AGENDA FOR THE

CITY OF PINOLE PLANNING COMMISSION
REGULAR MEETING

Monday, September 27, 2021
7:00 P.M.
Via Zoom Videoconference

DUE TO THE STATE OF CALIFORNIA'S DECLARATION OF EMERGENCY – THIS MEETING IS BEING HELD VIRTUALLY PURSUANT TO AUTHORIZATION FROM GOVERNOR NEWSOM'S EXECUTIVE ORDERS – CITY COUNCIL AND COMMISSION MEETINGS ARE NOT CURRENTLY OPEN TO IN-PERSON ATTENDANCE.

WAYS TO WATCH THE MEETING

- LIVE ON CHANNEL 26. The Community TV Channel 26 schedule is published on the City's website at www.ci.pinole.ca.us. The meeting can be viewed again as a retelecast on Channel 26.
- VIDEO-STREAMED LIVE ON THE CITY'S WEBSITE, www.ci.pinole.ca.us. and remain archived on the site for five (5) years.
- If none of these options are available to you, or you need assistance with public comment, please contact Planning Manager David Hanham at (510) 724-8912 or dhanham@ci.pinole.ca.us.

TO PARTICIPATE IN PUBLIC COMMENT DURING THE MEETING

Members of the public may submit a live remote public comment via Zoom video conferencing. Download the Zoom mobile app from the Apple Appstore or Google Play. If you are using a desktop computer, you can test your connection to Zoom by clicking here. Zoom also allows you to join the meeting by phone.

From a PC, Mac, iPad, iPhone or Android:

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OR

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Webinar ID: 876 3714 9010

By phone: +1 (669) 900-6833 or +1 (253) 215-8782 or +1 (346) 248-7799

- Speakers will be asked to provide their name and city of residece, although providing this is not required for participation.
- Each speaker will be afforded up to 3 minutes to speak.
- Speakers will be muted until their opportunity to provide public comment.

When the Chair opens the comment period for the item you wish to speak on, please use the "raise hand" feature (or press *9 if connecting via telephone) which will alert staff that you have a comment to provide. Once you have been identified to speak, please check to make sure you have unmuted yourself in the videoconference application (or press *6 if connecting via telephone).

COMMENTS

Please submit public comments to Planning Staff before or during the meeting via email dhanham@ci.pinole.ca.us. Comments received before the close of the item will be read into the record and limited to 3 minutes. Please include your full name, city of residence and agenda item you are commenting on.

AMERICANS WITH DISABILITIES ACT

In compliance with the Americans with Disabilities Act of 1990, if you need special assistance to participate in a City meeting or you need a copy of the agenda, or the agenda packet in an appropriate alternative format, please contact the Development Services Department at (510) 724-8912. Notification of at least 48 hours prior to the meeting or time when services are needed will assist the City staff in assuring that reasonable arrangements can be made to provide accessibility to the meeting or service.

CITIZEN PARTICIPATION:

Persons wishing to speak on an item listed on the Agenda may do so when the Chair asks for comments in favor of or in opposition to the item under consideration. After all of those persons wishing to speak have done so, the hearing will be closed and the matter will be discussed amongst the Commission prior to rendering a decision.

NOTE FOR VIDEOCONFERENCE MEETINGS: Public comments may be submitted to Planning Staff before or during the meeting via email dhanham@ci.pinole.ca.us. Comments received before the close of the item will be read into the record and limited to 3 minutes. Please include your full name, city of residence and agenda item you are commenting on.
Persons wishing to speak when items are opened for public comment may use the raise hand feature if connected via Zoom or press *9 if connected via telephone. When identified to speak, persons should ensure they have unmuted themselves or press *6 to unmute if connected via telephone.

Any person may appeal an action of the Planning Commission or of the Planning Manager by filing an appeal with the City Clerk, in writing, within ten (10) days of such action. Following a Public Hearing, the City Council may act to confirm, modify or reverse the action of the Planning Commission and the Planning Commission may act to confirm, modify, or reverse the action of the Planning Manager. The cost to appeal a decision is $500 and a minimum $2,500 deposit fee.

Note: If you challenge a decision of the Commission regarding a project in court, you may be limited to raising only those issues you or someone else raised at the public hearing or in writing delivered to the City of Pinole at, or prior to, the public hearing.

A. CALL TO ORDER

B. PLEDGE OF ALLEGIANCE AND ROLL CALL

C. CITIZENS TO BE HEARD:

The public may address the Planning Commission on items that are within its jurisdiction and not otherwise listed on the agenda. Planning Commissioners may discuss the matter brought to their attention, but by State law (Ralph M. Brown Act), action must be deferred to a future meeting. Time allowed: five (5) minutes each.

D. MEETING MINUTES:

1. Planning Commission Meeting Minutes from August 23, 2021

E. PUBLIC HEARINGS:

At the beginning of an item, the Chair will read the description of that item as stated on the Agenda. The City Staff will then give a brief presentation of the proposed project. The Commission may then ask Staff questions about the item.

For those items listed as Public Hearings, the Chair will open the public hearing and ask the applicant if they wish to make a presentation. Those persons in favor of the project will then be given an opportunity to speak followed by those who are opposed to the project. The applicant will then be given an opportunity for rebuttal.

The Public Hearing will then be closed and the Commission may discuss the item amongst themselves and ask questions of Staff. The Commission will then vote to approve, deny, approve in a modified form, or continue the matter to a later date for a decision. The Chair will announce the Commission's decision and advise the audience of the appeal procedure.

Note: No Public Hearings will begin after 11:00 p.m. Items still remaining on the agenda after 11:00 p.m. will be held over to the next meeting.

1. Conditional Use Permit CUP21-03 Cortez Body and Tow Shop

Request: Consideration of a Conditional Use Permit for the purpose of establishing a tow truck and body shop business in an existing building located at 730 San Pablo Avenue.

Applicant: Isael Cortez
730 San Pablo
Pinole, CA 94564

Location: 730 San Pablo Avenue
(APN 402-210-002)

Planner: David Hanham

2. Comprehensive Design Review DR21-11 Vista Woods Senior Apartment Complex

Request: Consideration of a Comprehensive Design Review for the purpose of constructing 179 units for low-income senior households that consist of 16 studios, 128 one-bedroom apartments and 35 two-bedroom units. The

complex will provide management offices for the residents, two outdoor deck areas on the 2nd and 3rd floors, a community kitchen, a dining/game room, a TV room, and fitness area. The complex will provide 88 parking spaces as well as bicycle parking.

Applicant: MRK Partners
108 Standard Street
El Segundo, CA 90245

Location: 600 Roble Avenue, 1106 San Pablo Avenue, and 1230 San Pablo Avenue (APNs 402-023-007, 402-023-002 & 402-023-003)

Planner: David Hanham

F. OLD BUSINESS:

None

G. NEW BUSINESS:

None

H. CITY PLANNER'S/COMMISSIONER'S REPORT:

I. COMMUNICATIONS:

J. NEXT MEETING(S):

Planning Commission Regular Meeting, October 11, 2021 at 7:00PM

K. ADJOURNMENT

POSTED: September 23, 2021

_____

David Hanham
Planning Manager

DRAFT

MINUTES OF THE REGULAR MEETING
PINOLE PLANNING COMMISSION

August 23, 2021

DUE TO THE STATE OF CALIFORNIA'S DECLARATION OF EMERGENCY – THIS MEETING WAS HELD PURSUANT TO AUTHORIZATION FROM GOVERNOR NEWSOM'S EXECUTIVE ORDERS – CITY COUNCIL AND COMMISSION MEETINGS WERE NO LONGER OPEN TO IN-PERSON ATTENDANCE. THE MEETING WAS HELD VIA ZOOM TELECONFERENCE.

A. CALL TO ORDER: 7:03 P.M.

B. PLEDGE OF ALLEGIANCE AND ROLL CALL

Commissioners Present: Benzuly, Kurrent, Martinez, Wong, Vice Chair Moriarty, Chair Banuelos

Commissioners Absent: None

Staff Present: David Hanham, Planning Manager
Michael Laughlin, Interim Community Development Director
Alex Mog, Assistant City Attorney
Justin Shiu, Contract Planner

C. CITIZENS TO BE HEARD

James ____, Pinole, suggested the description for Agenda Item G1 was vague in that the item should have been more descriptive in terms of what the Planning Commission was being asked to discuss. He asked staff to clarify the intended discussion to allow public participation. He also asked about the status of the following projects: Dr. Lee's Ophthalmology Center, the stark white colors of the exterior of the building were to be toned down but had yet to be modified; an ingress/egress problem continued to persist for the major driveways for the Kaiser building, dialysis center, Starbucks entry and the main entry for Sprouts, and he recommended signage and landscaping; and questioned what was being done to address the pre-erosion issues with the creek area behind the Sprouts building and the bowling alley. He added that comments in the form of e-mails and letters had been provided to staff on those issues in 2020 and 2021, although there had been no response from staff.

Planning Manager David Hanham reported that there had been agreement to the colors for Dr. Lee's Ophthalmology Center in 2017 and the Planning Commission had recently approved a new landscape plan which would offset the stark white colors of the building, and trees had been installed to screen the starkness of the building. He clarified that Agenda Item G1 was an informational item for the Three Corridors Specific Plan and no changes had been recommended to the Plan. As to the creek area behind Sprouts, an update would be provided as part of Agenda Item H. In addition, the ingress/egress issue that had been raised would have to be researched by staff to determine whether the Public Works Department was conducting any work in the area.

D. <u>MEETING MINUTES</u>:

1. Planning Commission Meeting Minutes from June 28, 2021

MOTION with a Roll Call Vote to adopt the Planning Commission Meeting Minutes from June 28, 2021, as submitted.

MOTION: Benzuly SECONDED: Moriarty APPROVED: 6-0

E. <u>PUBLIC HEARINGS</u>: None

F. <u>OLD BUSINESS</u>: None

G. <u>NEW BUSINESS</u>:

1. Three Corridors Specific Plan: Informational and Discussion Item

Planning Manager Hanham provided a PowerPoint presentation of the City of Pinole's Three Corridors Specific Plan (which governed the San Pablo Avenue, Pinole Valley Road and Appian Way corridors) to be reviewed by the Planning Commission over the next few meetings in terms of the Plan's relationship to the General Plan and Pinole Zoning Ordinance, primarily given the submittal of five multifamily residential applications totaling approximately 606 units in the Three Corridors Specific Plan area.

The goal of the Three Corridors Specific Plan was to preserve the character of Pinole and support commercial and residential development that could function as the catalyst for economic revitalization and further the City's goals and objectives; enhance Old Town Pinole as a vibrant, pedestrian-oriented commercial destination with a strong civic identity; encourage Transit Oriented Development (TOD) within the Priority Development Areas (PDAs) on San Pablo Avenue, Pinole Valley Road, and Appian Way; and support economic development that would bring more housing, retail, and employment opportunities to the community.

Responding to the Commission, Mr. Hanham and Assistant City Attorney Alex Mog clarified:

- State housing laws, density requirements, the City's parking requirements, and affordable housing concessions.

- Impacts from parking and vehicles in the downtown commercial areas, encouraging the use of public transit and other types of transportation would all be considered on an application-by-application basis.

- The City may mandate improvements directly tied to a project. As an example, sidewalk improvements directly in front of a property could be required but the City may not mandate that an applicant provide a sidewalk improvement plan for the entire City.

- More citywide projects had been implemented via the use of impact fees where a developer would contribute an impact fee based on the expected impact from a project, with a study to identify any impacts.

- Projects subject to the California Environmental Quality Act (CEQA) would have to mitigate any environmental impacts associated with the project, although most applications received by the City within the Three Corridors Specific Plan area would be exempt from CEQA requirements.

- Pinole Valley Road had been identified as a gateway into the City of Pinole/Old Town. Signature gateway features included gateway and branding plans and would require community input given that much of the public improvements would be in the right-of-way (ROW). Future discussions on a wayfinding plan, which would outline different signage types for the gateways and entries, would be encouraged with the possible use of grants or partnership with the Chamber of Commerce.

- The Three Corridors Specific Plan had been adopted by the City Council in 2010. Over the past 11 years the City had governed San Pablo Avenue, Pinole Valley Road, and Appian Way using design guidelines and land use standards from the Specific Plan. With the submittal of new applications in the Three Corridors Specific Plan area, now was the time to discuss what the City wanted for the future given more information available in terms of reuse, all electric buildings, sustainability and new technologies.

- A senior housing project proposed for Roble and San Pablo Avenues would be presented to the Planning Commission in the near future. Staff was in the process of preparing conditions of approval and all issues would be reviewed including potential safety measures and potential implementation of stoplights.

- Sustainability, energy measures and overall landscaping would be reviewed and considered for all future projects.

- A State requirement for emergency shelters and temporary homes allowed by right was clarified.

- Staff was in agreement to avoid piecemeal planning given the cost of the Three Corridors Specific Plan, and staff acknowledged there may be policies and procedures as part of the Housing Element Update that may dictate other additional housing units in the mixed use areas of the City.

- Pinole Vista Shopping Center was the last property in the Appian Way Specific Plan area.

- Adding Fitzgerald Drive as the last (fourth) corridor could be an interesting idea since Fitzgerald Drive served as an entry corridor off of I-80, and there were opportunities that could be considered.

- The City Council Ordinance Subcommittee had been intended as a committee for updates from the City Council, but if the Planning Commission wanted to bring the idea of Fitzgerald Drive as a fourth corridor, Planning Commissioners may e-mail City Council members; ask the City Manager to place an item on a City Council agenda for discussion; or Planning Commissioners may participate in a City Council meeting and ask the City Council to decide whether to place the idea on a future agenda for further discussion.

- The City Council and Planning Commission had met jointly in the past to discuss specific projects and yearly to discuss general issues. A joint City Council/Planning Commission meeting would allow a general discussion of ideas; and

- American Rescue Plan Act (ARPA) funds included certain parameters for eligible expenses, with the funds generally intended to be used on items directly related to the impacts of COVID-19.

PUBLIC COMMENTS OPENED

Rafael Menis, Pinole, asked for clarification and the status of a number of items in the Three Corridors Specific Plan including: Page 41, referenced a plan to narrow San Pablo Avenue and Page 170 included more detailed discussion on narrowing the street from four to two through lanes; Page 46 included a discussion of active use open space park land on the hill near Appian Way and Doctor's Medical Center, and Page 89 included further discussion. He asked for consideration to open the open space area to allow more public access via public trails.

Mr. Menis also referred to Page 114 where there had been a discussion on the expansion of shared public parking and possibly a parking garage in Old Town Pinole to relieve individual projects of the obligation to provide parking on-site. He asked whether any of the overall parking studies had determined that a garage was not needed. He noted a prior discussion of public transit links and improvements to public transit access in Pinole, and possibly a Park and Ride lot in a central area of downtown Pinole.

Mr. Menis added that Page 32, Chapter 1, had discussed the core community character goals of the General Plan and how they tied into the Three Corridors Specific Plan, although in terms of sustainability only a brief paragraph had been included on Page 57, and it had not included the community character goals which should be further identified. He understood the Three Corridors Specific Plan had last been updated in June 2020.

PUBLIC COMMENTS CLOSED

In response to the public comment, Chairperson Banuelos provided an overview of the background of the potential plans to narrow San Pablo Avenue to generate a greater walking presence in the look and feel of the street, although San Pablo Avenue had been designated as a regional road requiring a certain number of lanes, and any bulb-out of areas for landscaping or seating would be in direct conflict with the State requirements. He noted that when initially discussed, there had been significant reaction from local businesses in the immediate downtown that had been concerned with fewer lanes on San Pablo Avenue possibly impacting deliveries to the businesses.

Commissioner Kurrent stated that San Pablo Avenue was considered a route of regional significance as defined by the Contra Costa Transportation Authority (CCTA) and any changes to routes of regional significance must be approved by the CCTA. Also, a reduction of lanes would create traffic issues and the narrowing of lanes would be in opposition to Measure J. As a result, the idea to reduce lanes on San Pablo Avenue had ultimately not been pursued.

Chairperson Banuelos also commented that a parking garage by the U.S. Post Office had been discussed in the past as part of the City's Redevelopment Agency. Given the cost of a parking garage, it had not be pursued. He added that sustainability had not been a high consideration when the Three Corridors Specific Plan had been adopted in 2010. He also pointed out that current building codes required green building practices, the transit area located in the City of Hercules had not been in place when the Three Corridors Specific Plan had been adopted, and a certain amount of area was needed for Park and Ride lots. While there had been past discussions to take over the former shopping center in Tara Hills to install a transit center, those discussions had not formalized into a project.

Mr. Hanham stated the City could work with business owners on Fitzgerald Drive to designate a certain portion of their lots for Park and Ride use, Monday through Friday in the outlying area of the parking lots and there were other ways to consider those options. He acknowledged that while sustainability efforts had not been part of the discussion in 2010, with the enhanced requirements of Title 24, Building Energy Efficiency Standards and with Leadership in Energy and Environmental Design (LEED) Certification standards, the City's plans must be updated. He understood that would be a topic of discussion when the City had a new Community Development Director.

Mr. Hanham reported he had done some research with the West Contra Costa Transportation Advisory Committee (WCCTAC) as related to the number of lanes required for San Pablo Avenue, and advised as part of the San Pablo Avenue Vehicle Bridge project, San Pablo Avenue would be narrowed to two lanes and staff was working with WCCTAC and Caltrans on funding opportunities. At that time, the community would have a sense of what it would be like with a roadway reduced to two lanes, which would be studied as part of the process for the bridge project and WCCTAC's goal to get as much traffic through the area during the peak period as possible.

Chairperson Banuelos also suggested the impacts of driverless vehicles should be considered in the future.

Mr. Hanham acknowledged there was work being done with Google, Google Maps and other mapping companies related to driverless vehicles and the road network.

As to open space on Appian Way referenced by Mr. Menis, Mr. Hanham advised that most of the land was privately owned and the City would have to obtain easements and work with the property owners to create trails in those areas.

The Planning Commission looked forward to more information, presentations and insight on potential ideas and Mr. Hanham explained as part of the next presentation on the San Pablo Avenue Corridor, the Planning Commission would discuss opportunities and constraints, zoning and land use and then work through the remaining corridors after that.

Vice Chairperson Moriarty encouraged the public to review the Three Corridors Specific Plan. She looked forward to a future discussion of a gateway plan for Pinole Valley Road into Old Town and the public realm sections of the Three Corridors Specific Plan. She also urged creative use of the ARPA funds to assist the community.

Chairperson Banuelos commented that many projects that had been controversial had occurred prior to the implementation of the Three Corridors Specific Plan, including the Pinole Valley Shopping Center which had a lot of moving parts.

The City Council at that time had allowed a variance for around 100 parking spaces less than required which had generated a rejection of the project, which had been appealed by the then City Council, although since the shopping center was in dire need of renovation that had led to the reduction in parking. He agreed that Fitzgerald Drive should be its own corridor. He also detailed the history and intent of the Three Corridors Specific Plan, General Plan and Zoning ordinance, along with the quick advancements related to autonomous vehicles.

Chairperson Banuelos also recognized there was a housing crisis and greater interest in public transportation and that the development anticipated in the Three Corridors Specific Plan area would have impacts on residents in the future. He wanted a map of the proposed and anticipated development in the Three Corridors Specific Plan area to be provided to Commissioners along with another area plan for Fitzgerald Drive. He also sought ways to generate improvements with respect to more defined bicycle paths, and wider sidewalks on San Pablo Avenue near the Senior Center. He urged a review of the projects as a whole as opposed to a piecemeal approach.

Mr. Hanham advised he would start identifying future projects in the Three Corridors Specific Plan area and could provide that information at a future meeting.

H. CITY PLANNER'S / COMMISSIONERS' REPORT

Mr. Hanham reported the Vista Woods project had been tentatively scheduled for Planning Commission consideration on September 13, 2021; and 2151 Appian Way and 2801 Pinole Valley Road projects had environmental contracts signed and were ready for the environmental work to proceed with the goal for all of the projects to be entitled by January or February 2022. He continued to work with the City Clerk on e-mail addresses for the Planning Commission, the Request for Proposal (RFP) for the Housing Element Update was ready to go out, and interviews for the vacancy on the Planning Commission would be held this week.

Mr. Hanham added that in discussions with the former Development Services Director, he had been informed that the West County Storm Drain Protection District had stipulated no trees around the creek area behind Sprouts, although there had been some enhanced landscaping in the medians for the project as well as some signage but was uncertain it had all been signed-off. As to the trail behind Sprouts, most of which was located on private property, staff was working with the property owner to maintain the area.

Vice Chairperson Moriarty expressed the willingness to send information to Mr. Hanham via e-mail related to the history of the trees that were to have been planted in the creek area behind Sprouts; Chairperson Banuelos recalled the original landscape plan had discussed signage; and Mr. Hanham reported he had reviewed the records and the Planning Commission's approval in 2015, and was uncertain whether the landscape plans had been amended since then.

Vice Chairperson Moriarty inquired of the status of the tree replacement at the property at 2518 San Pablo Avenue, and Interim Community Development Director Michael Laughlin reported that staff had been working with the Public Works Department on pricing for the tree, grate, and maintenance, with the property owner to provide a deposit.

Vice Chairperson Moriarty asked the status of the Pinole Square landscape plan and Mr. Hanham advised the applicant had requested and received approval for the extension for the project, staff was processing the Parcel Map, and he hoped it would generate movement on the landscape plan.

Mr. Laughlin reported the next week was his last week with the City of Pinole. He wished the Planning Commission well as they moved forward.

The Planning Commission wished Mr. Laughlin well on his next endeavor.

I. **COMMUNICATIONS**: None

J. **NEXT MEETING**

The next meeting of the Planning Commission to be a Regular Meeting scheduled for September 13, 2021 at 7:00 P.M.

K. **ADJOURNMENT**: 9:15 P.M.

Transcribed by:

Sherri D. Lewis
Transcriber

Item E1

Memorandum

TO: PINOLE PLANNING COMMISSION

FROM: DAVID HANHAM, PLANNING MANAGER

SUBJECT: CORTEZ TOW AND BODY SHOP

DATE: SEPTEMBER 27, 2021

Property Owner:	**Project Applicant:**
Richmond Development c/o Carlos Valero 4480 Appian Way #205 El Sobrante, CA 94803	Isael Cortez 730 San Pablo Ave, Bldg 2 Pinole, CA 94564

PROJECT:	Cortez Tow and Body Shop
FILE:	Condition Use Permit (CUP) 21-03
LOCATION:	730 San Pablo Avenue
APN:	402-210-012
ZONING:	Office Industrial Mixed Use (OIMU)
GP LU DESIGNATION:	Service Sub-Area (SSA)
SPECIFIC PLAN:	OIMU in SSA in the San Pablo Avenue corridor

REQUEST

Isael Cortez (applicant) is seeking approval of a conditional use permit to establish a tow and body shop at 730 San Pablo Avenue in the OIMU district. The body shop is proposed within existing buildings on the site. Tow service would support the body shop use. The Planning Commission has the authority to review the request for a conditional use permit under the Zoning Code.

STAFF RECOMMENDATION

Adopt Resolution 21-10 for Conditional Use Permit (CUP) 21-03 conditionally approving a tow and body shop at 730 San Pablo Avenue.

SITE LOCATION

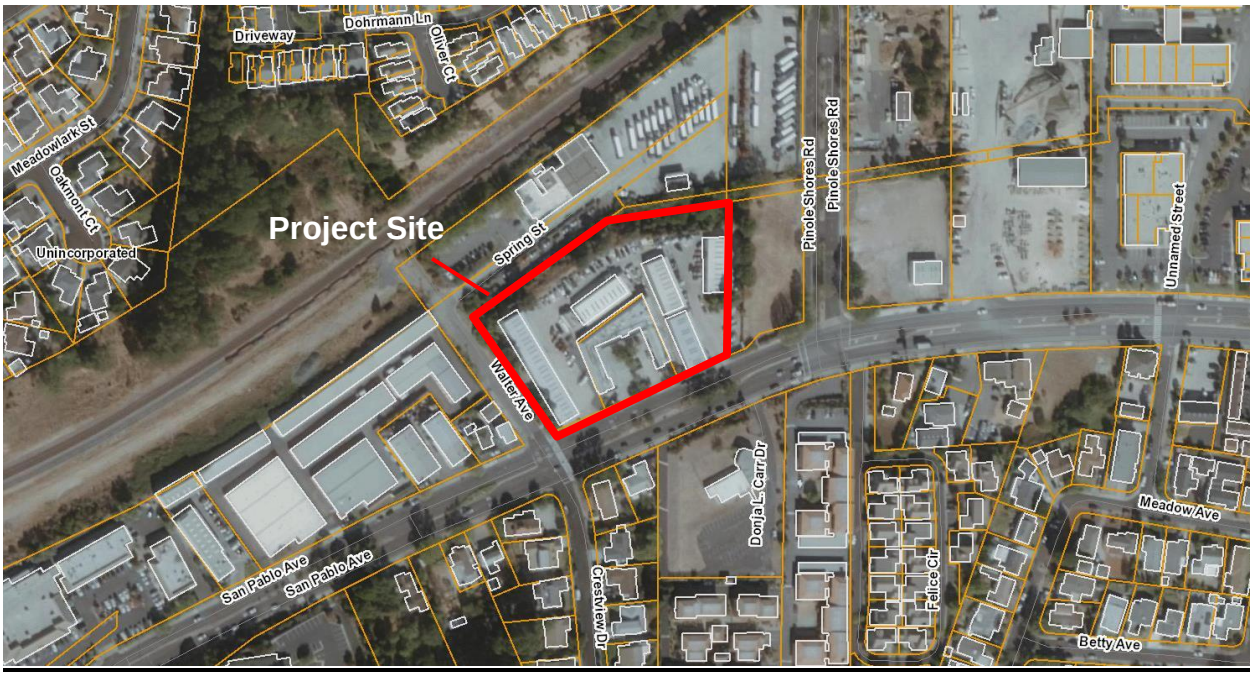

Figure 1. Site Location

Direction from Project Site	Land Use
North	WestCAT Admin Building and Yard
West	Vehicle Service and Industrial Use on the western portion of the site. Walter Avenue, with Single Family Residential and Storage beyond
South	Vehicle Service. San Pablo Avenue, with Single Family Residential and Commercial beyond
East	Vacant

PROJECT DESCRIPTION

The project consists of establishing tow and autobody services, as described by the applicant's proposed scope (Attachment B), at 730 San Pablo Avenue. The applicant currently operates Cortez Tires and Auto Repair, a vehicle service use, in one building on site (Building 2). The project proposes to use an adjacent building (Building 1) for vehicle services as well. In addition, a new tow service is proposed to complement the body shop. Building 2 would contain car lifts, tire racks, office space, customer areas, changing rooms, restrooms, and other equipment. Building 1 is an empty warehouse space that will accommodate four work spaces, vehicle storage for up to 12 cars, office space, and a restroom.

The body shop is proposed to operate from 9:00am to 6:00pm Monday to Friday. The proposed towing hours are proposed for 7:00am to 7:00pm everyday. The business proposes three

employees for the body shop and two tow truck drivers at the start.

The proposal indicates that up to 16 vehicles can be stored inside Building 2 (4 in workspaces and 12 in open areas in the building). Five parking spaces are available outside the building as well. Ten employee parking spaces are located behind Building 3 on the lot. The towing operation proposes pick-up and drop-off of vehicles. Vehicles to be worked on will be stored in the body shop. The applicants expect an average of potentially one car towed per day at the beginning and hope to see at least three cars per day as the business continues.

As a condition of approval, vehicles towed to the site and that are awaiting work, undergoing work, or completed work shall be stored in the building or in additional locations outside the building indicated on the project plans. Tow vehicles shall be parked in locations identified in the plans. Furthermore, vehicles shall not be parked as to block circulation access through the site, as conditioned (Attachment A).

The proposal has identified an available space on the side of Building 1 that is approximately 55 feet by 8 feet and closed from view for the storage of parts and waste. The applicant shall be responsible for continued maintenance of the site, including the coordination of pick-up and clearance of items. A condition of approval has been included for site maintenance (Attachment A).

BACKGROUND

The project location is 730 San Pablo Avenue, which is an approximately 115,000 square foot U-shaped developed lot. The lot contains five industrial/warehouse style buildings and is covered by paved surfaces serving as parking and circulation on the majority of the property. Vehicle service uses operate in some of the tenant spaces.

The proposed use requested under this Conditional Use Permit is located on the eastern portion of the 730 San Pablo Avenue property. Cortez Tire and Autobody Repair currently occupies Building 2, an approximately 4,500 square foot building on the property. The Project proposes to also operate in the existing space of Building 1, which is an approximately 4,500 square foot building that was most recently used as a granite and marble warehouse. Attachment C contains images of the space and the immediate areas outside.

Under current requirements within the Three Corridors Specific Plan, vehicle service uses require a conditional use permit. Existing vehicle service may continue to operate. However, a conditional use permit would be required for new vehicle service uses if the new vehicle service business occupies a space that did not have a previous vehicle service use, the new business occupies a space that was vacated by a vehicle service use for more than six months, or if the proposed use is intensified or expanded. The latest use of Building 1 is a marble and granite warehouse, therefore a conditional use permit would be required to provide for use as vehicle service.

Vehicle services uses in the city are reviewed and approved by Planning Commission as Conditional Use Permits, per Pinole Municipal Code Section 17.12.140.

ANALYSIS

Land Use

The project site is designated Service Sub-Area (SSA) in the General Plan and Three Corridors Specific Plan. Per the General Plan, the SSA is intended to "maintain and enhance existing land uses while providing land use flexibility and incentives to encourage new private investment and additional development." The SSA emphasis in the San Pablo Avenue corridor is to "preserve land for manufacturing and industrial uses, particularly 'green industry'. A limited amount of general office, retail and residential uses may be permitted where they will not conflict with the principal industrial uses in the area." The proposed project continues vehicle service uses that have operated on the property and expands the business on the same site.

The project would meet General Plan Goals and Policies, including the following:

> GOAL LU.7 Balance housing and employment opportunities to reduce trips in and out of the region and encourage commercial development which maintains and enhances the quality of the city's commercial areas, provides services for residents and broadens the tax base of the community to provide needed revenues for public services.
>
> POLICY LU.7.1 Provide sufficient land for commercial and industrial uses to allow for development that provides basic goods and services to Pinole residents.
>
> POLICY LU.7.2 Provide for economic development which (1) maintains the City's ability to finance services and the construction and maintenance of public improvements; (2) offers local employment opportunities for Pinole residents to reduce inter-city commuting; and (3) assures the availability and diversity of resident-serving goods and services.

The Three Corridors Specific Plan, expanding upon the SSA description in the General Plan, envisions SSA in the San Pablo Avenue corridor as a gateway into Pinole and encourages light and green industry. The vision includes embrace of the area's "historic character as an industrial area while moving towards newer cleaner industry while allowing land use flexibility." The site has a Specific Plan and Zoning designation of Office Industrial Mixed Use District (OIMU), which is intended to allow a wide range of office and light industrial development and uses. Vehicle services are identified as an allowable use with approval of a conditional use permit for the OIMU district in the SSA of the San Pablo Avenue corridor. The property contains existing vehicle service uses, and the proposal would be a continuation of vehicle service uses that have been available on site. The project proposes expanded operations that include use of another building on site and tow operations to serve the autobody shop. However, the building is not proposed to be modified and the exterior areas of the site would not be modified. The proposal would provide expanded vehicle services to serve residents.

Zoning

The property is located within the Office Industrial Mixed Use (OIMU) zoning district. Under the Three Corridors Specific Plan, the OIMU zoning district provides for light industrial development. The project does not propose modifications to the existing buildings.

ENVIRONMENTAL REVIEW

The project is exempt from the requirements of the California Environmental Quality Act (CEQA) in that this proposal involves new construction or conversion of small structures. The project is determined to be categorically exempt from the California Environmental Quality Act (CEQA) under Section 15303 of the CEQA Guidelines because it proposes new vehicle service use within an existing building that is less than 10,000 square feet and with no modification to the exterior of the structure. The project is located in an urbanized area intended for light industrial uses and has other vehicle service uses, does not contain significant amounts of hazardous substances, is served by public services and facilities, and is not in an environmentally sensitive area.

CONCLUSION

The project proposes a vehicle service use on a developed property with similar uses. The proposal provides expanded local vehicle services, including autobody repair and towing.

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ATTACHMENTS

A. Resolution 21-10 with Exhibit A: Conditions of Approval
B. Project Scope and Plans, date received August 10, 2021
C. Site Pictures

ATTACHMENT A

PLANNING COMMISSION RESOLUTION 21-10
WITH EXHIBIT A: CONDITIONS OF APPROVAL

RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF PINOLE, COUNTY OF CONTRA COSTA, STATE OF CALIFORNIA, APPROVING A CONDITIONAL USE PERMIT (CUP21-03) FOR A TOW AND BODY SHOP AT 730 SAN PABLO AVENUE, APN: 402-210-012

WHEREAS, Isael Cortez (applicant) filed an application for a Conditional Use Permit (CUP21-03) with the City of Pinole to operate a proposed tow and body shop at 730 San Pablo Avenue; and

WHEREAS, the Planning Commission of the City of Pinole is the appropriate authority to hear and take action on this project; and

WHEREAS, said property is designated Service Sub-Area (SSA) in the Pinole General Plan in the city; and

WHEREAS, the property has a Specific Plan Land Use and is zoned Office Industrial Mixed Use (OIMU), which allows for vehicles services with approval of a Conditional Use Permit; and

WHEREAS, the project meets the criteria for a Categorical Exemption as a New Construction or Conversion of Small Structures pursuant to Section 15303 of the California Environmental Quality Act (CEQA) Guidelines; and

WHEREAS, the Planning Commission of the City of Pinole has conducted a duly noticed public hearing to consider CUP21-03 on September 27, 2021; and

WHEREAS, after the close of public hearing, the Planning Commission considered all public comments received both before and during the public hearing, the presentation by City staff, the staff report, and all other pertinent information regarding the proposed development.

NOW, THEREFORE, the Planning Commission hereby finds that:

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

2. The proposed use is consistent with the general plan, any applicable specific plans, and all applicable provisions of this title. The proposal contains vehicle service uses that would be compatible with existing vehicle service uses on site and compatible with the industrial character intended for the Office Industrial Mixed Use designation for the property.

3. The establishment, maintenance, or operation of the use applied for will not, under the circumstances of the particular case (location, size, design, and operating characteristics), be detrimental to the health, safety, peace, morals, comfort, or general welfare of persons residing or working in the neighborhood of such use or to the general welfare of the city.

4. The site of the proposed use is physically suitable for the type, density and intensity of the use and related structures being proposed. The proposal would occupy existing structures and parking areas on site.

5. It will not be contrary to the specific intent clauses, development regulations, or performance standards established for the zoning district in which it is located. The proposed use and related structures are compatible with other land uses, transportation and service facilities in the vicinity. The proposal would be compatible with other vehicle service uses on the property and does not propose modifications to structures.

6. The conditional use permit request is Categorically Exempt from CEQA pursuant to Section 15303(a) of the CEQA Guidelines because it involves new construction or conversion of small structures. The project is determined to be categorically exempt from the California Environmental Quality Act (CEQA) under Section 15303 of the CEQA Guidelines because it proposes new vehicle service use within an existing building that is less than 10,000 square feet and with no modification to the exterior of the structure. The project is located in an urbanized area intended for light industrial uses and has other vehicle service uses, does not contain significant amounts of hazardous substances, is served by public services and facilities, and is not in an environmentally sensitive area.

NOW, THEREFORE BE IT RESOLVED by the Planning Commission of the City of Pinole:

A. Hereby approves CUP21-03 as provided in the staff report, and subject to the Conditions of Approval attached as Exhibit A to this Resolution.

B. The approval of CUP21-03 shall expire on September 27, 2022, unless exercised and actual construction or alteration as needed under valid permits has begun within said period or a written request has been submitted to the City, prior to the expiration date, for an extension of time as allowed under the Zoning Ordinance.

PASSED AND ADOPTED by the Planning Commission of the City of Pinole on this 27th day of September 2021, by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

_____
Tim Banuelos, Chair, 2021-2022

ATTEST:

_____
David Hanham, Planning Manager

Exhibit A
PLANNING COMMISSION RESOLUTION 21-10 CONDITIONS OF APPROVAL

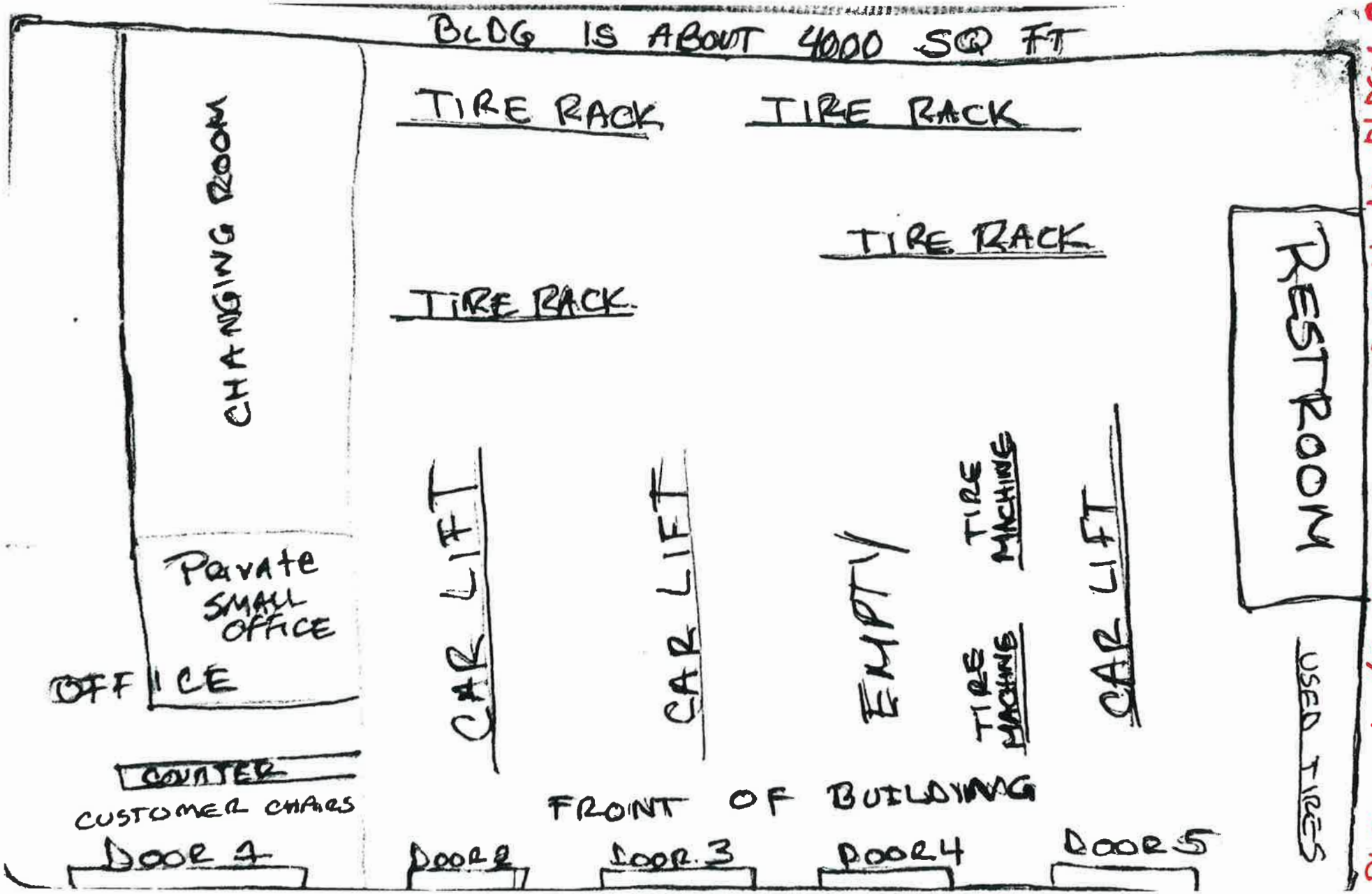
		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
1.	The project shall be constructed in substantial compliance with the approved Conditional Use Permit at 730 San Pablo Avenue (APN 402-210-012), approved by the Planning Commission as shown on the project plans received August 10, 2021, unless otherwise conditioned. The proposed project shall be built in a manner consistent with all applicable federal, state, and local regulations.	Ongoing	Development Services Department	
2.	The Applicant shall hold harmless the City, its Council Members, its Planning Commission, officers, agents, employees, and representatives from liability for any award, damages, costs and fees incurred by the City and/or awarded to any plaintiff in an action challenging the validity of this permit or any environmental or other documentation related to approval of this permit. Applicant further agrees to provide a defense for the City in any such action.	Ongoing	Development Services Department	
3.	The use shall substantially conform to the approved planning application materials. Any modifications must be reviewed by the Planning Manager who shall determine whether the modification requires additional approval of the Planning Commission.	Ongoing	Development Services Department	

Exhibit A
PLANNING COMMISSION RESOLUTION 21-10 CONDITIONS OF APPROVAL

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
4.	CIRCULATION - The applicant and owner shall ensure operations associated with the project do not obstruct circulation within the site or entering/exiting the site.	Ongoing	Development Services Department	
5.	SITE MAINTENANCE - The applicant and owner shall ensure orderly maintenance of storage, waste, and other products associated with operation. Maintenance includes coordination of pick-up and clearance of items.	Ongoing	Development Services Department	
6.	VEHICLE STORAGE - Vehicles towed to the site and that are awaiting work, undergoing work, or completed work shall be stored in the building or parked in identified parking locations permitted by the owner and on the project plans.	Ongoing	Development Services Department	
7.	HOURS OF OPERATION - The hours of operation shall be as shown below. Modifications to hours of operation would require review by the Planning Manager. Body Shop Operations: Monday to Friday – 9:00am to 6:00pm Tow Operations: Everyday – 7:00am to 7:00pm	Ongoing	Development Services Department	
8.	SPRAY BOOTH - The applicant shall not construct and operate a spray booth without further review and approval by the Development Services Department.	Ongoing	Development Services Department	

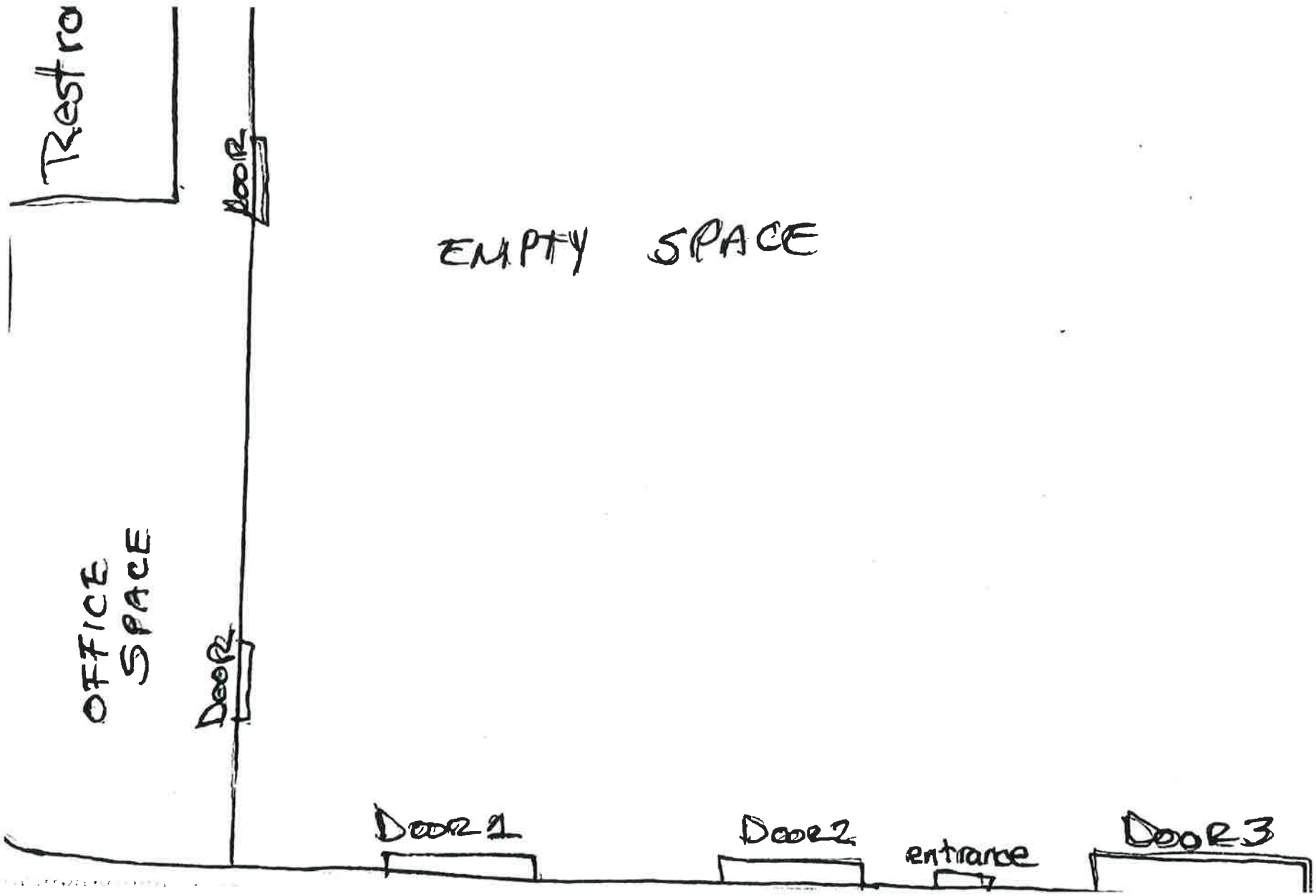
Exhibit A
PLANNING COMMISSION RESOLUTION 21-10 CONDITIONS OF APPROVAL

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
9.	BUILDING PERMIT - The applicant shall obtain a building permit for any work proposed for applicable remodel and interior work proposed within buildings.	Ongoing	Development Services Department	
10.	PERMITS, BONDS, AND INSURANCE - The applicant shall obtain an encroachment permit, posting the required bonds and insurance, for any work to be done in the City's right-of-way. This encroachment permit shall be obtained prior to the issuance of a building permit and prior to any work being done in the City's right-of-way.	Ongoing	Development Services Department	

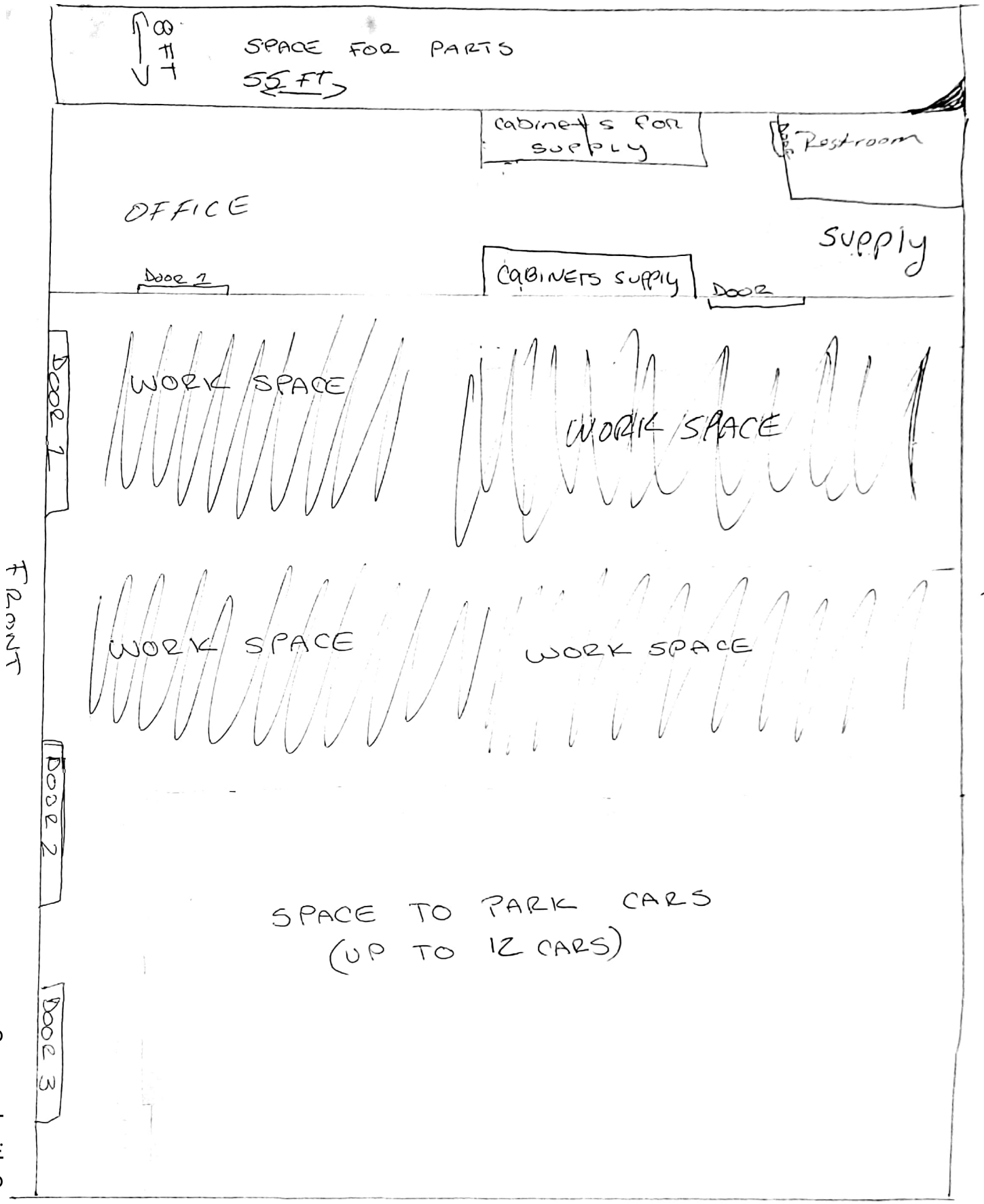


PL21-0067 / CUP 21-03 @ 730 San Pablo Ave. BLDG 1-2

ATTACHMENT B



PL21-0067/CUP21-03 @ 730 SAN PABLO AVE BLDG 1-2



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CORTEZ AUTO BODY SHOP/ CORTEZ TOWING

HOURS OF OPERATION FOR BODY SHOP
9am-6pm Monday-Friday

HOURS OF OPERATION FOR TOWING
7am-7pm EVERYDAY

BODYSHOP
We will be starting off with 3 employees
#1 Bodywork
#2 Detailer
#3 Office
We are hoping that in the future we get more business and have
#2 Bodywork
#2 Detailers
#1 Office

TOWING
We will be getting a cell phone to be able to answer calls from 7am to 7pm but we will be using body shop office personal during shop's business hours.

We will be starting with 2 tow trucks (2 driver's)

BODY SHOP

We are able to store 12 vehicles while working on 4 more inside, so we would be able to store all 16 vehicles inside plus an additional 5 outside the building.
Plus I have attached a drawing of all the parking spaces we have available for us to use.
There is also 10 Employee parking in the back of bldg. 3 that we are able to use plus plenty of street parking for employee.

TOWING

We will be operating from 7am to 7pm every day.

Our plan for starting up our business is just to pick up/drop off vehicles. NO STORING.
We will only store vehicles that will be having a repair in one of our shops.
We are new to the towing business and we are not expecting much in the first few months, maybe tow a car per day or at least 5 per week. We are hoping it does pick up to at least 3 per day (pick up /drop offs) in later months.
We are expecting the towing business to help us bring in more work to our shops but our plan is to grow the towing business itself.
We are aware of the space limitations we currently have, but our plan for the future is to get our own Yard and more towing trucks.
We are preparing ourselves on this possibility depending how things work out.

We won't be making any modifications on the outside or inside of building.

I understand there was a concerned of where we would be storing used parts or garbage, we have available a space on the side of bldg. 1 of 55ft by 8ft that is closed off of view (see pics attached) and that is where we would be using for used parts and garbage but we do have a person currently that picks up every other week and we would have him come once a week or as need it to keep area clean.

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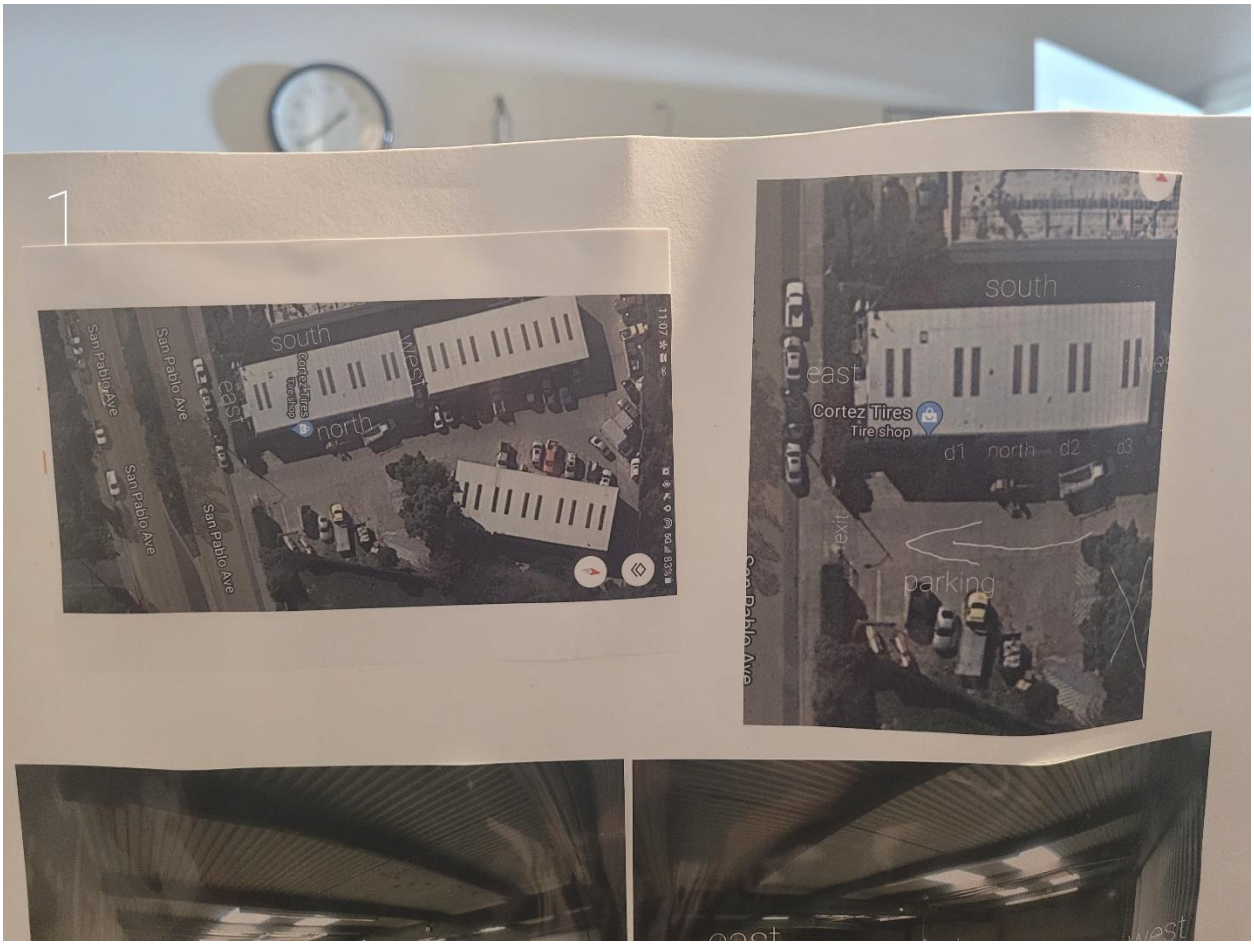
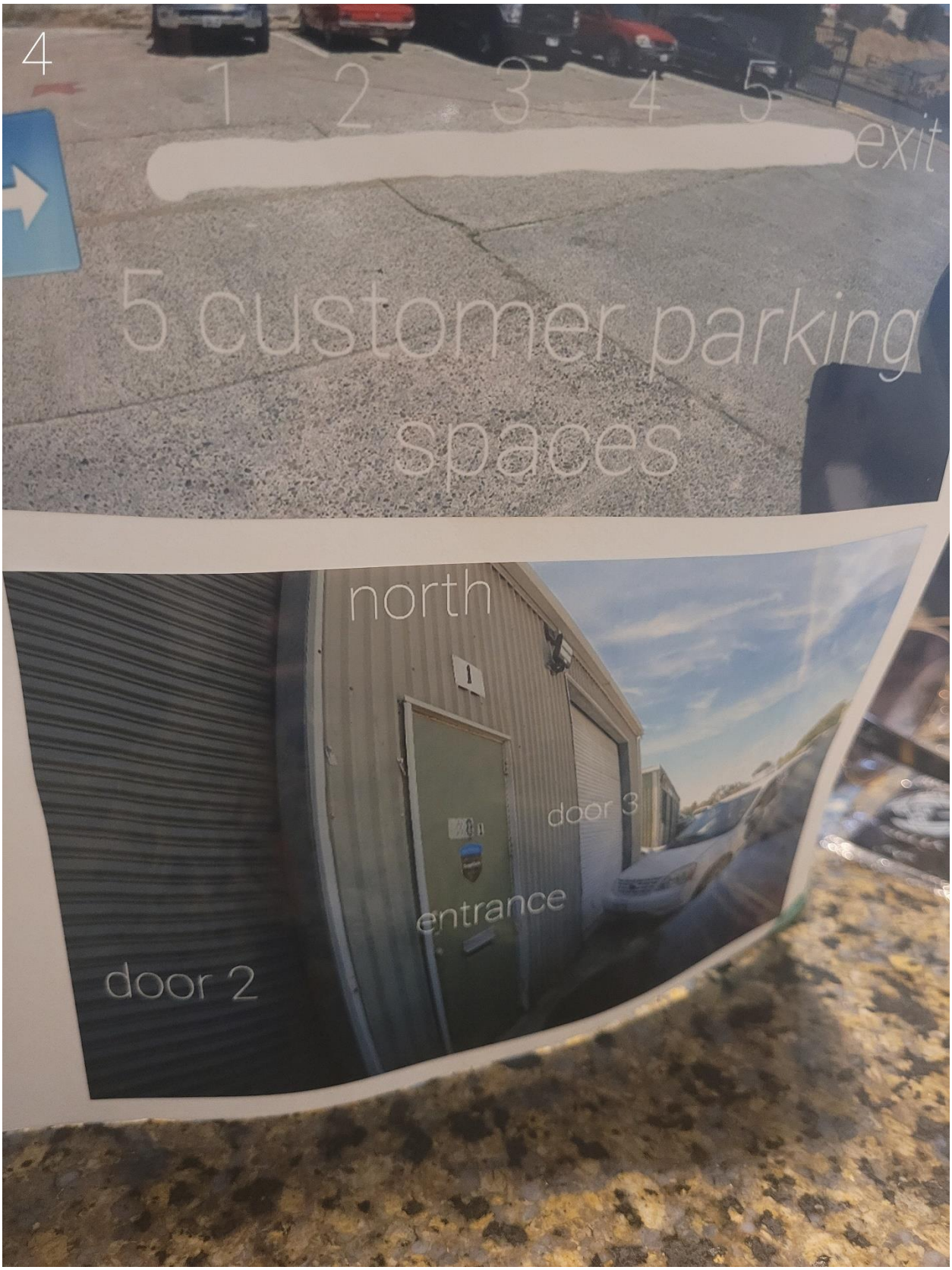
ATTACHMENT C

PICTURES FROM APPLICANT

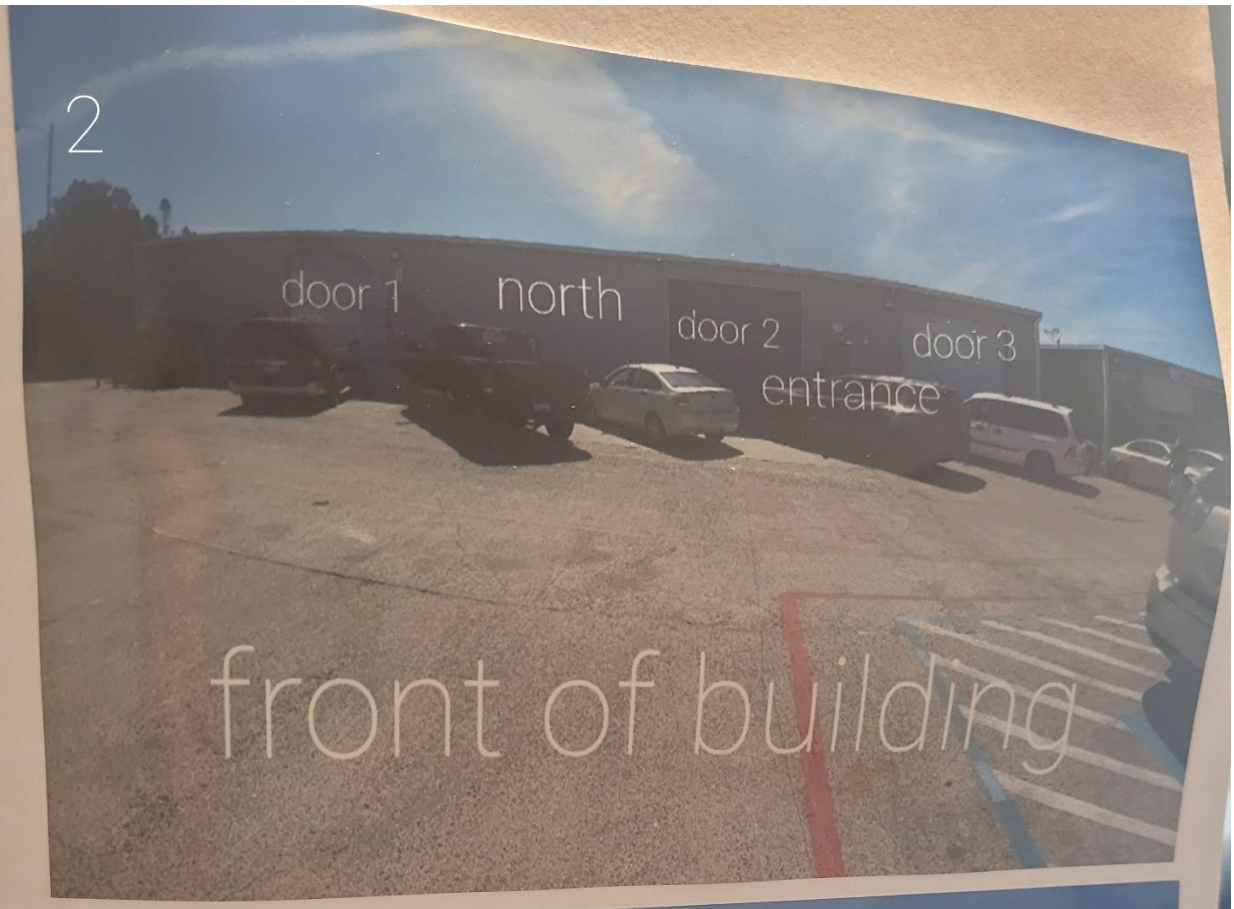



4
1 2 3 4 5
exit
5 customer parking
spaces
north
1
door 3
entrance
door 2

3
parkng
1 2 3 4 5
exit

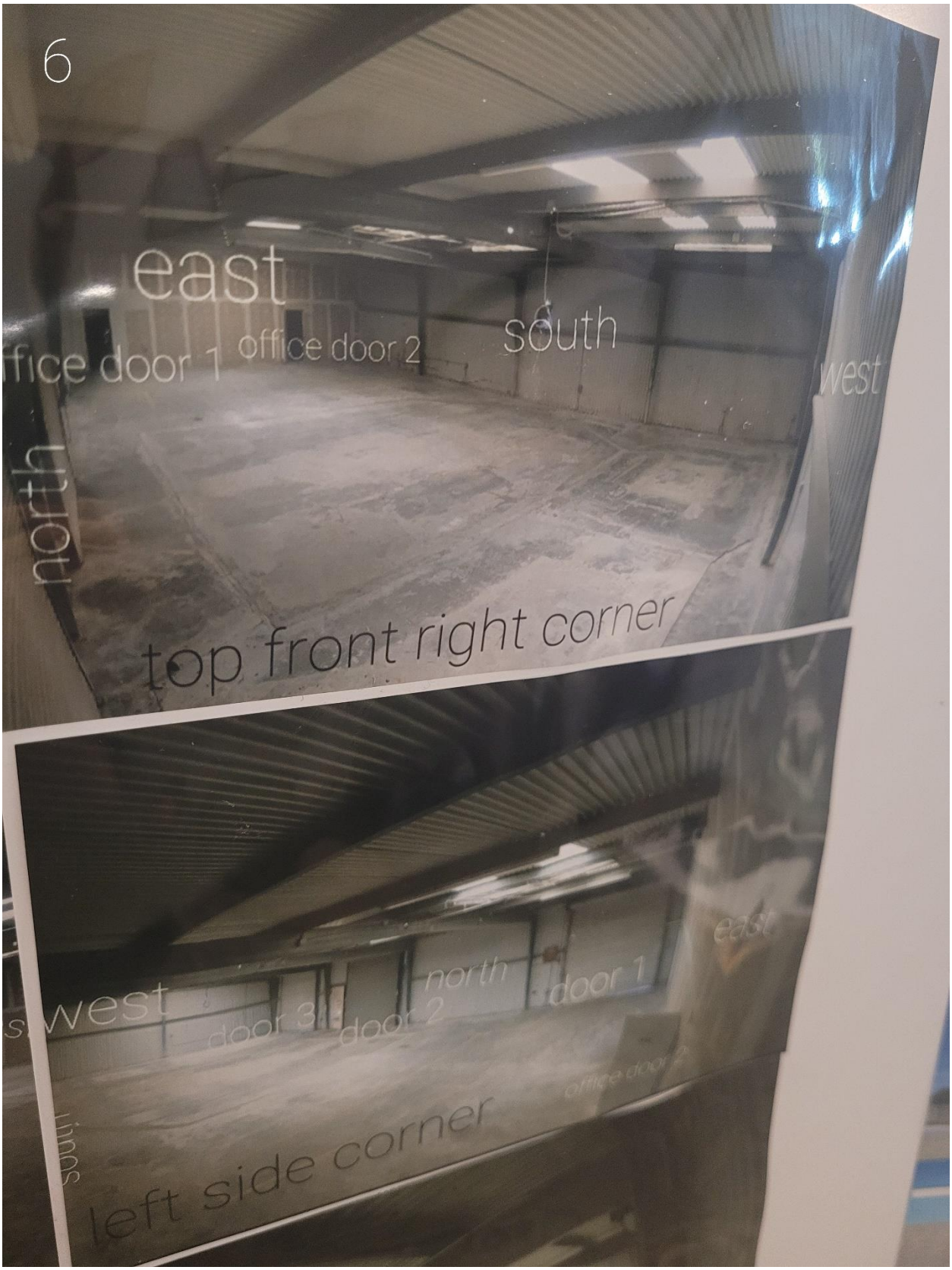
1 2 3 4 5 exit
5 customer parking
spaces

2


door 1
north
door 2
door 3
entrance
front of building

door 1
north
BLDG 1
empty space
electric panel

5
east
south
west
office door 2
left front corner
north
door 3
exit
door 2
west
rear right corner


6
east
office door 1
office door 2
south
west
north
top front right corner
west
door 3
door 2
north
door 1
east
left side corner

Item E2

Memorandum

TO: **PLANNING COMMISSION MEMBERS**

FROM: **David Hanham, Planning Manager**

SUBJECT: **Vista Woods 179 unit affordable units.**

DATE: **September 27 2021**

Applicant: PInole Venture LP/ C/o MRK Architecture c/o Jeni Jackman 5230 Pacific Concourse Dr., Suite 350 Los Angeles, CA 90045	**Property Owner:** Pinole Venture LP/ C/o MRK Architecture c/o Jeni Jackman 5230 Pacific Concourse Dr , Suite 350 Los Angeles, CA 90045
File: Comprehensive Design Review – PL-21-0030/DR 21-11	
Location: 600 Roble Ave, 1230 San Pablo, 11069 San Pablo Avenue APNs: 402-023-002, 003, & 007	
General Plan: MUSA, Mixed Use Sub Area Specific Plan: San Pablo /Service Sub-Area (SSA) / Mixed Use Zoning: VHDR, Very High Density Residential (35.1 to 50 du/ac)	

BACKGROUND

MRK Partners owns the properties located at 600 Roble, 1109 and 1230 San Pablo Avenue. The project area is bordered by San Pablo Avenue, Roble Avenue, Encina Avenue, and Madrone. MRK Partners are proposing to construct 179 affordable units for seniors.

MRK Partners submitted a development application on March 30, 2021. As stated above, MRK Partners are proposing to construct 179 affordable units for seniors on the three parcels approximately 2.01/87,555 sq ft site. The project is proposing to utilize by right state density bonus law provision as described later in this report.

The Planning Commission Sub-Committee met on May 12, 2021 to discuss this project. The main issues that were discussed included parking, articulation of the east elevation, and the overall site utilization of the project. The Planning Commission- Sub-Committee wanted to look at altering the Encina Drive

elevation and adding some additional landscaping. The Sub-Committee also wanted the owners to add additional parking added. However, given site constraints, additional parking was not found feasible.

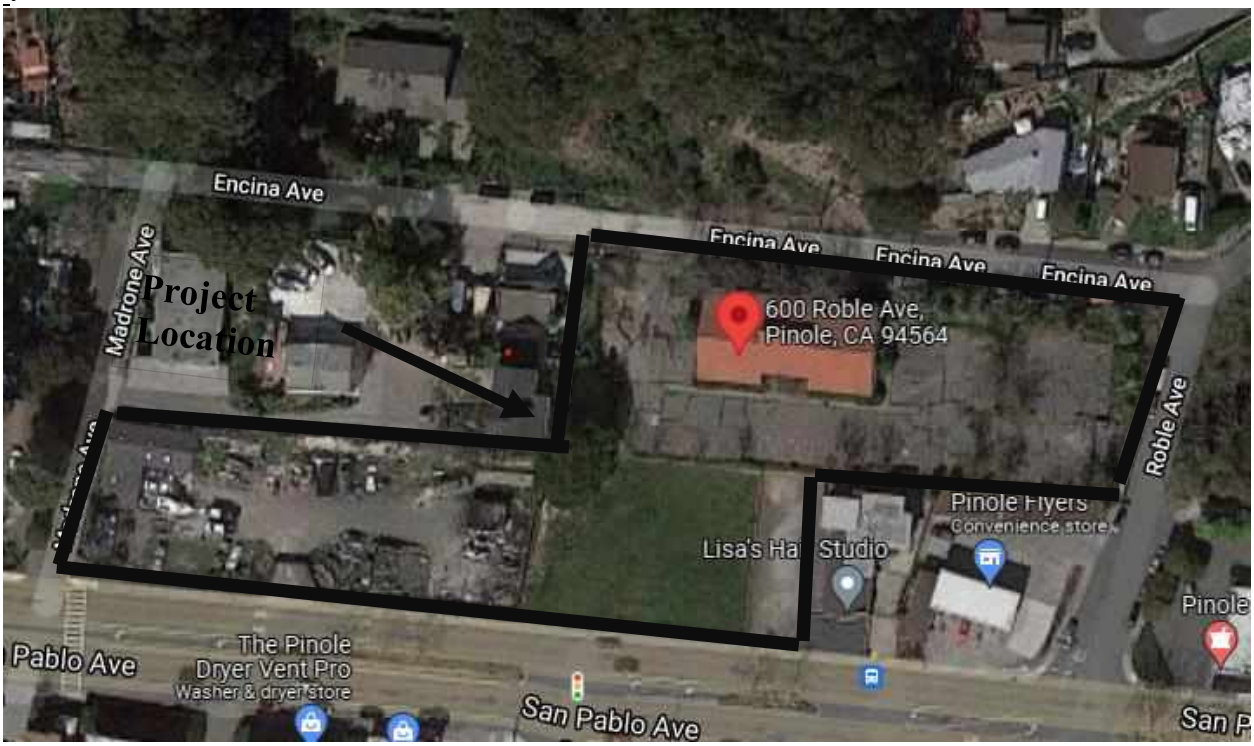
PROJECT DESCRIPTION

The Vista Woods project will provide 100% affordable housing with 179 affordable units for seniors. The development will consist of 16-studios, 128 one-bedroom units and nine (9) two-bedroom units, one of which will be the manager's unit in a four story building. The ground floor comprises of a lobby with mailboxes, stairs, elevator, a spacious community room with a kitchen and a computer station, a laundry and fitness center facility, an exterior bike storage area, with business offices for property management. There are to parking areas. The first area is along Madrone Avenue. The Madrone Avenue parking area consist of 13 parking spaces. The Roble Avenue Parking area consist of 25 parking spaces on the outside of buildings, and approximately 50 parking spaces located in an underground facility under Wings C and D. All of the parking stalls will be EV ready and the project will be required to install two (2) install stations. Vista Woods is providing 18 bicycle stalls on site including an additional 207 spaces within the 179 units.

Required Land Use Approval

Entitlements and city approvals for the project include Comprehensive Design Review, an Affordable Housing Regulatory Agreement, and a California Environmental Quality Act determination. Pursuant to Table 17.10.060-1, of the Zoning Code of the City Pinole, a Comprehensive Design Review final approval is normally issued by the Planning Commission with an appeal to the City Council. The Affordable Housing Agreement will be approved at the City Council at a later date.

Figure 1 Site Location



Direction from Project Site	Land Use
North	Encina Avenue/Single Family Residential
West	Madrone Avenue/ Existing Commercial Building
South	San Pablo Avenue/ Existing Commercial Buildings
East	Roble Avenue/Existing Single Family Residential

Site Parameters

The site is bound by Encina Avenue to the north, San Pablo Avenue to the South, Roble Avenue to the East and Madrone Avenue to the West. Surrounding land uses include a commercial storage yard to the west of the property, existing Single Family Residential to the north and to the east with existing businesses to the south. The project site has topographic issues that will be needed to be mitigated. The property high point is on the northeast corner of the property and it drops to the southwest corner of the property. The topography is shown on Sheets C2.1-2.3 of the Vista Woods Design Package.

The site has been vacant for about 20 years. Previous uses of the site a Union Hall building, a storage yard, and a vacant piece of property. Driveways are still visible usable for the Vista Woods Project.

ANALYSIS

This section of the report will analyze the Vista Wood Apartment Complex. As stated above, MRK Partners applied for a Comprehensive Design Review and a Tree Removal Permit. Staff will analyze the project for consistency with the City of Pinole General Plan, the Three Corridor Specific Plan, and the Pinole Zoning Ordinance. As part of the consistency. As part of the consistency evaluation and approval, the Planning Commission is required to make specific findings and other consideration consistent with Chapter 17.12.156 (G) & (H) of the Pinole Zoning Code. In addition, the Planning Commission will review the by-right and incentives, waivers and concessions for this project. consistent with the State Density Bonus Law (Section 65915 of the California Government Code).

Density Bonus Request:

State Density Bonus Law Section 65915 has been in effect since January 1, 2021. The Vista Woods Project qualifies for the incentives and exemptions by the following criteria:

1. The project is 100% deed restricted affordable to low-income households
2. The project is 100% deed restrictive dwelling units to senior housing aged 62 and above.
3. The site is within ½ mile of a bus stop with service greater than 8 times a day.

State Density Bonus Law Section 65915 allows Vista Woods to have by-right requests that are automatically granted. I have listed those by-right requests automatically granted:

1. Zero Parking Required
2. 80% Density Bonus
3. Four (4) incentive/concessions
4. Waivers of development standards.

1. Parking

Section 65915 (p)(3)(B) of the California Government Code allow for zero parking under the criteria that the development is a for-rent housing development for individuals who are 62 years of age or older that complies with Sections 51.2 and 51.3 of the Civil Code and the development has either paratransit service or unobstructed access, within one-half mile, to fixed bus route service that operates at least eight times per day.

Section 17.48.050-Table 17.48.050-1 requires that Senior Projects and one (1) space per unit. Vista Woods is proposing 179 units of Senior Housing that requires individuals over the age of 62. Vista Woods is proposing to construct 88 parking stalls throughout their project. All 88 stalls will be EV ready and will have two spaces with charging station.

2. 80% Density Bonus

Vista Woods is asking for a for an 80% density bonus. As stated above, the density bonus is allowed under the State Density Bonus Law. Below is the calculation of required affordable units as established in Section 17.32.020 (A). All projects for rental or ownership of residential developments of four (4) or more units located in the City shall have at 15% of the total units and of those units, 40% must be affordable for very low income households. Also, calculated below is the density bonus for this project.

Vista Woods zoning is VHDR, Very High Density Residential (35.1-50 units per acre.) The Vista Woods project encompasses 2.01 acres. Vista Woods is required to have affordable units. Below, is Vista Woods requirement for affordable housing.

Affordable Requirement:

A. 35.1 X 2.01 =70.55 or 71 units
71 units X 15%=10.65 or 11 affordable units are required at a minimum
11 units X 40% = 4.4 or 5 units must be for very low-income households at a minimum.

B. 50 X 2.01 = 100.5 or 101 units
101 X 15% =15.15 or 16 affordable units are required at a maximum.
16 units X 40% =6.4 units or 7 units are for very low-income households at a maximum

Density Bonus Request

C. 71 X 80%=56.8 units are in addition to the 71 units that equals 127.8 or 128 units.

D. 101 X 80% = 80.8 units are in addition to the 101 units that equals 181.8 or 182 units.

In conclusion, Vista Woods proposal is consistent with State Density Bonus Law and Section 17.32 of the Pinole Zoning Ordinance.

3. Incentives and Concessions

Section 65915 of the California Government Code requires cities to allow for four incentives and concession of development standards based on the facts that this project is 100% affordable. The City is required to grant the concessions unless the request would have a specific, adverse impact on public health or safety that cannot be mitigated. This is a very high standard, and it is not met here. I have listed the three incentives below that Vista Woods is requesting to modify.

A. Side Yard Setback.

The Three Corridor requires that buildings side yard set should be 0’ except when adjacent to residential uses. The setback when is adjacent residential is 15’.

Vista Woods is requesting that the side yard setback on the Encina Avenue be adjusted to between 1’ - 14’11’ depending on location. Due to the property restraints, they are not able to get the full setback. Vista Woods was able to get additional setback by splitting up the Encina Avenue elevations. All of the other setbacks are within the requirement of the Plan.

B. Reduction of Open Space

The Pinole Zoning Code requires that the project have 300 sq ft per unit. Based on the requirement, Vista Woods requires 179 units X 300 Sq Ft or 53,700 sq ft.

Vista Woods is proposing 30,792 sq ft of open space, which is 57% of the standard.

C Compact Parking

The Pinole Zoning Code requires that projects have up to 25% compact parking spaces. Based upon the City Standard listed above, this project would be allowed to have 45 compact parking spacing. Vista Woods is requesting that the city waive the 25% standard and allow for the proposed 62.5 % ratio of compact spaces.

4. Wavier of Development Standards

Section 65915 (e) (1) & (2) of the California Government Code requires that an applicant can request a waiver of the development standards that will have the effect of physically precluding the construction of the Development at the density allowed under the density bonus law. I have listed below Vista Woods request for development standard waivers.

A. Special Height Requirement (Rear or Side Setback)

The Three Corridor Specific Plan requirement for the Special Height Requirement requires any story above two (2) have a 45-degree setback as shown in Figure 6.3 of the Three Corridor Specific Plan.

Vista Woods is requesting relief of this standard, because if enforced, would have an effect of physically precluding the construction of the development.

B. Special Height Requirement (Across the Street Setback)

The Three Corridor Specific Plan requirement for Special Height Requirement requires any story above three (3) have a 45-degree setback as shown in Figure 6.4 of the Three Corridor Specific Plan.

C. Increased Height

Vista Woods is proposing to raise the height to 60’ 7”. The height difference would start at the Encina Avenue/Roble Avenue intersection and would end 83 feet west along Encina. The building would return to the 50’ height standard for the remainder of the Encina Avenue Elevation. All of the other wings of the project will be at the 50’ requirement,

Vista Woods is requesting relief of this standard, because if enforced, would have an effect of physically precluding the construction of the development.

General Plan Consistency

The property located at 600 Roble, 1106 San Pablo and 1230 San Pablo has a General Plan Land Use Designation of MUSA, Mixed Use Sub-Area (10.1 to 50 du/ac). MUSA is defined as encouraging mixed residential and commercial development that is united by transit and pedestrian improvements. This land use designation allows all types of commercial and residential as either a single use or a combination with other allowable commercial and residential uses.

The project helps to implement numerous policies within different elements of the General Plan including the Community Character Element, Land Use and Economic Development Element, Circulation Element, Health and Safety Element, the Natural Resources and Open Space Element, and the Sustainability Element. Applicable policies are provided below.

Community Character Element

POLICY CC.1.1 All new development and redevelopment shall adhere to the basic principles of high-quality urban design and architecture including, but not limited to, human-scaled design, pedestrian orientation, and interconnectivity of street layout, siting buildings to highlight important intersections, entryways, focal points and landmarks.

POLICY CC.1.2 Require all new development to incorporate high-quality site design, architecture and planning to enhance the overall quality of the built environment in Pinole and create a visually interesting and aesthetically pleasing town environment.

Land Use and Economic Development Element

POLICY LU.3.2 Ensure high quality site planning, architecture and landscape design for all new residential development, renovation or remodel

POLICY LU.4.1 Ensure all new development, renovation or remodeling preserves and strengthens Pinole's residential neighborhoods by requiring projects to be harmoniously designed and integrated with the existing neighborhood.

POLICY LU.4.2 Maintain the character and long-term viability of the City's residential areas by ensuring that residential projects are well designed and consistent with challenging development constraints.

Housing Element

POLICY H 2.1 Enhance neighborhood identity and sense of community by designing new housing to have a sensitive transition of scale and compatibility in form with the existing neighborhood.

POLICY H.2.3 PROMOTE HIGH QUALITY DESIGN. Provide stable, safe, and attractive neighborhoods through high quality architecture, site planning, and amenities that: (1) reduce the perception of bulk; (2) recognize existing street patterns; CHAPTER 6 HOUSING 6.0-96 CITY OF PINOLE GENERAL PLAN (3) enhance the sense of place; (4) minimize the visual impact of parking and garages; and (5) use quality building materials.

POLICY H.3.4 PROVIDE ADEQUATE TRANSPORTATION FACILITIES AND SERVICES. Provide adequate transportation alternatives which improve accessibility of residential neighborhoods to the community and beyond, while maintaining neighborhood integrity. The following are specific policies to reduce traffic on residential streets and improve available transportation alternatives: • Encourage a variety of transportation modes to serve existing neighborhoods. • Plan new commercial development around the use of certain arterial corridors and in close proximity to new residential development. • Foster pedestrian oriented neighborhoods. • Maintain and improve AC Transit and WestCat services, including the implementation of BART Express Service.

POLICY H.4.1 PROVIDE A CHOICE OF HOUSING. Provide a mix of sizes and housing types to meet the needs of Pinole's diverse population. Specific examples include traditional single family homes, second units, mixed use developments, infill development, accessible housing, and transitional and emergency housing. Opportunities must be available for lower, moderate, and above-moderate income households reflecting available job opportunities in close proximity to Pinole. Available housing choices should also strive to minimize transportation needs.

POLICY H.4.4 SUPPORT THE DEVELOPMENT OF AFFORDABLE HOUSING. Maintain appropriate land use regulations and other development tools to encourage development of affordable housing opportunities throughout the City.

Circulation Element

- POLICY CE.1.4 Encourage maximum utilization of the existing public transit system and alternate modes of transportation in Pinole.
- POLICY CE.8.1 Require development to provide pedestrian walkways that are safe, interconnected, and accessible by all members of the community.
- POLICY CE.8.4 Encourage the location of basic shopping and services within walkable distances to residential areas.

Health and Safety Element

- POLICY HS.6.1 Promote and encourage walking and bicycling as viable forms of transportation to services, shopping and employment.
- POLICY HS.7.3 Reduce the transport of runoff and surface pollutants off site.

Natural Resources and Open Space Element

- POLICY OS.3.6 Minimize Environmental Impacts. Encourage development patterns which minimize impacts on the City's biological, visual, and cultural resources, and integrate development with open space areas.

ACTION OS.8.8.6 Require new development projects to incorporate facilities and measures to treat stormwater before discharge from the site. The facilities shall be included in required Stormwater Control Plans and sized to meet NPDES permit requirements. Projects shall protect water quality by incorporating Low Impact Development (LID) design to detain, treat, and infiltrate runoff by minimizing impervious area; such as use of pervious pavements and green roofs, disperse runoff to landscaped areas; and/or route runoff to rain gardens, cisterns, swales, and other small-scale facilities distributed throughout the project area.

Sustainability Element

POLICY SE.4.3 Pinole will promote and require renewable energy generation and cogeneration where feasible and appropriate.

POLICY SE.4.5 Pinole will continue to promote and support and require, where appropriate, the development of solar energy.

POLICY SE.5.3 Prior to reuse, former commercial and industrial sites will be cleaned up, according to relevant state and federal regulations.

POLICY SE.8.7 Work to improve Pinole's pedestrian and bicycle infrastructure and to meet the needs of all pedestrians and bicyclists.

Specific Plan and Zoning Consistency

The Vista Woods project is located in the Three Corridor Specific Plan. The project has a Mixed Use Sub-Area and a VDHR, Very High Density Residential zoning designation. By developing the Vista Woods project, the city is replacing a vacant and underutilized parcel in a mixed-use area with new residential and increasing residential density area along the San Pablo Corridor.

The proposed project includes features to improve pedestrian access from the project to San Pablo Avenue. Landscape upgrades are proposed within the project site that include tree and shrub plantings as well as new landscaping along San Pablo Avenue.

The Specific Plan includes policies to help fulfill the plan's objectives. The proposed project helps to implement the Specific Plan policies provided below.

Table 2 Land Use Policies of the Three Corridor Specific Plan	
Land Use Policy 1	Provide for a variety of housing types throughout the plan areas.
Land Use Policy 3	Provide affordable housing within he plan areas consistent with the City's General Plan
Land Use Policy 6	Actively promote the "revitalization" of underutilized land.
Land Use Policy 8	Encourage the development of mixed use office buildings in proximity to existing transit stops

Overall Design of the Project DR-21-11

The scale and detail of the building were designed to contextually blend with this section of San Pablo Avenue streetscape, which is a blend of older buildings with varied setbacks and varied building forms. To activate the San Pablo corridor in keeping with priorities and principles set forth in Pinole's Three Corridor Specific Plan, the design places the lobby and entrance, service office, and property management office along the project frontage, featuring storefront windows and a minimal setback. The building entrance and lobby will provide a welcoming and secure point-of-entrance for residents and visitors alike. A spacious multi-purpose community room is located just off of the lobby, which in turn is connected via an outdoor pathway to a large patio terrace/courtyard in the rear of the property to facilitate indoor/outdoor activities. Residential units are located on the first through fourth floors; the upper floors are fully accessible and served by an elevator.

Generous landscaping is incorporated to create a sense of being built into the surroundings and allows for a softer transition from the heavier street traffic. In order to achieve the character built within Pinole, the building has been laid out to ensure the parking and many of the units are tucked behind the main façade which becomes the feature to assist in defining the project and achieving the goal to fit into the distinct identity of Pinole. The proposed site plan includes large green space at the south end of the site that is designed for shared community use and programmed with amenities such as a children's play area, and community garden beds.

Findings:

1.The proposed project is consistent with the objectives of the general plan and complies with applicable zoning regulations, planned development, master plan or specific plan provisions, improvement standards, and other applicable standards and regulations adopted by the city;

General Plan, Specific Plan and Zoning Regulations:

As stated above in this report, General Plan and Specific Plan goals, policies, and action items have been identified to satisfy consistency with this project, the City of Pinole General Plan, and the Three Corridor Specific Plan. As described above, this project is asking for some concessions that are permitted under state density bonus law. The proposed project is consistent with the Three Corridor Specific Plan as well as the Zoning Ordinance of the City of Pinole.

Building Architecture

The architecture for the project includes a mix of materials and colors. The mix of materials and colors will be used will provide a modern looking building. The building will be a mixture of stucco. The building will include individual balconies

Landscape Plan

The landscape plan includes the removal of the existing trees on the project site and replacement with new trees. A conceptual landscape plan is provided with potential tree, shrub and ground cover choices that

are drought tolerant and well-suited to Pinole's climate. Much of the proposed new landscape material is proposed inside the complex with some landscaping along San Pablo Avenue Encina Avenue. As described in the Landscape Plan on pages, L1.01-L8.13, they are .going to plant 48 trees plus shrubs and ground cover. This project will be replacing approximately 51 existing trees. Based on the layout of the plan, the trees will need to be removed. There are 3 heritage trees on the site.

Density Bonus/Affordable Housing

As stated above, this Project is zoned VDHR, Very High Density Residential. The maximum density for this area is 50 units per acre. The Parcels are 2.01 acres. Based on the zoning and the size of the parcel, Vista Woods is allowed to build a maximum of 101units. All residential projects in the City are required to have an affordable housing component. Section 17.32.020 requires that 15 percent of the propose project shall be affordable and 40 percent of that number is required for very low income. Based on the 101 units, VISTA WOODS is required to provide 15 units for 80 percent of median income and 7 of those units are required to be for persons making 120 percent of median income. The project exceeds the Municipal Code requirements for affordability.

Vista Woods is proposing that 179 units would be available for people making 80 to 120 percent of the median income. By Vista Woods proposing that all of the units are affordable, State Law allows for an 80 percent maximum density bonus. Vista Woods is requesting the maximum density bonus which allows Vista Woods to build 179 units. The density bonus request is consistent with state law density bonus requirements.

When a project is using a density bonus, the applicant is allowed concessions and waivers from the City to relieve VISTA WOODS of burdens of the City Codes. VISTA WOODS is requesting three (3) concessions of City Standards. The concessions are listed below:

> *Concession 1* – Vista Woods is requesting that the side yard setback on the Encina Avenue be adjusted to 1' -14'11'. Due to the property restraints, they are not able to get the full setback. Vista Woods was able to get additional setback by splitting up the Encina Avenue elevations. All of the other setbacks are within the requirement of the Plan.
>
> *Concession 2* – Vista Woods requires 179 units X 300 sq. Ft or 53,700 sq. ft. Vista Woods is proposing 30,792 sq. ft. of open space, which is 57% of the standard.
>
> *Concession 3* – Vista Woods is proposing to raise the height to 60' 7". The height difference would start at the Encina Avenue/Roble Avenue intersection and would end 83 feet west along Encina. The building would return to the 50' height standard for the remainder of the Encina Avenue Elevation. All of the other wings of the project will be at the 50' requirement,

Conclusion: Based on the statements above, the concessions requested by the applicant are consistent with state law allowances for density bonus concessions.

2. The proposed project will not create conflicts with vehicular, bicycle, or pedestrian transportation modes of circulation;

Vista Woods has three accesses. The first access is on Madrone Avenue. The second access is located on Roble Avenue. The third access is located on San Pablo Avenue. The access on Madrone leads to a full intersection with all of the turning movements available for vehicles. The access on Roble Avenue is a full access entry that leads to San Pablo Avenue. The San Pablo/Roble Avenue intersection is full intersection with all turning movements available for vehicles. The San Pablo Avenue access is a right-in/right-out access for vehicles coming to complex and leaving the complex. There is an existing median directly in front of the project that prohibits and left ins to the project area. The project is proposing 18 bicycle stalls in front of the entrance and 207 bicycle parking within the 179 units. The project is also proposing separate entrances in the front of the building and the rear of the building for pedestrian access. San Pablo Avenue has improved curb, gutter, and sidewalk for pedestrian access in front of the project area. There is a cross walk with high-visibility striping and pedestrian crossing signage on the west leg of the San Pablo/Madrone Avenue and San Pablo/Roble Avenue intersection with stop controls for the north and south bound traffic.

Conclusion: Based on the discussion above, the proposed project with not create conflicts with vehicular, bicycle or transportation modes of circulation.

3. The site layout (orientation and placement of buildings and parking areas), as well as the landscaping, lighting, and other development features, are compatible with and complement the existing surrounding environment and ultimate character of the area under the general plan and applicable specific plans.

The Project layout has most of the amenities within the Complex area as seen on page A0.13 of the project plan, the project's site layout as well as the landscaping, lighting, and other development features are compatible with and complement the existing surrounding environment and ultimate character of the area under the general plan and applicable specific plans. The project plans submitted with the application provide the landscaping and lighting plan that is consistent with the General Plan, Three Corridor Specific Plan, and Pinole Zoning Ordinance regulations.

Conclusion: Based on the above discussion, the site layout and development features are compatible with and complement the existing surrounding environment and ultimate character of the area.

4. Qualifying single-family residential, multi-family residential, and residential mixed-use projects shall comply with all relevant standards and guidelines in the city's currently adopted design guidelines for residential development.

Vista Woods is proposing a multi-family project within the Three Corridors Specific Plan area. The Three Corridors Specific Plan includes design guidelines for multi-family residential projects which include design standards for massing, landscape, setbacks and exterior building design. The design that Vista Woods has proposed has included elements that are consistent with the Three Corridors Specific Plan. The VDHR, Very High Density Residential zoning requires a site to develop a density of between 35.1 and

50 dwelling units per acre. The proposed project maximizes the density with a density bonus and exceeds the 50 dwelling units per acre.

Conclusion – Based on the discussion above, the project is consistent with the Three Corridors Specific Plan design guidelines.

In conducting comprehensive design review, the designated approving authority shall consider the following:

1. Considerations relating to site layout, the orientation and location of building, signs, other structures, open spaces, landscaping, and other development features in relation to the physical characteristics, zoning, and land use of the site and surrounding properties.

The Development Package dated 06/18/2021 as well as the assessment of the project above shows that the project has been designed to consider all of the development features applicable to the project site and surrounding properties. Project orientation along San Pablo, Roble Avenue, Encina Avenue and Madrone Avenue allow the project to have different orientations along the four roadways

Conclusion: Based on the discussion in the staff report and above, considerations relating to site layout and other design features in relation to the physical characteristics of the site and surrounding properties have been made.

2. Considerations relating to traffic, safety, and traffic congestion, including the effect of the development plan on traffic conditions on abutting streets, the layout of the site with respect to locations and dimensions of vehicular and pedestrian entrances, exits, driveways, and walkways, the adequacy of off-street parking facilities to prevent traffic congestion, and the circulation patterns within the boundaries of the development.

As shown on page A02.0, the project has three different ingress and egress. The accesses on Madrone Avenue and Roble Avenue lead to full intersections and San Pablo Avenue left-in and left-out giving the property multiple accesses. Due to the median located in San Pablo Avenue, the vehicular traffic is required to go to the intersection of Madrone/San Pablo and have the ability to make U-turns at the intersection giving the San Pablo Avenue access the ability to both people traveling east and west the ability to use that access. The layout of the site allows for the driveways to be spread out through the project and so that not all of the traffic is coming from one ingress and egress of the property. The concession of eliminating 45 parking stalls will eliminate on-site conflict within in the development.

Conclusion: Based on the discussion above and in the staff report, the project design addresses and considered traffic, safety, traffic congestion and the effect of the development on traffic conditions. The project also includes appropriately designed vehicle and pedestrian entrance, exits, driveways and walkways. Parking facilities are provided consistent with the requested density bonus concession.

3. Considerations necessary to ensure that the proposed development is consistent with the general plan and all applicable specific plans or other city plans, including, but not limited to, the density of residential units.

As stated above in this report, General Plan and Specific Plan goals, policies, and action items have been identified to satisfy consistency with this project and the City of Pinole General Plan, and the Three Corridor Specific Plan. The project is also consistent with state density bonus law for the density of the residential units

Conclusion: Based on the discussion in the staff report and above, the project is consistent with the General Plan and the Three Corridors Specific Plan.

4. Considerations relating to the availability of city services, including, but not limited to, water, sewer, drainage, police and fire, and whether such services are adequate based upon city standards.

Based on discussions with City Staff and a review of available utility information, this project has availability of water, sewer, drainage, police and fire. The Applicant will be required to install the new green infrastructure in compliance with the most current Contra Costa Clearwater Program Guidelines Program as required under the current Regional Water Quality Control Permit. The Project will also be required to add Trash Capture Devices basins the parking lot prior to the issuance of a building permit for compliance

Conclusion: Based on the discussion above and information in the staff report, city services are available and adequate to serve the site.

ENVIRONMENTAL REVIEW

CEQA provides several "categorical exemptions" which are applicable to categories of projects and activities that the Lead Agency has determined generally do not pose a risk of significant impacts on the environment. The project consists of a residential project within the developed urban area of the city of Pinole. The project is exempt under Section 15332 of the State CEQA Guidelines (Class 32-Infill Development Projects) and under Government Code section 65457 and State CEQA Guidelines Sec. 15182 (Specific Plan Consistency). The detail of these exemptions is located in Attachment 2 of this report.

STAFF RECOMMENDATION

Staff recommends that the Planning Commission take the following actions after holding a public hearing.

Adopt Resolution 21-11 approving a Comprehensive Design Review, Tree Removal Permit, and CEQA-Notice of Exemption,

ATTACHMENTS

A. Draft Resolution 21-11 – with Exhibit A, Conditions of Approval.
B. CEQA Determination -- Notice of Exemption
C. Development Plan Package date June 18, 2021 (under separate cover)

PLANNING COMMISSION RESOLUTION 21-11
WITH EXHIBIT A: CONDITIONS OF APPROVAL

RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF PINOLE FOR A COMPREHENSIVE DESIGN REVIEW (DR21-11) TO CONSTRUCT A 179 SENIOR APARTMENT COMPLEX AND MAKE SITE IMPROVEMENTS, LOCATED AT 600 ROBLE AVENUE, 1106 SAN PABLO AVENUE, AND 1230 SAN PABLO AVENUE (APNs 402-023-007-6, 402-023-003-5 & 405-023-002-7)

WHEREAS, Pinole Venture LP, c/o MRK Partners Inc., (Applicant) filed an application with the City of Pinole for a Comprehensive Design Review, for the purpose of constructing 179 affordable housing units and in accordance with Title 17, of the Pinole Municipal Code (the "Project"; and

WHEREAS, the Project site is located on the north side of San Pablo Ave on properties identified as APNs 402-023-007-6 (600 Roble Avenue), 402-023-003-5, (1106 San Pablo Avenue), & 405-023-002-7 (1230 San Pablo Avenue); and

WHEREAS, the site has a General Plan Land Use Designation of Mixed-Use Sub-Area (MUSA) and has a Specific Plan Land Use designation and Zoning designation of Very High Density Residential (VHDR); and

WHEREAS, a new multifamily residential development is subject to review and approval of a Comprehensive Design Review application; and

WHEREAS, the Applicant has proposed 100% affordability for the units and has requested a density bonus as permitted by State Law, including concessions and waivers; and

WHEREAS, the Vista Woods Project proposes a residential development located on Opportunity Site #3 as identified in the Three Corridors Specific Plan; and

WHEREAS, City of Pinole General Plan and Three Corridors Specific Plan were approved and the Environmental Impact Report (SCH Number 2009022057) was certified on October 20, 2010, by Resolution Number 2010-88, and are hereby incorporated by reference; and

WHEREAS, in compliance with California Environmental Quality Act (CEQA), the City prepared a CEQA Analysis (Attachment B of the Staff Report); and

WHEREAS, the CEQA Analysis uses streamlining provisions in accordance with CEQA Guidelines 15168(c)(2) and 15183 for consistency with the General Plan and Three Corridors Specific Plan and the certified Environmental Impact Report (EIR), as well as the categorical exemption Class 32, set forth in CEQA Guidelines Section 15332; and

WHEREAS, the CEQA Analysis identified environmental conditions of approval, which ensure implementation of applicable mitigation measures and policies set forth in the General

Plan, Three Corridors Specific Plan and the corresponding EIR, and have been reviewed and agreed to by the project applicant (Exhibit A hereto); and

WHEREAS, the Planning Commission has reviewed the CEQA analysis contained in Attachment B to the staff report for this Project; and

WHEREAS, the Planning Commission serves as the approval authority on Comprehensive Design Review applications; and

WHEREAS, the Planning Commission has considered the Project in light of the items listed in Municipal Code section 17.12.150(H); and

WHEREAS, a notice of public hearing was distributed to all property owners within 300 feet of the Project site and a notice was published in the September 17, 2021 edition of the West County Times; and

WHEREAS, the Planning Commission held a duly noticed public hearing on September 27, 2021 and considered all public comments received, the presentation by City staff, the staff report, and all other pertinent documents regarding the proposed request.

NOW THEREFORE, BE IT RESOLVED, that the above recitals are true and correct and made part of this resolution.

BE IT FURTHER RESOLVED that the Project is consistent with the programmatic EIR previously certified by the City for the Three Corridors Specific Plan and the project is an infill development project, and therefore the Project exempt from further environmental review under the California Environmental Quality Act ("CEQA") pursuant to CEQA Guidelines Section 15332 (Class 32-Infill Development Projects) and pursuant to Government Code section 65457 and CEQA Guidelines Section 15182 (Specific Plan Consistency) as further described in the CEQA analysis contained in attachment B to the staff report dated September 27, 2021.

BE IT FURTHER RESOLVED that the Planning Commission of the City of Pinole hereby approves DR 21-11 subject to the Conditions of Approval, applicable to the entire Project, attached as Exhibit A to this Resolution, and hereby makes the following findings, for the reasons provided in the Staff Report dated September 27, 2021 to Planning Commission and incorporated by reference:

Findings

1. The proposed project is consistent with the objectives of the general plan and complies with applicable zoning regulations, planned development, master plan or specific plan provisions, improvement standards, and other applicable standards and regulations adopted by the city.

2. The proposed project will not create conflicts with vehicular, bicycle, or pedestrian transportation modes of circulation.

3. The site layout (orientation and placement of buildings and parking areas), as well as the landscaping, lighting, and other development features, are compatible with and complement the existing surrounding environment and ultimate character of the area

under the general plan and the Three Corridors Specific Plan; and

4. Qualifying single-family residential, multi-family residential, and residential mixed-use projects shall comply with all relevant standards and guidelines in the city's currently adopted design guidelines for residential development.

PASSED AND ADOPTED by the Planning Commission of the City of Pinole on this 27th day of September 2021, by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

_____
Timothy Banuelos, Chair, 2021-2022

ATTEST:

_____
David Hanham, Planning Manager

Exhibit A
PLANNING COMMISSION RESOLUTION 21-11 CONDITIONS OF APPROVAL

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
1.	The project shall be constructed in substantial compliance with the approved Design Review request for the Vista Woods Apartments (APNs 402-023-007-6, 402-023-003-5, & 405-023-002-7), as shown on the project plans date-stamped received June 18, 2021, unless otherwise conditioned. The proposed project shall be built in a manner consistent with all applicable federal, state, and local regulations.	On-Going	Development Services Department	
2.	The Applicant shall hold harmless the City, its Council Members, its Planning Commission, officers, agents, employees, and representatives from liability for any award, damages, costs and fees incurred by the City and/or awarded to any plaintiff in an action challenging the validity of this permit or any environmental or other documentation related to approval of this permit. Applicant further agrees to provide a defense for the City in any such action.	On-Going	Development Services Department	
3.	All building permit drawings and subsequent construction shall substantially conform to the approved drawings and application materials. Any modifications must be reviewed by the Planning Manager who shall determine whether the modification requires additional review and approval by the Planning Commission.	On-Going	Development Services Department	

Exhibit A
PLANNING COMMISSION RESOLUTION 21-11 CONDITIONS OF APPROVAL

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
	Ongoing			
4.	ENV TRAN-2: To maintain adequate sight lines at the project driveways, pursuant to Pinole Municipal Code Section 17.98.020, signage, trees and other landscaping features within the clear vision triangle at driveway and street intersections shall be maintained such that visibility is maintained between thirty (30) inches and seven (7) feet. The applicant shall be responsible for maintaining adequate sight lines from the project driveways.	On-Going	Development Services Department	
	Prior to Issuance of Building Permits			
5.	LANDSCAPE AND FENCING PLAN – The applicant shall prepare and submit a final full detailed landscape, fencing and irrigation plan for review and approval by the Development Services Department prior to the issuance of building permits. The landscape, fencing and irrigation plan shall include the number, type, and size of all proposed new trees, shrubs, and groundcover specimens. Any new fencing or gate design details shall be included within the building construction plans. All proposed plantings shall be drought-tolerant and well-suited to the City's climate zone**.** Where feasible, trees and other plant materials shall be California natives. The detailed landscape, fencing and irrigation plan shall be consistent with all applicable requirements of the Municipal Code including Chapter	Prior to Issuance of Building Permits	Development Services Department	

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
	17.44. The detailed landscape plan shall ensure that: a. All shrubs shall be a minimum 5-gallon size. b. Light-colored, high albedo materials or vegetation shall be installed for at least fifty percent of all sidewalks, patios, and driveways. Specific design material information and specifications for the permeable pavers and crushed rock shall be included within the final landscape plan. c. High water use turf grasses and other similar plantings shall only be utilized in high-use areas with high visibility or functional needs. When only drought-tolerant turf grasses are used, the turf area shall be limited to twenty-five percent (25%) of all irrigated, landscaped areas. When non-drought-tolerant turf grasses or a combination of non-drought-tolerant and drought-tolerant turf grasses is used, the turf area shall be limited to fifteen percent (15%) of all irrigated, landscaped areas. d. At least twenty-five percent (25%) of the lot area and no more than forty percent (40%) of the front yard area shall be non-pervious surface. Additionally, at least ninety percent (90%) of the plants selected in non-turf areas shall be well suited to the climate of the region and require minimal water once established. Up to			

Exhibit A
PLANNING COMMISSION RESOLUTION 21-11 CONDITIONS OF APPROVAL

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
	ten percent (10%) of the plants may be of a non-drought-tolerant variety, provided they are grouped together and can be irrigated separately e. Tree protection measures provided by a certified arborist shall be included in the landscape plan. f. Landscaping shall be maintained on site and replaced as needed.			
6.	WATER EFFICIENT LANDSCAPING – The Applicant shall demonstrate compliance with Water Efficient Landscaping requirements, pursuant to Pinole Municipal Code Chapter 15.54, including submittal of a Landscape Documentation Package as described in Chapter 15.54 and consistent with State Water Efficient Landscape Ordinance provisions.	Prior to Issuance of Building Permits	Development Services Department	
7.	REFUSE AREA DESIGN AND SERVICE – The project shall provide for service by Republic Services. The area and access to trash, recycling and green waste containers shall be approved in advance by Republic Services.	Prior to Issuance of Building Permits	Development Services Department	
8.	MECHANICAL EQUIPMENT – All mechanical devices and their component parts, such as air conditioners, evaporative coolers, exhaust fans, or similar equipment located wholly or partially on the roof or wall shall be screened from view. All wall mounted heating units or air conditioners shall be flush-mounted.	Prior to Issuance of Building Permits	Development Services Department	

Exhibit A
PLANNING COMMISSION RESOLUTION 21-11 CONDITIONS OF APPROVAL

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
9.	DRAINAGE PLANS - The applicant shall prepare a construction drainage plan and final drainage plan for Development Services Department review and approval. The construction drainage plan will show how drainage will be handled during construction. The final drainage plan will show how drainage will be handled after construction is complete. Site design shall avoid drainage of water from one property onto another property and shall be subject to approval by the City Engineer.	Prior to Issuance of Building Permits	Development Services Department	
10.	GRADING AND DEMOLITION PLANS – The applicant shall obtain City approval for the Project grading and demolition plans prior to issuance of building permits.	Prior to Issuance of Building Permits	Development Services Department	
11.	AFFORDABLE HOUSING AGREEMENT –The Applicant shall execute the Affordable Housing Regulatory Agreement and Declaration of Restrictive Covenants and record the document in the Official Records of Contra Costa County.	Prior to Issuance of Grading Permits or Building Permits	Development Services Department	
12.	PRE-CONSTRUCTION WASTE MANAGEMENT PLAN - The applicant shall complete a pre-construction waste management plan. Forms can be obtained from the Development Services Department.	Prior to Issuance of Building Permits	Development Services Department	
13.	PERMITS, BONDS, AND INSURANCE - The applicant shall obtain an encroachment permit, posting the required bonds and insurance, for any work to be done in the City's right-of-way. This encroachment permit shall	Prior to Issuance of Building	Development Services Department	

Exhibit A
PLANNING COMMISSION RESOLUTION 21-11 CONDITIONS OF APPROVAL

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
	be obtained prior to the issuance of a building permit and prior to any work being done in the City's right-of-way.	Permits		
14.	DEVELOPMENT IMPACT FEES - The applicant shall pay all applicable development impact fees prior to issuance of the building permit.	Prior to Issuance of Building Permits	Development Services Department	
15.				
16.	EROSION CONTROL PLAN – The applicant shall submit an erosion control plan in accordance with the City's Grading Ordinance (PMC §15.36.190) when grading is performed during winter season (October 1 through April 15). For all sites over one acre, in accordance with the City's Erosion Control Ordinance (PMC §08.20) the applicant shall submit: 1. Storm Water Pollution Prevention Plan (SWPPP) 2. Strom Water Control Plan (SCP) Certified by an Architect or Engineer. 3. Operation and Maintenance.	Prior to Issuance of Grading Permits or Building Permits	Development Services Department	
17.	MATERIAL HAULING - The applicant shall submit a proposed material hauling route and schedule. All material hauling activities including, but not limited to, adherence to approved route, hours of operation, dust control and street maintenance shall be the responsibility of the applicant (as per Section 15.36.080 of the Municipal Code). Violation of the	Prior to Issuance of Building Permits	Development Services Department	

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
	applicable may be cause for suspension of work.			
18.	WATER SUPPLY SYSTEM - Prior to issuance of a building permit there shall be an approved and tested water supply system capable of supplying the required fire flow as determined by the Fire Chief or Fire Marshall. Water supply system for staged construction, if applicable, shall provide required fire flows at all stages.	Prior to Issuance of Building Permit	Fire Department	
19.	SEWER CONNECTION - The project is within the service area of the Pinole/Hercules Water Pollution Control Plant. The proposed project shall have a unique connection to the public sewer collection system. The connection to the sewer system will require a permit from the City of Pinole, the payment of sewer user fees, and payment of a sewer connection fee prior to the issuance of building permits.	Prior to Issuance of Building Permit	Development Services Department	
20.	ENV AES-1: The applicant shall ensure, and the City shall verify that the final lighting plan incorporates applicable requirements set forth in Chapter 17.46 of the Pinole Municipal Code, including that all outdoor lighting fixtures be designed, shielded, aimed, located, and maintained to shield adjacent properties and to not provide glare onto adjacent properties or roadways.	Prior to Issuance of Building Permit	Development Services Department	
21.	ENV AQ-2: High-efficiency particulate filtration systems shall be installed in residential heating, ventilation, and air-conditioning (HVAC) systems for residences within 35 feet of San Pablo Avenue and/or HVAC intake shall be located as far as possible from the San Pablo Avenue right-of-way and no closer than 35 feet from the edge of roadway. Unless air	Prior to Issuance of Building Permit	Development Services Department	

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
	dispersion modeling demonstrates exposure risk below BAAQMD thresholds, the project shall implement the following measures to minimize long-term annual Diesel Particulate Matter exposure for incoming residential occupants: 1. Install forced air mechanical ventilation devices in new residences. Air filtration devices shall be rated MERV13 or higher. To ensure adequate health protection to sensitive receptors (i.e., residents), this mechanical ventilation system will circulate fresh filtered air into the dwelling units. 2. In order to effectively implement this measure, an ongoing maintenance plan for the buildings' HVAC air filtration system shall be required. 3. Ensure that the use agreement and other property documents: (1) require cleaning, maintenance, and monitoring of the affected buildings for air flow leaks, (2) include assurance that new owners or tenants are provided information on the ventilation system, and (3) include provisions that fees associated with owning or leasing a unit(s) in the building include funds for cleaning, maintenance, monitoring, and replacements of the filters, as needed.			
22.	ENV BIO-3:Prior to any tree removal or alteration, the applicant shall obtain approval from the City of Pinole to implement a plan for tree preservation and replacement in accordance with the City's Tree Removal Permit. Replacement of protected trees onsite shall be replaced by either planting trees onsite as part of the development over and above the landscaping that would otherwise be required at a value equal to the	Prior to Issuance of Building Permit	Development Services Department	

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
	value of the protected trees that will be removed, or through the payment of an in-lieu fee to the City in an amount equal to the value of the protected trees that will be removed.			
23.	ENV GEO-1: The applicant shall incorporate the recommendations of the Project Geotechnical Report prepared by Partner Assessment Corporation (April 7, 2021) into construction drawings. As determined by the City Engineer and/or Chief Building Official, all applicable recommendations set forth in the in Geotechnical Report prepared for the subject property, including, but not limited to grading, excavation, foundations systems, and compaction specifications shall be incorporated. Final grading plan, construction plans, and building plans shall demonstrate that recommendations set forth in the geotechnical reports and/or to the satisfaction of the City Engineer/Chief Building Official have been incorporated into the design of the project. Nothing in this mitigation measure shall preclude the City Engineer and/or Chief Building Official from requiring additional information to determine compliance with applicable standards. The geotechnical engineer shall inspect the construction work and shall certify to the City, prior to issuance of a certificate of occupancy that the improvements have been constructed in accordance with the geotechnical specifications.	Prior to Issuance of Building Permit	Development Services Department	
24.	ENV GEO-2: Prior to issuance of a grading permit, an erosion control plan along with grading and drainage plans shall be submitted to the City Engineer for review. The project shall comply with stormwater management requirements and guidelines established by Contra Costa	Prior to Issuance of Building Permit	Development Services Department	

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
	County under the Contra Costa Clean Water Program Stormwater C.3 Guidebook and incorporate Contra Costa County best management practices for erosion and sediment control for construction. All earthwork, grading, trenching, backfilling, and compaction operations shall be conducted in accordance with the City's Erosion Control requirements, Chapter 15.36.190 of the Municipal Code. Plans shall detail erosion control measures such as site watering, sediment capture, equipment staging and laydown pad, and other erosion control measures to be implemented during all construction activity.			
25.	ENV GEO-3: All site retaining walls, including walls planned to be repaired or replaced, shall be identified, and submitted for building permit review.	Prior to Issuance of Building Permit	Development Services Department	
26.	ENV HAZ-1: Prior to issuance of any demolition, grading, or building permit, the project applicant shall prepare an Operations and Maintenance (O&M) Safety Plan and receive approval of the O&M Plan by the City of Pinole Fire Department. The purpose of the O&M Plan is to establish protocol for the removal and disposal of asbestos containing materials (ACM) and lead-based paint (LBP) and shall also address the potential for accidental discovery of hazards and hazardous materials during construction activities including groundwater contamination. Said plans shall be implemented during demolition and construction activities including the following: a) Conduct construction work in accordance with CCR Title 8 Section 1532.1, Lead in Construction. b) Use appropriate site control measures such as wet methods to	Prior to Issuance of Grading or Building Permit	Development Services Department	

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
	minimize airborne dust generation. c) Identify construction worker protection plan for handing ACM and LBP. d) Characterize material export and proper disposal requirements. e) Notification requirements to the Bay Area Air Quality Management District in accordance with the Asbestos Demolition and Renovation Program requirements.			
27.	ENV HAZ-2: The Project applicant shall implement all of the following Best Management Practices (BMPs) regarding potential soil hazards: a) Soil generated by construction activities shall be stockpiled onsite in a secure and safe manner or if designated for off-site disposal at a permitted facility, the soil shall be loaded, transported, and disposed of in a safe and secure manner. All contaminated soils determined to be hazardous or non-hazardous waste must be adequately profiled (sampled) prior to acceptable reuse or disposal at an appropriate off-site facility. Specific sampling and handling and transport procedures for reuse or disposal shall be in accordance with applicable local, state, and federal agencies laws, in particular, the Regional Water Quality Control Board (RWQCB), the Contra Costa Environmental Health Services Department, and the City of Pinole. b) Groundwater pumped from the subsurface shall be contained onsite in a secure and safe manner, prior to treatment and disposal, to ensure environmental and health issues are resolved pursuant to applicable laws and policies of the City of Pinole, the RWQCB and/or	Prior to Issuance of Building Permit	Development Services Department	

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
	Contra Costa Environmental Health Services Department.			
28.	ENV HYD-1: Prior to issuance of a building permit, the applicant shall prepare a design-level Stormwater Management Plan that incorporates stormwater management requirements and best management practices, per Pinole Municipal Code Chapter 8.20 and Contra Costa County Clean Water Program requirements, including the Contra Costa Clean Water Program Stormwater C.3 Guidebook and demonstrates that the storm drain system has adequate capacity to serve the project. The Stormwater Management Plan shall be reviewed and accepted by the City Engineer.	Prior to Issuance of Building Permit	Development Services Department	
29.	ENV HYD-2: Prior to issuance of a grading permit, the applicant shall file a Notice of Intent with the RWQCB and demonstrate compliance with the Statewide General Permit for Construction Activities. In accordance with the National Pollution Discharge Elimination System (NPDES) regulations, the applicant shall prepare and implement a project-specific Stormwater Pollution Prevention Plan, including an erosion control plan, for grading and construction activities. The SWPPP shall address erosion and sediment control during all phases of construction, storage and use of fuels, and use and clean-up of fuels and hazardous materials. The SWPPP shall designate locations where fueling, cleaning and maintenance of equipment can occur and shall ensure that protections are in place to preclude materials from entering into storm drains. The contractor shall maintain materials onsite during	Prior to Issuance of Grading Permit	Development Services Department	

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
	construction for containments and clean-up of any spills. The applicant shall provide approval documentation from the RWQCB to the City verifying compliance with NPDES.			
30.	ENV NOI-1: All windows in the south-facing residential units of Wing 1 shall have a Sound Transmission Class (STC) rating of 30 or greater. The building shall be constructed in compliance with noise exposure standards under 24 CFR Part 51, Subpart B in maintaining interior noise levels not exceeding 45 dBA DNL.	Prior to Issuance of Building Permit	Development Services Department	
31.	ENV TRAN-1: Prior to the issuance of a building permit, the applicant shall submit for review and approval by the Development Services Department a TDM plan for the project. The plan shall include action items such as provision of transit passes, shared ride vehicles or shuttles and car sharing to encourage alternative transportation modes.	Prior to Issuance of Building Permit	Development Services Department	
32.	ENV UTIL-1: Pursuant to Action GM 2.2.1 Service Standards, prior to issuance of a building permit, the applicant shall secure verification from EBMUD that adequate water supplies are available to serve the project and prior to issuance of occupancy the applicant shall demonstrate that all EBMUD water efficiency requirements have been fulfilled.	Prior to Issuance of Building Permit	Development Services Department	
33.	ENV UTIL-3: Pursuant to General Plan Action CS.8.1.3 and in accordance with current CalGreen Building Code requirements, a Construction Waste Management Plan shall be prepared and implemented during all stages of construction. The Construction Waste Management Plan shall meet the minimum requirements of the CalGreen code for residential development including but not limited to regional material sourcing (A5.405.1), Bio-based materials (A5.105.2), Reused	Prior to Issuance of Building Permit	Development Services Department	

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
	materials (A5.405.3), and materials with a recycled content (A5.405.4).			
34.	CONDITIONS ON PLANS - These project conditions of approval listed below under the heading "During Construction and Prior to Occupancy" shall appear on the building plans.	Prior to Issuance of Building Permit	Development Services Department	
	During Construction and Prior to Occupancy			
35.	RF VERIFICATION – The applicant shall conduct measurements of radiofrequency (RF) emissions on the property to verify all areas that will be accessible by the public or residents will be within maximum public exposure limits consistent with federal standards and supporting the conclusions of the RF report for the project. Measurements shall ensure that the height and location of units and other areas within the proposed building have been considered and are within maximum public exposure limits consistent with federal standards. The applicant shall submit an RF verification letter to the Development Services Department for review.	Prior to Pouring Foundations	Development Services Department	
36.	ENV BIO-1:To avoid and minimize potential impacts to nesting birds including passerines and raptors, the following measures shall be implemented: 1. Grading or removal of potentially occupied habitat should be conducted outside the nesting season, which occurs between	Prior to Construction/ During Construction	Development Services Department	

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
	approximately February 1 and August 31. 2. If grading between August 31 and February 1 is infeasible and groundbreaking must occur within the nesting season, a pre-construction nesting bird survey (migratory species, passerines, and raptors) of the potentially occupied habitat (trees, shrubs, grassland) shall be performed by a qualified biologist within 7 days of groundbreaking. If no nesting birds are observed no further action is required and grading shall occur within one week of the survey to prevent "take" of individual birds that could begin nesting after the survey. 3. If active bird nests (either passerine and/or raptor) are observed during the pre-construction survey, a disturbance-free buffer zone shall be established around the occupied habitat until the young have fledged, as determined by a qualified biologist. 4. The radius of the required buffer zone can vary depending on the species, (i.e., 75-100 feet for passerines and 200-500 feet for raptors), with the dimensions of any required buffer zones to be determined by a qualified biologist in consultation with CDFW. 5. To delineate the buffer zone around the occupied habitat, construction fencing shall be placed at the specified radius from the nest within which no machinery or workers shall intrude. 6. Biological monitoring of active nests shall be conducted by a qualified biologist to ensure that nests are not disturbed and that buffers are appropriate adjusted by a qualified biologist as needed to avoid disturbance. 7. No construction or earth-moving activity shall occur within any			

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
	established nest protection buffer prior to September 1 unless it is determined by a qualified ornithologist/biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones, or that the nesting cycle is otherwise completed.			
37.	ENV BIO-2:To avoid impacts to pallid bats, a "species of special concern" in the state, a qualified biologist shall conduct a bat survey 15 days prior to the commencement of ground work. If no special-status bats are found during the survey, then construction may begin without restriction. If special-status bat species are found roosting on the Project site, the biologist shall determine if there are young present (i.e., the biologist should determine if there are maternal roosts). If young are found roosting in any tree that will be impacted by the Project, such impacts shall be avoided until the young are flying and feeding on their own. A non-disturbance buffer installed with orange construction fencing will be established around the maternity site. The size of the buffer zone will be determined by a qualified bat biologist at the time of the surveys. If adults are found roosting in a tree on the project site but no maternal sites are found, then the adult bats can be flushed, or a one-way eviction door can be placed over the tree cavity for a 48-hour period prior to the tree removal.	Prior to Construction/ During Construction	Development Services Department	
38.	CERTIFIED GRADED PAD - A California-Licensed Engineer shall certify that the graded construction pad for the proposed dwelling unit has been adequately compacted and designed to support the proposed dwelling	During Construction	Development Services Department	

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
	unit.			
39.	CONSTRUCTION SITE INFORMATION – A construction contact person's name, mobile phone number, and email address shall be posted on the project site during the duration of construction. The property address shall be clearly marked during the project construction process.	During Construction	Development Services Department	
40.	CONSTRUCTION ACTIVITY - The building permit holder shall ensure the following provisions to control noise, dust, and construction debris nuisance occur during construction: A. Building construction activities shall occur only between 7:00A.M. and 5:00 P.M., Monday through Friday on non-federal holidays. Interior construction work may occur between 9:00A.M. and 6:00P.M. on weekends if requested and approved by the City as allowed under Chapter 15.02 of the City Municipal Code. B. All construction vehicles shall be properly maintained and equipped with exhaust mufflers and meet State and Federal standards. C. Newly disturbed soil surfaces shall be watered down regularly throughout the day and any construction grading activity shall be discontinued in wind conditions greater than 10 miles per hour.	During Construction	Development Services Department	

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
	D. Construction activities shall be scheduled so that paving and foundation placement begin immediately upon completion of grading operation. E. All excavated or silty materials shall be covered with a tarp during transit to and from the site. F. All construction debris shall be covered with a tarp during transit from the site. G. The construction site shall be maintained in an orderly fashion and litter shall be contained and properly disposed of on a daily basis.			
41.	SITE MAINTENANCE - The construction site shall be cleaned of garbage and debris on a daily basis and maintained in an orderly fashion. All construction equipment shall be secured at the end of each day of construction.	During Construction	Development Services Department	
42.	INSPECTIONS - The applicant shall notify the Development Services Department at least forty-eight (48) hours prior to starting any work pertaining to on-site drainage facilities, grading, or paving, as well as any work in the City's right-of-way as per Section 15.36.230 of the Municipal Code. The applicant shall arrange all inspections with the Building Division, Fire	During Construction	Development Services Department	

Exhibit A
PLANNING COMMISSION RESOLUTION 21-11 CONDITIONS OF APPROVAL

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
	Department, and Public Works Division. All Building Division inspection requests shall be made at least 24 hours in advance.			
43.	ACCESS TO SAN PABLO AVENUE - Project construction vehicles and vehicles belonging to construction workers shall not block access to San Pablo Avenue, Robles Avenue, Encina Avenue, Madrone Avenue, or any other public roadway.	During Construction	Development Services Department	
44.	ENV AQ-1: During all construction activities including demolition and ground disturbance activities, on and offsite, the contractor shall implement the latest BAAQMD recommended Best Management Practices (BMPs) to control for fugitive dust and exhaust as follows: 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 shall be covered. 3. All visible mud and 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 practicable. Building pads shall be laid as soon as practicable 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 5 minutes (as	During Construction	Development Services Department	

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
	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. 7. All 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 working condition prior to operation. 8. A publicly-visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints shall be posted on the project site prior to the initiation of construction activities. 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.			
45.	ENV CUL-1: To ensure the Project does not result in impacts to buried archaeological resources onsite, if present, the following shall be implemented: 1. Training. Prior to commencement of ground-disturbing activities, a professional archaeologist shall conduct a preconstruction training for construction personnel. The training shall familiarize individuals with the potential to encounter prehistoric artifacts or historic-era archaeological deposits, the types of archaeological material that could be encountered within the Project Area, and the requirement for a monitor to be present during initial ground-disturbing activities. 2. Monitoring. During initial ground disturbing activities on native soils, a Secretary of the Interior-qualified archeologist shall be onsite to	During Construction	Development Services Department	

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
	monitor activities. The monitor shall have the authority to temporarily halt work to inspect areas as needed for potential cultural materials or deposits. Daily monitoring logs shall be completed by the monitor. 3. Post-review Discoveries. In the event that cultural resources are exposed during construction, all earth work occurring within 100 feet of the find shall be immediately stopped until a Secretary of Interior-qualified Archaeologist inspects the material(s), assess historical significance, consults with Tribes and other stakeholders as needed, and provides recommendations for the treatment of the discovery. 4. Archaeological Monitoring Report:. Within 60 days following completion of construction work, an archeological monitoring report shall be submitted to the City. The report shall include the results of the monitoring program (even if negative), a summary of any findings or evaluation/data recovery efforts, and supporting documentation (e.g., daily monitoring logs).			
46.	ENV CUL-2: In the event that human remains are encountered within the Project Area during Project-related, ground-disturbing activities, all work must stop, and the County Coroner immediately notified of the discovery. If the County coroner determined that remains are, or are believed to be Native American, then the Native American Heritage Commission must be contacted by the Coroner so that a “Most Likely Descendant” (MLD) can be designated to provide further recommendations regarding treatment of the remains. A Secretary of Interior-qualified Archaeologist should also evaluate the historical	During Construction	Development Services Department	

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
	significance of the discovery, the potential for additional human remains to be present, and to provide further recommendations for treatment of the resource in accordance with the MLD recommendations. Federal regulations require that Native American human remains, funerary objects, and object of cultural patrimony are handed consistent with the requirement of the Native American Graves Protection and Repatriation Act.			
47.	ENV GEO-4: Should any potentially unique paleontological resources (fossils) be encountered during development activities, work shall be suspended within 50 feet of the discovery and the City of Pinole Planning Division of the Development Services Department shall be immediately notified. At that time, the City will coordinate any necessary investigation of the discovery with a qualified paleontologist. The project proponent shall be required to implement any mitigation necessary for the protection of paleontological resources. The City and the project applicant shall consider the mitigation recommendations of the qualified paleontologist for any unanticipated discoveries. The City and the project applicant shall consult and agree upon implementation of a measure or measures that the City and project applicant deem feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures.	During Construction	Development Services Department	

Exhibit A
PLANNING COMMISSION RESOLUTION 21-11 CONDITIONS OF APPROVAL

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
48.	ENV NOI-2: Construction activities including delivery and hauling shall comply with construction hours as provided under Pinole Municipal Code Section 15.02.070 and in accordance with construction best management practices for minimizing noise including: 1. Limit construction hours to between 7 a.m. and 5:00 p.m., Monday through Friday. Construction activities shall be prohibited on Saturday, Sundays, and State, Federal and Local Holidays, unless an exception is granted in accordance with the Municipal Code. 2. Delivery of materials and equipment to the site and truck traffic coming to and from the site is restricted to the same construction hours specified above. 3. Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment. 4. Unnecessary idling of internal combustion engines shall be strictly prohibited. 5. Locate stationary noise-generating equipment such as air compressors or portable power generators as far as possible from sensitive receptors. If they must be located near receptors, adequate muffling (with enclosures where feasible and appropriate) shall be used to reduce noise levels at the adjacent sensitive receptors. Any enclosure openings or venting shall face away from sensitive receptors. 6. Acoustically shield stationary equipment located near residential receivers with temporary noise barriers. 7. Utilize "quiet" air compressors and other stationary noise sources	During Construction	Development Services Department	

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
	where technology exists. 8. Construction staging areas shall be established at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction activities. 9. Locate material stockpiles, as well as maintenance/equipment staging and parking areas, as far as feasible from existing residences. 10. Control noise from construction workers' radios to a point where they are not audible at existing residences bordering the project site. 11. The contractor shall prepare a detailed construction 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. 12. 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. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include in it the notice sent to neighbors regarding the construction schedule.			

Exhibit A
PLANNING COMMISSION RESOLUTION 21-11 CONDITIONS OF APPROVAL

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
49.	ENV NOI-3: Consistent with typical contractor procedures, prior to the start of soldier pile drilling site work, detailed photographic documentation of existing conditions at the adjacent offsite residences shall be performed by an experienced engineer, inspector, or other qualified professional. The photographic documentation shall be collected with sufficient information to establish a baseline, against which a post drilling inspection will be compared to verify that no building damage attributed to the construction activities of the Vista Woods project occurred. In the event that damage to structures is identified and attributed to Vista Woods construction, then the contractor shall be repair damaged structures.	During Construction	Development Services Department	
50.	ENV UTIL-4: In accordance with CalGreen Section 4.410.2 onsite recycling shall be provided in readily accessible areas for the depositing, storage and collection of non-hazardous materials including at a minimum paper, cardboard, glass, plastics, organic waste, and metals.	During Construction	Development Services Department	
51.	ENV UTIL-5: The applicant shall coordinate with Republic Services to appropriately size trash enclosures and ensure that maximum waste stream diversion occurs by providing onsite pre-sorting for recyclables and greenwaste for compostable and organic materials as available.	During Construction	Development Services Department	
52.	SIDEWALK, CURB AND GUTTER REPAIR - The applicant shall repair and replace to existing City standards, any sidewalk, curb and gutter abutting the project site.	Prior to Occupancy	Development Services Department	

Exhibit A
PLANNING COMMISSION RESOLUTION 21-11 CONDITIONS OF APPROVAL

		Timing/ Implementation	Monitoring Department / Division	Verification (date and Signature)
53.	POST-CONSTRUCTION WASTE MANAGEMENT Report - The applicant shall complete a post-construction waste management report prior to issuance of a certificate of occupancy.	Prior to Occupancy	Development Services Department	
54.	ADDRESSING - Prior to issuance of a "Certificate of Occupancy" or final building inspection approved illuminated numbers and addresses shall be installed in compliance with Section 15.02.050 of the Municipal Code.	Prior to Occupancy	Development Services Department	
55.	LANDSCAPING CERTIFICATE OF COMPLETION – A Certificate of Completion shall be submitted by either the signer of the landscape design plan, the signer of the irrigation design plan, or the licensed landscape contractor certifying that the landscape project has been installed per the approved Landscape Documentation Package	Prior to Occupancy	Development Services Department	
56.	ENV UTIL-2: Pursuant to MM 4.12.6.2, the project shall secure a can and will serve letter demonstrating that there is sufficient sewer/water treatment and conveyance capacity prior to issuance of Certificate of Occupancy. The proposed project shall have a unique connection to the public sewer collection system. The connection to the sewer system will require a permit from the City of Pinole, the payment of sewer user fees, and payment of a sewer connection fee prior to the issuance of building permits.	Prior to Occupancy	Development Services Department	

*Note: Conditions of Approval beginning with "ENV" are based on the CEQA document for the project.

ATTACHMENT B

ENVIRONMENTAL CHECKLIST FOR STREAMLINED REVIEW

PURSUANT TO CALIFORNIA PUBLIC RESOURCES CODE SECTION 21083.3 AND CEQA GUIDELINES SECTIONS 15168, 15183, and 15332

VISTA WOODS PROJECT

Prepared For:

City of Pinole
2131 Pear Street
Pinole, CA 94564

September 2021

VISTA WOODS PROJECT
CEQA ENVIRONMENTAL CHECKLIST FOR STREAMLINED REVIEW

Project Title:	Vista Woods Project
Lead Agency:	City of Pinole 2131 Pear Street Pinole, CA 94564
Contact Person:	David Hanham, Planning Manager Phone: (510) 724-9842 Email: dhanham@ci.pinole.ca.us
Project Location:	600 Roble Avenue, 1106 San Pablo Avenue, and 1230 San Pablo Avenue, City of Pinole, Contra Costa County, California APNs 402-023-007-6 (600 Roble Avenue), 402-023-003-5 (1106 San Pablo Avenue), & 405-023-002-7 (1230 San Pablo Avenue)
Property Sponsor and Owner(s):	Pinole Venture LP, c/o MRK Partners Inc. 5230 Pacific Concourse Dr Ste 350 Los Angeles, CA 90045
General Plan Designation:	Mixed Use Sub-Area
Zoning:	Very High Density Residential
Specific Plan Designation	Service Sub-Area, San Pablo Avenue
Description of project:	The Project consists of a new four-story, 179-unit affordable senior apartment complex and associated site improvements on a 2.01-acre site.
Surrounding land uses and setting; briefly describe the project's surroundings:	The Project site is located in the San Pablo Avenue Corridor of the Three Corridors Specific Plan and is surrounded by existing urban uses, including single family and multifamily residential development, commercial buildings, mixed use residential and commercial development, a gas station, and a pet hospital. The site is located at a developed location served by four roads adjacent to the project site: San Pablo Avenue, Roble Avenue, Madrone Avenue, and Encina Avenue.
Other public agencies whose approval is required (e.g., permits, financial, or participation agreements):	N/A
Have California Native American tribes requested consultation pursuant to Public Resources Code section 21080.3.1?	The City conducted notification within the statutory timeframe provided by Public Resources Code §21080.3.1. Notice was delivered to tribes on August 3, 2021. As of September 3, 2021, the City of Pinole did not receive a response requesting consultation.

VISTA WOODS PROJECT

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1. INTRODUCTION

This California Environmental Quality Act (CEQA) Analysis evaluates environmental impacts from the proposed Vista Woods Project, which consists of the development of a 179-unit, affordable senior apartment complex and ancillary improvements (hereinafter referred to as the "Project"). Documentation herein has been prepared by the City of Pinole as lead agency in full accordance with the procedural and substantive requirements of CEQA, CEQA Guidelines. This CEQA Analysis uses streamlining provisions in accordance with CEQA Guidelines 15168(c)(2) and 15183 for consistency with the General Plan and Three Corridors Specific Plan and the certified Environmental Impact Report (EIR), as well as the categorical exemption Class 32, set forth in CEQA Guidelines Section 15332.

2. PROJECT DESCRIPTION

Regional Setting

The City of Pinole is located in northwestern Contra Costa County along the Interstate 80 (I-80) freeway, approximately 12 miles South of Vallejo and 17 miles north of Oakland. It is located at the southeastern edges of San Pablo Bay and north of the San Pablo reservoir (**Figure 1: Regional Location**). The site is located along San Pablo Avenue, north of I-80, and within the San Pablo Avenue corridor of the City of Pinole's Three Corridors Specific; the San Pablo Avenue Corridor has been designated as a Priority Development Area (PDA).

Priority Development Areas (PDAs) are places identified by Bay Area communities as areas for investment, new homes, and job growth. PDAs are the foundation for sustainable regional growth as envisioned through Plan Bay Area, the region's Sustainable Community Strategy (SCS). The most recently adopted SCS is the Plan Bay Area 2040 prepared as a joint effort between the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG). Implementation of PDA's enhance mobility and economic growth by linking the location of housing and jobs with transit, thus offering a more efficient land use pattern around transit, reducing greenhouse gas emissions, and realizing a greater return on existing and planned transit investments.

Vicinity Setting

The Project site is located within the San Pablo Avenue corridor of the Three Corridors Specific Plan. The site is surrounded by existing urban uses with single family and multifamily residential development to the west; apartments and commercial uses to the south; mixed use residential and commercial development, a gas station, pet hospital, and residences to the east; and single-family development to the north (**Figure 2: Project Vicinity)**

Project Site

The Project proposes the development of a new four-story, 179-unit affordable senior apartment complex on a 2.01-acre site comprised of three parcels: 402-023-007-6 (600 Roble Avenue), 402-023-003-5 (1106 San Pablo Avenue), and 405-023-002-7 (1230 San Pablo Avenue). The site is under the Mixed-Use Sub-Area (MUSA) General Plan land use designation and has a Very High Density Residential (VHDR) zoning designation (**Figure 3: Land Use and Zoning Map**). The purpose of the VHDR designation is to allow for development of a wide range of housing types between 35.1 and 50 dwelling units per acre. This district is intended for higher density housing including townhomes, condominiums, brownstones, and apartment complexes. The surrounding zoning consists of a mix of residential and mixed use designated properties including VHDR to the west; VHDR and Residential Mixed Use (RMU) to the south; VHDR, RMU, and Commercial Mixed Use (CMU) to the east; and Suburban Residential (R-1) to the north.

The proposed Project would introduce a Z-shaped building on the site, with the building envelope containing 136,498 square feet with 179 units comprised of 16 studios, 128 one-bedroom units, and 35 two-bedroom units. Each unit includes a private or semi-private balcony, and outdoor decks are located on the 3 and 4th floor for tenants' use. Solar photovoltaic arrays will be sited on the roof of the new building. Open space onsite includes improved usable and non-recreational landscaping areas. A 6-foot-tall fence would be installed along the north

property line. The proposed landscaping plan includes tree species, a variety of shrubs, grasses, and other ground cover. Plantings will be located at the site perimeter and concentrated at the main building entrance along San Pablo Avenue and Roble Avenue.

Building materials are combinations of metal cladding, stucco siding, metal railing and screens, and framed windows. Proposed materials are of neutral colors (beige, grey, and white) as well as accent tones (green and blue). Building facades include articulated balconies, uniform windows, and entry elements. The building's roof types are generally flat, to accommodate rooftop solar arrays and mechanical equipment.

Existing structures, improvements, and vegetation on the site would be demolished and removed to accommodate development of the senior apartment complex consisting of the proposed residential building, parking, drive aisles, common open space, and associated site improvements. The proposed apartment building varies in height and would be approximately 60'-7" at its tallest point and four stories in height, with a subterranean level for parking. At grade, the Project includes surface parking, common space patios, walkways, gardens, landscaping, and amenities. The Project proposes below grade parking located beneath the building segment along Encina Avenue as well as surface parking accessed via internal drive aisles, which total 88 parking spaces. All parking stalls will be EV ready, and 2 parking stalls will provide EV hook-up. Vehicular access to the site would be provided from Roble Avenue and Madrone Avenue and San Pablo Avenue. One bicycle parking space will be accommodated within each of the 179 units, as well as 28 additional bicycle parking spaces provided onsite (**Figure 4: Site Plan**).

All existing trees and vegetation are proposed to be removed to accommodate development. Two of the trees to be removed are considered protected trees under the Pinole Municipal Code and removal is subject Chapter 17.96 of the code.

The Project site is currently served by existing utilities including water, sewer, and power. Development of the site will include installation of sewer and water laterals, pipes, manholes, and tie ins to connect to existing pipelines in San Pablo Avenue and Roble Avenue. Storm drain improvements to be installed include onsite planers, drain pipes, litter traps, and manholes. An 8-inch diameter storm drain will be installed within the internal drive aisle onsite and will extend offsite to tie into the existing 24-inch diameter storm drain located in Roble Avenue.

The site has an existing unmanned wireless facility at the southwest corner near the intersection of Madrone Avenue and San Pablo Avenue. The nearest new building is proposed to be located approximately 100 feet from the existing wireless facility. A radiofrequency (RF) emissions analysis was performed to evaluate RF exposure using standards from the Federal Communications Commission (FCC), the regulating authority on RF emissions. From the findings in the report, the existing wireless facility does not have the potential to exceed the federal allowable RF exposure limits for RF emissions at the proposed building location. Based on the modeling data, the predictive maximum public exposure (MPE) adjacent to the proposed building at an elevation of 20' would be 20.74% of the permitted MPE. Section 4.11 Land Use presents a discussion regarding RF emissions and potential land use conflicts associated with siting new residents proximate to the existing wireless facility.

Density Bonus

The Project is eligible for a density bonus under the State density bonus law by offering 100% deed restricted affordable units to low-income seniors. The maximum density allowed under the Specific Plan is 50 units to the acre, or 100 dwelling units (2.01-acre site x 50 units to the acres). As proposed, 100% of the housing units will be available to low-income households, which allows for an 80% density bonus. As such, a total of 180 units would be permitted with the density bonus, provided that all units are reserved for low-income households for 55 years. Density bonus provisions provide for incentives and concessions such as reduced parking, waivers, or reduction of development standards including setbacks and height limits. The Project is eligible for zero parking as part of the application of Density Bonus provisions but is proposing to provide 88 parking spaces onsite. Pursuant to the state density bonus law, the Project is eligible for three incentives/concessions and has identified a reduction in the side yard setback, a reduction of open space

requirement, and a height increase to allow up to 60'7" for a portion of the building. Requested waivers include compact parking, upper story step back, and parking lot shade standards.

Construction

Construction will result in the development of the site, excavation, grading, and construction of the building. For purposes of this analysis, it is assumed that development onsite will occur over an approximately two-year construction period, from February 2022 to February 2024. Site preparation would initiate with demolition to remove existing buildings, structures, and impervious surfaces onsite. Site preparation would also include grubbing to remove existing vegetation and trees. Grading onsite would result in 10,245 cubic yards of cut and would require 3,137 cubic yards of fill. As such a net export of soils of 7,138 cubic yards would be required in order to achieve proposed elevations. Concentrated trucking activity would occur during the grading and export operation at the onset of the Project, initially projected for April and May 2022 and then again for July 2022. Trucking hours would be between 7:00AM and 3:30PM. Routine trucking will cease post-grading; however occasional material deliveries will be anticipated. Construction entry gates were identified on the Roble Avenue, San Pablo Avenue and Madrone Avenue frontages of the site.

Following completion of grading activities, infrastructure improvements, subterranean parking, and building foundations would be constructed. The project proposes use of spread foundations.

Utilities, storm drains and bioretention basins would be installed. The proposed building, other onsite amenities, and the drive aisle and parking lot would be constructed. Frontage improvements, sidewalks, curbs and gutters, striping, landscaping, and signage would be installed.

Construction equipment expected to be utilized includes tractors, backhoes, haul trucks, graders, pavers, and water trucks. All construction material and equipment would be staged on-site or, through issuance of an encroachment permit, on abutting rights-of-way.

Public Outreach

The applicant has held one public outreach event to obtain feedback from the community on Friday, June 18, 2021. This event was a virtual meeting with notices mailed to property owners and occupants within a 1,000-foot radius.

Entitlements

The applicant is requesting approval of a Design Review application and affordable housing agreement to construct a new multifamily residential development. The Project applicant has applied to the City of Pinole for the following entitlements:

- Comprehensive Design Review
- Tree Removal Permit
- Affordable Housing Agreement

3. APPLICABLE CEQA PROVISIONS AND FINDINGS

The following discussion presents the relevant provisions of CEQA to which the proposed Vista Woods Project complies. It provides an overview of the Community Plan Exemption, determination of consistency with the City's program level EIR, the 2010 FEIR, and a summary of the Class 32 Infill Exemption. A description of how the Vista Woods Project complies with each provision is presented below. Finally, this section concludes with the CEQA finding and determination that the project is exempt from further environmental review.

3.1. GENERAL PLAN EIR (2010 FEIR)

The City of Pinole General Plan serves as the document that guides future development citywide that expresses the community's development goals and public policies relative to land uses. The update of the General Plan was adopted in 2010. The Three Corridors Specific Plan was developed concurrently with the General Plan update to guide development in defined sub-areas of the General Plan to focus development on unique characteristics of these areas. The purpose of the Specific Plan is to focus revitalization along the three corridors: San Pablo Avenue, Pinole Valley Road, and Appian Way.

The General Plan EIR (2010 FEIR) assesses potentially significant environmental impacts associated with implementation of the General Plan and the Three Corridors Specific Plan. The 2010 FEIR was prepared in order to provide the public, responsible agencies, and decision makers with information about the probable environmental effects of adoption and implementation of the General Plan Update, Three Corridors Specific Plan, and associated Zoning Code Updates. The 2010 FEIR serves as a programmatic document that is intended to be used to evaluate subsequent projects and activities within the planning area. The findings of the 2010 FEIR are presented below in Section 4 for each environmental category.

3.2. CONSISTENCY WITH PROGRAM EIR (CEQA GUIDELINES SECTION 15168)

The City of Pinole certified a program level EIR. The 2010 FEIR, that includes an analysis of the development potential of the subject Vista Woods Project. The 2010 FEIR provides for streamlining and/or tiering opportunities under CEQA Guidelines Section 15168. CEQA Guidelines 15168(c) provide that "later activities in the program must be examined in the light of the program EIR to determine whether an additional environmental document must be prepared."

APPLICABILITY OF THE VISTA WOODS PROJECT TO 15168

The proposed Vista Woods Project is a "later activity" of the program EIR. Section 4 of this CEQA Analysis provides an assessment of the Project's environmental impacts relative to what was analyzed in the 2010 FEIR. As described in Section 4, the Project, does not result in environmental effects that were not previously examined. As such, pursuant to CEQA Guidelines Section 15162 and 15163, no subsequent or supplemental EIR is required. In accordance with CEQA Guidelines Section 15168(c)(2), the City can "approve the activity as being within the scope of the project covered by the program EIR, and no new environmental document would be required."

CEQA Guidelines 15168(c)(3) provide that "an agency shall incorporate all feasible mitigation measures and alternatives developed in the program EIR into later activities in the program." Section 6 of this CEQA analysis identifies the relevant environmental conditions of approval that will be required of the proposed Project to demonstrate compliance with mitigation measures set forth in the program level EIR, and policies, programs and goals of the Three Corridors Specific Plan and General Plan.

As described below in Section 4, for each environmental resource topic in the Environmental Checklist, with implementation of mitigation measures, the proposed project would not result in significant impacts beyond those analyzed in the program level EIR. In addition, the project is subject to the payment of Development Impact Fees, which are collected to offset incremental increase in demands for public services and infrastructure from implementation of the General Plan and Specific Plan.

3.3. GENERAL PLAN/COMMUNITY PLAN EXEMPTION (CEQA GUIDELINES SECTION 15183)

California Public Resources Code Section 21083.3 and CEQA Guidelines Section 15183 allows a streamlined environmental review process for projects that are consistent with the densities established by existing zoning, community plan, or general plan policies for which an EIR was certified.

Section 15183 (a) "mandates that projects which are consistent with the development density established by existing zoning, community plan, or general plan policies for which an EIR was certified shall not require

additional environmental review, except as might be necessary to examine whether there are project-specific significant effects which are peculiar to the project or its site. This streamlines the review of such projects and reduces the need to prepare repetitive environmental studies."

Section 15183(b) specifies that "in approving a project meeting the requirements of Section 15183, a public agency shall limit its examination of environmental effects to those which the agency determines, in an initial study or other analysis:

1) Are peculiar to the project or the parcel on which the project would be located;
2) Were not analyzed as significant effects in a prior EIR on the zoning action, general plan, or community plan, with which the project is consistent;
3) Are potentially significant off-site impacts and cumulative impacts which were not discussed in the prior EIR prepared for the general plan, community plan or zoning action; or
4) Are previously identified significant effects which, as a result of substantial new information which was not known at the time the EIR was certified, are determined to have a more severe adverse impact than discussed in the prior EIR."

Section 15183(c) specifies that if an impact is not peculiar to the parcel or to the project, has been addressed as a significant effect in the prior EIR, or can be substantially mitigated by the imposition of uniformly applied development policies or standards, then an additional EIR need not be prepared for the project solely on the basis of that impact.

Section 15183(d) further states that the streamlining provisions of this section "shall apply only to projects that meet the following conditions:

(1) the project is consistent with a community plan adopted as part of a general plan, a zoning action which zoned or designated the parcel on which the project would be located to accommodate a particular density of development, or a general plan of a local agency; and

(2) an EIR was certified by the lead agency for the zoning action, the community plan, or the general plan."

APPLICABILITY OF THE VISTA WOODS PROJECT TO 15183

The proposed Vista Woods Project is consistent with the General Plan land use designation and zoning for the site, as outlined below, and meets the streamlining provisions under CEQA Guidelines Section 15183(d)(1):

(d)(1)(A) The project is consistent with a community plan adopted as part of a general plan.

The City of Pinole General Plan and Three Corridors Specific Plan were approved and the EIR (SCH Number 2009022057) was certified on October 20, 2010, by Resolution Number 2010-88. The Project is located on a site with the Very High Density Residential (VHDR) designation within the Mixed-Use Sub-Area (MUSA) in the San Pablo Avenue Corridor. The Specific Plan intends for the MUSA to create a bridge between historic Old Town Pinole and the Service sub-area in the San Pablo Avenue corridor and "a varied mix of uses (low density residential, multi-family residential, professional office, and service commercial) will play a vital role in fulfilling this vision". The VHDR designation is intended for higher density housing types, including apartment complexes. The Project consists of a multifamily residential development, which is consistent with the intent of the Specific Plan sub-area and zoning designations.

The proposed Vista Woods Project is also consistent with the following Three Corridors Specific Plan land use policies related to the San Pablo Avenue Corridor:

- Land Use Policy 1. Provide for a variety of housing types throughout the plan areas.
- Land Use Policy 3. Provide affordable housing within the plan areas consistent with the City's General Plan.

- Land Use Policy 4. Ensure development of “Opportunity Sites” with high quality mixed use or high density housing.
- Land Use Policy 6. Actively promote the “revitalization” of underutilized land.

(d)(1)(B) The project is consistent with a zoning action which zoned or designated the parcel on which the project would be located to accommodate a particular density of development.

The Project is subject to and consistent with the applicable development standards and zoning requirements within the Three Corridors Specific Plan and the Pinole zoning code (Title 17 of the Pinole Municipal Code). As established in the Specific Plan, the Specific Plan takes precedence where there is a conflict between the Specific Plan and the zoning code.

The General Plan and Specific Plan have assumed a total maximum development potential of 1,076 net dwelling units within the Specific Plan area, of which 234 net units are within the San Pablo Avenue Corridor. Residential development along San Pablo Avenue has included a 33-unit affordable housing project at 811 San Pablo Avenue, entitled in 2021, and a 3-unit development at 1479 San Pablo Avenue, entitled in 2019. Otherwise, there has not been a substantial change in net new residential units since certification of the 2010 FEIR.

The Project is located on a site designated as Very High Density Residential, where the housing density is noted as 35.1 to 50 dwelling units per acre. The Project is eligible for a by-right increase in density above the General Plan densities through the Project’s provisions of 100% affordable senior housing under State density bonus provisions (Government Code Section 65915). The Project applies an 80% density bonus to increase allowable units from 100 units to 179 units.

The proposed Project is consistent with the projected development under the General Plan and Specific Plan and provisions of State density bonus law.

The Project meets applicable development standards within the Specific Plan. Through the provision of affordable housing units with 100% of units affordable to low-income income senior households, the Project is automatically granted certain incentives/concessions and waivers of development standards through provisions of the State density bonus law (Government Code Section 65915), which include:

- Zero parking spaces required (GC Section 65915(p)(3)(B)). However, the Project has elected to provide 88 parking spaces.
- 80% density bonus (GC Section 65915(d)(3)(D)(i)). The maximum density under standard zoning results in 100 units and the density bonus would allow for the 179 units proposed.
- Three concessions (GC Section 65915(e)(1) and (2)): reduced setbacks, reduced open space, and increased height.
- Waiver of development standards (GC Section 65915(e)(1) and (2)): compact parking ratio, 45-degree upper story step backs, and parking lot shade standards.

(d)(1)(C) The project is consistent with the City of Pinole General Plan.

The Project site is designated Mixed Use Sub-Area (MUSA) on the City’s General Plan Land Use map. The MUSA classification encourages mixed residential and commercial development that is united by transit and pedestrian improvements, parks, and public spaces. It identifies that residential uses may include single-family and multi-family residential uses. The proposed Project is consistent with the General Plan in that it provides the development of apartment units in a location designated for high density residential development. The proposed development is consistent with projected development in the City of Pinole General Plan and 2010 FEIR, which assumed approximately 1,306 additional housing units (approximately 1,076 of which would be accommodated within the Specific Plan area).

The proposed Project is consistent with the following General Plan policies:

- Policy LU.1.1. Increase land use diversity along the San Pablo Avenue, Pinole Valley Road and Appian Way corridors; reduce residential density on large land holdings designated for Rural land use; and maintain other land use designations for a variety of residential, commercial, light industrial, recreational, open space and public purposes which (1) protect environmental resources; (2) provide a mix of housing types, densities and tenure; (3) ensure that a variety of commercial and industrial goods, services and employment opportunities are available; and (4) offer a range of recreational and public facilities to meet the needs of residents.

- Policy LU.4.3. Cluster development at higher densities to protect natural resources and address site development constraint issues, including archaeological sites, access, traffic, emergency services, water and sewer availability, creek and tree protection, steep slopes, potential geologic hazards, grading impacts, view protection and protection of open space resources. (See also Goal LU.8 below.)

- Policy LU.7.3. Continue to strive for a balance between the number of jobs in the Pinole Planning Area and the number of housing units available for workers by encouraging and supporting policies and programs, mixed-use projects which provide both housing and employment opportunities, and the development of affordable housing.

- Policy.H.2.5. Support seniors and individuals with special needs. Develop programs to assist lower income seniors and disabled individuals to live independently, age in place, and maintain their homes.

- Policy H.4.1. Provide a choice of housing. Provide a mix of sizes and housing types to meet the needs of Pinole's diverse population. Specific examples include traditional single-family homes, second units, mixed use developments, infill development, accessible housing, and transitional and emergency housing. Opportunities must be available for lower, moderate, and above-moderate income households reflecting available job opportunities in close proximity to Pinole. Available housing choices should also strive to minimize transportation needs.

- Policy H.4.2. Provide equal housing opportunities. Encourage the provision of adequate housing for all persons regardless of income, age, sex, race, or ethnic background, consistent with the Fair Housing Act.

- Policy H.4.4. Support the development of affordable housing. Maintain appropriate land use regulations and other development tools to encourage development of affordable housing opportunities throughout the City.

3.4. CONSISTENCY WITH THREE CORRIDORS SPECIFIC PLAN (SECTION 65457)

California Government Code Section 65457(a) provides an exemption for residential development projects that are consistent with a Specific Plan for which an EIR was certified after January 1, 1980. This exemption does not apply if any of the events identified in Section 21166 of Public Resources Code have occurred, unless a supplemental EIR is prepared.

APPLICABILITY OF THE VISTA WOODS PROJECT TO 65457(a)

As described above, the Vista Woods Project is consistent with the Specific Plan for which an EIR was certified in 2010. As presented herein, the 2010 FEIR remains relevant and none of the events identified in Section 21166 of the California Public Resources Code have occurred that require preparation of a supplemental EIR. Therefore, the Project is exempt pursuant to California Government Code Section 65457(a).

(a) Substantial changes are proposed in the project which will require major revisions of the environmental impact report.

The proposed Project is consistent with the development intensity analyzed in the 2010 FEIR. There are no substantial changes to the project that require major revisions of the 2010 FEIR.

(b) Substantial changes occur with respect to the circumstances under which the project is being undertaken which will require major revisions in the environmental impact report.

Development within the Three Corridors Specific Plan area has built out in a manner consistent with what was analyzed in the 2010 FEIR including planned development, redevelopment, infrastructure, and transportation improvements. There are no substantial changes to the circumstances under which the project is being undertaken that require major revisions of the 2010 FEIR.

(c) New information, which was not known and could not have been known at the time the environmental impact report was certified as complete, becomes available.

There is no new information that would substantially alter the conclusions of the 2010 FEIR. The analysis of the 2010 FEIR remains applicable to the Vista Woods Project.

3.5. CLASS 32 CATEGORICAL EXEMPTION (15332)

CEQA Guidelines 15332 provides for a categorical exemption for infill development projects that are consistent with applicant general plan policies and zoning regulations, are located on a project site that is less than 5 acres and substantially surrounded by urban uses, have no value as habitat for endangered, rare or threatened species, would not result in significant effects relating to traffic, noise air quality or water quality, and are located on a site that can be adequately served by all required utilities and public services.

APPLICABILITY OF THE VISTA WOODS PROJECT TO 15332

(a) The project is consistent with the applicable General Plan Designation, applicable policies and applicable zoning designation and regulations.

The Project site is consistent with the applicable General Plan Mixed Use Sub-Area (MUSA) land use designation in that the MUSA encourages mixed residential and commercial development and identifies that residential uses may include single-family and multi-family residential uses. Additionally, the Three Corridors Specific Plan envisions that the MUSA in the San Pablo Avenue Corridor would create a bridge between historic Old Town Pinole and the Service Sub-Area and that a varied mix of uses (low density residential, multi-family residential, professional office, and service commercial) is intended to play a vital role in fulfilling this vision. The Project is a senior apartment complex located in the Very High-Density Residential district, which is intended for higher density housing including townhomes, condominiums, brownstones, and apartment complexes. The Project complies with applicable development standards within the Pinole Zoning Code, with development incentives and concessions for modification of standards allowed through the State density bonus law (Government Code Section 65915).

(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 is located on a 2.01-acre site that is substantially surrounded by urban uses, including single family and multifamily residential development, commercial buildings, mixed use residential and commercial development, a gas station, and a pet hospital. The site is located at a developed location served by four roads adjacent to the project site: San Pablo Avenue, Roble Avenue, Madrone Avenue, and Encina Avenue.

(c) The project has no value as habitat for endangered, rare, or threatened species.

The Project site does not present any value for special-status plant species due to lack of suitable habitat. Due to surrounding roads and development, frequent site maintenance, and other human presence, the Project site does not support special-status wildlife species.

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

Evaluations of environmental effects relative to traffic, noise, air quality, and water quality are discussed in Section 4. 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.

The Project site is well served by existing utilities and services systems; it is located within an urbanized area along the San Pablo Avenue corridor and is well served by water, sewer, storm drain systems, natural gas, electricity, police, fire, and other utilities and public services.

EXCEPTION TO EXEMPTIONS

Section 15300.2 of the CEQA Guidelines identify exceptions to exemptions including cumulative impact, significant effect, scenic highway, hazardous waste sites, and historical resources. Cumulative impact, in 15300.2(b) of the CEQA Guidelines, is not applicable since the project will not contribute to successive impacts in the same location. Significant effect, set forth in 15300.2(c), is not applicable since there are no unusual circumstances. Scenic Highways, discussed in 15300.2(d), is not applicable, as the Project is not located in the vicinity of a State Designated Highway, nor is it in the vicinity of a locally recognized or designated Scenic Corridor. Hazardous Waste Sites, discussed in 15300.2(e),is not applicable, since, there are no open hazardous waste sites at the Project site. Historic Resources, discussed in 15300.2(f), will not be adversely impacted by the Project since the site is not located within a historic district, there are no historic resources on site, and nearby historic resources will not be directly or indirectly affected by development. No exceptions to the Class 32 infill exemption have been identified.

15332 DETERMINATION

The proposed Vista Woods Project meets the provisions set forth in 15332 and qualifies for a Class 32 categorical exemption. As described above, the project is consistent with the General Plan and Specific Plan Land Use designations, policies, and zoning regulations. In addition, none of the exceptions identified in CEQA Guidelines Section 15300.2 are applicable to the Project. Therefore, the proposed Project qualifies for a Class 32 categorical exemption.

3.6. CEQA DETERMINATION AND SUMMARY OF FINDINGS

As summarized above and presented herein, the proposed Vista Woods Project is eligible for the following CEQA exemptions:

Consistency with Program EIR. The City of Pinole 2010 FEIR provides for streamlining and/or tiering provisions under CEQA Guidelines Section 15168. This CEQA Analysis demonstrates that the Project would not result in substantial changes or involve new information that would warrant preparation of a subsequent EIR because the level of development proposed is within the development assumptions analyzed in the program level EIR (2010 FEIR). No further environmental review is required.

Community Plan Exemption. Streamlined environmental review per Section 15183 of the CEQA Guidelines and California Public Resources Code Section 21083.3. The Project is consistent with the General Plan and will not result in significant environmental impacts that were not previously identified as significant project-level, cumulative or offsite effects in the 2010 FEIR. The Project is exempt from further CEQA review, since it is consistent with the General Plan.

Specific Plan Consistency 65457(a). Pursuant to Government Code Section 65457(a), once an EIR has been certified and a Specific Plan adopted, any residential development project, that is undertaken to implement and is consistent with the Specific Plan, is exempt from additional CEQA review. The Project is consistent with the adopted Three Corridors Specific Plan for which an EIR was certified in 2010.

Class 32 Categorical Exemption: The Project complies with Public Resources Code Section 21084 and CEQA Guidelines Section 15332 and is exempt from further environmental review.

Findings Summary

As described herein, the proposed Project is within the scope of development projected under the General Plan and Three Corridors Specific Plan, for which an EIR was certified in 2010. The proposed Vista Woods Project will implement applicable mitigation measures identified in the 2010 FEIR. In addition, the Project would be required to comply with applicable conditions of approval and subject to uniformly applied development standards. With implementation of required mitigation measures and conditions of approval, the Project would not result in a substantial increase in the severity or significant impacts that were previously identified in the program level EIRs, nor would the Project introduce any new significant impacts that were not previously identified. Therefore, there would be no additional environmental impacts beyond those analyzed in the 2010 FEIR.

Each of the above findings provides for a separate and independent basis for CEQA compliance. We do hereby certify that the above determination has been made pursuant to State and Local requirements.

_____ _____

Signature: City of Pinole **Date**

3.7. ENVIRONMENTAL CONDITIONS OF APPROVAL

The Project shall incorporate all feasible mitigation measures set forth in findings of fact for prior applicable Environmental Impact Reports (EIR). The following EIRs have been determined by the City to be applicable to the Project:

- City of Pinole General Plan EIR (SCH Number 2009022057)

In each impact section of the Evaluation of Environmental Impacts, applicable mitigation measures from the findings of fact for the certified EIR are identified. Section 6 of this CEQA Analysis identifies relevant conditions of approval for the Project derived from mitigation measures, policies and implementing programs established in the City's General Plan and Three Corridors Specific Plan and the certified 2010 FEIR.

The Vista Woods Project applicant has reviewed all conditions of approval and as signed below is committed to implementing all conditional of approval as part of the Project.

_____ _____

Signature: Project Applicant **Date**

Vista Woods: Regional Location

N

0 0.25 0.5 Miles

Vista Woods (Project Site)

Pinole

Contra Costa County

Data Source: Contra Costa County; City of Pinole; ESRI Basemap

Pinole, California

Vista Woods: Project Vicinity

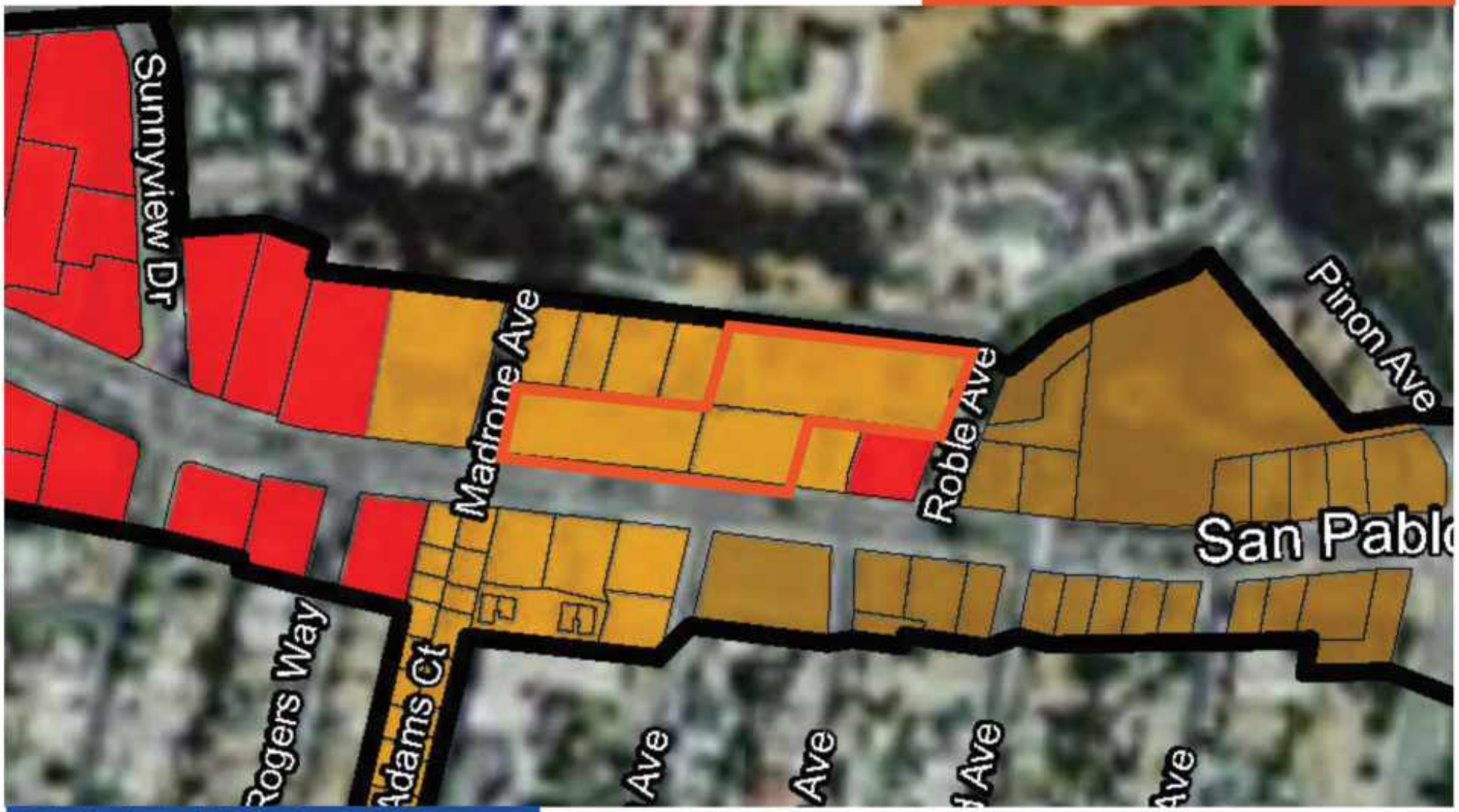
N

0 100 200 400 Feet

Project Site

Data Source: City of Pinole, Google Maps, ESRI Basemaps

Pinole, California



Vista Woods: Land Use and Zoning Map

N

0 100 200 400 Feet

Data Source: City of Pinole

Project Site

General Plan/Specific Plan Land Use

Mixed Use Sub-Area

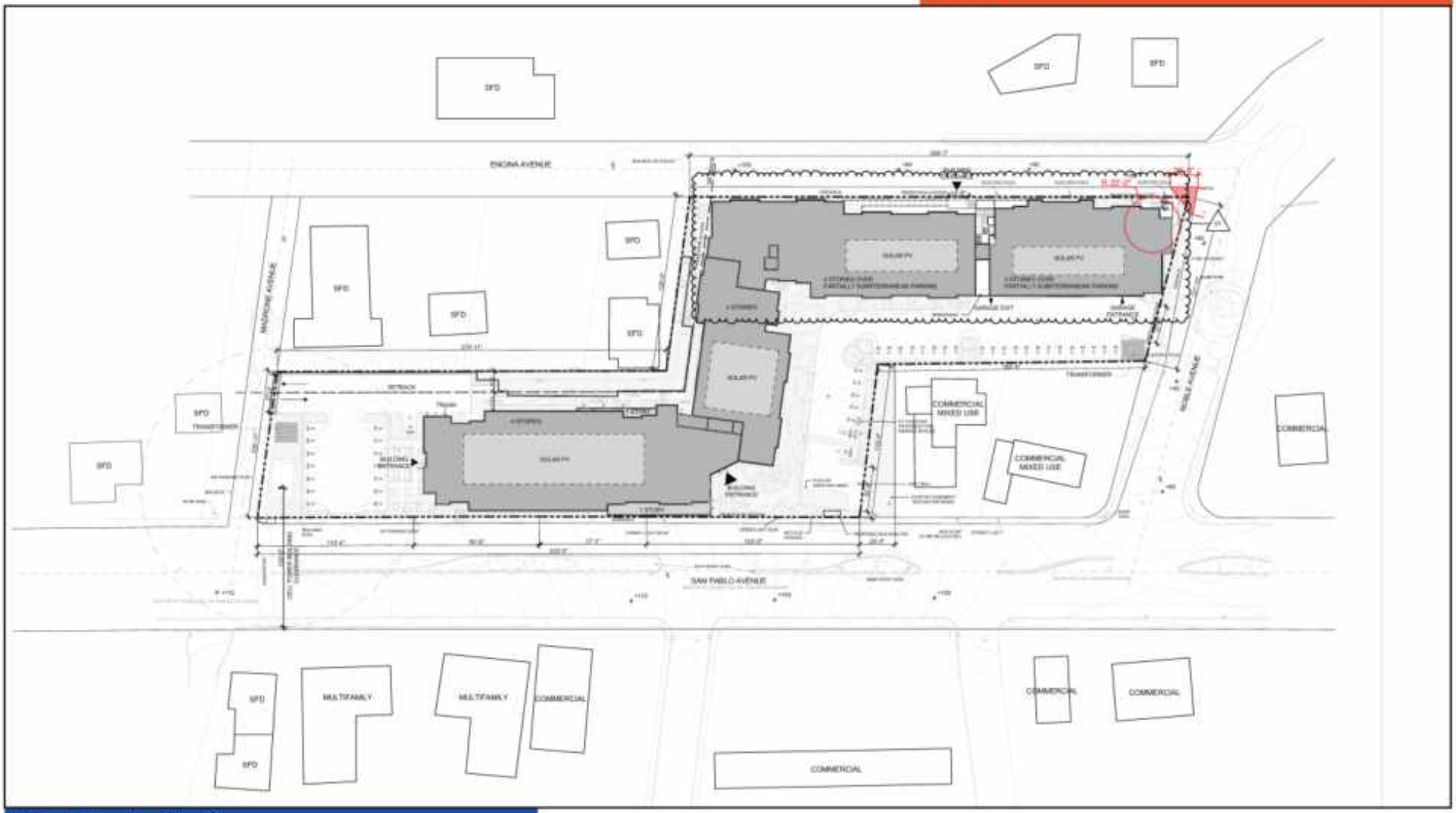
Zoning

Very High Density Residential

Commercial Mixed Use

Residential Mixed Use

Pinole, California



Vista Woods: Site Plan

N

0 50 100 200 Feet

Data Source: Plan Set prepared by Relativity Architects, dated 6.18.2021

4. EVALUATION OF ENVIRONMENTAL EFFECTS

This section examines the Project's potential environmental effects within the parameters outlined in CEQA Guidelines Section 15183(b). The "Prior EIRs" (as defined in CEQA Guidelines Section 15183(b)(3)) is the City of Pinole General Plan EIR (2010 FEIR), inclusive of all impact determinations, significance thresholds and mitigation measures identified therein.

Th evaluation builds from the Appendix G Environmental Checklist and has been modified to reflect the parameters outlined in CEQA Guidelines Section 15183(b). The checkboxes in the evaluation below indicate whether the proposed project would result in environmental impacts, as follows:

- **New Significant Impact –** The proposed Project would result in a new significant impact that was not previously identified in the 2010 FEIR.
- **Substantial Increase in Severity of Previously Identified Significant Impact in GP EIR –** The proposed Project's specific impact would be substantially greater than the specific impact described in the 2010 FEIR.
- **Substantial Change Relative to GP EIR –** The proposed Project would involve a substantial change from analysis conducted in the 2010 FEIR.
- **Equal or Less Severity of Impact than Previously Identified in GP EIR –** The severity of the specific impact of the proposed Project would be the same as or less than the severity of the specific impact described in the 2010 FEIR.

Where the severity of the impacts of the proposed Project would be the same as or less than the severity of the impacts described in the 2010 FEIR, the checkbox for Equal or Less Severity of Impact Previously Identified in FEIR is checked. Where the checkbox for Substantial Increase in Severity of Previously Identified Significant Impact in FEIR or New Significant Impact is checked, there are significant impacts that are:

- Peculiar to project or project site (CEQA Guidelines Section 15183[b][3]);
- Not analyzed as significant impacts in the previous EIRs, including off-site and cumulative impacts (CEQA Guidelines Section 15183[b][2]);
- Due to substantial changes in the project (CEQA Guidelines Section 15162[a][1]);
- Due to substantial changes in circumstances under which the project will be undertaken (CEQA Guidelines Section 15162[a][2]); or
- Due to substantial new information not known at the time the EIRs were certified (CEQA Guidelines Sections 15162[a][3] and 15183[b][4]).

As described herein, the proposed Project will be required to comply with all applicable mitigation measures identified in the 2010 FEIR.

This evaluation hereby incorporates by reference the 2010 FEIR discussion and analysis of all environmental topics. The 2010 FEIR significance thresholds have been consolidated and abbreviated in this Checklist; a complete list of the significance thresholds can be found in the 2010 FEIR.

The 2010 FEIR is a program level documents that consider the combined effects of implementing several related projects. As such, the analyses presented in the 2010 FEIR represents a cumulative analysis of environmental impacts that may occur from buildout of the Specific Plan and the General Plan.

4.1. AESTHETICS

Except as provided in Public Resources Code Section 21099, would the project:	New Significant Impact Not Identified in 2010 FEIR	More Severe Impact Relative to 2010 FEIR	No Substantial Change Relative to 2010 FEIR	No Change Relative to the 2010 FEIR
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Sources: City of Pinole General Plan and EIR; Plan Set, prepared by Relativity Architects, dated June 18, 2021; and Shadow study, prepared by Dudek, dated May 28, 2021

General Plan and Specific Plan EIR Findings

The 2010 FEIR evaluated potential impacts to aesthetics in Chapter 4.11 including the Three Corridors Specific Plan area and determined the following:

- Impact 4.11.1- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would encourage new development and redevelopment activities that could potentially degrade existing scenic vistas. This impact is considered less than significant.

- Impact 4.11.2- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) could result in the alteration of visual character. This is considered a less than significant impact.

- Impact 4.11.3- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would result in the intensification of land uses within the GPU Planning Area, which has the potential to create new sources of daytime glare and nighttime illumination. This impact is considered less than significant.

- Impact 4.11.4- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update), along with foreseeable development in the region, would not result in the significant conversion of the city's visual character. This is considered a less than cumulatively considerable impact.

The 2010 FEIR determined that implementation would result in less than significant impacts regarding degradation of existing scenic vistas, alteration of visual character, and light and glare. No mitigation measures were required for the determination of less than significant impacts.

Project Consistency with the 2010 FEIR

4.1(a) (Scenic Vistas) No Change Relative to the 2010 FEIR: The 2010 FEIR determined that there are no designated scenic vistas within the City. Although the City contains scenic views of the bay and the surrounding cities that can be seen from the City's ridgelines, these views were not considered scenic vistas and the 2010 FEIR determined impacts to scenic vistas as less than significant. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

4.1(b) (Scenic Highways) No Change Relative to the 2010 FEIR: The 2010 FEIR determined that there are no officially designated state scenic highways or highways eligible for a designation by the California Department of Transportation Scenic Highways Program within the City. Accordingly, the Project will have no impact on scenic resources within a state scenic highway. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

4.1(c) (Scenic Quality) No Substantial Change Relative to the 2010 FEIR: The 2010 FEIR determined that implementation of the General Plan and Specific Plan could result in alteration to the visual setting and that impacts would be less than significant. The Project is consistent with the intent of the General Plan to minimize development of natural open space, such as hillsides and ridgelines, and to promote infill development in the primary transportation corridors. The 2010 FEIR indicated that development consistent with the Zoning Code and General Plan policies would protect the visual character of the City. The Project is compatible with General Plan policies, including Policy CC.1.1 and CC.1.2, to develop according to high quality urban design, architecture, and site planning. The Project is located on Opportunity Site 3 identified in the Three Corridors Specific Plan to support very high density residential. The design applies features described in the Specific Plan design guidelines, including the façade design that uses breaks, articulation, and vertical and horizontal offsets to minimize large blank walls through variations in the roofline, balconies, and wall plane.

In consideration of shading effects on the surroundings, the Project included the preparation of models analyzing the impact of shadows at winter solstice (December 21st) in the hours between 9:00 am and 3:00 pm, which is a period where shadows may be most extensive. The simulation showed windows of properties most likely to be affected would not be shaded for longer than 3 consecutive hours during this time (**Appendix A**). The development is in line with the type of development (i.e., multifamily residential structures) in the Very High Density Residential District. The Project incorporates all applicable zoning standards and development provisions allowed by-right through State density bonus law. The Project is subject to the findings for review and approval of the design review application through the City's Design Review process.

The 2010 FEIR identified significant existing visual features as historic buildings, structures, landmarks, and monuments. The Project includes demolition of existing buildings on site, which includes two main buildings and an accessory structure. However, the buildings were found to be ineligible for listing in the National Register of Historic Places, California Register of Historical Resources, and locally in the City of Pinole due to a lack of significance (**Appendix D-1**).

Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

4.1(d) (Lighting and Glare) No Substantial Change Relative to the 2010 FEIR: The 2010 FEIR determined that intensification of land uses may create new sources of light and glare. Application of lighting rules and regulations, including the Zoning Code, was identified as a means to minimize impacts. The proposed lighting would be in conformance with the City's Zoning Code as a standard condition of Design Review approval, including Chapter 17.46, which governs installation and operation of lighting fixtures. Among the standards for lighting is the requirement for full downward shielding in order to reduce light and glare impacts to adjoining properties and public rights-of-way. Compliance with lighting standards, in accordance with Action CC.2.3.4, has been imposed under environmental condition of approval AES-1. Therefore, the Project will not result in a

new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

Applicable 2010 FEIR Mitigation Measures

There are no applicable 2010 FEIR mitigation measures to this Project.

Conclusion and Environmental Conditions of Approval

The Project would not result in any new or more severe impacts to aesthetics relative to what was identified in the 2010 FEIR. The Project would be required to comply with City of Pinole regulations that implement General Plan policies, including Zoning Code standards captured in the following environmental condition of approval:

AES-1: The applicant shall ensure, and the City shall verify that the final lighting plan incorporates applicable requirements set forth in Chapter 17.46 of the Pinole Municipal Code, including that all outdoor lighting fixtures be designed, shielded, aimed, located, and maintained to shield adjacent properties and to not provide glare onto adjacent properties or roadways.

4.2. AGRICULTURAL AND FORESTRY RESOURCES

Would the project:	New Significant Impact Not Identified in 2010 FEIR	More Severe Impact Relative to 2010 FEIR	No Substantial Change Relative to 2010 FEIR	No Change Relative to the 2010 FEIR
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?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
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))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Sources: City of Pinole General Plan and EIR; California Department of Conservation Farmland Mapping and Monitoring Program

General Plan and Specific Plan EIR Findings

The 2010 FEIR determined under Chapter 1.7 that implementation of the General Plan/Specific Plan would not result in any potentially significant impacts to agricultural land because the City has been largely built out and does not have agricultural operations.

Project Consistency with the 2010 FEIR

4.2(a-e) (Farmland, Agricultural Land, Forest Land) No Change Relative to the 2010 FEIR: The 2010 FEIR determined that the Project will not impact agricultural land. The Project site is a developed site with existing buildings, paved circulation access, and ruderal vegetated areas. It does not contain farmland or forest land pursuant to Section 12220(g) of the Public Resources Code. As the Project is within the scope of development projected under the General Plan/Specific Plan and the 2010 FEIR, there would be no additional impacts to agricultural and forestry resources beyond those analyzed in the 2010 FEIR.

Applicable 2010 FEIR Mitigation Measures

There are no applicable 2010 FEIR mitigation measures to this Project.

Conclusion

The Project would not result in any new or more severe impacts to agricultural and forestry resources relative to what was identified in the 2010 FEIR. The Project consists of development within an urban context that would not impact agricultural resources, consistent with the City's General Plan and Three Corridors Specific Plan.

4.3. AIR QUALITY

Would the project:	New Significant Impact Not Identified in 2010 FEIR	More Severe Impact Relative to 2010 FEIR	No Substantial Change Relative to 2010 FEIR	No Change Relative to the 2010 FEIR
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Exposure of sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Sources: City of Pinole General Plan and EIR; BAAQMD 2017 Bay Area Clean Air Plan; BAAQMD CEQA Guidelines May 2017; BAAQMD Recommended Methods for Screening and Modeling Local Risks and Hazards, prepared by the BAAQMD, May 2011; and Air Quality and Greenhouse Gas Analysis, prepared by Dudek, April 28, 2021.

General Plan and Specific Plan EIR Findings

The 2010 FEIR evaluated potential impacts to air quality in Chapter 4.3 including the Three Corridors Specific Plan area and determined the following:

- Impact 4.3.1- Subsequent land use activities associated with implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would result in increased population and vehicle miles traveled that would exceed assumptions used to create the BAAQMD's Clean Air Plan. Although the GP EIR identified policies that would help reduce the effect of impacts, the impact would be significant and unavoidable, and there are no available mitigation measures.

- Impact 4.3.2- Subsequent land use activities associated with implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) could result in short-term construction emissions that could violate or substantially contribute to violations of federal and state ambient air quality standards. Implementation of mitigation measure 4.3.2, requiring the use of BAAQMD best management practices for construction emissions, would reduce impacts to less than significant.

- Impact 4.3.3- Subsequent land use activities associated with implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) could result in long-term, operational emissions that could violate or substantially contribute to violations of federal and state ambient air quality standards. Impacts were determined to be significant and unavoidable, and there are no available mitigation measures. A statement of overriding consideration was adopted with certification of the 2010 FEIR.

- Impact 4.3.4- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would result in increased population and employment that would result in level of service operations that would be inconsistent with the region's congestion management Program. Implementation of mitigation measure 4.4.2, for the City to work with county transportation agencies, would reduce impacts to less than significant impacts. The Project is consistent with development assumptions within the General Plan and results in no new significant or more severe impact relative to the 2010 FEIR.

- Impact 4.3.5- Subsequent land use activities associated with implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) could result in projects that would include sources of toxic air contaminants which could affect surrounding land use. Subsequent land use activities could also place sensitive land uses near existing sources of toxic air contaminants. These factors could result in the exposure of sensitive receptors to substantial concentrations of toxic air contaminants and/or fine particulate matter. General Plan policies that would reduce impacts include Policy SE.7.1, SE.7.9 and LU.3.3. Impacts were determined to be significant and unavoidable, and there are no available mitigation measures. A statement of overriding consideration was adopted with certification of the 2010 FEIR.

- Impact 4.3.6- Subsequent land use activities associated with implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) could include sources that could create objectionable odors affecting a substantial number of people or expose new residents to existing sources of odor. Mitigation measure 4.3.6a and 4.3.6b, which includes compliance with BAAQMD best management practices, would reduce impacts to less than significant.

- Impact 4.3.7- The General Plan EIR determined that implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update), in combination with cumulative development in the SFBAAB, would result in a cumulatively considerable net increase of ozone and coarse and fine particulate matter. Impacts were determined to be cumulatively considerable, and there are no available mitigation measures. A statement of overriding consideration was adopted with certification of the 2010 FEIR.

Implementation of the General Plan and Specific Plan would result in potentially significant air quality impacts. Mitigation measures from the 2010 FEIR would reduce the effect of impacts, however not all impacts may be reduced to less than significant levels. A statement of overriding consideration was adopted with certification of the 2010 FEIR.

Project Consistency with the 2010 FEIR

4.3(a) (Conflict with Plan) No Substantial Change Relative to the 2010 FEIR: The 2010 FEIR found that build out of the General Plan would result in significant and unavoidable impacts on air quality, and a statement of overriding considerations was adopted. The General Plan determined that impacts resulting from the increased population and vehicle miles traveled would exceed assumptions used to create the 2010 BAAQMD Clean Air Plan. As it relates to the General Plan and Specific Plan, the development proposed by the Vista Woods project is within the projections of the 2010 FEIR and would not create new impacts, more significant impacts, or a substantial change from the 2010 FEIR.

In the 2017 BAAQMD CEQA Air Quality Guidelines, the BAAQMD established thresholds of significance for construction and operation for emission levels that may be considered potentially significant impacts. Project-specific analysis of air pollutant emissions, (**Appendix B**), quantifies emission from short-term construction-related activities (e.g., construction equipment emissions, soil disturbance, transport of materials and worker trips) and long-term operations (e.g., resident and visitor vehicle use and area sources from use of natural gas, consumer products, and landscaping maintenance equipment). Air quality emissions generated by the Vista Woods Project would not exceed BAAQMD significance thresholds during construction or at operation, as shown in Tables AQ-1 and AQ-2 below.

Table AQ-1. Construction Emissions

Pollutant	BAAQMD Threshold (pounds/day)	Vista Woods Project Daily Average (pounds/day)
ROG (reactive organic gases)	54	6.49 (Volatile Organic Compounds)
NOX (nitrogen oxides)	54	17.26
PM10 (particulate matter-10 microns)	82 (exhaust)	0.67
PM2.5 (particulate matter-2.5 microns)	54 (exhaust)	0.63
PM10/PM2.5 (fugitive dust)	Best Management Practices	Required to comply with BMPs
Local CO (carbon monoxide)	None	16.91

Sources: 2017 BAAQMD CEQA Air Quality Guidelines, Air Quality and Greenhouse Gas Analysis for the Vista Woods Apartments Project

Table AQ-2. Operational Emissions

	Daily Average (pounds/day)		Annual Average (tons/year)	
Pollutant	BAAQMD Threshold	Vista Woods Project	BAAQMD Threshold	Vista Woods Project
ROG (reactive organic gases)	54	5.24	10	1.00
NOX (nitrogen oxides)	54	3.8	10	1.13
PM10 (particulate matter-10 microns)	82	3.22	15	1.04
PM2.5 (particulate matter-2.5 microns)	54	0.96	10	0.03
Local CO (carbon monoxide)	Consistent with requirements; CO calculated in AQ/GHG Analysis			

Sources: 2017 BAAQMD CEQA Air Quality Guidelines, Air Quality and Greenhouse Gas Analysis for the Vista Woods Apartments Project

BAAQMD does not have a quantitative threshold of significance for fugitive dust. However, the 2017 BAAQMD CEQA Guidelines provide recommendations for best management practices to reduce emissions, including fugitive dust. Mitigation measure 4.3.2, set forth in the 2010 FEIR requires the use of BAAQMD-approved basic construction mitigation measures. The 2010 FEIR concluded that impacts from construction would be less than significant with implementation of mitigations. Best management practices from the latest BAAQMD CEQA Air Quality Guidelines are required to be implemented by the Project as imposed by condition of approval (COA) AQ-1, consistent with mitigation measure 4.3.2. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

4.3(b) (Increase Criteria Pollutants) No Substantial Change Relative to the 2010 FEIR: The 2010 FEIR identified a cumulatively considerable impact from the net increase of criteria pollutants citywide from buildout of the General Plan, and a statement of overriding considerations was adopted. The Project is consistent with the projected buildout of the General Plan. At the project-level, analysis of criteria pollutant emissions from development of the project, as described above in 4.3(a), indicate that the Project would not exceed criteria

pollutant thresholds and impacts would be less than significant. The Vista Woods Project would have emissions that are below the BAAQMD thresholds of significance as shown in Table AQ-1 and AQ-2 above. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

4.3.(c) (Sensitive Receptors) No Substantial Change Relative to the 2010 FEIR: The 2010 FEIR determined impacts to sensitive receptors would be significant and unavoidable, and a statement of overriding consideration was adopted. At the project-level, construction activities would result in short term emissions that could potentially impact nearby sensitive receptors including surrounded residential uses. During construction, onsite activities will result in airborne particles from site disturbance and construction equipment emissions (i.e., diesel particulate matter exhaust emissions from vehicles and heavy equipment operations). Health risks from diesel-exhaust emissions are connected to long-term exposure and the associated carcinogenic risk. For toxic air contaminants (TACs) and effects on sensitive groups, health risks are based on a 30-year exposure period in accordance with the Office of Environmental Health Hazard Assessment. The Air Quality Analysis conducted for the Vista Woods Project (**Appendix B**) concludes that based on the duration of construction activities (e.g. two years, which a fraction of the 30-year exposure period), the California Air Resources Board regulation of construction equipment, and the implementation of best management practices during construction (in accordance with mitigation measure 4.3.2), diesel exhaust and particulate matter generated by the Project during construction would not result in concentrations posing a significant health risk to sensitive receptors and impacts would be less than significant. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

4.3(d) (Odors) No Substantial Change Relative to the 2010 FEIR: The 2010 FEIR determined that impacts due to odors would be less than significant with implementation of applicable mitigation measures. As a residential development, the Vista Woods Project does not involve operations that may generate substantial odors, such as manufacturing, refineries, landfills, or treatment uses. During construction, odors may be emitted from construction equipment and vehicles, but would be minimized through best management practices and impacts would be less than significant.

At operation, the project would introduce new sensitive receptors (residents) to an area adjacent to a high-volume roadway. As presented in the General Plan, under existing conditions San Pablo Avenue supports 20,600 average daily trips (ADT) and at build out San Pablo Avenue is projected to support 30,000 (ADT). New residents introduced by the project would be exposed to air quality emissions associated with the adjacent high-volume roadway. In accordance with mitigation measure MM 4.3.6b and imposed through condition of approval AQ-2 below, the Project's HVAC system shall be equipped with MERV 13 or higher air filtration system in order to protect public health and safety and ensure that new residents are not exposed to ambient elevated air quality concentrations. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

Applicable Mitigation Measures

The following mitigation measures from the 2010 FEIR mitigation monitoring and reporting program apply to the project:

MM 4.3.2 The proposed General Plan Update shall include a policy that would require the use of BAAQMD-approved criteria air pollutant reducing Basic Construction Mitigation Measures to all future construction projects within the GPU Planning Area where feasible whether or not construction-related emissions exceed applicable Thresholds of Significance.

Status: Applicable. In accordance with this measure, the Project is subject to environmental condition of approval AQ-1.

MM 4.3.6a The proposed General Plan Update shall include an action item that shall require the city to update the Zoning Code to require the City to identify the location of existing odor sources in the city.

Status: Not applicable.

MM 4.3.6b The following policy shall be incorporated into the Sustainability Element of the General Plan: When new development that would be a source of odors is proposed near residences or sensitive receptors, either adequate buffer distances shall be provided (based on recommendations and requirements of the BAAQMD CEQA Air Quality Guidelines) or filters or other equipment/solutions shall be provided to reduce the potential exposure to acceptable levels. Potential mitigation associated with this policy requirement will be coordinated with any required permit conditions from BAAQMD.

When new residential or other sensitive receptors are proposed near existing sources of odors, either adequate buffer distances shall be provided (based on recommendations and requirements of the BAAQMD CEQA Air Quality Guidelines) or filters or other equipment/solutions shall be provided to the source to reduce the potential exposure to acceptable levels.

Status: Applicable. The Project will introduce residents to an area adjacent to the Pinole Valley Road, which accommodates approximately 20,600 average daily trips under existing conditions and up to 30,000 ADT at buildout of the General Plan. In accordance with this measure, the Project is subject to environmental condition of approval AQ-2.

Conclusion and Environmental Conditions of Approval

The proposed Project is within the scope of development projected under the General Plan and Three Corridors Specific Plan, and there would be no additional impacts to air quality beyond those analyzed in the 2010 FEIR. The following environmental conditions of approval would apply to the Project to implement requirements of the 2010 FEIR mitigation measures.

AQ-1: During all construction activities including demolition and ground disturbance activities, on and offsite, the contractor shall implement the latest BAAQMD recommended Best Management Practices (BMPs) to control for fugitive dust and exhaust as follows:

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 shall be covered.
3. All visible mud and 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 practicable. Building pads shall be laid as soon as practicable 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 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.
7. All 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 working condition prior to operation.
8. A publicly-visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints shall be posted on the project site prior to the initiation of construction activities. 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.

AQ-2: High-efficiency particulate filtration systems shall be installed in residential heating, ventilation, and air-conditioning (HVAC) systems for residences within 35 feet of San Pablo Avenue and/or HVAC intake shall be located as far as possible from the San Pablo Avenue right-of-way and no closer than 35 feet from the edge of roadway. Unless air dispersion modeling demonstrates exposure risk below BAAQMD thresholds, the project shall implement the following measures to minimize long-term annual Diesel Particulate Matter exposure for incoming residential occupants:

1. Install forced air mechanical ventilation devices in new residences. Air filtration devices shall be rated MERV13 or higher. To ensure adequate health protection to sensitive receptors (i.e., residents), this mechanical ventilation system will circulate fresh filtered air into the dwelling units.
2. In order to effectively implement this measure, an ongoing maintenance plan for the buildings' HVAC air filtration system shall be required.
3. Ensure that the use agreement and other property documents: (1) require cleaning, maintenance, and monitoring of the affected buildings for air flow leaks, (2) include assurance that new owners or tenants are provided information on the ventilation system, and (3) include provisions that fees associated with owning or leasing a unit(s) in the building include funds for cleaning, maintenance, monitoring, and replacements of the filters, as needed.

4.4. BIOLOGICAL RESOURCES

Would the project:	New Significant Impact Not Identified in 2010 FEIR	More Severe Impact Relative to 2010 FEIR	No Substantial Change Relative to 2010 FEIR	No Change Relative to the 2010 FEIR
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
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 California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
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?	☐	☐	☐	☒

Sources: City of Pinole General Plan/Specific Plan and EIR; Results of Biological Resources Assessment, prepared by Dudek, May 2021; and Arborist Report, prepared by Dudek, June 2021.

General Plan and Specific Plan EIR Findings

Biological resources are protected by federal and state statute including the Federal Endangered Species Act (FESA), the California Endangered Species Act (CESA), the Clean Water Act (CWA), and the Migratory Bird Treaty Act (MBTA) which affords protection to migratory bird species including birds of prey. These regulations provide the legal protection for identified plant and animal species of concern and their habitat.

The 2010 FEIR evaluated potential impacts to biological resources in Chapter 4.7 including the Three Corridors Specific Plan area and determined the following:

- Impact 4.7.1- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would result direct and indirect loss of habitat and individuals of endangered, threatened, rare, proposed, and candidate plant and wildlife species, plant species identified by the California Native Plant Society with a rating of List 1A or 1B (i.e., rare, threatened, or endangered plants) as well as animal and plant species of concern and other non-listed special status species. This would be a less than significant impact with identified policies including Policy OS.3.9.

- Impact 4.7.2- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would result in disturbance, degradation, and removal of riparian habitat, coastal oak woodland, and wetland habitats. This would be a potentially significant impact and reduced to less than significant with mitigation measures 4.7.2a and 4.7.2b.

- Impact 4.7.4- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) could interfere substantially with the movement of native resident or migratory fish or wildlife species. This would be a less than significant impact with incorporation of General Plan policies and actions items.

- Impact 4.7.5- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or any adopted biological resources recovery or conservation plan of any federal or state agency. Therefore, there is no impact.

- Impact 4.7.6- Implementation of the proposed General Plan and associated project components (Three Corridors Specific Plan, and Zoning Code Update), together with past, present, and probable future projects in the Planning Area and larger regional context, would result in a cumulatively significant loss of biological resources in the region. The project's incremental contribution to this significant cumulative impact is less than cumulatively considerable.

As shown on Figure 4.7-2 of the 2010 FEIR, the Project site and vicinity have the potential to support special-status animal species including the pallid bat, san pablo song sparrow, and the Yellow-headed black bird. Based on the species descriptions presented on page 4.7.22 of the 2010 FEIR, neither the san pablo song sparrow nor the yellow-headed black bird is expected to nest onsite since the site lacks salt marshes, tidal slews, and freshwater emergent wetlands.

Biological Resources Assessment

A site-specific Biological Resources Assessment was prepared by Dudek for the subject Vista Woods property and characterizes the existing site conditions and evaluates potential impacts to biological resources that would result from the proposed development. The Assessment includes a review of available data from the California Natural Diversity Database (CNDDB), U.S. Fish and Wildlife Service (USFWS), and the California Department of Fish and Wildlife (CDFW). It also includes a reconnaissance-level site survey that was conducted on May 28, 2021 and evaluated the property for special status species and sensitive natural communities. The information presented in this section is based on the project-specific Biological Resources Assessment prepared for the Project, which is included in **Appendix C** of this document.

Project Consistency with the 2010 FEIR

4.4(a-b) (Special-Status Species and Sensitive Communities) No Substantial Change Relative to the 2010 FEIR: The 2010 FEIR concluded that the Project could result in adverse effects, either directly or indirectly, on species listed as endangered, threatened, rare, proposed, and candidate plant and wildlife species as well as plant species identified by the CNPS with a rating of List 1A or 1B. The 2010 FEIR identifies impacts as less than significant with the implementation of mitigation measures and identified policies and actions.

The subject Vista Woods Project site is located within the Three Corridors Specific Plan Area considered as part of the 2010 FEIR, which is an area with a diversity of common and special status species. In accordance with mitigation measure 4.7.2b, a biological resources evaluation was conducted and concluded that no natural vegetation communities, special status species or sensitive biological resources are expected to occur onsite (**Appendix C**). In accordance with the federal Migratory Bird Treaty Act (MBTA) and Section 3503 of the California Fish and Game Code, the Biological Resources Assessment recommends that preconstruction nesting bird surveys be conducted during the nesting season. This recommendation has been imposed on the project by environmental condition of approval (COA) BIO-1. Furthermore, although no evidence of Pallid Bats have been observed onsite, there is a low potential that bats could occupy the site prior to construction. As such, COA BIO-2 is set forth below and requires a preconstruction survey for the pallid bat and protocol to follow in the event that bats are identified. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact to biological resources relative to the 2010 FEIR.

4.4(c) (Adverse Effects to Jurisdictional Waters) No Change Relative to the 2010 FEIR: The 2010 FEIR determined that implementation of the General Plan and Three Corridors Specific Plan would result in disturbance, degradation, and removal of riparian habitat, coastal oak woodland, and wetland habitats and that impacts would be less than significant with mitigation measures 4.7.2a and 4.7.2b. No creeks or tributaries are located within 100-feet of the project site, and therefore the project is not subject to mitigation measure 4.7.2a. In accordance with mitigation measure 4.7.2b, the Vista Woods Project site was subject to a biological resources evaluation, which did not identify any jurisdictional features onsite. As such, the Project would have no impacts to jurisdictional waters. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

4.4(d) (Adverse Effect on Wildlife Movement) No Change Relative to the 2010 FEIR: The 2010 FEIR determined that implementation of the General Plan and Three Corridors Specific Plan could interfere with movement of native resident or migratory fish or wildlife species and that impacts would be less than significant. Wildlife movement includes seasonal migration, long-term genetic flow, and daily movement within an animal's territory. Barriers to wildlife movement include large developments or major roadways. Movement to and from the subject property is restricted by established urban development and roadways, including San Pablo Avenue to the south. The proposed development of the site will not result in a barrier to wildlife movement. Accordingly, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact to wildlife movement relative to the 2010 FEIR.

4.4(e) (Conflict with Local Ordinances) No Substantial Change Relative to the 2010 FEIR: The 2010 FEIR determined that the General Plan and Three Corridors Specific Plan will not result in a conflict with a local policy or ordinance protecting biological resources. Chapter 17.96 of the Zoning Code addresses tree removal and defines protected trees. The Project proposes removal of all vegetation and trees onsite. In accordance with

Action CC 2.2.1, an Arborist Report (**Appendix C-1**) was conducted for the Vista Woods Project site. The Arborist Report evaluated all trees onsite and concluded that of the 47 trees proposed for removal two Coast Live Oak trees are considered protected by the City of Pinole.

In accordance with Chapter 17.96, removal of protected trees requires a Protected Tree Removal Permit Application and compliance with conditions including planting trees onsite or the payment of an in-lieu fee as set forth in COA BIO-3 below. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact due to a conflict with local ordinances to protect biological resources relative to the 2010 FEIR.

4.4(f) (Conflicts with Habitat Conservation Plans) No Change Relative to the 2010 FEIR: The 2010 FEIR determined that the Project would not conflict with the provision of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved Conservation Plan and that there would be no impacts. There are no established habitat conservation plans applicable to the Project site. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

Applicable 2010 FEIR Mitigation Measures

MM 4.7.2a Require a minimum 100-foot setback from the top of creek banks (Pinole Creek, Catty Creek, Duncan Canyon/Cole Creek, Shady Draw, Faria Creek, and Roble Creek) for development and associated above-ground infrastructure. Analyze the adequacy of a 100-foot setback as a part of project and environmental review, and require a larger setback where necessary to mitigate project impacts.

Status: Not Applicable. The Project site is not located within 100-feet of a creek top of bank.

MM 4.7.2b The City shall require biological resources evaluation for discretionary projects in areas identified to contain or possibly contain plant and/or wildlife species designated by state and federal agencies as rare, threatened, or endangered. This evaluation shall be conducted prior to the authorization of any ground disturbance. For proposed projects in which plant and/or wildlife species designated by state and federal agencies as rare, threatened, or endangered are found, the City shall require feasible mitigation of impacts to those species that ensure that the project does not contribute to the decline of the affected species such that their decline would impact the viability of the species. Such mitigation measures may include providing and permanently maintaining similar quality and quantity of replacement habitat, enhancing existing habitat areas, or paying fees towards an approved habitat mitigation bank. Replacement habitat may occur either on-site or at approved off-site locations. Feasible mitigation shall be determined by the City after the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (now California Department of Fish and Wildlife) are provided an opportunity to comment. Mitigation shall emphasize a multi-species approach to the maximum extent feasible. This may include development or participation in a habitat conservation plan.

Status: Applicable. The Project has complied with this measure by conducting a Biological Resources Assessment (**Appendix C**). Based on recommendations therein, the Project is subject to COA BIO-1 through COA BIO-3, set forth below.

Conclusion and Environmental Conditions of Approval

The Project would not result in any new or more severe impacts to biological resources relative to what was identified the 2010 FEIR. The Project has complied with mitigation measure 4.7.2b through the preparation of a project-specific Biological Resources Assessment, and with Action CC 2.2.1. through the preparation of an Arborist Report, which identifies the following recommendations, imposed as environmental conditions of approval:

BIO-1: To avoid and minimize potential impacts to nesting birds including passerines and raptors, the following measures shall be implemented:

1. Grading or removal of potentially occupied habitat should be conducted outside the nesting season, which occurs between approximately February 1 and August 31.
2. If grading between August 31 and February 1 is infeasible and groundbreaking must occur within the nesting season, a pre-construction nesting bird survey (migratory species, passerines, and raptors) of the potentially occupied habitat (trees, shrubs, grassland) shall be performed by a qualified biologist within 7 days of groundbreaking. If no nesting birds are observed no further action is required and grading shall occur within one week of the survey to prevent "take" of individual birds that could begin nesting after the survey.
3. If active bird nests (either passerine and/or raptor) are observed during the pre-construction survey, a disturbance-free buffer zone shall be established around the occupied habitat until the young have fledged, as determined by a qualified biologist.
4. The radius of the required buffer zone can vary depending on the species, (i.e., 75-100 feet for passerines and 200-500 feet for raptors), with the dimensions of any required buffer zones to be determined by a qualified biologist in consultation with CDFW.
5. To delineate the buffer zone around the occupied habitat, construction fencing shall be placed at the specified radius from the nest within which no machinery or workers shall intrude.
6. Biological monitoring of active nests shall be conducted by a qualified biologist to ensure that nests are not disturbed and that buffers are appropriate adjusted by a qualified biologist as needed to avoid disturbance.
7. No construction or earth-moving activity shall occur within any established nest protection buffer prior to September 1 unless it is determined by a qualified ornithologist/biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones, or that the nesting cycle is otherwise completed.

BIO-2: To avoid impacts to pallid bats, a "species of special concern" in the state, a qualified biologist shall conduct a bat survey 15 days prior to the commencement of ground work. If no special-status bats are found during the survey, then construction may begin without restriction.

If special-status bat species are found roosting on the Project site, the biologist shall determine if there are young present (i.e., the biologist should determine if there are maternal roosts). If young are found roosting in any tree that will be impacted by the Project, such impacts shall be avoided until the young are flying and feeding on their own. A non-disturbance buffer installed with orange construction fencing will be established around the maternity site. The size of the buffer zone will be determined by a qualified bat biologist at the time of the surveys. If adults are found roosting in a tree on the project site but no maternal sites are found, then the adult bats can be flushed, or a one-way eviction door can be placed over the tree cavity for a 48-hour period prior to the tree removal.

BIO-3: Prior to any tree removal or alteration, the applicant shall obtain approval from the City of Pinole to implement a plan for tree preservation and replacement in accordance with the City's Tree Removal Permit. Replacement of protected trees onsite shall be replaced by either planting trees onsite as part of the development over and above the landscaping that would otherwise be required at a value equal to the value of the protected trees that will be removed, or through the payment of an in-lieu fee to the City in an amount equal to the value of the protected trees that will be removed.

4.5. CULTURAL RESOURCES

Would the project:	New Significant Impact Not Identified in 2010 FEIR	More Severe Impact Relative to 2010 FEIR	No Substantial Change Relative to 2010 FEIR	No Change Relative to the 2010 FEIR
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☐	☒	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

Sources: City of Pinole General Plan/Specific Plan and EIR; Archaeological Assessment, prepared by Dudek, May 28, 2021; and Built Environment Inventory and Evaluation Report, prepared by Dudek, August 2021.

General Plan and Specific Plan EIR Findings

The 2010 FEIR evaluated potential impacts to cultural resources in Chapter 4.10 including the Three Corridors Specific Plan area and determined the following:

- Over 40 archaeological and historical investigations, covering approximately 60% of the Pinole General Plan Update Planning Area have been conducted.
- Impact 4.10.1- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) could result in the potential disturbance of cultural resources (i.e., prehistoric sites, historic sites, and isolated artifacts and features) and human remains. This would be a potentially significant impact and reduced to less than significant with mitigation measures 4.10.1a through c.
- Impact 4.10.3- Adoption of the proposed project along with foreseeable development in the region could result in the disturbance of cultural resources and human remains. This contribution is considered cumulatively considerable and would be reduced to less than significant levels with mitigation measures 4.10.1a through c.

Archaeological Assessment

Consistent with mitigation measure 4.10.1a set forth in the 2010 FEIR, an archaeological assessment was completed for the Vista Woods Project site (**Appendix D**). No previously recorded resources were identified within the Vista Woods Area of Potential Effect during the records review and no resources were identified onsite during the April 2021 pedestrian survey.

Historic Evaluation

Consistent with mitigation measure 4.10.1a set forth in the 2010 FEIR, a historical investigation was completed for the Vista Woods Project site (**Appendix D-1**). Buildings and structures onsite were assessed to identify any listed historical resource or resource eligible for listing. The Historic Evaluation determined that none of the buildings or structures onsite are currently listed on any national, state, or local landmark or historic district programs and none are eligible for listing.

Project Consistency with the 2010 FEIR

4.5(a) (Historic Resources) No Change Relative to the 2010 FEIR: The 2010 FEIR concluded that compliance with mitigation measure 4.10.1a and General Plan Action CC.4.2.4, would ensure that subsequent development projects result in less than significant impacts to historical resources. The Project site is currently developed with one building constructed in 1984, a main building constructed in 1948, a shed constructed in 1958, and shipping containers, which date to 2005-2009. Other than the 1948 and 1958 structures, none of the structures onsite are historic resources since they are not over 45 years in age. All existing buildings, structures, and site improvements will be demolished to accommodate the proposed development.

In compliance with mitigation measure 4.10.1a, the existing buildings onsite were evaluated to determine eligibility for listing as historical resources. The existing building at 600 Roble Avenue was built in 1984, which is not eligible for listing since it not older than 45 years in age. As detailed in the Historic Evaluation, neither of the two buildings onsite that are over 45 years in age (the main building and shed located at 1106 San Pablo Avenue) are eligible for listing as historical resources under the National Register of Historic Places, the California Register of Historical Resources, or locally, due to lack of significance. In addition, the Historic Evaluation assessed existing residential properties within close proximity of the Project site, and it was also determined that none of the structures were eligible for listing as an existing district or individually.

Based on the determination that none of the structures evaluated are eligible for listing, the proposed demolition of existing buildings and structures onsite will not result in impacts to an identified or eligible historic district or to an individual historical resource. Therefore, no new significant impacts or substantial increase in the severity of previously identified impacts, due to a substantial adverse change in the significance of a historical resource, would result from the project relative to the 2010 FEIR findings.

4.5(b) (Archaeological Resources) No Substantial Change Relative to the 2010 FEIR: The 2010 FEIR concluded that compliance with mitigation measures 4.10.1a and 4.10.1b, as well as General Plan Actions CC.4.2.4 and 4.2.5, would ensure that subsequent development projects result in less than significant impacts to archaeological resources. In compliance with mitigation measure 4.10.1a, the Project completed an Archaeological Assessment including a database review, records search, and a pedestrian field survey to evaluate the site for evidence of cultural resources with negative results.

Though no archaeological resources were found onsite during the site survey, due to the known occurrence of cultural resources within 0.5 miles of the site, there is a potential of encountering buried cultural resources, which generally include habitation debris such as shellfish detritus. In the event that archaeological resources are present onsite, ground-disturbing activities from project development could result in potentially significant impacts to buried archeological resources, as identified by the 2010 FEIR.

To mitigate potential impacts cultural resources (archeological and/or tribal), the Vista Woods Project has complied with mitigation measure 4.10.1a by conducting an archaeological assessment, which recommends monitoring during all initial ground-disturbance activities on native soils to identify and preserve buried cultural resources if present. In accordance with mitigation measure 4.10.1b, condition of approval (COA) CUL-1 is imposed on the Project, which requires the presence of an archeological monitor with the authority to temporarily halt work to inspect areas as needed. COA CUL-1 also requires that in the event that archaeological resources are exposed during construction, then all earth-disturbing work within 100-feet of the find be immediately stopped until the monitor can evaluate the significance of the find and determine if additional study is warranted. With implementation of COA CUL-1, the Project will result in less than significant impacts from a substantial adverse change in the significance of an archaeological resource. Therefore, no new significant impact or substantial increase in the severity of a previously identified impacts would result from the Project relative to the 2010 FEIR findings.

4.5(c) (Discovery of Human Remains) No Substantial Change Relative to the 2010 FEIR: No evidence suggests that human remains have been interred within the boundaries of the Project site. However, in the event that during ground disturbing activities, human remains are discovered, the Project shall comply with mitigation measure 4.10.1c as imposed by COA CUL-2, which requires the immediate cessation of ground disturbing activities near or in any area potentially overlying adjacent human remains and contacting the City

and County Coroner upon the discovery of any human remains. If it is determined by the Coroner that the discovered remains are of Native American descent, the Native American Heritage Commission shall be contacted immediately. If required, the Project sponsor shall retain a City-qualified archeologist to provide adequate inspection, recommendations, and retrieval. Compliance with COA CUL-2 as well as California Health and Safety Code Section 7050.5 and performance of actions therein will ensure that in the event of accidental discovery of historically significant remains the Project will result in less than significant impacts. Therefore, no new significant impact or substantial increase in the severity of a previously identified impacts would result from the Project relative to the 2010 FEIR findings.

Applicable 2010 FEIR Mitigation Measures

MM 4.10.1a The City shall include the following as an action in the Community Character Element of the General Plan Update. Cultural resources studies (i.e., archaeological, and historical investigations) shall be required for all applicable discretionary projects, in accordance with CEQA regulations, for areas not previously surveyed and/or that are sensitive for cultural resources. The studies should identify cultural resources (i.e., prehistoric sites, historic sites, and historic buildings/structures) in the project area, determine their eligibility for inclusion in the California Register of Historical Resources, and provide feasible and appropriate measures for the protection of any historical resources or unique archaeological resources to maximum extent feasible. Cultural resources studies should be completed by a professional archaeologist or architectural historian that meets the Secretary of the Interior's Professional Qualifications Standards in archaeology.

Status: Applicable. The Project has complied with this measure by conducting an Archaeological Assessment and a Historical Investigation. Based on recommendations therein, the Project is subject to COA CUL-1, set forth below.

MM 4.10.1b The City shall include the following as an action in the Community Character Element of the General Plan Update. Should any cultural resources such as structural features, unusual amounts of bone or shell, artifacts, or architectural remains be encountered during development activities, work shall be suspected within 50 feet of the discovery and the City of Pinole Community Development Department shall be immediately notified. At that time, the City will coordinate any necessary investigation of the discovery with an appropriate specialist (e.g., archaeologist or architectural historian). The project proponent shall be required to implement any mitigation necessary for the protection of cultural resources.

The City of Pinole and the project application shall consider mitigation recommendations presented by a qualified archaeologist or other appropriate technical specialist for any unanticipated discoveries. The City and the project applicant shall consult and agree upon implementation of a measure or measures that the City and applicant deem feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, document, curation, data recovery, or other appropriate measures.

Status: Applicable. Based on the recommendations presented in the Archaeological Assessment, the Project is subject to COA CUL-1, set forth below. COA CUL-1 ensures compliance with this measure.

MM 4.10.1c The City shall include the following as an action in the Community Character Element of the General Plan Update. If human remains are discovered, all work must halt within 50 feet of the find, the City of Pinole Community Development Department shall be notified and the County Coroner must be notified accordingly to Section 5097.98 of the California Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined to be Native American, the coroner will notify the Native American Heritage Commission and the procedures outline in CEQA Section 15064.5(d) and (e) shall be followed.

Status: Applicable. Based on the recommendations presented in the Archaeological Assessment, the Project is subject to COA CUL-2, set forth below. COA CUL-2 ensures compliance with this measure.

Conclusion and Environmental Conditions of Approval

The Project would not result in any new or more severe impacts to archaeological resource relative to what was identified the 2010 FEIR. The Project has complied with mitigation measure 4.10.1a through the preparation of a project specific Historic Evaluation and an Archaeological Assessment, which identifies the following recommendations, imposed as environmental conditions of approval:

CUL-1: To ensure the Project does not result in impacts to buried archaeological resources onsite, if present, the following shall be implemented:

1. **Training**. Prior to commencement of ground-disturbing activities, a professional archaeologist shall conduct a preconstruction training for construction personnel. The training shall familiarize individuals with the potential to encounter prehistoric artifacts or historic-era archaeological deposits, the types of archaeological material that could be encountered within the Project Area, and the requirement for a monitor to be present during initial ground-disturbing activities.
2. **Monitoring**. During initial ground disturbing activities on native soils, a Secretary of the Interior-qualified archeologist shall be onsite to monitor activities. The monitor shall have the authority to temporarily halt work to inspect areas as needed for potential cultural materials or deposits. Daily monitoring logs shall be completed by the monitor.
3. **Post-review Discoveries**. In the event that cultural resources are exposed during construction, all earth work occurring within 100 feet of the find shall be immediately stopped until a Secretary of Interior-qualified Archaeologist inspects the material(s), assess historical significance, consults with Tribes and other stakeholders as needed, and provides recommendations for the treatment of the discovery.
4. **Archaeological Monitoring Report**:. Within 60 days following completion of construction work, an archeological monitoring report shall be submitted to the City. The report shall include the results of the monitoring program (even if negative), a summary of any findings or evaluation/data recovery efforts, and supporting documentation (e.g., daily monitoring logs).

CUL-2: In the event that human remains are encountered within the Project Area during Project-related, ground-disturbing activities, all work must stop, and the County Coroner immediately notified of the discovery. If the County coroner determined that remains are, or are believed to be Native American, then the Native American Heritage Commission must be contacted by the Coroner so that a “Most Likely Descendant” (MLD) can be designated to provide further recommendations regarding treatment of the remains. A Secretary of Interior-qualified Archaeologist should also evaluate the historical significance of the discovery, the potential for additional human remains to be present, and to provide further recommendations for treatment of the resource in accordance with the MLD recommendations. Federal regulations require that Native American human remains, funerary objects, and object of cultural patrimony are handed consistent with the requirement of the Native American Graves Protection and Repatriation Act.

4.6. ENERGY

Would the project:	New Significant Impact Not Identified in 2010 FEIR	More Severe Impact Relative to 2010 FEIR	No Substantial Change Relative to 2010 FEIR	No Change Relative to the 2010 FEIR
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☐	☒
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

Sources: City of Pinole General Plan and EIR.

General Plan and Specific Plan EIR Findings

The 2010 FEIR evaluated potential impacts to energy in Chapter 4.13 including the Three Corridors Specific Plan area and determined the following:

- Impact 4.13.3- Development under the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would increase the consumption of energy associated with electrical, natural gas, and vehicle fuel. This is considered to be a less than cumulatively considerable impact.

Project Consistency with the 2010 FEIR

4.6(a-b) (Energy Consumption) No Change Relative to the 2010 FEIR: The 2010 FEIR determined that the wasteful, inefficient, or unnecessary consumption of energy resources was a less than cumulatively considerable impact. The FEIR acknowledges that the development and operation of proposed residential and commercial land uses will increase energy consumption, but that new development will be more energy efficient pursuant to the requirements of building energy efficiency standards under the current building code.

The subject Vista Woods Project would be required to comply with the latest energy efficiency standards as well as other green building standards under Title 24, which is confirmed through the City's building permit review process and would be consistent with Policy SE 1.4 for meeting applicable green building standards. Through building permit review, the construction plans would be evaluated for inclusion of required green building features, consistent with state and local regulations for applying green building standards in new construction. The Project is consistent with General Plan policies, such as Policy HS.5.2, to promote infill development along corridors and to locate residences near transit and services, which can reduce automobile travel and fuel consumption. Further, the Project is a 100% senior housing development where residents may be retired or those still in the workforce may likely choose to live closer to their place of employment or telecommute. As a high-density residential development subject to the latest building code standard, energy consumption of the Project will not be wasteful or inefficient, nor will it obstruct a state or local plan for renewable energy. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

Applicable 2010 FEIR Mitigation Measures

There are no applicable 2010 FEIR mitigation measures to this Project.

Conclusion and Environmental Conditions of Approval

The Project would not result in any new or more severe impacts to energy relative to what was identified in the 2010 FEIR. The Project consists of development that is required to comply with the latest energy efficiency standards as a new construction and is consistent with the General Plan policies encouraging infill development, at higher densities, near transit. The Project is subject to uniformly applied development standards including review of construction plans by building officials to verify compliance with latest building codes. No environmental conditions of approval related to energy are required.

4.7. GEOLOGY AND SOILS

Would the project:	New Significant Impact Not Identified in 2010 FEIR	More Severe Impact Relative to 2010 FEIR	No Substantial Change Relative to 2010 FEIR	No Change Relative to the 2010 FEIR
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☒	☐
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

Sources: City of Pinole General Plan and EIR; Plan set, prepared by Relativity Architects, dated June 18, 2021; and Geotechnical Report, prepared by Partner, April 7, 2021

General Plan and Specific Plan EIR Findings

The 2010 FEIR evaluated the potential impacts related to geology and soils in Chapter 4.8 and determined the following.

- Impact 4.8.1- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would result in the construction of projects over a seismically hazardous area. This is considered less than significant impact.

- Impact 4.8.2- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would result in increased soil, wind, and water erosion and loss of topsoil, due to grading activities within the Planning Area. This is considered a less than significant impact.

- Impact 4.8.3- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) may result in construction in areas subject to landslide. This impact is less than significant.

- Impact 4.8.4- Implementation of the proposed (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would expose buildings, pavements, and utilities to significant damage as a result of underlying expansive or unstable soil properties. This is considered a less than significant impact.

- Impact 4.8.5- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update), in combination with existing, planned, proposed, and reasonably foreseeable development, would not contribute to cumulative geologic, seismic, and soil impacts, as the impacts would be site-specific and not additive in character. Thus, this impact would be less than cumulatively considerable.

- Impact 4.10.2- Adoption of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) could result in the potential damage or destruction of undiscovered paleontological resources. This is considered a potentially significant impact that may be reduced to a less than significant impact with mitigation measure 4.10.2.

Project Consistency with the 2010 FEIR

4.7(a) (Seismic Hazards) No Substantial Change Relative to the 2010 FEIR: The 2010 FEIR determined impacts from fault rupture, strong ground shaking, seismic-related ground failure, and landslides would be less than significant. The Vista Woods Project site is not located in an active fault zone and would not be affected by fault rupture. The Project proposes to redevelop the site with the majority of the site not featuring significant slopes and portions of the site containing retaining walls for elevation changes so that the property would not be subject to potential effects from landslides. Due to the site's location in the seismically active Bay Area region, as identified and considered in the 2010 FEIR, the site and the city as a whole would experience ground shaking. The Project is subject to construction standards established for seismic safety within the 2019 California Building Code, which would minimize the impact of ground shaking. In accordance with Municipal Code Section 15.36.180, as well as General Plan Policy HS.3.1, a project-specific geotechnical report (**Appendix E**) was prepared that characterizes soil conditions and provides recommendations on foundation design to address potential seismic impacts, such as ground failure. The Project would implement the recommendations of the report and would be consistent with General Plan Policy HS.3.2, HS.3.3, and HS.3.4 that address geologic and seismic hazard mitigations in project design, which are confirmed in the building permit review process, through environmental condition of approval (COA) GEO-1. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

4.7(b) (Erosion) No Substantial Change Relative to the 2010 FEIR: The 2010 FEIR concluded impacts from soil erosion would be less than significant. The Vista Woods Project site is not located on a slope that may result in substantial soil erosion. The site is previously disturbed from past uses and would be redeveloped with new grading, paving, and landscaping. Projects that create more than 10,000 square feet of impervious surfaces would be subject to implementation of stormwater management facilities to treat site runoff per Contra Costa County C.3 requirements. Best management practices for soil erosion and sediment control are required to be applied during construction. The Vista Woods Project is subject to these requirements, which minimize impacts of pollutants and sediment in runoff to stormwater systems. Pursuant to Municipal Code Section 15.36.190, Erosion and Sediment Control Plan, the project is subject to COA GEO-2, which requires preparation and implementation of a final erosion and sediment control plan. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

4.7(c) (Geologic Stability) No Substantial Change Relative to the 2010 FEIR: The 2010 FEIR determined that impacts from geologic or soil instability would be less than significant. Based on regional geologic maps, the Vista Woods Project site is located on Monterey Formation soils, which are composed of sedimentary residual soil that increases in density with depth and gradually transitions from soil to partially weathered bedrock. However, the Monterey formation in the area sometimes contains diatomite, a soft and porous sedimentary rock, which in its weathered form is not suitable for heavily-loaded building foundations. Additionally, highly plastic silt, a potentially expansive material, was observed at the surface of the site. In accordance with Municipal Code Section 15.36.180, the Project level geotechnical report identifies site conditions and provides recommendations for grading and foundation design accordingly. COA GEO-1 requires the incorporation of recommendations in the geotechnical report into the final construction plans.

The design of the Project would include grading with cuts of up to seven feet in depth to establish the new finished floor excavations. Based on location of cut areas, stepped excavations can be used without the need for shoring. A portion of construction would result in a partial basement, where the basement walls will function as retaining walls. New building excavations identified around the property boundaries are expected to be three feet or less, where shoring is not required. Site retaining walls planned to be repaired or replaced would be reviewed during the building permit process, which is imposed as COA GEO-3.

As a standard part of the Building Permit review process, soils and geotechnical reports are required for new construction and recommendations. In accordance with Municipal Code Section 15.36.180, a geotechnical report was prepared, and recommendations therein imposed as COA GEO-1. Incorporation of the recommendations in the geotechnical report and review for building code compliance through the Building Permit process would confirm the Project would not result in location a building on unstable geologic units or cause on- or off-site geologic impacts. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

4.7(d) (Expansive Soils) No Substantial Change Relative to the 2010 FEIR: The 2010 FEIR concluded that there would be less than significant impacts due to expansive soils. The site-specific geotechnical report identified conditions on the site and determined the proposed development was feasible with implementation of recommendations in the report. The Project would be required to incorporate the recommendations of the geotechnical report per COA GEO-1 and comply with building code standards for seismic safety. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

4.8(e) (Septic Tanks) No Change Relative to the 2010 FEIR: The Project would not include the use of septic tanks and connection to the existing sewer line along San Pablo Avenue is planned.

4.9.(f) (Paleontological Resources) No Substantial Change Relative to the 2010 FEIR: The 2010 FEIR determined that impacts on unique geologic or paleontological resources would be less than significant with implementation of mitigation measure 4.10.2. The potential to uncover undiscovered paleontological resources was considered in the 2010 FEIR, and mitigation measure 4.10.2 was created to include a policy requiring work to be suspended within 50 feet of any discovered potentially unique paleontological resources and for the City to be contacted to coordinate further investigation. A search of the University of California Museum of

Paleontology database did not identify any evidence of significant paleontological resources within the Pinole General Plan Planning Area. Nonetheless, in compliance with mitigation measure 4.10.2, the Project is subject to COA GEO-4, which identifies protocol in the event that paleontological resources are encountered during construction activities. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

Applicable 2010 FEIR Mitigation Measures

The following mitigation measures from the 2010 FEIR mitigation monitoring and reporting program apply to the project:

MM 4.10.2 The City shall include the following as an action in the Community Character Element of the General Plan Update. Should any potentially unique paleontological resources (fossils) be encountered during development activities, work shall be suspended within 50 feet of the discovery and the City of Pinole Planning Division of the Development Services Department shall be immediately notified. At that time, the City will coordinate any necessary investigation of the discovery with a qualified paleontologist. The project proponent shall be required to implement any mitigation necessary for the protection of paleontological resources.

The City and the project applicant shall consider the mitigation recommendations of the qualified paleontologist for any unanticipated discoveries. The City and the project applicant shall consult and agree upon implementation of a measure or measures that the City and project applicant deem feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures.

Status: Applicable. The Project is subject to this mitigation measure, through COA GEO-4 below.

Conclusion and Environmental Conditions of Approval

The proposed Project is within the scope of development projected under the General Plan and Three Corridors Specific Plan, and there would be no additional impacts to geology and soils beyond those analyzed in the 2010 FEIR. The following environmental conditions of approval would apply to the Project to implement General Plan policies, Municipal Code requirements, and mitigation measure 4.10.2.

GEO-1: The applicant shall incorporate the recommendations of the Project Geotechnical Report prepared by Partner Assessment Corporation (April 7, 2021) into construction drawings. As determined by the City Engineer and/or Chief Building Official, all applicable recommendations set forth in the in Geotechnical Report prepared for the subject property, including, but not limited to grading, excavation, foundations systems, and compaction specifications shall be incorporated. Final grading plan, construction plans, and building plans shall demonstrate that recommendations set forth in the geotechnical reports and/or to the satisfaction of the City Engineer/Chief Building Official have been incorporated into the design of the project.

Nothing in this mitigation measure shall preclude the City Engineer and/or Chief Building Official from requiring additional information to determine compliance with applicable standards. The geotechnical engineer shall inspect the construction work and shall certify to the City, prior to issuance of a certificate of occupancy that the improvements have been constructed in accordance with the geotechnical specifications.

GEO-2: Prior to issuance of a grading permit, an erosion control plan along with grading and drainage plans shall be submitted to the City Engineer for review. The project shall comply with stormwater management requirements and guidelines established by Contra Costa County under the Contra Costa Clean Water Program Stormwater C.3 Guidebook and incorporate Contra Costa County best management practices for erosion and sediment control for construction. All earthwork, grading, trenching, backfilling, and compaction operations shall be

conducted in accordance with the City's Erosion Control requirements, Chapter 15.36.190 of the Municipal Code. Plans shall detail erosion control measures such as site watering, sediment capture, equipment staging and laydown pad, and other erosion control measures to be implemented during all construction activity.

GEO-3: All site retaining walls, including walls planned to be repaired or replaced, shall be identified, and submitted for building permit review.

GEO-4: Should any potentially unique paleontological resources (fossils) be encountered during development activities, work shall be suspended within 50 feet of the discovery and the City of Pinole Planning Division of the Development Services Department shall be immediately notified. At that time, the City will coordinate any necessary investigation of the discovery with a qualified paleontologist. The project proponent shall be required to implement any mitigation necessary for the protection of paleontological resources. The City and the project applicant shall consider the mitigation recommendations of the qualified paleontologist for any unanticipated discoveries. The City and the project applicant shall consult and agree upon implementation of a measure or measures that the City and project applicant deem feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures.

4.8. GREENHOUSE GAS EMISSIONS

Would the project:	New Significant Impact Not Identified in 2010 FEIR	More Severe Impact Relative to 2010 FEIR	No Substantial Change Relative to 2010 FEIR	No Change Relative to the 2010 FEIR
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☐	☒
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

Sources: City of Pinole General Plan and EIR; BAAQMD 2017 Bay Area Clean Air Plan; and BAAQMD CEQA Guidelines May 2017; Air Quality and Greenhouse Gas Analysis, prepared by Dudek, April 28, 2021.

General Plan and Specific Plan EIR Findings

The 2010 FEIR evaluated the potential impacts related to greenhouse gas emissions in Chapter 4.13 and determined the following.

- Impact 4.13.1- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would result in greenhouse gas emissions that would not be anticipated to conflict with the goals of AB 32 nor result in a significant impact on the environment. This is a less than cumulatively considerable impact.

- Impact 4.13.2- Environmental effects of climate change are not currently expected to result in adverse impacts to the General Plan Update Planning Area. This is a less than cumulatively considerable impact.

- Impact 4.13.3- Development under the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would increase the consumption of energy associated with electrical, natural gas, and vehicle fuel. This is a less than cumulatively considerable impact.

Project Consistency with the 2010 FEIR

4.8(a) (Greenhouse Gas Generation) No Change Relative to the 2010 FEIR: The 2010 FEIR determined that greenhouse gas emissions generation for buildout of the General Plan was a less than significant impact. The greenhouse gas emissions (GHG) generated by the Vista Woods Project are projected to be below levels that would have a potentially significant impact on the environment. The Air Quality and Greenhouse Gas Analysis (**Appendix B**) prepared for the Project identifies the 2017 BAAQMD CEQA Air Quality Guidelines threshold of significance as 1,100 MT CO2e per year. The calculated amortized construction and operational GHG emissions are projected to result in 760.45 MT CO_2e per year. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

4.8(b) (Conflict with Plans) No Change Relative to the 2010 FEIR: The 2010 FEIR determined that the project would have a less than significant cumulatively considerable impact with implementation of relevant policies and actions in the General Plan. The Vista Woods Project is consistent with the General Plan and Three Corridors Specific Plan as a higher density residential infill development along the San Pablo Avenue corridor within a priority development area (PDA) pursuant to the Sustainable Community Strategy (SCS). The proposed development is consistent with the type of development envisioned along the San Pablo Avenue corridor that provides high density development on a corridor served by transit. The Project is compatible with the policies of the General Plan that promote a reduction in greenhouse gas generation through the lower vehicle trip demand and application of energy efficiency standards and green building requirements under the California Building Code. Furthermore, the Project is consistent with the SCS by introducing high density housing within an identified PDA. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

Applicable 2010 FEIR Mitigation Measures

The following mitigation measures from the 2010 FEIR mitigation monitoring and reporting program apply to the project:

MM 4.3.2 The proposed General Plan Update shall include a policy that would require the use of BAAQMD-approved criteria air pollutant reducing Basic Construction Mitigation Measures to all future construction projects within the GPU Planning Area where feasible whether or not construction-related emissions exceed applicable Thresholds of Significance.

Status: Applicable. The Project shall comply with the latest BAAQMD best management practices, which is imposed by COA AQ-1.

Conclusion and Environmental Conditions of Approval

The proposed Project is within the scope of development projected under the General Plan and Three Corridors Specific Plan, and there would be no additional impacts from greenhouse gas emissions beyond those analyzed in the 2010 FEIR. The Project shall implement COA AQ-1 to apply BAAQQMD best management practices that minimize construction-related emissions.

4.9. HAZARDS AND HAZARDOUS MATERIALS

Would the project:	New Significant Impact Not Identified in 2010 FEIR	More Severe Impact Relative to 2010 FEIR	No Substantial Change Relative to 2010 FEIR	No Change Relative to the 2010 FEIR
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒

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?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

Sources: City of Pinole General Plan/Specific Plan and EIR; Phase 1 Environmental Site Assessment Report, prepared by Partner Engineering and Science, Inc., March 5, 2021; and Contra Costa County Local Hazard Mitigation Plan, January 2018.

General Plan and Specific Plan EIR Findings

The 2010 FEIR evaluated potential impacts to Hazards and Human Health in Chapter 4.6 including the Three Corridors Specific Plan area and determined the following:

- Impact 4.6.1- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) could include the routine transportation, use, or disposal of hazardous materials on the Planning Area Transportation network. This is considered a less than significant impact.

- Impact 4.6.2- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) could include land uses that have the potential to result in an increased risk of release of hazardous materials. This is considered a less than significant impact.

- Impact 4.6.3- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) could consist of land uses having the potential to result in an increased risk of release of hazardous materials. This is considered a less than significant impact.

- Impact 4.6.4- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) could impair implementation of or physically interfere with the City's Emergency Operations Plan (EOP). This is considered a less than significant impact.

- Impact 4.6.5- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would not cumulatively contribute to regional hazards. This is less than cumulatively considerable.

Phase I Environmental Site Assessment

A Phase I Environmental Site Assessment (ESA) was conducted for the Vista Wood Project site in March 2021, in accordance with the American Society for Testing and Materials (ASTM) Standard Practice E1527-13 (**Appendix F**). The Phase I ESA discusses the Recognized Environmental Conditions (RECs), Controlled Recognized Environmental Conditions (CRECs), Historical Recognized Environmental Conditions (HRECs), and environmental issues of the project site. The Phase I ESA included research and review of regulatory information, a site reconnaissance of the project site and neighboring properties, and interviews with individuals with knowledge of the site and surrounding properties. The Phase I ESA did not identify RECs, CRECs, or HRECs during the course of the assessment. The following environmental issues were identified:

- An active gasoline fueling station is located upgradient from the project site and has been operational since at least 1985. Soil vapor sampling determined that concentrations of volatile organic compounds associated with the gasoline station did not exceed the calculated future residential screening level. No impacts to groundwater were indicated and no further investigation was recommended.

- The project site formerly contained one 400-gallon petroleum underground storage tank (UST), which was removed on August 13, 2002, with Contra Costa Health Service Oversight. No leaks were detected, and no further action was required. The former UST is not considered a significant environmental concern.

- The existing building at 1106 San Pablo Avenue is currently used by an HVAC contractor and formerly used for auto repair. The undocumented industrial use, exterior storage and assumed use of hazardous materials in former auto repair operations, is an environmental concern.

- The building at 600 Robles Avenue was formerly equipped with a spray booth, but no evidence of spray both was observed during the site reconnaissance. Reported concentration of VOCs in soil vapor samples did not exceed the calculated future residential soil gas screening levels for these compounds. The former spray booth does not appear to present a significant environmental concern.

- There is a potential that asbestos-containing materials (ACB) and/or lead based paint (LBP) are present within buildings onsite. A written Operations and Maintenance Plan for the safe management of materials is recommended.

Project Consistency with the 2010 FEIR

4.9(a-b) (Routine Transport, Upset and Accident Involving Release) No Change Relative to the 2010 FEIR: The 2010 FEIR concluded that the proposed Project including implementation of the Three Corridors Specific Plan would result in the use, storage, and transport of hazardous materials, that accidental release could constitute a hazard to the public or the environmental, and that compliance with local, state, and federal regulation would ensure impacts are less than significant.

Demolition and construction activities of the subject Project will result in the temporary presence of potentially hazardous materials including, but not limited to, fuels and lubricants, paints, solvents, insulation, electrical wiring, and other construction related materials onsite. Although potentially hazardous materials may be present onsite during construction, the Project is required to comply with all existing federal, state, and local safety regulations governing the transportation, use, handling, storage, and disposal of potentially hazardous materials. Once construction activities are complete there will not be ongoing use or generation of hazardous materials onsite due to the proposed residential use.

Additionally, prior to the commencement of site preparation, a Storm Water Pollution Prevention Plan (SWPPP) that includes Best Management Practices will be prepared and implemented during all construction activities (see Hydrology/Water Quality discussion below). Accordingly, the impact of hazards to the public or the

environment through the routine transport, use, or disposal of hazardous materials from the proposed Project would be less than significant. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

4.9(c) (Emit or Handle Hazardous Material within ¼ Mile of School Sites): The 2010 FEIR concluded that the implementation of the Three Corridors Specific Plan would result in a less than significant impact due to the release and exposure of hazardous material onto schools sites.

The subject Project site is not located within a quarter mile of a school. The nearest schools, Shannon Elementary School, Collins Elementary School, and Saint Joseph's Catholic School, are located over one-half mile southwest and southeast of the Project site. There are no activities associated with the proposed Project that would pose a threat to schools from the release or handling of hazardous materials. As such, the Project would not result in any increased risk of exposure to existing schools. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

4.9(d) (Existing Hazardous Materials Sites) No Substantial Change Relative to the 2010 FEIR: The 2010 FEIR concluded that implementation of the Three Corridors Specific Plan would result in less than significant impacts due to release and exposure of hazardous materials.

In accordance with Action HS.3.5.4, which directs that at the time of new development, any known or discovered hazardous materials should be cleaned up and mitigated, a Phase I Environmental Site Assessment (ESA) was prepared. The Phase I ESA identified environmental concerns associated with past uses onsite and the potential presence of asbestos-containing materials (ACM) and/or lead based paint (LBP), due to the age of the building onsite. The existing building at 600 Roble Avenue was found to contain 3 to 5% asbestos and did not detect lead concentrations above the regulatory threshold. As proposed by the Project, all onsite buildings and structures will be demolished and removed. Demolition of buildings with ACM or LBP above regulatory thresholds have the potential to be released and/or expose workers during construction. The Phase I ESA identified potential present of ACM and LBP and recommended the development of an operation and maintenance plan for the safe removal and disposal of ACM and LBP, where present. As such environmental condition of approval (COA) HAZ-1 shall be imposed on the Project requiring the preparation and implementation of an Operations and Maintenance Plan as presented below. Similarly, due to the identified environmental concern associated with past uses onsite, the Project is subject to environmental COA HAZ-2, which requires best management practices regarding potential soil hazards in the event that unknown contamination is encountered during construction. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

4.9(e) (Public Airport Land Use Plans) No Change Relative to the 2010 FEIR: The 2010 FEIR concluded that no impacts related to airports or airstrips would occur as no airports are located within or proximate to the planning area. The subject Project site is not located within the boundaries of an airport land use plan, nor is it located in direct proximity to a private airstrip. The nearest airports are the San Rafael Airport (approximately 12 miles west) and Buchanan Field Airport (approximately 13 miles east) of the City. Accordingly, no impacts associated with airport-related hazards will result from the proposed Project. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

4.9(f) (Impair Emergency Response Plan) No Change Relative to the 2010 FEIR: The 2010 FEIR concluded that the Three Corridors Specific plan would not impair implementation of or physically interfere with the City's Emergency Operations Plan (EOP) and impacts would be less than significant. The City of Pinole responds to emergencies in accordance with the adopted Emergency Operations Plan. The City provides emergency preparedness information through Pinole Ready including alerts, response, recovery, and mitigation.

As a multi-family residential development generally consistent with the Three Corridors Specific Plan, none of the proposed Project improvements are expected to impair the implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. The Project includes adequate onsite access to accommodate emergency vehicles, including adequate driveway/drive aisle width and turning radii. Furthermore, the Fire Department has reviewed the project, including proposed emergency vehicle access and

circulation, in accordance with General Plan Action HS.4.1.3, and determined that improvements do not impair movement of emergency vehicles and equipment. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

4.9(g) (Wildland Fire Hazards) No Change Relative to the 2010 FEIR: No impacts related to wildland fire hazard would occur as the Project area is surrounded by urban development and roadways and is not adjacent to a wildland urban interface fire hazard area. The Project site is categorized as a Non-VHFHZ by CAL FIRE and surrounded by land designated as Non-VHFHZ on all sides. Based on the site's location outside of a designated fire hazard zone and the proximity of the site to existing fire stations, there would be no impacts related to the exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

Applicable 2010 FEIR Mitigation Measures

There are no applicable 2010 FEIR mitigation measures to this Project.

Conclusion and Environmental Conditions of Approval

The Project would not result in any new or more severe impacts to human health caused by hazards or hazardous materials relative to what was identified the 2010 FEIR. The Project is generally consistent with the Three Corridors Specific Plan by introducing residential development on an infill and underutilized site. The following environmental conditions of approval are imposed in compliance with the General Plan Actions and Policies/Goals set forth in the Three Corridors Specific Plan regarding hazardous materials and waste:

HAZ-1: Prior to issuance of any demolition, grading, or building permit, the project applicant shall prepare an Operations and Maintenance (O&M) Safety Plan and receive approval of the O&M Plan by the City of Pinole Fire Department. The purpose of the O&M Plan is to establish protocol for the removal and disposal of asbestos containing materials (ACM) and lead-based paint (LBP) and shall also address the potential for accidental discovery of hazards and hazardous materials during construction activities including groundwater contamination. Said plans shall be implemented during demolition and construction activities including the following:

a) Conduct construction work in accordance with CCR Title 8 Section 1532.1, Lead in Construction.

b) Use appropriate site control measures such as wet methods to minimize airborne dust generation.

c) Identify construction worker protection plan for handing ACM and LBP.

d) Characterize material export and proper disposal requirements.

e) Notification requirements to the Bay Area Air Quality Management District in accordance with the Asbestos Demolition and Renovation Program requirements.

HAZ-2: The Project applicant shall implement all of the following Best Management Practices (BMPs) regarding potential soil hazards:

a) Soil generated by construction activities shall be stockpiled onsite in a secure and safe manner or if designated for off-site disposal at a permitted facility, the soil shall be loaded, transported, and disposed of in a safe and secure manner. All contaminated soils determined to be hazardous or non-hazardous waste must be adequately profiled (sampled) prior to acceptable reuse or disposal at an appropriate off-site facility. Specific sampling and handling and transport procedures for reuse or disposal shall be in accordance with applicable local, state, and federal agencies laws, in particular, the

Regional Water Quality Control Board (RWQCB), the Contra Costa Environmental Health Services Department, and the City of Pinole.

b) Groundwater pumped from the subsurface shall be contained onsite in a secure and safe manner, prior to treatment and disposal, to ensure environmental and health issues are resolved pursuant to applicable laws and policies of the City of Pinole, the RWQCB and/or Contra Costa Environmental Health Services Department.

4.10. HYDROLOGY AND WATER QUALITY

Would the project:	New Significant Impact Not Identified in 2010 FEIR	More Severe Impact Relative to 2010 FEIR	No Substantial Change Relative to 2010 FEIR	No Change Relative to the 2010 FEIR
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☒	☐
i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Sources: City of Pinole General Plan and EIR; Plan set, prepared by Relativity Architects, dated June 18, 2021; FEMA FIRMette maps, accessed August 2021; and Department of Conservation Tsunami Hazard Area Map, accessed August 2021.

General Plan and Specific Plan EIR Findings

The 2010 FEIR evaluated the potential impacts related to hydrology and water quality in Chapter 4.9 and determined the following.

- Impact 4.9.1- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) could result in the discharge of polluted runoff during construction and operation of future urban development potentially violating water quality standards or otherwise substantially degrading surface water quality. This is considered a potentially significant impact that may be reduced to less than significant with implementation of mitigation measure 4.9.1.

- Impact 4.9.2- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) could result in the degradation of groundwater quality resulting from construction and operation of future urban development. This is considered a less than significant impact.

- Impact 4.9.4- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would increase impervious surfaces and alter drainage conditions and rates in the Planning Area, which could result in increased runoff and potential flooding impacts. This is considered a less than significant impact.

- Impact 4.9.5- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) and its associated project components could create or contribute stormwater runoff water which would exceed the capacity of the City's stormwater drainage system. This is considered a less than significant impact.

- Impact 4.9.6- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) could result in the development of urban uses within areas subject to flooding, dam failure inundation, and/or sea level rise. This is considered a potentially significant impact that may be reduced to less than significant with implementation of mitigation measures 4.9.6a, b, and c.

- Impact 4.9.7- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update), in combination with other development activities within the watershed, would contribute to a cumulative degradation of water quality from construction activities and increased urban runoff. This is considered a potentially cumulatively considerable that may be reduced to less than cumulatively considerable with implementation of mitigation measure 4.9.1.

- Impact 4.9.8- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) could increase impervious surfaces and alter drainage conditions and rates in the Planning Area, which could contribute to cumulative flood conditions in the Pinole Creek watershed and San Pablo Bay. This is cumulatively considerable that may be reduced to less than cumulatively considerable with implementation of mitigation measures 4.9.1, 4.9.6a, 4.9.6b, and 4.9.6c.

Stormwater Regulation

The State Water Resources Control Board is responsible for implementing the Clean Water Act and has issued a statewide General Permit for construction, which acts to minimize pollutant runoff to surface waters and groundwater. The San Francisco Bay Regional Water Quality Control board is the regional entity facilitating regional implementation and has issued a Municipal Stormwater National Pollutant Discharge Elimination System (NPDES) permit to Contra Costa County and its 19 cities. The NPDES permit applies to development projects and establishes runoff requirements. The City's coverage under the NPDES requires compliance with the Contra Costa Clean Water Program Stormwater C.3 Guidebook to protect water quality, which includes implementing best management practices (BMP) to control runoff pollutants and guidance on Low Impact Development (LID) to management stormwater on site. Further, these requirements for stormwater control under the NPDES permit are integrated into the Pinole Municipal Code as Chapter 8.20. The City of Pinole Department of Public Works has jurisdiction over stormwater management in the City and is a co-permittee of the Contra Cota County Clean Water Program.

Project Consistency with the 2010 FEIR

4.9(a) (Discharge) No Substantial Change Relative to the 2010 FEIR: The 2010 FEIR determined that the Project would have a potentially significant impact due to discharge of polluted runoff that may be reduced to less than significant with implementation of mitigation measure 4.9.1a. The Vista Woods Project is required to implement applicable requirements for stormwater control and apply best management practices to the Project's management of stormwater on site, in compliance with Pinole Municipal Code Chapter 8.20. Compliance with municipal code requirements is a standard condition of approval for construction, which has been incorporated as condition of approval (COA) HYD-1. With adherence to the municipal code, the Project satisfies mitigation measure 4.9.1. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

4.9(b) (Groundwater) No Substantial Change Relative to the 2010 FEIR: The 2010 FEIR determined that the Project would have a less than significant impact to degradation of groundwater and no impact on the extraction of groundwater. The intensification of uses in the Specific Plan area was determined to potentially result in the increase in runoff containing pollutants that could degrade groundwater quality. Implementation of General Plan policies, Municipal Code, and applicable requirements from the Contra Costa Clean Water Program Stormwater C.3 Guidebook were identified as measures that would reduce impacts to less than significant levels. The Vista Woods Project would comply with these requirements pursuant to COA HYD-1. The Project does not involve the extraction and use of groundwater. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

4.9(c)(i-iv) (Drainage Pattern) No Substantial Change Relative to the 2010 FEIR: The 2010 FEIR determined that impacts due to increase in impervious surfaces and alteration of drainage conditions, as they relate to erosion, runoff, and drainage flow would be less than significant with general plan policies and mitigation. Implementation of General Plan policies, Municipal Code, and applicable requirements from the Contra Costa Clean Water Program Stormwater C.3 Guidebook were identified as measures that would reduce impacts to less than significant levels. The Project would comply with these requirements and is subject to COA HYD-1.

The City is served by an existing storm drain system, and the City Engineering Division confirms infrastructure capacity for new developments. As new development has the potential to incrementally increase the use of storm drains, the City has established development impact fees for new developments such as multifamily residential projects to contribute to any needed new or expanded infrastructure. Payment of development impact fees, as well as review of final drainage plans, is a requirement in the building permit process. Development impacts fees are used to maintain and expand the City storm drain system as warranted. The Vista Woods Project is consistent with the development potential analyzed in the 2010 FEIR, includes storm drain infrastructure onsite with connections to the existing storm drain system, and is subject to impact fees. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

4.9(d) (Flood Hazard, Tsunami, or Seiche Zones) No Change Relative to the 2010 FEIR: The 2010 FEIR determined that implementation of the General Plan and Specific Plan would have a potentially significant impact to flood hazards that may be reduced to less than significant with mitigation measures 4.9.6a, 4.9.6b, and 4.9.6c.

The Vista Woods Project is not expected to be impacted by flood hazards. As presented in the National Flood Hazard Layer FIRMette maps accessed from the Federal Emergency Management Agency (FEMA) in August 2021, the site is located in Zone X, outside of the Special Flood Hazard Areas. The Project site is not located on the shoreline and is no subject to associated risk of flooding in these areas. Tsunamis and seiches were not identified as significant flood hazards that may affect the Project: San Francisco Bay significantly attenuates tsunamis before they reach Pinole and the Project is located approximately 1,800 feet from the shoreline with existing development and changing topography between the site and the shore. The site is not located in a tsunami hazard area, as shown in the California Department of Conservation Tsunami Hazard Area Map, accessed August 2021. As a result, there is no substantial risk of flood hazards, tsunamis, or seiches causing

release of pollutants due to project inundation. Mitigation measures 4.9.6a, 4.9.6b, and 4.9.6c address the impacts of sea level rise. However, the site is not located in an area identified as a shoreline area vulnerable to sea level rise, and the corresponding mitigation measures are not appliable to the Vista Woods Project. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

4.9(e) (Water Quality Control and Sustainable Groundwater) No Substantial Change Relative to the 2010 FEIR: The 2010 FEIR determined that new development would be required to adhere to pertinent local, state, and federal agency requirements, and that with mitigation measure 4.9.1 and compliance with water quality regulation including NPDES requirements, potential impacts to water quality would be reduced to less than significant levels.

The Vista Woods Project would meet this requirement through compliance with procedures under Chapter 8.20 of the Municipal Code, as identified in COA HYD-1, and would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Furthermore, in accordance with General Plan Action OS.8.8.2, the Project is subject to COA HYD-2, which requires compliance with the City's NPDES permit including preparation and implementation of an approved Stormwater Pollution Prevention Plan (SWPPP). Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

Applicable 2010 FEIR Mitigation Measures

MM 4.9.1 General Plan Action HS.2.1.3 shall be revised as follows: Establish land use controls for properties that abut Pinole Creek in order to minimize potential conflicts between flood, resource protection and recreational goals. Adopt new development regulations that require applications for new development projects to adhere to pertinent local, state, and federal agency requirements. City Development regulation for properties that abut the Creek shall specify appropriate land uses and ensure that new projects will take into account issues including flow velocity, sediment load, and volume within Pinole Creek.

Status: Applicable. The project is required to adhere to local, state, and federal regulations on stormwater management. Compliance with the Pinole Municipal Code, under Chapter 8.20, requires implementation of best management practices. Application of the latest guidance on best management practices from Contra Costa Country, including the Contra Costa Clean Water Program Stormwater C.3 Guidebook, is a standard condition of new development and has been imposed as environmental COA HYD-1.

MM 4.9.6a The City of Pinole shall work with the Bay Conservation and Development Commission (BCDC) to implement strategies to adapt to Bay-related impacts of climate change. The City shall work with BCDC to develop a vulnerability analyses for its shoreline and to address shoreline management issues that cross jurisdictional boundaries.

Status: Not Applicable. The Project is not located within 100 feet of the shoreline and is not located in an area identified as a shoreline area vulnerable to sea level rise in the 2010 FEIR.

MM 4.9.6b The City will continue to implement the Municipal Code flood protection standards for development within a FEMA-designated Special Flood Hazard Area and will coordinate with FEMA and other agencies in the evaluation and mitigation of future flooding hazards that may occur as a result of sea level rise.

Status: Not Applicable. The Project is not located in a flood hazard area.

MM 4.9.6c The City shall pursue funding for adequate protection from sea level rise and continued subsidence and construction in areas threatened by sea level rise and/or settlement.

Status: Not Applicable. The Project is not located in an area identified as a shoreline area vulnerable to sea level rise in the 2010 FEIR.

Conclusion and Environmental Conditions of Approval

The proposed Project is within the scope of development projected under the General Plan and Three Corridors Specific Plan, and there would be no additional impacts to hydrology beyond those analyzed in the 2010 FEIR. The following environmental conditions of approval would apply to the project to implement requirements of the 2010 FEIR mitigation measures.

HYD-1: Prior to issuance of a building permit, the applicant shall prepare a design-level Stormwater Management Plan that incorporates stormwater management requirements and best management practices, per Pinole Municipal Code Chapter 8.20 and Contra Costa County Clean Water Program requirements, including the Contra Costa Clean Water Program Stormwater C.3 Guidebook and demonstrates that the storm drain system has adequate capacity to serve the project. The Stormwater Management Plan shall be reviewed and accepted by the City Engineer.

HYD-2: Prior to issuance of a grading permit, the applicant shall file a Notice of Intent with the RWQCB and demonstrate compliance with the Statewide General Permit for Construction Activities.

In accordance with the National Pollution Discharge Elimination System (NPDES) regulations, the applicant shall prepare and implement a project-specific Stormwater Pollution Prevention Plan, including an erosion control plan, for grading and construction activities. The SWPPP shall address erosion and sediment control during all phases of construction, storage and use of fuels, and use and clean-up of fuels and hazardous materials. The SWPPP shall designate locations where fueling, cleaning and maintenance of equipment can occur and shall ensure that protections are in place to preclude materials from entering into storm drains. The contractor shall maintain materials onsite during construction for containments and clean-up of any spills. The applicant shall provide approval documentation from the RWQCB to the City verifying compliance with NPDES.

4.11. LAND USE AND PLANNING

Would the project:	New Significant Impact Not Identified in 2010 FEIR	More Severe Impact Relative to 2010 FEIR	No Substantial Change Relative to 2010 FEIR	No Change Relative to the 2010 FEIR
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

Sources: City of Pinole General Plan and EIR; RF Site Report, prepared by SiteSafe August 24, 2021

General Plan and Specific Plan EIR Findings

The 2010 FEIR evaluated potential impacts to Land Use in Chapter 4.1 including the Three Corridors Specific Plan area and determined the following:

- Impact 4.1.1- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would not physically divide an established community. This is considered no impact.

- Impact 4.1.2- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would not result in conflicts with relevant land use planning documents within and adjacent to the City of Pinole. This is considered a less than significant impact.

- Impact 4.1.3 Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) could create incompatibilities between existing and future land uses within the City of Pinole. This is considered a less than significant impact.

- Impact 4.1.4- When considered with existing, proposed, approved, and reasonably foreseeable development in the region, implementation of the proposed project has the potential to contribute to cumulative land use conditions, resulting in significant impacts to the physical environment. The proposed project would have a less than cumulatively considerable contribution to this impact.

Project Consistency with the 2010 FEIR

4.1(a) (Physically Divide Community) No Change Relative to the 2010 FEIR: The 2010 FEIR determined that the General Plan and Specific Plan is a refinement of the established urban form and allows for more intensive, concentrated development; it does not divide or separate a portion of the community. The Vista Woods Project is consistent with the projected land use of the site and involves development on privately-owned parcels. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

4.1(b) (Conflict with Land Use) No Substantial Change Relative to the 2010 FEIR: The 2010 FEIR determined impacts to be less than significant with implementation of General Plan policies. The Project site is within City limits and the proposed use is consistent with the land use for the site as provided under the General Plan and Specific Plan. The proposed multifamily residential development is a use permitted by right under the Pinole Municipal Code. The Project is located on a site with an existing wireless facility. However, the Radiofrequency Emissions study (**Appendix G**) analyzing the effect on the Project determined the facility does not have the potential to exceed the federal allowable limits for RF exposure at the proposed building location. The Federal Communications Commission establishes the General Public Maximum Permissible Exposure (MPE) limit, where 100 percent of the MPE represents the limit. The modeling for the Project analyzes a “worst case scenario” that assumes a maximum RF density output as if the antennas were to operate at full power at all times. RF exposure to the Project is not close to approaching the MPE, with the greatest exposure modeled at approximately 21 percent of the MPE. This occurs at a point 20 feet above the ground level near the western façade of the building. All areas on site that may by occupied by residents or accessible by the public are shown to be below the MPE limit. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

Applicable 2010 FEIR Mitigation Measures

There are no applicable 2010 FEIR mitigation measures to this Project.

Conclusion

The Project would not result in any new or more severe impacts to land use relative to what was identified in the 2010 FEIR. The Project consists of development consistent with the land use provided under the General Plan and Specific Plan.

4.12. MINERAL RESOURCES

Would the project:	New Significant Impact Not Identified in 2010 FEIR	More Severe Impact Relative to 2010 FEIR	No Substantial Change Relative to 2010 FEIR	No Change Relative to the 2010 FEIR
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Sources: City of Pinole General Plan and EIR

General Plan and Specific Plan EIR Findings

The 2010 FEIR did not identify any known significant mineral resources of value to the region and residents of the state within the City.

Project Consistency with the 2010 FEIR

4.12(a-b) (Mineral Resources) No Change Relative to the 2010 FEIR: The City does not contain known significant mineral resources of value. As such, the Project would result in no impact to mineral resources. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

Applicable 2010 FEIR Mitigation Measures

There are no applicable 2010 FEIR mitigation measures to this Project.

Conclusion

The Project would not result in any new or more severe impacts to mineral resources relative to what was identified in the 2010 FEIR.

4.13. NOISE

Would the project:	New Significant Impact Not Identified in 2010 FEIR	More Severe Impact Relative to 2010 FEIR	No Substantial Change Relative to 2010 FEIR	No Change Relative to the 2010 FEIR
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose	☐	☐	☐	☒

people residing or working in the project area to excessive noise levels?	

Sources: City of Pinole General Plan and EIR; Technical Noise Memo prepared by Dudek, April 27, 2021; and Predictive Analysis of Drill Operations prepared by Dudek, August 17, 2021.

General Plan and Specific Plan EIR Findings

The 2010 FEIR evaluated potential impacts to Noise in Chapter 4.5 including the Three Corridors Specific Plan area and determined the following:

- Impact 4.5.1- The proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) could 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 of applicable standards of other agencies. However, the proposed Pinole General Plan Update's mitigating policies and actions ensure the impact will be less than significant. Therefore, noise impacts associated with the development and operation of land uses of the proposed General Plan Update would be less than significant.

- Impact 4.5.2- Construction activities associated with the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) could result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project and could 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 of applicable standards of other agencies. This impact would be considered less than significant.

- Impact 4.5.3- The proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) could result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project and could result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan, as a result of increased traffic on the roadway network. In addition, future development of noise-sensitive land uses could be exposed to roadway and/or railroad noise levels in excess of the City's noise standards. This impact would be considered potentially significant. With implementation of mitigation measures 4.5.3a and 4.5.3b, the impact would be less than significant.

- Impact 4.5.4- Sensitive land uses would not be exposed to aircraft noise in excess of applicable noise standards for land use compatibility. This is considered a less than significant impact.

- Impact 4.5.5- Subsequent development associated with the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) could result in new noise-sensitive land uses encroaching upon existing or proposed stationary noise sources or new stationary noise sources encroaching upon existing or proposed noise-sensitive land uses. This could result in a substantial permanent increase in ambient noise levels in the project vicinity above existing levels or could 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 of applicable standards of other agencies. As a result, this impact is considered potentially significant. With implementation of General Plan policies, the impact would be less than significant.

- Impact 4.5.6- The proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) could result in exposure of persons to or generation of excessive groundborne vibration levels. As a result, this impact is considered potentially significant. With implementation of mitigation measures 4.5.6, the impact would be less than significant.

- Impact 4.5.7- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update), in combination with other development in nearby areas in Contra Costa County, would increase transportation noise along area roadways. This would be a cumulatively

considerable impact. A statement of overriding consideration was adopted for the significant and unavoidable impact.

Project Consistency with the 2010 FEIR

4.13(a) (Increase in Ambient Noise) No Substantial Change Relative to the 2010 FEIR: The 2010 FEIR determined that implementation of the General Plan may have potentially significant impacts that could be reduced to less than significant with implementation of mitigation measures. The Visa Woods Project consists of development along the San Pablo Avenue corridor, where the General Plan and Specific Plan identify high density residential development. Consistent 2010 FEIR mitigation measures 4.5.3a and 4.5.6, a project level noise study (**Appendix H**) was conducted that evaluates ambient noise conditions and provides recommendations to minimize potential noise conflicts.

Although the effect of ambient noise on the Project is not considered an environmental impact under CEQA, the Project is subject to condition of approval (COA) NOI-1, which requires sound-rated windows on exposed building faces in order to achieve the interior noise standard of 45 dBA (A-Weighted sound level), pursuant to mitigation measure 4.5.3a. In general, projects exposed to greater than 65 dBA and not exceeding 75 dBA day-night average sound level (DNL) require a minimum of 5 dB additional sound attenuation for buildings with noise-sensitive uses. Portions of the façade were calculated to be exposed to 67.8 to 68.4 dBA DNL. However, typical new multifamily buildings are constructed to provide a minimum of 25 dB exterior to interior noise reduction and the difference (68BA – 25dBA = 43dBA) brings the project within the interior 45 dBA standard. Nonetheless, to ensure compliance with HUD noise standards, all windows in the south-facing residential units of Wing 1 shall have a Sound Transmission Class rating of 30 or greater, as required by environmental COA NOI-1.

At operation, the Vista Woods Project, as a residential development, would not result in substantial change to the ambient noise environment. Development introduced onsite will result in noise at operation, including from outdoor uses, HVAC and mechanical equipment, driveways, and parking areas. However, development is consistent with the General Plan and Specific Plan and noise level from residential uses were captured in the 2010 FEIR. The greatest potential noise source generated by the proposed Project would be vehicular traffic. From traffic generated by the development, the project-specific noise study found a potential 3 percent increase in traffic volume along San Pablo Avenue associated with the Project, which corresponds with an approximately 0.1 dBA increase in traffic noise, which would be imperceptible. Like any use within the City, the ongoing use at the Vista Woods Project would be subject to the noise regulations under Chapter 8.35 of the Pinole Municipal Code and any enforcement actions to remediate violations.

The 2010 FEIR concluded that construction activities could result in a substantial temporary or periodic increase in ambient noise levels, and that impacts would be less than significant. Due to the short-term nature of construction noise, the intermittent frequency, and required compliance with Municipal Code standards, the 2010 FEIR determined that construction noise level increases will not result in an increase in ambient noise levels in excess of applicable standards. During construction, the Vista Woods Project site will result in a temporary noise increase from construction equipment and materials delivery. Construction activities and associated noise would be restricted by construction hours under Section 15.02.070 of the Pinole Municipal Code, which is intended to minimize nuisances due to construction noise and has a standard allowance of work from 7:00am to 5:00pm on weekdays that are non-federal holidays. Compliance with construction hours and best management practices to minimize noise during construction activities is imposed under COA NOI-2.

Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

4.13(b) (Groundborne Vibration) No Substantial Change Relative to the 2010 FEIR: The 2010 FEIR determined that impacts from groundborne vibrations could be potentially significant and would be reduced to less than significant levels with implementation of mitigation measure 4.5.6. A report covering groundborne vibrations was prepared for the Vista Woods project (**Appendix H-1**) to address mitigation measure 4.5.6 and determine whether additional control measures are required. The Project would not result in long-term and excessive groundborne vibration and groundborne noise as a completed residential use after construction.

During the course of construction, the Project may generate temporary and intermittent groundborne vibrations and noise through the operation of construction equipment, material hauling, and earthwork. Specifically, groundborne vibration from soldier pile drilling would have the most noticeable effect. The report determined that groundborne vibration during pile drilling would be distinctly perceptible but is not expected to cause risk of building damage. In accordance with mitigation measure 4.5.6, recommendations from the vibration report to minimize short term vibration impacts are imposed as COA NOI-3. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

4.13(c) (Airfield Noise) No Change Relative to the 2010 FEIR: The 2010 FEIR determined that noise impacts due to the proximity of an airfield would be less than significant. The City is not located within the vicinity of a private airstrip or an airport land use plan, nor is it within two miles of a public airport or public use airport. The nearest airports are the San Rafael Airport (approximately 12 miles west) and Buchanan Field Airport (approximately 13 miles east) of the City. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

Applicable 2010 FEIR Mitigation Measures

MM 4.5.3a The following policy shall be incorporated into the Health and Safety Element under Goal HS.8: New development of noise-sensitive land uses will not be permitted in areas exposed to existing or planned transportation noise sources that exceed the levels specified in Policy HS.8.1 of the proposed General Plan Update, unless the project design includes measures to reduce exterior and interior noise levels to those specified in Policy HS.8.1 of the proposed General Plan Update.

Status: Applicable. A project-specific noise study has been prepared and identifies ambient noise levels that exceed standards due to existing traffic noise on San Pablo Road. To ensure that interior noise standard are achieved, and that the project does not introduce a potential conflict due to noise incompatibility, the Project is subject to Condition of Approval NOI-1, which requires sound-rated windows on facades with elevated noise levels.

MM 4.5.3b The following policy shall be incorporated into the Health and Safety Element under Goal HS.8: Require site-specific noise studies for noise-sensitive projects which may be affected by railroad noise, and incorporate noise attenuation measures into the project design to reduce any impacts.

Status: Not applicable. The Project is not located in the immediate vicinity to a railroad.

MM 4.5.6 The following mitigation shall be implemented as an action under Policy HS 8.1: Require the use of temporary construction noise control measures including the use of temporary noise barriers, temporary relocation of noise-sensitive land uses, or other appropriate measures as mitigation for noise generated during construction of public and/or private projects.

Status: Applicable. A project-specific noise study was prepared that identifies practicable noise reduction strategies, which are imposed as environmental conditions of approval NOI-2 and NOI-3 set forth below.

Conclusion an Environmental Conditions of Approval

The Project would not result in any new or more severe impacts to noise relative to what was identified the 2010 FEIR. The Project is in compliance with mitigation measure 4.5.3a and 4.5.6, through the project noise analysis, with implementation of the following recommendations in the noise report:

NOI-1: All windows in the south-facing residential units of Wing 1 shall have a Sound Transmission Class (STC) rating of 30 or greater. The building shall be constructed in compliance with noise

exposure standards under 24 CFR Part 51, Subpart B in maintaining interior noise levels not exceeding 45 dBA DNL.

NOI-2: Construction activities including delivery and hauling shall comply with construction hours as provided under Pinole Municipal Code Section 15.02.070 and in accordance with construction best management practices for minimizing noise including:

1. Limit construction hours to between 7 a.m. and 5:00 p.m., Monday through Friday. Construction activities shall be prohibited on Saturday, Sundays, and State, Federal and Local Holidays, unless an exception is granted in accordance with the Municipal Code.
2. Delivery of materials and equipment to the site and truck traffic coming to and from the site is restricted to the same construction hours specified above.
3. Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
4. Unnecessary idling of internal combustion engines shall be strictly prohibited.
5. Locate stationary noise-generating equipment such as air compressors or portable power generators as far as possible from sensitive receptors. If they must be located near receptors, adequate muffling (with enclosures where feasible and appropriate) shall be used to reduce noise levels at the adjacent sensitive receptors. Any enclosure openings or venting shall face away from sensitive receptors.
6. Acoustically shield stationary equipment located near residential receivers with temporary noise barriers.
7. Utilize "quiet" air compressors and other stationary noise sources where technology exists.
8. Construction staging areas shall be established at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction activities.
9. Locate material stockpiles, as well as maintenance/equipment staging and parking areas, as far as feasible from existing residences.
10. Control noise from construction workers' radios to a point where they are not audible at existing residences bordering the project site.
11. The contractor shall prepare a detailed construction 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.
12. 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. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include in it the notice sent to neighbors regarding the construction schedule.

NOI-3: Consistent with typical contractor procedures, prior to the start of soldier pile drilling site work, detailed photographic documentation of existing conditions at the adjacent offsite residences shall be performed by an experienced engineer, inspector, or other qualified professional. The photographic documentation shall be collected with sufficient information to establish a baseline, against which a post drilling inspection will be compared to verify that no building damage attributed to the construction activities of the Vista Woods project occurred. In the event that damage to structures is identified and attributed to Vista Woods construction, then the contractor shall be repair damaged structures.

4.14. POPULATION AND HOUSING

Would the project:	New Significant Impact Not Identified in 2010 FEIR	More Severe Impact Relative to 2010 FEIR	No Substantial Change Relative to 2010 FEIR	No Change Relative to the 2010 FEIR
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Sources: City of Pinole General Plan and EIR.

General Plan and Specific Plan EIR Findings

The 2010 FEIR evaluated potential impacts to Population and Housing in Chapter 4.2 including the Three Corridors Specific Plan area and determined the following:

- Impact 4.2.1- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would result in slight population, housing, and employment increases within the Planning Area.

- Impact 4.2.2- Subsequent land use activities associated with implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would not result in the displacement of substantial numbers of housing units and/or persons. This is a less than significant impact.

- Impact 4.2.3- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would not result in substantial population, housing, and employment increases in Contra Costa County and the Bay Area. This is less than cumulatively considerable.

Project Consistency with the 2010 FEIR

4.14(a) (Induced Substantial Growth). No Change Relative to the 2010 FEIR: The 2010 FEIR determined that impacts from induced substantial population growth would be less than significant. The Project is consistent with the planned development potential analyzed in the 2010 FEIR. As an infill development, the Project is located within a developed environment served by existing infrastructure. The 2010 FEIR indicated directing growth toward infill and redevelopment sites in areas close to existing transit, retail, jobs, infrastructure, and other amenities would reduce the potential environmental impacts of growth in the City. The Project proposes 179 residential units, which is within the projected 1,076 units for the Specific Plan corridors analyzed in the 2010 FEIR. Since the adoption of the General Plan and Specific Plan, the city has not experienced substantial change in residential units in the Specific Plan corridors – a 33-unit development at 811 San Pablo Avenue is a major residential development and was approved recently in 2021. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

4.14(b) (Displacement). No Change Relative to the 2010 FEIR: The 2010 FEIR determined that impacts from displacement would be less than significant. The General Plan and Specific Plan have designated areas for the development of housing in the San Pablo Corridor and throughout the City, with the intent to increase the amount and variety of housing opportunities. The Vista Woods Project involves the development of new housing units without demolishing existing housing units or causing displacement. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact

relative to the 2010 FEIR.

Applicable 2010 FEIR Mitigation Measures

There are no applicable 2010 FEIR mitigation measures to this Project.

Conclusion

The Project would not result in any new or more severe impacts to population and housing relative to what was identified in the 2010 FEIR. The Project consists of development consistent with the projected growth under the General Plan and Specific Plan.

4.15. PUBLIC SERVICES

Would the project:	New Significant Impact Not Identified in 2010 FEIR	More Severe Impact Relative to 2010 FEIR	No Substantial Change Relative to 2010 FEIR	No Change Relative to the 2010 FEIR
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☒	☐
Fire Protection?	☐	☐	☒	☐
Police Protection?	☐	☐	☒	☐
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☒	☐

Sources: City of Pinole General Plan and EIR.

General Plan and Specific Plan EIR Findings

The 2010 FEIR evaluated potential impacts to Public Services and Utilities in Chapter 4.12 including the Three Corridors Specific Plan area and determined the following:

Fire Protection

- Impact 4.12.1.1- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) could result in increased demand for fire protection and emergency medical services within the GPU Planning Area. This is a less than significant impact.

- Impact 4.12.1.2- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update), along with other planned development and redevelopment within the GPU Planning Area, would contribute to the cumulative demand for fire protection and emergency medical services. This is less than cumulatively considerable impact.

Law Enforcement Services

- Impact 4.12.2.1- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would result in increased demand for law enforcement services within the GPU Planning Area. This is a less than significant impact.

- Impact 4.12.2.2- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update), along with other planned development and redevelopment within the GPU Planning Area, would contribute to the cumulative demand for law enforcement services. This is less than cumulatively considerable impact.

Public Schools

- Impact 4.12.3.1- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would increase student enrollment within the WCCUSD and may require new school facilities and related services. This is a less than significant impact.

- Impact 4.12.3.2- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update), as well as potential development within the cumulative setting area, would result in cumulative public school impacts. These public school impacts are less than cumulatively considerable.

Park and Recreational Facilities

- Impact 4.12.4.1- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would increase the demand for existing facilities and require additional parks and recreational facilities. This is a less than significant impact.

- Impact 4.12.4.2- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update), in combination with other reasonably foreseeable development, would require additional park and recreation facilities within the GPU Planning Area. This would be less than cumulatively considerable.

Project Consistency with the 2010 FEIR

4.15(a) (Public Services) No Substantial Change Relative to the 2010 FEIR: The 2010 FEIR concluded that, with policies set forth in the General Plan, public services impacts would be less than significant. Given the focus on infill development and the compact urban form in the General Plan and Specific Plan, the 2010 FEIR determined impacts to emergency response times would be less than significant. Fire and police services from City Hall are expected to be able to reach the site with adequate response times and meet General Plan policies CS 2.1 and CS2.2, which calls for a 5-minute response time. Typical automobile travel time between City Hall and the project site is approximately 4 minutes, and police and emergency vehicles would be able to meet the response times established by General Plan policies. The 2010 FEIR determined that General Plan buildout would increase demand for fire and emergency response services but indicated that agencies would receive a portion of funding from property taxes and development impact fees. Impacts to fire and emergency services and response were determined to be less than significant and be less than cumulatively considerable. Similarly, impacts on police services were determined to be less than significant and less than cumulatively considerable by the 2010 FEIR, which found that no new or expanded facilities were needed to maintain service and funding from property taxes on new development would be received as development occurs. Upon review of the development plans, the Police and Fire Department did not indicate concerns about response times or the capacity to provide services to the Project. New development projects are subject to the payment of development impact fees to fund the incremental increase in demand for services. The Project is subject to development impacts fees and is consistent with the development potential analyzed in the 2010 FEIR. As such, the Project would not result in an impact more significant than the less than significant impact identified in the 2010 FEIR.

The Vista Woods Project would not create direct impacts on educational services provided by schools. The 2010 FEIR determined that impacts associated with increased student enrollment to schools would be less than

significant. The Project as a senior housing development would not directly contribute to increased student enrollment. The 2010 FEIR also determined that the cumulative impacts of General Plan buildout to schools would be less than cumulatively considerable. The determination indicated that new schools planned within the West Contra Costa Unified School District (WCCUSD) would have the capacity to accommodate future development. Additionally, development would be subject payment of school fees to mitigate potential impacts. WCCUSD monitors development in the district and assesses school fees on new residential and commercial development to fund facilities improvements. Confirming the payment of school fees is a standard part of the building permit process. As a senior housing development, the Project would not substantially contribute to demands for school services in the district and would be subject to development impact fees. Therefore, the Project would result in less than significant impacts to school consistent with the determination made in the 2010 FEIR.

The increase in demand for parks and recreational facilities associated with population growth and development was considered in the 2010 FEIR. The Vista Woods Project is consistent with the projected build out analyzed in the General Plan and Specific Plan EIR, which determined impacts to existing parks and recreational resources would be less than significant and cumulative impacts would be less than cumulatively considerable. As described in 4.16 Recreation, new residents would make use of existing parks and recreational facilities in the City of Pinole, and the Project is subject to development impact fees to fund maintenance, acquisition, and development of City of Pinole facilities. Therefore, the Project will not result in a new significant impact or substantially increase the severity of a previously identified significant impact relative to the 2010 FEIR.

Applicable 2010 FEIR Mitigation Measures

There are no applicable 2010 FEIR mitigation measures to this Project.

Conclusion

The Project would not result in any new or more severe impacts to public services relative to what was identified in the 2010 FEIR. The Project consists of development consistent with the General Plan and Specific Plan and would offset potential incremental increase in the use of services through required development impact fees.

4.16. RECREATION

Would the project:	New Significant Impact Not Identified in 2010 FEIR	More Severe Impact Relative to 2010 FEIR	No Substantial Change Relative to 2010 FEIR	No Change Relative to the 2010 FEIR
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Sources: City of Pinole General Plan/Specific Plan and EIR; Parks and Recreation Master plan, prepared 2007; and City of Pinole Master Fee Schedule.

General Plan and Specific Plan EIR Findings

The 2010 FEIR evaluated potential impacts to recreational parks and facilities in Chapter 4.12, Public Services and Utilities and determined the following:

- Impact 4.12.4.1- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would increase the demand for existing facilities and require additional parks and recreational facilities. This is a less than significant impact.

- Impact 4.12.4.2- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update), in combination with other reasonably foreseeable development, would require additional park and recreation facilities within the GPU Planning Area. This would be less than cumulatively considerable.

Project Consistency with the 2010 FEIR

4.16(a-b) (Deterioration of Parks, Additional Recreational Facilities) No Change Relative to the 2010 FEIR: The Project is not expected to result in substantially more significant impacts to parks or recreational facilities as compared to the impacts analyzed in the 2010 FEIR. The Project site is situated within 2 miles of several existing parks including Fernandez Park, located approximately 0.66 miles east of the project site, Bayfront Park, located approximately 1.3 miles northeast of the site, Pinole Shores Park, located approximately 1.4 miles northwest of the site, and Meadow Park, located approximately 0.4 miles southwest of the site. Furthermore, East Bay Regional Park District (EBRPD) manages approximately 95,000 acres of open space and preserves providing regional amenities to Pinole residents, including access to the San Francisco Bay Trail.

While new residents introduced by the Project would increase use of surrounding parks and recreational facilities, the anticipated increase would be consistent with the expected use generated by the Three Corridors Specific Plan. Existing recreational facilities are sufficient to meet active and passive recreational demands of the new residents. Additionally, the City of Pinole periodically updates the Recreation Park and Facility Master Plan in accordance with General Plan Action CS.1.3.4 to monitor the condition of recreational facilities and ensure community needs are adequately addressed. Pursuant to Action CS.3.1.1 the Master Plan is used to identify areas that underserved by recreation facilities and identify opportunity sites that may satisfy existing and projected park and recreation needs. The Project is in compliance with Action CS3.4.3, which directs that the Recreation Department review development proposals. The Recreation Department was routed the development proposal and determined that existing park and recreation facilities were adequate to meet recreational demands of the Project. Additionally, the Project, as proposed includes the construction of on-site passive and active recreational amenities including outdoor gathering areas, bench seating, and exercise equipment. Furthermore, as a multi-family development, the Project is subject to Development Impact Fees, levied by the City per Resolution No. 2018029/4-3-2018 or as subsequently amended, which are used to fund maintenance, acquisition, and development of Pinole parks and recreational facilities

Potential impacts to recreational facilities within the City of Pinole as a result of new development have been identified and analyzed under the 2010 FEIR, which concludes that build out will have a less than significant impact on recreational facilities. Because the project will not induce substantial population growth and is within the population growth anticipated in the General Plan and the Three Corridors Specific Plan, the Project would not put further pressure on recreational amenities thereby requiring construction or expansion of such facilities relative to what was analyzed in the 2010 FEIR. The Project will not substantially increase the use of existing neighborhood and regional parks such that physical deterioration of facilities would occur or be accelerated. Therefore, impacts related to the increased use, deterioration, construction, or expansion of recreational facilities are not expected to be new or more severe relative to the 2010 FEIR as a result of the proposed Project.

Applicable 2010 FEIR Mitigation Measures

There are no applicable 2010 FEIR mitigation measures to this Project.

Conclusion and Environmental Conditions of Approval

The Project would not result in any new or more severe impacts to recreation relative to what was identified in the 2010 FEIR. The Project consists of development anticipated by the Three Corridors Specific Plan and

General Plan Update and will be subject to all applicable Development Impact Fees including the Parks and Recreation fee.

4.17. TRANSPORTATION

Would the project:	New Significant Impact Not Identified in 2010 FEIR	More Severe Impact Relative to 2010 FEIR	No Substantial Change Relative to 2010 FEIR	No Change Relative to the 2010 FEIR
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d) Result in inadequate emergency access?	☐	☐	☐	☒

Sources: City of Pinole General Plan/Specific Plan and EIR; Technical Advisory on Evaluating Transportation Impacts in CEQA, prepared by the State of California Governor's Office of Planning and Research, December 2018; and Vehicle Miles Traveled (VMT) Screening Analysis for the Vista Woods Apartments, prepared by Dudek, May 3, 2021.

General Plan and Specific Plan EIR Findings

The 2010 FEIR evaluated potential impacts to Traffic and Circulation in Chapter 4.4 including the Three Corridors Specific Plan area and determined the following:

- Impact 4.4.1- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would result in an increase in freeway mainline volumes during the AM and PM peak hours. This is considered a significant impact and remains significant and unavoidable with mitigation.

- Impact 4.4.2- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would result in an increase in volume to capacity (v/c) ratios and a decrease in LOS on study intersections during the AM and PM peak hours. This is considered a potentially significant impact and is reduced to less than significant with modification to the LOS policy allowing for LOS F standard within Old Town.

- Impact 4.4.3- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would conflict with the multimodal transportation service objectives (MTSOs) identified in the West County Action Plan. This is considered a significant impact and is remains significant and unavoidable with mitigation.

- Impact 4.4.4- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would result in changes to the circulation network. However, the changes would not increase hazards due to design features or incompatible uses. This is considered a less than significant impact.

- Impact 4.4.5- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would result in an increase in vehicular traffic and changes to the

roadway network, which may potentially increase emergency access conflicts. This is considered a less than significant impact.

- Impact 4.4.6- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would support continued and expanded transit use, bicycling, and walking throughout the city, although changes to the roadway network may potentially affect bus operations. This is considered a less than significant impact.

- Impact 4.4.7- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would result in cumulative transportation impacts. This impact is cumulatively considerable and is reduced to less than cumulatively considerable with mitigation.

- Impact 4.4.8- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would conflict with the multimodal transportation service objectives (MTSOs) identified in the West County Action Plan. This impact is cumulatively considerable and remains significant and unavoidable with mitigation.

- Impact 4.4.9- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) in combination with pending or approved major projects within the city as well as consideration of regional activities, would result in changes to the circulation network. The changes are not anticipated to increase hazards due to design features or incompatible uses. This impact is less than cumulatively considerable.

- Impact 4.4.10- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) in combination with pending or approved major projects within the city as well as consideration of regional activities, would result in an increase in vehicle traffic and changes to the roadway network, which may potentially increase emergency access conflicts. This impact is less than cumulatively considerable.

- Impact 4.4.11- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) in combination with pending or approved major projects within the city as well as consideration of regional activities, would support continued and expanded transit use, bicycling, and walking throughout the city, although changes to the roadway network may potentially effect bus operations. This impact is cumulatively considerable and with mitigation is reduced to less than cumulatively considerable.

Level of Service to Vehicle Miles Traveled

Level of service (LOS) has historically been used as a standard measure of traffic service within the City of Pinole. Pursuant to SB 743, as of July 1, 2020, lead agencies are required to evaluate transportation impacts of a project using a Vehicle Miles Traveled (VMT) metric, which focuses on balancing the needs of congestion management with statewide goals related to infill development, promotion of public health through increased active transportation facilitated by closer proximity to alternative travel modes and reduces greenhouse gas emissions.

In December 2018, the California Governor's Office of Planning and Research (OPR) published the Technical Advisory on Evaluating Transportation Impacts in CEQA, which provides recommendations for evaluating a project's transportation impact using a VMT metric, thresholds of significance, and mitigation measures. Pursuant to Government Code Section 15064.3(b), lead agencies have discretion to select the most appropriate methodology for evaluating a project's VMT impacts. To date (August 2021) the City of Pinole has not adopted VMT thresholds or guidelines. In the absence of locally adopted thresholds at the time of review of the proposed Project, the City of Pinole is relying upon recommendations set forth in OPR's Technical Advisory. The Advisory provides qualitative thresholds for which projects are considered to have characteristics that will not result in significant VMT impacts and are therefore not required to conduct transportation analyses. Examples of project types that screen out from additional VMT impact analysis include projects that are 100% affordable.

Vehicle Miles Traveled (VMT) Screening Analysis

In accordance with SB 743, a VMT Screening Analysis was completed for the Vista Woods Project (**Appendix F**). Based on the proposed 100% affordable residential development, and pursuant to OPR's Technical Advisory, the Project is not subject to a VMT analysis since affordable infill projects generally improve the jobs to housing balance, shorten commute lengths, and locate residents closer to goods and services.

Project Consistency with the 2010 FEIR

4.17(a) (Conflicts with Plans, Policies, Ordinances) No Substantial Change Relative to the 2010 FEIR: The 2010 FEIR concluded that the project would conflict with the multimodal transportation service objectives (MTSOs) identified in the West County Action Plan and that impact would be significant and unavoidable.

The Project is proposed consistent with the land use designation established through the Three Corridors Specific Plan and impacts to plans, policies and ordinances were analyzed in the 2010 FEIR. As a residential use serving seniors, it was assumed that the Project would generate 3.70 daily trips per unit, per Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition Code 252, Senior Adult Housing – Attached. Accordingly, the proposed 179-unit development would generate 662 daily trips (**Appendix F**). Trips associated with the Project will increase the volume of trips on Project area roadways and highways at a level anticipated by the 2010 FEIR. As such, the Project will not introduce new or more severe impacts due to a conflict with policies related to level of service beyond those identified in the 2010 FEIR.

4.17(b) (Conflict with 15064.3(b) VMT) No Substantial Change Relative to the 2010 FEIR: Following adoption of the General Plan, Specific Plan, and Zoning Code Updates, and certification of the 2010 FEIR, SB 743 went into effect, changing how transportation impacts must be evaluated under CEQA. Under SB 743, lead agencies are required to evaluate transportation impacts of a project using a VMT metric which focuses on balancing the needs of congestion management with statewide goals.

Absent locally adopted VMT thresholds, the City of Pinole is relying upon the Technical Advisory for Evaluating VMT issued by the Office of Planning Research. As provided in the Technical Advisory, several types of land use projects screen out from the need for further VMT analysis if certain criteria are met. The proposed Project screens out from the need for further analysis as a 100% affordable residential development. The Project is 100% affordable and will provide permanent housing for seniors. Therefore, consistent with OPR's VMT Advisory it can be qualitatively determined that the Project will not conflict with CEQA Guidelines section 15064.3, subdivision (b). The Project is within the scope of development anticipated under the Three Corridors Specific Plan and no additional or more severe transportation-related impacts beyond what have been identified in the 2010 FEIR will result from the Project. Nonetheless, in an effort to minimize VMT for all new development projects, in accordance with Action SE.7.8.1, a project-level Transportation Demand Management (TDM) Plan shall be prepared and submitted to the Development Services Department for review and approval prior to issuance of abuilding permit, as set forth in environmental condition of approval (COA) TRAN-1.

4.17(c) (Geometric Design Feature Hazard) No Substantial Change Relative to the 2010 FEIR: The FEIR concluded that transportation and circulation improvements would be implemented over time and would be designed and constructed consistent with local, regional, and federal standards and as such would result in less than significant impacts related to a geometric design features or incompatible uses.

Access to the site is currently provided from San Pablo Avenue, Roble Avenue, Encina Avenue, and Madrone Avenue. The Project proposes to maintain existing driveways on Roble Avenue and Madrone Avenue. The access driveway on San Pablo Avenue will be restricted to exit only. No new driveways will be introduced by the Project. Sight lines at existing driveways on San Pablo Avenue and Madrone Avenue are clear in each direction. Sight lines at the driveway on Robles Avenue are partially obscured due to the roadway curvature and existing vegetation. Vegetation will be removed to accommodate the proposed Project and new landscaping, signage, and lighting will be introduced by the Project in compliance with the public realm standards and design guidelines established in the Three Corridors Specific Plan. Consistent with Policy 1 (safe and efficient movement of people and goods) and Policy 2 (road and intersection improvements to consider pedestrian and traffic safety) of the Three Corridors Specific Plan, the Project is subject to COA TRAN-2 which requires that signage, trees, and landscaping elements within a clear vision triangle, including driveways and street intersections, maintain clear sight lines at heights between two and one-half feet and seven feet, pursuant to Pinole Zoning Code Section 17.98.020.

Existing pedestrian crosswalks are located east of Roble Avenue and at Madrone Avenue, providing pedestrian access across San Pablo Avenue. Proposed improvements associated with the Vista Woods Project would not present geometric design feature hazards associated with the existing pedestrian sidewalks. The Vista Woods Project is subject to transportation impact fees, which are levied to install needed improvements, including updates to existing pedestrian facilities and crosswalks as determined by the City Engineer.

As such, the Project will not result in new or more severe impacts beyond those analyzed in the 2010 FEIR by way of introducing a hazardous design feature.

4.17(d) (Emergency Access) No Substantial Change Relative to the 2010 FEIR: The FEIR concluded that impacts related to emergency access would be less than significant as individual development projects are required to be reviewed for compliance with emergency access standards set forth by the City's public safety officials. The proposed Project will not result in insufficient emergency access during construction or at operation. Road closure is not anticipated by the proposed Project, although temporary encroachment may occur during construction activities. At least one lane of travel in each direction will be maintained on San Pablo Avenue during temporary construction activities and will not substantially impair emergency access. Any proposed road closure associated with construction activities will be coordinated with the Fire and Public Works Departments.

The Project's circulation plan has been reviewed and meets all requirements of the Fire and Public Works Departments. Site circulation was determined to be adequate, including sufficient street widths and drive aisles to allow for fire truck access to the proposed project. Therefore, emergency vehicle access would be adequate under the proposed project and there would be no new or more severe impacts related to emergency access as a result of project implementation relative to the 2010 FEIR.

Applicable 2010 FEIR Mitigation Measures

MM 4.4.11 Work with WestCAT and AC Transit to construct additional bus turnouts along the following Pinole Roadways; San Pablo Avenue, Pinole Valley Road, Appian Way & Fitzgerald Drive.

Status: Applicable. Coordination has been carried out with transit providers on San Pablo Avenue. The existing bus stop will be relocated west of the existing driveway on San Pablo Avenue westbound, at the Project site frontage and will be improved with a standard bus shelter.

Conclusion and Environmental Conditions of Approval

The Project would not result in any new or more severe impacts to traffic and circulation including transportation relative to what was identified the 2010 FEIR. The Project is in compliance with measure 4.4.11 and is generally consistent with the Three Corridors Specific Plan by introducing standard sidewalks, bike lanes, access aisles, and by maintaining adequate emergency access. The following environmental conditions of approval are imposed in compliance with the Three Corridors Specific Plan:

TRAN-1: Prior to the issuance of a building permit, the applicant shall submit for review and approval by the Development Services Department a TDM plan for the project. The plan shall include action items such as provision of transit passes, shared ride vehicles or shuttles and car sharing to encourage alternative transportation modes.

TRAN-2: To maintain adequate sight lines at the project driveways, pursuant to Pinole Municipal Code Section 17.98.020, signage, trees and other landscaping features within the clear vision triangle at driveway and street intersections shall be maintained such that visibility is maintained between thirty (30) inches and seven (7) feet. The applicant shall be responsible for maintaining adequate sight lines from the project driveways.

4.18. TRIBAL CULTURAL RESOURCES

Would the project:	New Significant Impact Not Identified in 2010 FEIR	More Severe Impact Relative to 2010 FEIR	No Substantial Change Relative to 2010 FEIR	No Change Relative to the 2010 FEIR
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:	☐	☐	☒	☐
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or				
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☒	☐

Sources: City of Pinole General Plan/Specific Plan and EIR; Archaeological Assessment, prepared by Dudek, May 2021; and AB 52 Notification issued by the City of Pinole August 2, 2021.

According to Public Resources Code (PRC) Section 21074, tribal cultural resources are defined as follows:

1. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
    a. Included or determined to be eligible for inclusion in the California Register of Historical Resources; or
    b. Included in a local register of historical resources as defined in PRC Section 5020.1(k).
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 PRC Section 5024.1(c). In applying the criteria set forth in PRC Section 5024.1(c), the lead agency shall consider the significance of the resource to a California Native American tribe.
3. A cultural landscape that meets the criteria of PRC Section 21074(a) to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.
4. A historical resource described in PRC Section 21084.1, a unique archaeological resource as defined in PRC Section 21083.2(g), or a “non-unique archaeological resource” as defined in PRC Section 21083.2(h), if it conforms with the criteria of PRC Section 21074(a).

In accordance with PRC Section 21080.3.1(d), the City of Pinole provided written formal notification to the (insert list of tribes) on August 2, 2021, which included a brief description of the proposed Project and its location, the City of Pinole contact information, and a notification that the Tribes have 30 days to request consultation. On August 3, 2021, the City sent notification to the following tribes and tribal organizations:

- Indian Canyon Mutsun Band of Costanoan
- Muwekma Ohlone Indian Tribe of the SF Bay Area

- North Valley Yokuts Tribe
- Amah Mutsun Tribal Band
- Guidiville Indian Rancheria
- The Ohlone Indian Tribe

As of September 2021, no responses from any tribes or individual have been received requesting consultation.

General Plan and Specific Plan EIR Findings

As discussed above in Section 4.5 (Cultural Resources), the 2010 FEIR concluded that the project would result in potentially significant impacts related to the discovery of buried cultural resources, which may include tribal cultural resources.

Project Consistency with the 2010 FEIR

4.18(a) (Listed or Eligible for Listing) No Substantial Change Relative to the 2010 FEIR: As described in 4.5 Cultural Resources, the Archaeological Assessment did not identify resources onsite that are listed or eligible for listing. Therefore, the Project would not result in new or more severe impacts relative to the 2010 FEIR as it relates to a tribal cultural resource that is 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).

4.18(b) (Significant Resources) No Substantial Change Relative to the 2010 FEIR: As described above, the City of Pinole provided notification of the project to tribes and tribal organizations on August 3, 2021, consistent with AB 52. No requests to enter into consultation were received on the Vista Woods Project.

Although no tribal cultural resources were observed during the field survey conducted onsite, the Project site has a potential to contain buried tribal cultural resources. As such, development within the Project site has the potential to result in impacts to buried tribal cultural resources if encountered during construction. COA TCUL-1, set forth below, ensures that environmental conditions of approval set forth under the Cultural Resources discussion above are implemented. COA TCUL-1 provides for the protection of buried cultural resources, including tribal cultural resources, in the event of discovery. Therefore, the proposed Project would not result in new or more severe impacts relative to the 2010 FEIR.

Applicable 2010 FEIR Mitigation Measures

See Section 4.5 above, which identifies mitigation measures 4.10.1a, 4.10.1b, and 4.10.1c as set forth in the 2010 FEIR.

Conclusion and Environmental Conditions of Approval

The Project would not result in any new or more severe impacts to archaeological resource, including tribal cultural resources, relative to what was identified the 2010 FEIR. The Project has complied with measure 4.10.1a through the preparation of a project specific Historic Evaluation and an Archaeological Assessment, which identifies recommendations, imposed as environmental conditions of approval.

TCUL-1: To protect buried Tribal Cultural Resources that may be encountered during construction activities, the Project shall implement enviornmental COA CUL-1 and COA CUL-2.

4.19. UTILITIES AND SERVICE SYSTEMS

Would the project:	New Significant Impact Not Identified in 2010 FEIR	More Severe Impact Relative to 2010 FEIR	No Substantial Change Relative to 2010 FEIR	No Change Relative to the 2010 FEIR
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c) 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?	☐	☐	☒	☐
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

Sources: City of Pinole General Plan and EIR; Vista Woods Apartments Plan Set, Sheets C2.2 Drainage Plan and C3.0 Utility Plan, dated 6.18.21; and Urban Water Management Plan 2020 East Bay Municipal Utility District, Water Resources Planning Division EBMUD, June 2021.

General Plan and Specific Plan EIR Findings

The 2010 FEIR evaluated potential impacts to Public Services and Utilities in Chapter 4.12 including the Three Corridors Specific Plan area and determined the following:

Water Supplies/Infrastructure

- Impact 4.12.5.1- Implementation of the General Plan Update, Three Corridors Specific Plan, and Zoning Code Update would require additional water supplies, as well as additional water supply infrastructure, to meet the projected water demands. This is considered a less than significant impact.

- Impact 4.12.5.2- Implementation of the General Plan Update and its associated project components would contribute to the cumulative demand for water supply and associated infrastructure in EBMUD's service area. This is less than cumulatively considerable with the associated General Plan policies and actions, as well as Specific Plan standards and guidelines.

Wastewater

- Impact 4.12.6.1- Implementation of the General Plan Update, Three Corridors Specific Plan, and Zoning Code Update would increase wastewater flows and demand for sanitary sewer facilities.

Increased flows could exceed the capacity of the wastewater conveyance, treatment, and disposal systems at the City of Pinole Public Works Department and the West County Wastewater District. This is considered a less than significant impact.

- Impact 4.12.6.2- Implementation of the General Plan Update, Three Corridors Specific Plan, and Zoning Code Update could result in wastewater discharge that would exceed wastewater treatment requirements of the San Francisco Bay Regional Water Quality Control Board. This is considered a less than significant impact.

- Impact 4.12.6.3- Implementation of the General Plan Update, Three Corridors Specific Plan, and Zoning Code Update as well as existing, planned, proposed, approved, and reasonably foreseeable development in the City of Pinole Public Works Department and West County Wastewater District wastewater service areas, would increase wastewater flows and required additional infrastructure and treatment capacity to accommodate the anticipated demands. This proposed project's construction to this impact is considered to be less than cumulatively considerable.

Solid Waste

- Impact 4.12.7.1- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would increase solid waste generation and the demand for related services. This is considered a less than significant impact.

- Impact 4.12.7.2- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update), along with other existing, planned, proposed, approved, and reasonably foreseeable development within the West Contra Costa Integrated Waste Management Authority service area, would result in cumulative solid waste impacts. This is considered a less than cumulatively considerable impact.

Energy and Communication

- Impact 4.12.8.1- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) would require additional electric and natural gas supplies, along with conveyance facilities for these and telephone and cable television services. This is considered a less than significant impact.

- Impact 4.12.8.2- Implementation of the proposed project (General Plan Update, Three Corridors Specific Plan, and Zoning Code Update) as well as potential development in the surrounding areas, would result in an increase in cumulative utility service demands. The proposed project would have a less than cumulatively considerable impact on electrical, natural gas, telephone, and cable television services.

Project Consistency with the 2010 FEIR

4.19(a) (Relocation/Expansion of Utilities) No Change Relative to the 2010 FEIR: The FEIR concluded that buildout of the Three Corridors Specific Plan would increase demands for utilities and services systems including water, wastewater, storm drain, and energy and communications infrastructure and impacts would be less than significant. The subject Vista Woods Project is generally consistent with the Three Corridors Specific Plan and will not necessitate the expansion or relocation of existing utilities. The proposed Project would introduce 179 dwelling units, providing housing to seniors, which will generate demand for utilities and services. The site vicinity is well served by existing utilities, including water, wastewater, electricity, natural gas, telecommunication, cable, and storm drain infrastructure, which will be extended onsite to provide services to residents.

Stormwater runoff generally follows the gradient of the site and sheet flows from the west to the east. An existing 24-inch diameter storm water drain line is located within the Roble Avenue right-of-way adjacent to the site. The Project includes installation of a storm drain manhole and 4- and 8-inch diameter storm drain pipelines connecting to the existing storm drain line in Roble Avenue. Improvements proposed by the Project will increase

impervious surfaces through the introduction of buildings, driveways, sidewalks, paved parking lots, and other hardscaped improvement. Although the proposed development will result in an increase in impervious surfaces relative to existing conditions, the Project has been designed in accordance with the Contra Costa County Clean Water Program, Stormwater C.3 Guidebook.

Demand for utilities and service systems generated by the Vista Woods Project is anticipated by the 2010 FEIR and does not require the relocation or expansion of infrastructure. Therefore, the Project's impacts related to the relocation, construction, or expansion of utilities will not result in new or more severe impacts relative to the 2010 FEIR.

4.19(b) (Sufficient Water Supplies) No Substantial Change Relative to the 2010 FEIR: The FEIR concluded that the Project would result in additional demands for water supplies and infrastructure and impacts would be less than significant.

The Vista Woods Project will utilize water obtained from the municipal water system to meet onsite water demands. East Bay Municipal Utility District (EBMUD) provides water to the Project site. Water is conveyed via the existing municipal water system via an existing 8-inch diameter potable water main within the Sa Pablo Avenue right-of-way. The Project would connect to the existing water main through a proposed domestic water service stub. Potable water would be accommodated via the installation of new water laterals that would connect the existing water main to the project site.

Water demand resulting from the proposed Project is in line with what was anticipated in the General Plan, Three Corridors Specific Plan, and the 2020 EBMUD Urban Water Management Plan (UWMP). The existing entitlements for water supplies are sufficient to continue to meet the needs of Pinole during normal, dry, and multiple dry years in addition to the water demands generated by the project. In accordance with Action GM2.2.1 verification by EBMUD is required for approval of new developed to ensure that adequate water supply and quality can be provided. This is imposed through environmental condition of approval (COA) UTIL-1 set forth below. Therefore, impacts due to insufficient water supplies or inadequate entitlements would not result in new or more severe impacts relative to those identified in the 2010 FEIR.

4.19(c) (Wastewater Capacity) No Substantial Change Relative to the 2010 FEIR: The FEIR concluded that buildout of the Three Corridors Specific Plan would increase wastewater flows and demand for sanitary sewer facilities and impacts would be less than significant. The City of Pinole provides sanitary sewer service to the Vista Woods project site via an existing service line located within the Roble Avenue right-of-way. The Project includes installation of a manhole at the site frontage to Roble Avenue and an 8-inch diameter service pipeline to provide wastewater services to the Project site.

As a project that is generally consistent with the Three Corridoes Specific Plan, the increase in wastewater generated by the Vista Woods Project is within the flow capacity analyzed as part of the 2010 FEIR. Furthermore, as a multi-family development, the Project is subject to Development Impact Fees, including a wastewater fee, which is used to fund maintenance and expansion of wastewater conveyance systems and treatment facilities. In accordance with mitigation measure 4.12.6.2 adequate wastewater capacity shall be demonstrated prior to issuance of Certificate of Occupancy. This is imposed through environmental COA UTIL-2 set forth below. As such, the proposed project will not cause or exceed wastewater treatment requirements set forth by the Regional Water Quality Control Board, nor will the project necessitate the expansion or construction of wastewater conveyance or treatment facilities. Therefore, impacts to wastewater capacity would not result in new or more severe impacts relative to those identified in the 2010 FEIR.

4.19(d,e) (Solid Waste Generation/Compliance with Solid Waste Management) No Substantial Change Relative to the 2010 FEIR: The FEIR concluded that development resulting from buildout of the project would increase solid waste generation and the demand for related services and impacts would be less than significant. The proposed Vista Woods project will contribute to the generation of solid waste within the Three Corridors Specific Plan area, as anticipated by the 2010 FEIR. The Project applicant is required to adhere to all regulations governing the disposal of solid waste. Republic Services provides solid waste collection services for recycling and waste disposal. Although the waste stream generated by the Project is expected to increase during construction and operation, it is not expected to exceed landfill capacity and is not expected to result in violations

of federal, state, and local statutes and regulations related to solid waste. In accordance with General Plan Action CS.8.1.3 construction sites shall provide for the salvage, reuse or recycling of construction and demolition materials. This is imposed through environmental COA UTIL-3 set forth below. Pursuant to Action SE.5.1.2 improve and expand curbside recycling services; the Project is subject to environmental COA UTIL-4 and UTIL-5 set forth below. Therefore, the disposal of solid waste resulting from project construction and operation would not result in new or more severe impacts relative to those identified in the 2010 FEIR.

Applicable 2010 FEIR Mitigation Measures

MM 4.12.6.2 The City shall include an action in the General Plan requiring all future development to demonstrate that there is sufficient sewer/wastewater treatment capacity to accommodate the proposed development and that the required sewer/wastewater infrastructure is in place before issuance of Certificate of Occupancy. Furthermore, all on-site and off-site sewer conveyance systems shall be in place prior to the issuance of Certificate of Occupancy and all financing shall be assured to the satisfaction of the City.

Status: Applicable. The project was considered as part of the Sewer Master Plan Update, currently in process, which indicated adequate facilities would be in place or expanded as necessary to accommodate the project with payment of required impact fees. Pursuant to this measure, the project is subject to Condition of Approval UTIL-2, which requires procurement of a will serve letter, verification of unique connections, and payment of development impact fees.

Conclusion and Environmental Conditions of Approval

The Project would not result in any new or more severe impacts to utilities and service systems, relative to what was identified the 2010 FEIR. The Project is subject to environmental conditions of approval pursuant to mitigation identified in the 2010 FEIR and General Plan Actions as follows:

UTIL-1: Pursuant to Action GM 2.2.1 Service Standards, prior to issuance of a building permit, the applicant shall secure verification from EBMUD that adequate water supplies are available to serve the project and prior to issuance of occupancy the applicant shall demonstrate that all EBMUD water efficiency requirements have been fulfilled.

UTIL-2: Pursuant to MM 4.12.6.2, the project shall secure a can and will serve letter demonstrating that there is sufficient sewer/water treatment and conveyance capacity prior to issuance of Certificate of Occupancy. The proposed project shall have a unique connection to the public sewer collection system. The connection to the sewer system will require a permit from the City of Pinole, the payment of sewer user fees, and payment of a sewer connection fee prior to the issuance of building permits.

UTIL-3: Pursuant to General Plan Action CS.8.1.3 and in accordance with current CalGreen Building Code requirements, a Construction Waste Management Plan shall be prepared and implemented during all stages of construction. The Construction Waste Management Plan shall meet the minimum requirements of the CalGreen code for residential development including but not limited to regional material sourcing (A5.405.1), Bio-based materials (A5.105.2), Reused materials (A5.405.3), and materials with a recycled content (A5.405.4).

UTIL-4: In accordance with CalGreen Section 4.410.2 onsite recycling shall be provided in readily accessible areas for the depositing, storage and collection of non-hazardous materials including at a minimum paper, cardboard, glass, plastics, organic waste, and metals.

UTIL-5: The applicant shall coordinate with Republic Services to appropriately size trash enclosures and ensure that maximum waste stream diversion occurs by providing onsite pre-sorting for recyclables and greenwaste for compostable and organic materials as available.

4.20. WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	New Significant Impact Not Identified in 2010 FEIR	More Severe Impact Relative to 2010 FEIR	No Substantial Change Relative to 2010 FEIR	No Change Relative to the 2010 FEIR
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

Sources: City of Pinole General Plan and EIR; and Contra Costa County Local Hazard Mitigation Plan, January 2018.

General Plan and Specific Plan EIR Findings

The 2010 FEIR addressed wildfire risk in Chapters 4.8 and 4.13. The General Plan discusses Wildland Fire Hazards in Chapter 9, Health and Safety, and the Contract Costa County Local Hazard Mitigation Plan includes a wildfire risk assessment.

During wildfire events residents are exposed to direct effects of the wildfire, such as the loss of structures, and to the secondary effects of the wildfire, such as smoke and air pollution. Smoke generated by wildfire consists of visible and invisible emissions that contain particulate matter (soot, tar, water vapor, and minerals) and gases (carbon monoxide, carbon dioxide, nitrogen oxides). Public health impacts associated with wildfire include difficulty in breathing, odor, and reduction in visibility.

Due to the urban development pattern of Pinole and surrounding jurisdictions wildfire risk is relatively low within the San Pablo Avenue corridor of the Three Corridors Specific Plan including the Project site. Areas of the City that are most susceptible to wildfire hazards are located east of Appian Way, south of Interstate 80 at the City/County boundary. This area is designated as “Very High Fire Hazard Severity Zone” (VHFHSZ) within a State Responsibility Area by CAL FIRE.

Project Consistency with the 2010 FEIR

4.20(a) (Impair Emergency Plans) No Change Relative to the 2010 FEIR: The Project is limited to the construction and operation of a multi-family residential development on a site planned to support higher density residential pursuant to the Three Corridors Specific Plan. During construction activities, temporary lane closures on adjacent rights-of-way including San Pablo Avenue, Encino Avenue, and Roble Avenue, may occur and will be coordinated with Fire, Police, and emergency responders to ensure that through access in maintained and adequate response times are achievable. There are no elements of the project that would impair emergency response or evacuation routes. Therefore, the proposed Project is not expected to substantially impair an adopted emergency response plan or emergency evacuation plan and there would be no change in impacts relative to the 2010 FEIR.

4.20(b-d) (Wildfire Risk Exacerbation, Infrastructure Contributing to Wildfire Risk, Exposure to Wildfire-Related Risks) No Change Relative to the 2010 FEIR: The Project site is relatively flat and located approximately one mile from a State Responsibility Area (SRA) designated as a Very High Fire Hazard Severity Zone. New structures onsite would be built according to the latest California Building Code, which contains fire prevention standards for building materials, systems, and assemblies used in the exterior design and construction of new buildings. There are no factors, such as steep slopes, prevailing winds, or the installation/maintenance of new infrastructure, that would exacerbate fire risk or expose project occupants to the uncontrolled spread of a wildfire, pollutant concentrations from a wildfire, post-fire slope instability, or post-fire flooding.

The Project site is adjacent to roadways and surrounded by highly urbanized development. The site is categorized as a Non-VHFHZ by CAL FIRE and surrounded by land designated as Non-VHFHZ on all sides. The vicinity is generally developed with urban land uses and is not adjacent to areas where there is a wildland urban interface fire hazard. As such, the Project would have no impacts related to exposure of people or structures to a significant risk of loss, injury, or death involving fires. Therefore, impacts related to the increased use, deterioration, construction, or expansion of recreational facilities are not expected to be new or more severe relative to the 2010 FEIR as a result of the proposed Project.

Applicable 2010 FEIR Mitigation Measures

There are no applicable 2010 FEIR mitigation measures to this Project.

Conclusion and Environmental Conditions of Approval

The Project would not result in any new or more severe impacts due to wildfire risk relative to what was identified the 2010 FEIR. The Project consists of development that is required to comply with the latest building code including fire safety standards for new construction.

4.21. MANDATORY FINDINGS OF SIGNIFICANCE

	New Significant Impact Not Identified in 2010 FEIR	More Severe Impact Relative to 2010 FEIR	No Substantial Change Relative to 2010 FEIR	No Change Relative to the 2010 FEIR
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☒
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)?	☐	☐	☐	☒
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

Sources: City of Pinole General Plan/Specific Plan and EIR.

General Plan and Specific Plan EIR Findings

As presented above in Sections 4.1 through 4.20, the 2010 FEIR included an evaluation of cumulative impacts associated with implementation of the General Plan and the Three Corridors Specific Plan.

Project Consistency with the 2010 FEIR

4.21(a) (Degrade the Environment) No Change Relative to the 2010 FEIR: The Project is located within the Three Corridors Specific Plan boundary and potential impacts associated with its development have been anticipated by the City's General Plan and analyzed in the 2010 FEIR. The Project is consistent with the General Plan Land Use designation, goals, policies, and programs, as well as the Land Use Development Standard and Private Realm Design Guidelines set forth in the Three Corridors Specific Plan.

As described herein, the proposed Project has the potential to result in environmental impacts primarily associated with temporary construction activities and environmental conditions of approval have been identified that avoid, reduce, or offset impacts consistent with the 2010 FEIR. This analysis identifies requirements and includes environmental conditions of approval to address applicable regulations related to suitable habitat and special-status species. With implementation of conditions of approval set forth above in Biological Resources and Cultural Resources, as well as adherence to the City's uniformly applied development standards, the Project's potential to degrade the quality of the environment would be substantially the same as those identified in the 2010 FEIR. As such, the Project will not degrade the quality of the environment, reduce habitat, or affect cultural resources beyond what has already been disclosed and analyzed in the certified 2010 FEIR.

4.21(b) (Cumulatively Affect the Environment) No Change Relative to the 2010 FEIR: The CEQA Guidelines define cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The individual effects may be changes resulting from a single project or increase in environmental impacts. The cumulative impact from several projects is the change in the environment which results from the incremental impact of the proposed project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time" (Guidelines, Section 15355(a)(b)).

The analysis of cumulative impacts for each environmental factor can employ one of two methods to establish the effects of other past, current, and probable future projects. A lead agency may select a list of projects, including those outside the control of the agency, or alternatively, a summary of projections. These projections may be from an adopted general plan or related planning document or from a prior environmental document that has been adopted or certified; these documents may describe or evaluate the regional or area-wide conditions contributing to the cumulative impact.

Cumulative impacts are evaluated using the 2010 FEIR as discussed throughout this document. Development of the proposed Project, in combination with past, present, and future development in the City, would result in less than cumulatively considerable impacts to Visual Resources (aesthetics), Air Quality/Greenhouse Gases, Biological Resources, Cultural Resources, Geology and Soils, Hydrology and Water Quality, Land Use, Public Services, Population and Housing, and Transportation. Cumulative long-term impacts from development within the City were identified and analyzed in the 2010 FEIR including implementation of the Three Corridors Specific Plan. Cumulatively considerable impacts would occur to air quality/greenhouse gases (ozone and particulate matter), transportation, and transportation-related noise.

The Project will contribute to cumulative impacts identified in the 2010 FEIR. As described in **Sections 4.1 – 4.20,** development of the Project would not result in new or more severe impacts relative to those identified in the 2010 FEIR. The Project is subject to applicable mitigation measures and General Plan Actions imposed as environmental conditions of approval. Implementation of identified conditions of approval as well as uniformly applied development standards would ensure that development of the proposed Project would not result in cumulatively considerable environmental impacts beyond those addressed in the 2010 FEIR.

4.21(c) (Substantial Adverse Effect on Humans) No Substantial Change Relative to the 2010 FEIR: The Project would not result in any new or more substantial adverse effects on humans relative to the 2010 FEIR findings for the General Plan and the Three Corridors Specific Plan, within which the Project is located. With implementation of mitigation measures and General Plan action items imposed as environmental conditions of approval, the Vista Woods Project will not result in new or more severe impacts beyond those identified in the 2010 FEIR that would directly or indirectly impact human beings onsite or in the Project vicinity.

Applicable 2010 FEIR Mitigation Measures

No applicable mitigation measures beyond those identified in Section 4.104.20 above.

Conclusion and Environmental Conditions of Approval

With uniformly applied development standards, mitigation measures imposed as environmental conditions of approval, and standard regulatory requirements, the Project would not result in any new or more severe impacts relative to what was identified the 2010 FEIR.

5. REFERENCE DOCUMENTS

The following reference documents are hereby incorporated by reference and are available for review during normal business hours at the City of Pinole, 2131 Pear Street, in the Community Development Department.

5.1. TECHNICAL APPENDICES

A. Shadow Study for the Vista Woods Apartment Project, prepared by Dudek, May 28, 2021.

B. Air Quality and Greenhouse Gas Analysis for the Vista Woods Apartments Project, prepared by Dudek, April 28, 2021.

C. Biological Resources Assessment, prepared by Dudek, May 2021.

C-1. Arborist Report Vista Woods Apartment Pinole, prepared by Dudek, June 2021.

D. Archaeological Assessment, prepared by Dudek, May 28, 2021

D-1. Built Environment Inventory and Evaluation Report, prepared by Dudek, August 2021.

E. Geotechnical Report, prepared by Partner, April 7, 2021.

F. Phase I Environmental Site Assessment Report, prepared by Partner Engineering and Science, Inc., March 5, 2021.

G. Radio Frequency (RF) Site Report, prepared by SiteSafe, August 24, 2021.

H. Technical Noise Memo – Vista Woods Apartment Project, prepared by Dudek, April 27, 2021.

H-1. Predictive Analysis of Drilling Operation at Vista Woods Apartments Project near Existing Residence, prepared by Dudek, August 17, 2021.

I. Vehicle Miles Traveled (VMT) Screening Analysis for the Vista Woods Apartments, prepared by Dudek, May 3, 2021.

5.2. OTHER DOCUMENTS REFERENCED

1. 2019 California Green Building Standards Code (CalGreen), Effective January 1, 2020.

2. BAAQMD 2017 Bay Area Clean Air Plan, prepared by the Bay Area Air Quality Management District, April 2017.

3. BAAQMD Recommended Methods for Screening and Modeling Local Risks and Hazards, prepared by the BAAQMD, May 2011.

4. California Environmental Quality Act Air Quality Guidelines, prepared by the Bay Area Air Quality Management District, May 2017.

5. California Scenic Highway Mapping System, Scenic Highway System Lists, 2019. https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways, accessed August 2021.

6. Contra Costa County Local Hazard Mitigation Plan, January 2018.

7. National Flood Hazard Layer. FEMA. August 2021. https://www.fema.gov/flood-maps/national-flood-hazard-layer

8. Technical Advisory on Evaluating Transportation Impacts in CEQA, prepared by the State of California Governor's Office of Planning and Research, December 2018

9. Tsunami Hazard Area Map. California Department of Conservation, August 23, 2021. https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps

10. Urban Water Management Plan 2020 East Bay Municipal Utility District, Water Resources Planning Division EBMUD, June 2021.

6. ENVIRONMENTAL CONDITIONS OF APPROVAL

The following conditions of approval have been identified through this analysis and ensure implementation of applicable mitigation measures and policies set forth in the General Plan, Three Corridors Specific Plan and their EIR.

AES-1: The applicant shall ensure, and the City shall verify that the final lighting plan incorporates applicable requirements set forth in Chapter 17.46 of the Pinole Municipal Code, including that all outdoor lighting fixtures be designed, shielded, aimed, located, and maintained to shield adjacent properties and to not provide glare onto adjacent properties or roadways.

AQ-1: During all construction activities including demolition and ground disturbance activities, on and offsite, the contractor shall implement the latest BAAQMD recommended Best Management Practices (BMPs) to control for fugitive dust and exhaust as follows:

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 shall be covered.
3. All visible mud and 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 practicable. Building pads shall be laid as soon as practicable 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 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.
7. All 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 working condition prior to operation.
8. A publicly-visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints shall be posted on the project site prior to the initiation of construction activities. 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.

AQ-2: High-efficiency particulate filtration systems shall be installed in residential heating, ventilation, and air-conditioning (HVAC) systems for residences within 35 feet of San Pablo Avenue and/or HVAC intake shall be located as far as possible from the San Pablo Avenue right-of-way and no closer than 35 feet from the edge of roadway. Unless air dispersion modeling demonstrates exposure risk below BAAQMD thresholds, the project shall implement the following measures to minimize long-term annual Diesel Particulate Matter exposure for incoming residential occupants:

1. Install forced air mechanical ventilation devices in new residences. Air filtration devices shall be rated MERV13 or higher. To ensure adequate health protection to sensitive receptors (i.e., residents), this mechanical ventilation system will circulate fresh filtered air into the dwelling units.

2. In order to effectively implement this measure, an ongoing maintenance plan for the buildings' HVAC air filtration system shall be required.

3. Ensure that the use agreement and other property documents: (1) require cleaning, maintenance, and monitoring of the affected buildings for air flow leaks, (2) include assurance that new owners or tenants are provided information on the ventilation system, and (3) include provisions that fees associated with owning or leasing a unit(s) in the building include funds for cleaning, maintenance, monitoring, and replacements of the filters, as needed.

BIO-1: To avoid and minimize potential impacts to nesting birds including passerines and raptors, the following measures shall be implemented:

1. Grading or removal of potentially occupied habitat should be conducted outside the nesting season, which occurs between approximately February 1 and August 31.

2. If grading between August 31 and February 1 is infeasible and groundbreaking must occur within the nesting season, a pre-construction nesting bird survey (migratory species, passerines, and raptors) of the potentially occupied habitat (trees, shrubs, grassland) shall be performed by a qualified biologist within 7 days of groundbreaking. If no nesting birds are observed no further action is required and grading shall occur within one week of the survey to prevent "take" of individual birds that could begin nesting after the survey.

3. If active bird nests (either passerine and/or raptor) are observed during the pre-construction survey, a disturbance-free buffer zone shall be established around the occupied habitat until the young have fledged, as determined by a qualified biologist.

4. The radius of the required buffer zone can vary depending on the species, (i.e., 75-100 feet for passerines and 200-500 feet for raptors), with the dimensions of any required buffer zones to be determined by a qualified biologist in consultation with CDFW.

5. To delineate the buffer zone around the occupied habitat, construction fencing shall be placed at the specified radius from the nest within which no machinery or workers shall intrude.

6. Biological monitoring of active nests shall be conducted by a qualified biologist to ensure that nests are not disturbed and that buffers are appropriate adjusted by a qualified biologist as needed to avoid disturbance.

7. No construction or earth-moving activity shall occur within any established nest protection buffer prior to September 1 unless it is determined by a qualified ornithologist/biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones, or that the nesting cycle is otherwise completed.

BIO-2: To avoid impacts to pallid bats, a "species of special concern" in the state, a qualified biologist shall conduct a bat survey 15 days prior to the commencement of ground work. If no special-status bats are found during the survey, then construction may begin without restriction.

If special-status bat species are found roosting on the Project site, the biologist shall determine if there are young present (i.e., the biologist should determine if there are maternal roosts). If young are found roosting in any tree that will be impacted by the Project, such impacts shall be avoided until the young are flying and feeding on their own. A non-disturbance buffer installed with orange construction fencing will be established around the maternity site. The size of the buffer zone will be determined by a qualified bat biologist at the time of the surveys. If adults are found roosting in a tree on the project site but no maternal sites are found, then the adult bats can be flushed, or a one-way eviction door can be placed over the tree cavity for a 48-hour period prior to the tree removal.

BIO-3: Prior to any tree removal or alteration, the applicant shall obtain approval from the City of Pinole to implement a plan for tree preservation and replacement in accordance with the City's Tree Removal Permit. Replacement of protected trees onsite shall be replaced by either planting trees onsite as part of the development over and above the landscaping that would otherwise be required at a value equal to the value of the protected trees that will be removed, or through the payment of an in-lieu fee to the City in an amount equal to the value of the protected trees that will be removed.

CUL-1: To ensure the Project does not result in impacts to buried archaeological resources onsite, if present, the following shall be implemented:

1. **Training**. Prior to commencement of ground-disturbing activities, a professional archaeologist shall conduct a preconstruction training for construction personnel. The training shall familiarize individuals with the potential to encounter prehistoric artifacts or historic-era archaeological deposits, the types of archaeological material that could be encountered within the Project Area, and the requirement for a monitor to be present during initial ground-disturbing activities.
2. **Monitoring**. During initial ground disturbing activities on native soils, a Secretary of the Interior-qualified archeologist shall be onsite to monitor activities. The monitor shall have the authority to temporarily halt work to inspect areas as needed for potential cultural materials or deposits. Daily monitoring logs shall be completed by the monitor.
3. **Post-review Discoveries**. In the event that cultural resources are exposed during construction, all earth work occurring within 100 feet of the find shall be immediately stopped until a Secretary of Interior-qualified Archaeologist inspects the material(s), assess historical significance, consults with Tribes and other stakeholders as needed, and provides recommendations for the treatment of the discovery.
4. **Archaeological Monitoring Report**:. Within 60 days following completion of construction work, an archeological monitoring report shall be submitted to the City. The report shall include the results of the monitoring program (even if negative), a summary of any findings or evaluation/data recovery efforts, and supporting documentation (e.g., daily monitoring logs).

CUL-2: In the event that human remains are encountered within the Project Area during Project-related, ground-disturbing activities, all work must stop, and the County Coroner immediately notified of the discovery. If the County coroner determined that remains are, or are believed to be Native American, then the Native American Heritage Commission must be contacted by the Coroner so that a "Most Likely Descendant" (MLD) can be designated to provide further recommendations regarding treatment of the remains. A Secretary of Interior-qualified Archaeologist should also evaluate the historical significance of the discovery, the potential for additional human remains to be present, and to provide further recommendations for treatment of the resource in accordance with the MLD recommendations. Federal regulations require that Native American human remains, funerary objects, and object of cultural patrimony are handed consistent with the requirement of the Native American Graves Protection and Repatriation Act.

GEO-1: The applicant shall incorporate the recommendations of the Project Geotechnical Report prepared by Partner Assessment Corporation (April 7, 2021) into construction drawings. As determined by the City Engineer and/or Chief Building Official, all applicable recommendations set forth in the in Geotechnical Report prepared for the subject property, including, but not limited to grading, excavation, foundations systems, and compaction specifications shall be incorporated. Final grading plan, construction plans, and building plans shall demonstrate that recommendations set forth in the geotechnical reports and/or to the satisfaction of the City Engineer/Chief Building Official have been incorporated into the design of the project.

Nothing in this mitigation measure shall preclude the City Engineer and/or Chief Building Official from requiring additional information to determine compliance with applicable standards. The geotechnical engineer shall inspect the construction work and shall certify to the City, prior to issuance of a certificate of occupancy that the improvements have been constructed in accordance with the geotechnical specifications.

GEO-2: Prior to issuance of a grading permit, an erosion control plan along with grading and drainage plans shall be submitted to the City Engineer for review. The project shall comply with stormwater management requirements and guidelines established by Contra Costa County under the Contra Costa Clean Water Program Stormwater C.3 Guidebook and incorporate Contra Costa County best management practices for erosion and sediment control for construction. All earthwork, grading, trenching, backfilling, and compaction operations shall be conducted in accordance with the City's Erosion Control requirements, Chapter 15.36.190 of the Municipal Code. Plans shall detail erosion control measures such as site watering, sediment capture, equipment staging and laydown pad, and other erosion control measures to be implemented during all construction activity.

GEO-3: All site retaining walls, including walls planned to be repaired or replaced, shall be identified, and submitted for building permit review.

GEO-4: Should any potentially unique paleontological resources (fossils) be encountered during development activities, work shall be suspended within 50 feet of the discovery and the City of Pinole Planning Division of the Development Services Department shall be immediately notified. At that time, the City will coordinate any necessary investigation of the discovery with a qualified paleontologist. The project proponent shall be required to implement any mitigation necessary for the protection of paleontological resources. The City and the project applicant shall consider the mitigation recommendations of the qualified paleontologist for any unanticipated discoveries. The City and the project applicant shall consult and agree upon implementation of a measure or measures that the City and project applicant deem feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures.

HYD-1: Prior to issuance of a building permit, the applicant shall prepare a design-level Stormwater Management Plan that incorporates stormwater management requirements and best management practices, per Pinole Municipal Code Chapter 8.20 and Contra Costa County Clean Water Program requirements, including the Contra Costa Clean Water Program Stormwater C.3 Guidebook and demonstrates that the storm drain system has adequate capacity to serve the project. The Stormwater Management Plan shall be reviewed and accepted by the City Engineer.

HYD-2: Prior to issuance of a grading permit, the applicant shall file a Notice of Intent with the RWQCB and demonstrate compliance with the Statewide General Permit for Construction Activities.

In accordance with the National Pollution Discharge Elimination System (NPDES) regulations, the applicant shall prepare and implement a project-specific Stormwater Pollution Prevention Plan, including an erosion control plan, for grading and construction activities. The SWPPP shall address erosion and sediment control during all phases of construction, storage and use of fuels, and use and clean-up of fuels and hazardous materials. The SWPPP shall designate locations where fueling, cleaning and maintenance of equipment can occur and shall ensure that protections are in place to preclude materials from entering into storm drains. The contractor shall maintain materials onsite during construction for containments and clean-up of any spills. The applicant shall provide approval documentation from the RWQCB to the City verifying compliance with NPDES.

NOI-1: All windows in the south-facing residential units of Wing 1 shall have a Sound Transmission Class (STC) rating of 30 or greater. The building shall be constructed in compliance with noise

exposure standards under 24 CFR Part 51, Subpart B in maintaining interior noise levels not exceeding 45 dBA DNL.

NOI-2: Construction activities including delivery and hauling shall comply with construction hours as provided under Pinole Municipal Code Section 15.02.070 and in accordance with construction best management practices for minimizing noise including:

1. Limit construction hours to between 7 a.m. and 5:00 p.m., Monday through Friday. Construction activities shall be prohibited on Saturday, Sundays, and State, Federal and Local Holidays, unless an exception is granted in accordance with the Municipal Code.
2. Delivery of materials and equipment to the site and truck traffic coming to and from the site is restricted to the same construction hours specified above.
3. Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
4. Unnecessary idling of internal combustion engines shall be strictly prohibited.
5. Locate stationary noise-generating equipment such as air compressors or portable power generators as far as possible from sensitive receptors. If they must be located near receptors, adequate muffling (with enclosures where feasible and appropriate) shall be used to reduce noise levels at the adjacent sensitive receptors. Any enclosure openings or venting shall face away from sensitive receptors.
6. Acoustically shield stationary equipment located near residential receivers with temporary noise barriers.
7. Utilize "quiet" air compressors and other stationary noise sources where technology exists.
8. Construction staging areas shall be established at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction activities.
9. Locate material stockpiles, as well as maintenance/equipment staging and parking areas, as far as feasible from existing residences.
10. Control noise from construction workers' radios to a point where they are not audible at existing residences bordering the project site.
11. The contractor shall prepare a detailed construction 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.
12. 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. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include in it the notice sent to neighbors regarding the construction schedule.

NOI-3: Consistent with typical contractor procedures, prior to the start of soldier pile drilling site work, detailed photographic documentation of existing conditions at the adjacent offsite residences shall be performed by an experienced engineer, inspector, or other qualified professional. The photographic documentation shall be collected with sufficient information to establish a baseline, against which a post drilling inspection will be compared to verify that no building damage attributed to the construction activities of the Vista Woods project occurred. In the event that damage to structures is identified and attributed to Vista Woods construction, then the contractor shall be repair damaged structures.

TRAN-1: Prior to the issuance of a building permit, the applicant shall submit for review and approval by the Development Services Department a TDM plan for the project. The plan shall include action items such as provision of transit passes, shared ride vehicles or shuttles and car sharing to encourage alternative transportation modes.

TRAN-2: To maintain adequate sight lines at the project driveways, pursuant to Pinole Municipal Code Section 17.98.020, signage, trees and other landscaping features within the clear vision triangle at driveway and street intersections shall be maintained such that visibility is maintained between thirty (30) inches and seven (7) feet. The applicant shall be responsible for maintaining adequate sight lines from the project driveways.

TCUL-1: To protect buried Tribal Cultural Resources that may be encountered during construction activities, the Project shall implement environmental COA CUL-1 and COA CUL-2.

UTIL-1: Pursuant to Action GM 2.2.1 Service Standards, prior to issuance of a building permit, the applicant shall secure verification from EBMUD that adequate water supplies are available to serve the project and prior to issuance of occupancy the applicant shall demonstrate that all EBMUD water efficiency requirements have been fulfilled.

UTIL-2: Pursuant to MM 4.12.6.2, the project shall secure a can and will serve letter demonstrating that there is sufficient sewer/water treatment and conveyance capacity prior to issuance of Certificate of Occupancy. The proposed project shall have a unique connection to the public sewer collection system. The connection to the sewer system will require a permit from the City of Pinole, the payment of sewer user fees, and payment of a sewer connection fee prior to the issuance of building permits.

UTIL-3: Pursuant to General Plan Action CS.8.1.3 and in accordance with current CalGreen Building Code requirements, a Construction Waste Management Plan shall be prepared and implemented during all stages of construction. The Construction Waste Management Plan shall meet the minimum requirements of the CalGreen code for residential development including but not limited to regional material sourcing (A5.405.1), Bio-based materials (A5.105.2), Reused materials (A5.405.3), and materials with a recycled content (A5.405.4).

UTIL-4: In accordance with CalGreen Section 4.410.2 onsite recycling shall be provided in readily accessible areas for the depositing, storage and collection of non-hazardous materials including at a minimum paper, cardboard, glass, plastics, organic waste, and metals.

UTIL-5: The applicant shall coordinate with Republic Services to appropriately size trash enclosures and ensure that maximum waste stream diversion occurs by providing onsite pre-sorting for recyclables and greenwaste for compostable and organic materials as available.

TECHNICAL APPENDICES

VISTA WOODS PROJECT
CEQA ENVIRONMENTAL CHECKLIST FOR STREAMLINED REVIEW

A. Shadow Study for the Vista Woods Apartment Project, prepared by Dudek, May 28, 2021.

B. Air Quality and Greenhouse Gas Analysis for the Vista Woods Apartments Project, prepared by Dudek, April 28, 2021.

C. Biological Resources Assessment, prepared by Dudek, May 2021.

C-1. Arborist Report Vista Woods Apartment Pinole, prepared by Dudek, June 2021.

D. and D-1. [Not Available for Public Distribution]

E. Geotechnical Report, prepared by Partner, April 7, 2021.

F. Phase I Environmental Site Assessment Report, prepared by Partner Engineering and Science, Inc., March 5, 2021.

G. Radio Frequency (RF) Site Report, prepared by SiteSafe, August 24, 2021.

H. Technical Noise Memo – Vista Woods Apartment Project, prepared by Dudek, April 27, 2021.

H-1. Predictive Analysis of Drilling Operation at Vista Woods Apartments Project near Existing Residence, prepared by Dudek, August 17, 2021.

I. Vehicle Miles Traveled (VMT) Screening Analysis for the Vista Woods Apartments, prepared by Dudek, May 3, 2021.

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MEMORANDUM

To:	Kelly Modén, cREate development
From:	Josh Saunders, AICP and Jonathan Rigg (Dudek)
Subject:	Third-Party Review and Assessment: Shadow Study for the Vista Woods Apartments Project
Date:	May 28, 2021
cc:	Jonathan Rigg, Dudek
Attachment(s):	Shadow Study for the Vista Woods Apartments Project

Dudek has prepared the following Shadow Study memorandum to support the California Environmental Quality Act (CEQA) environmental analysis for the proposed Vista Woods Apartments (project) located at 600 Roble Avenue in the City of Pinole (City), California. The purpose of this memorandum is present an assessment of the Shadow Study prepared for the project by Relativity Architects and interpret that assessment in the context of the City's significance threshold pertaining to building shadows. According to the City, a significant shadow impact would occur if the project would cast shadows onto the interior portion of an existing offsite residence for more than three (3) consecutive hours from 9:00 a.m. to 3:00 p.m. on the Winter Solstice.

1U Project Description

The project involves demolition of existing structures, sitework, and construction a new 4-story building providing 179 units of affordable housing for seniors. Tenant amenities will include a variety of community gathering spaces, a fitness room, shared laundry in addition to in-unit washer/dryer hook-ups, exterior and garage parking, and offices for on-site management staff. The landscape design incorporates a diverse set of outdoor passive and active recreation spaces for residents and their pets to encourage healthy living. Designed with sustainability in mind, the development will introduce a new bus shelter on San Pablo Avenue in addition to producing renewable energy through rooftop solar panels.

2U Methodology and Approach

To depict the anticipated shadows cast by the new four (4)-story building on the project site and potential shading of off-site structures, Relativity Architects prepared digital three-dimensional (3d) massing models of the new buildings. The project models are precise and informed by existing topography, proposed grading, and architectural plans. Off-site topography and structures not within the boundary of the project were also included in the model and are approximate representations based on available information including site observations, and Google Earth's Street View imagery and 3d buildings layer. A 3-D sun system was then added to the model and used to depict anticipated shadows from new and existing buildings between 9:00 a.m. and 3:00 p.m. on the Winter Solstice. The 3d massing models of buildings and anticipated shadows cast every hour 9:00 a.m. to 3:00 p.m. from

new and existing buildings are depicted in a bird's eye perspective in the Shadow Study (see Attachment 1, Shadow Study). In addition, graphics depicting offsite shadows falling onto three primary residential properties in the immediate are also included and are referenced to determine whether the project-facing elevation (and windows) would be fully covered by project shadows at the top of each hour between 9:00 a.m. and 3:00 p.m. on the Winter Solstice. The City's interior shadow threshold, as verbally described to Kelly Modén by City of Pinole planner, Michael Laughlin, is continuous shade for three or more hours. For purposes of this memorandum and the City's interior shadow threshold, all windows on the project-facing exterior of occupied two-story residences at 1169 Encina Avenue (north of Wing 1 and west of Wing 2 of the project), 1268 Encina Avenue, and 1288 Encina Avenue (both located to the north of Wing 4 of the project) must be covered by project shadow to be considered impacted for that specific hour of depiction. For example, if a project-facing elevation of an offsite buildings includes six (6) windows and all but one second-story window are covered by project shadows at 9:00 a.m., that offsite building is not considered to be impacted by shadows at 9:00 a.m. under the City's shadow threshold and for purposes of the consecutive hours specification.

3U Shadow Study Results

The shadow study results are presented below by residence and at each hour from 9:00 a.m. to 3:00 p.m. A summary table is provided at the end of the discussion for ease of reporting. For each offsite residence of interest in the immediate surrounding area, a yes/no determination of full shadow coverage on the project-facing elevation of the building is provided in the summary table based on Dudek's review of the Shadow Study graphics and based on available information regarding offsite building facades and design as informed by publicly available sources (i.e., site photographs, Google Earth Street View and 3d buildings layer).

1169 Encina Avenue (Residence 1)

9:00 a.m.

At 9:00 a.m., shadows cast by the project (Wings 1 and 2) fully cover the south elevation of the nearby two-story residence at 1169 Encina Avenue. As demonstrated in the Shadow Study (see Appendix A), all upper floor windows on the south elevation of the residences are covered by shadow. Therefore, the residence is considered to be impacted by shadow at 9:00 a.m.

10:00 a.m.

At 10:00 a.m., project shadows would begin to shorten and shift from the northwest towards the north such that an upper floor window on the south elevation of the structure is not covered by shadow. See Appendix A. As such, the residence is not considered to be impacted by project shadows at 10:00 a.m.

11:00 a.m.

At 11:00 a.m., project shadows continue to shorten in length and shift towards the north such that one upper floor window on the south elevation of the structure does not receive shadow and another window is partially covered in shadow. Therefore, the residence is not considered to be impacted by project shadows at 11:00 a.m.

12:00 p.m.

At noon, shadow conditions on the south elevation of Residence 1 would be similar (albeit slightly reduced in length) as at 11:00 a.m. Therefore, the residence is not considered to be impacted by project shadows at 12:00 p.m.

1:00 p.m. and 2:00 p.m.

At 1:00 p.m. and 2:00 p.m., shadows begin to elongate as the sun begins to fall from its highest point in the sky towards the western horizon. Despite this gradual elongation and shift from north to northeast, shadows at 1:00 p.m. and 2:00 p.m. would not fully cover the south-facing elevation of Residence 1. At minimum one window on the south-facing elevation of Residence 1 would remain uncovered by shadow and therefore, the residence is not considered to be impacted by project shadows at 1:00 p.m. and 2:00 p.m.

3:00 p.m.

In the early afternoon, project shadows would extend to the northeast. At this time, project shadows from Wing 1 would fully cover the south-facing elevation (and the entire building footprint) of Residence 1 such that sunlight would not be received on this side of the residence. Therefore, the residence is considered to be impacted by shadows at 3:00 p.m.

1268 Encina Avenue (Residence 2)

9:00 a.m.

At 9:00 a.m., project shadows from Wing 4 would extend to the northwest and onto a portion of the south-facing elevation of Residence 2. See Attachment 1. However, as depicted in the Shadow Study, at least two upper floor windows on the south-facing elevation of the residence would not be covered and interior spaces would continue to receive sunlight. As such, the residence is not considered to be impacted by shadow at 9:00 a.m.

10:00 a.m.

Compared to 9:00 a.m. shadows, project-shadows at 10:00 a.m. on Residence 2 would be reduced such that all upper floor windows on the south-facing elevation of the structure would not be covered by shadow. These windows would generally receive sunlight that would be unimpeded by the project and therefore, the residence is not considered to be impacted by shadow at 10:00 a.m.

11:00 a.m. , 12:00 p.m. 1:00 p.m. , and 2:00 p.m.

From 11:00 a.m. to 2:00 p.m., project shadows extending to the south-facing elevation of Residence 2 would generally remain consistent and similar as shadows at 10:00 a.m. The lower floor of the south-facing elevation (which appear to consist of a garage and other space) would be covered by project-shadows but the upper floor window would not receive shadows from the project building. Thus, sunlight onto these windows would be unimpeded by the project and the residence is not considered to be impacted by shadows from 11:00 a.m. to 2:00 p.m.

3:00 p.m.

Between 2:00 p.m. and 3:00 p.m., project shadows would elongate and shift more to the northeast such that the south-facing elevation of Residence 2 would be fully covered and cast in shadow at 3:00 p.m. All windows (lower and upper floors) on the south-facing elevation of the structure would be fully covered in shadow and sunlight would be fully impeded. Therefore, the residence is considered to be impacted by shadows at 3:00 p.m.

1288 Encina Avenue (Residence 3)

9:00 a.m.

No project shadows would fall on Residence 3 and the south-facing elevation of the structure would receive unimpeded sunlight.

10:00 a.m. and 11:00 a.m.

At 10:00 a.m., project-shadows would continue to fall in a primarily northwesterly direction such that Residence 3 and the underlying property would generally receive no project-related shadows. By 11:00 a.m., project-shadows would visibly shift to north yet the south-facing elevation of Residence 3 would generally receive unimpeded sunlight. According to the Shadow Study, no project shadows would extend to the south-facing elevation of Residence 3 at 10:00 a.m. or 11:00 a.m. and therefore, the residence is not considered to be impacted by shadows at these times.

12:00 p.m.

At noon, project-shadows from Wing 4 would be cast primarily to the north and partially fall onto the south-facing elevation of Residence 2. However, based on the results of the Shadow Study, it appears that one window would be fully cast in shadow and two other windows would continue to receive sunlight that would be unimpeded by the new 4-story apartment building on the project site. Because windows on the south-facing elevation would continue to receive sunlight, the residence is not considered to be impacted by shadows 12:00 p.m.

1:00 p.m. , 2:00 p.m. , and 3:00 p.m.

According to the Shadow Study, at 1:00 p.m., 2:00 p.m., and 3:00 p.m. elongated project shadows would extend to the north-northeast and fully cover all windows on the south-facing elevation of Residence 3. Because the south façade of the residential structure would be fully cast in project-generated shadow and sunlight would not fall onto windows and illuminate interior spaces, the residence is considered to be impacted by shadows at 1:00 p.m., 2:00 p.m., and 3:00 p.m. While the residence would be impacted by project-shadows for three consecutive reporting hours (i.e., 1:00 p.m., 2:00 p.m., and 3:00 p.m.), the threshold specifically establishes that a significant shadow impact occurs when a building is covered by shadow from a new building for more than three hours. Therefore, based on our understanding of the City's significance threshold, project-shadow exposure and duration onto Residence 3 would not be considered significant.

Shadow Study Results by Offsite Residence Address

Residence[1]	Project-Facing Elevation of Residence Fully Covered by Shadows? [2]						
	9:00 a.m.	10:00 a.m.	11:00 a.m.	12:00 p.m.	1:00 p.m.	2:00 p.m.	3:00 p.m.
R1	**YES**	NO	NO	NO	NO	NO	**YES**
R2	NO	NO	NO	NO	NO	NO	**YES**
R3	NO	NO	NO	NO	**YES**	**YES**	**YES**

1.UR1 = 1169 Encina Avenue; R2 – 1268 Encina Avenue; R3 = 1288 Encina Avenue
2.UFor purposes of this analysis, "fully covered by shadows" means that all windows on the project-facing elevation of the offsite residence is fully covered by/cast in shadows at the specified time.
Note: shaded cells denotes full shading of residence for three (3) consecutive hours between 9:00 a.m. and 3:00 p.m. on the Winter Solstice.

4U Shadow Study CEQA Conclusions

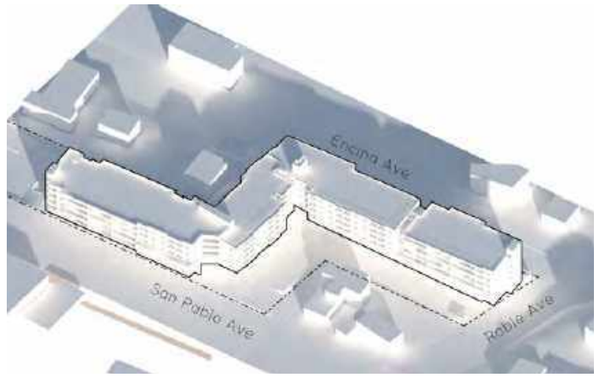
Based on the modeling of project scale and mass and related shadow conditions, nearby residences at 1169 Encina Avenue and 1268 Encina Avenue would not be significantly impacted by new shadow to be generate by the project., The south-facing elevation of the residence at 1288 Encina Avenue located to the north of proposed Wing 4 would be covered by shadow at 1:00 p.m., 2:00 p.m., and 3:00 p.m., however, the south-facing elevation of the building would not be covered by project shadows for more than three hours. Therefore, based on our understanding of the City shadow threshold, afternoon shadow exposure at Residence 3 would not be considered a significant interior shadow impact (impacts would be less than significant).

Attachment 1

Shadow Study

VISTA WOODS SENIOR APARTMENTS

600 ROBLE AVENUE, PINOLE CA
05.27.2021



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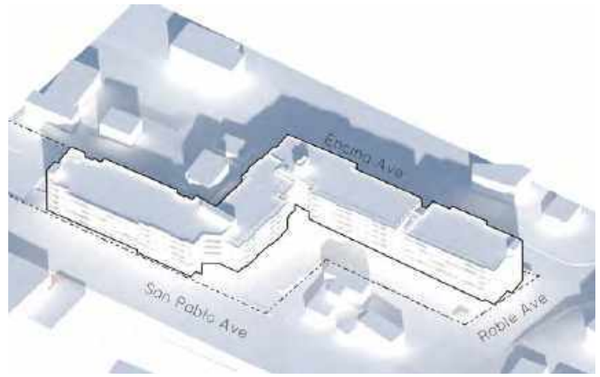

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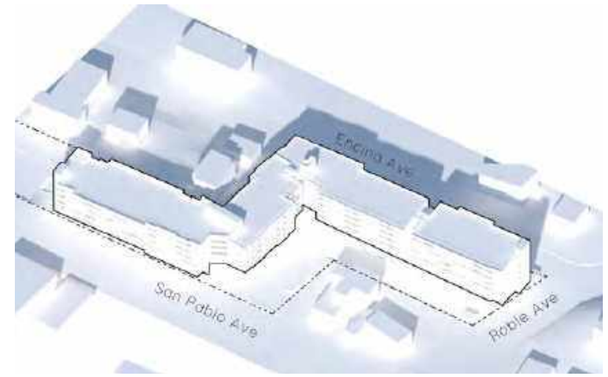

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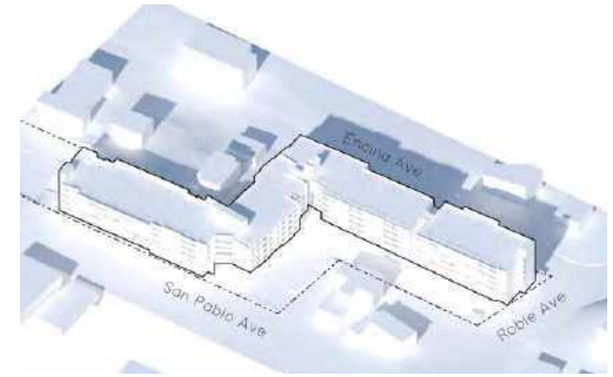

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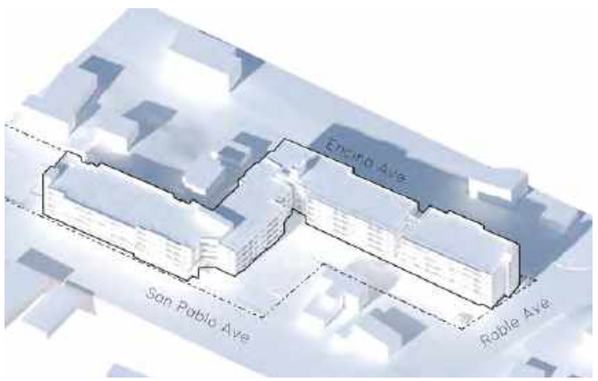

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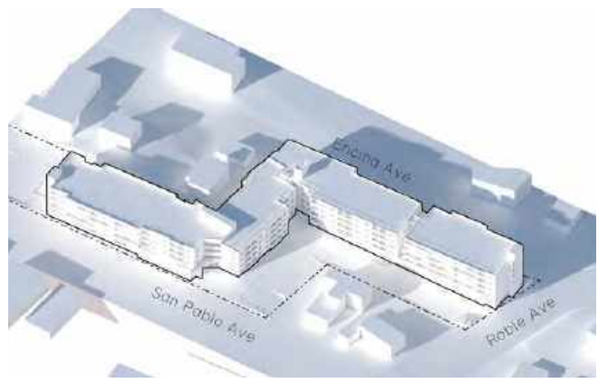

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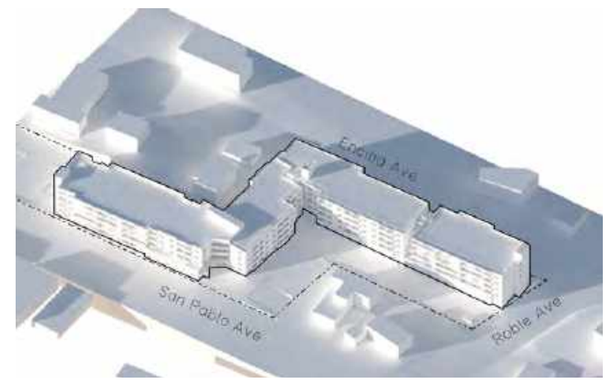

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Shadow Studies

*Topography and structures not within the property boundary of the proposed project are approximate representations based on available information, and whose accuracy is not guaranteed.

PROJECT NAME: VISTA WOODS SENIOR APARTMENTS

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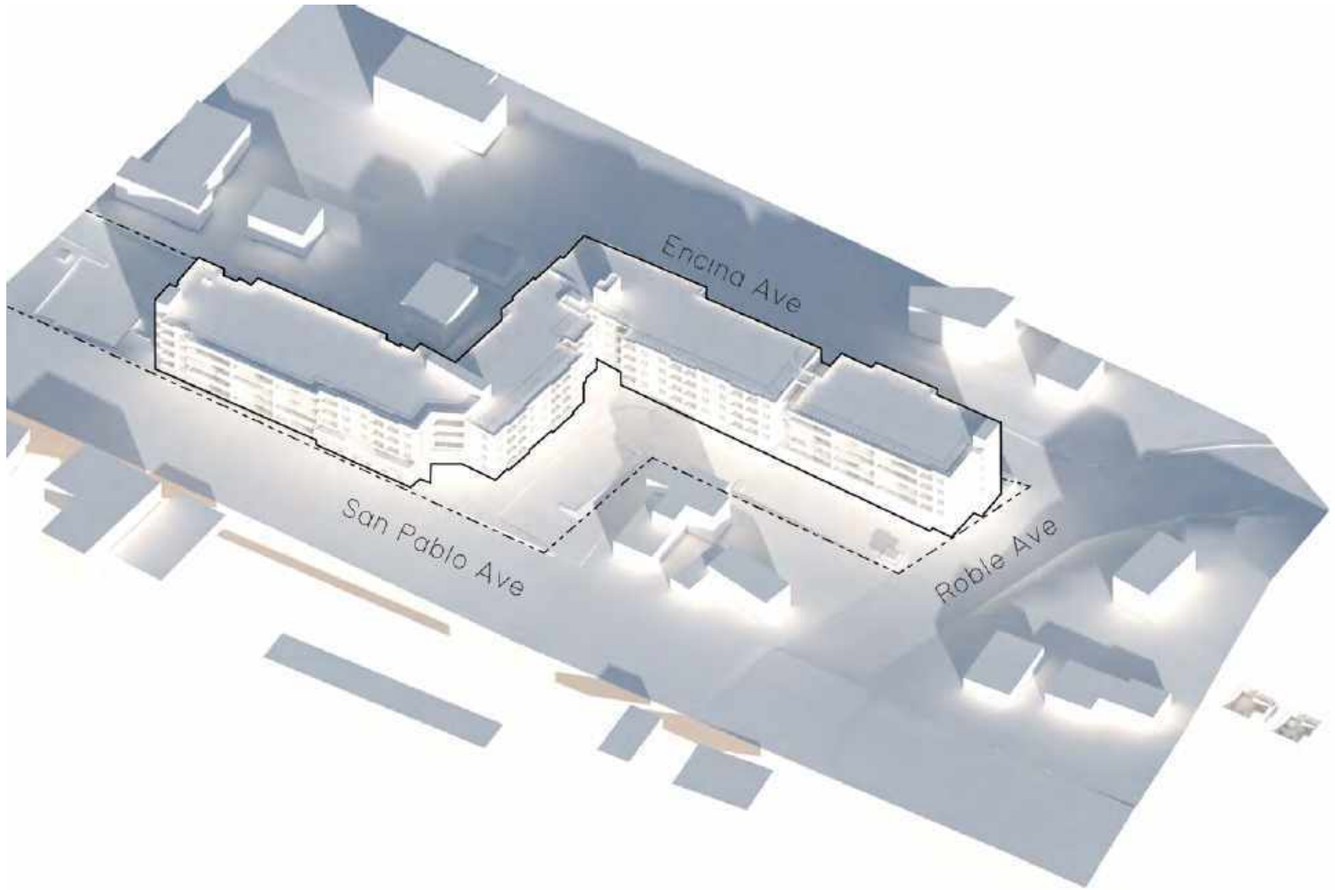

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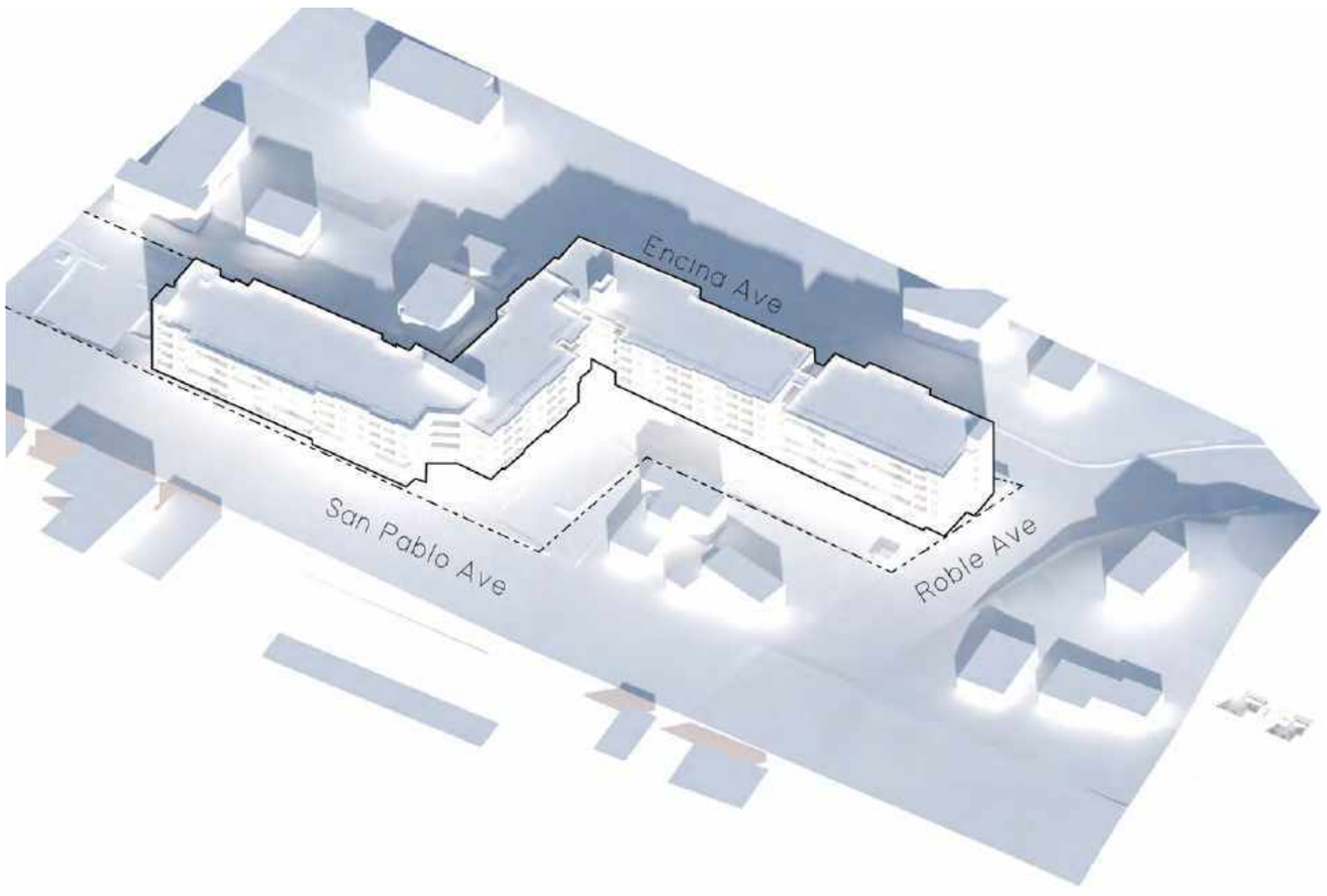

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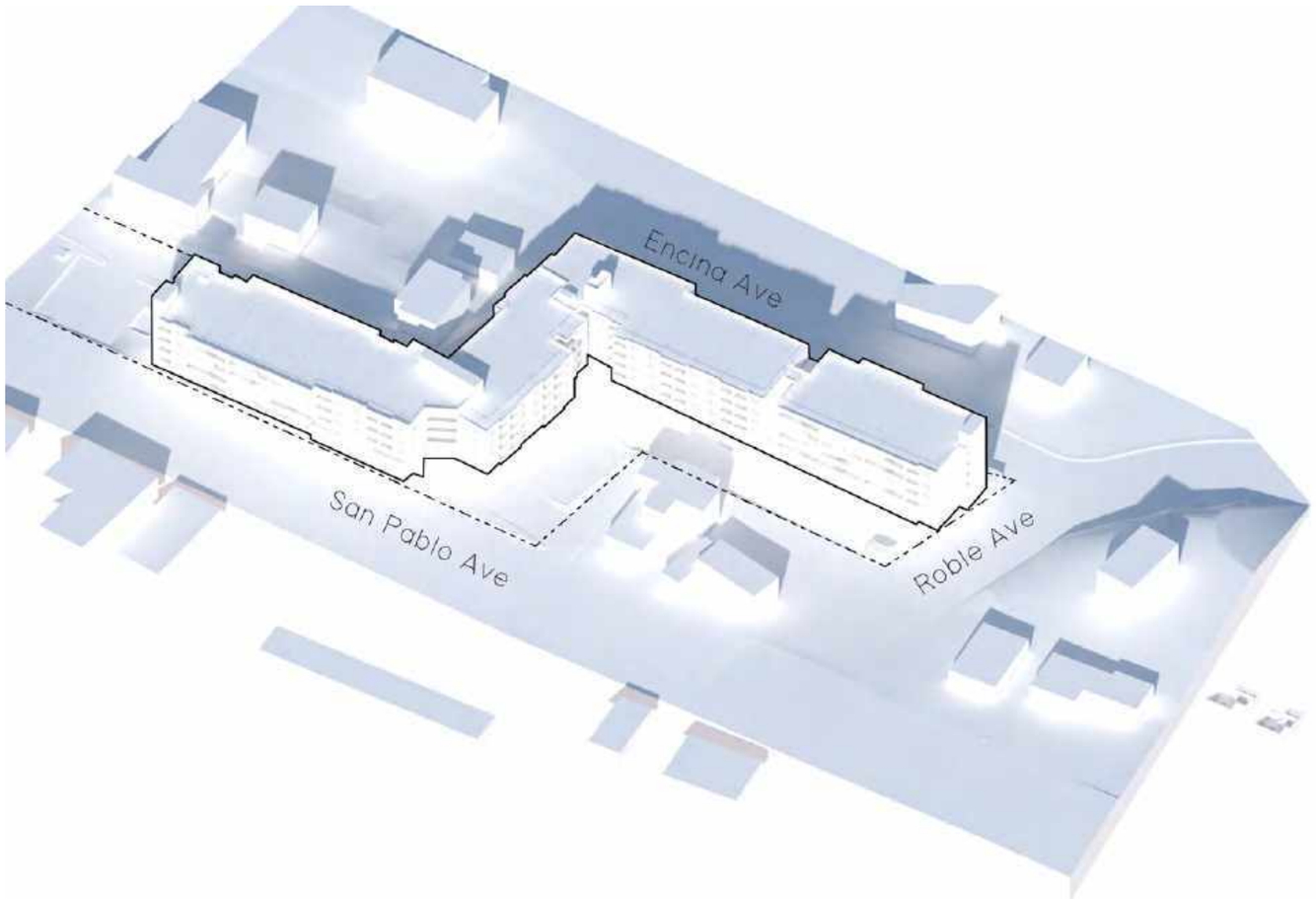

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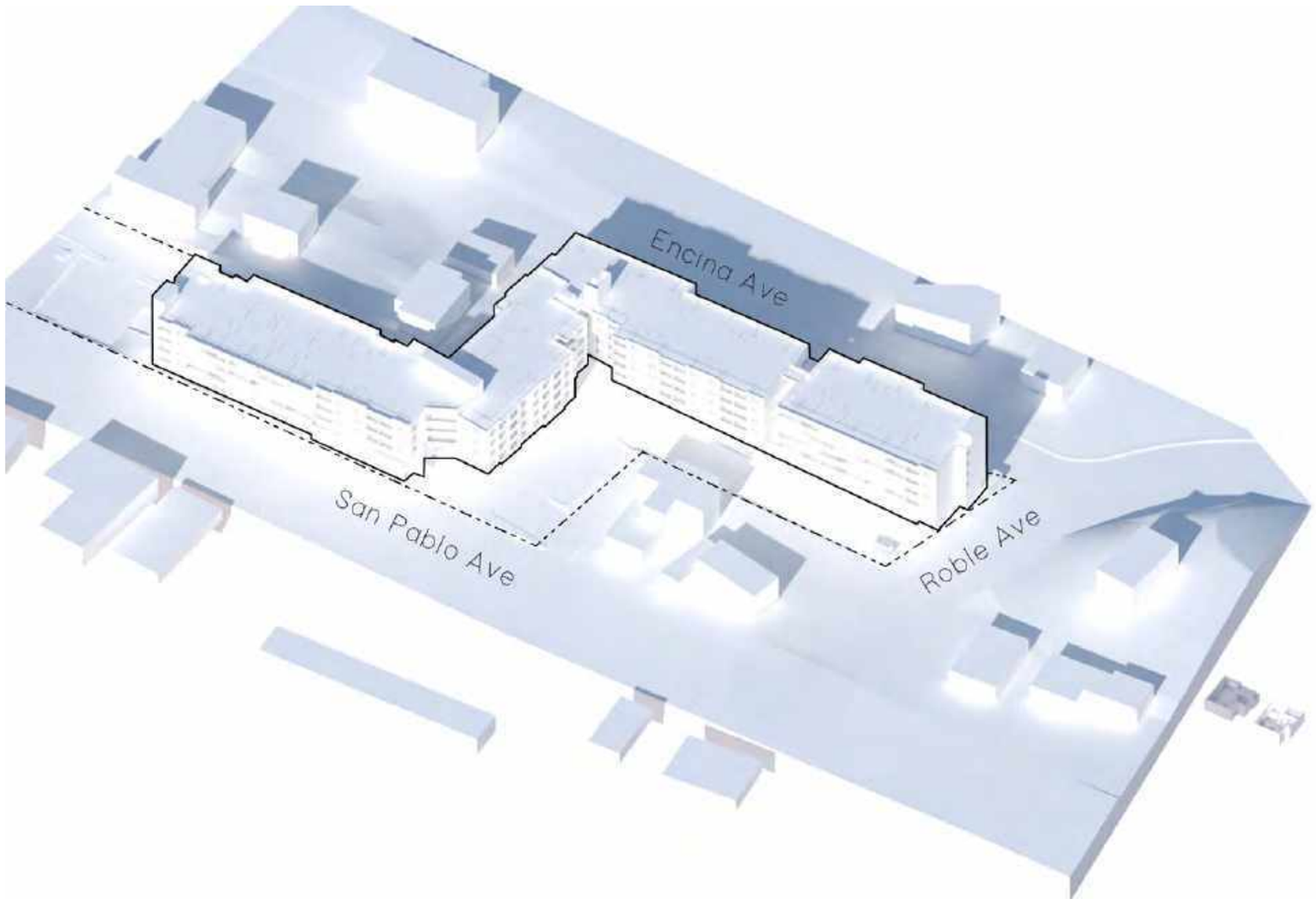

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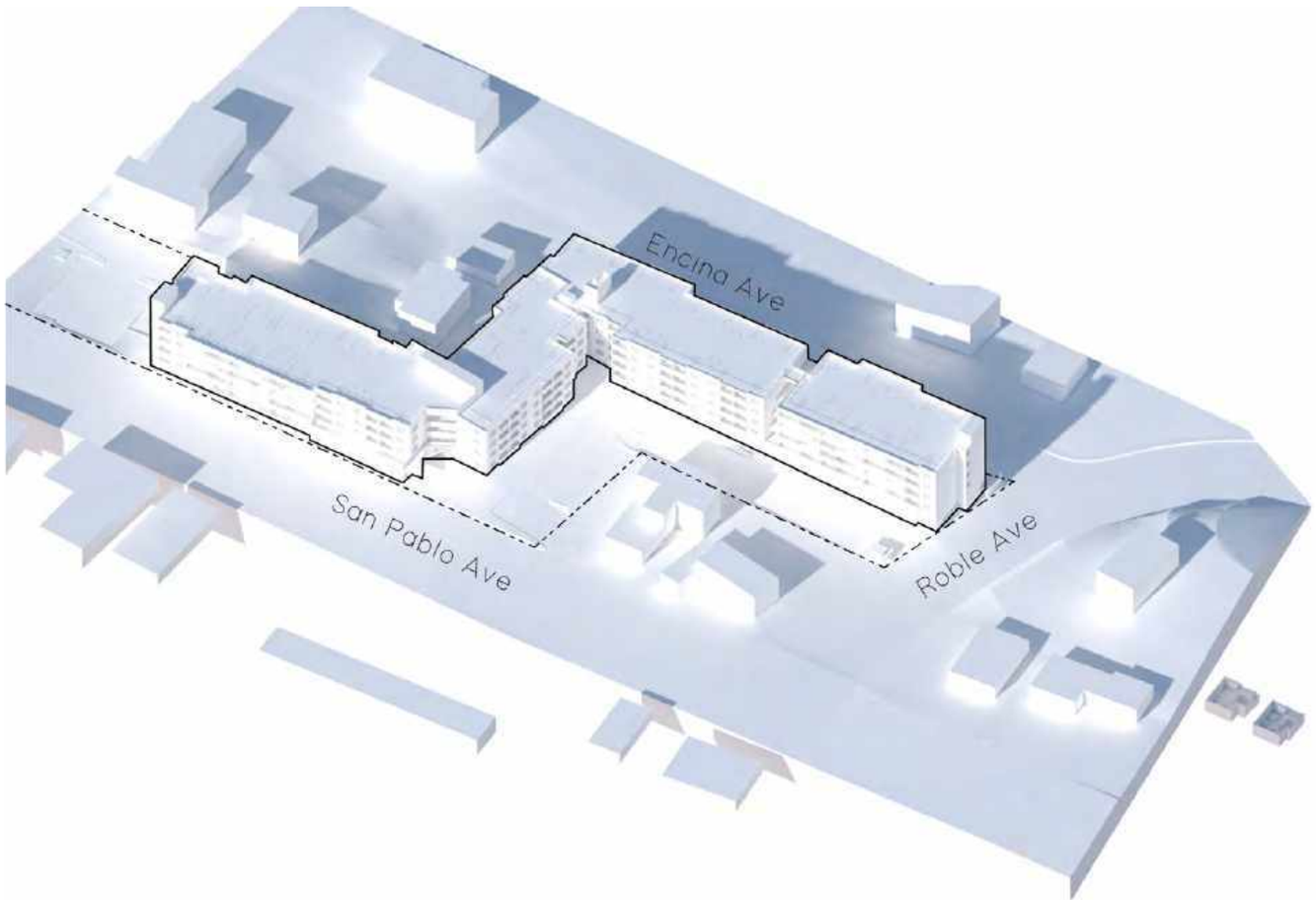

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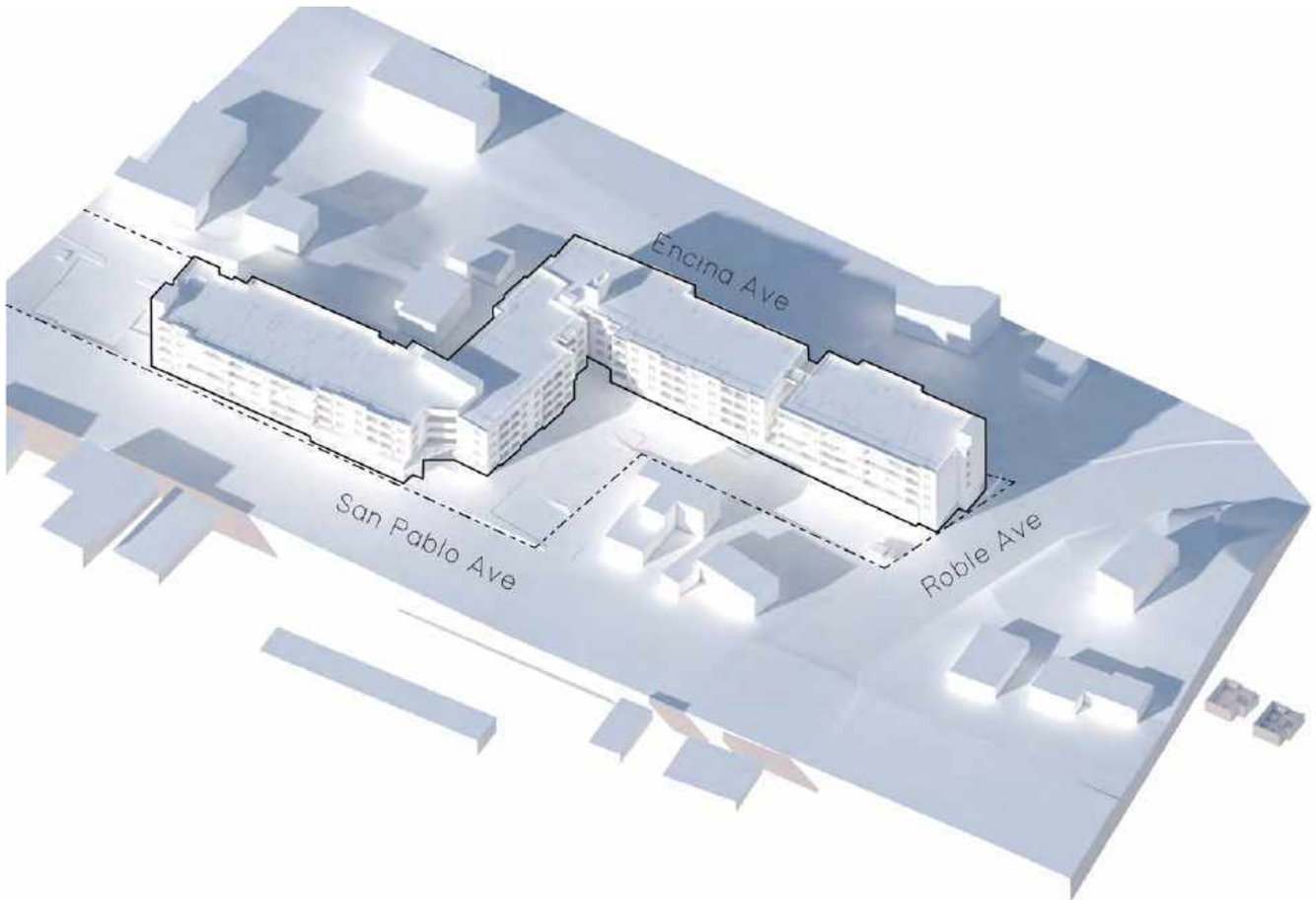

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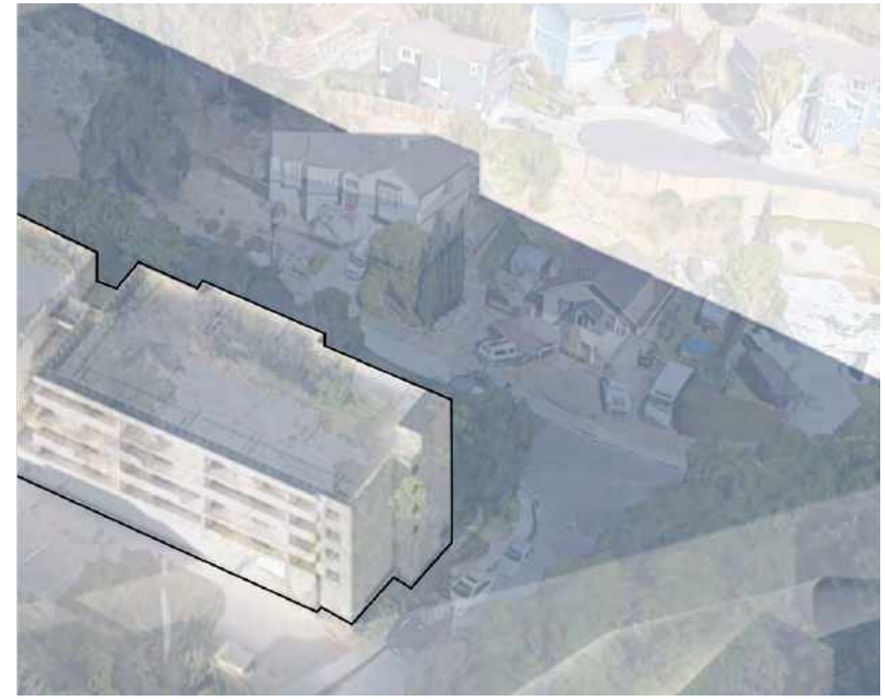

PROJECT NAME: VISTA WOODS SENIOR APARTMENTS

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MEMORANDUM

To:	Ben Kurzius, MRK Partners
From:	Matthew Morales, Dudek
CC:	Jonathan Rigg, Dudek
Subject:	Air Quality and Greenhouse Gas Analysis for the Vista Woods Apartments Project
Date:	April 28, 2021
Attachment A:	CalEEMod Output Files

Dudek is pleased to submit this focused air quality and greenhouse gas (GHG) emissions assessment to assist in environmental planning requirements for the Vista Woods Apartments Project (project) located at 600 Roble Avenue within the City of Pinole (City), California. This memorandum estimates criteria air pollutants and GHG emissions from construction and operation of the project and evaluates the project's compliance with general conformity requirements under the federal Clean Air Act. The analysis also includes a comparison of project emissions to the Bay Area Air Quality Management District (BAAQMD) threshods for informational purposes only. The contents and organization of this memorandum are as follows: brief project description; general methodology and assumptions; air quality assessment, including a general conformity analysis; GHG emissions assessment; a summary of conclusions; and references cited.

1 Project Description

The project involves demolition of existing structures, sitework, and construction a new 4-story building providing 179 units of affordable housing for seniors. Tenant amenities will include a variety of community gathering spaces, a fitness room, shared laundry in addition to in-unit washer/dryer hook-ups, exterior and garage parking, and offices for on-site management staff. The landscape design incorporates a diverse set of outdoor passive and active recreation spaces for residents and their pets to encourage healthy living. Designed with sustainability in mind, the development will introduce a new bus shelter on San Pablo Avenue in addition to producing renewable energy through rooftop solar panels.

2 General Methodology and Assumptions

2.1 Construction

Emissions from project construction activities were estimated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2. CalEEMod is a statewide computer model developed in cooperation with air districts throughout the state to quantify criteria air pollutant and GHG emissions associated with the construction and operational activities from a variety of land-use projects, such as residential, commercial, and industrial facilities. CalEEMod input parameters, including the proposed project land-use type and size, was based on information from the project architect or default model assumptions if project specifics were unavailable.

In order to estimate project emissions, it is assumed that construction of the project would begin in February 2022 and would last approximately 23 months, ending December 2023. The analysis contained herein is based on the following assumptions (duration of phases is approximate):

- Demolition: 20 days (February 2022)
- Site Preparation: 4 days (March 2022)
- Grading/ Trenching: 40 days (March 2022 to April 2022)
- Building Construction: 390 days (April 2022 to October 2023)
- Paving: 20 days (October 2023 to November 2023)
- Architectural Coating: 20 days (November 2023 to December 2023)

For the analysis, it was generally assumed that heavy construction equipment would be operating at the site for up to 8 hours per day, 5 days per week (22 days per month), during project construction. In addition to construction equipment operation, emissions from worker trips and vendor trucks (i.e., delivery trucks) were estimated based on CalEEMod defaults. Vendor trucks transporting building materials were assumed for building construction, and haul trucks were assumed for the import and export of earthwork material during the grading phase of construction.

The construction equipment mix and estimated hours of equipment operation per day used for the project's air emissions modeling are based on CalEEMod defaults and are shown in Table 1. Additional details regarding construction assumptions are provided in the modeling output, Attachment A.

Table 1
Construction Scenario Assumptions

Construction Phase	Daily Worker One-Way Trips	Daily Vendor Truck One-Way Trips	Total Haul Truck One-Way Trips	Equipment	Quantity	Daily Usage Hours
Demolition	13	0	31	Concrete/ Industrial Saws	1	8
				Rubber Tired Dozers	1	8
				Tractors/ Loaders/ Backhoes	3	8
Site Preparation	8	0	0	Graders	1	8
				Scrapers	1	8
				Tractors/ Loaders/ Backhoes	1	7
Grading/ Trenching	13	0	1,676	Graders	1	8
				Rubber Tired Dozers	1	8
				Tractors/ Loaders/ Backhoes	2	7
				Trenchers	1	8
Building Construction	166	33	0	Cranes	1	8
				Forklifts	2	7
				Generator Sets	1	8
				Tractors/ Loaders/ Backhoes	1	6
				Welders	3	8
Paving	15	0	0	Cement and Mortar Mixers	1	8
				Pavers	1	8
				Paving Equipment	1	8
				Rollers	2	8
				Tractors/ Loaders/ Backhoes	1	8
Architectural Coatings	33	0	0	Air Compressors	1	6

Source: See Attachment A for details.

2.2 Operations

Emissions from the operational phase of the project were also estimated using CalEEMod Version 2016.3.2. Operational year 2024 was assumed based on the first full year of project operations. During long-term operations, the project would generate air pollutants and GHGs from mobile, energy, and area sources, and GHGs

would be generated by solid waste. CalEEMod was used to estimate emissions from all of these sources. Trip generation rates from the Institute of Transportation Engineers 10th Edition for Senior Adult Housing - Attached. In addition, default CalEEMod assumptions were used for the generation of electricity associated with water supply, treatment, distribution and wastewater treatment, area sources (i.e., landscaping, consumer products, and architectural coatings for building maintenance), and solid waste disposal. Low flow toilets, faucets, showers and water efficient irrigation was assumed in compliance with the CALGreen code. Building electricity and natural gas consumption factors in CalEEMod were adjusted to account for 2019 Title 24 standards. Notably, the emission factors (in pounds per megawatt-hour) for CH_4 and N_2O are from CalEEMod defaults for Pacific Gas & Electric (PG&E), but the CO_2 emission factor is from PG&E's *Corporate Responsibility and Sustainability Report 2020* (PG&E 2020).

3 Air Quality

3.1 Air Quality Overview

The project is located within the San Francisco Bay Area Air Basin (SFBAAB) and is within the jurisdictional boundaries of the BAAQMD, which has jurisdiction over Contra Costa County, including Pinole. Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. Criteria air pollutants that are evaluated include volatile organic compounds (VOCs), oxides of nitrogen (NO_x), carbon monoxide (CO), sulfur oxides (SO_x), particulate matter with an aerodynamic diameter less than or equal to 10 microns in size (PM_{10}), and particulate matter with an aerodynamic diameter less than or equal to 2.5 microns in size ($PM_{2.5}$). VOCs and NO_x are important because they are precursors to ozone (O_3).

3.2 General Conformity Background

Under Section 176(c)(1) of the federal Clean Air Act, federal agencies that "engage in, support in any way or provide financial assistance for, license or permit, or approve any activity"[1] must demonstrate that such actions do not interfere with state and local plans to bring an area into attainment with the National Ambient Air Quality Standards (NAAQS). The program by which a federal agency determines that its action would not obstruct or conflict with air quality attainment plans is called "general conformity." The implementing regulations for general conformity are found in Title 40, Code of Federal Regulations, Part 51, Subpart W.

Under the general conformity regulations, both the direct and indirect emissions associated with a federal action must be evaluated. Subpart W defines direct emissions as:

> *[T]hose emissions of a criteria pollutant or its precursors that are caused or initiated by the Federal action and occur at the same time and place as the action.*

Indirect emissions are defined as:

1 Title 40, Code of Federal Regulation, Part 51, Section 51.850.

[T]hose emissions of a criteria pollutant or its precursors that:

(1) Are caused by the Federal action, but may occur later in time and/or may be farther removed in distance from the action itself but are still reasonably foreseeable; and

(2) The Federal agency can practicably control and will maintain control over due to a continuing program responsibility of the Federal agency.

3.3 Attainment Status and General Conformity Thresholds

A conformity determination is required for each criteria pollutant or precursor where the direct and indirect emissions of the criteria pollutant or precursor in a federal nonattainment or maintenance area would equal or exceed specified annual emission rates, referred to as "de minimis" thresholds. For O_3 precursors (VOCs and NO_x), the de minimis thresholds depend on the nonattainment classification's severity; for other pollutants, the threshold is set at 100 tons per year. The SFBAAB is designated as nonattainment for O_3 and $PM_{2.5}$. The BAAQMD is in attainment with all remaining NAAQS. The relevant de minimis thresholds for the SFBAAB are 100 tons per year for VOCs (O_3 precursor), NO_x (O_3 precursor), and $PM_{2.5}$, as shown in Table 2.

Table 2
General Conformity De Minimis Thresholds

Pollutant	Attainment Status	Annual Emissions (ton/yr)
VOC	Nonattainment/Marginal (O_3)	100
NO_X	Nonattainment/Marginal (O_3)	100
$PM_{2.5}$	Nonattainment/Moderate	100

Source: EPA 2020a; EPA 2020b
Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; O_3 = ozone; $PM_{2.5}$ = particulate matter with an aerodynamic diameter less than or equal to 2.5 microns.

3.4 Bay Area Air Quality Management District Thresholds

In June 2010, the BAAQMD adopted thresholds of significance to assist lead agencies in the evaluation and mitigation of air quality impacts under CEQA. The BAAQMD CEQA Air Quality Guidelines were recently re-released in May 2017 and include the same thresholds as in the 2010 Guidelines for criteria air pollutants, toxic air contaminants (TACs), and GHGs (BAAQMD 2017a). The current BAAQMD significance thresholds are summarized in Table 3.

Table 3
Bay Area Air Quality Management District Thresholds of Significance

Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (tons/year)

Table 3
Bay Area Air Quality Management District Thresholds of Significance

Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (tons/year)
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (exhaust)	82	15
$PM_{2.5}$	54 (exhaust)	54	10
$PM_{10}/PM_{2.5}$ (fugitive dust)	Best Management Practices	None	
Local CO	None	9.0 ppm (8-hour average, 20.0 ppm (1-hour average)	
Risks and Hazards (Individual Project)	Compliance with Qualified Community Risk Reduction Plan or Increased cancer risk of >10.0 in a million Increased noncancer risk of >1.0 Hazard Index (Chronic or Acute) Ambient $PM_{2.5}$ increase >0.3 µg/m³ annual average Zone of Influence: 1,000-foot radius from property line of source or receptor		
Risks and Hazards (Cumulative)	Compliance with Qualified Community Risk Reduction Plan or Cancer risk of >100 in a million (from all local sources) Noncancer risk of >10.0 Hazard Index (chronic, from all local sources) Ambient $PM_{2.5}$ >0.8 µg/m³ annual average (from all local sources) Zone of Influence: 1,000-foot radius from property line of source or receptor		
Accidental Release of Acutely Hazardous Air Pollutants	None	Storage or use of acutely hazardous material located near receptors or new receptors located near stored or used acutely hazardous materials considered significant	
Odors	None	Five confirmed complaints to BAAQMD per year averaged over 3 years	

Source: BAAQMD 2017a.
Notes: lbs/day = pounds per day; tons/year = tons per year; ppm = parts per million; µg/m³ = micrograms per cubic meter; ROG = reactive organic gases; NO_x = oxides of nitrogen; PM_{10} = particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; CO = carbon monoxide

3.5 Criteria Air Pollutant Emissions

3.5.1 Construction

Construction of the project would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment and soil disturbance) and off-site sources (i.e., on-road haul trucks, vendor trucks, and worker vehicle trips). CalEEMod was used to calculate the annual criteria air pollutant emissions based on the construction scenario described in Section 2, General Methodology and Assumptions. Table 4 presents the estimated annual emissions generated during construction of the project. While there are no applicable de minimis thresholds for CO, SO_x, or PM_{10}, as the SFBAAB is in attainment of the NAAQS for these pollutants, estimated annual emissions for SO_x, PM_{10}, and $PM_{2.5}$ are provided in Table 4 for disclosure. Details of the emission calculations are provided in Attachment A.

Table 4
Estimated Annual Construction Criteria Air Pollutant Emissions

Year	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Tons per Year					
2022	0.28	2.40	2.08	<0.01	0.38	0.20
2023	1.32	1.86	2.10	<0.01	0.24	0.11
Maximum Annual Emissions	**1.32**	**2.40**	**2.10**	**<0.01**	**0.38**	**0.20**
De Minimis Threshold	100	100	N/A	N/A	N/A	100
Exceeds threshold?	**No**	**No**	**N/A**	**N/A**	**N/A**	**No**

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; N/A = not applicable.
See Attachment A for complete results.

As shown in Table 4, the annual emissions of VOC, NO_x, and $PM_{2.5}$ would not exceed the applicable de minimis thresholds; therefore, further analysis is not required for VOC, NO_x, and $PM_{2.5}$. As such, the project would be in compliance with the general conformity requirements and would not conflict with local air quality attainment plans to achieve federal ambient air quality standards.

For disclosure purposes, average daily emissions were computed by dividing the total construction emissions by the number of active construction days, which were then compared to the BAAQMD construction thresholds of significance in Table 5 below.

Table 5
Estimated Average Daily Construction Criteria Air Pollutant Emissions

Year	VOC	NO_x	CO	SO_x	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
	Pounds per Day					
2022 – 2023 Construction	6.49	17.26	16.91	0.04	0.67	0.63
BAAQMD Construction Thresholds	54	54	N/A	N/A	82	54
Exceeds threshold?	**No**	**No**	**N/A**	**N/A**	**No**	**No**

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; N/A = not applicable; BAAQMD = Bay Area Air Quality Management District.
See Attachment A for complete results. The values shown are average daily emissions based on total overall construction emissions in tons, converted to pounds, and divided by 494 active work days.

As shown in Table 5, construction of the project would not exceed BAAQMD significance thresholds. Although the BAAQMD does not have a quantitative significance threshold for fugitive dust, the BAAQMD's CEQA Guidelines recommend that projects determine the significance for fugitive dust through application of best management practices (BMPs). The project contractor would be required as conditions of approval to implement the following BMPs that are required of all projects:

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 miles per hour (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 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.

7. All 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.

8. Post a publicly visible sign with the telephone number and person to contact at the City regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Implementation of the required BMPs would ensure air quality and fugitive dust-related impacts associated with construction would remain less than significant.

3.5.2 Operations

Table 6 presents the annual area, energy, and mobile source emissions associated with operation of the project. Details of the emission calculations are provided in Attachment A.

Table 6
Estimated Annual Operational Criteria Air Pollutant Emissions

Source	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Tons per Year					
Area	0.74	0.02	1.33	<0.01	0.01	0.01
Energy	0.01	0.07	0.03	<0.01	0.01	0.01
Mobile	0.25	1.04	2.81	0.01	1.01	0.28
Total Project Operations	**1.00**	**1.13**	**4.17**	**0.01**	**1.04**	**0.30**
De Minimis Threshold	*100*	*100*	*N/A*	*N/A*	*N/A*	*100*
Exceeds threshold?	**No**	**No**	**N/A**	**N/A**	**N/A**	**No**

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; N/A = not applicable.
Totals may not sum due to rounding. See Attachment A for complete results.

As shown in Table 6, the annual emissions of VOC, NO_x, and $PM_{2.5}$ associated with the project would not exceed the de minimis thresholds; therefore, further analysis is not required for VOC, NO_x, and $PM_{2.5}$. As such, the project would be in compliance with the general conformity requirements and would not conflict with local air quality attainment plans to achieve federal ambient air quality standards.

For disclosure purposes, maximum daily criteria air pollutant emissions were estimated and compared to the BAAQMD operational thresholds of significance in Table 7 below.

Table 7
Estimated Maximum Daily Operational Criteria Air Pollutant Emissions

Source	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
Area	4.28	0.17	14.77	0.01	0.08	0.08
Energy	0.04	0.38	0.16	<0.01	0.03	0.03
Mobile	0.92	3.25	8.97	0.03	3.11	0.85
BAAQMD Operational Thresholds	54	54	N/A	N/A	82	54
Exceeds threshold?	**No**	**No**	**N/A**	**N/A**	**No**	**No**

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; N/A = not applicable; BAAQMD = Bay Area Air Quality Management District.
See Attachment A for complete results. The values shown are the maximum of the summer or winter outputs from CalEEMod. Although no mitigation was required, the "mitigated" values are shown in order to account for inherent transportation benefits of the project (i.e., increased density and below market rate housing) as well as CALGreen compliance for water consumption reductions.

As shown in Table 7, operation of the project would not exceed BAAQMD significance thresholds. Further, since the project would not exceed applicable BAAQMD thresholds, would develop affordable housing in compliance with all applicable building codes (including rooftop solar panels) as well as support alternative transportation

options through the construction of a new bus shelter, the project would not conflict with or obstruct implementation of the *Spare the Air: Cool The Climate Final 2017 Clean Air Plan* (BAAQMD 2017b).

3.5 Toxic Air Contaminants

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Children, pregnant women, older adults, and people with existing health problems are especially vulnerable to the effects of air pollution. Accordingly, land uses where sensitive-receptor population groups are likely to be located at hospitals, medical clinics, schools, playgrounds, childcare centers, residences, and retirement homes (BAAQMD 2017a). There are existing residences in close proximity to the project site.

TACs are defined as substances that may cause or contribute to an increase in deaths or in serious illness, or that may pose a present or potential hazard to human health. Health effects from carcinogenic air toxics are usually described in terms of cancer risk. BAAQMD recommends an incremental cancer risk threshold of 10 in 1 million. "Incremental cancer risk" is the net increased likelihood that a person continuously exposed to concentrations of TACs resulting from a project over a 9-, 30-, and 70-year exposure period will contract cancer based on the use of standard California Office of Environmental Health Hazard Assessment risk-assessment methodology (OEHHA 2015). In addition, some TACs have non-carcinogenic effects. BAAQMD recommends a Hazard Index of 1 or more for acute (short-term) and chronic (long-term) non-carcinogenic effects.[2] The TAC that would potentially be emitted during construction activities associated with development of the proposed project would be diesel particulate matter.

Diesel particulate matter emissions would be emitted from heavy equipment operations and heavy-duty trucks. Heavy-duty construction equipment is subject to a CARB air toxic control measure for diesel construction equipment to reduce diesel particulate emissions. According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 30-year exposure period for the maximally exposed individual resident; however, such assessments should be limited to the period and duration of activities associated with the proposed project. The duration of the proposed construction activities would only constitute a small percentage of the total 30-year exposure period. Due to the relatively short period of exposure and minimal particulate emissions generated, TACs emitted during construction would not be expected to result in concentrations causing significant health risks. In addition, since the project would consist of residential uses, it wouldn't introduce new sources of TACs.

4 Greenhouse Gas Emissions

4.1 Greenhouse Gases Overview

A GHG is any gas that absorbs infrared radiation in the atmosphere; in other words, GHGs trap heat in the atmosphere. As defined in California Health and Safety Code Section 38505(g), for purposes of administering many of the state's primary GHG emissions reduction programs, GHGs include carbon dioxide (CO_2), methane

[2] Non-cancer adverse health risks are measured against a hazard index, which is defined as the ratio of the predicted incremental exposure concentrations of the various non-carcinogens from the proposed project to published reference exposure levels that can cause adverse health effects.

(CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride. (See also Cal. Code Regs. tit. 14, § 15364.5.) Some GHGs, such as CO_2, CH_4, and N_2O, occur naturally and are emitted into the atmosphere through natural processes and human activities. Of these gases, CO_2 and CH_4 are the predominant GHGs emitted from human activities. Manufactured GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases, such as HFCs, PFCs, and SF_6, associated with certain industrial products and processes.

The effect each GHG has on climate change is measured as a combination of the mass of its emissions and the potential of a gas or aerosol to trap heat in the atmosphere, known as its global warming potential (GWP), which varies among GHGs. Total GHG emissions are expressed as a function of how much warming would be caused by the same mass of CO_2. Thus, GHG gas emissions are typically measured in metric tons (MT) of CO_2 equivalent (CO_2e).[3]

Climate change refers to any significant change in measures of climate, such as temperature, precipitation, or wind patterns, lasting for an extended period of time (decades or longer). The greenhouse effect, which is the trapping and build-up of heat in the atmosphere near the Earth's surface, is a natural process that contributes to regulating the Earth's temperature. Human activities that emit additional GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing the Earth's surface temperature to rise.

The Council on Environmental Quality (CEQ) has withdrawn its final guidance for Federal agencies on how to consider GHG emissions and the effects of climate change in National Environmental Policy Act (NEPA) reviews, a Notice of Availability for which was published on August 5, 2016 (81 FR 51866). As explained in the Notice of Availability, the withdrawn guidance was not a regulation. Pursuant to Executive Order 13783, "Promoting Energy Independence and Economic Growth,"[4] of March 28, 2017, the guidance has been withdrawn for further consideration. Subsequently, in 2019, the CEQ published draft guidance for the consideration of GHG emissions under NEPA. On January 20, 2021, however, President Biden rescinded the CEQ June 2019 Draft NEPA Guidance on Consideration of GHG Emissions and directed preparation of new guidance building on the August 2016 Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews. While there are currently no formal guidance or numeric thresholds for evaluating project-generated GHG emissions in NEPA assessments, estimated project-generated GHG emissions are included herein for disclosure purposes.

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[3] The CO_2 equivalent for a gas is derived by multiplying the mass of the gas by the associated GWP, such that metric tons of CO_2e = (metric tons of a GHG) × (GWP of the GHG). CalEEMod assumes that the GWP for CH_4 is 25, which means that emissions of 1 metric ton of CH_4 are equivalent to emissions of 25 metric tons of CO_2, and the GWP for N_2O is 298.

[4] Executive Order 13783, Promoting Energy Independence and Economic Growth, is available here: https://www.federalregister.gov/documents/2017/03/31/2017-06576/promoting-energy-independence-and-economic-growth.

4.2 GHG Emissions

4.2.1 Construction

Construction of the project would result in GHG emissions that are primarily associated with use of off-road construction equipment, on-road vendor and haul trucks, and worker vehicles. CalEEMod was used to calculate the annual GHG emissions based on the construction scenario described in Section 2, General Methodology and Assumptions. Table 8 shows the estimated annual GHG construction emissions associated with the project. Details of the emission calculations are provided in Attachment A.

Table 8
Estimated Annual Construction GHG Emissions

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
2022	482.76	0.06	0.00	484.35
2023	443.47	0.05	0.00	444.79
			Total Project Construction Emissions	**929.14**
			Amortized Emissions (Over 30 Years)	*30.97*

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent
See Attachment A for complete results.

As shown in Table 8, the estimated total project-generated construction GHG emissions would be minimal, estimated at approximately 929 MT CO_2e, or about 31 MT CO_2e per year when amortized over 30 years.

4.2.2 Operations

Table 9 presents the area sources, energy usage, motor vehicles, solid waste generation, water usage and wastewater generation GHG emissions associated with operation of the project. Details of the GHG emission calculations are provided in Attachment A.

Table 9
Estimated Annual Operational GHG Emissions

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
Area	2.17	<0.01	0.00	2.22
Energy	148.25	0.01	<0.01	149.56
Mobile	515.61	0.02	0.00	516.04
Solid waste	16.73	0.99	0.00	41.46
Water supply and wastewater	10.37	0.31	0.01	20.20
Total Project Operational Emissions				**729.48**
Amortized Construction Emissions				*30.97*
Total Project Operational plus Amortized Construction Emissions				**760.45**

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.
Totals may not sum due to rounding. See Attachment A for complete results. Although no mitigation was required, the "mitigated" values are shown in order to account for inherent transportation benefits of the project (i.e., increased density and below market rate housing) as well as CALGreen compliance for water consumption reductions.

As shown in Table 9, the annual emissions of GHGs associated with the project would be minimal, estimated at approximately 730 MT CO_2e per year. When summed with amortized construction emissions, the project would generate approximately 761 MT CO_2e per year. As a comparison for information purposes, BAAQMD's currently adopted GHG threshold for land use development projects is 1,100 MT CO_2e per year (BAAQMD 2017a), which the project would not exceed. In addition, as an affordable housing development in an infill location, the project is anticipated to shorten commutes and reduce vehicle-miles traveled and thus reduce GHG emissions. The project would also be developed in compliance with all applicable building codes (including inclusion of rooftop solar panels) as well as support alternative transportation options through the construction of a new bus shelter.

5 Summary

Neither construction emissions nor the operational emissions generated by the project would exceed the general conformity de minimis thresholds for VOC, NO_x, and $PM_{2.5}$, as shown in Tables 4 and 6. Accordingly, the project would be in compliance with the federal Clean Air Act and general conformity requirements.

While there are no specific requirements for evaluating GHG emissions under NEPA, estimated project-generated GHG emissions are included for disclosure. As presented in Tables 8 and 9, the project is estimated to generate a total of approximately 929 MT CO_2e during construction (or 31 MT CO_2e per year when amortized over 30 years) and 730 MT CO_2e per year during operations. When summed with amortized construction emissions, the project would generate approximately 761 MT CO_2e per year.

6 References

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PG&E (Pacific Gas & Electric). 2020. *Corporate Responsibility and Sustainability Report 2020*. https://www.pgecorp.com/corp_responsibility/reports/2020/assets/PGE_CRSR_2020.pdf

Attachment A

CalEEMod Output Files

Vista Woods Senior Housing Project

Contra Costa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	66.00	Space	0.59	26,400.00	0
Unenclosed Parking with Elevator	24.00	Space	0.00	9,600.00	0
City Park	1.18	Acre	1.18	51,183.00	0
Apartments Mid Rise	179.00	Dwelling Unit	0.25	151,191.00	512

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	206	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Revised CO2 Intensity Factor based on PG&E's 2020 Corporate Sustainability Report

Land Use - Land uses assumed: 179 mid rise apartments, 1.18 acre park (representative of open space/landscaped areas), and 24 space unenclosed parking with elevator, and 66 space parking lot on 2.02 acres total

Construction Phase - Adjusted schedule based on applicant input (Feb 2022 through Dec 2023)

Off-road Equipment - Default equipment assumptions

Off-road Equipment - Default equipment assumptions

Off-road Equipment - Default equipment assumptions

Off-road Equipment - Added trencher for utility infrastructure
Off-road Equipment - Default equipment assumptions

Off-road Equipment - Default equipment assumptions

Trips and VMT - Default construction trip assumptions

On-road Fugitive Dust - Defaults

Demolition - 6,858 square feet of existing buildings to be demolished

Grading - 10,275 CY soil export and 3,137 CY soil import per applicant input

Architectural Coating - Defaults

Vehicle Trips - Adjusted trip gen based on ITE 10th Edition. Zeroed out trips for "park" use since the common areas would be for residents.

Vehicle Emission Factors - Default

Vehicle Emission Factors - Default

Vehicle Emission Factors - Default

Road Dust - Defaults

Woodstoves - No woodstoves or fireplaces assumed

Consumer Products - Defaults

Area Coating - Defaults

Landscape Equipment - Defaults

Energy Use - Adjusted energy use intensity based on 2019 Title 24 compliance

Water And Wastewater - Defaults

Solid Waste - Defaults

Mobile Land Use Mitigation - Increased density (89.5 du/acre) and 100% below market rate housing selected

Water Mitigation - Low flow faucets, toilets, showers and water efficient irrigation per CALGreen

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	3.00	4.00
tblConstructionPhase	NumDays	6.00	40.00
tblConstructionPhase	NumDays	220.00	390.00
tblConstructionPhase	NumDays	10.00	20.00

tblConstructionPhase	NumDays	10.00	20.00
tblEnergyUse	T24E	426.45	90.83
tblEnergyUse	T24NG	6,115.43	5,828.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	26.85	0.00
tblFireplaces	NumberNoFireplace	7.16	179.00
tblFireplaces	NumberWood	30.43	0.00
tblGrading	MaterialExported	0.00	3,137.00
tblGrading	MaterialImported	0.00	10,275.00
tblLandUse	LandUseSquareFeet	51,400.80	51,183.00
tblLandUse	LandUseSquareFeet	179,000.00	151,191.00
tblLandUse	LotAcreage	0.22	0.00
tblLandUse	LotAcreage	4.71	0.25
tblProjectCharacteristics	CO2IntensityFactor	641.35	206
tblTripsAndVMT	HaulingTripNumber	1,677.00	1,676.00
tblVehicleTrips	ST_TR	6.39	3.56
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	SU_TR	5.86	3.26
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	WD_TR	6.65	3.70
tblVehicleTrips	WD_TR	1.89	0.00
tblWoodstoves	NumberCatalytic	3.58	0.00
tblWoodstoves	NumberNoncatalytic	3.58	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2781	2.4031	2.0817	5.4500e-003	0.2902	0.0926	0.3828	0.1093	0.0877	0.1970	0.0000	482.7324	482.7324	0.0635	0.0000	484.3198
2023	1.3248	1.8593	2.0954	5.0800e-003	0.1687	0.0722	0.2409	0.0454	0.0691	0.1145	0.0000	443.4698	443.4698	0.0529	0.0000	444.7913
Maximum	**1.3248**	**2.4031**	**2.0954**	**5.4500e-003**	**0.2902**	**0.0926**	**0.3828**	**0.1093**	**0.0877**	**0.1970**	**0.0000**	**482.7324**	**482.7324**	**0.0635**	**0.0000**	**484.3198**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2781	2.4031	2.0817	5.4500e-003	0.2902	0.0926	0.3828	0.1093	0.0877	0.1970	0.0000	482.7321	482.7321	0.0635	0.0000	484.3195
2023	1.3248	1.8593	2.0954	5.0800e-003	0.1687	0.0722	0.2409	0.0454	0.0691	0.1145	0.0000	443.4695	443.4695	0.0529	0.0000	444.7911
Maximum	**1.3248**	**2.4031**	**2.0954**	**5.4500e-003**	**0.2902**	**0.0926**	**0.3828**	**0.1093**	**0.0877**	**0.1970**	**0.0000**	**482.7321**	**482.7321**	**0.0635**	**0.0000**	**484.3195**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	2-1-2022	4-30-2022	0.8764	0.8764
2	5-1-2022	7-31-2022	0.6754	0.6754
3	8-1-2022	10-31-2022	0.6765	0.6765
4	11-1-2022	1-31-2023	0.6568	0.6568
5	2-1-2023	4-30-2023	0.5926	0.5926
6	5-1-2023	7-31-2023	0.6107	0.6107
7	8-1-2023	9-30-2023	0.4049	0.4049
		Highest	0.8764	0.8764

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7405	0.0153	1.3294	7.0000e-005		7.3700e-003	7.3700e-003		7.3700e-003	7.3700e-003	0.0000	2.1727	2.1727	2.0900e-003	0.0000	2.2249
Energy	8.1500e-003	0.0696	0.0296	4.4000e-004		5.6300e-003	5.6300e-003		5.6300e-003	5.6300e-003	0.0000	148.2547	148.2547	0.0111	3.4500e-003	149.5587
Mobile	0.1378	0.5807	1.5623	5.8900e-003	0.5583	4.5900e-003	0.5629	0.1498	4.2700e-003	0.1541	0.0000	540.5732	540.5732	0.0178	0.0000	541.0179
Waste						0.0000	0.0000		0.0000	0.0000	16.7346	0.0000	16.7346	0.9890	0.0000	41.4592
Water						0.0000	0.0000		0.0000	0.0000	3.7000	8.7610	12.4610	0.3813	9.2300e-003	24.7425
Total	**0.8865**	**0.6657**	**2.9213**	**6.4000e-003**	**0.5583**	**0.0176**	**0.5759**	**0.1498**	**0.0173**	**0.1671**	**20.4346**	**699.7616**	**720.1962**	**1.4012**	**0.0127**	**759.0031**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7405	0.0153	1.3294	7.0000e-005		7.3700e-003	7.3700e-003		7.3700e-003	7.3700e-003	0.0000	2.1727	2.1727	2.0900e-003	0.0000	2.2249
Energy	8.1500e-003	0.0696	0.0296	4.4000e-004		5.6300e-003	5.6300e-003		5.6300e-003	5.6300e-003	0.0000	148.2547	148.2547	0.0111	3.4500e-003	149.5587
Mobile	0.1355	0.5669	1.5046	5.6200e-003	0.5304	4.3900e-003	0.5348	0.1423	4.0900e-003	0.1464	0.0000	515.6119	515.6119	0.0172	0.0000	516.0411
Waste						0.0000	0.0000		0.0000	0.0000	16.7346	0.0000	16.7346	0.9890	0.0000	41.4592
Water						0.0000	0.0000		0.0000	0.0000	2.9600	7.4070	10.3669	0.3051	7.3900e-003	20.1970
Total	**0.8841**	**0.6519**	**2.8636**	**6.1300e-003**	**0.5304**	**0.0174**	**0.5478**	**0.1423**	**0.0171**	**0.1594**	**19.6946**	**673.4462**	**693.1408**	**1.3244**	**0.0108**	**729.4808**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.26**	**2.08**	**1.97**	**4.22**	**5.00**	**1.14**	**4.88**	**4.99**	**1.04**	**4.60**	**3.62**	**3.76**	**3.76**	**5.48**	**14.51**	**3.89**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	2/1/2022	2/28/2022	5	20	
2	Site Preparation	Site Preparation	3/1/2022	3/4/2022	5	4	
3	Grading	Grading	3/5/2022	4/29/2022	5	40	
4	Building Construction	Building Construction	4/30/2022	10/27/2023	5	390	
5	Paving	Paving	10/28/2023	11/24/2023	5	20	
6	Architectural Coating	Architectural Coating	11/25/2023	12/22/2023	5	20	

Acres of Grading (Site Preparation Phase): 6

Acres of Grading (Grading Phase): 20

Acres of Paving: 0.59

Residential Indoor: 306,162; Residential Outdoor: 102,054; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 2,160 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Grading	Trenchers	1	8.00	78	0.50
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	31.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	13.00	0.00	1,676.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	166.00	33.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	33.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.3800e-003	0.0000	3.3800e-003	5.1000e-004	0.0000	5.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0169	0.1662	0.1396	2.4000e-004		8.3800e-003	8.3800e-003		7.8300e-003	7.8300e-003	0.0000	21.0777	21.0777	5.3700e-003	0.0000	21.2120
Total	**0.0169**	**0.1662**	**0.1396**	**2.4000e-004**	**3.3800e-003**	**8.3800e-003**	**0.0118**	**5.1000e-004**	**7.8300e-003**	**8.3400e-003**	**0.0000**	**21.0777**	**21.0777**	**5.3700e-003**	**0.0000**	**21.2120**

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.1000e-004	3.8100e-003	8.1000e-004	1.0000e-005	2.6000e-004	1.0000e-005	2.7000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	1.1453	1.1453	5.0000e-005	0.0000	1.1466
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.5000e-004	2.7300e-003	1.0000e-005	1.0300e-003	1.0000e-005	1.0400e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.8401	0.8401	2.0000e-005	0.0000	0.8405
Total	**4.8000e-004**	**4.0600e-003**	**3.5400e-003**	**2.0000e-005**	**1.2900e-003**	**2.0000e-005**	**1.3100e-003**	**3.4000e-004**	**2.0000e-005**	**3.6000e-004**	**0.0000**	**1.9854**	**1.9854**	**7.0000e-005**	**0.0000**	**1.9871**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.3800e-003	0.0000	3.3800e-003	5.1000e-004	0.0000	5.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0169	0.1662	0.1396	2.4000e-004		8.3800e-003	8.3800e-003		7.8300e-003	7.8300e-003	0.0000	21.0777	21.0777	5.3700e-003	0.0000	21.2119
Total	**0.0169**	**0.1662**	**0.1396**	**2.4000e-004**	**3.3800e-003**	**8.3800e-003**	**0.0118**	**5.1000e-004**	**7.8300e-003**	**8.3400e-003**	**0.0000**	**21.0777**	**21.0777**	**5.3700e-003**	**0.0000**	**21.2119**

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.1000e-004	3.8100e-003	8.1000e-004	1.0000e-005	2.6000e-004	1.0000e-005	2.7000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	1.1453	1.1453	5.0000e-005	0.0000	1.1466
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.5000e-004	2.7300e-003	1.0000e-005	1.0300e-003	1.0000e-005	1.0400e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.8401	0.8401	2.0000e-005	0.0000	0.8405
Total	**4.8000e-004**	**4.0600e-003**	**3.5400e-003**	**2.0000e-005**	**1.2900e-003**	**2.0000e-005**	**1.3100e-003**	**3.4000e-004**	**2.0000e-005**	**3.6000e-004**	**0.0000**	**1.9854**	**1.9854**	**7.0000e-005**	**0.0000**	**1.9871**

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.1800e-003	0.0000	3.1800e-003	3.4000e-004	0.0000	3.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7600e-003	0.0313	0.0201	5.0000e-005		1.1900e-003	1.1900e-003		1.1000e-003	1.1000e-003	0.0000	4.3094	4.3094	1.3900e-003	0.0000	4.3443
Total	**2.7600e-003**	**0.0313**	**0.0201**	**5.0000e-005**	**3.1800e-003**	**1.1900e-003**	**4.3700e-003**	**3.4000e-004**	**1.1000e-003**	**1.4400e-003**	**0.0000**	**4.3094**	**4.3094**	**1.3900e-003**	**0.0000**	**4.3443**

3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	3.0000e-005	3.4000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1034	0.1034	0.0000	0.0000	0.1035
Total	**5.0000e-005**	**3.0000e-005**	**3.4000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1034**	**0.1034**	**0.0000**	**0.0000**	**0.1035**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.1800e-003	0.0000	3.1800e-003	3.4000e-004	0.0000	3.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7600e-003	0.0313	0.0201	5.0000e-005		1.1900e-003	1.1900e-003		1.1000e-003	1.1000e-003	0.0000	4.3094	4.3094	1.3900e-003	0.0000	4.3443
Total	**2.7600e-003**	**0.0313**	**0.0201**	**5.0000e-005**	**3.1800e-003**	**1.1900e-003**	**4.3700e-003**	**3.4000e-004**	**1.1000e-003**	**1.4400e-003**	**0.0000**	**4.3094**	**4.3094**	**1.3900e-003**	**0.0000**	**4.3443**

3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	3.0000e-005	3.4000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1034	0.1034	0.0000	0.0000	0.1035
Total	**5.0000e-005**	**3.0000e-005**	**3.4000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1034**	**0.1034**	**0.0000**	**0.0000**	**0.1035**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1318	0.0000	0.1318	0.0675	0.0000	0.0675	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0381	0.4073	0.2364	4.8000e-004		0.0196	0.0196		0.0181	0.0181	0.0000	42.1375	42.1375	0.0136	0.0000	42.4782
Total	**0.0381**	**0.4073**	**0.2364**	**4.8000e-004**	**0.1318**	**0.0196**	**0.1514**	**0.0675**	**0.0181**	**0.0855**	**0.0000**	**42.1375**	**42.1375**	**0.0136**	**0.0000**	**42.4782**

3.4 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.1300e-003	0.2057	0.0436	6.4000e-004	0.0142	6.0000e-004	0.0148	3.9000e-003	5.8000e-004	4.4800e-003	0.0000	61.9214	61.9214	2.6700e-003	0.0000	61.9881
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.5000e-004	5.0000e-004	5.4700e-003	2.0000e-005	2.0600e-003	1.0000e-005	2.0800e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.6801	1.6801	4.0000e-005	0.0000	1.6810
Total	**6.8800e-003**	**0.2062**	**0.0491**	**6.6000e-004**	**0.0163**	**6.1000e-004**	**0.0169**	**4.4500e-003**	**5.9000e-004**	**5.0400e-003**	**0.0000**	**63.6016**	**63.6016**	**2.7100e-003**	**0.0000**	**63.6692**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1318	0.0000	0.1318	0.0675	0.0000	0.0675	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0381	0.4073	0.2364	4.8000e-004		0.0196	0.0196		0.0181	0.0181	0.0000	42.1375	42.1375	0.0136	0.0000	42.4782
Total	**0.0381**	**0.4073**	**0.2364**	**4.8000e-004**	**0.1318**	**0.0196**	**0.1514**	**0.0675**	**0.0181**	**0.0855**	**0.0000**	**42.1375**	**42.1375**	**0.0136**	**0.0000**	**42.4782**

3.4 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.1300e-003	0.2057	0.0436	6.4000e-004	0.0142	6.0000e-004	0.0148	3.9000e-003	5.8000e-004	4.4800e-003	0.0000	61.9214	61.9214	2.6700e-003	0.0000	61.9881
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.5000e-004	5.0000e-004	5.4700e-003	2.0000e-005	2.0600e-003	1.0000e-005	2.0800e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.6801	1.6801	4.0000e-005	0.0000	1.6810
Total	**6.8800e-003**	**0.2062**	**0.0491**	**6.6000e-004**	**0.0163**	**6.1000e-004**	**0.0169**	**4.4500e-003**	**5.9000e-004**	**5.0400e-003**	**0.0000**	**63.6016**	**63.6016**	**2.7100e-003**	**0.0000**	**63.6692**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1624	1.2779	1.2559	2.1900e-003		0.0614	0.0614		0.0589	0.0589	0.0000	181.7201	181.7201	0.0351	0.0000	182.5966
Total	**0.1624**	**1.2779**	**1.2559**	**2.1900e-003**		**0.0614**	**0.0614**		**0.0589**	**0.0589**	**0.0000**	**181.7201**	**181.7201**	**0.0351**	**0.0000**	**182.5966**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.8100e-003	0.2819	0.0711	7.7000e-004	0.0190	5.8000e-004	0.0196	5.4900e-003	5.6000e-004	6.0500e-003	0.0000	73.9359	73.9359	3.2900e-003	0.0000	74.0181
Worker	0.0418	0.0282	0.3056	1.0400e-003	0.1152	7.3000e-004	0.1159	0.0306	6.7000e-004	0.0313	0.0000	93.8614	93.8614	1.9900e-003	0.0000	93.9110
Total	**0.0506**	**0.3101**	**0.3767**	**1.8100e-003**	**0.1342**	**1.3100e-003**	**0.1355**	**0.0361**	**1.2300e-003**	**0.0374**	**0.0000**	**167.7973**	**167.7973**	**5.2800e-003**	**0.0000**	**167.9291**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1624	1.2779	1.2559	2.1900e-003		0.0614	0.0614		0.0589	0.0589	0.0000	181.7199	181.7199	0.0351	0.0000	182.5964
Total	**0.1624**	**1.2779**	**1.2559**	**2.1900e-003**		**0.0614**	**0.0614**		**0.0589**	**0.0589**	**0.0000**	**181.7199**	**181.7199**	**0.0351**	**0.0000**	**182.5964**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.8100e-003	0.2819	0.0711	7.7000e-004	0.0190	5.8000e-004	0.0196	5.4900e-003	5.6000e-004	6.0500e-003	0.0000	73.9359	73.9359	3.2900e-003	0.0000	74.0181
Worker	0.0418	0.0282	0.3056	1.0400e-003	0.1152	7.3000e-004	0.1159	0.0306	6.7000e-004	0.0313	0.0000	93.8614	93.8614	1.9900e-003	0.0000	93.9110
Total	**0.0506**	**0.3101**	**0.3767**	**1.8100e-003**	**0.1342**	**1.3100e-003**	**0.1355**	**0.0361**	**1.2300e-003**	**0.0374**	**0.0000**	**167.7973**	**167.7973**	**5.2800e-003**	**0.0000**	**167.9291**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1842	1.4646	1.5281	2.6900e-003		0.0660	0.0660		0.0632	0.0632	0.0000	223.2797	223.2797	0.0422	0.0000	224.3354
Total	**0.1842**	**1.4646**	**1.5281**	**2.6900e-003**		**0.0660**	**0.0660**		**0.0632**	**0.0632**	**0.0000**	**223.2797**	**223.2797**	**0.0422**	**0.0000**	**224.3354**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.1700e-003	0.2636	0.0779	9.2000e-004	0.0233	3.1000e-004	0.0237	6.7500e-003	3.0000e-004	7.0500e-003	0.0000	88.3071	88.3071	3.3200e-003	0.0000	88.3901
Worker	0.0479	0.0311	0.3453	1.2200e-003	0.1415	8.8000e-004	0.1424	0.0376	8.1000e-004	0.0385	0.0000	110.8357	110.8357	2.1900e-003	0.0000	110.8903
Total	**0.0560**	**0.2947**	**0.4231**	**2.1400e-003**	**0.1649**	**1.1900e-003**	**0.1661**	**0.0444**	**1.1100e-003**	**0.0455**	**0.0000**	**199.1427**	**199.1427**	**5.5100e-003**	**0.0000**	**199.2804**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1842	1.4646	1.5281	2.6900e-003		0.0660	0.0660		0.0632	0.0632	0.0000	223.2795	223.2795	0.0422	0.0000	224.3351
Total	**0.1842**	**1.4646**	**1.5281**	**2.6900e-003**		**0.0660**	**0.0660**		**0.0632**	**0.0632**	**0.0000**	**223.2795**	**223.2795**	**0.0422**	**0.0000**	**224.3351**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.1700e-003	0.2636	0.0779	9.2000e-004	0.0233	3.1000e-004	0.0237	6.7500e-003	3.0000e-004	7.0500e-003	0.0000	88.3071	88.3071	3.3200e-003	0.0000	88.3901
Worker	0.0479	0.0311	0.3453	1.2200e-003	0.1415	8.8000e-004	0.1424	0.0376	8.1000e-004	0.0385	0.0000	110.8357	110.8357	2.1900e-003	0.0000	110.8903
Total	**0.0560**	**0.2947**	**0.4231**	**2.1400e-003**	**0.1649**	**1.1900e-003**	**0.1661**	**0.0444**	**1.1100e-003**	**0.0455**	**0.0000**	**199.1427**	**199.1427**	**5.5100e-003**	**0.0000**	**199.2804**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.8000e-003	0.0861	0.1168	1.8000e-004		4.3400e-003	4.3400e-003		4.0000e-003	4.0000e-003	0.0000	15.5128	15.5128	4.9200e-003	0.0000	15.6357
Paving	7.7000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.5700e-003**	**0.0861**	**0.1168**	**1.8000e-004**		**4.3400e-003**	**4.3400e-003**		**4.0000e-003**	**4.0000e-003**	**0.0000**	**15.5128**	**15.5128**	**4.9200e-003**	**0.0000**	**15.6357**

3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	2.6000e-004	2.9000e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9317	0.9317	2.0000e-005	0.0000	0.9321
Total	**4.0000e-004**	**2.6000e-004**	**2.9000e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9317**	**0.9317**	**2.0000e-005**	**0.0000**	**0.9321**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.8000e-003	0.0861	0.1168	1.8000e-004		4.3400e-003	4.3400e-003		4.0000e-003	4.0000e-003	0.0000	15.5128	15.5128	4.9200e-003	0.0000	15.6357
Paving	7.7000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.5700e-003**	**0.0861**	**0.1168**	**1.8000e-004**		**4.3400e-003**	**4.3400e-003**		**4.0000e-003**	**4.0000e-003**	**0.0000**	**15.5128**	**15.5128**	**4.9200e-003**	**0.0000**	**15.6357**

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	2.6000e-004	2.9000e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9317	0.9317	2.0000e-005	0.0000	0.9321
Total	**4.0000e-004**	**2.6000e-004**	**2.9000e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9317**	**0.9317**	**2.0000e-005**	**0.0000**	**0.9321**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.0718					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9200e-003	0.0130	0.0181	3.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571
Total	**1.0737**	**0.0130**	**0.0181**	**3.0000e-005**		**7.1000e-004**	**7.1000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.5000e-004**	**0.0000**	**2.5571**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	5.8000e-004	6.3800e-003	2.0000e-005	2.6200e-003	2.0000e-005	2.6300e-003	7.0000e-004	1.0000e-005	7.1000e-004	0.0000	2.0496	2.0496	4.0000e-005	0.0000	2.0507
Total	**8.9000e-004**	**5.8000e-004**	**6.3800e-003**	**2.0000e-005**	**2.6200e-003**	**2.0000e-005**	**2.6300e-003**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**2.0496**	**2.0496**	**4.0000e-005**	**0.0000**	**2.0507**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.0718					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9200e-003	0.0130	0.0181	3.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571
Total	**1.0737**	**0.0130**	**0.0181**	**3.0000e-005**		**7.1000e-004**	**7.1000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.5000e-004**	**0.0000**	**2.5571**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	5.8000e-004	6.3800e-003	2.0000e-005	2.6200e-003	2.0000e-005	2.6300e-003	7.0000e-004	1.0000e-005	7.1000e-004	0.0000	2.0496	2.0496	4.0000e-005	0.0000	2.0507
Total	**8.9000e-004**	**5.8000e-004**	**6.3800e-003**	**2.0000e-005**	**2.6200e-003**	**2.0000e-005**	**2.6300e-003**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**2.0496**	**2.0496**	**4.0000e-005**	**0.0000**	**2.0507**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Integrate Below Market Rate Housing

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1355	0.5669	1.5046	5.6200e-003	0.5304	4.3900e-003	0.5348	0.1423	4.0900e-003	0.1464	0.0000	515.6119	515.6119	0.0172	0.0000	516.0411
Unmitigated	0.1378	0.5807	1.5623	5.8900e-003	0.5583	4.5900e-003	0.5629	0.1498	4.2700e-003	0.1541	0.0000	540.5732	540.5732	0.0178	0.0000	541.0179

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	662.30	637.24	583.54	1,495,398	1,420,628
City Park	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	662.30	637.24	583.54	1,495,398	1,420,628

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Unenclosed Parking with	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.594233	0.036933	0.184882	0.116155	0.014918	0.004973	0.010771	0.025002	0.001640	0.001706	0.005301	0.002715	0.000771
City Park	0.594233	0.036933	0.184882	0.116155	0.014918	0.004973	0.010771	0.025002	0.001640	0.001706	0.005301	0.002715	0.000771
Parking Lot	0.594233	0.036933	0.184882	0.116155	0.014918	0.004973	0.010771	0.025002	0.001640	0.001706	0.005301	0.002715	0.000771
Unenclosed Parking with Elevator	0.594233	0.036933	0.184882	0.116155	0.014918	0.004973	0.010771	0.025002	0.001640	0.001706	0.005301	0.002715	0.000771

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	67.6061	67.6061	9.5200e-003	1.9700e-003	68.4309
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	67.6061	67.6061	9.5200e-003	1.9700e-003	68.4309
NaturalGas Mitigated	8.1500e-003	0.0696	0.0296	4.4000e-004		5.6300e-003	5.6300e-003		5.6300e-003	5.6300e-003	0.0000	80.6486	80.6486	1.5500e-003	1.4800e-003	81.1278
NaturalGas Unmitigated	8.1500e-003	0.0696	0.0296	4.4000e-004		5.6300e-003	5.6300e-003		5.6300e-003	5.6300e-003	0.0000	80.6486	80.6486	1.5500e-003	1.4800e-003	81.1278

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.5113e+006	8.1500e-003	0.0696	0.0296	4.4000e-004		5.6300e-003	5.6300e-003		5.6300e-003	5.6300e-003	0.0000	80.6486	80.6486	1.5500e-003	1.4800e-003	81.1278
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**8.1500e-003**	**0.0696**	**0.0296**	**4.4000e-004**		**5.6300e-003**	**5.6300e-003**		**5.6300e-003**	**5.6300e-003**	**0.0000**	**80.6486**	**80.6486**	**1.5500e-003**	**1.4800e-003**	**81.1278**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.5113e+006	8.1500e-003	0.0696	0.0296	4.4000e-004		5.6300e-003	5.6300e-003		5.6300e-003	5.6300e-003	0.0000	80.6486	80.6486	1.5500e-003	1.4800e-003	81.1278
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**8.1500e-003**	**0.0696**	**0.0296**	**4.4000e-004**		**5.6300e-003**	**5.6300e-003**		**5.6300e-003**	**5.6300e-003**	**0.0000**	**80.6486**	**80.6486**	**1.5500e-003**	**1.4800e-003**	**81.1278**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	695660	65.0025	9.1500e-003	1.8900e-003	65.7955
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	9240	0.8634	1.2000e-004	3.0000e-005	0.8739
Unenclosed Parking with Elevator	18624	1.7402	2.4000e-004	5.0000e-005	1.7615
Total		**67.6061**	**9.5100e-003**	**1.9700e-003**	**68.4309**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	695660	65.0025	9.1500e-003	1.8900e-003	65.7955
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	9240	0.8634	1.2000e-004	3.0000e-005	0.8739
Unenclosed Parking with Elevator	18624	1.7402	2.4000e-004	5.0000e-005	1.7615
Total		**67.6061**	**9.5100e-003**	**1.9700e-003**	**68.4309**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7405	0.0153	1.3294	7.0000e-005		7.3700e-003	7.3700e-003		7.3700e-003	7.3700e-003	0.0000	2.1727	2.1727	2.0900e-003	0.0000	2.2249
Unmitigated	0.7405	0.0153	1.3294	7.0000e-005		7.3700e-003	7.3700e-003		7.3700e-003	7.3700e-003	0.0000	2.1727	2.1727	2.0900e-003	0.0000	2.2249

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1072					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5933					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0400	0.0153	1.3294	7.0000e-005		7.3700e-003	7.3700e-003		7.3700e-003	7.3700e-003	0.0000	2.1727	2.1727	2.0900e-003	0.0000	2.2249
Total	**0.7405**	**0.0153**	**1.3294**	**7.0000e-005**		**7.3700e-003**	**7.3700e-003**		**7.3700e-003**	**7.3700e-003**	**0.0000**	**2.1727**	**2.1727**	**2.0900e-003**	**0.0000**	**2.2249**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1072					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5933					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0400	0.0153	1.3294	7.0000e-005		7.3700e-003	7.3700e-003		7.3700e-003	7.3700e-003	0.0000	2.1727	2.1727	2.0900e-003	0.0000	2.2249
Total	**0.7405**	**0.0153**	**1.3294**	**7.0000e-005**		**7.3700e-003**	**7.3700e-003**		**7.3700e-003**	**7.3700e-003**	**0.0000**	**2.1727**	**2.1727**	**2.0900e-003**	**0.0000**	**2.2249**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	10.3669	0.3051	7.3900e-003	20.1970
Unmitigated	12.4610	0.3813	9.2300e-003	24.7425

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	11.6626 / 7.35249	12.0012	0.3812	9.2100e-003	24.2771
City Park	0 / 1.40595	0.4598	6.0000e-005	1.0000e-005	0.4654
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**12.4610**	**0.3813**	**9.2200e-003**	**24.7425**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	9.33006 / 6.90399	9.9352	0.3050	7.3800e-003	19.7600
City Park	0 / 1.32019	0.4318	6.0000e-005	1.0000e-005	0.4370
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**10.3669**	**0.3051**	**7.3900e-003**	**20.1970**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	16.7346	0.9890	0.0000	41.4592
Unmitigated	16.7346	0.9890	0.0000	41.4592

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	82.34	16.7143	0.9878	0.0000	41.4089
City Park	0.1	0.0203	1.2000e-003	0.0000	0.0503
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**16.7346**	**0.9890**	**0.0000**	**41.4592**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	82.34	16.7143	0.9878	0.0000	41.4089
City Park	0.1	0.0203	1.2000e-003	0.0000	0.0503
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**16.7346**	**0.9890**	**0.0000**	**41.4592**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Vista Woods Senior Housing Project

Contra Costa County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	66.00	Space	0.59	26,400.00	0
Unenclosed Parking with Elevator	24.00	Space	0.00	9,600.00	0
City Park	1.18	Acre	1.18	51,183.00	0
Apartments Mid Rise	179.00	Dwelling Unit	0.25	151,191.00	512

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	206	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Revised CO2 Intensity Factor based on PG&E's 2020 Corporate Sustainability Report

Land Use - Land uses assumed: 179 mid rise apartments, 1.18 acre park (representative of open space/landscaped areas), and 24 space unenclosed parking with elevator, and 66 space parking lot on 2.02 acres total

Construction Phase - Adjusted schedule based on applicant input (Feb 2022 through Dec 2023)

Off-road Equipment - Default equipment assumptions

Off-road Equipment - Default equipment assumptions

Off-road Equipment - Default equipment assumptions

Off-road Equipment - Added trencher for utility infrastructure
Off-road Equipment - Default equipment assumptions

Off-road Equipment - Default equipment assumptions

Trips and VMT - Default construction trip assumptions

On-road Fugitive Dust - Defaults

Demolition - 6,858 square feet of existing buildings to be demolished

Grading - 10,275 CY soil export and 3,137 CY soil import per applicant input

Architectural Coating - Defaults

Vehicle Trips - Adjusted trip gen based on ITE 10th Edition. Zeroed out trips for "park" use since the common areas would be for residents.

Vehicle Emission Factors - Default

Vehicle Emission Factors - Default

Vehicle Emission Factors - Default

Road Dust - Defaults

Woodstoves - No woodstoves or fireplaces assumed

Consumer Products - Defaults

Area Coating - Defaults

Landscape Equipment - Defaults

Energy Use - Adjusted energy use intensity based on 2019 Title 24 compliance

Water And Wastewater - Defaults

Solid Waste - Defaults

Mobile Land Use Mitigation - Increased density (89.5 du/acre) and 100% below market rate housing selected

Water Mitigation - Low flow faucets, toilets, showers and water efficient irrigation per CALGreen

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	3.00	4.00
tblConstructionPhase	NumDays	6.00	40.00
tblConstructionPhase	NumDays	220.00	390.00
tblConstructionPhase	NumDays	10.00	20.00

tblConstructionPhase	NumDays	10.00	20.00
tblEnergyUse	T24E	426.45	90.83
tblEnergyUse	T24NG	6,115.43	5,828.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	26.85	0.00
tblFireplaces	NumberNoFireplace	7.16	179.00
tblFireplaces	NumberWood	30.43	0.00
tblGrading	MaterialExported	0.00	3,137.00
tblGrading	MaterialImported	0.00	10,275.00
tblLandUse	LandUseSquareFeet	51,400.80	51,183.00
tblLandUse	LandUseSquareFeet	179,000.00	151,191.00
tblLandUse	LotAcreage	0.22	0.00
tblLandUse	LotAcreage	4.71	0.25
tblProjectCharacteristics	CO2IntensityFactor	641.35	206
tblTripsAndVMT	HaulingTripNumber	1,677.00	1,676.00
tblVehicleTrips	ST_TR	6.39	3.56
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	SU_TR	5.86	3.26
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	WD_TR	6.65	3.70
tblVehicleTrips	WD_TR	1.89	0.00
tblWoodstoves	NumberCatalytic	3.58	0.00
tblWoodstoves	NumberNoncatalytic	3.58	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	2.4716	30.4878	19.0391	0.0573	7.4290	1.0124	8.4414	3.6021	0.9325	4.5347	0.0000	5,861.3200	5,861.3200	0.8966	0.0000	5,883.7348
2023	107.4679	16.3172	18.5156	0.0461	1.5870	0.6247	2.2117	0.4260	0.5983	1.0243	0.0000	4,443.6517	4,443.6517	0.5442	0.0000	4,455.9083
Maximum	**107.4679**	**30.4878**	**19.0391**	**0.0573**	**7.4290**	**1.0124**	**8.4414**	**3.6021**	**0.9325**	**4.5347**	**0.0000**	**5,861.3200**	**5,861.3200**	**0.8966**	**0.0000**	**5,883.7348**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	2.4716	30.4878	19.0391	0.0573	7.4290	1.0124	8.4414	3.6021	0.9325	4.5347	0.0000	5,861.3200	5,861.3200	0.8966	0.0000	5,883.7348
2023	107.4679	16.3172	18.5156	0.0461	1.5870	0.6247	2.2117	0.4260	0.5983	1.0243	0.0000	4,443.6517	4,443.6517	0.5442	0.0000	4,455.9083
Maximum	**107.4679**	**30.4878**	**19.0391**	**0.0573**	**7.4290**	**1.0124**	**8.4414**	**3.6021**	**0.9325**	**4.5347**	**0.0000**	**5,861.3200**	**5,861.3200**	**0.8966**	**0.0000**	**5,883.7348**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.2829	0.1702	14.7708	7.8000e-004		0.0819	0.0819		0.0819	0.0819	0.0000	26.6108	26.6108	0.0256	0.0000	27.2500
Energy	0.0447	0.3816	0.1624	2.4400e-003		0.0309	0.0309		0.0309	0.0309		487.1223	487.1223	9.3400e-003	8.9300e-003	490.0171
Mobile	0.9306	3.1707	9.3471	0.0355	3.2484	0.0258	3.2741	0.8689	0.0240	0.8929		3,582.9274	3,582.9274	0.1116		3,585.7171
Total	**5.2581**	**3.7225**	**24.2803**	**0.0387**	**3.2484**	**0.1385**	**3.3868**	**0.8689**	**0.1367**	**1.0056**	**0.0000**	**4,096.6605**	**4,096.6605**	**0.1465**	**8.9300e-003**	**4,102.9841**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.2829	0.1702	14.7708	7.8000e-004		0.0819	0.0819		0.0819	0.0819	0.0000	26.6108	26.6108	0.0256	0.0000	27.2500
Energy	0.0447	0.3816	0.1624	2.4400e-003		0.0309	0.0309		0.0309	0.0309		487.1223	487.1223	9.3400e-003	8.9300e-003	490.0171
Mobile	0.9171	3.0977	8.9705	0.0338	3.0859	0.0246	3.1106	0.8255	0.0230	0.8484		3,417.0975	3,417.0975	0.1075		3,419.7856
Total	**5.2446**	**3.6495**	**23.9036**	**0.0370**	**3.0859**	**0.1373**	**3.2233**	**0.8255**	**0.1357**	**0.9611**	**0.0000**	**3,930.8307**	**3,930.8307**	**0.1424**	**8.9300e-003**	**3,937.0526**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.26**	**1.96**	**1.55**	**4.26**	**5.00**	**0.80**	**4.83**	**5.00**	**0.75**	**4.42**	**0.00**	**4.05**	**4.05**	**2.78**	**0.00**	**4.04**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	2/1/2022	2/28/2022	5	20	
2	Site Preparation	Site Preparation	3/1/2022	3/4/2022	5	4	
3	Grading	Grading	3/5/2022	4/29/2022	5	40	
4	Building Construction	Building Construction	4/30/2022	10/27/2023	5	390	
5	Paving	Paving	10/28/2023	11/24/2023	5	20	
6	Architectural Coating	Architectural Coating	11/25/2023	12/22/2023	5	20	

Acres of Grading (Site Preparation Phase): 6

Acres of Grading (Grading Phase): 20

Acres of Paving: 0.59

Residential Indoor: 306,162; Residential Outdoor: 102,054; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 2,160 (Architectural Coating – sqft)

OffRoad Equipment

Vista Woods Senior Housing Project - Contra Costa County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Grading	Trenchers	1	8.00	78	0.50
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	31.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	13.00	0.00	1,676.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	166.00	33.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	33.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3375	0.0000	0.3375	0.0511	0.0000	0.0511			0.0000			0.0000
Off-Road	1.6889	16.6217	13.9605	0.0241		0.8379	0.8379		0.7829	0.7829		2,323.4168	2,323.4168	0.5921		2,338.2191
Total	**1.6889**	**16.6217**	**13.9605**	**0.0241**	**0.3375**	**0.8379**	**1.1754**	**0.0511**	**0.7829**	**0.8340**		**2,323.4168**	**2,323.4168**	**0.5921**		**2,338.2191**

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0112	0.3737	0.0782	1.1900e-003	0.0271	1.1100e-003	0.0282	7.4200e-003	1.0600e-003	8.4800e-003		127.1794	127.1794	5.3000e-003		127.3120
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0405	0.0226	0.3076	1.0100e-003	0.1068	6.5000e-004	0.1075	0.0283	6.0000e-004	0.0289		100.9406	100.9406	2.1300e-003		100.9940
Total	**0.0518**	**0.3963**	**0.3858**	**2.2000e-003**	**0.1339**	**1.7600e-003**	**0.1356**	**0.0358**	**1.6600e-003**	**0.0374**		**228.1201**	**228.1201**	**7.4300e-003**		**228.3060**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3375	0.0000	0.3375	0.0511	0.0000	0.0511			0.0000			0.0000
Off-Road	1.6889	16.6217	13.9605	0.0241		0.8379	0.8379		0.7829	0.7829	0.0000	2,323.4168	2,323.4168	0.5921		2,338.2191
Total	**1.6889**	**16.6217**	**13.9605**	**0.0241**	**0.3375**	**0.8379**	**1.1754**	**0.0511**	**0.7829**	**0.8340**	**0.0000**	**2,323.4168**	**2,323.4168**	**0.5921**		**2,338.2191**

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0112	0.3737	0.0782	1.1900e-003	0.0271	1.1100e-003	0.0282	7.4200e-003	1.0600e-003	8.4800e-003		127.1794	127.1794	5.3000e-003		127.3120
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0405	0.0226	0.3076	1.0100e-003	0.1068	6.5000e-004	0.1075	0.0283	6.0000e-004	0.0289		100.9406	100.9406	2.1300e-003		100.9940
Total	**0.0518**	**0.3963**	**0.3858**	**2.2000e-003**	**0.1339**	**1.7600e-003**	**0.1356**	**0.0358**	**1.6600e-003**	**0.0374**		**228.1201**	**228.1201**	**7.4300e-003**		**228.3060**

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.3784	15.6673	10.0558	0.0245		0.5952	0.5952		0.5476	0.5476		2,375.1569	2,375.1569	0.7682		2,394.3613
Total	**1.3784**	**15.6673**	**10.0558**	**0.0245**	**1.5908**	**0.5952**	**2.1859**	**0.1718**	**0.5476**	**0.7193**		**2,375.1569**	**2,375.1569**	**0.7682**		**2,394.3613**

3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0250	0.0139	0.1893	6.2000e-004	0.0657	4.0000e-004	0.0661	0.0174	3.7000e-004	0.0178		62.1173	62.1173	1.3100e-003		62.1502
Total	**0.0250**	**0.0139**	**0.1893**	**6.2000e-004**	**0.0657**	**4.0000e-004**	**0.0661**	**0.0174**	**3.7000e-004**	**0.0178**		**62.1173**	**62.1173**	**1.3100e-003**		**62.1502**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.3784	15.6673	10.0558	0.0245		0.5952	0.5952		0.5476	0.5476	0.0000	2,375.1569	2,375.1569	0.7682		2,394.3613
Total	**1.3784**	**15.6673**	**10.0558**	**0.0245**	**1.5908**	**0.5952**	**2.1859**	**0.1718**	**0.5476**	**0.7193**	**0.0000**	**2,375.1569**	**2,375.1569**	**0.7682**		**2,394.3613**

3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0250	0.0139	0.1893	6.2000e-004	0.0657	4.0000e-004	0.0661	0.0174	3.7000e-004	0.0178		62.1173	62.1173	1.3100e-003		62.1502
Total	**0.0250**	**0.0139**	**0.1893**	**6.2000e-004**	**0.0657**	**4.0000e-004**	**0.0661**	**0.0174**	**3.7000e-004**	**0.0178**		**62.1173**	**62.1173**	**1.3100e-003**		**62.1502**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5903	0.0000	6.5903	3.3732	0.0000	3.3732			0.0000			0.0000
Off-Road	1.9042	20.3633	11.8191	0.0240		0.9818	0.9818		0.9032	0.9032		2,322.4319	2,322.4319	0.7511		2,341.2099
Total	**1.9042**	**20.3633**	**11.8191**	**0.0240**	**6.5903**	**0.9818**	**7.5720**	**3.3732**	**0.9032**	**4.2764**		**2,322.4319**	**2,322.4319**	**0.7511**		**2,341.2099**

3.4 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3031	10.1019	2.1128	0.0323	0.7320	0.0300	0.7620	0.2006	0.0287	0.2293		3,437.9475	3,437.9475	0.1433		3,441.5308
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0405	0.0226	0.3076	1.0100e-003	0.1068	6.5000e-004	0.1075	0.0283	6.0000e-004	0.0289		100.9406	100.9406	2.1300e-003		100.9940
Total	**0.3436**	**10.1245**	**2.4204**	**0.0333**	**0.8388**	**0.0307**	**0.8694**	**0.2289**	**0.0293**	**0.2582**		**3,538.8881**	**3,538.8881**	**0.1455**		**3,542.5248**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5903	0.0000	6.5903	3.3732	0.0000	3.3732			0.0000			0.0000
Off-Road	1.9042	20.3633	11.8191	0.0240		0.9818	0.9818		0.9032	0.9032	0.0000	2,322.4319	2,322.4319	0.7511		2,341.2099
Total	**1.9042**	**20.3633**	**11.8191**	**0.0240**	**6.5903**	**0.9818**	**7.5720**	**3.3732**	**0.9032**	**4.2764**	**0.0000**	**2,322.4319**	**2,322.4319**	**0.7511**		**2,341.2099**

3.4 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3031	10.1019	2.1128	0.0323	0.7320	0.0300	0.7620	0.2006	0.0287	0.2293		3,437.9475	3,437.9475	0.1433		3,441.5308
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0405	0.0226	0.3076	1.0100e-003	0.1068	6.5000e-004	0.1075	0.0283	6.0000e-004	0.0289		100.9406	100.9406	2.1300e-003		100.9940
Total	**0.3436**	**10.1245**	**2.4204**	**0.0333**	**0.8388**	**0.0307**	**0.8694**	**0.2289**	**0.0293**	**0.2582**		**3,538.8881**	**3,538.8881**	**0.1455**		**3,542.5248**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8555	14.6040	14.3533	0.0250		0.7022	0.7022		0.6731	0.6731		2,289.2813	2,289.2813	0.4417		2,300.3230
Total	**1.8555**	**14.6040**	**14.3533**	**0.0250**		**0.7022**	**0.7022**		**0.6731**	**0.6731**		**2,289.2813**	**2,289.2813**	**0.4417**		**2,300.3230**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0985	3.1907	0.7579	8.9200e-003	0.2234	6.5400e-003	0.2299	0.0643	6.2500e-003	0.0706		941.6247	941.6247	0.0398		942.6194
Worker	0.5176	0.2885	3.9279	0.0129	1.3637	8.3500e-003	1.3720	0.3617	7.6900e-003	0.3694		1,288.9343	1,288.9343	0.0273		1,289.6158
Total	**0.6161**	**3.4792**	**4.6858**	**0.0219**	**1.5870**	**0.0149**	**1.6019**	**0.4260**	**0.0139**	**0.4400**		**2,230.5590**	**2,230.5590**	**0.0671**		**2,232.2352**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8555	14.6040	14.3533	0.0250		0.7022	0.7022		0.6731	0.6731	0.0000	2,289.2813	2,289.2813	0.4417		2,300.3230
Total	**1.8555**	**14.6040**	**14.3533**	**0.0250**		**0.7022**	**0.7022**		**0.6731**	**0.6731**	**0.0000**	**2,289.2813**	**2,289.2813**	**0.4417**		**2,300.3230**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0985	3.1907	0.7579	8.9200e-003	0.2234	6.5400e-003	0.2299	0.0643	6.2500e-003	0.0706		941.6247	941.6247	0.0398		942.6194
Worker	0.5176	0.2885	3.9279	0.0129	1.3637	8.3500e-003	1.3720	0.3617	7.6900e-003	0.3694		1,288.9343	1,288.9343	0.0273		1,289.6158
Total	**0.6161**	**3.4792**	**4.6858**	**0.0219**	**1.5870**	**0.0149**	**1.6019**	**0.4260**	**0.0139**	**0.4400**		**2,230.5590**	**2,230.5590**	**0.0671**		**2,232.2352**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7136	13.6239	14.2145	0.0250		0.6136	0.6136		0.5880	0.5880		2,289.5233	2,289.5233	0.4330		2,300.3479
Total	**1.7136**	**13.6239**	**14.2145**	**0.0250**		**0.6136**	**0.6136**		**0.5880**	**0.5880**		**2,289.5233**	**2,289.5233**	**0.4330**		**2,300.3479**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0743	2.4341	0.6792	8.6700e-003	0.2234	2.8800e-003	0.2263	0.0643	2.7500e-003	0.0671		915.3148	915.3148	0.0328		916.1353
Worker	0.4818	0.2592	3.6220	0.0124	1.3637	8.1800e-003	1.3718	0.3617	7.5300e-003	0.3692		1,238.8136	1,238.8136	0.0245		1,239.4251
Total	**0.5560**	**2.6933**	**4.3011**	**0.0211**	**1.5870**	**0.0111**	**1.5981**	**0.4260**	**0.0103**	**0.4363**		**2,154.1283**	**2,154.1283**	**0.0573**		**2,155.5605**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7136	13.6239	14.2145	0.0250		0.6136	0.6136		0.5880	0.5880	0.0000	2,289.5233	2,289.5233	0.4330		2,300.3479
Total	**1.7136**	**13.6239**	**14.2145**	**0.0250**		**0.6136**	**0.6136**		**0.5880**	**0.5880**	**0.0000**	**2,289.5233**	**2,289.5233**	**0.4330**		**2,300.3479**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0743	2.4341	0.6792	8.6700e-003	0.2234	2.8800e-003	0.2263	0.0643	2.7500e-003	0.0671		915.3148	915.3148	0.0328		916.1353
Worker	0.4818	0.2592	3.6220	0.0124	1.3637	8.1800e-003	1.3718	0.3617	7.5300e-003	0.3692		1,238.8136	1,238.8136	0.0245		1,239.4251
Total	**0.5560**	**2.6933**	**4.3011**	**0.0211**	**1.5870**	**0.0111**	**1.5981**	**0.4260**	**0.0103**	**0.4363**		**2,154.1283**	**2,154.1283**	**0.0573**		**2,155.5605**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8802	8.6098	11.6840	0.0179		0.4338	0.4338		0.4003	0.4003		1,709.9926	1,709.9926	0.5420		1,723.5414
Paving	0.0773					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9575**	**8.6098**	**11.6840**	**0.0179**		**0.4338**	**0.4338**		**0.4003**	**0.4003**		**1,709.9926**	**1,709.9926**	**0.5420**		**1,723.5414**

3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0435	0.0234	0.3273	1.1200e-003	0.1232	7.4000e-004	0.1240	0.0327	6.8000e-004	0.0334		111.9410	111.9410	2.2100e-003		111.9963
Total	**0.0435**	**0.0234**	**0.3273**	**1.1200e-003**	**0.1232**	**7.4000e-004**	**0.1240**	**0.0327**	**6.8000e-004**	**0.0334**		**111.9410**	**111.9410**	**2.2100e-003**		**111.9963**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8802	8.6098	11.6840	0.0179		0.4338	0.4338		0.4003	0.4003	0.0000	1,709.9926	1,709.9926	0.5420		1,723.5414
Paving	0.0773					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9575**	**8.6098**	**11.6840**	**0.0179**		**0.4338**	**0.4338**		**0.4003**	**0.4003**	**0.0000**	**1,709.9926**	**1,709.9926**	**0.5420**		**1,723.5414**

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0435	0.0234	0.3273	1.1200e-003	0.1232	7.4000e-004	0.1240	0.0327	6.8000e-004	0.0334		111.9410	111.9410	2.2100e-003		111.9963
Total	**0.0435**	**0.0234**	**0.3273**	**1.1200e-003**	**0.1232**	**7.4000e-004**	**0.1240**	**0.0327**	**6.8000e-004**	**0.0334**		**111.9410**	**111.9410**	**2.2100e-003**		**111.9963**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	107.1804					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**107.3721**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0958	0.0515	0.7200	2.4700e-003	0.2711	1.6300e-003	0.2727	0.0719	1.5000e-003	0.0734		246.2702	246.2702	4.8600e-003		246.3917
Total	**0.0958**	**0.0515**	**0.7200**	**2.4700e-003**	**0.2711**	**1.6300e-003**	**0.2727**	**0.0719**	**1.5000e-003**	**0.0734**		**246.2702**	**246.2702**	**4.8600e-003**		**246.3917**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	107.1804					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**107.3721**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0958	0.0515	0.7200	2.4700e-003	0.2711	1.6300e-003	0.2727	0.0719	1.5000e-003	0.0734		246.2702	246.2702	4.8600e-003		246.3917
Total	**0.0958**	**0.0515**	**0.7200**	**2.4700e-003**	**0.2711**	**1.6300e-003**	**0.2727**	**0.0719**	**1.5000e-003**	**0.0734**		**246.2702**	**246.2702**	**4.8600e-003**		**246.3917**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Integrate Below Market Rate Housing

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9171	3.0977	8.9705	0.0338	3.0859	0.0246	3.1106	0.8255	0.0230	0.8484		3,417.0975	3,417.0975	0.1075		3,419.7856
Unmitigated	0.9306	3.1707	9.3471	0.0355	3.2484	0.0258	3.2741	0.8689	0.0240	0.8929		3,582.9274	3,582.9274	0.1116		3,585.7171

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	662.30	637.24	583.54	1,495,398	1,420,628
City Park	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	662.30	637.24	583.54	1,495,398	1,420,628

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Unenclosed Parking with	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.594233	0.036933	0.184882	0.116155	0.014918	0.004973	0.010771	0.025002	0.001640	0.001706	0.005301	0.002715	0.000771
City Park	0.594233	0.036933	0.184882	0.116155	0.014918	0.004973	0.010771	0.025002	0.001640	0.001706	0.005301	0.002715	0.000771
Parking Lot	0.594233	0.036933	0.184882	0.116155	0.014918	0.004973	0.010771	0.025002	0.001640	0.001706	0.005301	0.002715	0.000771
Unenclosed Parking with Elevator	0.594233	0.036933	0.184882	0.116155	0.014918	0.004973	0.010771	0.025002	0.001640	0.001706	0.005301	0.002715	0.000771

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0447	0.3816	0.1624	2.4400e-003		0.0309	0.0309		0.0309	0.0309		487.1223	487.1223	9.3400e-003	8.9300e-003	490.0171
NaturalGas Unmitigated	0.0447	0.3816	0.1624	2.4400e-003		0.0309	0.0309		0.0309	0.0309		487.1223	487.1223	9.3400e-003	8.9300e-003	490.0171

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	4140.54	0.0447	0.3816	0.1624	2.4400e-003		0.0309	0.0309		0.0309	0.0309		487.1223	487.1223	9.3400e-003	8.9300e-003	490.0171
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0447**	**0.3816**	**0.1624**	**2.4400e-003**		**0.0309**	**0.0309**		**0.0309**	**0.0309**		**487.1223**	**487.1223**	**9.3400e-003**	**8.9300e-003**	**490.0171**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	4.14054	0.0447	0.3816	0.1624	2.4400e-003		0.0309	0.0309		0.0309	0.0309		487.1223	487.1223	9.3400e-003	8.9300e-003	490.0171
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0447**	**0.3816**	**0.1624**	**2.4400e-003**		**0.0309**	**0.0309**		**0.0309**	**0.0309**		**487.1223**	**487.1223**	**9.3400e-003**	**8.9300e-003**	**490.0171**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.2829	0.1702	14.7708	7.8000e-004		0.0819	0.0819		0.0819	0.0819	0.0000	26.6108	26.6108	0.0256	0.0000	27.2500
Unmitigated	4.2829	0.1702	14.7708	7.8000e-004		0.0819	0.0819		0.0819	0.0819	0.0000	26.6108	26.6108	0.0256	0.0000	27.2500

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5873					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.2509					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.4447	0.1702	14.7708	7.8000e-004		0.0819	0.0819		0.0819	0.0819		26.6108	26.6108	0.0256		27.2500
Total	**4.2829**	**0.1702**	**14.7708**	**7.8000e-004**		**0.0819**	**0.0819**		**0.0819**	**0.0819**	**0.0000**	**26.6108**	**26.6108**	**0.0256**	**0.0000**	**27.2500**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5873					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.2509					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.4447	0.1702	14.7708	7.8000e-004		0.0819	0.0819		0.0819	0.0819		26.6108	26.6108	0.0256		27.2500
Total	**4.2829**	**0.1702**	**14.7708**	**7.8000e-004**		**0.0819**	**0.0819**		**0.0819**	**0.0819**	**0.0000**	**26.6108**	**26.6108**	**0.0256**	**0.0000**	**27.2500**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Vista Woods Senior Housing Project

Contra Costa County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	66.00	Space	0.59	26,400.00	0
Unenclosed Parking with Elevator	24.00	Space	0.00	9,600.00	0
City Park	1.18	Acre	1.18	51,183.00	0
Apartments Mid Rise	179.00	Dwelling Unit	0.25	151,191.00	512

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	206	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Revised CO2 Intensity Factor based on PG&E's 2020 Corporate Sustainability Report

Land Use - Land uses assumed: 179 mid rise apartments, 1.18 acre park (representative of open space/landscaped areas), and 24 space unenclosed parking with elevator, and 66 space parking lot on 2.02 acres total

Construction Phase - Adjusted schedule based on applicant input (Feb 2022 through Dec 2023)

Off-road Equipment - Default equipment assumptions

Off-road Equipment - Default equipment assumptions

Off-road Equipment - Default equipment assumptions

Off-road Equipment - Added trencher for utility infrastructure
Off-road Equipment - Default equipment assumptions

Off-road Equipment - Default equipment assumptions

Trips and VMT - Default construction trip assumptions

On-road Fugitive Dust - Defaults

Demolition - 6,858 square feet of existing buildings to be demolished

Grading - 10,275 CY soil export and 3,137 CY soil import per applicant input

Architectural Coating - Defaults

Vehicle Trips - Adjusted trip gen based on ITE 10th Edition. Zeroed out trips for "park" use since the common areas would be for residents.

Vehicle Emission Factors - Default

Vehicle Emission Factors - Default

Vehicle Emission Factors - Default

Road Dust - Defaults

Woodstoves - No woodstoves or fireplaces assumed

Consumer Products - Defaults

Area Coating - Defaults

Landscape Equipment - Defaults

Energy Use - Adjusted energy use intensity based on 2019 Title 24 compliance

Water And Wastewater - Defaults

Solid Waste - Defaults

Mobile Land Use Mitigation - Increased density (89.5 du/acre) and 100% below market rate housing selected

Water Mitigation - Low flow faucets, toilets, showers and water efficient irrigation per CALGreen

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	3.00	4.00
tblConstructionPhase	NumDays	6.00	40.00
tblConstructionPhase	NumDays	220.00	390.00
tblConstructionPhase	NumDays	10.00	20.00

tblConstructionPhase	NumDays	10.00	20.00
tblEnergyUse	T24E	426.45	90.83
tblEnergyUse	T24NG	6,115.43	5,828.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	26.85	0.00
tblFireplaces	NumberNoFireplace	7.16	179.00
tblFireplaces	NumberWood	30.43	0.00
tblGrading	MaterialExported	0.00	3,137.00
tblGrading	MaterialImported	0.00	10,275.00
tblLandUse	LandUseSquareFeet	51,400.80	51,183.00
tblLandUse	LandUseSquareFeet	179,000.00	151,191.00
tblLandUse	LotAcreage	0.22	0.00
tblLandUse	LotAcreage	4.71	0.25
tblProjectCharacteristics	CO2IntensityFactor	641.35	206
tblTripsAndVMT	HaulingTripNumber	1,677.00	1,676.00
tblVehicleTrips	ST_TR	6.39	3.56
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	SU_TR	5.86	3.26
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	WD_TR	6.65	3.70
tblVehicleTrips	WD_TR	1.89	0.00
tblWoodstoves	NumberCatalytic	3.58	0.00
tblWoodstoves	NumberNoncatalytic	3.58	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	2.4857	30.7037	18.8001	0.0566	7.4290	1.0130	8.4420	3.6021	0.9331	4.5352	0.0000	5,792.0473	5,792.0473	0.9049	0.0000	5,814.6701
2023	107.4696	16.3889	18.2680	0.0447	1.5870	0.6248	2.2118	0.4260	0.5984	1.0244	0.0000	4,303.9960	4,303.9960	0.5440	0.0000	4,316.2680
Maximum	**107.4696**	**30.7037**	**18.8001**	**0.0566**	**7.4290**	**1.0130**	**8.4420**	**3.6021**	**0.9331**	**4.5352**	**0.0000**	**5,792.0473**	**5,792.0473**	**0.9049**	**0.0000**	**5,814.6701**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	2.4857	30.7037	18.8001	0.0566	7.4290	1.0130	8.4420	3.6021	0.9331	4.5352	0.0000	5,792.0473	5,792.0473	0.9049	0.0000	5,814.6701
2023	107.4696	16.3889	18.2680	0.0447	1.5870	0.6248	2.2118	0.4260	0.5984	1.0244	0.0000	4,303.9960	4,303.9960	0.5440	0.0000	4,316.2680
Maximum	**107.4696**	**30.7037**	**18.8001**	**0.0566**	**7.4290**	**1.0130**	**8.4420**	**3.6021**	**0.9331**	**4.5352**	**0.0000**	**5,792.0473**	**5,792.0473**	**0.9049**	**0.0000**	**5,814.6701**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.2829	0.1702	14.7708	7.8000e-004		0.0819	0.0819		0.0819	0.0819	0.0000	26.6108	26.6108	0.0256	0.0000	27.2500
Energy	0.0447	0.3816	0.1624	2.4400e-003		0.0309	0.0309		0.0309	0.0309		487.1223	487.1223	9.3400e-003	8.9300e-003	490.0171
Mobile	0.7541	3.3322	9.1938	0.0328	3.2484	0.0259	3.2742	0.8689	0.0241	0.8930		3,309.2917	3,309.2917	0.1130		3,312.1172
Total	**5.0816**	**3.8839**	**24.1269**	**0.0360**	**3.2484**	**0.1386**	**3.3869**	**0.8689**	**0.1368**	**1.0057**	**0.0000**	**3,823.0248**	**3,823.0248**	**0.1479**	**8.9300e-003**	**3,829.3842**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.2829	0.1702	14.7708	7.8000e-004		0.0819	0.0819		0.0819	0.0819	0.0000	26.6108	26.6108	0.0256	0.0000	27.2500
Energy	0.0447	0.3816	0.1624	2.4400e-003		0.0309	0.0309		0.0309	0.0309		487.1223	487.1223	9.3400e-003	8.9300e-003	490.0171
Mobile	0.7409	3.2507	8.8700	0.0312	3.0859	0.0248	3.1107	0.8255	0.0231	0.8486		3,155.9695	3,155.9695	0.1092		3,158.6994
Total	**5.0684**	**3.8024**	**23.8032**	**0.0345**	**3.0859**	**0.1375**	**3.2234**	**0.8255**	**0.1358**	**0.9613**	**0.0000**	**3,669.7027**	**3,669.7027**	**0.1441**	**8.9300e-003**	**3,675.9664**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.26**	**2.10**	**1.34**	**4.23**	**5.00**	**0.80**	**4.83**	**5.00**	**0.75**	**4.42**	**0.00**	**4.01**	**4.01**	**2.59**	**0.00**	**4.01**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	2/1/2022	2/28/2022	5	20	
2	Site Preparation	Site Preparation	3/1/2022	3/4/2022	5	4	
3	Grading	Grading	3/5/2022	4/29/2022	5	40	
4	Building Construction	Building Construction	4/30/2022	10/27/2023	5	390	
5	Paving	Paving	10/28/2023	11/24/2023	5	20	
6	Architectural Coating	Architectural Coating	11/25/2023	12/22/2023	5	20	

Acres of Grading (Site Preparation Phase): 6

Acres of Grading (Grading Phase): 20

Acres of Paving: 0.59

Residential Indoor: 306,162; Residential Outdoor: 102,054; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 2,160 (Architectural Coating – sqft)

OffRoad Equipment

Vista Woods Senior Housing Project - Contra Costa County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Grading	Trenchers	1	8.00	78	0.50
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	31.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	13.00	0.00	1,676.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	166.00	33.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	33.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3375	0.0000	0.3375	0.0511	0.0000	0.0511			0.0000			0.0000
Off-Road	1.6889	16.6217	13.9605	0.0241		0.8379	0.8379		0.7829	0.7829		2,323.4168	2,323.4168	0.5921		2,338.2191
Total	**1.6889**	**16.6217**	**13.9605**	**0.0241**	**0.3375**	**0.8379**	**1.1754**	**0.0511**	**0.7829**	**0.8340**		**2,323.4168**	**2,323.4168**	**0.5921**		**2,338.2191**

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0115	0.3815	0.0843	1.1700e-003	0.0271	1.1300e-003	0.0282	7.4200e-003	1.0800e-003	8.5000e-003		124.9676	124.9676	5.6200e-003		125.1080
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0412	0.0278	0.2796	9.2000e-004	0.1068	6.5000e-004	0.1075	0.0283	6.0000e-004	0.0289		91.4590	91.4590	1.9500e-003		91.5078
Total	**0.0527**	**0.4093**	**0.3639**	**2.0900e-003**	**0.1339**	**1.7800e-003**	**0.1357**	**0.0358**	**1.6800e-003**	**0.0374**		**216.4266**	**216.4266**	**7.5700e-003**		**216.6158**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3375	0.0000	0.3375	0.0511	0.0000	0.0511			0.0000			0.0000
Off-Road	1.6889	16.6217	13.9605	0.0241		0.8379	0.8379		0.7829	0.7829	0.0000	2,323.4168	2,323.4168	0.5921		2,338.2191
Total	**1.6889**	**16.6217**	**13.9605**	**0.0241**	**0.3375**	**0.8379**	**1.1754**	**0.0511**	**0.7829**	**0.8340**	**0.0000**	**2,323.4168**	**2,323.4168**	**0.5921**		**2,338.2191**

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0115	0.3815	0.0843	1.1700e-003	0.0271	1.1300e-003	0.0282	7.4200e-003	1.0800e-003	8.5000e-003		124.9676	124.9676	5.6200e-003		125.1080
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0412	0.0278	0.2796	9.2000e-004	0.1068	6.5000e-004	0.1075	0.0283	6.0000e-004	0.0289		91.4590	91.4590	1.9500e-003		91.5078
Total	**0.0527**	**0.4093**	**0.3639**	**2.0900e-003**	**0.1339**	**1.7800e-003**	**0.1357**	**0.0358**	**1.6800e-003**	**0.0374**		**216.4266**	**216.4266**	**7.5700e-003**		**216.6158**

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.3784	15.6673	10.0558	0.0245		0.5952	0.5952		0.5476	0.5476		2,375.1569	2,375.1569	0.7682		2,394.3613
Total	**1.3784**	**15.6673**	**10.0558**	**0.0245**	**1.5908**	**0.5952**	**2.1859**	**0.1718**	**0.5476**	**0.7193**		**2,375.1569**	**2,375.1569**	**0.7682**		**2,394.3613**

3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0253	0.0171	0.1721	5.6000e-004	0.0657	4.0000e-004	0.0661	0.0174	3.7000e-004	0.0178		56.2825	56.2825	1.2000e-003		56.3125
Total	**0.0253**	**0.0171**	**0.1721**	**5.6000e-004**	**0.0657**	**4.0000e-004**	**0.0661**	**0.0174**	**3.7000e-004**	**0.0178**		**56.2825**	**56.2825**	**1.2000e-003**		**56.3125**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.3784	15.6673	10.0558	0.0245		0.5952	0.5952		0.5476	0.5476	0.0000	2,375.1569	2,375.1569	0.7682		2,394.3613
Total	**1.3784**	**15.6673**	**10.0558**	**0.0245**	**1.5908**	**0.5952**	**2.1859**	**0.1718**	**0.5476**	**0.7193**	**0.0000**	**2,375.1569**	**2,375.1569**	**0.7682**		**2,394.3613**

3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0253	0.0171	0.1721	5.6000e-004	0.0657	4.0000e-004	0.0661	0.0174	3.7000e-004	0.0178		56.2825	56.2825	1.2000e-003		56.3125
Total	**0.0253**	**0.0171**	**0.1721**	**5.6000e-004**	**0.0657**	**4.0000e-004**	**0.0661**	**0.0174**	**3.7000e-004**	**0.0178**		**56.2825**	**56.2825**	**1.2000e-003**		**56.3125**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5903	0.0000	6.5903	3.3732	0.0000	3.3732			0.0000			0.0000
Off-Road	1.9042	20.3633	11.8191	0.0240		0.9818	0.9818		0.9032	0.9032		2,322.4319	2,322.4319	0.7511		2,341.2099
Total	**1.9042**	**20.3633**	**11.8191**	**0.0240**	**6.5903**	**0.9818**	**7.5720**	**3.3732**	**0.9032**	**4.2764**		**2,322.4319**	**2,322.4319**	**0.7511**		**2,341.2099**

3.4 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3116	10.3126	2.2775	0.0317	0.7320	0.0306	0.7625	0.2006	0.0293	0.2298		3,378.1564	3,378.1564	0.1518		3,381.9523
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0412	0.0278	0.2796	9.2000e-004	0.1068	6.5000e-004	0.1075	0.0283	6.0000e-004	0.0289		91.4590	91.4590	1.9500e-003		91.5078
Total	**0.3528**	**10.3404**	**2.5571**	**0.0327**	**0.8388**	**0.0312**	**0.8700**	**0.2289**	**0.0299**	**0.2588**		**3,469.6154**	**3,469.6154**	**0.1538**		**3,473.4602**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5903	0.0000	6.5903	3.3732	0.0000	3.3732			0.0000			0.0000
Off-Road	1.9042	20.3633	11.8191	0.0240		0.9818	0.9818		0.9032	0.9032	0.0000	2,322.4319	2,322.4319	0.7511		2,341.2099
Total	**1.9042**	**20.3633**	**11.8191**	**0.0240**	**6.5903**	**0.9818**	**7.5720**	**3.3732**	**0.9032**	**4.2764**	**0.0000**	**2,322.4319**	**2,322.4319**	**0.7511**		**2,341.2099**

3.4 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3116	10.3126	2.2775	0.0317	0.7320	0.0306	0.7625	0.2006	0.0293	0.2298		3,378.1564	3,378.1564	0.1518		3,381.9523
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0412	0.0278	0.2796	9.2000e-004	0.1068	6.5000e-004	0.1075	0.0283	6.0000e-004	0.0289		91.4590	91.4590	1.9500e-003		91.5078
Total	**0.3528**	**10.3404**	**2.5571**	**0.0327**	**0.8388**	**0.0312**	**0.8700**	**0.2289**	**0.0299**	**0.2588**		**3,469.6154**	**3,469.6154**	**0.1538**		**3,473.4602**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8555	14.6040	14.3533	0.0250		0.7022	0.7022		0.6731	0.6731		2,289.2813	2,289.2813	0.4417		2,300.3230
Total	**1.8555**	**14.6040**	**14.3533**	**0.0250**		**0.7022**	**0.7022**		**0.6731**	**0.6731**		**2,289.2813**	**2,289.2813**	**0.4417**		**2,300.3230**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1044	3.2143	0.8766	8.7000e-003	0.2234	6.7700e-003	0.2301	0.0643	6.4700e-003	0.0708		917.3729	917.3729	0.0434		918.4588
Worker	0.5258	0.3555	3.5703	0.0117	1.3637	8.3500e-003	1.3720	0.3617	7.6900e-003	0.3694		1,167.8614	1,167.8614	0.0249		1,168.4845
Total	**0.6302**	**3.5698**	**4.4469**	**0.0204**	**1.5870**	**0.0151**	**1.6022**	**0.4260**	**0.0142**	**0.4402**		**2,085.2343**	**2,085.2343**	**0.0684**		**2,086.9433**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8555	14.6040	14.3533	0.0250		0.7022	0.7022		0.6731	0.6731	0.0000	2,289.2813	2,289.2813	0.4417		2,300.3230
Total	**1.8555**	**14.6040**	**14.3533**	**0.0250**		**0.7022**	**0.7022**		**0.6731**	**0.6731**	**0.0000**	**2,289.2813**	**2,289.2813**	**0.4417**		**2,300.3230**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1044	3.2143	0.8766	8.7000e-003	0.2234	6.7700e-003	0.2301	0.0643	6.4700e-003	0.0708		917.3729	917.3729	0.0434		918.4588
Worker	0.5258	0.3555	3.5703	0.0117	1.3637	8.3500e-003	1.3720	0.3617	7.6900e-003	0.3694		1,167.8614	1,167.8614	0.0249		1,168.4845
Total	**0.6302**	**3.5698**	**4.4469**	**0.0204**	**1.5870**	**0.0151**	**1.6022**	**0.4260**	**0.0142**	**0.4402**		**2,085.2343**	**2,085.2343**	**0.0684**		**2,086.9433**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7136	13.6239	14.2145	0.0250		0.6136	0.6136		0.5880	0.5880		2,289.5233	2,289.5233	0.4330		2,300.3479
Total	**1.7136**	**13.6239**	**14.2145**	**0.0250**		**0.6136**	**0.6136**		**0.5880**	**0.5880**		**2,289.5233**	**2,289.5233**	**0.4330**		**2,300.3479**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0790	2.4457	0.7754	8.4500e-003	0.2234	3.0000e-003	0.2264	0.0643	2.8700e-003	0.0672		891.9734	891.9734	0.0356		892.8635
Worker	0.4905	0.3193	3.2782	0.0113	1.3637	8.1800e-003	1.3718	0.3617	7.5300e-003	0.3692		1,122.4993	1,122.4993	0.0223		1,123.0566
Total	**0.5695**	**2.7650**	**4.0536**	**0.0197**	**1.5870**	**0.0112**	**1.5982**	**0.4260**	**0.0104**	**0.4364**		**2,014.4727**	**2,014.4727**	**0.0579**		**2,015.9201**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7136	13.6239	14.2145	0.0250		0.6136	0.6136		0.5880	0.5880	0.0000	2,289.5233	2,289.5233	0.4330		2,300.3479
Total	**1.7136**	**13.6239**	**14.2145**	**0.0250**		**0.6136**	**0.6136**		**0.5880**	**0.5880**	**0.0000**	**2,289.5233**	**2,289.5233**	**0.4330**		**2,300.3479**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0790	2.4457	0.7754	8.4500e-003	0.2234	3.0000e-003	0.2264	0.0643	2.8700e-003	0.0672		891.9734	891.9734	0.0356		892.8635
Worker	0.4905	0.3193	3.2782	0.0113	1.3637	8.1800e-003	1.3718	0.3617	7.5300e-003	0.3692		1,122.4993	1,122.4993	0.0223		1,123.0566
Total	**0.5695**	**2.7650**	**4.0536**	**0.0197**	**1.5870**	**0.0112**	**1.5982**	**0.4260**	**0.0104**	**0.4364**		**2,014.4727**	**2,014.4727**	**0.0579**		**2,015.9201**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8802	8.6098	11.6840	0.0179		0.4338	0.4338		0.4003	0.4003		1,709.9926	1,709.9926	0.5420		1,723.5414
Paving	0.0773					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9575**	**8.6098**	**11.6840**	**0.0179**		**0.4338**	**0.4338**		**0.4003**	**0.4003**		**1,709.9926**	**1,709.9926**	**0.5420**		**1,723.5414**

3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0443	0.0289	0.2962	1.0200e-003	0.1232	7.4000e-004	0.1240	0.0327	6.8000e-004	0.0334		101.4307	101.4307	2.0100e-003		101.4810
Total	**0.0443**	**0.0289**	**0.2962**	**1.0200e-003**	**0.1232**	**7.4000e-004**	**0.1240**	**0.0327**	**6.8000e-004**	**0.0334**		**101.4307**	**101.4307**	**2.0100e-003**		**101.4810**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8802	8.6098	11.6840	0.0179		0.4338	0.4338		0.4003	0.4003	0.0000	1,709.9926	1,709.9926	0.5420		1,723.5414
Paving	0.0773					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9575**	**8.6098**	**11.6840**	**0.0179**		**0.4338**	**0.4338**		**0.4003**	**0.4003**	**0.0000**	**1,709.9926**	**1,709.9926**	**0.5420**		**1,723.5414**

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0443	0.0289	0.2962	1.0200e-003	0.1232	7.4000e-004	0.1240	0.0327	6.8000e-004	0.0334		101.4307	101.4307	2.0100e-003		101.4810
Total	**0.0443**	**0.0289**	**0.2962**	**1.0200e-003**	**0.1232**	**7.4000e-004**	**0.1240**	**0.0327**	**6.8000e-004**	**0.0334**		**101.4307**	**101.4307**	**2.0100e-003**		**101.4810**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	107.1804					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**107.3721**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0975	0.0635	0.6517	2.2400e-003	0.2711	1.6300e-003	0.2727	0.0719	1.5000e-003	0.0734		223.1475	223.1475	4.4300e-003		223.2582
Total	**0.0975**	**0.0635**	**0.6517**	**2.2400e-003**	**0.2711**	**1.6300e-003**	**0.2727**	**0.0719**	**1.5000e-003**	**0.0734**		**223.1475**	**223.1475**	**4.4300e-003**		**223.2582**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	107.1804					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**107.3721**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0975	0.0635	0.6517	2.2400e-003	0.2711	1.6300e-003	0.2727	0.0719	1.5000e-003	0.0734		223.1475	223.1475	4.4300e-003		223.2582
Total	**0.0975**	**0.0635**	**0.6517**	**2.2400e-003**	**0.2711**	**1.6300e-003**	**0.2727**	**0.0719**	**1.5000e-003**	**0.0734**		**223.1475**	**223.1475**	**4.4300e-003**		**223.2582**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Integrate Below Market Rate Housing

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.7409	3.2507	8.8700	0.0312	3.0859	0.0248	3.1107	0.8255	0.0231	0.8486		3,155.9695	3,155.9695	0.1092		3,158.6994
Unmitigated	0.7541	3.3322	9.1938	0.0328	3.2484	0.0259	3.2742	0.8689	0.0241	0.8930		3,309.2917	3,309.2917	0.1130		3,312.1172

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	662.30	637.24	583.54	1,495,398	1,420,628
City Park	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	662.30	637.24	583.54	1,495,398	1,420,628

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Unenclosed Parking with	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.594233	0.036933	0.184882	0.116155	0.014918	0.004973	0.010771	0.025002	0.001640	0.001706	0.005301	0.002715	0.000771
City Park	0.594233	0.036933	0.184882	0.116155	0.014918	0.004973	0.010771	0.025002	0.001640	0.001706	0.005301	0.002715	0.000771
Parking Lot	0.594233	0.036933	0.184882	0.116155	0.014918	0.004973	0.010771	0.025002	0.001640	0.001706	0.005301	0.002715	0.000771
Unenclosed Parking with Elevator	0.594233	0.036933	0.184882	0.116155	0.014918	0.004973	0.010771	0.025002	0.001640	0.001706	0.005301	0.002715	0.000771

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0447	0.3816	0.1624	2.4400e-003		0.0309	0.0309		0.0309	0.0309		487.1223	487.1223	9.3400e-003	8.9300e-003	490.0171
NaturalGas Unmitigated	0.0447	0.3816	0.1624	2.4400e-003		0.0309	0.0309		0.0309	0.0309		487.1223	487.1223	9.3400e-003	8.9300e-003	490.0171

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	4140.54	0.0447	0.3816	0.1624	2.4400e-003		0.0309	0.0309		0.0309	0.0309		487.1223	487.1223	9.3400e-003	8.9300e-003	490.0171
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0447**	**0.3816**	**0.1624**	**2.4400e-003**		**0.0309**	**0.0309**		**0.0309**	**0.0309**		**487.1223**	**487.1223**	**9.3400e-003**	**8.9300e-003**	**490.0171**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	4.14054	0.0447	0.3816	0.1624	2.4400e-003		0.0309	0.0309		0.0309	0.0309		487.1223	487.1223	9.3400e-003	8.9300e-003	490.0171
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0447**	**0.3816**	**0.1624**	**2.4400e-003**		**0.0309**	**0.0309**		**0.0309**	**0.0309**		**487.1223**	**487.1223**	**9.3400e-003**	**8.9300e-003**	**490.0171**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.2829	0.1702	14.7708	7.8000e-004		0.0819	0.0819		0.0819	0.0819	0.0000	26.6108	26.6108	0.0256	0.0000	27.2500
Unmitigated	4.2829	0.1702	14.7708	7.8000e-004		0.0819	0.0819		0.0819	0.0819	0.0000	26.6108	26.6108	0.0256	0.0000	27.2500

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5873					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.2509					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.4447	0.1702	14.7708	7.8000e-004		0.0819	0.0819		0.0819	0.0819		26.6108	26.6108	0.0256		27.2500
Total	**4.2829**	**0.1702**	**14.7708**	**7.8000e-004**		**0.0819**	**0.0819**		**0.0819**	**0.0819**	**0.0000**	**26.6108**	**26.6108**	**0.0256**	**0.0000**	**27.2500**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5873					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.2509					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.4447	0.1702	14.7708	7.8000e-004		0.0819	0.0819		0.0819	0.0819		26.6108	26.6108	0.0256		27.2500
Total	**4.2829**	**0.1702**	**14.7708**	**7.8000e-004**		**0.0819**	**0.0819**		**0.0819**	**0.0819**	**0.0000**	**26.6108**	**26.6108**	**0.0256**	**0.0000**	**27.2500**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Vista Woods Senior Housing Project

Contra Costa County, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demolition	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	No Change	0	1	No Change	0.00
Cement and Mortar Mixers	Diesel	No Change	0	1	No Change	0.00
Concrete/Industrial Saws	Diesel	No Change	0	1	No Change	0.00
Cranes	Diesel	No Change	0	1	No Change	0.00
Forklifts	Diesel	No Change	0	2	No Change	0.00
Generator Sets	Diesel	No Change	0	1	No Change	0.00
Graders	Diesel	No Change	0	2	No Change	0.00
Pavers	Diesel	No Change	0	1	No Change	0.00
Paving Equipment	Diesel	No Change	0	1	No Change	0.00
Rollers	Diesel	No Change	0	2	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	2	No Change	0.00
Scrapers	Diesel	No Change	0	1	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	8	No Change	0.00
Trenchers	Diesel	No Change	0	1	No Change	0.00
Welders	Diesel	No Change	0	3	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Air Compressors	1.92000E-003	1.30300E-002	1.81100E-002	3.00000E-005	7.10000E-004	7.10000E-004	0.00000E+000	2.55325E+000	2.55325E+000	1.50000E-004	0.00000E+000	2.55707E+000
Cement and Mortar Mixers	5.90000E-004	3.68000E-003	3.08000E-003	1.00000E-005	1.40000E-004	1.40000E-004	0.00000E+000	4.58280E-001	4.58280E-001	5.00000E-005	0.00000E+000	4.59470E-001
Concrete/Industrial Saws	3.58000E-003	2.80100E-002	3.66500E-002	6.00000E-005	1.50000E-003	1.50000E-003	0.00000E+000	5.37656E+000	5.37656E+000	2.90000E-004	0.00000E+000	5.38390E+000
Cranes	7.04100E-002	7.76290E-001	3.62780E-001	1.13000E-003	3.23300E-002	2.97400E-002	0.00000E+000	9.88566E+001	9.88566E+001	3.19700E-002	0.00000E+000	9.96559E+001
Forklifts	3.66800E-002	3.42070E-001	3.92030E-001	5.20000E-004	2.18600E-002	2.01100E-002	0.00000E+000	4.58269E+001	4.58269E+001	1.48200E-002	0.00000E+000	4.61974E+001
Generator Sets	6.17600E-002	5.48150E-001	7.16100E-001	1.28000E-003	2.66400E-002	2.66400E-002	0.00000E+000	1.10215E+002	1.10215E+002	5.02000E-003	0.00000E+000	1.10341E+002
Graders	9.13000E-003	1.15670E-001	3.78800E-002	1.50000E-004	3.68000E-003	3.38000E-003	0.00000E+000	1.27987E+001	1.27987E+001	4.14000E-003	0.00000E+000	1.29022E+001
Pavers	1.92000E-003	1.88300E-002	2.88300E-002	5.00000E-005	8.90000E-004	8.10000E-004	0.00000E+000	4.12966E+000	4.12966E+000	1.34000E-003	0.00000E+000	4.16305E+000
Paving Equipment	1.71000E-003	1.60300E-002	2.55700E-002	4.00000E-005	7.80000E-004	7.20000E-004	0.00000E+000	3.57854E+000	3.57854E+000	1.16000E-003	0.00000E+000	3.60748E+000
Rollers	3.07000E-003	3.22000E-002	3.70400E-002	5.00000E-005	1.77000E-003	1.63000E-003	0.00000E+000	4.61045E+000	4.61045E+000	1.49000E-003	0.00000E+000	4.64773E+000
Rubber Tired Dozers	2.51100E-002	2.63810E-001	1.07460E-001	2.60000E-004	1.25200E-002	1.15200E-002	0.00000E+000	2.25082E+001	2.25082E+001	7.28000E-003	0.00000E+000	2.26902E+001
Scrapers	1.64000E-003	1.78900E-002	1.27500E-002	3.00000E-005	7.00000E-004	6.40000E-004	0.00000E+000	2.66766E+000	2.66766E+000	8.60000E-004	0.00000E+000	2.68923E+000
Tractors/Loaders/ Backhoes	3.55200E-002	3.60980E-001	4.98460E-001	6.90000E-004	1.88000E-002	1.73000E-002	0.00000E+000	6.09691E+001	6.09691E+001	1.97200E-002	0.00000E+000	6.14620E+001
Trenchers	7.28000E-003	6.75900E-002	5.19800E-002	7.00000E-005	4.79000E-003	4.41000E-003	0.00000E+000	5.93207E+000	5.93207E+000	1.92000E-003	0.00000E+000	5.98003E+000
Welders	1.54710E-001	8.42140E-001	9.86290E-001	1.50000E-003	3.45500E-002	3.45500E-002	0.00000E+000	1.10109E+002	1.10109E+002	1.25300E-002	0.00000E+000	1.10422E+002

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Air Compressors	1.92000E-003	1.30300E-002	1.81100E-002	3.00000E-005	7.10000E-004	7.10000E-004	0.00000E+000	2.55325E+000	2.55325E+000	1.50000E-004	0.00000E+000	2.55707E+000
Cement and Mortar Mixers	5.90000E-004	3.68000E-003	3.08000E-003	1.00000E-005	1.40000E-004	1.40000E-004	0.00000E+000	4.58280E-001	4.58280E-001	5.00000E-005	0.00000E+000	4.59470E-001
Concrete/Industrial Saws	3.58000E-003	2.80100E-002	3.66500E-002	6.00000E-005	1.50000E-003	1.50000E-003	0.00000E+000	5.37656E+000	5.37656E+000	2.90000E-004	0.00000E+000	5.38389E+000
Cranes	7.04100E-002	7.76290E-001	3.62780E-001	1.13000E-003	3.23300E-002	2.97400E-002	0.00000E+000	9.88565E+001	9.88565E+001	3.19700E-002	0.00000E+000	9.96558E+001
Forklifts	3.66800E-002	3.42070E-001	3.92030E-001	5.20000E-004	2.18600E-002	2.01100E-002	0.00000E+000	4.58269E+001	4.58269E+001	1.48200E-002	0.00000E+000	4.61974E+001
Generator Sets	6.17600E-002	5.48150E-001	7.16100E-001	1.28000E-003	2.66400E-002	2.66400E-002	0.00000E+000	1.10215E+002	1.10215E+002	5.02000E-003	0.00000E+000	1.10341E+002
Graders	9.13000E-003	1.15670E-001	3.78800E-002	1.50000E-004	3.68000E-003	3.38000E-003	0.00000E+000	1.27987E+001	1.27987E+001	4.14000E-003	0.00000E+000	1.29022E+001
Pavers	1.92000E-003	1.88300E-002	2.88300E-002	5.00000E-005	8.90000E-004	8.10000E-004	0.00000E+000	4.12966E+000	4.12966E+000	1.34000E-003	0.00000E+000	4.16305E+000
Paving Equipment	1.71000E-003	1.60300E-002	2.55700E-002	4.00000E-005	7.80000E-004	7.20000E-004	0.00000E+000	3.57854E+000	3.57854E+000	1.16000E-003	0.00000E+000	3.60747E+000
Rollers	3.07000E-003	3.22000E-002	3.70400E-002	5.00000E-005	1.77000E-003	1.63000E-003	0.00000E+000	4.61045E+000	4.61045E+000	1.49000E-003	0.00000E+000	4.64772E+000
Rubber Tired Dozers	2.51100E-002	2.63810E-001	1.07460E-001	2.60000E-004	1.25200E-002	1.15200E-002	0.00000E+000	2.25082E+001	2.25082E+001	7.28000E-003	0.00000E+000	2.26902E+001
Scrapers	1.64000E-003	1.78900E-002	1.27500E-002	3.00000E-005	7.00000E-004	6.40000E-004	0.00000E+000	2.66765E+000	2.66765E+000	8.60000E-004	0.00000E+000	2.68922E+000
Tractors/Loaders/Backhoes	3.55200E-002	3.60980E-001	4.98460E-001	6.90000E-004	1.88000E-002	1.73000E-002	0.00000E+000	6.09690E+001	6.09690E+001	1.97200E-002	0.00000E+000	6.14619E+001
Trenchers	7.28000E-003	6.75900E-002	5.19800E-002	7.00000E-005	4.79000E-003	4.41000E-003	0.00000E+000	5.93206E+000	5.93206E+000	1.92000E-003	0.00000E+000	5.98003E+000
Welders	1.54710E-001	8.42140E-001	9.86290E-001	1.50000E-003	3.45500E-002	3.45500E-002	0.00000E+000	1.10109E+002	1.10109E+002	1.25300E-002	0.00000E+000	1.10422E+002

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Cement and Mortar Mixers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Concrete/Industrial Saws	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.85739E-006
Cranes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.21388E-006	1.21388E-006	0.00000E+000	0.00000E+000	1.10380E-006
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.09106E-006	1.09106E-006	0.00000E+000	0.00000E+000	1.08231E-006
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.17951E-006	1.17951E-006	0.00000E+000	0.00000E+000	1.17817E-006
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.56266E-006	1.56266E-006	0.00000E+000	0.00000E+000	1.55013E-006
Pavers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Paving Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	2.77202E-006
Rollers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	2.15159E-006
Rubber Tired Dozers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.33285E-006	1.33285E-006	0.00000E+000	0.00000E+000	1.32216E-006
Scrapers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	3.74860E-006	3.74860E-006	0.00000E+000	0.00000E+000	3.71854E-006
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.14812E-006	1.14812E-006	0.00000E+000	0.00000E+000	1.30162E-006
Trenchers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.68575E-006	1.68575E-006	0.00000E+000	0.00000E+000	0.00000E+000
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.18065E-006	1.18065E-006	0.00000E+000	0.00000E+000	1.17730E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input		Mitigation Input		Mitigation Input	
No	Soil Stabilizer for unpaved Roads	PM10 Reduction		PM2.5 Reduction			
No	Replace Ground Cover of Area Disturbed	PM10 Reduction		PM2.5 Reduction			

No	Water Exposed Area	PM10 Reduction		PM2.5 Reduction		Frequency (per day)	
No	Unpaved Road Mitigation	Moisture Content %		Vehicle Speed (mph)	0.00		
No	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Architectural Coating	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.30	0.08	0.30	0.08	0.00	0.00
Demolition	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Demolition	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Grading	Fugitive Dust	0.13	0.07	0.13	0.07	0.00	0.00
Grading	Roads	0.02	0.00	0.02	0.00	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	1.69	2.38	3.69	4.58	4.36	4.22	0.00	4.62	4.62	3.49	0.00	4.62
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	20.00	15.46	16.80	19.98	19.85	18.37
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting: Low Density Suburban

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
Yes	Land Use	Increase Density	0.00	89.50		
No	Land Use	Increase Diversity	0.18	0.45		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
Yes	Land Use	Integrate Below Market Rate Housing	0.04	100.00		
	Land Use	Land Use SubTotal	0.05			

No	Neighborhood Enhancements	Improve Pedestrian Network				
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.05			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"				
No	Commute	Workplace Parking Charge				
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program				
	Commute	Commute Subtotal	0.00			

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.05			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	100.00
No	Use Low VOC Paint (Residential Exterior)	150.00
No	Use Low VOC Paint (Non-residential Interior)	100.00
No	Use Low VOC Paint (Non-residential Exterior)	150.00
No	Use Low VOC Paint (Parking)	150.00
No	% Electric Lawnmower	
No	% Electric Leafblower	
No	% Electric Chainsaw	

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy	0.00	0.00
No	Use Reclaimed Water	0.00	0.00
No	Use Grey Water	0.00	
Yes	Install low-flow bathroom faucet	32.00	
Yes	Install low-flow Kitchen faucet	18.00	
Yes	Install low-flow Toilet	20.00	
Yes	Install low-flow Shower	20.00	
No	Turf Reduction	0.00	
Yes	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape	0.00	0.00

Solid Waste Mitigation

Mitigation Measures	Input Value

Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

1630 SAN PABLO AVENUE, SUITE 300
OAKLAND, CALIFORNIA 94612
T 510.601.2500 F 510.601.2501

May 28, 2021

Ben Kurzius
MRK Partners
108 Standard Street
El Segundo, CA 90245

Subject: Results of Biological Resources Assessment, Proposed Vista Woods Senior Housing Development, Pinole, Contra Costa County, California

Dear Mr. Kurzius:

Per your request, Dudek has completed a biological resources assessment of the above-referenced property (project site) located at 600 Roble Avenue, 1106 San Pablo Avenue and 1230 San Pablo Avenue in Pinole, California. The assessment was conducted to address the City of Pinole's request that a qualified biological consultant determine if any biological resources are present on or within 150 feet of the site. This assessment report includes discussion of existing conditions on the site and evaluation of the potential occurrence of any special-status species (plants and wildlife) and/or sensitive communities. Dudek's assessment methodology, site description, results, and conclusions are described below.

Methods

Dudek conducted an initial desktop analysis of the project site using aerial imagery, natural resources database sources, and information from Dudek's internal datasets and files regarding biological resources in western Contra Costa County. As part of the desktop analysis, Dudek analyzed the potential for special-status species and other sensitive biological resources to occur based on an evaluation of the physical characteristics of the project area (elevation, soil types, etc.), extent and quality of habitats/natural communities present, known geographic range of individual species and records from the project site vicinity. For the purposes of this analysis, special-status species are defined as animal or plant species (or subspecies) that are (1) listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act (FESA); (2) listed as threatened or endangered, or proposed for listing, under the California Endangered Species Act (CESA); (3) designated by the California Department of Fish and Wildlife (CDFW) as a California Species of Special Concern (SSC); and/or (4) designated as fully protected under Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code.

As noted above, prior to visiting the site, Dudek queried the California Natural Diversity Database (CNDDB; CDFW 2021) and the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) Trust Resources Report (USFWS 2021) for special-status species occurrences and other sensitive biological resources within two miles of the site.

Dudek senior biologist Sean O'Brien visited the site on May 28, 2021 to document existing habitat conditions on and within 150 feet of the site, as well as assess habitat suitability for special-status species and sensitive natural communities. Mr. O'Brien also recorded basic information (species, approximate size) on the existing trees within the

property boundary. Observations of existing vegetation, wildlife species, and habitat features were recorded using binoculars and field notebook.

Site Description and Results

The project site consists of three contiguous parcels located on the north side of San Pablo Avenue in a mixed residential and commercial area of Pinole. The site is generally bounded to the south by San Pablo Avenue, to the east by Roble Avenue, to the north by Encina Avenue, and to the west by Madrone Avenue. The northeastern parcel (600 Roble Avenue) is developed and occupied by a two-story office building (currently vacant) and associated surface parking lot and landscaped areas surrounding the building. The central parcel (1230 San Pablo Avenue) is an undeveloped parcel that is currently dominated by ruderal vegetation. The southwestern parcel (1106 San Pablo Avenue) consists of a single-story building and storage yard with vehicles (automobiles and boats), equipment, and materials scattered throughout the parcel.

The project site is largely developed and has been subject to prior grading and disturbance as indicated by abrupt, unnatural, changes in topography and presence of cut slopes. Where present, existing vegetation consists of ornamental trees, senescent landscaping and non-native ruderal species. Although one mature coast live oak tree (*Quercus agrifolia*) is present at the northwestern corner of 1230 San Pablo Avenue, no native natural communities were observed on the site.

Adjacent properties within 150 feet of the site consist of residential single-family housing, apartment buildings, commercial buildings, and storage yards. Two off-site areas supporting natural vegetation are present north and east of the site: (1) a stand of blue gum eucalyptus trees (*Eucalyptus globulus*) on the hillside across Encina Avenue to the north of the site; and (2) a small roadside drainage is present on the east side of Roble Avenue which supports a disturbed riparian area dominated by willow (*Salix* sp.), English ivy (*Hedera helix*), Himalayan blackberry (*Rubus armeniacus*), fennel (*Foeniculum vulgare*), cattail (*Typha* sp.), and pampas grass (*Cortederia selloana*).

A total of thirty two (32) special-status species (7 plants; 25 animals) have been documented or are considered to have some potential to occur in the vicinity of the project site (CDFW 2021; USFWS 2021). No special-status plants were observed on the project site during the field survey and none of the seven plant species identified in the database searches are expected to occur due to the lack of appropriate habitat conditions (e.g., salt marsh, native grassland, chaparral), the developed/disturbed condition of the project site, and lack of native communities. Furthermore, none of the 25 special-status animals identified in the database searches were observed during the field survey or are expected to occur due to the developed condition of the project site and surrounding areas, absence of appropriate native habitats on or near the site, and the site's relative isolation from intact natural communities.

Conclusions

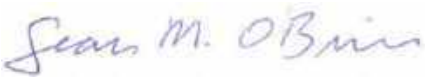
Based on the results of the desktop analysis and site visit described above, the project site consists of previously developed and disturbed parcels that provide very limited biological resource/habitat value for native plant and wildlife species. No natural vegetation communities are present on the project site due to its largely developed condition and location within an urbanized area. No special-status species or sensitive biological resources were observed or are expected to occur on the project site. One potentially sensitive aquatic feature, a small, disturbed

roadside drainage with riparian vegetation is present on the east side of Roble Avenue (across Roble Avenue from the project site). No other sensitive biological resources were identified within 150 of the project site.

The existing trees and other vegetation on the site provide habitat for common birds and other urban-adapted wildlife species (e.g., Anna's hummingbird, house finch, Eastern fox squirrel), but their removal or trimming would not eliminate any of these species from the vicinity. Nesting birds may occur on the ground or in trees, shrubs, open areas, buildings, or other locations within and adjacent to the project site. Nests of all native bird species are protected under the federal Migratory Bird Treaty Act (MBTA) and Section 3503 the California Fish and Game Code, which prohibits the take, possession, or destruction of nests or eggs. If vegetation removal or construction activities were scheduled during the nesting season (typically defined by CDFW as February through August), Dudek recommends that a qualified biologist inspect the vegetation for active nests within seven (7) days of the start of work to confirm that no active nests would be impacted.

Please contact me at 415-999-7691 or sobrien@dudek.com if you have any questions or require additional information regarding the findings of this report.

Sincerely,



Sean O'Brien
Principal/Senior Biologist

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USFWS (U.S. Fish and Wildlife Service). 2021. Information for Planning and Consultation (IPaC) Trust Report. http://ecos.fws.gov/ipac/. Accessed May 2021.

DRAFT - Arborist Report
Vista Woods Apartments
Pinole, California

Prepared for:

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108 Standard Street
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JUNE 2021

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1 Executive Summary

1.1 Proposed Project

The proposed development is located on 600 Roble Avenue, 1106 San Pablo Avenue and 1230 San Pablo Avenue in Pinole, Contra Costa County, California. This is a new development consisting of 4-story, 179-unit apartment complex providing affordable housing to seniors. The project involves demolition of two existing structures prior to development and the removal of all existing trees and vegetation.

1.2 Analysis Scope and Purpose

This report summarizes Dudek's evaluation of trees within the proposed new development area (Attachment A: Tree Locations) conducted on June 1, 2021. The report includes a discussion of the tree evaluation methods, a summary of findings, and identification of anticipated impacts and recommendations.

The primary focus of the field effort was to inventory all trees that will be impacted by the development activities and to identify protected trees as determined by the City of Pinole Municipal Code. For protected trees, alternative recommendations are provided to retain those trees on-site. If protection is not feasible for those trees, the replacement tree values have been calculated to aid in determining the conditions for a removal permit application to be approved due to project-related impacts.

1.3 Regulatory Framework

The City of Pinole Municipal Code addresses Tree Removal in Chapter 17.96. The City of Pinole identifies certain species of trees of a significant size as important natural features in the city therefore are protected. Protected trees are defined as:

(1) "select native trees with a single perennial stem of twelve (12) inches or larger in circumference (this is equivalent to 4 inches in diameter) measured four and a half feet above the natural grade. Those species include: Coast live oak, Madrone, Buckeye, Black Walnut, Redwood, Big Leaf Maple, Redbud, California Bay, Toyon.

(2) "any non-native tree species with a single perennial stem greater than fifty-six (56) inches or larger in circumference (this is equivalent to 18 inches in diameter) measured at four and half feet above the natural grade.

Section 17.96.040 of the Municipal Code discusses the Protected Tree Removal Permit Application. It states that any person desiring to remove one or more protected trees on land under development that require a building permit in the city will need to file a tree removal permit application with the Community Development Director. In addition, if the protected tree removal involves development, the applicant will need to file the tree removal application concurrently with the first application for approval of the development.

The application will need to detail the precise number, species, size and location of protected trees to be removed, a statement of the reason for removal, the signature of the property owner authorizing such removal and any other pertinent information the Community Development Director may require. In addition, a tree survey plan specifying the location and dripline of all existing trees on the property is required. As well, a certified arborist report including an evaluation of protected tree to be removed and any appropriate recommendations concerning preservation of protected trees on the property. The appraiser of the protected trees may be subject to the city's approval.

Section 17.96.060 discusses the process of the protected tree removal permit when it is part of a development. If the protected tree is to be removed because of a building permit issuance, the hearing body is the planning commission. A public hearing will be required on any application request for removal of protected trees. In approving any protected tree removal permit, the reviewing body will try to preserve all protected trees to the extent possible. Permits may be approved if it finds that the burden to the applicant greatly outweighs the benefit to the public. The factors considered in review include:

(1) The species, size, age, condition, and value of the protected tree.

(2) Whether the protected tree has particular historical or heritage value.

(3) The visibility and value of the protected tree to the neighborhood and the public.

(4) The contribution of the protected tree to the character of the site and the neighborhood.

(5) Whether the development provides a public benefit.

(6) The extent of hardship to the applicant in constructing the development using a different design, size or on-site location.

(7) Whether measures short of removing the protected tree can be employed consistent with the development.

Conditions to approving the protected tree permit application, may include planting trees as part of the development over and above the landscaping that is otherwise required at a value equal to the value of the protected tree or paying a in-lieu fee to the city in the amount equal to the value of the protected tree.

Section 17.96.070 discusses the minimal protection measures and requirements for preservation of existing protected trees during development. Protected trees that remain within the development area are subject to guarantee the health of the protected tree(s) to be preserved on the site until three years after the final inspection of the development or issuance of the certificate of occupancy (Section 17.96.080).

1.4 Summary of Findings

The proposed development will impact all 47 existing trees. Based on an evaluation of the current project impacts, this work will require the removal of 47 trees. Two of those trees are protected trees as defined by the City of Pinole. These impacts were determined based on review of the current architectural and engineering plans for the development application from Relativity Architects dated 3/30/21 Sheets A090, A091, A100, C1.0.

For one of the protected trees, a mature Coast live oak located at the northwestern corner of 1230 San Pablo Avenue, alternative options are provided as recommendations that would allow for preservation and protection by minimizing construction-related impacts to tree associated with soil compaction, root disturbance, and canopy pruning. The other protected tree was determined to be less suitable for preservation.

2 Tree Inventory and Analysis

2.1 Methods

The following sections describe the methods for inventorying trees on the project site and evaluating project-related tree impacts.

2.1.1 Field Tree Inventory and Evaluation

A Dudek International Society of Arboriculture (ISA) Certified Arborist conducted a site evaluation on June 1, 2021 to document tree location and attribute information. The trees evaluated for this Arborist Report included trees within and adjacent to the proposed new development where the construction activities will encroach within the protected perimeter (canopy dripline) of the trees and impacts may be realized.

During the site evaluation, tree attribute and location information was collected for all trees where there were anticipated impacts. Tree attribute data collected during site evaluations included species, trunk diameter, canopy spread, height, health condition, structural condition and presences of observable pests or other tree maladies. Trunk diameters were measured using a diameter tape which provides adjusted figures for diameter measurements when wrapping the tape around a trunk's circumference. Trunk diameter measurements were taken at 4.5 feet above the ground along the trunk axis, with a few common exceptions. In cases where a tree's trunk split into multiple stems at approximately 4.5 feet above ground, the measurement was made at the location that best represented the trunk's diameter. In cases where a tree's trunk split into multiple stems below 4.5 feet above the ground, individual measurements were made for each trunk. Tree canopy radius measurements were documented by measuring the radius of the canopy in one or more locations and estimating the canopy width.

Tree health and structure were evaluated with respect to five distinct tree components: roots, trunk, scaffold branches, small branches, and foliage. Each tree component was assessed with regard to health factors such as insect, fungal or pathogen damage, mechanical damage, presence of decay, presence of wilted or dead leaves, and wound closure. Components were graded as excellent, good, fair, poor and very poor. For the purposes of this report, trees were rated according to their "natural setting attributes." Good condition trees exhibit acceptable vigor, healthy foliage, adequate structure, and lack of any major maladies. Fair condition trees are typical, with few maladies, but declining vigor. Poor condition trees exhibit declining vigor, unhealthy foliage, poor branch structure or excessive lean.

It should also be noted that tree health assessments consider a number of observable tree characteristics. For example, a tree with a 'Fair' health rating is one that exhibits average overall health. There is nothing necessarily wrong with a tree given a 'Fair' rating, but it is simply not exhibiting good health. Trees with 'Fair' ratings can live for a very long time. Structural condition relates to the architecture of the tree. Trees with 'Poor' structural ratings usually have trunk issues (cavities, cracks, etc.), poor branch attachments that can lead to branch failure, or other structural soundness issues. This relates to the risk of the tree or tree part failing. From a wildlife habitat perspective, trees with fair or poor ratings would be perfectly normal in a woodland or forest setting, in which one would find trees of all rating categories. Poor structured trees typically provide great habitat value.

Tree location mapping was conducted using the Arc Collector app on an iPhone 7. Individual tree locations are presented in Attachment A (Tree Location).

2.1.2 Tree Impact Analysis

Dudek evaluated trees in relation to the proposed construction to determine which would require removal and which would be subject to other potential impacts associated with root and canopy encroachment during the project construction. Tree locations as assessed during the site inspection and the engineering plans were used to determine the impacts.

2.2 Results

2.2.1 Tree Quantities, Attributes and Conditions

A total of 47 trees were assessed during the site visit, including nine different species, as presented in Table 1. Two of those 47 trees were determined to be protected as defined by the City of Pinole Municipal Code. They are both Coast live oaks (*Quercus agrifolia*) larger than 4 inches in diameter.

One of the protected trees is a mature Coast live oak consisting of five co-dominant stems at grade. While some observable pest conditions were noted, like minor bark staining and insect frass, this is consistent and normal for a mature oak of this size and stature in good health. In addition, the tree is located very close (within 3 feet of the fence line) to the adjacent private property located at 1169 Encina Avenue. This tree is open grown with branches extending out over the neighboring home. See Tree 41 on the Tree Location map.

The second protected tree is a small Coast live oak located at the edge of the retaining wall on the 1106 San Pablo Avenue property. This tree has three co-dominant stems at grade. This tree was determined to be in good health with fair structural condition. See Tree 42 on the Tree Location map.

In general, other tree assessed on the site had structural issues including multiple codominant stems, restricted and/or unbalanced crown due to the density of trees within planting strips. Many of the trees were covered in English Ivy. This is a non-native vine species that can climb and cover the tree and canopy. It adds weight to the tree and can become so dense that it girdles the trunk and shades the tree canopy causing damage, affecting tree health, and leaving it more susceptible to pest, disease and wind damage. Most of the narrow leaved ash trees had some degree of canopy dieback. Canopy thinning and dieback in ash trees could be attributed to a few potential causes including poor site conditions and numerous pests (such as ash decline, ash anthracnose, verticillium wilt) that can impact this species.

Table 1
Quantity of Assessed Trees Species

Scientific Name	Common Name	Protected (Y/N)	Quantity
Cedrus deodara	Deodar cedar	N	3
Eucalyptus globulus	Blue gum eucalyptus	N	2
Fraxinus angustifolia	Narrow leaved ash	N	17

Table 1

Quantity of Assessed Trees Species

Scientific Name	Common Name	Protected (Y/N)	Quantity
Juglans regia	English walnut	N	2
Ligustrum lucidum	Glossy Privet	N	1
Liquidambar styraciflua	Sweetgum	N	16
Quercus agrifolia	Coast live oak	Y	2
Salix laevigata	Willow	N	1
Syagrus romanzoffiana	Queen palm	N	3
		Total	47

Individual tree attribute and condition information can be found in Table 2. For multi-stemmed trees, those originating from a shared root crown, the size of each individual stem is separated by slashes in that column. Photographs of the trees can be found in Attachment B.

Table 2

Trees Attributes and Conditions

Tree ID	Scientific Name	Common Name	DBH (inches)	Canopy width (feet)	Height (feet)	Health Condition	Structural Condition	Condition Notes
1	*Liquidambar styraciflua*	Sweetgum	5.3	20	40	good	good	
2	*Liquidambar styraciflua*	Sweetgum	6.2 / 4	20	45	fair	fair	codominant stems, crown dieback
3	*Liquidambar styraciflua*	Sweetgum	14.9	35	65	good	good	crown restricted
4	*Liquidambar styraciflua*	Sweetgum	11.7	35	55	good	fair	crown dieback
5	*Juglans regia*	English walnut	6 / 4.3	30	30	fair	fair	codominant stems, crown unbalanced from utility pruning with dieback, vines
6	*Liquidambar styraciflua*	Sweetgum	6.0	20	25	good	fair	crown restricted, vines
7	*Liquidambar styraciflua*	Sweetgum	12.0	45	40	fair	fair	unbalanced crown from utility pruning, heavy vines, nest
8	*Liquidambar styraciflua*	Sweetgum	9.0	25	35	good	fair	heavy vines
9	*Juglans regia*	English walnut	4 / 3.5 /2.2	15	25	fair	fair	multi-stemmed tree under utility lines
10	*Liquidambar styraciflua*	Sweetgum	7.2 / 6.9	25	45	good	fair	codominant stems, crown unbalanced from utility pruning, vines
11	*Liquidambar styraciflua*	Sweetgum	7 / 4.6	25	35	fair	good	codominant stems, vines

Table 2
Trees Attributes and Conditions

Tree ID	Scientific Name	Common Name	DBH (inches)	Canopy width (feet)	Height (feet)	Health Condition	Structural Condition	Condition Notes
12	*Fraxinus angustifolia*	Narrow-leaved ash	9.0	15	35	very poor	fair	Utility pruning with large sprout growth, decay, bark checking
13	*Fraxinus angustifolia*	Narrow-leaved ash	17.5	60	50	poor	fair	heavy vines, three stems at 10 ft above grade, crown dieback, branches overextended, DBH estimate due to vines
14	*Fraxinus angustifolia*	Narrow-leaved ash	16.0	30	35	poor	poor	utility pruning, major dieback, heavy vines, DBH estimate due to vines
15	*Fraxinus angustifolia*	Narrow-leaved ash	6.1	15	20	poor	poor	canopy dieback with resprouting
16	*Fraxinus angustifolia*	Narrow-leaved ash	13.2	40	50	fair	fair	four stems at 8 ft above grade, unbalanced crown with dieback, over extended branches
17	*Fraxinus angustifolia*	Narrow-leaved ash	11.1	35	50	fair	fair	three stems at 8 ft above grade, crown dieback
18	*Fraxinus angustifolia*	Narrow-leaved ash	12.9	40	50	fair	fair	five stems at 6 ft above grade, crown dieback
19	*Fraxinus angustifolia*	Narrow-leaved ash	10.6	35	45	fair	fair	lean with correction, vines, crown dieback
20	*Fraxinus angustifolia*	Narrow-leaved ash	12.3	35	45	good	good	vines
21	*Fraxinus angustifolia*	Narrow-leaved ash	12.3	35	45	fair	good	vines, unbalanced crown with dieback, overextended branches
22	*Fraxinus angustifolia*	Narrow-leaved ash	13.6	30	30	poor	poor	multi-stemmed at 8 ft above grade, vines, major crown dieback

Table 2
Trees Attributes and Conditions

Tree ID	Scientific Name	Common Name	DBH (inches)	Canopy width (feet)	Height (feet)	Health Condition	Structural Condition	Condition Notes
23	*Fraxinus angustifolia*	Narrow-leaved ash	12.4	35	50	fair	fair	crown dieback, vines
24	*Fraxinus angustifolia*	Narrow-leaved ash	10.6	20	30	fair	poor	major crown dieback
25	*Fraxinus angustifolia*	Narrow-leaved ash	5.7	15	30	fair	poor	major crown dieback
26	*Fraxinus angustifolia*	Narrow-leaved ash	5.4	15	30	very poor	poor	major crown dieback, sprout growth
27	*Liquidambar styraciflua*	Sweetgum	6.9	25	45	good	good	
28	*Cedrus deodara*	Deodar cedar	2.0	12	15	excellent	excellent	
29	*Cedrus deodara*	Deodar cedar	2.0	10	15	excellent	excellent	
30	*Cedrus deodara*	Deodar cedar	2.0	10	15	excellent	excellent	
31	*Liquidambar styraciflua*	Sweetgum	15.5	45	65	fair	good	codominant stems at 8 feet, vines
32	*Liquidambar styraciflua*	Sweetgum	12.4	45	65	fair	fair	crown thin, vines
33	*Liquidambar styraciflua*	Sweetgum	15.5	45	65	good	good	vines
34	*Ligustrum lucidum*	Glossy privet	2 / 1.5	12	10	good	fair	
35	*Salix laevigata*	Willow	4.6 / 4.1/ 3.9	30	25	poor	fair	utility pruning, heavy vines, mechanical damage, sprouts
36	*Fraxinus angustifolia*	Narrow-leaved ash	15.4	20	30	poor	poor	utility pruning, heavy vines
37	*Fraxinus angustifolia*	Narrow-leaved ash	17.0	30	25	poor	poor	utility pruning, heavy vines, crown dieback, unbalanced
38	*Liquidambar styraciflua*	Sweetgum	16.6	35	30	poor	fair	utility pruning, heavy vines, unbalanced crown
39	*Liquidambar styraciflua*	Sweetgum	11.8	35	30	poor	fair	utility pruning, heavy vines

Table 2
Trees Attributes and Conditions

Tree ID	Scientific Name	Common Name	DBH (inches)	Canopy width (feet)	Height (feet)	Health Condition	Structural Condition	Condition Notes
40	*Liquidambar styraciflua*	Sweetgum	12.3	25	40	fair	fair	utility pruning, heavy vines
41	*Quercus agrifolia*	Coast live oak	28.5 /26 /24.5 /11.7 / 8.8	70	60	good	fair	multi-stemmed tree at grade, open grown, minor staining, minor bark checking, minor frass, sapsucker activity
42	*Quercus agrifolia*	Coast live oak	4.5 / 4.2/ 4	20	15	fair	good	multi-stemmed at grade, tree rooted at edge of retaining wall
43	*Eucalyptus globulus*	Blue gum eucalyptus	3.8	10	20	fair	good	
44	*Eucalyptus globulus*	Blue gum eucalyptus	4.0	15	25	fair	good	rooted at the edge of utility foundation
45	*Syagrus romanzoffiana*	Queen palm	6.0	10	10	good	good	
46	*Syagrus romanzoffiana*	Queen palm	6.0	10	15	good	good	
47	*Syagrus romanzoffiana*	Queen palm	4.0	10	10	good	good	

2.2.2 Project Related Impacts

Impact totals presented herein are based on an evaluation of the project development plans available at the time of this report preparation. All 47 trees were determined to require removal based on the assessment. The protected trees that would be impacted are summarized in Table 3.

For the two protected trees where removal is required this is due to the extent of crown and root encroachment from the construction activities. Typically, any disturbance of the roots over 30% of the total root system is not recommended is stressful for trees to recover. Studies have shown cutting roots as one of the main reasons' trees die within 5 years of construction. Additionally, these trees would require pruning that exceeded >25% of the live crown for access. Collectively the stress of these combined root and crown impacts will often lead to decline.

Table 3

Protected Trees Recommended for Removal

Tree ID	Scientific Name	Common Name	Tree Impact Assessment and Reason for Removal	Tree Preservation Options
41	*Quercus agrifolia*	Coast live oak	Tree is located within the footprint of the proposed new biotreatment planter and landscaping for the development. The proposed construction will require a major change in grade in the location where the tree is rooted. In addition, the storm drain system is proposed to run through greater than 30% of the area where the root system located. The proposed new structure will encroach on greater than 25% of the tree canopy.	Redesign the biotreatment, landscaping storm system to be located outside of the dripline of this tree. Evaluate the proposed structure design to determine how it can be redesigned to limit encroachment into greater than 25% of the tree crown. Construct a retaining wall designed to maintain tree root system at the current grade to the dripline of the tree.
42	*Quercus agrifolia*	Coast live oak	Tree is located entirely within the footprint of proposed pavement to access the building and parking lot.	Tree is less suitable for preservation given its location immediately adjacent to the existing retaining wall, fair structural condition due to multiple co-dominant stems and overall immature size. Replacement trees of this size and stature with better structure can be planted on-site as part of the project development. Relocation of this tree within the site is not recommended but could be considered if removal and replacement is not a viable option.
Total	2			

3 Recommendations

3.1 Tree Protection

Tree protection measures described here are included in this report in the event that any protected or unprotected trees will be retained instead of removed as shown on current plans. For any protected trees that are retained Section 17.96.070 of the City of Pinole Municipal Code describes the general requirement for protection during development.

These recommendations and those in Appendix C are provided as additional guidelines to minimize impacts to retained trees and where encroachment is expected to occur within a tree's protected perimeter (canopy dripline). It is advisable that the tree protection measures included are implemented prior to, during, and following construction, as indicated, to minimize construction-related impacts to trees associated with soil compaction, root disturbance, and canopy pruning.

Prior to the start of construction, the following recommendations can be implemented:

- Erect tree protection zone fencing at the dripline of all trees that will be protected. No construction activity, heavy equipment access, or materials storage should take place within the tree protection zones during construction without the direct supervision and approval of a certified arborist.

- Prune trees for clearance within the work area. Hire a crew directly supervised by a certified arborist on site to ensure the pruning cuts are made to branch unions and do not remove an excessive amount of foliage. As the project progresses, only prune when deemed necessary by the project arborist as much live foliage as possible should be preserved through the construction process to give the trees the best opportunity to thrive after construction is complete.

During construction, retain the tree protection zone fencing until construction activity has been completed. After construction has been completed keep in mind, the most stressful time of year for the impacted trees will be the summer immediately following construction. Retain the leaf drop around the root zone of the trees where practical. The best ground cover for a tree is its own leaf mulch. Leaf mulch will continue to reduce soil evaporation and mitigate soil temperature changes. If leaf drop is not practical for use, apply a layer of coarse mulch 2-4 inches thick around the base of the trees intended for preservation.

4 Tree Value and Replacement

4.1 Tree Replacement Value Calculations

Based on the current plans, due to project related impacts, the two protected trees on site are recommended for removal. The City of Pinole requires a Protected Tree Removal Permit Application be submitted to the Community Development Director. If after reviewing the hearing body determines that the protected tree removal is appropriate, the replacement tree values can be used to determining the conditions for approving the application. Those condition may include planting trees as part of the development over and above the landscaping that is otherwise required at a value equal to the value of the protected trees or paying an in-lieu fee to the city in the amount equal to the value of the protected tree.

In order to determine the tree replacement value, Dudek used the 10th Edition, second printing, of the Guide to Plant Appraisal. In this case, the Reproduction Method of the Trunk Formula Technique to determine the value of two protected trees. The Reproduction Cost method is commonly used to estimate cost when a tree is removed. It involves estimating the cost of replacing the tree with one that is identical and thereby providing all the characteristics and benefits of the original. The Trunk Formula Technique is an extrapolation technique that takes the cost of a nursery plant and proportionally increase it to infer the cost of a larger plant. The detailed calculations can be seen in Attachment D.

In this case, the protected trees have multiple trunks, the diameter of each trunk is measured. The cross sectional area is calculated for each trunk then added together to arrive at the total cross sectional area. The unit cost of the nursery stock is published in the Western Chapter ISA Regional Species Classification Guide, it varies based on the growth rate of the tree ad its trunk size in various box sizes. This unit cost expressed in dollars per square inch of the trunk cross sectional area. The most recent update of this guide was published in 2004. One weakness is that it has not been adjusted for inflation and current market pricing. A more detail analysis would be needed to determine a more accurate unit cost. Due to limitations, that level of research was not undertaken for this report.

The condition rating has three subcomponents: health, structure, and form. These are subjectively rated on a scale of 0 to 100% by the arborist. Functional limitations reflect the restrictions on tree growth or intended use in the landscape based on the interaction of the site and species. External limitations are the restrictions on tree growth or intended use with respect to the attributes outside the control of the property owner.

A summary of the appraised tree value for the protected trees is presented in Table 4.

Table 4

Appraised Value for Protected Trees Recommended for Removal

Tree Number	Scientific Name	Common Name	Appraised Value
41	*Quercus agrifolia*	Coast live oak	$115,000

Table 4

Appraised Value for Protected Trees Recommended for Removal

Tree Number	Scientific Name	Common Name	Appraised Value
42	*Quercus agrifolia*	Coast live oak	$2,520
Total			$117,520

5 References

City of Pinole. 2021. Municipal Code. Chapter 17.96 Tree Removal. Site accessed on 5/31/21. https://codelibrary.amlegal.com/codes/pinole/latest/pinole_ca/0-0-0-11477#JD_Chapter17.96

Council of Tree and Landscape Appraisers (CTLA). 2019. Guide for Plant Appraisal. 10th Ed. Second Printing. International Society of Arboriculture. Champagne, Illinois.

Fite, K, Smiley, T. 2016. Best Management Practices (BMP) – Managing Trees During Construction, Second Edition. International Society of Arboriculture.

Relativity Architects. 2021. Sheet Set, Sheet No. A090, A091, A100, C1.0. Dated 3/30/2021

Western Chapter International Society of Arboriculture (WC-ISA). 2004. Species Classification and Group Assignment: A Regional Supplement to the CTLA Guide for Plant Appraisal, 9th Edition. Porterville, California.

Attachment A

Tree Locations

SOURCE: Bing Maps

DUDEK

0 50 100 Feet

Tree Locations, Vista Woods Apartments, Pinole, CA

Vista Woods Apartments Project

Attachment B

Tree Photographs

Tree 1	Tree 2
Tree 3	Tree 4

Tree 5	Tree 6
Tree 7	Tree 8

Tree 9	Tree 10
Tree 11	Tree 12

Tree 13	Tree 14
Tree 15	Tree 16

Tree 17	Tree 18
Tree 19	Tree 20

Tree 21	Tree 22
Tree 23	Tree 24

Tree 25	Tree 26
Tree 27	Tree 28

Tree 29	Tree 30
Tree 31	Tree 32

Tree 33	Tree 34
Tree 35	Tree 36

Tree 37	Tree 38
Tree 39	Tree 40

Tree 41	Tree 42
Tree 43	Tree 44

Tree 45	Tree 46
Tree 47	

Attachment C

Tree Protection Measures

Attachment C
Tree Protection Measures

Tree Protection Measures Prior to Construction

Prior to any grading activity, retained trees with canopies that fall within 30 feet of construction activity shall be protected by fencing and signage. In cases where fill soil is to be deposited within 30 feet of retained tree canopies, fill protection devices shall also be installed. All contractors shall be made aware of the tree protection measures. A project arborist shall be assigned to monitor tree health and construction activity near retained trees on site. The project arborist shall be an International Society of Arboriculture (ISA) Certified Arborist or Registered Consulting Arborist.

Site Preparation: Tree removal, pruning, and inspection should be conducted during site preparation activities. Where permitted by the County tree removal and pruning activity should be conducted according to industry standards (ANSI A300).

Fencing and Signage: A 6-foot high, chain link fence with tree protection signs shall be erected around all trees (or tree groups) to be retained. The protective fence shall be installed around the tree's dripline. This will delineate the tree protection zone and prevent unwanted activity in and around the trees in order to reduce soil compaction in the root zones of the trees and other damage from heavy equipment. Fences are to be mounted on two-inch diameter galvanized iron posts, driven into the ground to a depth of at least 2-feet at no more than 10-foot spacing. Tree protection signs should be attached to every fourth post. The contractor shall maintain the fence to keep it upright, taut, and aligned at all times. Fencing shall be removed only after all construction activities are complete.

Fill Protection: In addition to fencing, fill protection devices shall be installed where fill soil is to be deposited within 30 feet of retained tree canopy driplines. Fill protection devices shall prevent fill soil deposition beneath retained tree canopy driplines. Where fill soil deposition is temporary, temporary structures (e.g., post and plank walls) may be utilized. Where fill soil deposition is permanent, permanent structures (e.g., retaining walls) shall be utilized. The contractor shall maintain the integrity of fill protection devices at all times. Temporary fill protection devices shall be removed only after all construction activities are complete.

Pre-Construction Meeting: A pre-construction meeting shall be held between all contractors (including grading, tree removal/pruning, builders, etc.) and the project arborist. The project arborist will instruct the contractors on tree protection practices and answer any questions. All equipment operators and spotters, assistants, or those directing operators from the ground, shall provide written acknowledgement of their receiving tree protection training. This training shall include information on the location and marking of retained trees, the necessity of preventing damage, and the discussion of work practices that will accomplish such.

Protection and Maintenance during Construction

Once construction activities have begun the following measures shall be adhered to:

Avoidance: Signs, ropes, cables, or any other items shall not be attached to any retained tree.

Equipment Operation and Storage: Operating heavy machinery around the root zones of trees will increase soil compaction, which decreases soil aeration and subsequently reduces water penetration in the soil. All heavy equipment and vehicles shall stay out of the fenced tree protection zone, unless where specifically approved in writing by the project arborist.

Attachement C
Tree Protection Measures

Storage and Disposal: Do not store or discard any supply or material, including paint, lumber, concrete overflow, etc. within the fenced tree protection zone or within 10 feet of any tree. Remove all foreign debris within the fenced tree protection zone; it is important to leave the duff, mulch, chips, and leaves around the retained trees for water retention and nutrients. Avoid draining or leakage of equipment fluids near retained trees. Fluids such as: gasoline, diesel, oils, hydraulics, brake and transmission fluids, paint, paint thinners, and glycol (anti-freeze) should be disposed of properly. Keep equipment parked outside of the fenced tree protection zone of retained trees to avoid the possibility of leakage of equipment fluids into the soil. The effect of toxic equipment fluids on the retained trees could lead to decline and death.

Grade Changes: Grade changes are not recommended within the dripline of retained trees. No grade changes (cut, fill, compact) shall occur within 4 feet (measured horizontally) of the base of any retained tree. Lowering the grade within a tree's dripline will necessitate cutting main support and feeder roots, jeopardizing the health and structural integrity of the tree(s). Adding soil, even temporarily, on top of the existing grade will compact the soil further, and decrease both water and air availability to the trees' roots. A drainage outlet shall be provided, if necessary, to allow for appropriate surface drainage within the tree's dripline.

Moving Construction Materials: Care shall be taken when moving equipment or supplies near the trees, especially overhead. Avoid damaging the tree(s) when transporting or moving construction materials and working around retained trees (even outside of the fenced tree protection zone). Above ground tree parts that could be damaged (e.g., low limbs, trunks) should be flagged with red flagging. If contact with the tree crown is unavoidable, prune the conflicting branch(es) using ISA or ANSI A300 standards.

Trenching: All trenching shall be outside of the fenced tree protection zone. Roots primarily extend in a horizontal direction forming a support base to the tree similar to the base of a wineglass. Where trenching is necessary in areas that contain tree roots, prune the roots using a root pruner. All cuts should be clean and sharp, to minimize ripping, tearing, and fracturing of the root system. The trench should be made no deeper than necessary.

Irrigation: Trees that have been substantially root pruned (30% or more of their root zone) will require irrigation for the first twelve months. The first irrigation should be within 48 hours of root pruning. They should be deep watered every two to four weeks during the summer and once a month during the winter (adjust accordingly with rainfall). One irrigation cycle should thoroughly soak the root zones of the trees to a depth of 3 feet. The soil should dry out between watering; avoid keeping a consistently wet soil. Designate one person to be responsible for irrigating (deep watering) the trees. Check soil moisture with a soil probe before irrigating. Irrigation is best accomplished by installing a temporary above ground micro-spray system that will distribute water slowly (to avoid runoff) and evenly throughout the fenced tree protection zone ***but never soaking the area located within 6- feet of the tree trunk, especially during warmer months***. For trees not subject to root pruning activity, the amount of irrigation provided shall not be changed from that which was provided prior to the commencement of construction activity.

Canopy Pruning: All pruning shall be completed under the direction of an ISA Certified Arborist and following ISA or ANSI A300 standards. No more than 25 percent of a tree's canopy should be removed during pruning of preserved trees. Only conflicting limbs, broken limbs and dead wood shall be removed from tree canopies.

Attachement C
Tree Protection Measures

Washing: Periodic washing of the foliage is recommended during construction but no more than once every two weeks. Washing should include the upper and lower leaf surfaces and the tree bark. This should continue beyond the construction period at a less frequent rate with a high-powered hose only in the early morning hours. Washing will help control dirt/dust buildup that can lead to mite and insect infestations.

Maintenance after Construction

Once construction is complete the tree protection fencing may be removed and the following measures performed to sustain and enhance the vigor of the retained trees.

Mulch: Provide a 4-inch mulch layer under the canopy of trees. Mulch should include clean, organic mulch that will provide long-term soil conditioning, soil moisture retention, and soil temperature control.

Pruning: Pruning should *only* be done to maintain clearance and remove broken, dead or diseased branches. Pruning shall only take place following a recommendation by an ISA Certified Arborist and performed under the supervision of an ISA Certified Arborist. No more than 15% of the canopy shall be removed at any one time. All pruning shall conform to ISA or ANSI A300 standards.

Watering: Retained trees on site shall be watered as they were prior to the commencement of construction activity. Supplemental irrigation may be necessary for twelve months following substantial root pruning.

Watering Adjacent Plant Material: All plants near the trees shall be compatible with water requirements of said trees. Watering regime included in the site's landscape plan shall be developed with consideration for the water needs of retained trees.

Spraying: If the trees are maintained in a healthy state, regular spraying for insect or disease control should not be necessary. If a problem does develop, an ISA Certified Arborist should be consulted; the trees may require application of insecticides to prevent the intrusion of bark-boring beetles and other invading pests. All chemical spraying should be performed by a licensed applicator under the direction of a licensed pest control advisor.

Attachment D

Tree Value Calculations

Tree 41: Quercus agrifolia					
	Measurement	**Source**			
A	**DBH**	field measurment	Trunk 1	28.5	in
			Trunk 2	26	in
			Trunk 3	24.5	in
			Trunk 4	11.7	in
			Trunk 5	8.8	in
B	**Trunk Area**	π *(A/2)^2	Trunk 1	637.6	in^2
			Trunk 2	530.7	in^2
			Trunk 3	471.2	in^2
			Trunk 4	107.5	in^2
			Trunk 5	60.8	in^2
	Sum of Trunk Area		Total	1807.7	in^2
C	**Unit Cost**	WCISA Regional Guide		$82.82	
D	**Basic Tree Cost**	B*C		$149,715.50	
E	**Condition Rating**	Arborist Opinion		90%	
F	**Functional Limitations**	Arborist Opinion		85%	
G	**External Limitations**	Arborist Opinion		100%	
H	**Depreciated Cost**	D*E*F*G		$114,532.36	
I	**Final Appraised Cost**	Rounded to nearest $100		**$115,000**	

Tree 42: Quercus agrifolia					
	Measurement	**Source**			
A	**DBH**	field measurment	Trunk 1	4.5	in
			Trunk 2	4.2	in
			Trunk 3	4	in
B	**Trunk Area**	π *(A/2)^2	Trunk 1	15.9	in^2
			Trunk 2	13.8	in^2
			Trunk 3	12.6	in^2
	Sum of Trunk Area		Total	42.3	in^2
C	**Unit Cost**	WCISA Regional Guide		$82.82	
D	**Basic Tree Cost**	B*C		$3,503.59	
E	**Condition Rating**	Arborist Opinion		90%	
F	**Functional Limitations**	Arborist Opinion		80%	
G	**External Limitations**	Arborist Opinion		100%	
H	**Depreciated Cost**	D*E*F*G		$2,522.58	
I	**Final Appraised Cost**	Rounded to nearest $10		**$2,520**	

APPENDIX D. Archaeological Assessment for the Vista Woods Apartments

APPENDIX D-1. Built Environment Inventory and Evaluation Report

[Not Available for Public Distribution. Contains sensitive cultural resource information]

PARTNER

GEOTECHNICAL REPORT

New Residential Development
600 Roble Avenue, 1230 San Pablo Avenue
& 1106 San Pablo Avenue
Pinole, California 94564

April 7, 2021
Partner Project Number: 18-224911.3

Prepared for:

MRK Partners
108 Standard Street, Suite 526
El Segundo, California 90245

Engineers who understand your business

PARTNER

April 7, 2021

Ms. Cathy Coler
MRK Partners
108 Standard Street, Suite 526
El Segundo, California 90245

Subject: **Geotechnical Report**
New Residential Development
600 Roble Avenue, 1230 San Pablo Avenue & 1106 San Pablo Avenue
Pinole, California 94564
Partner Project No. 18-224911.3

Dear Ms. Coler:

Partner Assessment Corporation (Partner) presents the following general opinion regarding the geotechnical conditions at the subject site, based on the information contained within this geotechnical report and our general experience with construction practices and geotechnical conditions on other sites. This statement does not constitute an engineering recommendation.

- ***The geotechnical conditions on the site related to the planned construction are expected to be more difficult in comparison with other similar sites*; given challenges associated with high plasticity silts, and varying site grades.***

The descriptions and findings of our geotechnical report are presented for your use in this electronic format, for your use as shown in the hyperlinked outline below. To return to this page after clicking a hyperlink, hold "alt" and press the "left arrow key" on your keyboard.

1.0 Geotechnical Executive Summary
2.0 Report Overview and Limitations
3.0 Geologic Conditions and Hazards
4.0 Geotechnical Exploration and Laboratory Results
5.0 Geotechnical Recommendations

Figures & Appendices

We appreciate the opportunity to be of service during this phase of the work.

Sincerely,

REGISTERED PROFESSIONAL ENGINEER
MATTHEW MARCUS
C-81891
CIVIL
STATE OF CALIFORNIA

Matthew Marcus, PE, PG
Principal Geotechnical Engineer and Geologist

** "similar sites" refers to sites with similar planned and current use, where we have recently performed similar work, and is a general statement not based on statistical analysis.*

1. GEOTECHNICAL EXECUTIVE SUMMARY

The executive summary is meant to consolidate information provided in more detail in the body of this report. This summary in no way replaces or overrides the detailed sections of the report.

Geologic Zones and Site Hazards:

The subject property is located within the Coast Ranges physiographic province of California. The Coast Ranges are characterized by ranges and narrow valleys that are approximately parallel to the Pacific Ocean coastline. The site is located northeast of San Francisco Bay and less than half a mile from San Pablo Bay. Based on historic topographic maps, the site was previously graded and partially developed into offices, adjacent parking and equipment yard. In our review, the site was not located within a seismically induced hazard zone. According to the regional geologic map of the area, site soils are Monterey Formation, which is composed of sedimentary residual soil that increases in density with depth, gradually transitioning from soil, to partially weathered rock (PWR), to bedrock. Strong ground shaking is anticipated during the project life, and highly plastic silt (MH material) was observed across the site. No other geologic hazards were known or suspected on the project site.

Excavation Conditions:

We anticipate excavations to planned building foundation depths of up to 7 feet to establish new foundations elevations. Based on the locations of the building excavation we anticipate stepped excavations can be used without the need for shoring. However, shoring is recommended if site retaining walls are to be modified or constructed. The excavations will require heavy-duty construction equipment in good working condition and may encounter weathered rock and or remnants of previous construction, including concrete and steel that will call for ripping or other hard-digging techniques. Groundwater was encountered at 26 feet below ground surface (bgs) during drilling and wet soils were encountered at 10 feet depth; however, groundwater levels can fluctuate over time, and perched water can occur above PWR layers.

Foundation/Slab Support:

The foundations for the project are expected to bear in engineered fill extending to firm native soil. Where highly plastic clayey silt soil (MH material on the boring logs), is encountered, it should be removed from the upper 24 inches of bearing material below foundations and slabs on grade. We anticipate that removal of soft MH material, undocumented fills and remnants of previous construction will also be needed in both cut and fill areas of the site. Over-excavations as well as excavations for foundations and slabs on grade should be evaluated by the engineer.

Soil Reuse:

Site soils that are moderately or highly expansive (including MH material) will not be usable as engineered fill in the building areas. It is recommended to use non-expansive structural fill that is free of deleterious materials, and is properly moisture conditioned and compacted to 95% of the modified proctor (ASTM D 1557) is recommended.

Pavement Design:

Roadway Type	Subgrade Preparation	Pavement Section
Parking Area Light Duty (TI=4)	Compacted Subgrade	4-in asphalt & 8-in aggregate base
Parking Area Heavy Duty (TI=7)	Compacted Subgrade	4-in asphalt & 10-in aggregate base

2. REPORT OVERVIEW & LIMITATIONS

2.1 Report Overview

To develop this report, Partner accessed existing information and obtained site specific data from our exploration program. Partner also used standard industry practices and our experience on previous projects to perform engineering analysis and provide recommendations for construction along with construction considerations to guide the methods of site development. The opinions on the cover letter of this report do not constitute engineering recommendations, and are only general, based on our recent anecdotal experiences and not statistical analysis. Section 1.0, Executive Geotechnical Summary, compiles data from each of the report sections, while each of sections in the report presents a detailed description of our work. The detailed descriptions in Section 5.0 and constitute our engineering recommendations for the project, and they supersede the Executive Geotechnical Summary.

The report overview, including a description of the planned construction and a list of references, as well as an explanation of the report limitations is provided in Section 2.0. The findings of Partner's geologic review are included in Section 3.0 Geologic Conditions and Hazards. The descriptions of our methods of exploration and testing, as well as our findings, are included in Section 4.0 Geotechnical Exploration and Laboratory Results. In addition, logs of our exploration excavations are included in Appendix A of the report, and laboratory testing is included in Appendix B of the report. Site Location and Site Plan maps are included as Figures in the report.

2.2 Assumed Construction

Partner's understanding of the planned construction was based on information provided by the project team. The proposed site plan is included as Figure 2 to this report. Partner's assumptions regarding the new construction are presented in the below table.

Property Data	
Property Use:	New Multifamily Development (Apartment)
Building footprint/height	34,655 sf / 4 to 5 Stories (partial basement) max height 43 feet
Land Acreage (Ac):	402-023-007-6 (600 Roble Avenue; 1.05 Ac), 402-023-003-5 (1106 San Pablo Avenue; 0.668 Ac), and 405-023-002-7 (1230 San Pablo Avenue; 0.339 Ac)
Number of Buildings:	1
Expected Cuts and Fills	Approximately 15 feet
Type of Construction:	Concrete Podium with wood framing
Foundations Type	Assumed deep foundations, first floor parking likely below grade
Anticipated Loads	3,000 psf
Traffic Loading	Parking garage
Site Information Sources:	Development Application 3/30/2021, Civil Drawings

2.3 References

The following references were used to generate this report:

California Dept. of Transportation, AR5 Online, accessed 10/2/2018

California Geological Survey, Note 36, *California Geomorphic Provinces*, 2002.

Federal Emergency Management Agency, FEMA Flood Map Service Center, accessed 10/2/2018

Google Earth Pro (Online), accessed 10/2/2018

Historic Aerials by NETR Online, accessed 7/21/17

Partner Engineering and Science, Inc., Phase 1 Environmental Assessment Report, *Proposed New Residential Development, Pinole*, California, 9/24/2018.

Relativity Architects, Vista Woods Apartments, Development Application, 3/30/2021

United States Geological Survey, Lower 48 States 2014 Seismic Hazard Map, accessed online 10/2/2018

United States Geological Survey Topographic Map 2015, 7.5 minute series, *Mare Island Quadrangle, CA*, accessed via internet, accessed 10/2/2018

United States Geological Survey, *Geologic Map of Mare Island Quadrangle, California, 1:24,000*, Dibblee, 2005.

United States Geologic Survey, Earthquake Hazards Program (Online), accessed 10/2/2018

2.4 Limitations

The conclusions, recommendations, and opinions in this report are based upon soil samples and data obtained in widely spaced locations that were accessible at the time of exploration, and collected based on project information available at that time. Our findings are subject to field confirmation that the samples we obtained were representative of site conditions. If conditions on the site are different than what was encountered in our borings, the report recommendations should be reviewed by our office, and new recommendations should be provided based on the new information and possible additional exploration if needed. It should be noted that geotechnical subsurface evaluations are not capable of predicting all subsurface conditions, and that our evaluation was performed to industry standards at the time of the study, no other warranty or guarantee is made.

Likewise, our document review and geologic research study made a good-faith effort to review readily available documents that we could access and were aware of at the time, as listed in this letter. We are not able to guarantee that we have discovered, observed, and reviewed all relevant site documents and conditions. If new documents or studies are available following the completion of the report, the recommendations herein should be reviewed by our office, and new recommendations should be provided based on the new information and possible additional exploration if needed.

This report is intended for the use of the client in its entirety for the proposed project as described in the text. Information from this report is not to be used for other projects or for other sites. All of the report must be reviewed and applied to the project or else the report recommendations may no longer apply. If pertinent changes are made in the project plans or conditions are encountered during construction that

appear to be different than indicated by this report, please contact this office for review. Significant variations may necessitate a re-evaluation of the recommendations presented in this report. The findings in this report are valid for one year from the date of the report. This report has been completed under specific Terms and Conditions relating to scope, relying parties, limitations of liability, indemnification, dispute resolution, and other factors relevant to any reliance on this report. Any parties relying on this report do so having accepted Partner's standard Terms and Conditions, a copy of which can be found at http: / www.partneresi.com/terms-and-conditions.php

If parties other than Partner are engaged to provide construction geotechnical services, they must be notified that they will be required to assume complete responsibility for the geotechnical phase of the project by concurring with the findings and recommendations in this report or providing alternate recommendations.

3. GEOLOGIC CONDITIONS & HAZARDS

This section presents the results of a geologic review performed by Partner, for a proposed new construction on site. The general location of the project is shown on Figure 1.

3.1 Site Location and Project Information

The planned construction will be situated on currently partially developed adjacent parcels in Pinole, California. The immediately surrounding properties consist of commercial buildings on both sides. Figure 2 presents the project site and the locations of our site exploration. Based on our review of available documents, the site has had the following previous uses:

Historical Use Information		
Period/Date	**Source**	**Description/Use**
1902-1939	Aerial Photographs, Topographic Maps	Undeveloped/ Hilly Area
1948	Aerial Photographs, Building Records	1106 San Pablo Avenue Constructed
1950s-1960s	Aerial Photographs, Topographic Maps	Residential and Outbuildings at 1230 San Pablo Avenue
1985	Aerial Photographs, Building Records	600 Roble Avenue Constructed
1948-Present	Aerial Photographs, Building Records, City Directories	Commercial and Industrial

3.2 Geologic Setting

The subject property is located within the Coast Ranges physiographic province of California. The Coast Ranges are characterized by ranges and narrow valleys that are approximately parallel to the Pacific Ocean coastline. The site is located northeast of San Francisco Bay and less than half a mile from San Pablo Bay Based on historic topographic maps, the site was previously graded and for agricultural use. In our review, the site was not located within a seismically induced hazard zone. According to the regional geologic map of the area, site soils are Monterey Formation, which is composed of sedimentary residual soil that increases in density with depth, gradually transitioning from soil, to partially weathered rock (PWR), to bedrock. In addition, the Monterey formation in this area sometimes contains diatomite, which is a chalk-like, soft, highly porous, fine-grained, siliceous sedimentary rock which in its weathered form is not suitable below heavily loaded building foundations. General geologic data is presented below:

Geologic Data		
Parameter	**Value**	**Source**
Geomorphic Zone	Coast Ranges	CGS
Ground Elevation	105 feet above MSL	Google Earth
Flood Elevation	Zone X (Minimal Flood Hazard)	FEMA
Seismic Hazard Zone	Low to Moderate	USGS
Geologic Hazards	Expansive Soils	CGS
Surface Cover	Grass cover over alluvial sands	Google Earth

Geologic Data		
Parameter	**Value**	**Source**
Site Modifications	Previous commercial building	Historic Aerials
Surficial Geology	Alluvium	NGMDB
Depth to Bedrock	3 to 15 to PWR; refusal not encountered	Boring Log
Groundwater Depth	26 feet	Boring Log

3.3 Geologic Hazards

California is tectonically active and contains numerous large, active faults. As a result, geologic hazards with the greatest potential to affect northern California include earthquakes and related hazards such as tsunamis, landslides, and liquefaction. According to California Department of Transportation's ARS Online Database, the three faults most relevant to the site are the Hayward – 2.8 miles from site, MMax 7.3, the Contra Costa Shear Zone – 7.8 miles from site, MMax 6.5 and San Andres (North Coast) – 20.4 miles from site, MMax 8.0. The site was not mapped within a zone of seismically included hazard for liquefaction, landslide, or tsunami.

The seismic design parameters based on the USGS Design Maps Detailed Report for ASCE 7-10 Standard Method are presented below.

Site Address: 1230 San Pablo Ave, Pinole, CA (Site Coordinates: 38.00442° N, 122.30191° W)

Seismic Item	Value	Seismic Item	Value
Site Classification	C	Seismic Design Category	D
Fa	1.0	Fv	1.3
Ss	1.855g	S_1	0.745g
S_{MS}	1.855g	S_{M1}	0.968g
S_{DS}	1.237g	S_{D1}	0.645g
PGA Max (ASCE '10)	0.715g	67% PGA (ASCE '10)	0.479g

4. GEOTECHNICAL EXPLORATION & LABORATORY RESULTS

Our evaluation of soils on the site included field exploration and laboratory testing. The field exploration and laboratory testing programs are briefly described below. Data reports from the field exploration and laboratory testing are provided in Appendix A and Appendix B, respectively.

4.1 Soil Borings

The soil boring program was conducted on September 20 and 25, 2018. Seven (7) borings were advanced by the use of a truck-mounted drill using hollow flight auger drilling techniques. The borings were made to depths of 25 to 50 feet in the buildings footprint. The approximate locations of the exploratory borings are shown on Figure 2. Partner visited the site again in March of 2021, to provide supplemental percolation testing.

Logs of subsurface conditions encountered in the borings were prepared in the field by a representative of Partner Engineering. Soil samples consisting of relatively undisturbed brass ring samples and Standard Penetration Tests (SPT) samples were collected at approximately 2.5 and 5-foot depth intervals and were returned to the laboratory for testing. The SPTs were performed in accordance with ASTM D 1586. Typed boring logs were prepared from the field logs and are presented in Appendix A. A summary table description is provided below with estimated boring elevations, finished floor elevations and estimated subgrade remediation depths:

Surficial Geology			
Boring	**Boring Elevation (ft)**	**Finished Floor Elevation (ft)**	**Subgrade Preparation**
FILL AREAS			
Boring 1	104	107.2	Rework 18 in (103 to 104 ft)
Boring 2	101	107.2	Remove 3 ft soft MH (98 to 101 ft)
Boring 5	105	107.2	Rework 18 in (104 to 105 ft)
CUT AREAS			
Boring 3	101	94.7	Remove 24 in MH (92.7 to 94.7 ft)
Boring 4	93	~93 (projection)	Rework 4 ft of fill (89 to 93 ft)
Boring 6	113	110.7	Rework 18 in (109.2 to 110.7 ft)
Boring 7	114	110.7 (projection)	Remove 24 in MH (108.7 to 110.7 ft)

Groundwater/Soil Moisture:

Groundwater was encountered on the site during drilling at 26 feet below ground surface, and wet conditions were encountered at 10 feet below ground surface, above partially weathered rock. In addition, previous borings by Partner on nearby sites, and the well records from the state of California, indicated groundwater levels as shallow as 6 feet in the project vicinity. Based on our study and the planned cuts of 8 feet or less, we do not anticipate groundwater will impact the site. However, groundwater levels fluctuate over time and may be different at the time of construction and during the project life.

4.2 Laboratory Evaluation

Selected samples collected during drilling activities were tested in the laboratory to assist in evaluating engineering properties of subsurface materials at the site. The results of laboratory analyses are presented in Appendix B.

4.3 Infiltration Testing

Three tests designated P-1 through P-3, were performed using the *Boring Percolation Test Procedure Method* per City of Pinole guidelines. The results were calculated using the Porchet method. The borings were advanced using a 6-in.-diameter borehole and lined with screened 2-in. diameter pipes. Geotechnical borings accompanied the percolation tests for soil classification purposes. The results obtained in the field were properly stabilized and are presented below. Boring Logs and Percolation test data are attached.

Location	Depth Below Ground Surface (ft)	Unfactored Infiltration rate (in./hr)	Factor of Safety	Factored Infiltration Rate (in./hr)
P-1	4	0.0	3	0.0
P-2	5	0.0	3	0.0
P-3	6	0.0	3	0.0

We recommend that a factor of safety of 3 be applied to account for both site variability and siltation. At the time of drilling, site soils were generally consistent across the percolation tests (see Attached Figures and percolation test logs). In general, the soils across the site are not favorable for infiltration due to shallow weathered bedrock conditions encountered.

5. GEOTECHNICAL RECOMMENDATIONS & PARAMETERS

The following discussion of findings for the site is based on the assumed construction, geologic review, results of the field exploration, and laboratory testing programs. The recommendations of this report are contingent upon adherence to Appendix C of this report, General Geotechnical Design and Construction Considerations. For additional details on the below recommendations, please see Appendix C.

5.1 Geotechnical Recommendations

- The proposed construction is generally feasible from a geotechnical perspective provided the recommendations and assumptions of this report are followed.

Geologic/General Site Considerations

- The Coast Ranges are characterized by ranges and narrow valleys that are approximately parallel to the Pacific Ocean coastline. The site is located northeast of San Francisco Bay and less than half a mile from San Pablo Bay. Based on historic topographic maps, the site was previously graded and partially developed. The subject property is currently three adjacent lots, 600 Robles Avenue parcel is a two-story office building with surrounding asphalt paved parking lot, 1230 San Pablo Ave parcel is grass covered vacant lot and 1106 San Pablo Avenue parcel contains one story office and equipment yard with various cars. The surrounding neighborhood area is residential/ light industrial. The locations of Building 1 and Building 2 are shown on Figure 3.
- In our review, the site was not located within a seismically induced hazard zone. According to the regional geologic map of the area, site soils are Monterey Formation, which is composed of sedimentary residual soil that increases in density with depth, gradually transitioning from soil, to partially weathered rock (PWR), to bedrock. In addition, the Monterey formation in this area sometimes contains diatomite, which is a chalk-like, soft, highly porous, fine-grained, siliceous sedimentary rock which in its weathered form is not suitable below heavily loaded building foundations. Strong ground shaking is anticipated during the project life, and highly plastic silt (MH material) was observed at the surface across the site, which is potentially expansive material. No other geologic hazards were known or suspected on the project site.

Mass Grading Considerations

- We anticipate grading will require cuts to depths of up to 7 feet to establish new finished floor excavations. Based on the locations of the cut areas, we anticipate stepped excavations can be used without the need for shoring. New building excavations around the property boundaries are anticipated to be 3 feet or less and should not require shoring. However, it should be noted that site retaining walls are planned to be repaired/replaced. Our analysis did not include evaluation of the site retaining walls and modifications to site slopes. This should be addressed under separate cover.
- The excavations will require heavy-duty construction equipment in good working condition and may encounter weathered rock and or remnants of previous construction, including concrete and steel that will call for ripping or other hard-digging techniques. Groundwater was encountered at

26 feet below ground surface (bgs) during drilling and wet soils were encountered at 10 feet depth; however, groundwater levels can fluctuate over time, and perched water can occur above PWR layers.

- Excavations should be sloped and/or shored to protect worker safety and adjacent properties, per OSHA and local guidelines. In the cases where the demolition excavation is to be within a 2:1 (horizontal to vertical) zone below existing foundations or property lines, special demolition procedures should be used.

Spread Foundations

- We recommend the use of spread foundations on the site. Undocumented fill, remnants of previous construction, and soft clayey silty soils (MH material) should be removed from existing and finished grades within the building area. Dense MH material may remain in-place below deeper fills, so long as it will be 24 inches or more below foundation and slab bearing grades. In cut areas, any MH soil should be over-excavated to accommodate 24 inches of non-expansive granular fill to be placed directly below new foundations and slabs. The over-excavation should extend laterally 24 inches from the foundation and/or slab edges. The base of the foundation over-excavation, and foundation bearing grades should be carefully inspected during construction. More direction on preparation for new fills is provided in the "On Grade" section below. Section 4 of this report provides a table describing the conditions encountered in each boring.

- **Basement Design and Construction**

  A portion of the new construction, along the north-west corner of the site is to have a partial basement. The basement walls will function as retaining walls this will require the installation of damp-proofing on the outside of the walls, along with the placement of a back-drainage system. Such a system should be designed by the project engineer and could consist of open graded aggregate or other type of system. Parameters for the lateral loads are included in Section 5.2. For walls that are restrained at top and bottom, the static pressure values should be used. Additional recommendations for construction are included in Appendix C.

On-Grade Construction Considerations

- All grass, roots, plant materials, and remnants of previous construction should be removed from structural areas of the site. Given the presence of highly expansive material across the site, slab-on-grade areas should be supported on a 24-inch thick layer of non-expansive engineered fill overlying competent native soil.

- In new fill, planned slabs or in new pavement areas, cleaned subgrade should be proofrolled and evaluated by the engineer with a loaded water truck (4,000 gallon) or equivalent rubber-tired equipment. Soft or unstable areas should be repaired per the direction of the engineer. Once approved, the subgrade soil should be scarified to a depth of 18 inches, moisture conditioned, and compacted as engineered fill. The improvements should extend a distance of 2 feet beyond the planned area of new construction at finished grade (for fill sites, 2 feet inside the top of slope).

Soil Reuse Considerations

- Site surface soils are generally not recommended for use as engineered fill in structural areas as they contain highly plastic silt soil (MH materials) as well as low specific gravity diatomite gravels. Soils that they are generally free of deleterious materials and have a liquid limit below 50 and are properly moisture conditioned and compacted may be used in structural areas. For this project, 95% compaction of the standard proctor (ASTM D 1557) is called for.

Concrete Considerations

- Concrete should be corrosion resistant, using Type II/V Portland Cement, and fly ash mixtures of 25 percent cement replacement. We recommend a water/cement ratio of 0.45 or less. Site soil may be corrosive to un-protected metallic elements such as pipes, poles, etc. Concrete exposed to freezing weather in cold climates should be air-entrained.

Site Storm Water Considerations

- Surface drainage and landscaping design should be carefully planned to protect the new structures from erosion/undermining, and to maintain the site earthwork and structure subgrades in a relatively consistent moisture condition. Water should not flow towards or pond near to new structures, and high water demand plants should not be planned near to structures.

5.2 Geotechnical Parameters

Based on the findings of our field and laboratory testing, we recommend that design and construction proceed per industry accepted practices and procedures, as described in Appendix C, General Geotechnical Design and Construction Considerations (Considerations).

Subgrade Preparation Parameters – (hyperlink to Construction Considerations)

Subgrade Preparation				
Structure	**Bearing Capacity**	**Embedment Depth**	**Bearing Surface [a]**	**Settlement [d]**
Grade Slabs	k=150 pci [b]	NA	24 in non-expansive engineered fill	<1 inch
Spread Foundations	4,000 [c] psf	18 inches	24 in non-expansive engineered fill or to compacted in place approved native soil, whichever is deeper	<1 inch

[a] Repairs in bearing *surface areas should be structural fill per the recommendation of the Earthwork section of Appendix C that is moisture conditioned to within 3 percent below to optimum moisture content and compacted to 95 percent or more of the soil maximum dry density per ASTM D1557 Expansive material should not be located within the upper* 3 feet of the soil subgrade.

[b] *Subgrade modulus value "k," assuming the grade slab is supported by aggregate layer roughly equal to slab thickness (minimum 4 inches)*

[c] *Can be increased by 1/3 for temporary loading such as seismic and wind*

[d] Differential settlement is expected to be half of total settlement

Paving Structural Sections – (hyperlink to Construction Considerations)

Pavement Sections		
Roadway Type	**Subgrade Preparation [a]**	**Pavement Section [b]**
Parking Area Light Duty (TI=4)	Proofrolled Subgrade	4-in asphalt & 8-in aggregate base
Parking Area Heavy Duty (TI=7)	Proofrolled Subgrade	4-in asphalt & 10-in aggregate base
Parking Area Heavy Duty (TI=7)	Proofrolled Subgrade	7-in concrete & 4-in aggregate base

[a] Repairs in proofrolled areas should be structural fill per the recommendation of the Earthwork (hyperlink to Construction Considerations) that is moisture conditioned to within 3 percent below to optimum moisture content and compacted to 95 percent or more of the soil maximum dry density per ASTM D1557.

[b] 1 inch of pavement may be reduced if 6-in of lime-treated soil is used with a 500 psi 28 day compressive strength

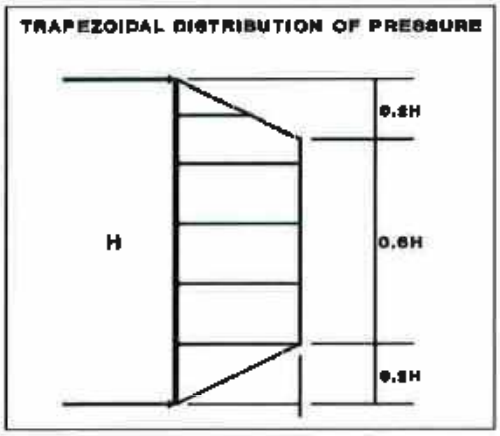
Laterally Loaded Structures Parameters– (hyperlink to Construction Considerations)

The parameters in this section pertain to walls that are fixed at the top and bottoms, so that strain is not allowed (static fluid pressure), and to flexible, cantilevered retaining walls (active fluid pressures). Static pressures would apply to the underground basements walls and any shoring system that uses boxes, struts, jacks, etc. The stress distribution for static fluid pressure is distributed as is shown in the below diagram. Active and passive fluid pressures have a triangular distribution. Surcharges for slopes above retaining walls should also be added, as surcharges for nearby foundations, traffic, and seismic forces, as shown in the below equations.

Lateral Earth Pressures [a]				
Soil Type	**Coefficient of Friction (μ)**	**Static Fluid Pressure (pcf)**	**Active Fluid Pressure (pcf)**	**Passive Fluid Pressure (pcf)**
Native/Silty/Clayey Soil (0-5 ft)	0.35	60	40	0
Native/Dense Soil (5 - 15 ft)	0.30	60	40	200

[a] These are raw unfactored values. Appropriate factors of safety should be selected by the structural engineer

[b] These loads should be modified by seismic and surcharge loads as shown in the below equations where k = 0.5:



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Traffic Surcharge Loading Equations

Table 1*

Equivalent Height of Soil for Vehicular Loading on Retaining Wall and Shoring Parallel to Traffic

Excavation/Wall Height (ft)	Distance from the edge of excavation (ft)	
	0.0 ft	1.0 ft or further
5.0	5.0	2.0
10.0	3.5	2.0
≥20.0	2.0	2.0

* From Table 3.11.6.4-2 of the AASHTO document referenced above

$$q = k \times \gamma_s \times H_{eq}$$

Where:
- q = lateral surcharge pressure (psf) in rectangular distribution
- k = active or at-rest earth pressure coefficient from Soils Report
- γ_s = total unit weight of soil (pcf)
- H_{eq} = equivalent height of soil from "Table 1" above

Foundation Surcharge Loading Equations

Resultant lateral force:

$$R = \frac{0.3Ph^2}{x^2+h^2}$$

Location lateral resultant:

$$d = x\left[\left(\frac{x^2}{h^2}+1\right)\left(\tan^{-1}\frac{h}{x}\right)-\left(\frac{x}{h}\right)\right]$$

WHERE:

- R = resultant lateral force measured in pounds per foot (N/m) of wall width.
- P = resultant surcharge loads of continuous or isolated footings measured in pounds per foot (N/m) of length parallel to the wall.
- X = distance of resultant load from back face of wall measured in feet (mm).
- h = depth below point of application of surcharge loading to top of wall footing measured in feet (mm).
- d = depth of lateral resultant below point of application of surcharge loading measured in feet (mm).
- $\tan^{-1} h/x$ = The angle in radians whose tangent is equal to h/x.

Loads applied within a horizontal distance equal to the wall stem height, measured from the back face of the wall, shall be considered as surcharge.

For isolated footings having a width parallel to the wall less than 3 feet (914 mm), "*R*" may be reduced to one-sixth the calculated value.

The resultant lateral force "*R*" shall be assumed to be uniform for the length of footing parallel to the wall and to diminish uniformly to zero at the distance "*x*" beyond the ends of the footing.

Vertical pressure due to surcharge applied to the top of the wall footing may be considered to spread uniformly within the limits of the stem and planes making an angle of 45 degrees with the vertical.

Seismic Surcharge Loading Equations

Combined effect of static and seismic lateral force:
$P_{AE} = F_1 + F_2$

$F_1 = 1/2*A*H^2$	Resultant acting at a distance of H/3 from base of wall
$F_2 = 3/8*K_h*\gamma*H^2$	Resultant acting at a distance of (0.6*H) from base of wall

Where:
F_1 = Static Force (plf) based on active pressure
F_2 = Seismic Lateral Force (plf) based on seismic pressure
γ = 120 pcf
$K_h = S_{DS}/2.5$
A = Active Pressure (pcf)
H = Height of retained soil (ft)

FIGURES

- Site Location Map
- Site Exploration Map
- Scaled Site Plans with Borings

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U.S. Geological Survey, 20180914, USGS US Topo 7.5-minute map for Mare Island, CA 2018: USGS - National Geospatial Technical Operations Center (NGTOC).

FIGURE 1 – SITE VICINITY PLAN

KEY

Approximate Site Location

Source: Google Earth, 2021, San Pablo Avenue, Feasibility Study, Relativity Architects

FIGURE 2 – PERCOLATION LOCATIONS

KEY

Approximate Percolation Test Location

Approximate Project Limits

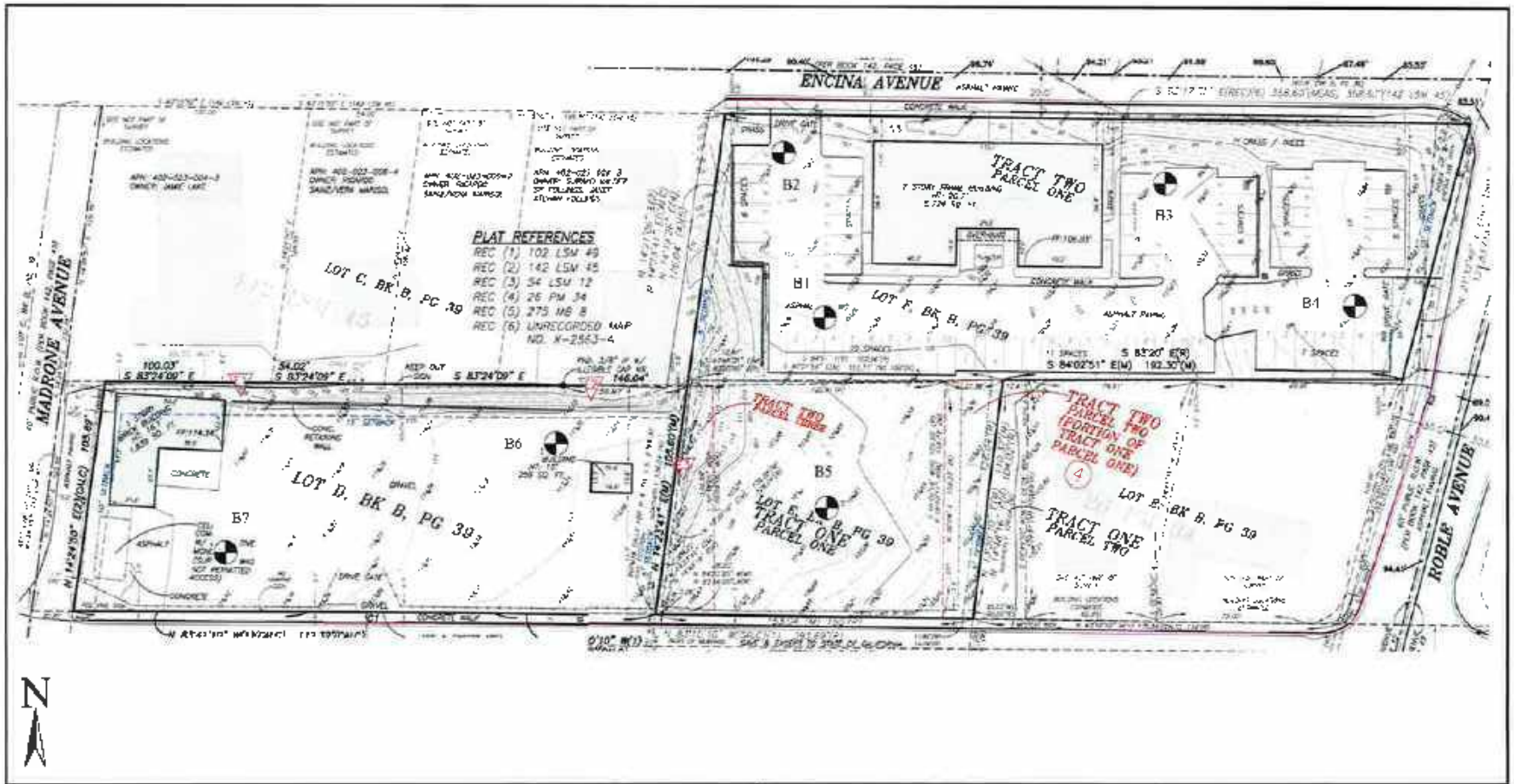
Source: Google Earth, 2021, San Pablo Avenue, Feasibility Study, Relativity Architects

FIGURE 3 – BORING LOCATIONS

KEY

Approximate Percolation Test Location

Approximate Project Limits



Source: The Architects Collective, Sheet C1.20, Grading Plans, 12/6/2019

FIGURE 4 – SCALED BORING LOCATION PLAN

KEY

Approximate Boring Location

Scale
1 inch = 25 feet

0 25' 50' 75' 100' 200' 300'

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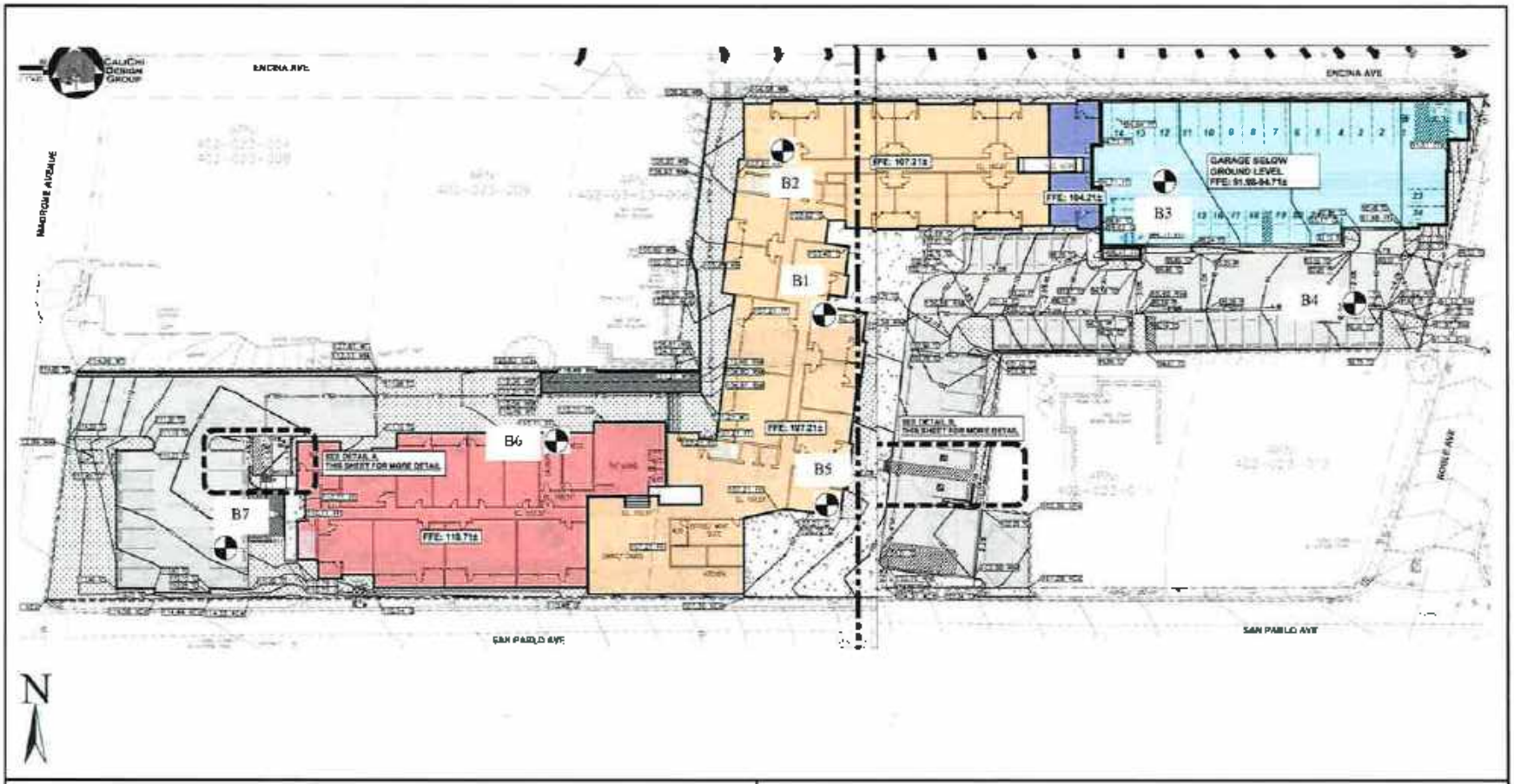


Source: The Architects Collective, Sheet C1.20, Grading Plans, 12/6/2019

FIGURE 5 – SCALED BORING LOCATION PLAN

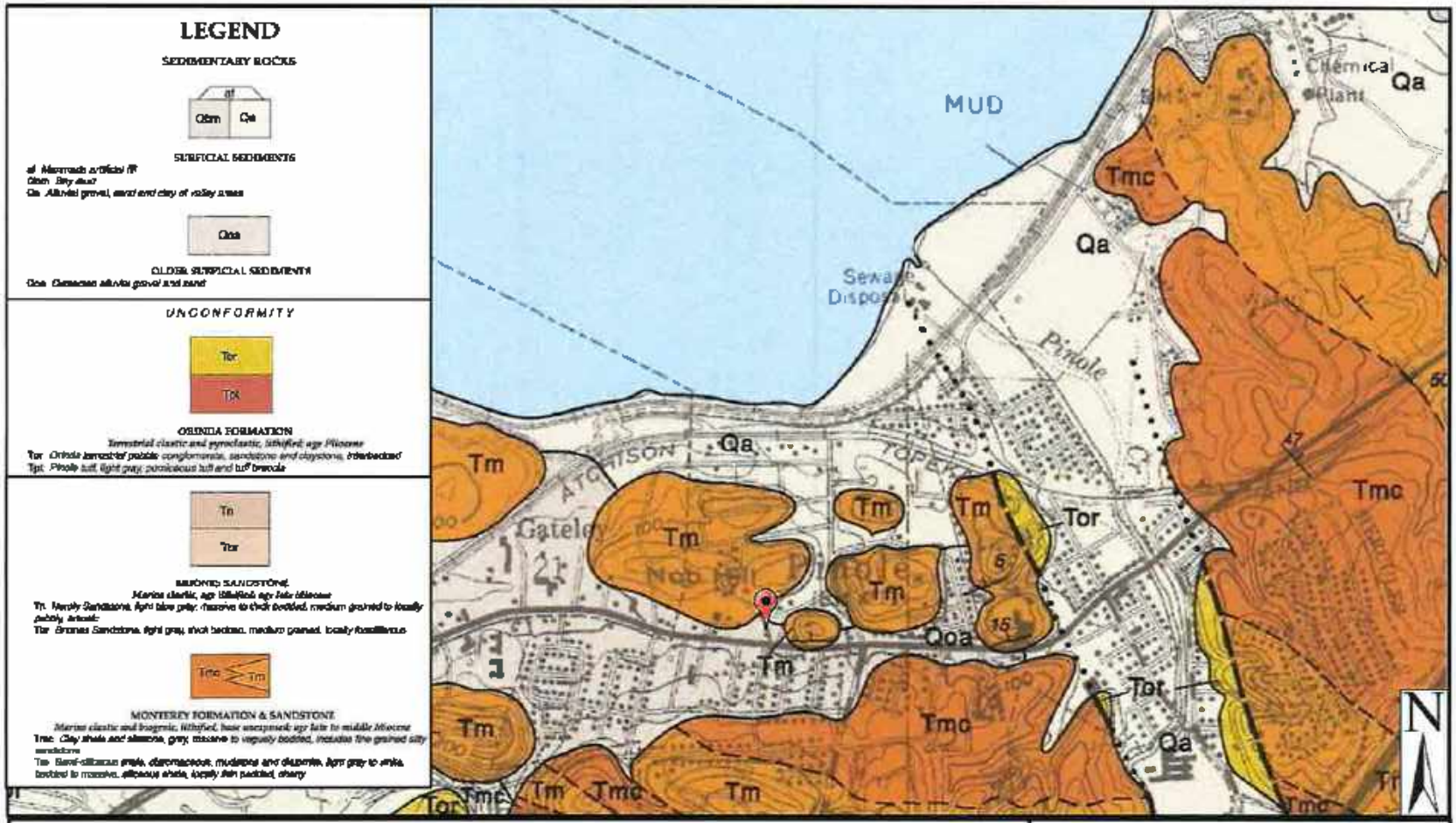
KEY

Approximate Boring Location

Scale
1 inch = 25 feet

0 25' 50' 75' 100' 200' 300'

PARTNER



Source: Dibblee, T.W., and Minch, J.A., 2005, Geologic map of the Mare Island quadrangle, Contra Costa, Solano, Marin, & Sonoma Counties, California; Dibblee Foundation Map DF-145, scale 1:24,000

FIGURE 6 – GEOLOGIC MAP

KEY

Approximate Site Location

APPENDIX A

Boring Logs

Percolation Test Results

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BORING LOG KEY - EXPLANATION OF TERMS

SURFACE COVER: General discription with thickness to the inch, ex. Topsoil, Concrete, Asphalt, etc,

FILL: General description with thickness to the 0.5 feet. Ex. Roots, Debris, Processed Materials (Pea Gravel, etc.)

NATIVE GEOLOGIC MATERIAL: Deposit type, 1.Color, 2.moisture, 3.density, 4.SOIL TYPE, other notes - Thickness to 0.5 feet

1. Color - Generalized

Light Brown (usually indicates dry soil, rock, caliche)
Brown (usually indicates moist soil)
Dark Brown (moist to wet soil, organics, clays)
Reddish (or other bright colors) Brown (moist, indicates some soil development/or residual soil)
Greyish Brown (Marine, sub groundwater - not the same as light brown above)
Mottled (brown and gray, indicates groundwater fluctuations)

2. Moisture

dry - only use for wind-blown silts in the desert
damp - soil with little moisture content
moist - near optimum, has some cohesion and stickyness
wet - beyond the plastic limit for clayey soils, and feels wet to the touch for non clays
saturated - Soil below the groundwater table, sampler is wet on outside

3. Density (based on blow counts or hand evaluation)

SPT	Ring	Granular	Cohesive		
0-5	0-7	very loose	very soft	Unsuitable	Thumb penetrates through
5-10	7-14	loose	soft	<1,500psf	Thumb penetrates part way
10-20	14-28	medium dense	firm	<3,000psf	Thumb dents only
20-75	28-100	dense	stiff	>3,000psf	Thumbnail dents
75+	100+	very dense	hard	Hard Dig	Thumbnail does not dent

4. Classification

Determine percent Gravel (bigger than 3/8")
Determine percent fines (silt and clay feel soft, with no grit)
Determine percent sand (between silt and clay, feels gritty)
Determine if clayey (make soil moist, if it easily roll into a snake it is clayey)

Sands and gravels (more gravel starts with G, more sand starts with S)

GP	SP	Mostly sand and gravel, with less than 5 % fines	sandy GRAVEL	SAND
GP-GM	SP-SM	Mostly sand and gravel 7-12% fines, non-clayey	sandy GRAVEL with silt	SAND with Silt
GP-GC	SP-SC	Mostly sand and gravel 7-12% fines, clayey	sandy GRAVEL with clay	SAND with clay
GC	SC	Mostly sand and gravel >12% fines clayey	clayey GRAVEL	clayey SAND
GM	SM	Mostly sand and gravel >12% fines non-clayey	silty GRAVEL	silty SAND

Cohesive Soil (generaly forms long chunks (more than 2 inches) in sampler

ML	Soft, non clayey	SILT with sand
MH	Very rare, holds a lot of water, and is pliable with very low strength	high plasticity SILT
CL	If sandy can be hard when dry, will be stiff/plastic when wet	CLAY with sand/silt
CH	Hard and resiliant when dry, very strong/sticky when wet (may have sand in it)	FAT CLAY

H = Liquid limit over 50%, L - LL under 50%
C = Clay
M = Silt

Samplers

S = Standard split spoon (SPT)
R = Modified ring
Bulk = Excavation spoils
ST = Shelby tube
C = Rock core

Boring Number:	B1	Boring Log Page 1 of 1	
Location:	SW of Existing building	Date Started:	9/25/2018
Site Address:	600 Roble Avenue	Date Completed:	9/25/2018
	Pinole, CA 94564	Depth to Groundwater:	N/A
Project Number:	18-224911.3	Field Technician:	B. Kim
Drill Rig Type:	Ingersoll Rand A400	**Partner Engineering and Science**	
Sampling Equipment:	SPT & Rings	111 Pine Street, #1750	
Borehole Diameter:	6.5"	San Francisco, CA 94111	

Depth	Sample	N-Value	USCS	Description
0				**SURFACE COVER:** Asphalt (2")
1				**NATIVE:** Brown, damp, sandy SILT with trace gravel
2				
3				
4				
5	S	50/5"	MH	Brown, damp, stiff, SILT with trace sand and gravel
6				
7				
8				
9				
10	S	50/6"		
11				
12				
13				
14				
15	R	50/5"	PWR	**PARTIALLY WEATHERED ROCK:** Brown, damp, hard, SILTSTONE with trace sand
16				and gravel
17				
18				
19				
20	S	50/3"		
21				Boring terminated at 21.5'
22				Backfilled with neat cement and patched upon completion
23				Groundwater not encountered
24				
25				
26				
27				
28				
29				

Boring Number:	B2	Boring Log Page 1 of 1	
Location:	NW of Existing building	Date Started:	9/25/2018
Site Address:	600 Roble Avenue	Date Completed:	9/25/2018
	Pinole, CA 94564	Depth to Groundwater:	N/A
Project Number:	18-224911.3	Field Technician:	B. Kim
Drill Rig Type:	Ingersoll Rand A400	**Partner Engineering and Science**	
Sampling Equipment:	SPT & Rings	111 Pine Street, #1750	
Borehole Diameter:	6.5"	San Francisco, CA 94111	

Depth	Sample	N-Value	USCS	Description
0				**SURFACE COVER:** Asphalt (2")
1				**NATIVE:** Dark gray/black, moist, SILT
2				
3				
4				
5	R	23	MH	Dark gray/black, moist, dense, SILT
6				
7				
8				
9				
10	S	30		
11				
12				
13				
14				
15	S	50/5"	PWR	**PARTIALLY WEATHERED ROCK:** Brown, damp, hard, SILTSTONE
16				
17				
18				
19				
20	S	92/10"		moist
21				Boring terminated at 21.5'
22				Backfilled with neat cement and patched upon completion
23				Groundwater not encountered
24				
25				
26				
27				
28				
29				

Boring Number:	B3	Boring Log Page 1 of 1	
Location:	NE of Existing building	Date Started:	9/25/2018
Site Address:	600 Roble Avenue	Date Completed:	9/25/2018
	Pinole, CA 94564	Depth to Groundwater:	N/A
Project Number:	18-224911.3	Field Technician:	B. Kim
Drill Rig Type:	Ingersoll Rand A400	**Partner Engineering and Science**	
Sampling Equipment:	SPT & Rings	111 Pine Street, #1750	
Borehole Diameter:	6.5"	San Francisco, CA 94111	

Depth	Sample	N-Value	USCS	Description
0				**SURFACE COVER:** Asphalt (2")
1				**FILL:** Brown, damp, gravel fill with some sand
2				
3				
4				
5	S	50	MH	**NATIVE:** Brown, damp, stiff, SILT with some sand [Fines: 35%]
6				
7				
8				
9				
10	S	20		Reddish brown, damp to moist, firm (LL=54.8, P =30.5)
11				
12				
13				
14				
15	R	38		Dark brown, stiff, with trace clay (Dry Density: 81.7 pcf, Moisture Content: 29.3 %,
16				Fines: 68%)
17				
18				
19				
20	S	55		
21				Boring terminated at 21.5'
22				Backfilled with neat cement and patched upon completion
23				Groundwater not encountered
24				
25				
26				
27				
28				
29				

Boring Number:	B4	Boring Log Page 1 of 1	
Location:	SE of Existing building	Date Started:	9/25/2018
Site Address:	600 Roble Avenue	Date Completed:	9/25/2018
	Pinole, CA 94564	Depth to Groundwater:	~10' (perched)
Project Number:	18-224911.3	Field Technician:	B. Kim
Drill Rig Type:	Ingersoll Rand A400	**Partner Engineering and Science**	
Sampling Equipment:	SPT & Rings	111 Pine Street, #1750	
Borehole Diameter:	6.5"	San Francisco, CA 94111	

Depth	Sample	N-Value	USCS	Description
0				**SURFACE COVER:** Asphalt (2")
1				**FILL:** Gray, damp, sandy gravelly soil
2				
3				
4				
5	S	17	MH	**NATIVE:** Gray, damp, firm, SILT (Dry Density: 65.6 pcf, Moisture Content: 43.3 %)
6				
7				
8				
9				
10	S	13		Black/dark gray, wet
11				
12				
13				
14				
15	R	93/9"	PWR	**PARTIALLY WEATHERED ROCK:** Brown, damp, hard, SILTSTONE with some sand
16				
17				
18				
19				
20	S	87/11"		
21				Boring terminated at 21.5'
22				Backfilled with neat cement and patched upon completion
23				Perched groundwater encountered at 10'
24				
25				
26				
27				
28				
29				

Boring Number:	B5	Boring Log Page 1 of 1	
Location:	Empty lot South of building	Date Started:	9/25/2018
Site Address:	1230 San Pablo Avenue	Date Completed:	9/25/2018
	Pinole, CA 94564	Depth to Groundwater:	N/A
Project Number:	18-224911.3	Field Technician:	B. Kim
Drill Rig Type:	Ingersoll Rand A400	**Partner Engineering and Science**	
Sampling Equipment:	SPT & Rings	111 Pine Street, #1750	
Borehole Diameter:	6.5"	San Francisco, CA 94111	

Depth	Sample	N-Value	USCS	Description
0				**SURFACE COVER:** Grass covered sand surface
1				
2				
3				
4				
5	R	50/5"	MH	**NATIVE:** Brown, damp, hard, SILT with some sand (Dry Density: 83 pcf, Moisture
6				Content. 20.1 %)
7				
8				
9				
10	S	50/5"		with organics
11				
12				
13				
14				
15	S	82/11"	PWR	**PARTIALLY WEATHERED ROCK:** Brown, damp, hard, SILTSTONE with some sand
16				
17				
18				
19				
20	S	82/10"		Reddish brown
21				Boring terminated at 21.5'
22				Backfilled with neat cement
23				Groundwater not encountered
24				
25				
26				
27				
28				
29				

Boring Number:	B6	Boring Log Page 1 of 2	
Location:	Junkyard SE of building	Date Started:	9/25/2018
Site Address:	1106 San Pablo Avenue	Date Completed:	9/25/2018
	Pinole, CA 94564	Depth to Groundwater:	26-27'
Project Number:	18-224911.3	Field Technician:	B. Kim
Drill Rig Type:	Ingersoll Rand A400	**Partner Engineering and Science**	
Sampling Equipment:	SPT & Rings	111 Pine Street, #1750	
Borehole Diameter:	6.5"	San Francisco, CA 94111	

Depth	Sample	N-Value	USCS	Description
0				**SURFACE COVER:** Asphalt (approx. 3")
1				**FILL:** Loose gravel/sand material to approx. 6"
2				
3				
4				
5	S	82/11"	PWR	**PARTIALLY WEATHERED ROCK:** Brown, damp, hard, SILTSTONE
6				
7				
8				
9				
10	S	78/11"		
11				
12				
13				
14				
15	R	50/2"		(Dry Density: 58 pcf, Moisture Content: 20.3 %)
16				
17				
18				
19				
20	S	82/10"		Reddish brown
21				
22				
23				
24				
25	S	82/11.5"		Saturated
26			▼	**groundwater encountered**
27				
28				
29				Continued on next page

Boring Number:	B6	Boring Log Page 2 of 2	
Location:	NE area of junkyard	Date Started:	9/25/2018
Site Address:	1106 San Pablo Avenue	Date Completed:	9/25/2018
	Pinole, CA 94564	Depth to Groundwater.	26-27'
Project Number:	18-224911.3	Field Technician:	B. Kim
Drill Rig Type:	Ingersoll Rand A400	**Partner Engineering and Science**	
Sampling Equipment:	SPT & Rings	111 Pine Street, #1750	
Borehole Diameter:	6.5"	San Francisco, CA 94111	

Depth	Sample	N-Value	USCS	Description
30	S	86/11"	PWR	Brown, saturated, hard, SILT
31				*sleeve is wet
32				
33				
34				
35	S	50/6"		
36				
37				
38				
39				
40	S	50/5.5"		with little clay
41				
42				
43				
44				
45	R	95/10"		Gray
46				
47				
48				
49				
50	S	82/10"		No recovery
51				Boring terminated at 51.5'
52				Backfilled with neat cement and patched upon completion
53				Groundwater encountered at 26-27'
54				
55				
56				
57				
58				
59				

Boring Number:	B7	Boring Log Page 1 of 1	
Location:	SW area of junkyard	Date Started:	9/25/2018
Site Address:	1106 San Pablo Avenue	Date Completed:	9/25/2018
	Pinole, CA 94564	Depth to Groundwater:	N/A
Project Number:	18-224911.3	Field Technician:	B. Kim
Drill Rig Type:	Ingersoll Rand A400	**Partner Engineering and Science**	
Sampling Equipment:	SPT & Rings	111 Pine Street, #1750	
Borehole Diameter:	6.5"	San Francisco, CA 94111	

Depth	Sample	N-Value	USCS	Description
0				**SURFACE COVER:** Loose gravel/sand area for 6"
1			MH	**NATIVE:** Dark brown, soft, clayey SILT
2				
3				
4				
5	R	88/11"	PWR	**PARTIALLY WEATHERED ROCK:** Brown, damp, hard, SILTSTONE with some sand
6				
7				
8				
9				
10	S	78/11"		
11				
12				
13				
14				
15	R	84/10"		(Dry Density: 56.4 pcf, Moisture Content: 46.3 %)
16				
17				
18				
19				
20	S	78		Reddish brown
21				
22				
23				
24				
25	S	55		stiff
26				Boring terminated at 26.5'
27				Backfilled with neat cement
28				Groundwater not encountered
29				

Technician: M. Helou
Date: 3/19/2021
Project and #: New Residential Development

Page: 1

PERCOLATION FIELD TEST REPORT

Notes & Observations

Perc Test #	P1	Location: Southeast side of building (1106 San Pablo Avenue)	Weather: Overcast/rain/sun in PM

Time	Comments
	Construction: 5 feet bgs, 6 inch diameter borehole, 2 inch diameter, 0.010-inch slotted PVC pipe Top of PVC to gravel = 24 inches (PVC level to grade)

Percolation Test - Pre Soak

Pre Soaking Time -
Time: 9:30 depth 24 inches
12:30

Percolation Reading	Start Time/ End Time	Elapsed Time	WL BTP (in)	WL Δ (in)	Infiltration Rate* (in/hr)
1	13:15	30.00	24	0.0	0.0
	13:45		24		
2	13:45	30.00	24	0.0	0.0
	14:15		24		
3	14:15	30.00	24	0.0	0.0
	14:45		24		
4	14:45	30.00	24	0.0	0.0
	15:15		24		
5	15:15	30.00	24	0.0	0.0
	15:45		24		
6					
7					
8					

Calculations

Measured Infiltration Rate (in/hr) = 0.00

Notes:	
btp - below top of pipe	d1 = Depth to Initial Water Depth (in.)
WL - water level	Δd = Water Level Drop of the Final Period or Stablixed Rate (in)
min - minutes	DIA - Diameter of the boring (in.)
ft - feet	

*Infiltration Rate percolation rate is the flow volume/ flo change/ change in time

Technician: M. Helou
Date: 3/19/2021
Project and #: New Residential Development

Page: 1

PERCOLATION FIELD TEST REPORT

Notes & Observations

Perc Test #	P2	Location: Center of vacant lot (1230 San Pablo Avenue)	Weather: Overcast/rain/sun in PM

Time	Comments
	Construction: 5 feet bgs, 6 inch diameter borehole, 2 inch diameter, 0.010-inch slotted PVC pipe Top of PVC to gravel = 23 inches (PVC level to grade)

Percolation Test - Pre Soak

Pre Soaking Time -
Time: 9:00
12:00

depth 23 inches

Percolation Reading	Start Time/ End Time	Elapsed Time	WL BTP (in)	WL Δ (in)	Infiltration Rate* (in/hr)	Calculations
1	13:00	30.00	23	0.0	0.0	
	13:30		23			
2	13:30	30.00	23	0.0	0.0	
	14:00		23			
3	14:00	30.00	23	0.0	0.0	
	14:30		23			
4	14:30	30.00	23	0.0	0.0	
	15:00		23			
5	15:00	30.00	23	0.0	0.0	
	15:30		23			
6						
7						
8						

Measured Infiltration Rate (in/hr) = 0.00

Notes:	
btp - below top of pipe	d1 = Depth to Initial Water Depth (in.)
WL - water level	Δd = Water Level Drop of the Final Period or Stablixed Rate (in)
min - minutes	DIA - Diameter of the boring (in.)
ft - feet	

*Infiltration Rate percolation rate is the flow volume/ flo change/ change in time

Technician: M. Helou

Date: 3/19/2021

New Residential Development

Project and #: 18-224911 9

Page: 1

PERCOLATION FIELD TEST REPORT

Notes & Observations

Perc Test #	P3	**Location:** Southeast side of building (1106 San Pablo Avenue)	**Weather:** Overcast/rain/sun in PM

Time	**Comments**
	Construction: 5 feet bgs, 6 inch diameter borehole, 2 inch diameter, 0.010 inch slotted PVC pipe Top of PVC to gravel = 17 inches (PVC level to grade)

Percolation Test - Pre Soak

Pre Soaking Time -

Time: 8:30 10:30 depth 17 inches

Percolation Reading	Start Time/ End Time	Elapsed Time	WL BTP (in)	WL Δ (in)	Infiltration Rate* (in/hr)
1	11:00	10.00	17	0.0	0.0
	11:10		17		
2	11:10	10 00	17	0.0	0.0
	11:20		17		
3	11:20	10.00	17	0.0	0.0
	11:30		17		
4	11:30	10.00	17	0.0	0.0
	11:40		17		
5	11:40	10.00	17	0.0	0.0
	11:50		17		
6	11:50	10.00	17	0.0	0.0
	12:00		17		
7	12:00	10.00	17	0.0	0.0
	12:10		17		
8	12.10	10.00	17	0.0	0.0
	12:20		17		

Calculations

Measured Infiltration Rate (in/hr) = 0.00

Notes:	
btp - below top of pipe	*d* 1 = Depth to Initial Water Depth (in.)
WL - water level	Δd = Water Level Drop of the Final Period or Stablixed Rate (in)
min - minutes	DIA - Diameter of the boring (in.)
ft - feet	

*Infiltration Rate percolation rate is the flow volume/ flo change/ change in time

APPENDIX B

Lab Data

PARTNER

LABORATORY TEST DATA

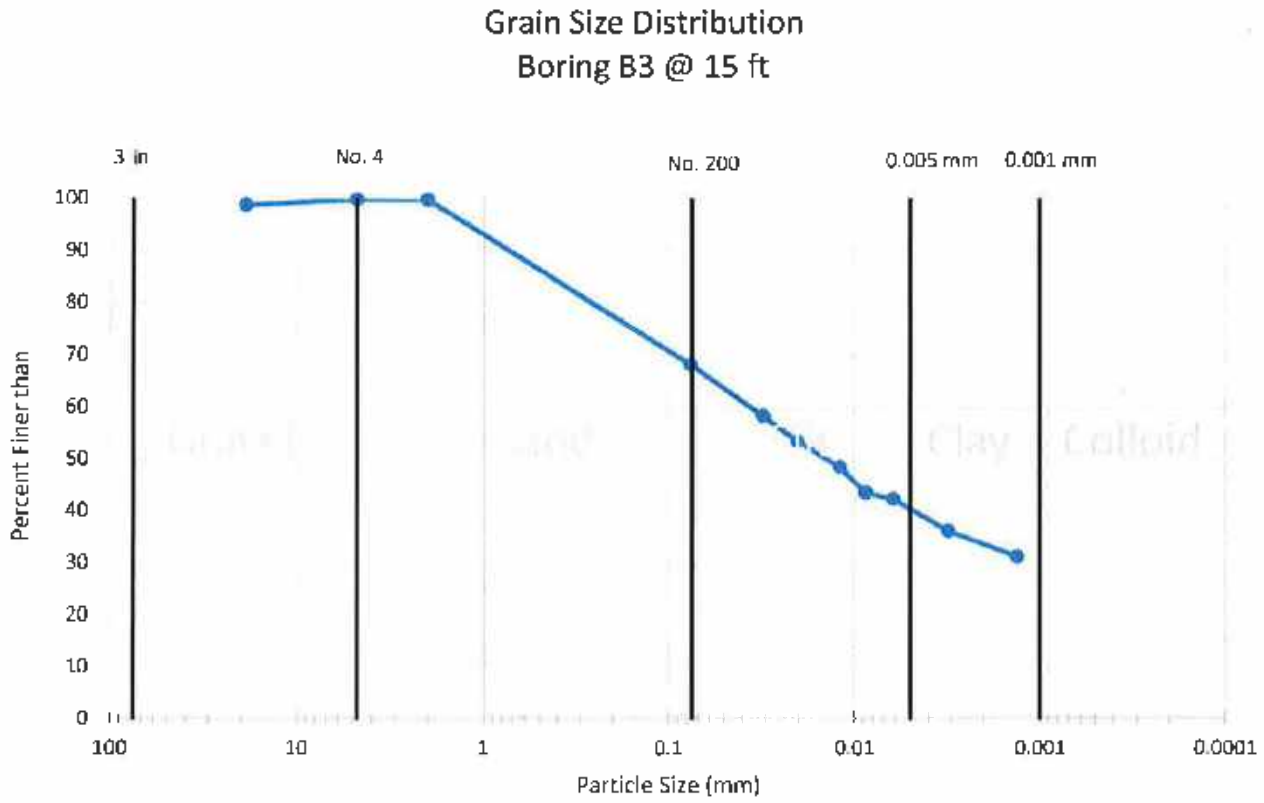
Index Test Results

Soil Sample	Plasticity Index	Liquid Limit	Fines Content (%)	Minus No. 10 Sieve Content (%)
B2 @ 5 feet	-	-	-	100
B3 @ 5 feet	-	-	35	100
B3 @ 10 feet	24	55		-
B3 @ 15 feet	-	-	68	99.99

In-Place Moisture and Density

Soil Sample	Dry Density (pcf)	Wet Density (pcf)	Moisture Content (%)
B3 @ 15 feet	81.7	105.7	29.3
B4 @ 5 feet	65.6	94.0	43.3
B5 @ 5 feet	83.0	99.7	20.1
B6 @ 15 feet	58.0	69.7	20.3
B7 @ 15 feet	56.4	82.6	46.3

HYDROMETER TEST DATA



PARTNER

HAMILTON
& Associates

1641 Border Avenue • Torrance, CA 90501 T 310.618.2190 888.618.2190 F 310.618.2191 W hamilton-associates.net

October 16, 2018
H&A Project No. 18-2513
Partner Project No. 18-224911.3

Partner Engineering and Science, Inc.
4518 N.12 Street Suite 201
Phoenix, AZ 85016

Attention: Mr. Matthew Marcus, Technical Director- Geotechnical Engineering

Subject: Laboratory Testing of Soil Samples: Partner (Pinole)
1230 San Pablo Avenue, Pinole, CA

Dear Mr. Marcus:

We have completed the laboratory tests on the samples provided for the subject project. Enclosed is a summary of laboratory test results.

We thank you for the opportunity to provide laboratory testing services. If there are any questions, please do not hesitate to contact the undersigned.

Respectfully submitted,
HAMILTON & ASSOCIATES, INC.

Rosa E. Murrieta
Laboratory Supervisor | Staff Geologist

David T. Hamilton, PE, GE
President

Distribution: (1) Matthew Marcus, mmarcus@partneresi.com
(2) Brett Bova, bbova@partneresi.com

MOISTURE CONTENT AND DENSITY TESTS

Relatively undisturbed soil retained within the rings of the Modified California barrel sampler were tested in the laboratory to determine in-place dry density and moisture content. Test results are presented in Table 1.

DIRECT SHEAR TESTS

Direct shear (ASTM D3080) tests were performed on selected relatively undisturbed samples to determine the shear strength parameters of various soil samples, respectively. The results of these tests are shown graphically on the appended "D" Plates.

HAMILTON
& Associates

TABLE 1: LABORATORY RESULTS

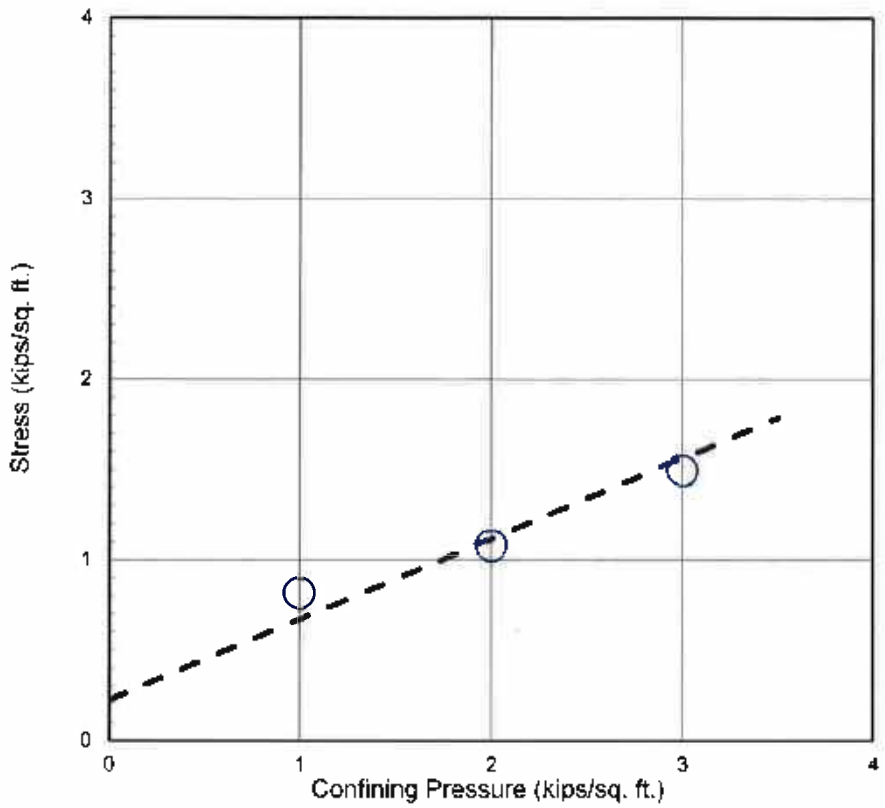
JOB TITLE: Partner (Pinole)
H&A PROJECT NO.: 18-2513
SCHEDULED BY: FC
DATE SAMPLES DROPPED OFF: 10/4/2018
DATE ASSIGNED: 10/5/2018
SHEET: 1 of 1

Test Pit/ Boring	Depth (ft)	Sampler /No. Rings	Field Dry Desnity (pcf)	Field Moisture (%)	Atterberg	Consolidation	Corrosivity Suite	Direct Shear	Expansion Index	Fines Fraction (Minus No. 200)	Hydraulic Conductivity	Maximum Density/ Optimum Moisture	No. 200 Wash / Grain Size Analysis (Particle Size)	Particle Size w/ Hydrometer	R-Value	Reshear (4/7 passes)	Specific Gravity	Sulfate	Triaxial (UU)	Triaxial (CU)	Unconfined Compression	Other	Other	Remarks
B-2	5	R	66.1	39.4				X																

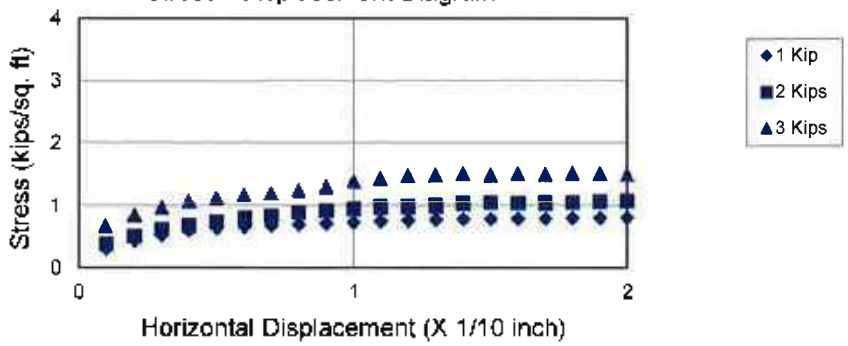
SPECIAL INSTRUCTIONS:

SHEAR TEST RESULTS

Boring 2 at 5 feet



Stress - Displacement Diagram



Dark Brown Silty Clay samples were submerged for at least 24 hours.
The samples had a density of 66.1 lbs./cu.ft. and a moisture content of 39.4 %
Cohesion = 225 psf
Friction Angle = 24 degrees
Based on Ultimate Strength

Geotechnical Engineering Investigation 1230 San Pablo Avenue Pinole, CA	Project No. 18-2513 Plate D-1

HAMILTON & ASSOCIATES

APPENDIX C

General Geotechnical Design and Construction Considerations

Subgrade Preparation

Earthwork – Structural Fill/Excavations

Underground Pipeline Installation – Structural Backfill

Cast-in-Place Concrete

Foundations

Laterally Loaded Structures

Excavations and Dewatering

Waterproofing and Drainage

Chemical Treatment of Soils

Paving

Site Grading and Drainage

PARTNER

SUBGRADE PREPARATION

1. In general, construction should proceed per the project specifications and contract documents, as well as governing jurisdictional guidelines for the project site, including but not limited to the applicable State Department of Transportation, City and/or County, Army Corps of Engineers, Federal Aviation, Occupational Safety and Health Administration (OSHA), and any other governing standard details and specifications. In areas where multiple standards are applicable the more stringent should be considered. Work should be performed by qualified, licensed contractors with experience in the specific type of work in the area of the site.
2. Subgrade preparation in this section is considered to apply to the initial modifications to existing site conditions to prepare for new planned construction.
3. Prior to the start of subgrade preparation, a detailed conflict study including as-builts, utility locating, and potholing should be conducted. Existing features that are to be demolished should also be identified and the geotechnical study should be referenced to determine the need for subgrade preparation, such as over-excavation, scarification and compaction, moisture conditioning, and/or other activities below planned new structural fills, slabs on grade, pavements, foundations, and other structures.
4. The site conflicts, planned demolitions, and subgrade preparation requirements should be discussed in a pre-construction meeting with the pertinent parties, including the geotechnical engineer, inspector, contractors, testing laboratory, surveyor, and others.
5. In the event of preparations that will require work near to existing structures to remain in-place, protection of the existing structures should be considered. This also includes a geotechnical review of excavations near to existing structures and utilities and other concerns discussed in General Geotechnical Design and Construction Considerations, EARTHWORK and UNDERGROUND PIPELINE INSTALLATION.
6. Features to be demolished should be completely removed and disposed of per jurisdictional requirements and/or other conditions set forth as a part of the project. Resulting excavations or voids should be backfilled per the recommendations in the General Geotechnical Design and Construction Considerations, EARTHWORK section.
7. Vegetation, roots, soils containing organic materials, debris and/or other deleterious materials on the site should be removed from structural areas and should be disposed of as above. Replacement of such materials should be in accordance with the recommendations in the General Geotechnical Design and Construction Considerations, EARTHWORK section
8. Subgrade preparation required by the geotechnical report may also call for as over-excavation, scarification and compaction, moisture conditioning, and/or other activities below planned structural fills, slabs on grade, pavements, foundations, and other structures. These requirements should be provided within the geotechnical report. The execution of this work should be observed by the geotechnical engineering representative or inspector for the site. Testing of the subgrade preparation should be performed per the recommendations in the General Geotechnical Design and Construction Considerations, EARTHWORK section.

9. Subgrade Preparation cannot be completed on frozen ground or on ground that is not at a proper moisture condition. Wet subgrades may be dried under favorable weather if they are disked and/or actively worked during hot, dry, weather, when exposed to wind and sunlight. Frozen ground or wet material can be removed and replaced with suitable material. Dry material can be pre-soaked, or can have water added and worked in with appropriate equipment. The soil conditions should be monitored by the geotechnical engineer prior to compaction. Following this type of work, approved subgrades should be protected by direction of surface water, covering, or other methods, otherwise, re-work may be needed.

EARTHWORK – STRUCTURAL FILL

1. In general, construction should proceed per the governing jurisdictional guidelines for the project site, including but not limited to the applicable State Department of Transportation, City and/or County, Army Corps of Engineers, Federal Aviation, Occupational Safety and Health Administration (OSHA), and any other governing standard details and specifications. In areas where multiple standards are applicable the more stringent should be considered. Work should be performed by qualified, licensed contractors with experience in the specific type of work in the area of the site.
2. Earthwork in this section is considered to apply to the re-shaping and grading of soil, rock, and aggregate materials for the purpose of supporting man-made structures. Where earthwork is needed to raise the elevation of the site for the purpose of supporting structures or forming slopes, this is referred to as the placement of structural fill. Where lowering of site elevations is needed prior to the installation of new structures, this is referred to as earthwork excavations.
3. Prior to the start of earthwork operations, the geotechnical study should be referenced to determine the need for subgrade preparation, such as over-excavation or scarification and compaction of unsuitable soils below planned structural fills, slabs on grade, pavements, foundations, and other structures. These required preparations should be discussed in a pre-construction meeting with the pertinent parties, including the geotechnical engineer, inspector, contractors, testing laboratory, surveyor, and others. The preparations should be observed by the inspector or geotechnical engineer representative, and following such subgrade preparation, the geotechnical engineer should observe the prepared subgrade to approve it for the placement of earthwork fills or new structures.
4. Structural fill materials should be relatively free of organic materials, man-made debris, environmentally hazardous materials, and brittle, non-durable aggregate, frozen soil, soil clods or rocks and/or any other materials that can break down and degrade over time.
5. In deeper structural fill zones, expansive soils (greater than 1.5 percent swell at 100 pounds per square foot surcharge) and rock fills (fills containing particles larger than 4 inches and/or containing more than 35 percent gravel larger than ¾-inch diameter or more than 50 percent gravel) may be used with the approval and guidance of the geotechnical report or geotechnical engineer. This may require the placement of geotextiles or other added costs and/or conditions. These conditions may also apply to corrosive soils (less than 2,000 ohm-cm resistivity, more than 50 ppm chloride content, more than 0.1 percent sulfates)
6. For structural fill zones that are closer in depth below planed structures, low expansive materials, and materials with smaller particle size are generally recommended, as directed by the geotechnical report (see criteria above in 5). This may also apply to corrosive soils.
7. For structural fill materials, in general the compaction equipment should be appropriate for the thickness of the loose lift being placed, and the thickness of the loose lift being placed should be at least two times the maximum particle size incorporated in the fill.
8. Fill lift thickness (including bedding) should generally be proportioned to achieve 95 percent or more of a standard proctor (ASTM D689) maximum dry density (MDD) or 90 percent or more of a

modified proctor (ASTM D1557) MDD, depending on the state practices. For subgrades below roadways, the general requirement for soil compaction is usually increased to 100 percent or more of the standard proctor MDD and 95 percent or more of the modified proctor MDD.

9. Soil compaction should be performed at a moisture content generally near optimum moisture content determined by either standard or modified proctor, and ideally within 3 percent below to 1 percent over the optimum for a standard proctor, and from 2 percent below to 2 percent above optimum for a modified proctor.
10. In some instances fill areas are difficult to access. In such cases a low-strength soil-cement slurry can be used in the place of compacted fill soil. In general such fills should be rated to have a 28-day strength of 75 to 125 psi, which in some areas is referred to as a "1-sack" slurry. It should be noted that these materials are wet during placement, and require a period of 2 days (24 hours) to cure before additional fill can be placed above them. Testing of this material can be done using concrete cylinder compression strength testing equipment, but care is needed in removing the test specimens from the molds. Field testing using the ball method, and spread or flow testing is also acceptable.
11. For fills to be placed on slopes, benching of fill lifts is recommended, which may require cutting into existing slopes to create a bench perpendicular to the slope where soil can be placed in a relatively horizontal orientation. For the construction of slopes, the slopes should be over-built and cut back to grade, as the material in the outer portion of the slope may not be well compacted.
12. For subgrade below roadways, runways, railways or other areas to receive dynamic loading, a proofroll of the finished, compacted subgrade should be performed by the geotechnical engineer or inspector prior to the placement of structural aggregate, asphalt or concrete. Proofrolling consists of observing the performance of the subgrade under heavy-loaded equipment, such as full, 4,000 Gallon water truck, loaded tandem-axel dump truck or similar. Areas that exhibit instability during proofroll should be marked for additional work prior to approval of the subgrade for the next stage of construction.
13. Quality control testing should be provided on earthwork. Proctor testing should be performed on each soil type, and one-point field proctors should be used to verify the soil types during compaction testing. If compaction testing is performed with a nuclear density gauge, it should be periodically correlated with a sand cone test for each soil type. Density testing should be performed per project specifications and or jurisdictional requirements, but not less than once per 12 inches elevation of any fill area, with additional tests per 12-inch fill area for each additional 7,500 square-foot section or portion thereof.
14. For earthwork excavations, OSHA guidelines should be referenced for sloping and shoring. Excavations over a depth of 20 feet require a shoring design. In the event excavations are planned near to existing structures, the geotechnical engineer should be consulted to evaluate whether such excavation will call for shoring or underpinning the adjacent structure. Pre-construction and post-construction condition surveys and vibration monitoring might also be helpful to evaluate any potential damage to surrounding structures.

15. Excavations into rock, partially weathered rock, cemented soils, boulders and cobbles, and other hard soil or "hard-pan" materials, may result in slower excavation rates, larger equipment with specialized digging tools, and even blasting. It is also not unusual in these situations for screening and or crushing of rock to be called for. Blasting, hard excavating, and material processing equipment have special safety concerns and are more costly than the use of soil excavation equipment. Additionally, this type of excavation, especially blasting, is known to cause vibrations that should be monitored at nearby structures. As above, a pre-blast and post-blast conditions assessment might also be warranted.

UNDERGROUND PIPELINE – STRUCTURAL BACKFILL

1. In general, construction should proceed per the governing jurisdictional guidelines for the project site, including but not limited to the applicable State Department of Transportation, the State Department of Environmental Quality, the US Environmental Protection Agency, City and/or County Public Works, Occupational Safety and Health Administration (OSHA), Private Utility Companies, and any other governing standard details and specifications. In areas where multiple standards are applicable the more stringent should be considered, and in some cases work may take place to multiple different standards. Work should be performed by qualified, licensed contractors with experience in the specific type of work in the area of the site.
2. Underground pipeline in this section is considered to apply to the installation of underground conduits for water, storm water, irrigation water, sewage, electricity, telecommunications, gas, etc. Structural backfill refers to the activity of restoring the grade or establishing a new grade in the area where excavations were needed for the underground pipeline installation.
3. Prior to the start of underground pipeline installation, a detailed conflict study including as-builts, utility locating, and potholing should be conducted. The geotechnical study should be referenced to determine subsurface conditions such as caving soils, unsuitable soils, shallow groundwater, shallow rock and others. In addition, the utility company responsible for the line also will have requirements for pipe bedding and support as well as other special requirements. Also, if the underground pipeline traverses other properties, rights-of-way, and/or easements etc. (for roads, waterways, dams, railways, other utility corridors, etc.) those owners may have additional requirements for construction.
4. The required preparations above should be discussed in a pre-construction meeting with the pertinent parties, including the geotechnical engineer, inspector, contractors, testing laboratory, surveyor, and other stake holders.
5. For pipeline excavations, OSHA guidelines should be referenced for sloping and shoring. Excavations over a depth of 20 feet require a shoring design. In the event excavations are planned near to existing structures or pipelines, the geotechnical engineer should be consulted to evaluate whether such excavation will call for shoring or supporting the adjacent structure or pipeline. A pre-construction and post-construction condition survey and vibration monitoring might also be helpful to evaluate any potential damage to surrounding structures.
6. Excavations into rock, partially weathered rock, cemented soils, boulders and cobbles, and other hard soil or "hard-pan" materials, may result in slower excavation rates, larger equipment with specialized digging tools, and even blasting. It is also not unusual in these situations for screening and or crushing of rock to be called for. Blasting, hard excavating, and material processing equipment have special safety concerns and are more costly than the use soil excavation equipment. Additionally, this type of excavation, especially blasting, is known to cause vibrations that should be monitored at nearby structures. As above, a pre-blast and post-blast conditions assessment might also be warranted.

7. Bedding material requirements vary between utility companies and might depend of the type of pipe material and availability of different types of aggregates in different locations. In general, bedding refers to the material that supports the bottom of the pipe, and extends to 1 foot above the top of the pipe. In general the use of aggregate base for larger diameter pipes (6-inch diameter or more) is recommended lacking a jurisdictionally specified bedding material. Gas lines and smaller diameter lines are often backfilled with fine aggregate meeting the ASTM requirements for concrete sand. In all cases bedding with less than 2,000 ohm-cm resistivity, more than 50 ppm chloride content or more than 0.1 percent sulfates should not be used.
8. Structural backfill materials above the bedding should be relatively free of organic materials, man-made debris, environmentally hazardous materials, frozen material, and brittle, non-durable aggregate, soil clods or rocks and/or any other materials that can break down and degrade over time.
9. In general the backfill soil requirements will depend on the future use of the land above the buried line, but in most cases, excessive settlement of the pipe trench is not considered advisable or acceptable. As such, the structural backfill compaction equipment should be appropriate for the thickness of the loose lift being placed. The thickness of the loose lift being placed should be at least two times the maximum particle size incorporated in the fill. Care should be taken not to damage the pipe during compaction or compaction testing.
10. Fill lift thickness (including bedding) should generally be proportioned to achieve 95 percent or more of a standard proctor (ASTM D689) maximum dry density (MDD) or 90 percent or more of a modified proctor (ASTM D1557) MDD, depending on the state practices (in general the modified proctor is required in California and for projects in the jurisdiction of the Army Corps of Engineers). For backfills within the upper portions of roadway subgrades, the general requirement for soil compaction is usually increased to 100 percent or more of the standard proctor MDD and 95 percent or more of the modified proctor MDD.
11. Soil compaction should be performed at a moisture content generally near optimum moisture content determined by either standard or modified proctor, and ideally within 3 percent below to 1 percent over the optimum for a standard proctor, and from 2 percent below to 2 percent above optimum for a modified proctor.
12. In some instances fill areas are difficult to access. In such cases a low-strength soil-cement slurry can be used in the place of compacted fill soil. In general such fills should be rated to have a 28-day strength of 75 to 125 psi, which in some areas is referred to as a "1-sack" slurry. It should be noted that these materials are wet, and require a period of 2 days (24 hours) to cure before additional fill can be placed above it. Testing of this material can be done using concrete cylinder compression strength testing equipment, but care is needed in removing the test specimens from the molds. Field testing using the ball method, and spread or flow testing is also acceptable.
13. Quality control testing should be provided on structural backfill to assist the contractor in meeting project specifications. Proctor testing should be performed on each soil type, and

one-point field proctors should be used to verify the soil types during compaction testing. If compaction testing is performed with a nuclear density gauge, it should be periodically correlated with a sand cone test for each soil type.

14. Density testing should be performed on structural backfill per project specifications and or jurisdictional requirements, but not less than once per 12 inches elevation in each area, and additional tests for each additional 500 linear-foot section or portion thereof.

CAST-IN-PLACE CONCRETE
SLABS-ON-GRADE/STRUCTURES/PAVEMENTS

1. In general, construction should proceed per the governing jurisdictional guidelines for the project site, including but not limited to the applicable American Concrete Institute (ACI), International Code Council (ICC), State Department of Transportation, City and/or County, Army Corps of Engineers, Federal Aviation, Occupational Safety and Health Administration (OSHA), and any other governing standard details and specifications. In areas where multiple standards are applicable the more stringent should be considered. Work should be performed by qualified, licensed contractors with experience in the specific type of work in the area of the site.
2. Cast-in-place concrete (concrete) in this section is considered to apply to the installation of cast-in-place concrete slabs on grade, including reinforced and non-reinforced slabs, structures, and pavements.
3. In areas where concrete is bearing on prepared subgrade or structural fill soils, testing and approval of this work should be completed prior to the beginning of concrete construction.
4. In locations where a concrete is approved to bear on in-place (native) soil or in locations where approved documented fills have been exposed to weather conditions after approval, a concrete subgrade evaluation should be performed prior to the placement of reinforcing steel and or concrete. This can consist of probing with a "t"-handled rod, borings, penetrometer testing, dynamic cone penetration testing, and/or other methods requested by the geotechnical engineer and/or inspector. Where unsuitable, wet, or frozen bearing material is encountered, the geotechnical engineer should be consulted for additional recommendations.
5. Slabs on grade should be placed on a 4-inch thick or more capillary barrier consisting of non-corrosive (more than 2,000 ohm-cm resistivity, less than 50 ppm chloride content and less than 0.1 percent sulfates) aggregate base or open-graded aggregate material. This material should be compacted or consolidated per the recommendations of the structural engineer or otherwise would be covered by the General Considerations for EARTHWORK.
6. Depending on the site conditions and climate, vapor barriers may be required below in-door grade-slabs to receive flooring. This reduces the opportunity for moisture vapor to accumulate in the slab, which could degrade flooring adhesive and result in mold or other problems. Vapor barriers should be specified by the structural engineer and/or architect. The installation of the barrier should be inspected to evaluate the correct product and thickness is used, and that it has not been damaged or degraded.
7. At times when rainfall is predicted during construction, a mud-mat or a thin concrete layer can be placed on prepared and approved subgrades prior to the placement of reinforcing steel or tendons. This serves the purpose of protecting the subgrades from damage once the reinforcement placement has begun.
8. Prior to the placement of concrete, exposed subgrade or base material and forms should be wetted, and form release compounds should be applied. Reinforcement support stands or ties

should be checked. Concrete bases or subgrades should not be so wet that they are softened or have standing water.

9. For a cast-in-place concrete, the form dimensions, reinforcement placement and cover, concrete mix design, and other code requirements should be carefully checked by an inspector before and during placement. The reinforcement should be specified by the structural engineering drawings and calculations.
10. For post-tension concrete, an additional check of the tendons is needed, and a tensioning inspection form should be prepared prior to placement of concrete.
11. For Portland cement pavements, forms an additional check of reinforcing dowels should performed per the design drawings.
12. During placement, concrete should be tested, and should meet the ACI and jurisdictional requirements and mix design targets for slump, air entrainment, unit weight, compressive strength, flexural strength (pavements), and any other specified properties. In general concrete should be placed within 90 minutes of batching at a temperature of less than 90 degrees Fahrenheit. Adding of water to the truck on the jobsite is generally not encouraged.
13. Concrete mix designs should be created by the accredited and jurisdictionally approved supplier to meet the requirements of the structural engineer. In general a water/cement ratio of 0.45 or less is advisable, and aggregates, cement, flyash, and other constituents should be tested to meet ASTM C-33 standards, including Alkali Silica Reaction (ASR). To further mitigate the possibility of concrete degradation from corrosion and ASR, Type II or V Portland Cement should be used, and fly ash replacement of 25 percent is also recommended. Air entrained concrete should be used in areas where concrete will be exposed to frozen ground or ambient temperatures below freezing.
14. Control joints are recommended to improve the aesthetics of the finished concrete by allowing for cracking within partially cut or grooved joints. The control joints are generally made to depths of about 1/4 of the slab thickness and are generally completed within the first day of construction. The spacing should be laid out by the structural engineer, and is often in a square pattern. Joint spacing is generally 5 to 15 feet on-center but this can vary and should be decided by the structural engineer. For pavements, construction joints are generally considered to function as control joints. Post-tensioned slabs generally do not have control joints.
15. Some slabs are expected to meet flatness and levelness requirements. In those cases, testing for flatness and levelness should be completed as soon as possible, usually the same day as concrete placement, and before cutting of control joints if possible. Roadway smoothness can also be measured, and is usually specified by the jurisdictional owner if is required.
16. Prior to tensioning of post-tension structures, placement of soil backfills or continuation of building on newly-placed concrete, a strength requirement is generally required, which should be specified by the structural engineer. The strength progress can be evaluated by the use of concrete compressive strength cylinders or maturity monitoring in some jurisdictions. Advancing with backfill, additional concrete work or post-tensioning without reaching strength benchmarks could result in damage and failure of the concrete, which could result in danger and harm to nearby people and property.

17. In general, concrete should not be exposed to freezing temperatures in the first 7 days after placement, which may require insulation or heating. Additionally, in hot or dry, windy weather, misting, covering with wet burlap or the use of curing compounds may be called for to reduce shrinkage cracking and curling during the first 7 days.

FOUNDATIONS

1. In general, construction should proceed per the governing jurisdictional guidelines for the project site, including but not limited to the applicable American Concrete Institute (ACI), International Code Council (ICC), State Department of Transportation, City and/or County, Army Corps of Engineers, Federal Aviation, Occupational Safety and Health Administration (OSHA), and any other governing standard details and specifications. In areas where multiple standards are applicable the more stringent should be considered. Work should be performed by qualified, licensed contractors with experience in the specific type of work in the area of the site.
2. Foundations in this section are considered to apply to the construction of structural supports which directly transfer loads from man-made structures into the earth. In general, these include shallow foundations and deep foundations. Shallow foundations are generally constructed for the purpose of distributing the structural loads horizontally over a larger area of earth. Some types of shallow foundations (or footings) are spread footings, continuous footings, mat foundations, and reinforced slabs-on-grade. Deep foundations are generally designed for the purpose of distributing the structural loads vertically deeper into the soil by the use of end bearing and side friction. Some types of deep foundations are driven piles, auger-cast piles, drilled shafts, caissons, helical piers, and micro-piles.
3. For shallow foundations, the minimum bearing depth considered should be greater than the maximum design frost depth for the location of construction. This can be found on frost depth maps (ICC), but the standard of practice in the city and/or county should also be consulted. In general the bearing depth should never be less than 18 inches below planned finished grades.
4. Shallow continuous foundations should be sized with a minimum width of 18 inches and isolated spread footings should be a minimum of 24 inches in each direction. Foundation sizing, spacing, and reinforcing steel design should be performed by a qualified structural engineer.
5. The geotechnical engineer will provide an estimated bearing capacity and settlement values for the project based on soil conditions and estimated loads provided by the structural engineer. It is assumed that appropriate safety factors will be applied by the structural engineer.
6. In areas where shallow foundations are bearing on prepared subgrade or structural fill soils, testing and approval of this work should be completed prior to the beginning of foundation construction.
7. In locations where the shallow foundations are approved to bear on in-place (native) soil or in locations where approved documented fills have been exposed to weather conditions after approval, a foundation subgrade evaluation should be performed prior to the placement of reinforcing steel. This can consist of probing with a "t"-handled rod, borings, penetrometer testing, dynamic cone penetration testing, and/or other methods requested by the geotechnical engineer and/or inspector. Where unsuitable foundation bearing material is encountered, the geotechnical engineer should be consulted for additional recommendations.
8. For shallow foundations to bear on rock, partially weathered rock, hard cemented soils, and/or boulders, the entire foundation system should bear directly on such material. In this case, the rock surface should be prepared so that it is clean, competent, and formed into a roughly

horizontal, stepped base. If that is not possible, then the entire structure should be underlain by a zone of structural fill. This may require the over-excavation in areas of rock removal and/or hard dig. In general this zone can vary in thickness but it should be a minimum of 1 foot thick. The geotechnical engineer should be consulted in this instance.

9. At times when rainfall is predicted during construction, a mud-mat or a thin concrete layer can be placed on prepared and approved subgrades prior to the placement of reinforcing steel. This serves the purpose of protecting the subgrades from damage once the reinforcing steel placement has begun.
10. For cast-in-place concrete foundations, the excavations dimensions, reinforcing steel placement and cover, structural fill compaction, concrete mix design, and other code requirements should be carefully checked by an inspector before and during placement.

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11. For deep foundations, the geotechnical engineer will generally provide design charts that provide foundations axial capacity and uplift resistance at various depths given certain-sized foundations. These charts may be based on blow count data from drilling and or laboratory testing. In general safety factors are included in these design charts by the geotechnical engineer.
12. In addition, the geotechnical engineer may provide other soil parameters for use in the lateral resistance analysis. These parameters are usually raw data, and safety factors should be provided by the shaft designer. Sometimes, direct shear and or tri-axial testing is performed for this analysis.
13. In general the spacing of deep foundations is expected to be 6 shaft diameters or more. If that spacing is reduced, a group reduction factor should be applied by the structural engineer to the foundation capacities per FHWA guidelines. The spacing should not be less than 2.5 shaft diameters.
14. For deep foundations, a representative of the geotechnical engineer should be on-site to observe the excavations (if any) to evaluate that the soil conditions are consistent with the findings of the geotechnical report. Soil/rock stratigraphy will vary at times, and this may result in a change in the planned construction. This may require the use of fall protection equipment to perform observations close to an open excavation.
15. For driven foundations, a representative of the geotechnical engineer should be on-site to observe the driving process and to evaluate that the resistance of driving is consistent with the design assumptions. Soil/rock stratigraphy will vary at times and may this may result in a change in the planned construction.
16. For deep foundations, the size, depth, and ground conditions should be verified during construction by the geotechnical engineer and/or inspector responsible. Open excavations should be clean, with any areas of caving and groundwater seepage noted. In areas below the groundwater table, or areas where slurry is used to keep the trench open, non-destructive testing techniques should be used as outlined below.
17. Steel members including structural steel piles, reinforcing steel, bolts, threaded steel rods, etc. should be evaluated for design and code compliance prior to pick-up and placement in the

foundation. This includes verification of size, weight, layout, cleanliness, lap-splices, etc. In addition, if non-destructive testing such as crosshole sonic logging or gamma-gamma logging is required, access tubes should be attached to the steel reinforcement prior to placement, and should be relatively straight, capped at the bottom, and generally kept in-round. These tubes must be filled with water prior to the placement of concrete.

18. In cases where steel welding is required, this should be observed by a certified welding inspector.
19. In many cases, a crane will be used to lower steel members into the deep foundations. Crane picks should be carefully planned, including the ground conditions at placement of outriggers, wind conditions, and other factors. These are not generally provided in the geotechnical report, but can usually be provided upon request.
20. Cast-in-place concrete, grout or other cementations materials should be pumped or distributed to the bottom of the excavation using a tremmie pipe or hollow stem auger pipe. Depending on the construction type, different mix slumps will be used. This should be carefully checked in the field during placement, and consolidation of the material should be considered. Use of a vibrator may be called for.
21. For work in a wet excavation (slurry), the concrete placed at the bottom of the excavation will displace the slurry as it comes up. The upper layer of concrete that has interacted with the slurry should be removed and not be a part of the final product.
22. Bolts or other connections to be set in the top after the placement is complete should be done immediately after final concrete placement, and prior to the on set of curing.
23. For shafts requiring crosshole sonic logging or gamma-gamma testing, this should be performed within the first week after placement, but not before a 2 day curing period. The testing company and equipment manufacturer should provide more details on the requirements of the testing.
24. Load testing of deep foundations is recommended, and it is often a project requirement. In some cases, if test piles are constructed and tested, it can result in a significant reduction of the amount of needed foundations. The load testing frame and equipment should be sized appropriately for the test to be performed, and should be observed by the geotechnical engineer or inspector as it is performed. The results are provided to the structural engineer for approval.

LATERALLY LOADED STRUCTURES - RETAINING WALLS/SLOPES/DEEP FOUNDATIONS/MISCELLANEOUS

1. In general, construction should proceed per the governing jurisdictional guidelines for the project site, including but not limited to the applicable American Concrete Institute (ACI), International Code Council (ICC), State Department of Transportation, City and/or County, Army Corps of Engineers, Federal Aviation, Occupational Safety and Health Administration (OSHA), and any other governing standard details and specifications. In areas where multiple standards are applicable the more stringent should be considered. Work should be performed by qualified, licensed contractors with experience in the specific type of work in the area of the site.
2. Laterally loaded structures for this section are generally meant to describe structures that are subjected to loading roughly horizontal to the ground surface. Such structures include retaining walls, slopes, deep foundations, tall buildings, box culverts, and other buried or partially buried structures.
3. The recommendations put forth in General Geotechnical Design and Construction Considerations for FOUNDATIONS, CAST-IN-PLACE CONCRETE, EARTHWORK, and SUBGRADE PREPARATION should be reviewed, as they are not all repeated in this section, but many of them will apply to the work. Those recommendations are incorporated by reference herein.
4. Laterally loaded structures are generally affected by overburden pressure, water pressure, surcharges, and other static loads, as well as traffic, seismic, wind, and other dynamic loads. The structural engineer must account for these loads. In addition, eccentric loading of the foundation should be evaluated and accounted for by the structural engineer. The structural engineer is also responsible for applying the appropriate factors of safety to the raw data provided by the geotechnical engineer.
5. The geotechnical report should provide data regarding soil lateral earth pressures, seismic design parameters, and groundwater levels. In the report the pressures are usually reported as raw data in the form of equivalent fluid pressures for three cases. 1. Static is for soil pressure against a structure that is fixed at top and bottom, like a basement wall or box culvert. 2. Active is for soil pressure against a wall that is free to move at the top, like a retaining wall. 3. Passive is for soil that is resisting the movement of the structure, usually at the toe of the wall where the foundation and embedded section are located. The structural engineer is responsible for deciding on safety factors for design parameters and groundwater elevations based on the raw data in the geotechnical report.
6. Generally speaking, direct shear or tri-axial shear testing should be performed for this evaluation in cases of soil slopes or unrestrained soil retaining walls over 6 feet in height or in lower walls in some cases based on the engineer's judgment. For deep foundations and completely buried structures, this testing will be required per the discretion of the structural engineer.
7. For non-confined retaining walls (walls that are not attached at the top) and slopes, a geotechnical engineer should perform overall stability analysis for sliding, overturning, and global stability. For walls that are structurally restrained at the top, the geotechnical engineer does not

generally perform this analysis. Internal wall stability should be designed by the structural engineer.

8. Cut slopes into rock should be evaluated by an engineering geologist, and rock coring to identify the orientation of fracture plans, faults, bedding planes, and other features should be performed. An analysis of this data will be provided by the engineering geologist to identify modes of failure including sliding, wedge, and overturning, and to provide design and construction recommendations.
9. For laterally loaded deep foundations that support towers, bridges or other structures with high lateral loads, geotechnical reports generally provide parameters for design analysis which is performed by the structural engineer. The structural engineer is responsible for applying appropriate safety factors to the raw data from the geotechnical engineer.
10. Construction recommendations for deep foundations can be found in the General Geotechnical Design and Construction Considerations-FOUNDATIONS section.
11. Construction of retaining walls often requires temporary slope excavations and shoring, including soil nails, soldier piles and lagging or laid-back slopes. This should be done per OSHA requirements and may require specialty design and contracting.
12. In general, surface water should not be directed over a slope or retaining wall, but should be captured in a drainage feature trending parallel to the slope, with an erosion protected outlet to the base of the wall or slope.
13. Waterproofing for retaining walls is generally required on the backfilled side, and they should be backfilled with an 18-inch zone of open graded aggregate wrapped in filter fabric or a synthetic draining product, which outlets to weep holes or a drain at the base of the wall. The purpose of this zone, which is immediately behind the wall, is to relieve water pressures from building behind the wall.
14. Backfill compaction around retaining walls and slopes requires special care. Lighter equipment should be considered, and consideration to curing of cementitious materials used during construction will be called for. Additionally, if mechanically stabilized earth walls are being constructed, or if tie-backs are being utilized, additional care will be necessary to avoid damaging or displacing the materials. Use of heavy or large equipment, and/or beginning of backfill prior to concrete strength verification can create dangers to construction and human safety. Please refer to the General Geotechnical Design and Construction Considerations-CAST-IN-PLACE CONCRETE section. These concerns will also apply to the curing of cell grouting within reinforced masonry walls.
15. Usually safety features such as handrails are designed to be installed at the top of retaining walls and slopes. Prior to their installation, workers in those areas will need to be equipped with appropriate fall protection equipment.

EXCAVATION AND DEWATERING

1. In general, construction should proceed per the governing jurisdictional guidelines for the project site, including but not limited to the applicable American Concrete Institute (ACI), International Code Council (ICC), State Department of Transportation, City and/or County, Army Corps of Engineers, Federal Aviation, Occupational Safety and Health Administration (OSHA), and any other governing standard details and specifications. In areas where multiple standards are applicable the more stringent should be considered. Work should be performed by qualified, licensed contractors with experience in the specific type of work in the area of the site.
2. Excavation and Dewatering for this section are generally meant to describe structures that are intended to create stable, excavations for the construction of infrastructure near to existing development and below the groundwater table.
3. The recommendations put forth in General Geotechnical Design and Construction Considerations for LATERALLY LOADED STRUCTURES, FOUNDATIONS, CAST-IN-PLACE CONCRETE, EARTHWORK, and SUBGRADE PREPARATION should be reviewed, as they are not all repeated in this section, but many of them will apply to the work. Those recommendations are incorporated by reference herein.
4. The site excavations will generally be affected by overburden pressure, water pressure, surcharges, and other static loads, as well as traffic, seismic, wind, and other dynamic loads. The structural engineer must account for these loads as described in Section 5.2 of this report. In addition, eccentric loading of the foundation should be evaluated and accounted for by the structural engineer. The structural engineer is also responsible for applying the appropriate factors of safety to the raw data provided by the geotechnical engineer.
5. The geotechnical report should provide data regarding soil lateral earth pressures, seismic design parameters, and groundwater levels. In the report the pressures are usually reported as raw data in the form of equivalent fluid pressures for three cases. 1. Static is for soil pressure against a structure that is fixed at top and bottom, like a basement wall or box culvert. 2. Active is for soil pressure against a wall that is free to move at the top, like a retaining wall. 3. Passive is for soil that is resisting the movement of the structure, usually at the toe of the wall where the foundation and embedded section are located. The structural engineer is responsible for deciding on safety factors for design parameters and groundwater elevations based on the raw data in the geotechnical report.
6. The parameters provided above are based on laboratory testing and engineering judgment. Since numerous soil layers with different properties will be encountered in a large excavation, assumptions and judgment are used to generate the equivalent fluid pressures to be used in design. Factors of safety are not included in those numbers and should be evaluated prior to design.
7. Groundwater, if encountered will dramatically change the stability of the excavation. In addition, pumping of groundwater from the bottom of the excavation can be difficult and costly, and it can result in potential damage to nearby structures if groundwater drawdown occurs. As such, we

recommend that groundwater monitoring be performed across the site during design and prior to construction to assist in the excavation design and planning.

8. Groundwater pumping tests should be performed if groundwater pumping will be needed during construction. The pumping tests can be used to estimate drawdown at nearby properties, and also will be needed to determine the hydraulic conductivity of the soil for the design of the dewatering system.
9. For excavation stabilization in granular and dense soil, the use of soldier piles and lagging is recommended. The soldier pile spacing and size should be determined by the structural engineer based on the lateral loads provided in the report. In general, the spacing should be more than two pile diameters, and less than 8 feet. Soldier piles should be advanced 5 feet or more below the base of the excavation. Passive pressures from Section 5.2 can be used in the design of soldier piles for the portions of the piles below the excavation.
10. If the piles are drilled, they should be grouted in place. If below the groundwater table, the grouting should be accomplished by tremmie pipe, and the concrete should be a mix intended for placement below the groundwater table. For work in a wet excavation, the concrete placed at the bottom of the excavation will displace the water as it comes up. The upper layer of concrete that has interacted with the water should be removed and not be a part of the final product. Lagging should be specially designed timber or other lagging. The temporary excavation will need to account for seepage pressures at the toe of the wall as well as hydrostatic forces behind the wall.
11. Depending on the loading, tie back anchors and/or soil nails may be needed. These should be installed beyond the failure envelope of the wall. This would be a plane that is rotated upward 55 degrees from horizontal. The strength of the anchors behind this plane should be considered, and bond strength inside the plane should be ignored. If friction anchors are used, they should extend 10 feet or more beyond the failure envelope. Evaluation of the anchor length and encroachment onto other properties, and possible conflicts with underground utilities should be carefully considered. Anchors are typically installed 25 to 40 degrees below horizontal. The capacity of the anchors should be checked on 10% of locations by loading to 200% of the design strength. All should be loaded to 120% of design strength, and should be locked off at 80%
12. The shoring and tie backs should be designed to allow less than ½ inch of deflection at the top of the excavation wall, where the wall is within an imaginary 1:1 line extending downward from the base of surrounding structures. This can be expanded to 1 inch of deflection if there is no nearby structure inside that plane. An analysis of nearby structures to locate their depth and horizontal position should be conducted prior to shored excavation design.
13. Assuming that the excavations will encroach below the groundwater table, allowances for drainage behind and through the lagging should be made. The drainage can be accomplished by using an open-graded gravel material that is wrapped in geotextile fabric. The lagging should allow for the collected water to pass through the wall at select locations into drainage trenches below the excavation base. These trenches should be considered as sump areas where groundwater can be pumped out of the excavation.

14. The pumped groundwater needs to be handled properly per jurisdictional guidelines.
15. In general, surface water should not be directed over a slope or retaining wall, but should be captured in a drainage feature trending parallel to the slope, with an erosion protected outlet to the base of the wall or slope.
16. Safety features such as handrails or barriers are to be designed to be installed at the top of retaining walls and slopes. Prior to their installation, workers in those areas will need to be equipped with appropriate fall protection equipment.

Waterproofing and Back Drainage

1. In general, construction should proceed per the governing jurisdictional guidelines for the project site, including but not limited to the applicable American Concrete Institute (ACI), International Code Council (ICC), State Department of Transportation, City and/or County, Army Corps of Engineers, Federal Aviation, Occupational Safety and Health Administration (OSHA), and any other governing standard details and specifications. In areas where multiple standards are applicable the more stringent should be considered. Work should be performed by qualified, licensed contractors with experience in the specific type of work in the area of the site.
2. Waterproofing and Back drainage structures for this section are generally meant to describe permanent subgrade structures that are planned to be below the historic high groundwater elevation of 20 feet below existing grades.
3. The recommendations put forth in General Geotechnical Design and Construction Considerations for FOUNDATIONS, CAST-IN-PLACE CONCRETE, EARTHWORK, and SUBGRADE PREPARATION should be reviewed, as they are not all repeated in this section, but many of them will apply to the work. Those recommendations are incorporated by reference herein.
4. In general, surface water should not be directed over a slope or retaining wall, but should be captured in a drainage feature trending parallel to the slope, with an erosion protected outlet to the base of the wall or slope.
5. Waterproofing for retaining walls is generally required on the backfilled side, and they should be backfilled with an 18-inch zone of open graded aggregate wrapped in filter fabric or a synthetic draining product, which outlets to weep holes or a drain at the base of the wall. The purpose of this zone, which is immediately behind the wall, is to relieve water pressures from building behind the wall.
6. For the basement walls on this site, sump pumps will be needed to reduce the build-up of water in the basement. The design should be for a historic high groundwater level of 20 feet bgs. The pumping system should be designed to keep the slab and walls relatively dry so that mold, efflorescence, and other detrimental effects to the concrete structure will not result.
7. Backfill compaction around retaining walls and slopes requires special care. Lighter equipment should be considered, and consideration to curing of cementitious materials used during construction will be called for. Additionally, if mechanically stabilized earth walls are being constructed, or if tie-backs are being utilized, additional care will be necessary to avoid damaging or displacing the materials. Use of heavy or large equipment, and/or beginning of backfill prior to concrete strength verification can create dangers to construction and human safety. Please refer to the General Geotechnical Design and Construction Considerations-CAST-IN-PLACE CONCRETE section. These concerns will also apply to the curing of cell grouting within reinforced masonry walls.

CHEMICAL TREATMENT OF SOIL

1. In general, construction should proceed per the governing jurisdictional guidelines for the project site, including but not limited to the applicable American Concrete Institute (ACI), International Code Council (ICC), State Department of Transportation, State Department of Environmental Quality, the US Environmental Protection Agency, City and/or County, Army Corps of Engineers, Federal Aviation, Occupational Safety and Health Administration (OSHA), and any other governing standard details and specifications. In areas where multiple standards are applicable the more stringent should be considered. Work should be performed by qualified, licensed contractors with experience in the specific type of work in the area of the site.
2. Chemical treatment of soil for this section is generally meant to describe the process of improving soil properties for a specific purpose, using cement or chemical lime.
3. A mix design should be performed by the geotechnical engineer to help it meet the specific strength, plasticity index, durability, and/or other desired properties. The mix design should be performed using the proposed chemical lime or cement proposed for use by the contractor, along with samples of the site soil that are taken from the material to be used in the process.
4. For the mix design the geotechnical engineer should perform proctor testing to determine optimum moisture content of the soil, and then mix samples of the soil at 3 percent above optimum moisture content with varying concentrations of lime or cement. The samples will be prepared and cured per ASTM standards, and then after 7-days for curing, they will be tested for compression strength. Durability testing goes on for 28 days.
5. Following this testing, the geotechnical engineer will provide a recommended mix ratio of cement or chemical lime in the geotechnical report for use by the contractor. The geotechnical engineer will generally specify a design ratio of 2 percent more than the minimum to account for some error during construction.
6. Prior to treatment, the in-place soil moisture should be measured so that the correct amount of water can be used during construction. Work should not be performed on frozen ground.
7. During construction, special considerations for construction of treated soils should be followed. The application process should be conducted to prevent the loss of the treatment material to wind which might transport the materials off site, and workers should be provided with personal protective equipment for dust generated in the process.
8. The treatment should be applied evenly over the surface, and this can be monitored by use of a pan placed on the subgrade. This can also be tested by preparing test specimens from the in-place mixture for laboratory testing.
9. Often, after or during the chemical application, additional water may be needed to activate the chemical reaction. In general, it should be maintained at about 3 percent or more above optimum moisture. Following this, mixing of the applied material is generally performed using specialized equipment.
10. The total amount of chemical provided can be verified by collecting batch tickets from the delivery trucks, and the depth of the treatment can be verified by digging of test pits, and the use of reagents that react with lime and or cement.

11. For the use of lime treatment, compaction should be performed after a specified amount of time has passed following mixing and re grading. For concrete, compaction should be performed immediately after mixing and re-grading. In both cases, some swelling of the surface should be expected. Final grading should be performed the following day of the initial work for lime treatment, and within 2 to 4 hours for soil cement.
12. Quality control testing of compacted treated subgrades should be performed per the recommendations of the geotechnical report, and generally in accordance with General Geotechnical Design and Construction Considerations - EARTHWORK

PAVING

1. In general, construction should proceed per the governing jurisdictional guidelines for the project site, including but not limited to the applicable American Concrete Institute (ACI), International Code Council (ICC), State Department of Transportation, City and/or County, Army Corps of Engineers, Federal Aviation, Occupational Safety and Health Administration (OSHA), and any other governing standard details and specifications. In areas where multiple standards are applicable the more stringent should be considered. Work should be performed by qualified, licensed contractors with experience in the specific type of work in the area of the site.
2. Paving for this section is generally meant to describe the placement of surface treatments on travel-ways to be used by rubber-tired vehicles, such as roadways, runways, parking lots, etc.
3. The geotechnical engineer is generally responsible for providing structural analysis to recommend the thickness of pavement sections, which can include asphalt, concrete pavements, aggregate base, cement or lime treated aggregate base, and cement or lime treated subgrades.
4. The civil engineer is generally responsible for determining which surface finishes and mixes are appropriate, and often the owner, general contractor and/or other party will decide on lift thickness, the use of tack coats and surface treatments, etc.
5. The geotechnical engineer will generally be provided with the planned traffic loading, as well as reliability, design life, and serviceability factors by the jurisdiction, traffic engineer, designer, and/or owner. The geotechnical study will provide data regarding soil resiliency and strength. A pavement modeling software is generally used to perform the analysis for design, however, jurisdictional minimum sections also must be considered, as well as construction considerations and other factors.
6. The geotechnical report will generally provide pavement section thicknesses if requested.
7. For construction of overlays, where new pavement is being placed on old pavement, an evaluation of the existing pavement is needed, which should include coring the pavement, evaluation of the overall condition and thickness of the pavement, and evaluation of the pavement base and subgrade materials.
8. In general, the existing pavement is milled and treated with a tack coat prior to the placement of new pavement for the purpose of creating a stronger bond between the old and new material. This is also a way of removing aged asphalt and helping to maintain finished grades closer to existing conditions grading and drainage considerations.
9. If milling is performed, a minimum of 2 inches of existing asphalt should be left in-place to reduce the likelihood of equipment breaking through the asphalt layer and destroying its integrity. After milling and before the placement of tack coat, the surface should be evaluated for cracking or degradation. Cracked or degraded asphalt should be removed, spanned with geosynthetic reinforcement, or be otherwise repaired per the direction of the civil and or geotechnical engineer prior to continuing construction. Proofrolling may be requested.
10. For pavements to be placed on subgrade or base materials, the subgrade and base materials should be prepared per the General Geotechnical Design and Construction Considerations – EARTHWORK section.

11. Following the proofrolling as described in the General Geotechnical Design and Construction Considerations – EARTHWORK section, the application of subgrade treatment, base material, and paving materials can proceed per the recommendations in the geotechnical report and/or project plans. The placement of pavement materials or structural fills cannot take place on frozen ground.
12. The placement of aggregate base material should conform to the jurisdictional guidelines. In general the materials should be provided by an accredited supplier, and the material should meet the standards of ASTM C-33. Material that has been stockpiled and exposed to weather including wind and rain should be retested for compliance since fines could be lost. Frozen material cannot be used.
13. The placement of asphalt material should conform to the jurisdictional guidelines. In general the materials should be provided by an accredited supplier, and the material should meet the standards of ASTM C-33. The material can be placed in a screed by end-dumping, or it can be placed directly on the paving surface. The temperature of the mix at placement should generally be on the order of 300 degrees Fahrenheit at time of placement and screeding.
14. Compaction of the screeded asphalt should begin as soon as practical after placement, and initial rolling should be performed before the asphalt has cooled significantly. Compaction equipment should have vibratory capabilities, and should be of appropriate size and weight given the thickness of the lift being placed and the sloping of the ground surface.
15. In cold and/or windy weather, the cooling of the screeded asphalt is a quality issue, so preparations should be made to perform screeding immediately after placement, and compaction immediately after screeding.
16. Quality control testing of the asphalt should be performed during placement to verify compaction and mix design properties are being met and that delivery temperatures are correct. Results of testing data from asphalt laboratory testing should be provided within 24 hours of the paving.

SITE GRADING AND DRAINAGE

1. In general, construction should proceed per the governing jurisdictional guidelines for the project site, including but not limited to the applicable American Concrete Institute (ACI), International Code Council (ICC), State Department of Transportation, State Department of Environmental Quality, the US Environmental Protection Agency, City and/or County, Army Corps of Engineers, Federal Aviation, Occupational Safety and Health Administration (OSHA), and any other governing standard details and specifications. In areas where multiple standards are applicable the more stringent should be considered. Work should be performed by qualified, licensed contractors with experience in the specific type of work in the area of the site.
2. Site grading and drainage for this section is generally meant to describe the effect of new construction on surface hydrology, which impacts the flow of rainfall or other water running across, onto or off-of, a newly constructed or modified development.
3. This section does not apply to the construction of site grading and drainage features. Recommendations for the construction of such features are covered in General Geotechnical Design and Construction Considerations for Earthwork – Structural Fills section and Underground Pipeline Installation – Backfill section.
4. In general, surface water flows should be directed towards storm drains, natural channels, retention or detention basins, swales, and/or other features specifically designed to capture, store, and or transmit them to specific off-site outfalls.
5. The surface water flow design is generally performed by a site civil engineer, and it can be impacted by hydrology, roof lines, and other site structures that do not allow for water to infiltrate into the soil, and that modify the topography of the site.
6. Soil permeability, density, and strength properties are relevant to the design of storm drain systems, including dry wells, retention basins, swales, and others. These properties are usually only provided in a geotechnical report if specifically requested, and recommendations will be provided in the geotechnical report in those cases.
7. Structures or site features that are not a part of the surface water drainage system should not be exposed to surface water flows, standing water or water infiltration. In general, roof drains and scuppers, exterior slabs, pavements, landscaping, etc. should be constructed to drain water away from structures and foundations. The purpose of this is to reduce the opportunity for water damage, erosion, and/or altering of structural soil properties by wetting. In general, a 5 percent or more slope away from foundations, structural fills, slopes, structures, etc. should be maintained.
8. Special considerations should be used for slopes and retaining walls, as described in the General Geotechnical Design and Construction Considerations - LATERALLY LOADED STRUCTURES section.
9. Additionally, landscaping features including irrigation emitters and plants that require large amounts of water should not be placed near to new structures, as they have the potential to alter soil moisture states. Changing of the moisture state of soil that provides structural support can lead to damage to the supported structures.

APPENDIX F

PARTNER
Engineering and Science, Inc.

PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT

New Residential Development
600 Roble Avenue,
1106 and 1230 San Pablo Avenue
Pinole, California 94564

Report Date: March 5, 2021
Partner Project No. 18-224911.8

Prepared for:

MRK Partners
108 Standard Street, Suite 300
El Segundo, California 90245

PARTNER
Engineering and Science, Inc.

March 5, 2021

Mr. Ben Kurzius
MRK Partners
108 Standard Street, Suite 300
El Segundo, California 90245

Subject: Phase I Environmental Site Assessment
New Residential Development
600 Roble Avenue, 1106 San Pablo Ave., and 1230 San Pablo Ave.
Pinole, California 94564
Partner Project No. 18-224911.8

Dear Mr. Kurzius:

Partner Engineering and Science, Inc. (Partner) is pleased to provide the results of the *Phase I Environmental Site Assessment* (Phase I ESA) report of the abovementioned address (the "subject property"). This assessment was performed in conformance with the scope and limitations as detailed in the ASTM Practice E1527-13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.

This assessment included a site reconnaissance as well as research and interviews with representatives of the public, property ownership, site manager, and regulatory agencies. An assessment was made, conclusions stated, and recommendations outlined.

We appreciate the opportunity to provide environmental services to you. If you have any questions concerning this report, or if we can assist you in any other matter, please contact me at (818) 337-1203.

Sincerely,

Misty Ponce
Principal

2154 Torrance Blvd., Suite 200, Torrance, CA 90501 ◊ Phone 800-419-4923 ◊ Fax 866-928-7418

1. GEOTECHNICAL EXECUTIVE SUMMARY

The executive summary is meant to consolidate information provided in more detail in the body of this report. This summary in no way replaces or overrides the detailed sections of the report.

Geologic Zones and Site Hazards:

The subject property is located within the Coast Ranges physiographic province of California. The Coast Ranges are characterized by ranges and narrow valleys that are approximately parallel to the Pacific Ocean coastline. The site is located northeast of San Francisco Bay and less than half a mile from San Pablo Bay. Based on historic topographic maps, the site was previously graded and partially developed into offices, adjacent parking and equipment yard. In our review, the site was not located within a seismically induced hazard zone. According to the regional geologic map of the area, site soils are Monterey Formation, which is composed of sedimentary residual soil that increases in density with depth, gradually transitioning from soil, to partially weathered rock (PWR), to bedrock. Strong ground shaking is anticipated during the project life, and highly plastic silt (MH material) was observed across the site. No other geologic hazards were known or suspected on the project site.

Excavation Conditions:

We anticipate excavations to planned building foundation depths of up to 7 feet to establish new foundations elevations. Based on the locations of the building excavation we anticipate stepped excavations can be used without the need for shoring. However, shoring is recommended if site retaining walls are to be modified or constructed. The excavations will require heavy-duty construction equipment in good working condition and may encounter weathered rock and or remnants of previous construction, including concrete and steel that will call for ripping or other hard-digging techniques. Groundwater was encountered at 26 feet below ground surface (bgs) during drilling and wet soils were encountered at 10 feet depth; however, groundwater levels can fluctuate over time, and perched water can occur above PWR layers.

Foundation/Slab Support:

The foundations for the project are expected to bear in engineered fill extending to firm native soil. Where highly plastic clayey silt soil (MH material on the boring logs), is encountered, it should be removed from the upper 24 inches of bearing material below foundations and slabs on grade. We anticipate that removal of soft MH material, undocumented fills and remnants of previous construction will also be needed in both cut and fill areas of the site. Over-excavations as well as excavations for foundations and slabs on grade should be evaluated by the engineer.

Soil Reuse:

Site soils that are moderately or highly expansive (including MH material) will not be usable as engineered fill in the building areas. It is recommended to use non-expansive structural fill that is free of deleterious materials, and is properly moisture conditioned and compacted to 95% of the modified proctor (ASTM D 1557) is recommended.

Pavement Design:

Roadway Type	Subgrade Preparation	Pavement Section
Parking Area Light Duty (TI=4)	Compacted Subgrade	4-in asphalt & 8-in aggregate base
Parking Area Heavy Duty (TI=7)	Compacted Subgrade	4-in asphalt & 10-in aggregate base

2. REPORT OVERVIEW & LIMITATIONS

2.1 Report Overview

To develop this report, Partner accessed existing information and obtained site specific data from our exploration program. Partner also used standard industry practices and our experience on previous projects to perform engineering analysis and provide recommendations for construction along with construction considerations to guide the methods of site development. The opinions on the cover letter of this report do not constitute engineering recommendations, and are only general, based on our recent anecdotal experiences and not statistical analysis. Section 1.0, Executive Geotechnical Summary, compiles data from each of the report sections, while each of sections in the report presents a detailed description of our work. The detailed descriptions in Section 5.0 and constitute our engineering recommendations for the project, and they supersede the Executive Geotechnical Summary.

The report overview, including a description of the planned construction and a list of references, as well as an explanation of the report limitations is provided in Section 2.0. The findings of Partner's geologic review are included in Section 3.0 Geologic Conditions and Hazards. The descriptions of our methods of exploration and testing, as well as our findings, are included in Section 4.0 Geotechnical Exploration and Laboratory Results. In addition, logs of our exploration excavations are included in Appendix A of the report, and laboratory testing is included in Appendix B of the report. Site Location and Site Plan maps are included as Figures in the report.

2.2 Assumed Construction

Partner's understanding of the planned construction was based on information provided by the project team. The proposed site plan is included as Figure 2 to this report. Partner's assumptions regarding the new construction are presented in the below table.

Property Data	
Property Use:	New Multifamily Development (Apartment)
Building footprint/height	34,655 sf / 4 to 5 Stories (partial basement) max height 43 feet
Land Acreage (Ac):	402-023-007-6 (600 Roble Avenue; 1.05 Ac), 402-023-003-5 (1106 San Pablo Avenue; 0.668 Ac), and 405-023-002-7 (1230 San Pablo Avenue; 0.339 Ac)
Number of Buildings:	1
Expected Cuts and Fills	Approximately 15 feet
Type of Construction:	Concrete Podium with wood framing
Foundations Type	Assumed deep foundations, first floor parking likely below grade
Anticipated Loads	3,000 psf
Traffic Loading	Parking garage
Site Information Sources:	Development Application 3/30/2021, Civil Drawings

2.3 References

The following references were used to generate this report:

California Dept. of Transportation, ARS Online, accessed 10/2/2018

California Geological Survey, Note 36, *California Geomorphic Provinces*, 2002.

Federal Emergency Management Agency, FEMA Flood Map Service Center, accessed 10/2/2018

Google Earth Pro (Online), accessed 10/2/2018

Historic Aerials by NETR Online, accessed 7/21/17

Partner Engineering and Science, Inc., Phase 1 Environmental Assessment Report, *Proposed New Residential Development, Pinole*, California, 9/24/2018.

Relativity Architects, Vista Woods Apartments, Development Application, 3/30/2021

United States Geological Survey, Lower 48 States 2014 Seismic Hazard Map, accessed online 10/2/2018

United States Geological Survey Topographic Map 2015, 7.5 minute series, *Mare Island Quadrangle, CA*, accessed via internet, accessed 10/2/2018

United States Geological Survey, *Geologic Map of Mare Island Quadrangle, California, 1:24,000*, Dibblee, 2005.

United States Geologic Survey, Earthquake Hazards Program (Online), accessed 10/2/2018

2.4 Limitations

The conclusions, recommendations, and opinions in this report are based upon soil samples and data obtained in widely spaced locations that were accessible at the time of exploration, and collected based on project information available at that time. Our findings are subject to field confirmation that the samples we obtained were representative of site conditions. If conditions on the site are different than what was encountered in our borings, the report recommendations should be reviewed by our office, and new recommendations should be provided based on the new information and possible additional exploration if needed. It should be noted that geotechnical subsurface evaluations are not capable of predicting all subsurface conditions, and that our evaluation was performed to industry standards at the time of the study, no other warranty or guarantee is made.

Likewise, our document review and geologic research study made a good-faith effort to review readily available documents that we could access and were aware of at the time, as listed in this letter. We are not able to guarantee that we have discovered, observed, and reviewed all relevant site documents and conditions. If new documents or studies are available following the completion of the report, the recommendations herein should be reviewed by our office, and new recommendations should be provided based on the new information and possible additional exploration if needed.

This report is intended for the use of the client in its entirety for the proposed project as described in the text. Information from this report is not to be used for other projects or for other sites. All of the report must be reviewed and applied to the project or else the report recommendations may no longer apply. If pertinent changes are made in the project plans or conditions are encountered during construction that

appear to be different than indicated by this report, please contact this office for review. Significant variations may necessitate a re-evaluation of the recommendations presented in this report. The findings in this report are valid for one year from the date of the report. This report has been completed under specific Terms and Conditions relating to scope, relying parties, limitations of liability, indemnification, dispute resolution, and other factors relevant to any reliance on this report. Any parties relying on this report do so having accepted Partner's standard Terms and Conditions, a copy of which can be found at http: / www.partneresi.com/terms-and-conditions.php

If parties other than Partner are engaged to provide construction geotechnical services, they must be notified that they will be required to assume complete responsibility for the geotechnical phase of the project by concurring with the findings and recommendations in this report or providing alternate recommendations.

3. GEOLOGIC CONDITIONS & HAZARDS

This section presents the results of a geologic review performed by Partner, for a proposed new construction on site. The general location of the project is shown on Figure 1.

3.1 Site Location and Project Information

The planned construction will be situated on currently partially developed adjacent parcels in Pinole, California. The immediately surrounding properties consist of commercial buildings on both sides. Figure 2 presents the project site and the locations of our site exploration. Based on our review of available documents, the site has had the following previous uses:

Historical Use Information		
Period/Date	**Source**	**Description/Use**
1902 1939	Aerial Photographs, Topographic Maps	Undeveloped/ Hilly Area
1948	Aerial Photographs, Building Records	1106 San Pablo Avenue Constructed
1950s-1960s	Aerial Photographs, Topographic Maps	Residential and Outbuildings at 1230 San Pablo Avenue
1985	Aerial Photographs, Building Records	600 Roble Avenue Constructed
1948-Present	Aerial Photographs, Building Records, City Directories	Commercial and Industrial

3.2 Geologic Setting

The subject property is located within the Coast Ranges physiographic province of California. The Coast Ranges are characterized by ranges and narrow valleys that are approximately parallel to the Pacific Ocean coastline. The site is located northeast of San Francisco Bay and less than half a mile from San Pablo Bay. Based on historic topographic maps, the site was previously graded and for agricultural use. In our review, the site was not located within a seismically induced hazard zone. According to the regional geologic map of the area, site soils are Monterey Formation, which is composed of sedimentary residual soil that increases in density with depth, gradually transitioning from soil, to partially weathered rock (PWR), to bedrock. In addition, the Monterey formation in this area sometimes contains diatomite, which is a chalk-like, soft, highly porous, fine-grained, siliceous sedimentary rock which in its weathered form is not suitable below heavily loaded building foundations. General geologic data is presented below:

Geologic Data		
Parameter	**Value**	**Source**
Geomorphic Zone	Coast Ranges	CGS
Ground Elevation	105 feet above MSL	Google Earth
Flood Elevation	Zone X (Minimal Flood Hazard)	FEMA
Seismic Hazard Zone	Low to Moderate	USGS
Geologic Hazards	Expansive Soils	CGS
Surface Cover	Grass cover over alluvial sands	Google Earth

Geologic Data		
Parameter	**Value**	**Source**
Site Modifications	Previous commercial building	Historic Aerials
Surficial Geology	Alluvium	NGMDB
Depth to Bedrock	3 to 15 to PWR; refusal not encountered	Boring Log
Groundwater Depth	26 feet	Boring Log

3.3 Geologic Hazards

California is tectonically active and contains numerous large, active faults. As a result, geologic hazards with the greatest potential to affect northern California include earthquakes and related hazards such as tsunamis, landslides, and liquefaction. According to California Department of Transportation's ARS Online Database, the three faults most relevant to the site are the Hayward – 2.8 miles from site, MMax 7.3, the Contra Costa Shear Zone – 7.8 miles from site, MMax 6.5 and San Andres (North Coast) – 20.4 miles from site, MMax 8.0. The site was not mapped within a zone of seismically included hazard for liquefaction, landslide, or tsunami.

The seismic design parameters based on the USGS Design Maps Detailed Report for ASCE 7-10 Standard Method are presented below.

Site Address: 1230 San Pablo Ave, Pinole, CA (Site Coordinates: 38.00442° N, 122.30191° W)

Seismic Item	Value	Seismic Item	Value
Site Classification	C	Seismic Design Category	D
Fa	1.0	Fv	1.3
Ss	1.855g	S_1	0.745g
S_{MS}	1.855g	S_{M1}	0.968g
S_{DS}	1.237g	S_{D1}	0.645g
PGA Max (ASCE '10)	0.715g	67% PGA (ASCE '10)	0.479g

4. GEOTECHNICAL EXPLORATION & LABORATORY RESULTS

Our evaluation of soils on the site included field exploration and laboratory testing. The field exploration and laboratory testing programs are briefly described below. Data reports from the field exploration and laboratory testing are provided in Appendix A and Appendix B, respectively.

4.1 Soil Borings

The soil boring program was conducted on September 20 and 25, 2018. Seven (7) borings were advanced by the use of a truck-mounted drill using hollow flight auger drilling techniques. The borings were made to depths of 25 to 50 feet in the buildings footprint. The approximate locations of the exploratory borings are shown on Figure 2. Partner visited the site again in March of 2021, to provide supplemental percolation testing.

Logs of subsurface conditions encountered in the borings were prepared in the field by a representative of Partner Engineering. Soil samples consisting of relatively undisturbed brass ring samples and Standard Penetration Tests (SPT) samples were collected at approximately 2.5 and 5-foot depth intervals and were returned to the laboratory for testing. The SPTs were performed in accordance with ASTM D 1586. Typed boring logs were prepared from the field logs and are presented in Appendix A. A summary table description is provided below with estimated boring elevations, finished floor elevations and estimated subgrade remediation depths:

Surficial Geology			
Boring	**Boring Elevation (ft)**	**Finished Floor Elevation (ft)**	**Subgrade Preparation**
FILL AREAS			
Boring 1	104	107.2	Rework 18 in (103 to 104 ft)
Boring 2	101	107.2	Remove 3 ft soft MH (98 to 101 ft)
Boring 5	105	107.2	Rework 18 in (104 to 105 ft)
CUT AREAS			
Boring 3	101	94.7	Remove 24 in MH (92.7 to 94.7 ft)
Boring 4	93	~93 (projection)	Rework 4 ft of fill (89 to 93 ft)
Boring 6	113	110.7	Rework 18 in (109.2 to 110.7 ft)
Boring 7	114	110.7 (projection)	Remove 24 in MH (108.7 to 110.7 ft)

Groundwater/Soil Moisture:

Groundwater was encountered on the site during drilling at 26 feet below ground surface, and wet conditions were encountered at 10 feet below ground surface, above partially weathered rock. In addition, previous borings by Partner on nearby sites, and the well records from the state of California, indicated groundwater levels as shallow as 6 feet in the project vicinity. Based on our study and the planned cuts of 8 feet or less, we do not anticipate groundwater will impact the site. However, groundwater levels fluctuate over time and may be different at the time of construction and during the project life.

4.2 Laboratory Evaluation

Selected samples collected during drilling activities were tested in the laboratory to assist in evaluating engineering properties of subsurface materials at the site. The results of laboratory analyses are presented in Appendix B.

4.3 Infiltration Testing

Three tests designated P-1 through P-3, were performed using the *Boring Percolation Test Procedure Method* per City of Pinole guidelines. The results were calculated using the Porchet method. The borings were advanced using a 6-in.-diameter borehole and lined with screened 2-in. diameter pipes. Geotechnical borings accompanied the percolation tests for soil classification purposes. The results obtained in the field were properly stabilized and are presented below. Boring Logs and Percolation test data are attached.

Location	Depth Below Ground Surface (ft)	Unfactored Infiltration rate (in./hr)	Factor of Safety	Factored Infiltration Rate (in./hr)
P-1	4	0.0	3	0.0
P-2	5	0.0	3	0.0
P-3	6	0.0	3	0.0

We recommend that a factor of safety of 3 be applied to account for both site variability and siltation. At the time of drilling, site soils were generally consistent across the percolation tests (see Attached Figures and percolation test logs). In general, the soils across the site are not favorable for infiltration due to shallow weathered bedrock conditions encountered.

5. GEOTECHNICAL RECOMMENDATIONS & PARAMETERS

The following discussion of findings for the site is based on the assumed construction, geologic review, results of the field exploration, and laboratory testing programs. The recommendations of this report are contingent upon adherence to Appendix C of this report, General Geotechnical Design and Construction Considerations. For additional details on the below recommendations, please see Appendix C.

5.1 Geotechnical Recommendations

- The proposed construction is generally feasible from a geotechnical perspective provided the recommendations and assumptions of this report are followed.

Geologic/General Site Considerations

- The Coast Ranges are characterized by ranges and narrow valleys that are approximately parallel to the Pacific Ocean coastline. The site is located northeast of San Francisco Bay and less than half a mile from San Pablo Bay. Based on historic topographic maps, the site was previously graded and partially developed. The subject property is currently three adjacent lots, 600 Robles Avenue parcel is a two-story office building with surrounding asphalt paved parking lot, 1230 San Pablo Ave parcel is grass covered vacant lot and 1106 San Pablo Avenue parcel contains one story office and equipment yard with various cars. The surrounding neighborhood area is residential/ light industrial. The locations of Building 1 and Building 2 are shown on Figure 3.
- In our review, the site was not located within a seismically induced hazard zone. According to the regional geologic map of the area, site soils are Monterey Formation, which is composed of sedimentary residual soil that increases in density with depth, gradually transitioning from soil, to partially weathered rock (PWR), to bedrock. In addition, the Monterey formation in this area sometimes contains diatomite, which is a chalk-like, soft, highly porous, fine-grained, siliceous sedimentary rock which in its weathered form is not suitable below heavily loaded building foundations. Strong ground shaking is anticipated during the project life, and highly plastic silt (MH material) was observed at the surface across the site, which is potentially expansive material. No other geologic hazards were known or suspected on the project site.

Mass Grading Considerations

- We anticipate grading will require cuts to depths of up to 7 feet to establish new finished floor excavations. Based on the locations of the cut areas, we anticipate stepped excavations can be used without the need for shoring. New building excavations around the property boundaries are anticipated to be 3 feet or less and should not require shoring. However, it should be noted that site retaining walls are planned to be repaired/replaced. Our analysis did not include evaluation of the site retaining walls and modifications to site slopes. This should be addressed under separate cover.
- The excavations will require heavy-duty construction equipment in good working condition and may encounter weathered rock and or remnants of previous construction, including concrete and steel that will call for ripping or other hard-digging techniques. Groundwater was encountered at

26 feet below ground surface (bgs) during drilling and wet soils were encountered at 10 feet depth; however, groundwater levels can fluctuate over time, and perched water can occur above PWR layers.

- Excavations should be sloped and/or shored to protect worker safety and adjacent properties, per OSHA and local guidelines. In the cases where the demolition excavation is to be within a 2:1 (horizontal to vertical) zone below existing foundations or property lines, special demolition procedures should be used.

Spread Foundations

- We recommend the use of spread foundations on the site. Undocumented fill, remnants of previous construction, and soft clayey silty soils (MH material) should be removed from existing and finished grades within the building area. Dense MH material may remain in-place below deeper fills, so long as it will be 24 inches or more below foundation and slab bearing grades. In cut areas, any MH soil should be over-excavated to accommodate 24 inches of non-expansive granular fill to be placed directly below new foundations and slabs. The over-excavation should extend laterally 24 inches from the foundation and/or slab edges. The base of the foundation over-excavation, and foundation bearing grades should be carefully inspected during construction. More direction on preparation for new fills is provided in the "On Grade" section below. Section 4 of this report provides a table describing the conditions encountered in each boring.

- **Basement Design and Construction**

  A portion of the new construction, along the north-west corner of the site is to have a partial basement. The basement walls will function as retaining walls this will require the installation of damp-proofing on the outside of the walls, along with the placement of a back-drainage system. Such a system should be designed by the project engineer and could consist of open graded aggregate or other type of system. Parameters for the lateral loads are included in Section 5.2. For walls that are restrained at top and bottom, the static pressure values should be used. Additional recommendations for construction are included in Appendix C.

On-Grade Construction Considerations

- All grass, roots, plant materials, and remnants of previous construction should be removed from structural areas of the site. Given the presence of highly expansive material across the site, slab-on-grade areas should be supported on a 24-inch thick layer of non-expansive engineered fill overlying competent native soil.

- In new fill, planned slabs or in new pavement areas, cleaned subgrade should be proofrolled and evaluated by the engineer with a loaded water truck (4,000 gallon) or equivalent rubber-tired equipment. Soft or unstable areas should be repaired per the direction of the engineer. Once approved, the subgrade soil should be scarified to a depth of 18 inches, moisture conditioned, and compacted as engineered fill. The improvements should extend a distance of 2 feet beyond the planned area of new construction at finished grade (for fill sites, 2 feet inside the top of slope).

Soil Reuse Considerations

- Site surface soils are generally not recommended for use as engineered fill in structural areas as they contain highly plastic silt soil (MH materials) as well as low specific gravity diatomite gravels. Soils that they are generally free of deleterious materials and have a liquid limit below 50 and are properly moisture conditioned and compacted may be used in structural areas. For this project, 95% compaction of the standard proctor (ASTM D 1557) is called for.

Concrete Considerations

- Concrete should be corrosion resistant, using Type II/V Portland Cement, and fly ash mixtures of 25 percent cement replacement. We recommend a water/cement ratio of 0.45 or less. Site soil may be corrosive to un-protected metallic elements such as pipes, poles, etc. Concrete exposed to freezing weather in cold climates should be air-entrained.

Site Storm Water Considerations

- Surface drainage and landscaping design should be carefully planned to protect the new structures from erosion/undermining, and to maintain the site earthwork and structure subgrades in a relatively consistent moisture condition. Water should not flow towards or pond near to new structures, and high water demand plants should not be planned near to structures.

5.2 Geotechnical Parameters

Based on the findings of our field and laboratory testing, we recommend that design and construction proceed per industry accepted practices and procedures, as described in Appendix C, General Geotechnical Design and Construction Considerations (Considerations).

Subgrade Preparation Parameters – (hyperlink to Construction Considerations)

Subgrade Preparation				
Structure	**Bearing Capacity**	**Embedment Depth**	**Bearing Surface [a]**	**Settlement [d]**
Grade Slabs	k=150 pci [b]	NA	24 in non-expansive engineered fill	<1 inch
Spread Foundations	4,000 [c] psf	18 inches	24 in non-expansive engineered fill or to compacted in place approved native soil, whichever is deeper	<1 inch

[a] Repairs in bearing *surface areas should be structural fill per the recommendation of the Earthwork section of Appendix C that is moisture conditioned to within 3 percent below to optimum moisture content and compacted to 95 percent or more of the soil maximum dry density per ASTM D1557. Expansive material should not be located within the upper* 3 feet of the soil subgrade.

[b] *Subgrade modulus value "k," assuming the grade slab is supported by aggregate layer roughly equal to slab thickness (minimum 4 inches)*

[c] *Can be increased by 1/3 for temporary loading such as seismic and wind*

[d] Differential settlement is expected to be half of total settlement

Paving Structural Sections – (hyperlink to Construction Considerations)

Pavement Sections		
Roadway Type	**Subgrade Preparation [a]**	**Pavement Section [b]**
Parking Area Light Duty (TI=4)	Proofrolled Subgrade	4-in asphalt & 8-in aggregate base
Parking Area Heavy Duty (TI=7)	Proofrolled Subgrade	4-in asphalt & 10-in aggregate base
Parking Area Heavy Duty (TI=7)	Proofrolled Subgrade	7-in concrete & 4-in aggregate base

[a] Repairs in proofrolled areas should be structural fill per the recommendation of the Earthwork (hyperlink to Construction Considerations) that is moisture conditioned to within 3 percent below to optimum moisture content and compacted to 95 percent or more of the soil maximum dry density per ASTM D1557.

[b] 1 inch of pavement may be reduced if 6-in of lime treated soil is used with a 500 psi 28-day compressive strength

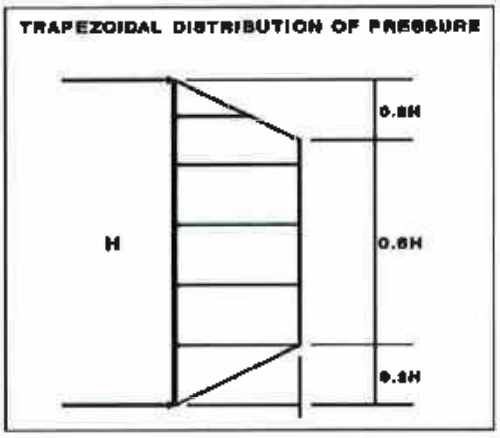
Laterally Loaded Structures Parameters– (hyperlink to Construction Considerations)

The parameters in this section pertain to walls that are fixed at the top and bottoms, so that strain is not allowed (static fluid pressure), and to flexible, cantilevered retaining walls (active fluid pressures). Static pressures would apply to the underground basements walls and any shoring system that uses boxes, struts, jacks, etc. The stress distribution for static fluid pressure is distributed as is shown in the below diagram. Active and passive fluid pressures have a triangular distribution. Surcharges for slopes above retaining walls should also be added, as surcharges for nearby foundations, traffic, and seismic forces, as shown in the below equations.

Lateral Earth Pressures [a]				
Soil Type	**Coefficient of Friction (μ)**	**Static Fluid Pressure (pcf)**	**Active Fluid Pressure (pcf)**	**Passive Fluid Pressure (pcf)**
Native/Silty/Clayey Soil (0-5 ft)	0.35	60	40	0
Native/Dense Soil (5 15 ft)	0.30	60	40	200

[a] These are raw unfactored values. Appropriate factors of safety should be selected by the structural engineer

[b] These loads should be modified by seismic and surcharge loads as shown in the below equations where k = 0.5:



Traffic Surcharge Loading Equations

Table 1*

Equivalent Height of Soil for Vehicular Loading on Retaining Wall and Shoring Parallel to Traffic

Excavation/Wall Height (ft)	Distance from the edge of excavation (ft)	
	0.0 ft	1.0 ft or further
5.0	5.0	2.0
10.0	3.5	2.0
≥20.0	2.0	2.0

* From Table 3.11.6.4-2 of the AASHTO document referenced above.

$$q = k \times \gamma_s \times H_{eq}$$

Where:
- q = lateral surcharge pressure (psf) in rectangular distribution
- k = active or at-rest earth pressure coefficient from Soils Report
- γ_s = total unit weight of soil (pcf)
- H_{eq} = equivalent height of soil from "Table 1" above

Foundation Surcharge Loading Equations

Resultant lateral force:

$$R = \frac{0.3Ph^2}{x^2+h^2}$$

Location lateral resultant:

$$d = x\left[\left\{\frac{x^2}{h^2}+1\right\}\left(\tan^{-1}\frac{h}{x}\right)-\left(\frac{x}{h}\right)\right]$$

WHERE:

- R = resultant lateral force measured in pounds per foot (N/m) of wall width.
- P = resultant surcharge loads of continuous or isolated footings measured in pounds per foot (N/m) of length parallel to the wall.
- X = distance of resultant load from back face of wall measured in feet (mm).
- h = depth below point of application of surcharge loading to top of wall footing measured in feet (mm).
- d = depth of lateral resultant below point of application of surcharge loading measured in feet (mm).
- $\tan^{-1} h/x$ = The angle in radians whose tangent is equal to h/x.

Loads applied within a horizontal distance equal to the wall stem height, measured from the back face of the wall, shall be considered as surcharge.

For isolated footings having a width parallel to the wall less than 3 feet (914 mm), "*R*" may be reduced to one-sixth the calculated value.

The resultant lateral force "*R*" shall be assumed to be uniform for the length of footing parallel to the wall and to diminish uniformly to zero at the distance "*x*" beyond the ends of the footing.

Vertical pressure due to surcharge applied to the top of the wall footing may be considered to spread uniformly within the limits of the stem and planes making an angle of 45 degrees with the vertical.

Seismic Surcharge Loading Equations

Combined effect of static and seismic lateral force:
$P_{AE} = F_1 + F_2$

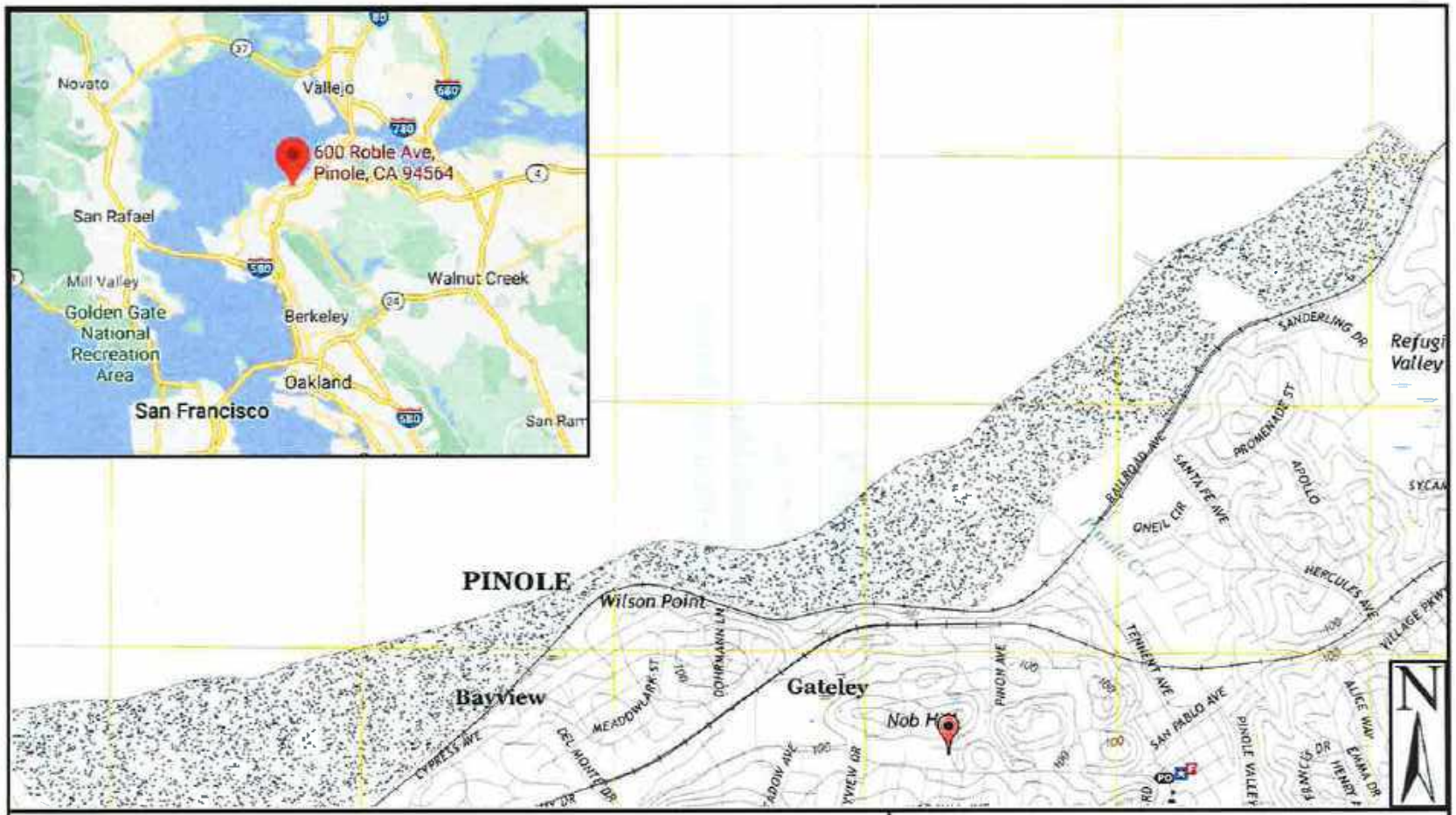
$F_1 = 1/2*A*H^2$ Resultant acting at a distance of H/3 from base of wall
$F_2 = 3/8*K_h*\gamma*H^2$ Resultant acting at a distance of (0.6*H) from base of wall

Where:
F_1 = Static Force (plf) based on active pressure
F_2 = Seismic Lateral Force (plf) based on seismic pressure
γ = 120 pcf
$K_h = S_{DS}/2.5$
A = Active Pressure (pcf)
H = Height of retained soil (ft)

FIGURES

- Site Location Map
- Site Exploration Map
- Scaled Site Plans with Borings

PARTNER



U.S. Geological Survey, 20180914, USGS US Topo 7.5-minute map for Mare Island, CA 2018: USGS - National Geospatial Technical Operations Center (NGTOC).

FIGURE 1 – SITE VICINITY PLAN

KEY

Approximate Site Location

Source: Google Earth, 2021, San Pablo Avenue, Feasibility Study, Relativity Architects

FIGURE 2 – PERCOLATION LOCATIONS

KEY

- Approximate Percolation Test Location
- Approximate Project Limits

Source: Google Earth, 2021, San Pablo Avenue, Feasibility Study, Relativity Architects

FIGURE 3 – BORING LOCATIONS

KEY

Approximate Percolation Test Location

Approximate Project Limits

Source: The Architects Collective, Sheet CT.2D, Grading Plans, 12/6/2018

FIGURE 4 – SCALED BORING LOCATION PLAN

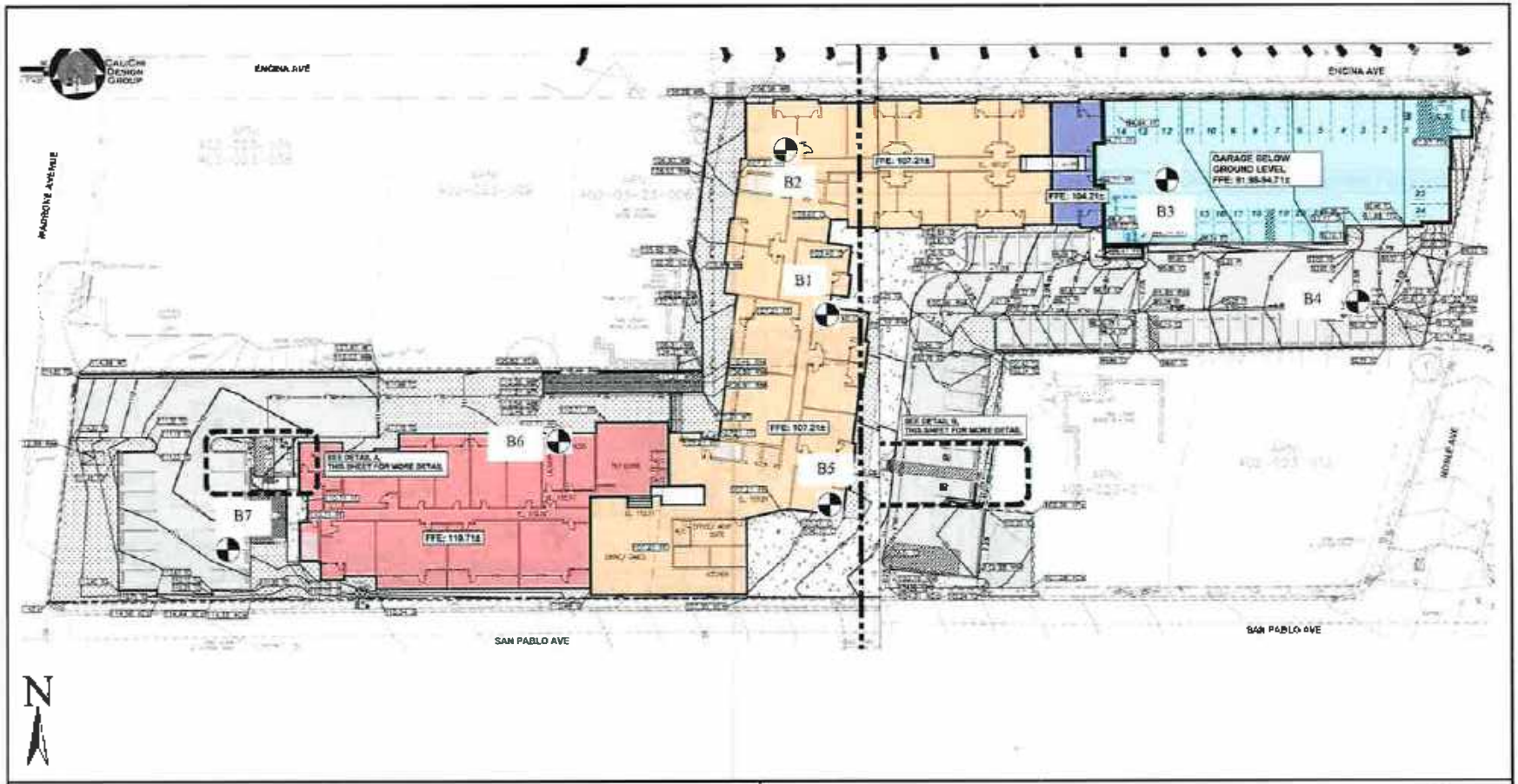
KEY

Approximate Boring Location

Scale
1 inch = 25 feet

0 25' 50' 75' 100' 200' 300'

PARTNER



Source: The Architects Collective, Sheet C1.20, Grading Plans, 12/6/2019

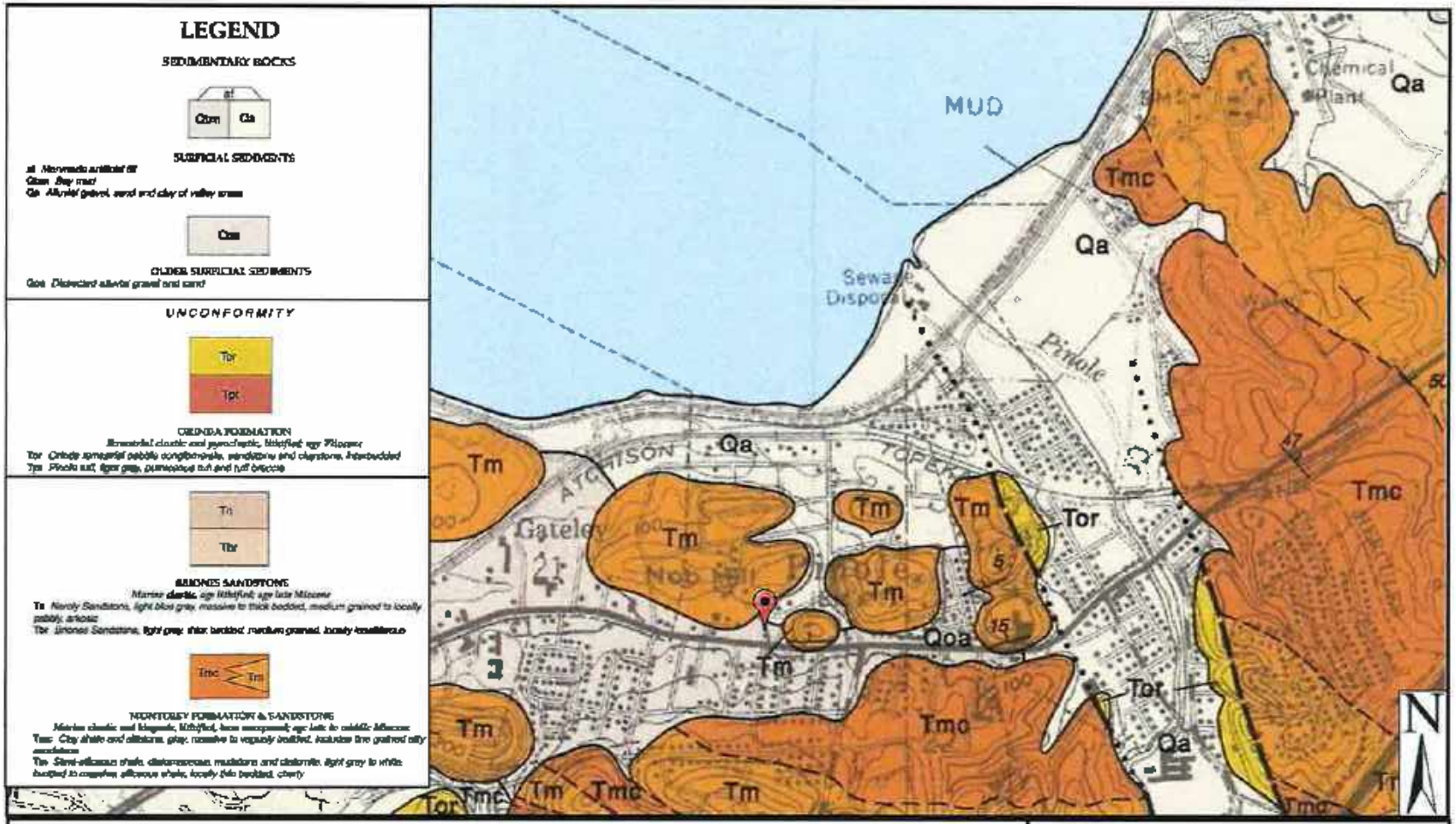
FIGURE 5 - SCALED BORING LOCATION PLAN

KEY

Approximate Boring Location

Scale
1 inch = 25 feet

0 25' 50' 75' 100' 200' 300'



Source: Dibblee, T.W., and Minch, J.A., 2005, Geologic map of the Mare Island quadrangle, Contra Costa, Solano, Marin, & Sonoma Counties, California; Dibblee Foundation Map DF-145, scale 1:24,000

FIGURE 6 – GEOLOGIC MAP

KEY

Approximate Site Location

APPENDIX A

Boring Logs

Percolation Test Results

PARTNER

BORING LOG KEY - EXPLANATION OF TERMS

SURFACE COVER: General discription with thickness to the inch, ex. Topsoil, Concrete, Asphalt, etc,

FILL: General description with thickness to the 0.5 feet. Ex. Roots, Debris, Processed Materials (Pea Gravel, etc.)

NATIVE GEOLOGIC MATERIAL: Deposit type, 1.Color, 2.moisture, 3.density, 4.SOIL TYPE, other notes - Thickness to 0.5 feet

1. Color - Generalized

Light Brown (usually indicates dry soil, rock, caliche)
Brown (usually indicates moist soil)
Dark Brown (moist to wet soil, organics, clays)
Reddish (or other bright colors) Brown (moist, indicates some soil development/or residual soil)
Greyish Brown (Marine, sub groundwater - not the same as light brown above)
Mottled (brown and gray, indicates groundwater fluctuations)

2. Moisture

dry - only use for wind-blown silts in the desert
damp - soil with little moisture content
moist - near optimum, has some cohesion and stickyness
wet - beyond the plastic limit for clayey soils, and feels wet to the touch for non clays
saturated - Soil below the groundwater table, sampler is wet on outside

3. Density (based on blow counts or hand evaluation)

SPT	Ring	Granular	Cohesive		
0-5	0-7	very loose	very soft	Unsuitable	Thumb penetrates through
5-10	7-14	loose	soft	<1,500psf	Thumb penetrates part way
10-20	14-28	medium dense	firm	<3,000psf	Thumb dents only
20-75	28-100	dense	stiff	>3,000psf	Thumbnail dents
75+	100+	very dense	hard	Hard Dig	Thumbnail does not dent

4. Classification

Determine percent Gravel (bigger than 3/8")
Determine percent fines (silt and clay feel soft, with no grit)
Determine percent sand (between silt and clay, feels gritty)
Determine if clayey (make soil moist, if it easily roll into a snake it is clayey)

Sands and gravels (more gravel starts with G, more sand starts with S)

GP	SP	Mostly sand and gravel, with less than 5 % fines	sandy GRAVEL	SAND
GP-GM	SP-SM	Mostly sand and gravel 7-12% fines, non-clayey	sandy GRAVEL with silt	SAND with Silt
GP-GC	SP-SC	Mostly sand and gravel 7-12% fines, clayey	sandy GRAVEL with clay	SAND with clay
GC	SC	Mostly sand and gravel >12% fines clayey	clayey GRAVEL	clayey SAND
GM	SM	Mostly sand and gravel >12% fines non-clayey	silty GRAVEL	silty SAND

Cohesive Soil (generaly forms long chunks (more than 2 inches) in sampler

ML	Soft, non clayey	SILT with sand
MH	Very rare, holds a lot of water, and is plable with very low strength	high plasticity SILT
CL	If sandy can be hard when dry, will be stiff/plastic when wet	CLAY with sand/silt
CH	Hard and resiliant when dry, very strong/sticky when wet (may have sand in it)	FAT CLAY

H = Liquid limit over 50%, L - LL under 50%
C = Clay
M = Silt

Samplers

S = Standard split spoon (SPT)
R = Modified ring
Bulk = Excavation spoils
ST = Shelby tube
C = Rock core

Boring Number:	B1	Boring Log Page 1 of 1	
Location:	SW of Existing building	Date Started:	9/25/2018
Site Address:	600 Roble Avenue	Date Completed:	9/25/2018
	Pinole, CA 94564	Depth to Groundwater:	N/A
Project Number:	18-224911.3	Field Technician:	B. Kim
Drill Rig Type:	Ingersoll Rand A400	**Partner Engineering and Science**	
Sampling Equipment:	SPT & Rings	111 Pine Street, #1750	
Borehole Diameter:	6.5"	San Francisco, CA 94111	

Depth	Sample	N-Value	USCS	Description
0				**SURFACE COVER:** Asphalt (2")
1				**NATIVE:** Brown, damp, sandy SILT with trace gravel
2				
3				
4				
5	S	50/5"	MH	Brown, damp, stiff, SILT with trace sand and gravel
6				
7				
8				
9				
10	S	50/6"		
11				
12				
13				
14				
15	R	50/5"	PWR	**PARTIALLY WEATHERED ROCK:** Brown, damp, hard, SILTSTONE with trace sand
16				and gravel
17				
18				
19				
20	S	50/3"		
21				Boring terminated at 21.5'
22				Backfilled with neat cement and patched upon completion
23				Groundwater not encountered
24				
25				
26				
27				
28				
29				

Boring Number:	B2	Boring Log Page 1 of 1	
Location:	NW of Existing building	Date Started:	9/25/2018
Site Address:	600 Roble Avenue	Date Completed:	9/25/2018
	Pinole, CA 94564	Depth to Groundwater:	N/A
Project Number:	18-224911.3	Field Technician:	B. Kim
Drill Rig Type:	Ingersoll Rand A400	**Partner Engineering and Science**	
Sampling Equipment:	SPT & Rings	111 Pine Street, #1750	
Borehole Diameter:	6.5"	San Francisco, CA 94111	

Depth	Sample	N-Value	USCS	Description
0				**SURFACE COVER:** Asphalt (2")
1				**NATIVE:** Dark gray/black, moist, SILT
2				
3				
4				
5	R	23	MH	Dark gray/black, moist, dense, SILT
6				
7				
8				
9				
10	S	30		
11				
12				
13				
14				
15	S	50/5"	PWR	**PARTIALLY WEATHERED ROCK:** Brown, damp, hard, SILTSTONE
16				
17				
18				
19				
20	S	92/10"		moist
21				Boring terminated at 21.5'
22				Backfilled with neat cement and patched upon completion
23				Groundwater not encountered
24				
25				
26				
27				
28				
29				

Boring Number:	B3	Boring Log Page 1 of 1	
Location:	NE of Existing building	Date Started:	9/25/2018
Site Address:	600 Roble Avenue	Date Completed:	9/25/2018
	Pinole, CA 94564	Depth to Groundwater:	N/A
Project Number:	18-224911.3	Field Technician:	B. Kim
Drill Rig Type:	Ingersoll Rand A400	**Partner Engineering and Science**	
Sampling Equipment:	SPT & Rings	111 Pine Street, #1750	
Borehole Diameter:	6.5"	San Francisco, CA 94111	

Depth	Sample	N-Value	USCS	Description
0				**SURFACE COVER:** Asphalt (2")
1				**FILL:** Brown, damp, gravel fill with some sand
2				
3				
4				
5	S	50	MH	**NATIVE:** Brown, damp, stiff, SILT with some sand (Fines: 35%)
6				
7				
8				
9				
10	S	20		Reddish brown, damp to moist, firm (LL=54.8, PI=30.5)
11				
12				
13				
14				
15	R	38		Dark brown, stiff, with trace clay (Dry Density: 81.7 pcf, Moisture Content: 29.3 %,
16				Fines: 68%)
17				
18				
19				
20	S	55		
21				Boring terminated at 21.5'
22				Backfilled with neat cement and patched upon completion
23				Groundwater not encountered
24				
25				
26				
27				
28				
29				

Boring Number:	B4	Boring Log Page 1 of 1	
Location:	SE of Existing building	Date Started:	9/25/2018
Site Address:	600 Roble Avenue	Date Completed:	9/25/2018
	Pinole, CA 94564	Depth to Groundwater:	~10' (perched)
Project Number:	18-224911.3	Field Technician:	B. Kim
Drill Rig Type:	Ingersoll Rand A400	**Partner Engineering and Science**	
Sampling Equipment:	SPT & Rings	111 Pine Street, #1750	
Borehole Diameter:	6.5"	San Francisco, CA 94111	

Depth	Sample	N-Value	USCS	Description
0				**SURFACE COVER:** Asphalt (2")
1				**FILL:** Gray, damp, sandy gravelly soil
2				
3				
4				
5	S	17	MH	**NATIVE:** Gray, damp, firm, SILT (Dry Density: 65.6 pcf, Moisture Content: 43.3 %)
6				
7				
8				
9				
10	S	13		Black/dark gray, wet
11				
12				
13				
14				
15	R	93/9"	PWR	**PARTIALLY WEATHERED ROCK:** Brown, damp, hard, SILTSTONE with some sand
16				
17				
18				
19				
20	S	87/11"		
21				Boring terminated at 21.5'
22				Backfilled with neat cement and patched upon completion
23				Perched groundwater encountered at 10'
24				
25				
26				
27				
28				
29				

Boring Number:	B5	Boring Log Page 1 of 1	
Location:	Empty lot South of building	Date Started:	9/25/2018
Site Address:	1230 San Pablo Avenue	Date Completed:	9/25/2018
	Pinole, CA 94564	Depth to Groundwater:	N/A
Project Number:	18-224911.3	Field Technician:	B. Kim
Drill Rig Type:	Ingersoll Rand A400	**Partner Engineering and Science**	
Sampling Equipment:	SPT & Rings	111 Pine Street, #1750	
Borehole Diameter:	6.5"	San Francisco, CA 94111	

Depth	Sample	N-Value	USCS	Description
0				**SURFACE COVER:** Grass covered sand surface
1				
2				
3				
4				
5	R	50/5"	MH	**NATIVE:** Brown, damp, hard, SILT with some sand (Dry Density: 83 pcf, Moisture
6				Content: 20.1 %)
7				
8				
9				
10	S	50/5"		with organics
11				
12				
13				
14				
15	S	82/11"	PWR	**PARTIALLY WEATHERED ROCK:** Brown, damp, hard, SILTSTONE with some sand
16				
17				
18				
19				
20	S	82/10"		Reddish brown
21				Boring terminated at 21.5'
22				Backfilled with neat cement
23				Groundwater not encountered
24				
25				
26				
27				
28				
29				

Boring Number:	B6	Boring Log Page 1 of 2	
Location:	Junkyard SE of building	Date Started:	9/25/2018
Site Address:	1106 San Pablo Avenue	Date Completed:	9/25/2018
	Pinole, CA 94564	Depth to Groundwater:	26-27'
Project Number:	18-224911.3	Field Technician:	B. Kim
Drill Rig Type:	Ingersoll Rand A400	**Partner Engineering and Science**	
Sampling Equipment:	SPT & Rings	111 Pine Street, #1750	
Borehole Diameter:	6.5"	San Francisco, CA 94111	

Depth	Sample	N-Value	USCS	Description
0				**SURFACE COVER:** Asphalt (approx. 3")
1				**FILL:** Loose gravel/sand material to approx. 6"
2				
3				
4				
5	S	82/11"	PWR	**PARTIALLY WEATHERED ROCK:** Brown, damp, hard, SILTSTONE
6				
7				
8				
9				
10	S	78/11"		
11				
12				
13				
14				
15	R	50/2"		(Dry Density: 58 pcf, Moisture Content: 20.3 %)
16				
17				
18				
19				
20	S	82/10"		Reddish brown
21				
22				
23				
24				
25	S	82/11.5"		Saturated
26			v	**groundwater encountered**
27				
28				
29				Continued on next page

Boring Number:	B6	Boring Log Page 2 of 2	
Location:	NE area of junkyard	Date Started:	9/25/2018
Site Address:	1106 San Pablo Avenue	Date Completed:	9/25/2018
	Pinole, CA 94564	Depth to Groundwater:	26-27'
Project Number:	18-224911.3	Field Technician:	B. Kim
Drill Rig Type:	Ingersoll Rand A400	**Partner Engineering and Science**	
Sampling Equipment:	SPT & Rings	111 Pine Street, #1750	
Borehole Diameter:	6.5"	San Francisco, CA 94111	

Depth	Sample	N-Value	USCS	Description
30	S	86/11"	PWR	Brown, saturated, hard, SILT
31				*sleeve is wet
32				
33				
34				
35	S	50/6"		
36				
37				
38				
39				
40	S	50/5.5"		with little clay
41				
42				
43				
44				
45	R	95/10"		Gray
46				
47				
48				
49				
50	S	82/10"		No recovery
51				Boring terminated at 51.5'
52				Backfilled with neat cement and patched upon completion
53				Groundwater encountered at 26-27'
54				
55				
56				
57				
58				
59				

Boring Number:	B7	Boring Log Page 1 of 1	
Location:	SW area of junkyard	Date Started:	9/25/2018
Site Address:	1106 San Pablo Avenue	Date Completed:	9/25/2018
	Pinole, CA 94564	Depth to Groundwater:	N/A
Project Number:	18-224911.3	Field Technician:	B. Kim
Drill Rig Type:	Ingersoll Rand A400	**Partner Engineering and Science**	
Sampling Equipment:	SPT & Rings	111 Pine Street, #1750	
Borehole Diameter:	6.5"	San Francisco, CA 94111	

Depth	Sample	N-Value	USCS	Description
0				**SURFACE COVER:** Loose gravel/sand area for 6"
1			MH	**NATIVE:** Dark brown, soft, clayey SILT
2				
3				
4				
5	R	88/11"	PWR	**PARTIALLY WEATHERED ROCK:** Brown, damp, hard, SILTSTONE with some sand
6				
7				
8				
9				
10	S	78/11"		
11				
12				
13				
14				
15	R	84/10"		(Dry Density: 56.4 pcf, Moisture Content: 46.3 %)
16				
17				
18				
19				
20	S	78		Reddish brown
21				
22				
23				
24				
25	S	55		stiff
26				Boring terminated at 26.5'
27				Backfilled with neat cement
28				Groundwater not encountered
29				

Technician: M. Helou
Date: 3/19/2021
Project and #: New Residential Development

Page: 1

PERCOLATION FIELD TEST REPORT

Notes & Observations

Perc Test #	P1	Location: Southeast side of building (1106 San Pablo Avenue)	Weather: Overcast/rain/sun in PM

Time	Comments
	Construction: 5 feet bgs, 6 inch diameter borehole, 2 inch diameter, 0.010-inch slotted PVC pipe Top of PVC to gravel = 24 inches (PVC level to grade)

Percolation Test - Pre Soak

Pre Soaking Time -
Time: 9:30
12:30

depth 24 inches

Percolation Reading	Start Time/ End Time	Elapsed Time	WL BTP (in)	WL Δ (in)	Infiltration Rate* (in/hr)	Calculations
1	13:15	30.00	24	0.0	0.0	
	13:45		24			
2	13:45	30.00	24	0.0	0.0	
	14:15		24			
3	14:15	30.00	24	0.0	0.0	
	14:45		24			
4	14:45	30.00	24	0.0	0.0	
	15:15		24			
5	15:15	30.00	24	0.0	0.0	
	15:45		24			
6						
7						
8						

Measured Infiltration Rate (in/hr) = 0.00

Notes:	
btp - below top of pipe	d 1 = Depth to Initial Water Depth (in.)
WL - water level	Δd = Water Level Drop of the Final Period or Stablixed Rate (in)
min - minutes	DIA - Diameter of the boring (in.)
ft - feet	

*Infiltration Rate percolation rate is the flow volume/ flo change/ change in time

Technician: M. Helou

Date: 3/19/2021

Project and #: New Residential Development

Page: 1

PERCOLATION FIELD TEST REPORT

Notes & Observations

Perc Test #	P2	Location: Center of vacant lot (1230 San Pablo Avenue)	Weather: Overcast/rain/sun in PM

Time	Comments
	Construction: 5 feet bgs, 6 inch diameter borehole, 2 inch diameter, 0.010-inch slotted PVC pipe Top of PVC to gravel = 23 inches (PVC level to grade)

Percolation Test - Pre Soak

Pre Soaking Time -

Time: 9:00 12:00

depth 23 inches

Percolation Reading	Start Time/ End Time	Elapsed Time	WL BTP (in)	WL Δ (in)	Infiltration Rate* (in/hr)	Calculations
1	13:00	30.00	23	0.0	0.0	
	13:30		23			
2	13:30	30.00	23	0.0	0.0	
	14:00		23			
3	14:00	30.00	23	0.0	0.0	
	14:30		23			
4	14:30	30.00	23	0.0	0.0	
	15:00		23			
5	15:00	30.00	23	0.0	0.0	
	15:30		23			
6						
7						
8						

Measured Infiltration Rate (in/hr) = 0.00

Notes:	
btp - below top of pipe	d 1 = Depth to Initial Water Depth (in.)
WL - water level	Δd = Water Level Drop of the Final Period or Stabilized Rate (in)
min - minutes	DIA - Diameter of the boring (in.)
ft - feet	

*Infiltration Rate percolation rate is the flow volume/ flo change/ change in time

Technician: M. Helou

Date: 3/19/2021

New Residential Development

Project and #: 18-224911.9

Page: 1

PERCOLATION FIELD TEST REPORT

Notes & Observations

Perc Test #	P3	**Location:** Southeast side of building (1106 San Pablo Avenue)	**Weather:** Overcast/rain/sun in PM

Time	**Comments**
	Construction: 5 feet bgs, 6 inch diameter borehole, 2 inch diameter, 0.010-inch slotted PVC pipe Top of PVC to gravel = 17 inches (PVC level to grade)

Percolation Test - Pre Soak

Pre Soaking Time -

Time: 8:30 depth 17 inches

10.30

Percolation Reading	Start Time/ End Time	Elapsed Time	WL BTP (in)	WL Δ (in)	Infiltration Rate* (in/hr)	Calculations
1	11:00	10.00	17	0.0	0.0	
	11:10		17			
2	11:10	10.00	17	0.0	0.0	
	11:20		17			
3	11:20	10.00	17	0.0	0.0	
	11:30		17			
4	11:30	10.00	17	0.0	0.0	
	11:40		17			
5	11:40	10.00	17	0.0	0.0	
	11:50		17			
6	11:50	10.00	17	0.0	0.0	
	12:00		17			
7	12:00	10.00	17	0.0	0.0	
	12:10		17			
8	12:10	10.00	17	0.0	0.0	
	12:20		17			

Measured Infiltration Rate (in/hr) = 0.00

Notes:	
btp - below top of pipe	d 1 = Depth to Initial Water Depth (in.)
WL - water level	Δd = Water Level Drop of the Final Period or Stablixed Rate (in)
min - minutes	DIA - Diameter of the boring (in.)
ft - feet	

*Infiltration Rate percolation rate is the flow volume/ flo change/ change in time

APPENDIX B

Lab Data

PARTNER

LABORATORY TEST DATA

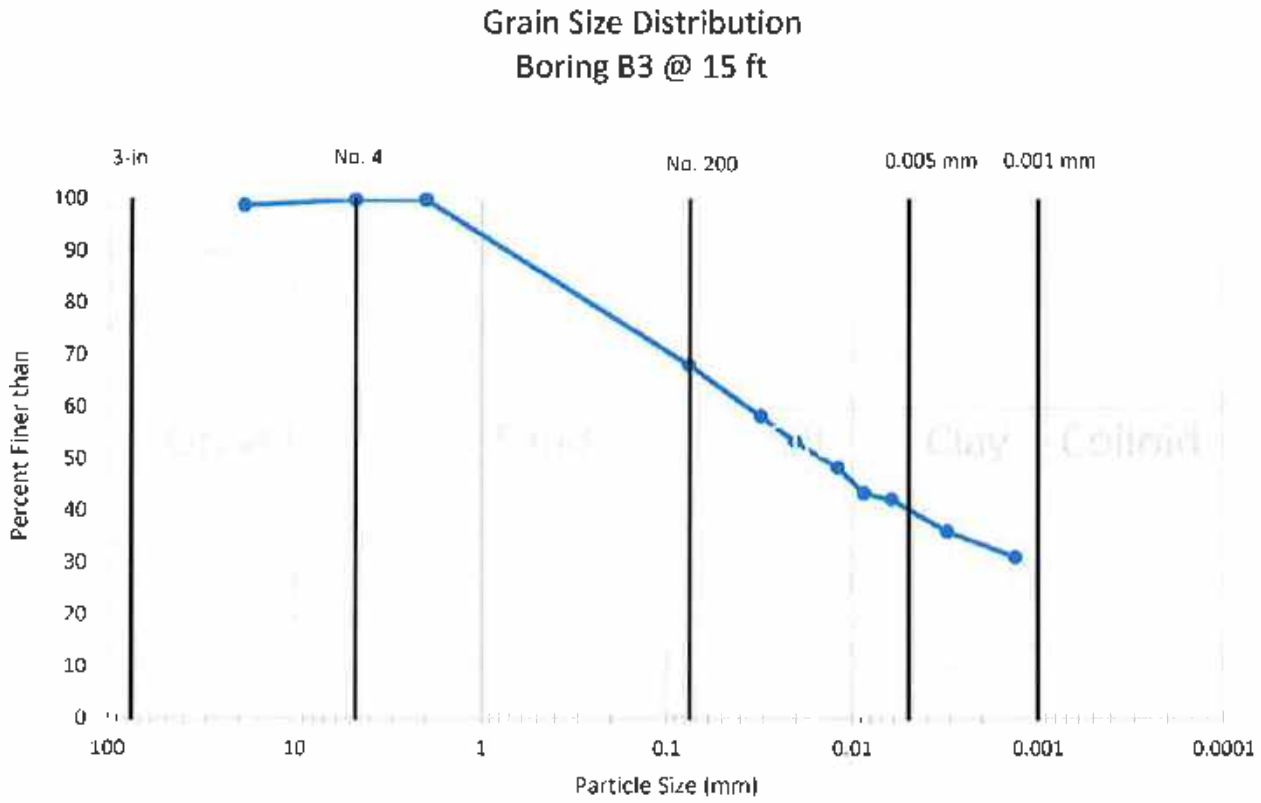
Index Test Results

Soil Sample	Plasticity Index	Liquid Limit	Fines Content (%)	Minus No. 10 Sieve Content (%)
B2 @ 5 feet	-	-	-	100
B3 @ 5 feet	-	-	35	100
B3 @ 10 feet	24	55	-	-
B3 @ 15 feet	-	-	68	99.99

In-Place Moisture and Density

Soil Sample	Dry Density (pcf)	Wet Density (pcf)	Moisture Content (%)
B3 @ 15 feet	81.7	105.7	29.3
B4 @ 5 feet	65.6	94.0	43.3
B5 @ 5 feet	83.0	99.7	20.1
B6 @ 15 feet	58.0	69.7	20.3
B7 @ 15 feet	56.4	82.6	46.3

HYDROMETER TEST DATA



PARTNER

HAMILTON
& Associates

1641 Border Avenue • Torrance, CA 90501 T 310.618.2190 888.618.2190 F 310.618.2191 W hamilton-associates.net

October 16, 2018
H&A Project No. 18-2513
Partner Project No. 18-224911.3

Partner Engineering and Science, Inc.
4518 N.12 Street Suite 201
Phoenix, AZ 85016

Attention: Mr. Matthew Marcus, Technical Director- Geotechnical Engineering

Subject: Laboratory Testing of Soil Samples: Partner (Pinole)
1230 San Pablo Avenue, Pinole, CA

Dear Mr. Marcus:

We have completed the laboratory tests on the samples provided for the subject project. Enclosed is a summary of laboratory test results.

We thank you for the opportunity to provide laboratory testing services. If there are any questions, please do not hesitate to contact the undersigned.

Respectfully submitted,
HAMILTON & ASSOCIATES, INC.

Rosa E. Murrieta
Laboratory Supervisor | Staff Geologist

David T. Hamilton, PE, GE
President

Distribution: (1) Matthew Marcus, mmarcus@partneresi.com
(2) Brett Bova, bbova@partneresi.com

MOISTURE CONTENT AND DENSITY TESTS

Relatively undisturbed soil retained within the rings of the Modified California barrel sampler were tested in the laboratory to determine in-place dry density and moisture content. Test results are presented in Table 1.

DIRECT SHEAR TESTS

Direct shear (ASTM D3080) tests were performed on selected relatively undisturbed samples to determine the shear strength parameters of various soil samples, respectively. The results of these tests are shown graphically on the appended "D" Plates.

HAMILTON
& Associates

TABLE 1: LABORATORY RESULTS

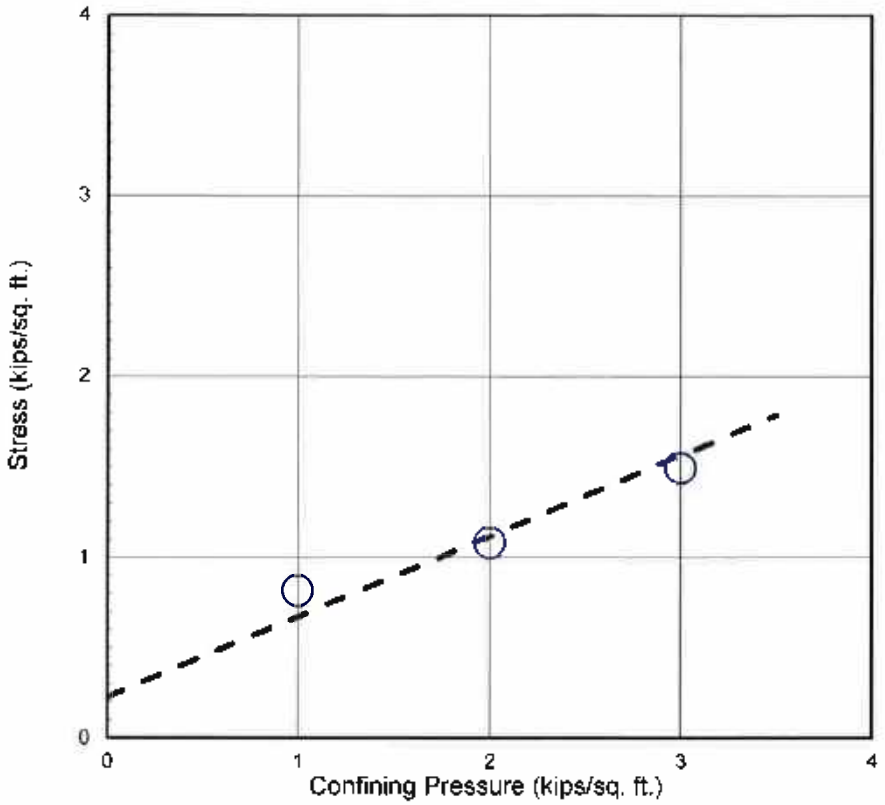
JOB TITLE: Partner (Pinole)
H&A PROJECT NO. 18-2513
SCHEDULED BY: FC
DATE SAMPLES DROPPED OFF. 10/4/2018
DATE ASSIGNED. **10/5/2018**
SHEET 1 of 1

Test Pit/ Boring	Depth (ft)	Sampler /No. Rings	Field Dry Desnity (pcf)	Field Moisture (%)	Atterberg	Consolidation	Corrosivity Suite	Direct Shear	Expansion Index	Fines Fraction (Minus No. 200)	Hydraulic Conductivity	Maximum Density/ Optimum Moisture	No. 200 Wash / Grain Size Analysis (Particle Size)	Particle Size w/ Hydrometer	R-Value	Reshear (4/7 passes)	Specific Gravity	Sulfate	Triaxial (UU)	Triaxial (CU)	Unconfined Compression	Other	Other	Remarks
B-2	5	R	66.1	39.4				x																

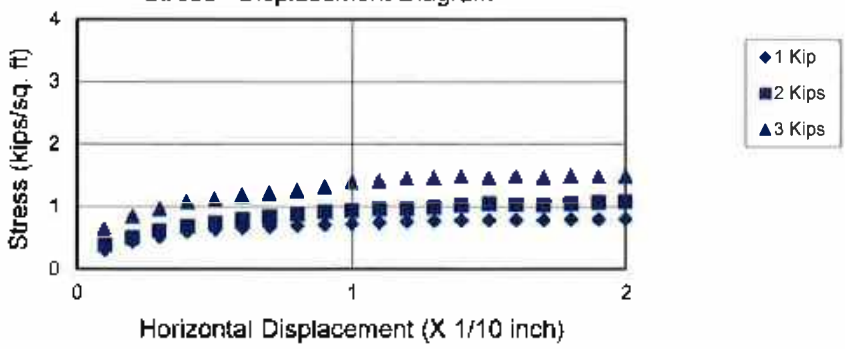
SPECIAL INSTRUCTIONS:

SHEAR TEST RESULTS

Boring 2 at 5 feet



Stress - Displacement Diagram



Dark Brown Silty Clay samples were submerged for at least 24 hours.
The samples had a density of 66.1 lbs./cu.ft. and a moisture content of 39.4 %
Cohesion = 225 psf
Friction Angle = 24 degrees
Based on Ultimate Strength

Geotechnical Engineering Investigation 1230 San Pablo Avenue Pinole, CA	Project No. 18-2513 Plate D-1

HAMILTON & ASSOCIATES

APPENDIX C

General Geotechnical Design and Construction Considerations

Subgrade Preparation

Earthwork – Structural Fill/Excavations

Underground Pipeline Installation – Structural Backfill

Cast-in-Place Concrete

Foundations

Laterally Loaded Structures

Excavations and Dewatering

Waterproofing and Drainage

Chemical Treatment of Soils

Paving

Site Grading and Drainage

PARTNER

SUBGRADE PREPARATION

1. In general, construction should proceed per the project specifications and contract documents, as well as governing jurisdictional guidelines for the project site, including but not limited to the applicable State Department of Transportation, City and/or County, Army Corps of Engineers, Federal Aviation, Occupational Safety and Health Administration (OSHA), and any other governing standard details and specifications. In areas where multiple standards are applicable the more stringent should be considered. Work should be performed by qualified, licensed contractors with experience in the specific type of work in the area of the site.
2. Subgrade preparation in this section is considered to apply to the initial modifications to existing site conditions to prepare for new planned construction.
3. Prior to the start of subgrade preparation, a detailed conflict study including as-builts, utility locating, and potholing should be conducted. Existing features that are to be demolished should also be identified and the geotechnical study should be referenced to determine the need for subgrade preparation, such as over-excavation, scarification and compaction, moisture conditioning, and/or other activities below planned new structural fills, slabs on grade, pavements, foundations, and other structures.
4. The site conflicts, planned demolitions, and subgrade preparation requirements should be discussed in a pre-construction meeting with the pertinent parties, including the geotechnical engineer, inspector, contractors, testing laboratory, surveyor, and others.
5. In the event of preparations that will require work near to existing structures to remain in-place, protection of the existing structures should be considered. This also includes a geotechnical review of excavations near to existing structures and utilities and other concerns discussed in General Geotechnical Design and Construction Considerations, EARTHWORK and UNDERGROUND PIPELINE INSTALLATION.
6. Features to be demolished should be completely removed and disposed of per jurisdictional requirements and/or other conditions set forth as a part of the project. Resulting excavations or voids should be backfilled per the recommendations in the General Geotechnical Design and Construction Considerations, EARTHWORK section.
7. Vegetation, roots, soils containing organic materials, debris and/or other deleterious materials on the site should be removed from structural areas and should be disposed of as above. Replacement of such materials should be in accordance with the recommendations in the General Geotechnical Design and Construction Considerations, EARTHWORK section
8. Subgrade preparation required by the geotechnical report may also call for as over-excavation, scarification and compaction, moisture conditioning, and/or other activities below planned structural fills, slabs on grade, pavements, foundations, and other structures. These requirements should be provided within the geotechnical report. The execution of this work should be observed by the geotechnical engineering representative or inspector for the site. Testing of the subgrade preparation should be performed per the recommendations in the General Geotechnical Design and Construction Considerations, EARTHWORK section.

9. Subgrade Preparation cannot be completed on frozen ground or on ground that is not at a proper moisture condition. Wet subgrades may be dried under favorable weather if they are disked and/or actively worked during hot, dry, weather, when exposed to wind and sunlight. Frozen ground or wet material can be removed and replaced with suitable material. Dry material can be pre-soaked, or can have water added and worked in with appropriate equipment. The soil conditions should be monitored by the geotechnical engineer prior to compaction. Following this type of work, approved subgrades should be protected by direction of surface water, covering, or other methods, otherwise, re-work may be needed.

EARTHWORK – STRUCTURAL FILL

1. In general, construction should proceed per the governing jurisdictional guidelines for the project site, including but not limited to the applicable State Department of Transportation, City and/or County, Army Corps of Engineers, Federal Aviation, Occupational Safety and Health Administration (OSHA), and any other governing standard details and specifications. In areas where multiple standards are applicable the more stringent should be considered. Work should be performed by qualified, licensed contractors with experience in the specific type of work in the area of the site.
2. Earthwork in this section is considered to apply to the re-shaping and grading of soil, rock, and aggregate materials for the purpose of supporting man-made structures. Where earthwork is needed to raise the elevation of the site for the purpose of supporting structures or forming slopes, this is referred to as the placement of structural fill. Where lowering of site elevations is needed prior to the installation of new structures, this is referred to as earthwork excavations.
3. Prior to the start of earthwork operations, the geotechnical study should be referenced to determine the need for subgrade preparation, such as over-excavation or scarification and compaction of unsuitable soils below planned structural fills, slabs on grade, pavements, foundations, and other structures. These required preparations should be discussed in a pre-construction meeting with the pertinent parties, including the geotechnical engineer, inspector, contractors, testing laboratory, surveyor, and others. The preparations should be observed by the inspector or geotechnical engineer representative, and following such subgrade preparation, the geotechnical engineer should observe the prepared subgrade to approve it for the placement of earthwork fills or new structures.
4. Structural fill materials should be relatively free of organic materials, man-made debris, environmentally hazardous materials, and brittle, non-durable aggregate, frozen soil, soil clods or rocks and/or any other materials that can break down and degrade over time.
5. In deeper structural fill zones, expansive soils (greater than 1.5 percent swell at 100 pounds per square foot surcharge) and rock fills (fills containing particles larger than 4 inches and/or containing more than 35 percent gravel larger than ¾-inch diameter or more than 50 percent gravel) may be used with the approval and guidance of the geotechnical report or geotechnical engineer. This may require the placement of geotextiles or other added costs and/or conditions. These conditions may also apply to corrosive soils (less than 2,000 ohm-cm resistivity, more than 50 ppm chloride content, more than 0.1 percent sulfates)
6. For structural fill zones that are closer in depth below planed structures, low expansive materials, and materials with smaller particle size are generally recommended, as directed by the geotechnical report (see criteria above in 5). This may also apply to corrosive soils.
7. For structural fill materials, in general the compaction equipment should be appropriate for the thickness of the loose lift being placed, and the thickness of the loose lift being placed should be at least two times the maximum particle size incorporated in the fill.
8. Fill lift thickness (including bedding) should generally be proportioned to achieve 95 percent or more of a standard proctor (ASTM D689) maximum dry density (MDD) or 90 percent or more of a

modified proctor (ASTM D1557) MDD, depending on the state practices. For subgrades below roadways, the general requirement for soil compaction is usually increased to 100 percent or more of the standard proctor MDD and 95 percent or more of the modified proctor MDD.

9. Soil compaction should be performed at a moisture content generally near optimum moisture content determined by either standard or modified proctor, and ideally within 3 percent below to 1 percent over the optimum for a standard proctor, and from 2 percent below to 2 percent above optimum for a modified proctor.
10. In some instances fill areas are difficult to access. In such cases a low-strength soil-cement slurry can be used in the place of compacted fill soil. In general such fills should be rated to have a 28-day strength of 75 to 125 psi, which in some areas is referred to as a "1-sack" slurry. It should be noted that these materials are wet during placement, and require a period of 2 days (24 hours) to cure before additional fill can be placed above them. Testing of this material can be done using concrete cylinder compression strength testing equipment, but care is needed in removing the test specimens from the molds. Field testing using the ball method, and spread or flow testing is also acceptable.
11. For fills to be placed on slopes, benching of fill lifts is recommended, which may require cutting into existing slopes to create a bench perpendicular to the slope where soil can be placed in a relatively horizontal orientation. For the construction of slopes, the slopes should be over-built and cut back to grade, as the material in the outer portion of the slope may not be well compacted.
12. For subgrade below roadways, runways, railways or other areas to receive dynamic loading, a proofroll of the finished, compacted subgrade should be performed by the geotechnical engineer or inspector prior to the placement of structural aggregate, asphalt or concrete. Proofrolling consists of observing the performance of the subgrade under heavy loaded equipment, such as full, 4,000 Gallon water truck, loaded tandem-axel dump truck or similar. Areas that exhibit instability during proofroll should be marked for additional work prior to approval of the subgrade for the next stage of construction.
13. Quality control testing should be provided on earthwork. Proctor testing should be performed on each soil type, and one-point field proctors should be used to verify the soil types during compaction testing. If compaction testing is performed with a nuclear density gauge, it should be periodically correlated with a sand cone test for each soil type. Density testing should be performed per project specifications and or jurisdictional requirements, but not less than once per 12 inches elevation of any fill area, with additional tests per 12-inch fill area for each additional 7,500 square-foot section or portion thereof.
14. For earthwork excavations, OSHA guidelines should be referenced for sloping and shoring. Excavations over a depth of 20 feet require a shoring design. In the event excavations are planned near to existing structures, the geotechnical engineer should be consulted to evaluate whether such excavation will call for shoring or underpinning the adjacent structure. Pre-construction and post-construction condition surveys and vibration monitoring might also be helpful to evaluate any potential damage to surrounding structures.

15. Excavations into rock, partially weathered rock, cemented soils, boulders and cobbles, and other hard soil or "hard-pan" materials, may result in slower excavation rates, larger equipment with specialized digging tools, and even blasting. It is also not unusual in these situations for screening and or crushing of rock to be called for. Blasting, hard excavating, and material processing equipment have special safety concerns and are more costly than the use of soil excavation equipment. Additionally, this type of excavation, especially blasting, is known to cause vibrations that should be monitored at nearby structures. As above, a pre-blast and post-blast conditions assessment might also be warranted.

UNDERGROUND PIPELINE – STRUCTURAL BACKFILL

1. In general, construction should proceed per the governing jurisdictional guidelines for the project site, including but not limited to the applicable State Department of Transportation, the State Department of Environmental Quality, the US Environmental Protection Agency, City and/or County Public Works, Occupational Safety and Health Administration (OSHA), Private Utility Companies, and any other governing standard details and specifications. In areas where multiple standards are applicable the more stringent should be considered, and in some cases work may take place to multiple different standards. Work should be performed by qualified, licensed contractors with experience in the specific type of work in the area of the site.
2. Underground pipeline in this section is considered to apply to the installation of underground conduits for water, storm water, irrigation water, sewage, electricity, telecommunications, gas, etc. Structural backfill refers to the activity of restoring the grade or establishing a new grade in the area where excavations were needed for the underground pipeline installation.
3. Prior to the start of underground pipeline installation, a detailed conflict study including as-builts, utility locating, and potholing should be conducted. The geotechnical study should be referenced to determine subsurface conditions such as caving soils, unsuitable soils, shallow groundwater, shallow rock and others. In addition, the utility company responsible for the line also will have requirements for pipe bedding and support as well as other special requirements. Also, if the underground pipeline traverses other properties, rights-of-way, and/or easements etc. (for roads, waterways, dams, railways, other utility corridors, etc.) those owners may have additional requirements for construction.
4. The required preparations above should be discussed in a pre-construction meeting with the pertinent parties, including the geotechnical engineer, inspector, contractors, testing laboratory, surveyor, and other stake holders.
5. For pipeline excavations, OSHA guidelines should be referenced for sloping and shoring. Excavations over a depth of 20 feet require a shoring design. In the event excavations are planned near to existing structures or pipelines, the geotechnical engineer should be consulted to evaluate whether such excavation will call for shoring or supporting the adjacent structure or pipeline. A pre-construction and post-construction condition survey and vibration monitoring might also be helpful to evaluate any potential damage to surrounding structures.
6. Excavations into rock, partially weathered rock, cemented soils, boulders and cobbles, and other hard soil or "hard-pan" materials, may result in slower excavation rates, larger equipment with specialized digging tools, and even blasting. It is also not unusual in these situations for screening and or crushing of rock to be called for. Blasting, hard excavating, and material processing equipment have special safety concerns and are more costly than the use soil excavation equipment. Additionally, this type of excavation, especially blasting, is known to cause vibrations that should be monitored at nearby structures. As above, a pre-blast and post-blast conditions assessment might also be warranted.

7. Bedding material requirements vary between utility companies and might depend of the type of pipe material and availability of different types of aggregates in different locations. In general, bedding refers to the material that supports the bottom of the pipe, and extends to 1 foot above the top of the pipe. In general the use of aggregate base for larger diameter pipes (6-inch diameter or more) is recommended lacking a jurisdictionally specified bedding material. Gas lines and smaller diameter lines are often backfilled with fine aggregate meeting the ASTM requirements for concrete sand. In all cases bedding with less than 2,000 ohm-cm resistivity, more than 50 ppm chloride content or more than 0.1 percent sulfates should not be used.
8. Structural backfill materials above the bedding should be relatively free of organic materials, man-made debris, environmentally hazardous materials, frozen material, and brittle, non-durable aggregate, soil clods or rocks and/or any other materials that can break down and degrade over time.
9. In general the backfill soil requirements will depend on the future use of the land above the buried line, but in most cases, excessive settlement of the pipe trench is not considered advisable or acceptable. As such, the structural backfill compaction equipment should be appropriate for the thickness of the loose lift being placed. The thickness of the loose lift being placed should be at least two times the maximum particle size incorporated in the fill. Care should be taken not to damage the pipe during compaction or compaction testing.
10. Fill lift thickness (including bedding) should generally be proportioned to achieve 95 percent or more of a standard proctor (ASTM D689) maximum dry density (MDD) or 90 percent or more of a modified proctor (ASTM D1557) MDD, depending on the state practices (in general the modified proctor is required in California and for projects in the jurisdiction of the Army Corps of Engineers). For backfills within the upper portions of roadway subgrades, the general requirement for soil compaction is usually increased to 100 percent or more of the standard proctor MDD and 95 percent or more of the modified proctor MDD.
11. Soil compaction should be performed at a moisture content generally near optimum moisture content determined by either standard or modified proctor, and ideally within 3 percent below to 1 percent over the optimum for a standard proctor, and from 2 percent below to 2 percent above optimum for a modified proctor.
12. In some instances fill areas are difficult to access. In such cases a low-strength soil-cement slurry can be used in the place of compacted fill soil. In general such fills should be rated to have a 28-day strength of 75 to 125 psi, which in some areas is referred to as a "1-sack" slurry. It should be noted that these materials are wet, and require a period of 2 days (24 hours) to cure before additional fill can be placed above it. Testing of this material can be done using concrete cylinder compression strength testing equipment, but care is needed in removing the test specimens from the molds. Field testing using the ball method, and spread or flow testing is also acceptable.
13. Quality control testing should be provided on structural backfill to assist the contractor in meeting project specifications. Proctor testing should be performed on each soil type, and

one-point field proctors should be used to verify the soil types during compaction testing. If compaction testing is performed with a nuclear density gauge, it should be periodically correlated with a sand cone test for each soil type.

14. Density testing should be performed on structural backfill per project specifications and or jurisdictional requirements, but not less than once per 12 inches elevation in each area, and additional tests for each additional 500 linear-foot section or portion thereof.

CAST-IN-PLACE CONCRETE SLABS-ON-GRADE/STRUCTURES/PAVEMENTS

1. In general, construction should proceed per the governing jurisdictional guidelines for the project site, including but not limited to the applicable American Concrete Institute (ACI), International Code Council (ICC), State Department of Transportation, City and/or County, Army Corps of Engineers, Federal Aviation, Occupational Safety and Health Administration (OSHA), and any other governing standard details and specifications. In areas where multiple standards are applicable the more stringent should be considered. Work should be performed by qualified, licensed contractors with experience in the specific type of work in the area of the site.
2. Cast-in-place concrete (concrete) in this section is considered to apply to the installation of cast-in-place concrete slabs on grade, including reinforced and non-reinforced slabs, structures, and pavements.
3. In areas where concrete is bearing on prepared subgrade or structural fill soils, testing and approval of this work should be completed prior to the beginning of concrete construction.
4. In locations where a concrete is approved to bear on in-place (native) soil or in locations where approved documented fills have been exposed to weather conditions after approval, a concrete subgrade evaluation should be performed prior to the placement of reinforcing steel and or concrete. This can consist of probing with a "t"-handled rod, borings, penetrometer testing, dynamic cone penetration testing, and/or other methods requested by the geotechnical engineer and/or inspector. Where unsuitable, wet, or frozen bearing material is encountered, the geotechnical engineer should be consulted for additional recommendations.
5. Slabs on grade should be placed on a 4-inch thick or more capillary barrier consisting of non-corrosive (more than 2,000 ohm-cm resistivity, less than 50 ppm chloride content and less than 0.1 percent sulfates) aggregate base or open-graded aggregate material. This material should be compacted or consolidated per the recommendations of the structural engineer or otherwise would be covered by the General Considerations for EARTHWORK.
6. Depending on the site conditions and climate, vapor barriers may be required below in-door grade-slabs to receive flooring. This reduces the opportunity for moisture vapor to accumulate in the slab, which could degrade flooring adhesive and result in mold or other problems. Vapor barriers should be specified by the structural engineer and/or architect. The installation of the barrier should be inspected to evaluate the correct product and thickness is used, and that it has not been damaged or degraded.
7. At times when rainfall is predicted during construction, a mud-mat or a thin concrete layer can be placed on prepared and approved subgrades prior to the placement of reinforcing steel or tendons. This serves the purpose of protecting the subgrades from damage once the reinforcement placement has begun.
8. Prior to the placement of concrete, exposed subgrade or base material and forms should be wetted, and form release compounds should be applied. Reinforcement support stands or ties

should be checked. Concrete bases or subgrades should not be so wet that they are softened or have standing water.

9. For a cast-in-place concrete, the form dimensions, reinforcement placement and cover, concrete mix design, and other code requirements should be carefully checked by an inspector before and during placement. The reinforcement should be specified by the structural engineering drawings and calculations.
10. For post-tension concrete, an additional check of the tendons is needed, and a tensioning inspection form should be prepared prior to placement of concrete.
11. For Portland cement pavements, forms an additional check of reinforcing dowels should performed per the design drawings.
12. During placement, concrete should be tested, and should meet the ACI and jurisdictional requirements and mix design targets for slump, air entrainment, unit weight, compressive strength, flexural strength (pavements), and any other specified properties. In general concrete should be placed within 90 minutes of batching at a temperature of less than 90 degrees Fahrenheit. Adding of water to the truck on the jobsite is generally not encouraged.
13. Concrete mix designs should be created by the accredited and jurisdictionally approved supplier to meet the requirements of the structural engineer. In general a water/cement ratio of 0.45 or less is advisable, and aggregates, cement, flyash, and other constituents should be tested to meet ASTM C-33 standards, including Alkali Silica Reaction (ASR). To further mitigate the possibility of concrete degradation from corrosion and ASR, Type II or V Portland Cement should be used, and fly ash replacement of 25 percent is also recommended. Air entrained concrete should be used in areas where concrete will be exposed to frozen ground or ambient temperatures below freezing.
14. Control joints are recommended to improve the aesthetics of the finished concrete by allowing for cracking within partially cut or grooved joints. The control joints are generally made to depths of about 1/4 of the slab thickness and are generally completed within the first day of construction. The spacing should be laid out by the structural engineer, and is often in a square pattern. Joint spacing is generally 5 to 15 feet on-center but this can vary and should be decided by the structural engineer. For pavements, construction joints are generally considered to function as control joints. Post-tensioned slabs generally do not have control joints.
15. Some slabs are expected to meet flatness and levelness requirements. In those cases, testing for flatness and levelness should be completed as soon as possible, usually the same day as concrete placement, and before cutting of control joints if possible. Roadway smoothness can also be measured, and is usually specified by the jurisdictional owner if is required.
16. Prior to tensioning of post-tension structures, placement of soil backfills or continuation of building on newly-placed concrete, a strength requirement is generally required, which should be specified by the structural engineer. The strength progress can be evaluated by the use of concrete compressive strength cylinders or maturity monitoring in some jurisdictions. Advancing with backfill, additional concrete work or post-tensioning without reaching strength benchmarks could result in damage and failure of the concrete, which could result in danger and harm to nearby people and property.

17. In general, concrete should not be exposed to freezing temperatures in the first 7 days after placement, which may require insulation or heating. Additionally, in hot or dry, windy weather, misting, covering with wet burlap or the use of curing compounds may be called for to reduce shrinkage cracking and curling during the first 7 days.

FOUNDATIONS

1. In general, construction should proceed per the governing jurisdictional guidelines for the project site, including but not limited to the applicable American Concrete Institute (ACI), International Code Council (ICC), State Department of Transportation, City and/or County, Army Corps of Engineers, Federal Aviation, Occupational Safety and Health Administration (OSHA), and any other governing standard details and specifications. In areas where multiple standards are applicable the more stringent should be considered. Work should be performed by qualified, licensed contractors with experience in the specific type of work in the area of the site.
2. Foundations in this section are considered to apply to the construction of structural supports which directly transfer loads from man-made structures into the earth. In general, these include shallow foundations and deep foundations. Shallow foundations are generally constructed for the purpose of distributing the structural loads horizontally over a larger area of earth. Some types of shallow foundations (or footings) are spread footings, continuous footings, mat foundations, and reinforced slabs-on-grade. Deep foundations are generally designed for the purpose of distributing the structural loads vertically deeper into the soil by the use of end bearing and side friction. Some types of deep foundations are driven piles, auger-cast piles, drilled shafts, caissons, helical piers, and micro-piles.
3. For shallow foundations, the minimum bearing depth considered should be greater than the maximum design frost depth for the location of construction. This can be found on frost depth maps (ICC), but the standard of practice in the city and/or county should also be consulted. In general the bearing depth should never be less than 18 inches below planned finished grades.
4. Shallow continuous foundations should be sized with a minimum width of 18 inches and isolated spread footings should be a minimum of 24 inches in each direction. Foundation sizing, spacing, and reinforcing steel design should be performed by a qualified structural engineer.
5. The geotechnical engineer will provide an estimated bearing capacity and settlement values for the project based on soil conditions and estimated loads provided by the structural engineer. It is assumed that appropriate safety factors will be applied by the structural engineer.
6. In areas where shallow foundations are bearing on prepared subgrade or structural fill soils, testing and approval of this work should be completed prior to the beginning of foundation construction.
7. In locations where the shallow foundations are approved to bear on in-place (native) soil or in locations where approved documented fills have been exposed to weather conditions after approval, a foundation subgrade evaluation should be performed prior to the placement of reinforcing steel. This can consist of probing with a "t"-handled rod, borings, penetrometer testing, dynamic cone penetration testing, and/or other methods requested by the geotechnical engineer and/or inspector. Where unsuitable foundation bearing material is encountered, the geotechnical engineer should be consulted for additional recommendations.
8. For shallow foundations to bear on rock, partially weathered rock, hard cemented soils, and/or boulders, the entire foundation system should bear directly on such material. In this case, the rock surface should be prepared so that it is clean, competent, and formed into a roughly

horizontal, stepped base. If that is not possible, then the entire structure should be underlain by a zone of structural fill. This may require the over-excavation in areas of rock removal and/or hard dig. In general this zone can vary in thickness but it should be a minimum of 1 foot thick. The geotechnical engineer should be consulted in this instance.

9. At times when rainfall is predicted during construction, a mud-mat or a thin concrete layer can be placed on prepared and approved subgrades prior to the placement of reinforcing steel. This serves the purpose of protecting the subgrades from damage once the reinforcing steel placement has begun.
10. For cast-in-place concrete foundations, the excavations dimensions, reinforcing steel placement and cover, structural fill compaction, concrete mix design, and other code requirements should be carefully checked by an inspector before and during placement.

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11. For deep foundations, the geotechnical engineer will generally provide design charts that provide foundations axial capacity and uplift resistance at various depths given certain-sized foundations. These charts may be based on blow count data from drilling and or laboratory testing. In general safety factors are included in these design charts by the geotechnical engineer.
12. In addition, the geotechnical engineer may provide other soil parameters for use in the lateral resistance analysis. These parameters are usually raw data, and safety factors should be provided by the shaft designer. Sometimes, direct shear and or tri-axial testing is performed for this analysis.
13. In general the spacing of deep foundations is expected to be 6 shaft diameters or more. If that spacing is reduced, a group reduction factor should be applied by the structural engineer to the foundation capacities per FHWA guidelines. The spacing should not be less than 2.5 shaft diameters.
14. For deep foundations, a representative of the geotechnical engineer should be on-site to observe the excavations (if any) to evaluate that the soil conditions are consistent with the findings of the geotechnical report. Soil/rock stratigraphy will vary at times, and this may result in a change in the planned construction. This may require the use of fall protection equipment to perform observations close to an open excavation.
15. For driven foundations, a representative of the geotechnical engineer should be on-site to observe the driving process and to evaluate that the resistance of driving is consistent with the design assumptions. Soil/rock stratigraphy will vary at times and may this may result in a change in the planned construction.
16. For deep foundations, the size, depth, and ground conditions should be verified during construction by the geotechnical engineer and/or inspector responsible. Open excavations should be clean, with any areas of caving and groundwater seepage noted. In areas below the groundwater table, or areas where slurry is used to keep the trench open, non-destructive testing techniques should be used as outlined below.
17. Steel members including structural steel piles, reinforcing steel, bolts, threaded steel rods, etc. should be evaluated for design and code compliance prior to pick-up and placement in the

foundation. This includes verification of size, weight, layout, cleanliness, lap-splices, etc. In addition, if non-destructive testing such as crosshole sonic logging or gamma-gamma logging is required, access tubes should be attached to the steel reinforcement prior to placement, and should be relatively straight, capped at the bottom, and generally kept in-round. These tubes must be filled with water prior to the placement of concrete.

18. In cases where steel welding is required, this should be observed by a certified welding inspector.
19. In many cases, a crane will be used to lower steel members into the deep foundations. Crane picks should be carefully planned, including the ground conditions at placement of outriggers, wind conditions, and other factors. These are not generally provided in the geotechnical report, but can usually be provided upon request.
20. Cast-in-place concrete, grout or other cementations materials should be pumped or distributed to the bottom of the excavation using a tremmie pipe or hollow stem auger pipe. Depending on the construction type, different mix slumps will be used. This should be carefully checked in the field during placement, and consolidation of the material should be considered. Use of a vibrator may be called for.
21. For work in a wet excavation (slurry), the concrete placed at the bottom of the excavation will displace the slurry as it comes up. The upper layer of concrete that has interacted with the slurry should be removed and not be a part of the final product.
22. Bolts or other connections to be set in the top after the placement is complete should be done immediately after final concrete placement, and prior to the on-set of curing.
23. For shafts requiring crosshole sonic logging or gamma-gamma testing, this should be performed within the first week after placement, but not before a 2 day curing period. The testing company and equipment manufacturer should provide more details on the requirements of the testing.
24. Load testing of deep foundations is recommended, and it is often a project requirement. In some cases, if test piles are constructed and tested, it can result in a significant reduction of the amount of needed foundations. The load testing frame and equipment should be sized appropriately for the test to be performed, and should be observed by the geotechnical engineer or inspector as it is performed. The results are provided to the structural engineer for approval.

LATERALLY LOADED STRUCTURES - RETAINING WALLS/SLOPES/DEEP FOUNDATIONS/MISCELLANEOUS

1. In general, construction should proceed per the governing jurisdictional guidelines for the project site, including but not limited to the applicable American Concrete Institute (ACI), International Code Council (ICC), State Department of Transportation, City and/or County, Army Corps of Engineers, Federal Aviation, Occupational Safety and Health Administration (OSHA), and any other governing standard details and specifications. In areas where multiple standards are applicable the more stringent should be considered. Work should be performed by qualified, licensed contractors with experience in the specific type of work in the area of the site.
2. Laterally loaded structures for this section are generally meant to describe structures that are subjected to loading roughly horizontal to the ground surface. Such structures include retaining walls, slopes, deep foundations, tall buildings, box culverts, and other buried or partially buried structures.
3. The recommendations put forth in General Geotechnical Design and Construction Considerations for FOUNDATIONS, CAST-IN-PLACE CONCRETE, EARTHWORK, and SUBGRADE PREPARATION should be reviewed, as they are not all repeated in this section, but many of them will apply to the work. Those recommendations are incorporated by reference herein.
4. Laterally loaded structures are generally affected by overburden pressure, water pressure, surcharges, and other static loads, as well as traffic, seismic, wind, and other dynamic loads. The structural engineer must account for these loads. In addition, eccentric loading of the foundation should be evaluated and accounted for by the structural engineer. The structural engineer is also responsible for applying the appropriate factors of safety to the raw data provided by the geotechnical engineer.
5. The geotechnical report should provide data regarding soil lateral earth pressures, seismic design parameters, and groundwater levels. In the report the pressures are usually reported as raw data in the form of equivalent fluid pressures for three cases. 1. Static is for soil pressure against a structure that is fixed at top and bottom, like a basement wall or box culvert. 2. Active is for soil pressure against a wall that is free to move at the top, like a retaining wall. 3. Passive is for soil that is resisting the movement of the structure, usually at the toe of the wall where the foundation and embedded section are located. The structural engineer is responsible for deciding on safety factors for design parameters and groundwater elevations based on the raw data in the geotechnical report.
6. Generally speaking, direct shear or tri-axial shear testing should be performed for this evaluation in cases of soil slopes or unrestrained soil retaining walls over 6 feet in height or in lower walls in some cases based on the engineer's judgment. For deep foundations and completely buried structures, this testing will be required per the discretion of the structural engineer.
7. For non-confined retaining walls (walls that are not attached at the top) and slopes, a geotechnical engineer should perform overall stability analysis for sliding, overturning, and global stability. For walls that are structurally restrained at the top, the geotechnical engineer does not

generally perform this analysis. Internal wall stability should be designed by the structural engineer.

8. Cut slopes into rock should be evaluated by an engineering geologist, and rock coring to identify the orientation of fracture plans, faults, bedding planes, and other features should be performed. An analysis of this data will be provided by the engineering geologist to identify modes of failure including sliding, wedge, and overturning, and to provide design and construction recommendations.
9. For laterally loaded deep foundations that support towers, bridges or other structures with high lateral loads, geotechnical reports generally provide parameters for design analysis which is performed by the structural engineer. The structural engineer is responsible for applying appropriate safety factors to the raw data from the geotechnical engineer.
10. Construction recommendations for deep foundations can be found in the General Geotechnical Design and Construction Considerations-FOUNDATIONS section.
11. Construction of retaining walls often requires temporary slope excavations and shoring, including soil nails, soldier piles and lagging or laid-back slopes. This should be done per OSHA requirements and may require specialty design and contracting.
12. In general, surface water should not be directed over a slope or retaining wall, but should be captured in a drainage feature trending parallel to the slope, with an erosion protected outlet to the base of the wall or slope.
13. Waterproofing for retaining walls is generally required on the backfilled side, and they should be backfilled with an 18-inch zone of open graded aggregate wrapped in filter fabric or a synthetic draining product, which outlets to weep holes or a drain at the base of the wall. The purpose of this zone, which is immediately behind the wall, is to relieve water pressures from building behind the wall.
14. Backfill compaction around retaining walls and slopes requires special care. Lighter equipment should be considered, and consideration to curing of cementitious materials used during construction will be called for. Additionally, if mechanically stabilized earth walls are being constructed, or if tie-backs are being utilized, additional care will be necessary to avoid damaging or displacing the materials. Use of heavy or large equipment, and/or beginning of backfill prior to concrete strength verification can create dangers to construction and human safety. Please refer to the General Geotechnical Design and Construction Considerations-CAST-IN-PLACE CONCRETE section. These concerns will also apply to the curing of cell grouting within reinforced masonry walls.
15. Usually safety features such as handrails are designed to be installed at the top of retaining walls and slopes. Prior to their installation, workers in those areas will need to be equipped with appropriate fall protection equipment.

EXCAVATION AND DEWATERING

1. In general, construction should proceed per the governing jurisdictional guidelines for the project site, including but not limited to the applicable American Concrete Institute (ACI), International Code Council (ICC), State Department of Transportation, City and/or County, Army Corps of Engineers, Federal Aviation, Occupational Safety and Health Administration (OSHA), and any other governing standard details and specifications. In areas where multiple standards are applicable the more stringent should be considered. Work should be performed by qualified, licensed contractors with experience in the specific type of work in the area of the site.
2. Excavation and Dewatering for this section are generally meant to describe structures that are intended to create stable, excavations for the construction of infrastructure near to existing development and below the groundwater table.
3. The recommendations put forth in General Geotechnical Design and Construction Considerations for LATERALLY LOADED STRUCTURES, FOUNDATIONS, CAST-IN-PLACE CONCRETE, EARTHWORK, and SUBGRADE PREPARATION should be reviewed, as they are not all repeated in this section, but many of them will apply to the work. Those recommendations are incorporated by reference herein.
4. The site excavations will generally be affected by overburden pressure, water pressure, surcharges, and other static loads, as well as traffic, seismic, wind, and other dynamic loads. The structural engineer must account for these loads as described in Section 5.2 of this report. In addition, eccentric loading of the foundation should be evaluated and accounted for by the structural engineer. The structural engineer is also responsible for applying the appropriate factors of safety to the raw data provided by the geotechnical engineer.
5. The geotechnical report should provide data regarding soil lateral earth pressures, seismic design parameters, and groundwater levels. In the report the pressures are usually reported as raw data in the form of equivalent fluid pressures for three cases. 1. Static is for soil pressure against a structure that is fixed at top and bottom, like a basement wall or box culvert. 2. Active is for soil pressure against a wall that is free to move at the top, like a retaining wall. 3. Passive is for soil that is resisting the movement of the structure, usually at the toe of the wall where the foundation and embedded section are located. The structural engineer is responsible for deciding on safety factors for design parameters and groundwater elevations based on the raw data in the geotechnical report.
6. The parameters provided above are based on laboratory testing and engineering judgment. Since numerous soil layers with different properties will be encountered in a large excavation, assumptions and judgment are used to generate the equivalent fluid pressures to be used in design. Factors of safety are not included in those numbers and should be evaluated prior to design.
7. Groundwater, if encountered will dramatically change the stability of the excavation. In addition, pumping of groundwater from the bottom of the excavation can be difficult and costly, and it can result in potential damage to nearby structures if groundwater drawdown occurs. As such, we

recommend that groundwater monitoring be performed across the site during design and prior to construction to assist in the excavation design and planning.

8. Groundwater pumping tests should be performed if groundwater pumping will be needed during construction. The pumping tests can be used to estimate drawdown at nearby properties, and also will be needed to determine the hydraulic conductivity of the soil for the design of the dewatering system.
9. For excavation stabilization in granular and dense soil, the use of soldier piles and lagging is recommended. The soldier pile spacing and size should be determined by the structural engineer based on the lateral loads provided in the report. In general, the spacing should be more than two pile diameters, and less than 8 feet. Soldier piles should be advanced 5 feet or more below the base of the excavation. Passive pressures from Section 5.2 can be used in the design of soldier piles for the portions of the piles below the excavation.
10. If the piles are drilled, they should be grouted in-place. If below the groundwater table, the grouting should be accomplished by tremmie pipe, and the concrete should be a mix intended for placement below the groundwater table. For work in a wet excavation, the concrete placed at the bottom of the excavation will displace the water as it comes up. The upper layer of concrete that has interacted with the water should be removed and not be a part of the final product. Lagging should be specially designed timber or other lagging. The temporary excavation will need to account for seepage pressures at the toe of the wall as well as hydrostatic forces behind the wall.
11. Depending on the loading, tie back anchors and/or soil nails may be needed. These should be installed beyond the failure envelope of the wall. This would be a plane that is rotated upward 55 degrees from horizontal. The strength of the anchors behind this plane should be considered, and bond strength inside the plane should be ignored. If friction anchors are used, they should extend 10 feet or more beyond the failure envelope. Evaluation of the anchor length and encroachment onto other properties, and possible conflicts with underground utilities should be carefully considered. Anchors are typically installed 25 to 40 degrees below horizontal. The capacity of the anchors should be checked on 10% of locations by loading to 200% of the design strength. All should be loaded to 120% of design strength, and should be locked off at 80%
12. The shoring and tie backs should be designed to allow less than ½ inch of deflection at the top of the excavation wall, where the wall is within an imaginary 1:1 line extending downward from the base of surrounding structures. This can be expanded to 1 inch of deflection if there is no nearby structure inside that plane. An analysis of nearby structures to locate their depth and horizontal position should be conducted prior to shored excavation design.
13. Assuming that the excavations will encroach below the groundwater table, allowances for drainage behind and through the lagging should be made. The drainage can be accomplished by using an open-graded gravel material that is wrapped in geotextile fabric. The lagging should allow for the collected water to pass through the wall at select locations into drainage trenches below the excavation base. These trenches should be considered as sump areas where groundwater can be pumped out of the excavation.

14. The pumped groundwater needs to be handled properly per jurisdictional guidelines.
15. In general, surface water should not be directed over a slope or retaining wall, but should be captured in a drainage feature trending parallel to the slope, with an erosion protected outlet to the base of the wall or slope.
16. Safety features such as handrails or barriers are to be designed to be installed at the top of retaining walls and slopes. Prior to their installation, workers in those areas will need to be equipped with appropriate fall protection equipment.

Waterproofing and Back Drainage

1. In general, construction should proceed per the governing jurisdictional guidelines for the project site, including but not limited to the applicable American Concrete Institute (ACI), International Code Council (ICC), State Department of Transportation, City and/or County, Army Corps of Engineers, Federal Aviation, Occupational Safety and Health Administration (OSHA), and any other governing standard details and specifications. In areas where multiple standards are applicable the more stringent should be considered. Work should be performed by qualified, licensed contractors with experience in the specific type of work in the area of the site.
2. Waterproofing and Back drainage structures for this section are generally meant to describe permanent subgrade structures that are planned to be below the historic high groundwater elevation of 20 feet below existing grades.
3. The recommendations put forth in General Geotechnical Design and Construction Considerations for FOUNDATIONS, CAST-IN-PLACE CONCRETE, EARTHWORK, and SUBGRADE PREPARATION should be reviewed, as they are not all repeated in this section, but many of them will apply to the work. Those recommendations are incorporated by reference herein.
4. In general, surface water should not be directed over a slope or retaining wall, but should be captured in a drainage feature trending parallel to the slope, with an erosion protected outlet to the base of the wall or slope.
5. Waterproofing for retaining walls is generally required on the backfilled side, and they should be backfilled with an 18-inch zone of open graded aggregate wrapped in filter fabric or a synthetic draining product, which outlets to weep holes or a drain at the base of the wall. The purpose of this zone, which is immediately behind the wall, is to relieve water pressures from building behind the wall.
6. For the basement walls on this site, sump pumps will be needed to reduce the build-up of water in the basement. The design should be for a historic high groundwater level of 20 feet bgs. The pumping system should be designed to keep the slab and walls relatively dry so that mold, efflorescence, and other detrimental effects to the concrete structure will not result.
7. Backfill compaction around retaining walls and slopes requires special care. Lighter equipment should be considered, and consideration to curing of cementitious materials used during construction will be called for. Additionally, if mechanically stabilized earth walls are being constructed, or if tie-backs are being utilized, additional care will be necessary to avoid damaging or displacing the materials. Use of heavy or large equipment, and/or beginning of backfill prior to concrete strength verification can create dangers to construction and human safety. Please refer to the General Geotechnical Design and Construction Considerations-CAST-IN-PLACE CONCRETE section. These concerns will also apply to the curing of cell grouting within reinforced masonry walls.

CHEMICAL TREATMENT OF SOIL

1. In general, construction should proceed per the governing jurisdictional guidelines for the project site, including but not limited to the applicable American Concrete Institute (ACI), International Code Council (ICC), State Department of Transportation, State Department of Environmental Quality, the US Environmental Protection Agency, City and/or County, Army Corps of Engineers, Federal Aviation, Occupational Safety and Health Administration (OSHA), and any other governing standard details and specifications. In areas where multiple standards are applicable the more stringent should be considered. Work should be performed by qualified, licensed contractors with experience in the specific type of work in the area of the site.
2. Chemical treatment of soil for this section is generally meant to describe the process of improving soil properties for a specific purpose, using cement or chemical lime.
3. A mix design should be performed by the geotechnical engineer to help it meet the specific strength, plasticity index, durability, and/or other desired properties. The mix design should be performed using the proposed chemical lime or cement proposed for use by the contractor, along with samples of the site soil that are taken from the material to be used in the process.
4. For the mix design the geotechnical engineer should perform proctor testing to determine optimum moisture content of the soil, and then mix samples of the soil at 3 percent above optimum moisture content with varying concentrations of lime or cement. The samples will be prepared and cured per ASTM standards, and then after 7-days for curing, they will be tested for compression strength. Durability testing goes on for 28 days.
5. Following this testing, the geotechnical engineer will provide a recommended mix ratio of cement or chemical lime in the geotechnical report for use by the contractor. The geotechnical engineer will generally specify a design ratio of 2 percent more than the minimum to account for some error during construction.
6. Prior to treatment, the in-place soil moisture should be measured so that the correct amount of water can be used during construction. Work should not be performed on frozen ground.
7. During construction, special considerations for construction of treated soils should be followed. The application process should be conducted to prevent the loss of the treatment material to wind which might transport the materials off site, and workers should be provided with personal protective equipment for dust generated in the process.
8. The treatment should be applied evenly over the surface, and this can be monitored by use of a pan placed on the subgrade. This can also be tested by preparing test specimens from the in-place mixture for laboratory testing.
9. Often, after or during the chemical application, additional water may be needed to activate the chemical reaction. In general, it should be maintained at about 3 percent or more above optimum moisture. Following this, mixing of the applied material is generally performed using specialized equipment.
10. The total amount of chemical provided can be verified by collecting batch tickets from the delivery trucks, and the depth of the treatment can be verified by digging of test pits, and the use of reagents that react with lime and or cement.

11. For the use of lime treatment, compaction should be performed after a specified amount of time has passed following mixing and re-grading. For concrete, compaction should be performed immediately after mixing and re-grading. In both cases, some swelling of the surface should be expected. Final grading should be performed the following day of the initial work for lime treatment, and within 2 to 4 hours for soil cement.
12. Quality control testing of compacted treated subgrades should be performed per the recommendations of the geotechnical report, and generally in accordance with General Geotechnical Design and Construction Considerations - EARTHWORK

PAVING

1. In general, construction should proceed per the governing jurisdictional guidelines for the project site, including but not limited to the applicable American Concrete Institute (ACI), International Code Council (ICC), State Department of Transportation, City and/or County, Army Corps of Engineers, Federal Aviation, Occupational Safety and Health Administration (OSHA), and any other governing standard details and specifications. In areas where multiple standards are applicable the more stringent should be considered. Work should be performed by qualified, licensed contractors with experience in the specific type of work in the area of the site.
2. Paving for this section is generally meant to describe the placement of surface treatments on travel-ways to be used by rubber-tired vehicles, such as roadways, runways, parking lots, etc.
3. The geotechnical engineer is generally responsible for providing structural analysis to recommend the thickness of pavement sections, which can include asphalt, concrete pavements, aggregate base, cement or lime treated aggregate base, and cement or lime treated subgrades.
4. The civil engineer is generally responsible for determining which surface finishes and mixes are appropriate, and often the owner, general contractor and/or other party will decide on lift thickness, the use of tack coats and surface treatments, etc.
5. The geotechnical engineer will generally be provided with the planned traffic loading, as well as reliability, design life, and serviceability factors by the jurisdiction, traffic engineer, designer, and/or owner. The geotechnical study will provide data regarding soil resiliency and strength. A pavement modeling software is generally used to perform the analysis for design, however, jurisdictional minimum sections also must be considered, as well as construction considerations and other factors.
6. The geotechnical report will generally provide pavement section thicknesses if requested.
7. For construction of overlays, where new pavement is being placed on old pavement, an evaluation of the existing pavement is needed, which should include coring the pavement, evaluation of the overall condition and thickness of the pavement, and evaluation of the pavement base and subgrade materials.
8. In general, the existing pavement is milled and treated with a tack coat prior to the placement of new pavement for the purpose of creating a stronger bond between the old and new material. This is also a way of removing aged asphalt and helping to maintain finished grades closer to existing conditions grading and drainage considerations.
9. If milling is performed, a minimum of 2 inches of existing asphalt should be left in-place to reduce the likelihood of equipment breaking through the asphalt layer and destroying its integrity. After milling and before the placement of tack coat, the surface should be evaluated for cracking or degradation. Cracked or degraded asphalt should be removed, spanned with geosynthetic reinforcement, or be otherwise repaired per the direction of the civil and or geotechnical engineer prior to continuing construction. Proofrolling may be requested.
10. For pavements to be placed on subgrade or base materials, the subgrade and base materials should be prepared per the General Geotechnical Design and Construction Considerations – EARTHWORK section.

11. Following the proofrolling as described in the General Geotechnical Design and Construction Considerations – EARTHWORK section, the application of subgrade treatment, base material, and paving materials can proceed per the recommendations in the geotechnical report and/or project plans. The placement of pavement materials or structural fills cannot take place on frozen ground.
12. The placement of aggregate base material should conform to the jurisdictional guidelines. In general the materials should be provided by an accredited supplier, and the material should meet the standards of ASTM C-33. Material that has been stockpiled and exposed to weather including wind and rain should be retested for compliance since fines could be lost. Frozen material cannot be used.
13. The placement of asphalt material should conform to the jurisdictional guidelines. In general the materials should be provided by an accredited supplier, and the material should meet the standards of ASTM C-33. The material can be placed in a screed by end-dumping, or it can be placed directly on the paving surface. The temperature of the mix at placement should generally be on the order of 300 degrees Fahrenheit at time of placement and screeding.
14. Compaction of the screeded asphalt should begin as soon as practical after placement, and initial rolling should be performed before the asphalt has cooled significantly. Compaction equipment should have vibratory capabilities, and should be of appropriate size and weight given the thickness of the lift being placed and the sloping of the ground surface.
15. In cold and/or windy weather, the cooling of the screeded asphalt is a quality issue, so preparations should be made to perform screeding immediately after placement, and compaction immediately after screeding.
16. Quality control testing of the asphalt should be performed during placement to verify compaction and mix design properties are being met and that delivery temperatures are correct. Results of testing data from asphalt laboratory testing should be provided within 24 hours of the paving.

SITE GRADING AND DRAINAGE

1. In general, construction should proceed per the governing jurisdictional guidelines for the project site, including but not limited to the applicable American Concrete Institute (ACI), International Code Council (ICC), State Department of Transportation, State Department of Environmental Quality, the US Environmental Protection Agency, City and/or County, Army Corps of Engineers, Federal Aviation, Occupational Safety and Health Administration (OSHA), and any other governing standard details and specifications. In areas where multiple standards are applicable the more stringent should be considered. Work should be performed by qualified, licensed contractors with experience in the specific type of work in the area of the site.
2. Site grading and drainage for this section is generally meant to describe the effect of new construction on surface hydrology, which impacts the flow of rainfall or other water running across, onto or off-of, a newly constructed or modified development.
3. This section does not apply to the construction of site grading and drainage features. Recommendations for the construction of such features are covered in General Geotechnical Design and Construction Considerations for Earthwork – Structural Fills section and Underground Pipeline Installation – Backfill section.
4. In general, surface water flows should be directed towards storm drains, natural channels, retention or detention basins, swales, and/or other features specifically designed to capture, store, and or transmit them to specific off-site outfalls.
5. The surface water flow design is generally performed by a site civil engineer, and it can be impacted by hydrology, roof lines, and other site structures that do not allow for water to infiltrate into the soil, and that modify the topography of the site.
6. Soil permeability, density, and strength properties are relevant to the design of storm drain systems, including dry wells, retention basins, swales, and others. These properties are usually only provided in a geotechnical report if specifically requested, and recommendations will be provided in the geotechnical report in those cases.
7. Structures or site features that are not a part of the surface water drainage system should not be exposed to surface water flows, standing water or water infiltration. In general, roof drains and scuppers, exterior slabs, pavements, landscaping, etc. should be constructed to drain water away from structures and foundations. The purpose of this is to reduce the opportunity for water damage, erosion, and/or altering of structural soil properties by wetting. In general, a 5 percent or more slope away from foundations, structural fills, slopes, structures, etc. should be maintained.
8. Special considerations should be used for slopes and retaining walls, as described in the General Geotechnical Design and Construction Considerations - LATERALLY LOADED STRUCTURES section.
9. Additionally, landscaping features including irrigation emitters and plants that require large amounts of water should not be placed near to new structures, as they have the potential to alter soil moisture states. Changing of the moisture state of soil that provides structural support can lead to damage to the supported structures.

PARTNER
Engineering and Science, Inc.

PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT

New Residential Development
600 Roble Avenue,
1106 and 1230 San Pablo Avenue
Pinole, California 94564

Report Date: March 5, 2021
Partner Project No. 18-224911.8

Prepared for:

MRK Partners
108 Standard Street, Suite 300
El Segundo, California 90245

PARTNER
Engineering and Science, Inc.

March 5, 2021

Mr. Ben Kurzius
MRK Partners
108 Standard Street, Suite 300
El Segundo, California 90245

Subject: Phase I Environmental Site Assessment
New Residential Development
600 Roble Avenue, 1106 San Pablo Ave., and 1230 San Pablo Ave.
Pinole, California 94564
Partner Project No. 18-224911.8

Dear Mr. Kurzius:

Partner Engineering and Science, Inc. (Partner) is pleased to provide the results of the *Phase I Environmental Site Assessment* (Phase I ESA) report of the abovementioned address (the "subject property"). This assessment was performed in conformance with the scope and limitations as detailed in the ASTM Practice E1527-13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.

This assessment included a site reconnaissance as well as research and interviews with representatives of the public, property ownership, site manager, and regulatory agencies. An assessment was made, conclusions stated, and recommendations outlined.

We appreciate the opportunity to provide environmental services to you. If you have any questions concerning this report, or if we can assist you in any other matter, please contact me at (818) 337-1203.

Sincerely,

Misty Ponce
Principal

2154 Torrance Blvd., Suite 200, Torrance, CA 90501 ◊ Phone 800-419-4923 ◊ Fax 866-928-7418

EXECUTIVE SUMMARY

Partner Engineering and Science, Inc. (Partner) has performed a Phase I Environmental Site Assessment (ESA) in accordance with the scope of work and limitations of ASTM Standard Practice E1527-13, the Environmental Protection Agency Standards and Practices for All Appropriate Inquiries (AAI) (40 CFR Part 312) and set forth by MRK Partners for the property located at 600 Roble Avenue, 1106 San Pablo Avenue, and 1230 San Pablo Avenue in the City of Pinole, Contra Costa County, California (the "subject property"). The Phase I Environmental Site Assessment is designed to provide MRK Partners with an assessment concerning environmental conditions (limited to those issues identified in the report) as they exist at the subject property.

Property Description

The subject property is located on the north side of San Pablo Avenue, the south side of Encina Avenue, and the west side of Roble Avenue within a mixed commercial and residential area of Pinole in Contra Costa County. Please refer to the table below for further description of the subject property:

Subject Property Data	
Address:	600 Roble Avenue, 1106 San Pablo Avenue, and 1230 San Pablo Avenue, Pinole, California
Property Use:	Industrial (1106 San Pablo Avenue); Vacant (600 Roble Avenue and 1230 San Pablo Avenue)
Land Acreage (Ac):	2.06 Ac
Number of Buildings:	Two
Number of Floors:	Two (600 Roble Avenue) and One (1106 San Pablo Avenue)
Gross Building Area (SF):	5,710 SF (600 Roble Avenue) and 1,148 SF (1106 San Pablo Avenue);
Date of Construction:	1985 (600 Roble Avenue) and 1948 (1106 San Pablo Avenue)
Assessor's Parcel Numbers (APNs):	402-023-007-6 (600 Roble Avenue; 1.05 Ac), 402-023-003-5 (1106 San Pablo Avenue; 0.668 Ac), and 402-023-002-7 (1230 San Pablo Avenue; 0.339 Ac)
Type of Construction:	Concrete Masonry Unit (1106 San Pablo Avenue); Wood-Framed (600 Roble Avenue)
Current Tenants:	Wheeler Heating & Air (1106 San Pablo Avenue)
Site Assessment Performed By:	Marc Hachey of Partner
Site Assessment Conducted On:	February 24, 2021

The subject property consists of three contiguous parcels of land. The northeastern parcel (600 Roble Avenue) is developed with a two-story, wood-framed office building, which is currently vacant. The central parcel (1230 San Pablo Avenue) is an unpaved parcel with no improvements. The southwestern parcel (1106 San Pablo Avenue) is developed with a single-story building and storage yard occupied by a heating and air contractor. Automobiles, equipment, and materials are stored at various locations on the 1106 San Pablo Avenue parcel. A cellular tower enclosure is located on the southwestern portion of the 1106 San Pablo Avenue parcel, which is maintained by AT&T. The enclosure appeared to include a faux tree tower and several lead-based backup batteries.

According to available historical sources, the subject property appears to have been vacant land from at least 1902 until at least 1939. The building at 1106 San Pablo Avenue was constructed in 1948 as an auto repair facility; an underground storage tank (UST) was apparently installed at that time. Apparent residences and outbuildings were located at 1230 San Pablo Avenue in the 1950s and 1960s and this parcel was vacant by 1974. The building at 600 Roble Avenue was constructed in 1985 and initially occupied as a painting apprenticeship facility, and later occupied by various commercial office tenants.

The immediately surrounding properties consist of the following: Encina Avenue is adjacent to the north, with residences (1268-1288 Encina Avenue) and vacant land beyond; residences to the northwest (601 Madrone Avenue & 1165-1169 Encina Avenue); San Pablo Avenue is adjacent to the south, beyond which is a residence (801 Adams Court), apartments (1139 & 1149 San Pablo Avenue), The Treasure Hunt thrift store (1189 San Pablo Avenue), and a multi-tenant commercial building (1219-1299 San Pablo Avenue); Lisa's Hair Studio (1300-1306 San Pablo Avenue) and Pinole Flyers gasoline station (1390 San Pablo Avenue) are adjacent to the southeast; a vacant parcel (1072 San Pablo Avenue) is adjacent to the west; and Roble Avenue is adjacent to the east, beyond which is a residence (625 Roble Avenue).

According to topographic map interpretation, the direction of groundwater in the vicinity of the subject property is inferred to flow toward the northwest. Based on groundwater investigation conducted on the subject property in 2018, shallow groundwater in the vicinity of the subject property is encountered at 18 to 32 feet below ground surface (bgs).

Findings

A *recognized environmental condition (REC)* refers to the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property; due to release to the environment; under conditions indicative of a release to the environment; or under conditions that pose a material threat of a future release to the environment. The following was identified during the course of this assessment:

- Partner did not identify RECs during the course of this assessment.

A *controlled recognized environmental condition (CREC)* refers to a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls. The following was identified during the course of this assessment:

- Partner did not identify CRECs during the course of this assessment.

A *historical recognized environmental condition (HREC)* refers to a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls. The following was identified during the course of this assessment:

- Partner did not identify HRECs during the course of this assessment.

An *environmental issue* refers to environmental concerns identified by Partner, which do not qualify as RECs; however, warrant further discussion. The following was identified during the course of this assessment:

- An active gasoline station (Pinole Flyers) is located adjacent to the southeast of the subject property and is situated hydrologically upgradient from the subject property. Available information indicates this location has been an active gasoline station since at least 1985. Based on the environmental database report, a release of gasoline was reported in January 1999 following the replacement of two gasoline USTs and one diesel UST. The Regional Water Quality Control Board (RWQCB) closed the case on June 1, 2000. No additional leaks, spills, or releases were recorded in association with this facility. The reported concentrations of volatile organic compounds (VOCs) in soil vapor samples collected during a 2018 limited subsurface investigation performed by Partner, indicated a general presence of chlorinated- and gasoline-related VOCs on the subject property, which were thought to be likely from groundwater associated with the offsite gasoline station situated to the southeast. The concentrations of VOCs in soil vapor did not exceed the calculated future residential and current commercial soil gas screening levels (SGSLs) for these compounds. Additional investigation of groundwater was performed by Partner in 2018 that concluded that there were no indications of impacts to groundwater from the upgradient off-site gasoline station and recommended no further investigation of the subject property.
- The subject property was formerly equipped with one 400-gallon petroleum (possibly lube oil) UST, reportedly installed in the late 1940s and associated with former truck repair operations. The UST was located adjacent to the west of the 1106 San Pablo Avenue building. The UST was removed on August 13, 2002 when the property was occupied by OJ Erikson (formerly Erikson, Inc.) with Contra Costa Health Services oversight, and was reported to be intact upon removal with no apparent leaks. The Contra Costa County Health Services required no further action with regard to the UST. Subsequently, in 2018, Partner performed a limited subsurface investigation of soils and soil vapor including investigation of the former UST area for the presence of TPH, VOCs, and metals. A minor release of petroleum was found in soil at the former on-site UST area, which did not translate to TPH in soil vapor in that area, no TPH-cc or VOC concentrations were detected in soil above applicable residential or commercial RSLs. Since the UST was not found to have been associated with a significant release and the removal was conducted with regulatory oversight and closed, this UST is not anticipated to be a significant environmental concern for the subject property.
- The building at 1106 San Pablo Avenue is currently used as by an HVAC contractor, and was formerly used for auto repair. Limited records were reviewed regarding the operations conducted in the building and if hazardous materials were used, although it can be assumed that at least some hazardous materials were used as part of auto repair operations. Additionally, the yard area to the east of the building is currently used for exterior storage and appears to have been used for undocumented storage since at least 1963 (based on aerial photography). The undocumented

industrial use of this area of the subject property, exterior storage, and the assumed use of hazardous materials in auto repair operations, is an environmental concern for the subject property;

- According to building permits, the subject property building at 600 Roble Avenue was formerly equipped with a spray booth, which was installed without the appropriate permits. This facility was a listed as a generator of hazardous waste. A City of Pinole letter dated January 18, 1988 outlined several violations to be corrected (regarding air controls and reporting). However, no subsequent correspondence was available. No additional information is available regarding possible operations at this facility involving the use of the spray booth or the location of the booth. No evidence of a spray booth was observed during the site reconnaissance. The presumed use of a spray booth at 600 Roble Avenue for an indeterminate period of time is an environmental concern, but since no releases have been detected and Partner assumes that there was no regulatory use, the spray booth does not appear to be a significant environmental concern. The reported concentrations of VOCs in soil vapor samples throughout the subject property based on the 2018 limited subsurface investigation performed by Partner, did not exceed the calculated future residential and current commercial soil gas SGSLs for these compounds.
- Due to the age of the subject property buildings, there is a potential that asbestos-containing material (ACM) and/or lead-based paint (LBP) are present. Overall, suspect ACMs and painted surfaces were observed in good condition and do not pose a health and safety concern to the occupants of the subject property at this time. During the course of the onsite ACM and lead paint survey performed in 2018, two samples of roof patch and penetration mastic at 600 Roble Avenue were found to contain 3 to 5% chrysotile asbestos. For the lead-based paint survey, no readings of lead greater than 1.0 mg/cm^2 (the current regulatory threshold for the requirement of lead-safe work practices in the City of Pinole) were detected. A written Operations and Maintenance (O&M) Plan for safe management of these materials was recommended at that time.

Conclusions, Opinions and Recommendations

Partner has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-13 of 600 Roble Avenue, 1106 San Pablo Avenue, and 1230 San Pablo Avenue in the City of Pinole, Contra Costa County, California (the "subject property"). Any exceptions to, or deletions from, this practice are described in Section 1.5 of this report.

This assessment has revealed no evidence of recognized environmental conditions in connection with the subject property; however, environmental issues were identified. Based on the conclusions of this assessment, Partner recommends no further investigation of the subject property at this time.

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1.0 INTRODUCTION

Partner Engineering and Science, Inc. (Partner) has performed a Phase I Environmental Site Assessment (ESA) in conformance with the scope and limitations of ASTM Standard Practice E1527-13 and the Environmental Protection Agency Standards and Practices for All Appropriate Inquiries (AAI) (40 CFR Part 312) for the property located at 600 Roble Avenue, 1106 San Pablo Avenue, and 1230 San Pablo Avenue in the City of Pinole, Contra Costa County, California (the "subject property"). Any exceptions to, or deletions from, this scope of work are described in the report.

1.1 Purpose

The purpose of this ESA is to identify existing or potential Recognized Environmental Conditions (as defined by ASTM Standard E1527-13) affecting the subject property that: 1) constitute or result in a material violation or a potential material violation of any applicable environmental law; 2) impose any material constraints on the operation of the subject property or require a material change in the use thereof; 3) require clean-up, remedial action or other response with respect to Hazardous Substances or Petroleum Products on or affecting the subject property under any applicable environmental law; 4) may affect the value of the subject property; and 5) may require specific actions to be performed with regard to such conditions and circumstances. The information contained in the ESA Report will be used by Client to: 1) evaluate its legal and financial liabilities for transactions related to foreclosure, purchase, sale, loan origination, loan workout or seller financing; 2) evaluate the subject property's overall development potential, the associated market value and the impact of applicable laws that restrict financial and other types of assistance for the future development of the subject property; and/or 3) determine whether specific actions are required to be performed prior to the foreclosure, purchase, sale, loan origination, loan workout or seller financing of the subject property.

This ESA was performed to permit the *User* to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on scope of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 U.S.C. §9601) liability (hereinafter, the "*landowner liability protections*," or "*LLPs*"). ASTM Standard E1527-13 constitutes "*all appropriate inquiry* into the previous ownership and uses of the *property* consistent with good commercial or customary practice" as defined at 42 U.S.C. §9601(35)(B).

1.2 Scope of Work

The scope of work for this ESA is in accordance with the requirements of ASTM Standard E1527-13. This assessment included: 1) a property and adjacent site reconnaissance; 2) interviews with key personnel; 3) a review of historical sources; 4) a review of regulatory agency records; and 5) a review of a regulatory database report provided by a third-party vendor. Partner contacted local agencies, such as environmental health departments, fire departments and building departments in order to determine any current and/or former hazardous substances usage, storage and/or releases of hazardous substances on the subject property. Additionally, Partner researched information on the presence of activity and use limitations (AULs) at these agencies. As defined by ASTM E1527-13, AULs are the legal or physical restrictions or limitations on the use of, or access to, a site or facility: 1) to reduce or eliminate potential

exposure to hazardous substances or petroleum products in the soil or groundwater on the subject property; or 2) to prevent activities that could interfere with the effectiveness of a response action, in order to ensure maintenance of a condition of no significant risk to public health or the environment. These legal or physical restrictions, which may include institutional and/or engineering controls (IC/ECs), are intended to prevent adverse impacts to individuals or populations that may be exposed to hazardous substances and petroleum products in the soil or groundwater on the property.

If requested by Client, this report may also include the identification, discussion of, and/or limited sampling of asbestos-containing materials (ACMs), lead-based paint (LBP), mold, and/or radon.

1.3 Limitations

Partner warrants that the findings and conclusions contained herein were accomplished in accordance with the methodologies set forth in the Scope of Work. These methodologies are described as representing good commercial and customary practice for conducting an ESA of a property for the purpose of identifying recognized environmental conditions. There is a possibility that even with the proper application of these methodologies there may exist on the subject property conditions that could not be identified within the scope of the assessment or which were not reasonably identifiable from the available information. Partner believes that the information obtained from the record review and the interviews concerning the subject property is reliable. However, Partner cannot and does not warrant or guarantee that the information provided by these other sources is accurate or complete. The conclusions and findings set forth in this report are strictly limited in time and scope to the date of the evaluations. The conclusions presented in the report are based solely on the services described therein, and not on scientific tasks or procedures beyond the scope of agreed-upon services or the time and budgeting restraints imposed by the Client. No other warranties are implied or expressed.

Some of the information provided in this report is based upon personal interviews, and research of available documents, records, and maps held by the appropriate government and private agencies. This report is subject to the limitations of historical documentation, availability, and accuracy of pertinent records, and the personal recollections of those persons contacted.

This practice does not address requirements of any state or local laws or of any federal laws other than the all appropriate inquiry provisions of the LLPs. Further, this report does not intend to address all of the safety concerns, if any, associated with the subject property.

Environmental concerns, which are beyond the scope of a Phase I ESA as defined by ASTM include the following: ACMs, LBP, radon, and lead in drinking water. These issues may affect environmental risk at the subject property and may warrant discussion and/or assessment; however, are considered non-scope issues. If specifically requested by the Client, these non-scope issues are discussed in Section 6.3.

1.4 User Reliance

MRK Partners engaged Partner to perform this assessment in accordance with an agreement governing the nature, scope and purpose of the work as well as other matters critical to the engagement. All reports, both verbal and written, are for the sole use and benefit of MRK Partners. 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 Partner granting such rights, no third parties shall have rights of recourse or recovery whatsoever under any course of action against Partner, its officers, employees, vendors, successors or assigns. Any such unauthorized user shall be responsible to protect, indemnify and hold Partner, Client and their respective officers, employees, vendors, successors and assigns harmless from any and all claims, damages, losses, liabilities, expenses (including reasonable attorneys' fees) and costs attributable to such Use. Unauthorized use of this report shall constitute acceptance of and commitment to these responsibilities, which shall be irrevocable and shall apply regardless of the cause of action or legal theory pled or asserted. Additional legal penalties may apply.

This report has been completed under specific Terms and Conditions relating to scope, relying parties, limitations of liability, indemnification, dispute resolution, and other factors relevant to any reliance on this report. Any parties relying on this report do so having accepted the Terms and Conditions for which this report was completed. A copy of Partner's standard Terms and Conditions can be found at http://www.partneresi.com/terms-and-conditions.php.

1.5 Limiting Conditions

The findings and conclusions contain all of the limitations inherent in these methodologies that are referred to in ASTM E1527-13.

Specific limitations and exceptions to this ESA are more specifically set forth below:

- Interviews with current or past owners, operators, and occupants were not reasonably ascertainable and thus constitute a data gap. Based on information obtained from other historical sources (as discussed in Section 3.0), this data gap is not expected to alter the findings of this assessment.
- Limited records are available regarding the operations at 1106 San Pablo Avenue that were conducted and if hazardous materials were used. The undocumented industrial use of this area is considered a data gap for this assessment.
- Partner's view of the ground and interior of the 1106 San Pablo Avenue building during the site assessment was obstructed due to excessive storage. Based on information obtained from other historical sources and the nature of use of the subject property, this limitation is not expected to alter the overall findings of this assessment.
- Partner submitted Freedom of Information Act (FOIA) requests to Pinole Fire Department and Pinole Building Department for information pertaining to hazardous substances, underground storage tanks, releases, inspection records, etc. for the subject property and/or adjacent properties. As of this writing, these agencies have not responded to Partner's request. Based on

information obtained from other historical sources, this limitation is not expected to alter the overall findings of this assessment.

- Partner was unable to observe the interior of the building located at 600 Roble Avenue and 1106 San Pablo Avenue. Based on observation and testing performed by Partner in 2018 at the subject property buildings, this limitation is not expected to alter the outcome of this assessment.

Due to time constraints associated with this report, the Client has requested the report despite the above-listed limitations.

2.0 SITE DESCRIPTION

2.1 Site Location and Legal Description

The subject property at 600 Roble Avenue, 1106 San Pablo Avenue, and 1230 San Pablo Avenue in Pinole, California is located on the north side of San Pablo Avenue, the west side of Roble Avenue, and the south side of Encina Avenue. According to the Contra Costa County Assessor, the subject property is identified by Assessor's Parcel Numbers (APNs) 402-023-007-6, 402-023-003-5, and 402-023-002-7, and ownership is recorded as Pinole Venture LP since 2019.

Please refer to Figure 1: Site Location Map, Figure 2: Site Plan, Figure 3: Topographic Map, and Appendix A: Site Photographs for the location and site characteristics of the subject property.

2.2 Current Property Use

The subject property consists of three contiguous parcels of land. The northeastern parcel (600 Roble Avenue) is developed with a two-story, wood-framed office building, which is currently vacant, with the exception of miscellaneous furnishings and rubbish. The central parcel (1230 San Pablo Avenue) is an unpaved parcel with no improvements. The southwestern parcel (1106 San Pablo Avenue) is developed with a single-story building and storage yard occupied by a heating and air contractor. The interior of the building includes a workshop area and office. Automobile, equipment, and materials are stored at various locations on the parcel. No on-site operations are currently conducted. A cellular tower enclosure is located on the southwestern portion of the 1106 San Pablo Avenue parcel, which is maintained by AT&T. Partner was not able to access the enclosure at the time of the site reconnaissance. The enclosure appeared to include a faux tree tower and several lead-based backup batteries.

The subject property is designated R-4 ("Very High Density Residential") for residential development by the City of Pinole.

The following addresses associated with subject property were identified in the regulatory database report, and are further discussed in Section 4.2.2:

- 600 Roble Avenue: Resource Conservation and Recovery Act (RCRA)-Small Quantity Generator (SQG), Facility Index System (FINDS), Enforcement & Compliance History Information (ECHO), FTTS, Historic FTTS, and California Facility and Manifest (HAZNET) databases; and
- 1106 San Roble Avenue: Contra Costa County Site List databases.

2.3 Current Use of Adjacent Properties

The subject property is located within a mixed commercial and residential area of Contra Costa County. During the vicinity reconnaissance, Partner observed the following land use on properties in the immediate vicinity of the subject property:

Immediately Surrounding Properties	
North:	Encina Avenue is adjacent to the north, with residences (1268-1288 Encina Avenue) beyond.
Northwest:	Residences (601 Madrone Avenue & 1165-1169 Encina Avenue) are adjacent to the

northwest.

South: San Pablo Avenue is adjacent to the south, beyond which is a residence (801 Adams Court), apartments (1139 & 1149 San Pablo Avenue), The Treasure Hunt (1189 San Pablo Avenue), and a multi-tenant commercial building (1219-1299 San Pablo Avenue).

Southeast: A residence and Lisa's Hair Studio (1300-1306 San Pablo Avenue) and Pinole Flyers (1390 San Pablo Avenue) are adjacent to the southeast.

West: Madrone Avenue beyond which is a developed parcel that appears to be residential (1072 San Pablo Avenue)

East: Roble Avenue is adjacent to the east, beyond which is a residence (625 Roble Avenue).

The adjacent property to the southeast (1390 San Pablo Avenue) was identified on the Underground Storage Tank (UST), Historic UST, Leaking UST (LUST), Statewide Environmental Evaluation and Planning System UST (SWEEPS UST), Contra Costa County Site List, California Facility and Manifest (HAZNET), Environmental Data Resources, Inc. (EDR) Historic Auto Station, California Environmental Reporting System (CERS), CERS Tanks, CERS Hazardous Waste, Enforcement, and Cortese databases, as further discussed in Section 4.2.3.

2.4 Physical Setting Sources

2.4.1 Topography

The United States Geological Survey (USGS) *Mare Island, California* Quadrangle 7.5-minute series topographic map was reviewed for this ESA. According to the contour lines on the topographic map, the subject property is located at approximately 100 feet above mean sea level (MSL). The contour lines in the area of the subject property indicate the area is sloping gently toward the northwest. No site-specific details are depicted on the 2015 map.

A copy of the most recent topographic map is included as Figure 3 of this report.

2.4.2 Hydrology

According to topographic map interpretation, the direction of groundwater in the vicinity of the subject property is inferred to flow toward the northwest. Based on groundwater monitoring conducted at 1718 San Pablo Avenue, approximately 1,000 feet east of the subject property, shallow groundwater in the vicinity of the subject property is encountered at six to 12 feet below ground surface (bgs). The nearest surface water in the vicinity of the subject property is San Pablo Bay located approximately 2,000 feet north of the subject property. No settling ponds, lagoons, surface impoundments, wetlands, or natural catch basins were observed at the subject property during this assessment.

According to available information, a public water system operated by the East Bay Municipal Utilities District (EBMUD) serves the subject property vicinity. According to the 2019 Water Quality Report, shallow groundwater directly beneath the subject property is not utilized for domestic purposes. The sources of public water for the City of Oakland are surface water from the Mokelumne River watershed in the Sierra Nevada Mountains, which accounts for 90% of the utility's water supply, with the remaining 10% obtained from local surface water sources.

2.4.3 Geology/Soils

The subject property is situated within the Coast Ranges geomorphic province of the State of California. According to information obtained from the US Geological Survey (USGS), the area surrounding the subject property is underlain by alluvium and marine deposits of the Quaternary era. Soils from this series are characterized as alluvium, lake, playa and terrace deposits; unconsolidated and semi-consolidated. Soils of this area consist of mostly of non-marine deposits, with some marine deposits near the shore.

Based on borings advanced during the 2018 limited subsurface investigation, the subsurface consists predominantly of light brown, moist, silt with interbedded, semi-consolidated siltstone from the ground surface to approximately 5 feet below ground surface (bgs) except for boing VP-8 and boring VP-1. In boring VP-8, mottled light brown, brown, and red, moist, low plasticity clay was encountered at a depth of 0.5 to approximately 3 feet bgs. In boring VP-1 from 4.5 to approximately 8.5 feet bgs, the subsurface consisted of a brown, moist, medium plastic clay

Based on information obtained from the USDA Natural Resources Conservation Service Web Soil Survey online database, the subject property is mapped as cut and fill land, Cropley clay, and Tierra loam. These soils are described as fine-grained soils to depths of at least 59 inches bgs.

2.4.4 Flood Zone Information

Partner performed a review of the Flood Insurance Rate Map, published by the Federal Emergency Management Agency. According to Community Panel Number 0613C0043H, dated March 21, 2017, the subject property appears to be located in Zone X, an area located outside of the 100-year and 500-year flood plains.

3.0 HISTORICAL INFORMATION

Partner obtained historical use information about the subject property from a variety of sources. A chronological listing of the historical data found is summarized in the table below:

Historical Use Information		
Period/Date	**Source**	**Description/Use**
1902-1939	Aerial Photographs, Topographic Maps	Undeveloped
1948	Aerial Photographs, Building Records	1106 San Pablo Avenue Constructed
1950s-1960s	Aerial Photographs, Topographic Maps	Apparent Residence(s) and Outbuildings at 1230 San Pablo Avenue
1985	Aerial Photographs, Building Records	600 Roble Avenue Constructed
1948-Present	Aerial Photographs, Building Records, City Directories, Onsite Observations,	Commercial and Industrial

The subject property appears to have been vacant land from at least 1902 until 1939. The building at 1106 San Pablo Avenue was constructed in 1948 as an auto repair facility; a UST was apparently installed at that time (which has been removed with regulatory oversight and closed). The yard area to the east of the building appears to have been used for undocumented storage since at least 1963. Apparent residences and outbuildings were located at 1230 San Pablo Avenue in the 1950s and 1960's this parcel was vacant by 1974. The building at 600 Roble Avenue was constructed in 1985 and initially occupied as a painting apprenticeship facility (with a paint booth), and later occupied by various commercial office tenants.

The former automotive repair use with exterior storage at 1106 San Pablo Avenue is an environmental concern for the subject property. In addition, the paint booth/painting apprenticeship at 600 Roble Avenue is an environmental concern for the subject property. Additional environmental concerns associated with the historical use of the subject property are discussed in Sections 4.1.4 and 4.2.2.

3.1 Aerial Photograph Review

Partner obtained available aerial photographs of the subject property and surrounding area from Environmental Data Resources (EDR) on February 23, 2021. The following was observed on the subject property and adjacent properties during the aerial photograph review:

Date: 1939	*Scale: 1"=500'*
Subject Property:	The subject property appears to be vacant land with a dirt trail on the western portion.
North:	The adjacent property to the north appears to be vacant land.
Northwest:	The adjacent property to the northwest appears to be vacant land.
South:	A roadway is adjacent to the south, with apparent residential and commercial structures beyond.
Southeast:	The adjacent property to the southeast appears to be developed with residential structures.
West:	The adjacent property to the west appears to be developed with residential structures.
East:	The adjacent property to the east appears to be developed with residential structures.

Date: 1946	Scale: 1"=500'
Subject Property:	The southwestern parcel appears to be graded land with a structure on the central portion with possible storage to the south of the structure and a second possible small structure on the western border
North:	The adjacent property to the north appears to be developed with residential structures.
Northwest:	No significant changes are visible from the previous photograph.
South:	No significant changes are visible from the previous photograph.
Southeast:	No significant changes are visible from the previous photograph.
West:	No significant changes are visible from the previous photograph.
East:	No significant changes are visible from the previous photograph.

Date: 1950	Scale: 1"=500'
Subject Property:	Additional structures/storage are visible on the central and western portions of the subject property. The western commercial building appears to be related to the northern abutter.
North:	No significant changes are visible from the previous photograph.
Northwest:	A building with a driveway that appears to be connected to the western site building is now present.
South:	No significant changes are visible from the previous photograph.
Southeast:	No significant changes are visible from the previous photograph.
West:	No significant changes are visible from the previous photograph.
East:	No significant changes are visible from the previous photograph.

Date: 1958	Scale: 1"=500'
Subject Property:	The western structure is no longer visible; no other significant changes are visible.
North:	No significant changes are visible from the previous photograph.
Northwest:	The building is no longer clearly visible and may have been removed.
South:	No significant changes are visible from the previous photograph.
Southeast:	No significant changes are visible from the previous photograph.
West:	No significant changes are visible from the previous photograph.
East:	No significant changes are visible from the previous photograph.

Date: 1963	Scale: 1"=500'
Subject Property:	The northeastern parcel appears to be graded land; and the central and western portions of the subject property are occupied by numerous buildings/sheds and storage, including the building at 1106 San Pablo Avenue.
North:	No significant changes are visible from the previous photograph.
Northwest:	What appears to be a residential building is present north of the 1106 San Pablo Avenue building.
South:	A roadway is adjacent to the south, with apparent apartment buildings, commercial buildings, and vacant land beyond.
Southeast:	An apparent residence and commercial building are visible adjacent to the southeast.
West:	No significant changes are visible from the previous photograph.
East:	No significant changes are visible from the previous photograph.

Date: 1968	*Scale: 1"=500'*
Subject Property:	Much of the site has been cleaned out; storage is no longer visible on the western border although buildings are still visible on the central lot.
North:	No significant changes are visible from the previous photograph.
Northwest:	The adjacent property to the northeast appears to be developed with residences.
South:	No significant changes are visible from the previous photograph.
Southeast:	No significant changes are visible from the previous photograph.
West:	No significant changes are visible from the previous photograph.
East:	No significant changes are visible from the previous photograph.

Date: 1974	*Scale: 1"=500'*
Subject Property:	The southwestern parcel appears to be used for apparent boat storage, and the southern parcel is vacant land. The buildings on the central lot appear to have been removed.
North:	No significant changes are visible from the previous photograph.
Northwest:	No significant changes are visible from the previous photograph.
South:	A roadway is adjacent to the south, with the existing residences and commercial building beyond.
Southeast:	The adjacent property to the southeast appears to be developed with a residence.
West:	No significant changes are visible from the previous photograph.
East:	No significant changes are visible from the previous photograph.

Date: 1982	*Scale: 1"=500'*
Subject Property:	The southwestern parcel appears to be used for materials and vehicle storage; no other significant changes are visible from the previous photograph.
North:	No significant changes are visible from the previous photograph.
Northwest:	No significant changes are visible from the previous photograph.
South:	No significant changes are visible from the previous photograph.
Southeast:	No significant changes are visible from the previous photograph.
West:	No significant changes are visible from the previous photograph.
East:	No significant changes are visible from the previous photograph.

Date: 1993, 1998, 2005, 2009, 2012, 2016	*Scale: 1"=500'*
Subject Property:	The existing building and parking area are visible on the northern parcel at 600 Roble Avenue; no other significant changes are visible from the previous photograph.
North:	No significant changes are visible from the previous photograph.
Northwest:	No significant changes are visible from the previous photograph.
South:	No significant changes are visible from the previous photograph.
Southeast:	An apparent residence and gasoline station are adjacent to the southeast.
West:	No significant changes are visible from the previous photograph.
East:	No significant changes are visible from the previous photograph.

Copies of reviewed aerial photographs are included in Appendix B of this report.

3.2 Fire Insurance Maps

Partner reviewed the collection of Sanborn Fire insurance maps from Environmental Data Resources (EDR) on February 23, 2021. Sanborn map coverage was not available for the subject property.

A copy of reviewed Sanborn Maps "No Coverage" certification is included in Appendix B of this report.

3.3 City Directories

Partner reviewed historical city directories obtained from EDR on August 27, 2018 for past names and businesses that were listed for the subject property and adjacent properties. The findings are presented in the following table:

City Directory Search for 600 Roble Avenue, 1106 and 1230 San Pablo Avenue (Subject Property)

Year(s)	Occupant Listed
1975	Addresses not listed
1980	Good Tm Volkswagen Repair (1106 San Pablo Avenue)
1985	Hibbard B D Construction (1106 San Pablo Avenue)
1987	Painters & Decorators (600 Roble Avenue)
1992	Painting & Decorating East Bay (600 Roble Avenue)
1995	Painters and Decorators Joint (600 Roble Avenue); Hibbard Roofing Inc. (1106 San Pablo Avenue)
2000	Painters & Decorators Jnt Cmmt, Painting Decorating Joing Apprnt (600 Roble Avenue)
2005	Painters & Decorators Jnt Cmmt, Painting Decorating Joing Apprnt (600 Roble Avenue)
2010	Brite Credit Inc., Get Help 123 Admin Svcs LLC, KPR Capital Inc, Mad Men Crew LLC, Painting Decorating Joint Apprnt, RCC Credit Solutions (600 Roble Avenue)
2014	Mad Men Crew LLC, Painting Decoratng Joint Apprnt (600 Roble Avenue)

According to the city directory review, the subject property has been occupied by an auto repair occupant, roofing contractor, painting contractor, and administrative offices since at least 1980. Environmental concerns associated with the historical use of the subject property are discussed in Sections 4.1.4 and 4.2.2.

City Directory Search for Adjacent Properties (Various Addresses)

Year(s)	Occupant Listed
1975	East Bay Real Estate (1191 San Pablo Avenue); Pinole Auto Supply (1195 San Pablo Avenue); Nob Hill Market (1229 San Pablo Avenue); Sounds Etc. (1239 San Pablo Avenue); Nob Hill Beauty Salon (1249 San Pablo Avenue); State Farm Insurance (1259 San Pablo Avenue); Mexican Villa Lounge (1269 San Pablo Avenue); Western Title (1299 San Pablo Avenue); Farmers Ins. Group, Tilghman Plumbing (1300 San Pablo Avenue); Residential listings (multiple addresses)
1980	Allstate Realtors (1189 San Pablo Avenue); East Bay Real Estate (1191 San Pablo Avenue); XXXX (1193 San Pablo Avenue); Pinole Auto Supply (1195 San Pablo Avenue); Nob Hill Market (1229 San Pablo Avenue); Sound Etc. (1239 San Pablo Avenue); Nob Hill Beauty Salon (1249 San Pablo Avenue); State Farm Pinole (1259 San Pablo Avenue); Painters Local 560 (1269 San Pablo Avenue); Browns Income Tax (1279 San Pablo Avenue); Mexican Villa (1299 San Pablo Avenue); Century 21, Jarvis Ceramic Tile (1300 San Pablo Avenue); Century 21 (1330 San Pablo Avenue)

City Directory Search for Adjacent Properties (Various Addresses)	
Year(s)	**Occupant Listed**
1985	Pinole Family Video (1191 San Pablo Avenue); Farm Boys Produce (1193 San Pablo Avenue); Lewis R A Mrtg Brkr (1195 San Pablo Avenue); Clothes for Less (1229 San Pablo Avenue); Button Mates (1239 San Pablo Avenue); Nob Hill Beauty Salon (1249 San Pablo Avenue); State Farm Pinole (1259 San Pablo Avenue); Painters Local 560 (1269 San Pablo Avenue); Browns Income Tax (1279 San Pablo Avenue); Mexican Villa (1299 San Pablo Avenue); Contl Home Service (1300 San Pablo Avenue); XXXX (1330 San Pablo Avenue); Edgar Tillman (1306 San Pablo Avenue); Major Line Gas (1390 San Pablo Avenue)
1992	PFV Enterprises Inc. (1191 San Pablo Avenue); Farm Boy Roadside Produce, Painters Local 560 (1229 San Pablo Avenue); Button Mates (1239 San Pablo Avenue); Nob Hill Beauty Salon (1249 San Pablo Avenue); Jack Bodutch (1259 San Pablo Avenue); Browns Income Tax Service (1279 San Pablo Avenue); The Villa (1299 San Pablo Avenue); Edgar Tillman (1306 San Pablo Avenue); Major Gas Line (1390 San Pablo Avenue)
1995	Farm Boy Roadside Produce, Painters Local 560 (1229 San Pablo Avenue); Button Mates (1239 San Pablo Avenue); Nob Hill Beauty Salon (1249 San Pablo Avenue); Jack Bodutch (1259 San Pablo Avenue); Browns Income Tax Service (1279 San Pablo Avenue); Occupant unknown (1299 San Pablo Avenue); Edgar Tillman (1306 San Pablo Avenue); K Major Line (1390 San Pablo Avenue)
2000	Curiosity Shop (1189 San Pablo Avenue); Kelvin Brown & Associates (1229 San Pablo Avenue); Cross Your Tees (1239 San Pablo Avenue); Nob Hill Beauty Salon (1249 San Pablo Avenue); Awesome Blossom (1259 San Pablo Avenue); The Villa (1299 San Pablo Avenue); Edgar Tillman (1306 San Pablo Avenue); K Major Line (1390 San Pablo Avenue)
2005	Quality Thrift (1189 San Pablo Avenue); Nob Hill Beauty Salon (1249 San Pablo Avenue); Gigi Nails (1259, 1269 San Pablo Avenue); The Villa (1299 San Pablo Avenue); Edgar Tillman (1306 San Pablo Avenue); K Major Line (1390 San Pablo Avenue)
2010	Dollarland LLC, James Commuter LLC (1239 San Pablo Avenue); Bay Area Youth Connection, Home Base (1259 San Pablo Avenue); Le Lovely Nails (1269 San Pablo Avenue); BT Sandwich Deli (1279 San Pablo Avenue); The Villa (1299 San Pablo Avenue); Edgar Tillman (1306 San Pablo Avenue); K Major Line (1390 San Pablo Avenue)
2014	Treasure Hunt (1189 San Pablo Avenue); Nevaeh Properties LLC (1239 San Pablo Avenue); Smoke and Save (1259 San Pablo Avenue); BT Sandwich Deli (1279 San Pablo Avenue); The Villa (1299 San Pablo Avenue); Edgar Tillman (1306 San Pablo Avenue); K Major Line (1390 San Pablo Avenue)
2017	Treasure Hunt (1189 San Pablo Avenue); Your Cross (1239 San Pablo Avenue); Smoke and Save (1259 San Pablo Avenue); BT Sandwich Deli (1279 San Pablo Avenue); Villa (1299 San Pablo Avenue); Edgar Tillman (1306 San Pablo Avenue); K Major Line (1390 San Pablo Avenue)

According to the city directory review, the adjacent properties have been occupied by various residential and commercial tenants, including as gasoline station. Environmental concerns associated with the gasoline station are discussed in Section 4.2.3. Based on the city directory review, no environmentally sensitive listings were identified for the adjacent property addresses.

Copies of reviewed city directories are included in Appendix B of this report.

3.4 Historical Topographic Maps

Partner reviewed historical topographic maps obtained from Environmental Data Resources (EDR) on February 23, 2021. The following was observed on the subject property and adjacent properties during the topographic map review:

Date: 1902, 1914, 1916	
Subject Property:	The subject property is depicted as undeveloped land.
North:	The adjacent property to the north is depicted as undeveloped land.
Northwest:	The adjacent property to the northwest is depicted as undeveloped land.
South:	A roadway is depicted adjacent to the south, with undeveloped land beyond.
Southeast:	The adjacent property to the southeast is depicted as undeveloped land.
West:	The adjacent property to the west is depicted as undeveloped land.
East:	The adjacent property to the east is depicted as undeveloped land.

Date: 1949, 1951, 1959	
Subject Property:	The subject property is depicted as developed with structures on the southwestern and southern parcels.
North:	The adjacent property to the north is depicted as developed with a structure.
Northwest:	No significant changes are depicted from the previous map.
South:	A roadway is depicted adjacent to the south, with structures beyond.
Southeast:	The adjacent property to the southeast is depicted as developed with a structure.
West:	The adjacent property to the west is depicted as developed with a structure.
East:	No significant changes are depicted from the previous map.

Date: 1968, 1980	
Subject Property:	No significant changes are depicted from the previous map.
North:	No significant changes are depicted from the previous map.
Northwest:	The adjacent property to the northwest is depicted as developed with two structures.
South:	A roadway is depicted adjacent to the south, with the area beyond shaded pink to depict urban development.
Southeast:	No significant changes are depicted from the previous map.
West:	No significant changes are depicted from the previous map.
East:	No significant changes are depicted from the previous map.

Copies of reviewed topographic maps are included in Appendix B of this report.

4.0 REGULATORY RECORDS REVIEW

4.1 Regulatory Agencies

4.1.1 State Department

Regulatory Agency Data	
Name of Agency:	California Environmental Protection Agency (CalEPA)
Point of Contact:	Not applicable
Agency Address:	1001 I Street, P.O. Box 2815, Sacramento, California 95812
Agency Phone Number:	(916) 324-9670
Date of Contact:	February 22, 2021
Method of Communication:	Online: https://siteportal.calepa.ca.gov/nsite/
Summary of Communication:	No records regarding hazardous substance use, storage or releases, or the presence of USTs and AULs on the subject property were on file with the Cal EPA database.

4.1.2 Health Department

Regulatory Agency Data	
Name of Agency:	Contra Costa County Health Services - Hazardous Materials Programs (CCCHS-HMP)
Point of Contact:	Mr. Alex McMullen
Agency Address:	4585 Pacheco Boulevard, Suite 100, Martinez, California
Agency Phone Number:	(925) 335-3200
Date of Contact:	February 22, 2021
Method of Communication:	Email
Summary of Communication:	An Underground Hazardous Substance Storage Tank Removal Permit and Information Form dated June 28, 2002 indicated one 400-gallon UST was to be removed. The UST is listed as associated with former truck repair operations; the contents are listed "petroleum" and "possibly lube oil." The UST was removed on August 13, 2002, and was reported to be intact upon removal, with no apparent leaks. One soil sample was collected from the UST excavation and analyzed for total petroleum hydrocarbons as gasoline (TPHg), as diesel (TPHd), California Assessment Metals (CAM) 5 Metals, chlorinated hydrocarbons, and total oil & grease (TOG). TPHd and TOG were reported at concentrations of 3.9 milligrams per kilogram (mg/kg) and 52 mg/kg, respectively. Metals were detected at concentrations consistent with background concentrations. In a letter dated September 17, 2008, the CCCHS required no further action. Additional documentation indicates AT&T maintains cellular equipment at 1106 San Pablo Avenue, which contains lead acid batteries. No additional information is available. Although the database report lists a UST associated with AT&T (discussed in Section 4.2.2), no petroleum is listed in the detailed Emergency

Contingency plan for AT&T and can be concluded that the UST noted in the database report is related to the 400-gallon UST at that same address described above.

For the 2018 Phase I ESA, Partner additionally reviewed files for the adjacent gasoline station "Major Line" at 1390 San Pablo Avenue. Permit records indicate that in 1984 three 10,000-gallon "motor vehicle fuel" USTs were installed at Major Line Gasoline, which were removed in 1999 and replaced with 12,000-gallon fiberglass UST containing regular gasoline, an 8,000-gallon fiberglass UST containing premium, and a 4,000-gallon fiberglass UST. Plans dated late 1998 and early 1999 documented steps to remove the original USTs, but no closure reports were present in the file (only a closure letter from CCCHS dated 2000). The depth to groundwater and direction of groundwater flow were not noted in the plans. In a letter dated January 26, 1999, CCCHS provided documentation that the three original USTs were removed on January 7, 1999 with a petroleum sheen noted in groundwater entering the pit (depth not noted). The CCCHS required that "over excavation of the pit" and "confirmation sampling" be conducted. Soil sampling data was also present in the file (summarized in Section 4.2). In a letter dated March 3, 1999, CCCHS indicated that the analytical data supported a release.

W.A. Craig, Inc. prepared a May 13, 1999 *Site Investigation Work Plan* "at the request of the San Francisco Bay Regional Water Quality Control Board" in order to assess groundwater. The work plan did not note the depth to groundwater or groundwater flow direction. No subsequent field reports were present in the file to indicate the depth of groundwater, although boring terminus depths were planned for 25 feet bgs, indicating a planned shallow groundwater depth. The Work Plan indicated that in April 1999 approximately 50,000-gallons of petroleum-impacted groundwater was removed from the excavation of the three former USTs, and 580 tons of soil were removed as part of "over excavation".

W.A. Craig additionally submitted a September 21, 1999 *Additional Investigation Work Plan* in response to a RWQCB request letter (dated September 14, 1999). The work plan indicated that in June 1999 soil and groundwater was sampled from six temporary borings and a release to groundwater was detected, and the workplan recommended additional sampling to the east and northeast of the USTs to fully delineate the release. Although the groundwater flow direction was not reported, it was noted that the additional wells were to be added to the "southwest of the former USTs, in the assumed up-gradient direction from the UST excavation." The work plan accounted for planned quarterly groundwater sampling for a

Regulatory Agency Data	
	period of one year (although no sampling reports were present in the file). Mapping showed a proposed well to the north of the gasoline station on the "school" property, which appears to be the former painting apprenticeship facility at 600 Roble Avenue. The well is noted as planned to be temporary (Partner did not observe markings on the subject property). A second addendum to the work plan was submitted on November 29, 1999 that included temporary borings (instead of monitoring wells) and the planned completion of a downgradient well survey, and at the time three points were planned for the on-site property (600 Roble); identified HP-7, HP-9, and HP-10. No sampling data was provided in the plans. No completion reports or investigation reports were found in the files. In a letter dated June 1, 2000 from the RWQCB, the USTs were closed at the gasoline station property. A tank tightness test from 1999 indicated that a 12,000-gallon fiberglass UST containing regular gasoline, an 8,000-gallon fiberglass UST containing premium, and a 4,000-gallon fiberglass UST containing diesel fuel were present at the gasoline station, which appear to have been replacement USTs installed in 1999. Based on a CCCHS inspection form from May 5, 1999, a split-compartment double walled UST (containing diesel and super) and a12,000-gallon diesel UST were installed at the gasoline station property. Records from the mid-2000s note three tanks were present; a 12,000-gallon double walled unleaded UST, and two 6,000-gallon double walled USTs containing diesel and premium. Based on the records reviewed, these tanks appear to be what is currently in place.

Copies of pertinent documents are included in Appendix B of this report.

4.1.3 Fire Department

Regulatory Agency Data	
Name of Agency:	Pinole Fire Department (PFD)
Point of Contact:	N/A
Agency Address:	880 Tennent Avenue, Pinole, California 94564
Agency Phone Number:	(510) 724-8970
Date of Contact:	February 22, 2021
Method of Communication:	Email
Summary of Communication:	As of the date of this report, Partner has not received a response from the PFD for inclusion in this report. However, according to the previous ESA prepared in 2018, PFD does not maintain records for hazardous materials or USTs.

4.1.4 Air Pollution Control Agency

Regulatory Agency Data	
Name of Agency:	Bay Area Air Quality Management District (BAAQMD)
Point of Contact:	Ms. Rochelle Henderson
Agency Address:	969 Ellis Street, San Francisco, California 94109
Agency Phone Number:	(707) 648-4565
Date of Contact:	February 22, 2021
Method of Communication:	Online Request
Summary of Communication:	No Permits to Operate (PTO), Notices of Violation (NOV), or Notices to Comply (NTC) or the presence of AULs, dry cleaning machines, or USTs were on file for the subject property with the BAAQMD.

4.1.5 Regional Water Quality Agency

Regulatory Agency Data	
Name of Agency:	Regional Water Quality Control Board (RWQCB)
Point of Contact:	Not applicable
Agency Address:	1515 Clay Street, Suite 1400, Oakland, California 94612
Agency Phone Number:	(510) 622-2430
Date of Contact:	February 22, 2021
Method of Communication:	Online
Summary of Communication:	No records regarding hazardous substance use, storage or releases, or the presence of USTs and AULs on the subject property were on file with the RWQCB. The subject property was not identified on the GeoTracker database.

4.1.6 Department of Toxic Substances Control

Regulatory Agency Data	
Name of Agency:	California Department of Toxic Substances Control (DTSC)
Point of Contact:	Not applicable
Agency Address:	1001 I Street, Sacramento, California 95814
Agency Phone Number:	(916) 255-3687
Date of Contact:	February 22, 2021
Method of Communication:	Online
Summary of Communication:	No records regarding hazardous substance use, storage or releases, or the presence of USTs and AULs on the subject property were on file with the DTSC. The subject property was not identified on the EnviroStor database.

4.1.7 Building Department

Regulatory Agency Data	
Name of Agency:	Pinole Building Department (PBD)
Point of Contact:	Not provided
Agency Address:	2131 Pear Street #1, Pinole, California 94564
Agency Phone Number:	(510) 724-8914
Date of Contact:	August 30, 2018
Method of Communication:	Email
Summary of Communication:	As of the date of this report, Partner has not received a response from the PBD for inclusion in this report. However, the following permits were reviewed for the 2018 ESA.

Building Records Reviewed for 600 Roble Avenue, 1106 and 1230 San Pablo Avenue (Subject Property)		
Year(s)	**Owner/Applicant**	**Description**
1958	O. Erickson	Building permit; details illegible (1106 San Pablo Avenue)
1963	N/A	Complaint letter regarding trailer being used in violation of City of Pinole ordinance (1230 San Pablo Avenue)
1968	N/A	Water heater installation (1230 San Pablo Avenue)
1984	N/A	Building permit for new commercial building (600 Roble Avenue)
1985	Painters/Decorators Joint Committee of the East Bay Counties	Certificate of Occupancy (600 Roble Avenue)
1988	Painters & Decorators Joint Committee	Correspondence regarding spray booth installed without permits (600 Roble Avenue) with violations related to air controls and documentation listed
2003	Steve Wheeler	Reroofing permit (1230 San Pablo Avenue)
2009	AT&T	Install faux tree pole for wireless (1230 San Pablo Avenue)
2011	AT&T	Remove antenna shed (1230 San Pablo Avenue)

A copy of pertinent documents is included in Appendix B of this report.

4.1.8 Planning Department

Regulatory Agency Data	
Name of Agency:	Pinole Planning Department (PPD)
Point of Contact:	N/A
Agency Address:	2131 Pear Street #1, Pinole, California 94564
Agency Phone Number:	(510) 724-9014
Date of Contact:	February 22, 2021
Method of Communication:	Online
Summary of Communication:	According to records reviewed, the subject property is zoned R-4 ("Very High Density Residential") for residential development by the City of Pinole.

4.1.9 Oil & Gas Exploration

Regulatory Agency Data	
Name of Agency:	California Division of Oil, Gas and Geothermal Resources (DOGGR)
Point of Contact:	Not applicable
Agency Address:	801 K Street, Sacramento, California 95814
Agency Phone Number:	(916) 322-1110
Date of Contact:	February 22, 2021
Method of Communication:	Online
Summary of Communication:	According to DOGGR, no oil or gas wells are located on or adjacent to the subject property.

4.1.10 Assessor's Office

Regulatory Agency Data	
Name of Agency:	Contra Costa County Assessor (CCCA)
Point of Contact:	Not applicable
Agency Address:	2530 Arnold Drive, Martinez, CA
Agency Phone Number:	(925) 313-7400
Date of Contact:	February 22, 2021
Method of Communication:	Online
Summary of Communication:	According to records reviewed, the subject property is identified by APNs 402-023-007-6, 402-023-003-5, and 402-023-002-7, and ownership is listed as MRK Properties since 2019. The 600 Roble Avenue building was constructed in 1984; the building at 1106 San Pablo Avenue was constructed in 1948 and totals 1,144 SF. The parcels total 2.1 acres.

Copies of pertinent documents are included in Appendix B of this report.

4.2 Mapped Database Records Search

Information from standard federal, state, county, and city environmental record sources was provided by Environmental Data Resources, Inc. (EDR). Data from governmental agency lists are updated and integrated into one database, which is updated as these data are released. The information contained in this report was compiled from publicly available sources and the locations of the sites are plotted utilizing a geographic information system, which geocodes the site addresses. The accuracy of the geocoded locations is approximately +/-300 feet.

Using the ASTM definition of migration, Partner considers the migration of hazardous substances or petroleum products in any form onto the subject property during the evaluation of each site listed on the radius report, which includes solid, liquid, and vapor.

4.2.1 Regulatory Database Summary

Radius Report Data				
Database	**Search Radius (mile)**	**Subject Property**	**Adjacent Properties**	**Sites of Concern**
Federal NPL or Delisted NPL Site	1.00	N	N	N
Federal CERCLIS Site	0.50	N	N	N
Federal CERCLIS-NFRAP Site	0.50	N	N	N
Federal RCRA CORRACTS Facility	1.00	N	N	N
Federal RCRA TSDF Facility	0.50	N	N	N
Federal RCRA Generators Site (LQG, SQG, CESQG)	0.25	**Y**	N	N
Federal IC/EC Registries	0.50	N	N	N
Federal ERNS Site	Subject Property	N	N	N
State/Tribal Equivalent NPL	1.00	N	N	N
State/Tribal Equivalent CERCLIS	1.00	N	N	N
State/Tribal Landfill/Solid Waste Disposal Site	0.50	N	N	N
State/Tribal Leaking Storage Tank Site	0.50	N	**Y**	N
State/Tribal Registered Storage Tank Sites (UST/AST)	0.25	N	**Y**	N
State/Tribal Voluntary Cleanup Sites (VCP)	0.50	N	N	N
State/Tribal Spills	0.50	N	N	N
Federal Brownfield Sites	0.50	N	N	N
State Brownfield Sites	0.50	N	N	N
EDR MGP	Varies	N	N	N
EDR US Hist Auto Station	Varies	N	**Y**	N
EDR US Hist Cleaners	Varies	N	N	N

4.2.2 Subject Property Listings

The subject property is identified in the regulatory database report, as discussed below:

- The subject property, identified as Painting and Dec JATC Bay Area Inc. / Skyline College / Southern California Painting & Drywall / JATC Training Committee of the East Bay at 600 Roble Avenue, is identified on the RCRA-SQG, FINDS, ECHO, FTTS, Historic FTTS, and HAZNET databases. The RCRA-SQG and HAZNET listings indicate former occupants generated hazardous waste; additional information regarding quantities and hazardous waste streams is provided in Section 4.1.1. The FTTS and Historic FTTS indicate former occupants of the subject property were training providers for pesticide applications. The FINDS listing is a 'pointer' indicator referring to the RCRA listing, and the ECHO listing provides enforcement and compliance information. No violations are listed. Based upon the regulatory oversight, these listings are not expected to represent a significant environmental concern.
- The subject property, identified as AT&T Mobility/Roble & Encina Aves (47538) at 1106 San Roble Avenue, is identified on the Contra Costa County Site List databases for operation of the on-site cellular tower. According to the database, this facility was formerly regulated by CCCHS as a

Hazardous Materials Business Plan (HMBP). In addition, the database report lists AT&T as a UST site; but based on the detailed Emergency Contingency plan for AT&T in CCHS files, it can be concluded that the UST noted in the database report is related to the 400-gallon UST at that same address. Additional information is provided in Section 4.1.4. Based upon the regulatory oversight, this listing is not expected to represent a significant environmental concern.

4.2.3 Adjacent Property Listings

The adjacent property to the southeast is identified in the regulatory database report, as discussed below:

- The property, identified as Darakar Inc. / Pinole Flyers / Major Lines Gasoline at 1390 San Pablo 1390 San Pablo Avenue, is located adjacent to the southeast of the subject property, and is situated hydrologically up-gradient. This facility was identified on the UST, Historic UST, LUST, SWEEPS UST, Contra Costa County Site List, RCRA NonGen / NLR, HAZNET, EDR Historic Auto Station, CERS, CERS Tanks, CERS Hazardous Waste, Enforcement, and Cortese databases. These listings pertain to the active gasoline station located adjacent to the southeast of 600 Roble Avenue. According to these listings, this location has been an active gasoline station since 1985. A release of gasoline was reported in January 1999 following the replacement of two gasoline USTs and one diesel UST. Soil samples collected from the excavation contained up to 8,000 mg/kg TPHg, 2,700 mg/kg TPHd, and 17 mg/kg benzene. Approximately 580 tons of soil was excavated and transported for off-site disposal. Six soil borings were advanced in July 1999; groundwater samples contained up to 900 micrograms per liter (µg/L) TPHg, 990 µg/L TPHd, and 310 µg/L MTBE. Following an additional subsurface investigation in February 2000, the RWQCB closed the case on June 1, 2000. No additional leaks, spills, or releases were recorded in association with this facility. The reported concentrations of volatile organic compounds (VOCs) in soil vapor samples collected during a 2018 limited subsurface investigation performed by Partner, indicated a general presence of chlorinated- and gasoline-related VOCs on the subject property, which were thought to be likely from groundwater associated with the offsite gasoline station situated to the southeast. The concentrations of VOCs in soil vapor did not exceed the calculated future residential and current commercial soil gas screening levels (SGSLs) for these compounds. Additional investigation of groundwater was performed by Partner in 2018 that concluded that there were no indications of impacts to groundwater from the upgradient off-site gasoline station and recommended no further investigation of the subject property.

Based on the findings, vapor migration is not expected to represent a significant environmental concern at this time.

4.2.4 Sites of Concern Listings

No sites of concern are identified in the regulatory database report.

Based on the findings, vapor migration is not expected to represent a significant environmental concern at this time.

4.2.5 Orphan Listings

No orphan listings of concern are identified in the regulatory database report

A copy of the regulatory database report is included in Appendix C of this report.

5.0 USER PROVIDED INFORMATION AND INTERVIEWS

In order to qualify for one of the *Landowner Liability Protections (LLPs)* offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the *Brownfields Amendments*), the *User* must conduct the following inquiries required by 40 CFR 312.25, 312.28, 312.29, 312.30, and 312.31. The *User* should provide the following information to the *environmental professional*. Failure to provide this information could result in a determination that *all appropriate inquiries* is not complete. The *User* is asked to provide information or knowledge of the following:

- Review Title and Judicial Records for Environmental Liens and AULs
- Specialized Knowledge or Experience of the User
- Actual Knowledge of the User
- Reason for Significantly Lower Purchase Price
- Commonly Known or *Reasonably Ascertainable* information
- Degree of Obviousness
- Reason for Preparation of this Phase I ESA

Fulfillment of these user responsibilities is key to qualification for the identified defenses to CERCLA liability. Partner requested our Client to provide information to satisfy User Responsibilities as identified in Section 6 of the ASTM guidance.

Pursuant to ASTM E1527-13, Partner requested the following site information from MRK Partners (User of this report).

User Responsibilities				
Item	**Provided by User**	**Not Provided by User**	**Discussed Below**	**Does Not Apply**
AAI User Questionnaire			X	
Title Records, Environmental Liens, and AULs			X	
Specialized Knowledge			X	
Actual Knowledge			X	
Valuation Reduction for Environmental Issues			X	
Identification of Key Site Manager	**Section 5.1.3**			
Reason for Performing Phase I ESA	**Section 1.1**			
Prior Environmental Reports	X		X	
Other				X

5.1 Interviews

5.1.1 Interview with Owner

The owner of the subject property since 2019, identified as Pinole Venture LP, was not available to be interviewed at the time of the assessment.

5.1.2 Interview with Report User

Please refer to Section 5.2 below for information requested from the Report User. The information requested was not received prior to the issuance of this report. Because the Report User (Client) is a lender, it is understood that the Report User would not have knowledge of the property that would significantly impact our ability to satisfy the objectives of this assessment. The lack of this information is not considered to represent a significant data gap.

5.1.3 Interview with Key Site Manager

A key site manager was not provided to be interviewed at the time of this assessment.

5.1.4 Interviews with Past Owners, Operators and Occupants

Interviews with past owners, operators and occupants were not reasonably ascertainable and thus constitute a data gap.

5.1.5 Interview with Others

As the subject property is not an abandoned property as defined in ASTM 1527-13, interview with others were not performed.

5.2 User Provided Information

5.2.1 Title Records, Environmental Liens, and AULs

At the request of the User, Partner contracted AFX Research, LLC to perform an environmental lien and AUL search for the subject property. No environmental liens or AULs were identified for the subject property.

Copies of pertinent pages are included in Appendix B of this report.

5.2.2 Specialized Knowledge

No specialized knowledge of environmental conditions associated with the subject property was provided by the User at the time of the assessment.

5.2.3 Actual Knowledge of the User

No actual knowledge of any environmental lien or AULs encumbering the subject property or in connection with the subject property was provided by the User at the time of the assessment.

5.2.4 Valuation Reduction for Environmental Issues

No knowledge of valuation reductions associated with the subject property was provided by the User at the time of the assessment.

5.2.5 Commonly Known or Reasonably Ascertainable Information

The User did not provide information that is commonly known or *reasonably ascertainable* within the local community about the subject property at the time of the assessment.

5.2.6 Previous Reports and Other Provided Documentation

The following information was provided to Partner for review during the course of this assessment:

Phase I Environmental Site Assessment, Partner Engineering and Science, Inc., September 14, 2018

Partner Engineering and Science, Inc. (Partner) prepared this report on behalf of MRK Partner. The assessment was performed in accordance with ASTM Standard E1527-13. The assessment consisted of a site reconnaissance, interviews with knowledgeable personnel, review of historical information, a review of federal, state and local regulatory databases and included a limited asbestos survey, a limited lead paint survey.

- At the time of the 2018 assessment, the subject property was developed similar to today.
- According to the 2018 report, the subject property formerly vacant land from at least 1902 until at least 1939. The building at 1106 San Pablo Avenue was constructed in 1948 as an auto repair facility; a UST was apparently installed at that time. Apparent residences and outbuildings were located at 1230 San Pablo Avenue in the 1950s and 1960s and this parcel was vacant by 1974. The building at 600 Roble Avenue was constructed in 1985 and initially occupied as a painting apprenticeship facility, and later occupied by various commercial office tenants.
- Partner identified a former 400-gallon petroleum UST located on the west end of the building at 1106 San Pablo Avenue. The UST was removed in 2002 under County oversight, and no issues were noted during the removal and no further action was required. The building at 1106 San Pablo Avenue was formerly used for auto repair.
- According to building permits, the subject property building at 600 Roble Avenue was formerly equipped with a spray booth, which was installed without the appropriate permits. This facility was a listed as a generator of hazardous waste

Partner identified a REC associated with the existing gas station located southeast of the subject property and recommended a limited subsurface investigation, as well as a comprehensive pre-demolition ACM survey for the two site buildings.

Limited Phase II Subsurface Investigation, Partner Engineering and Science, Inc., October 16, 2018

On September 27, 2018, Partner subcontracted with Environmental Control Associates, Inc. (ECA) to provide and operate drilling equipment to advance soil borings and install temporary soil vapor points. Vapor point VP-1 was advanced in the vicinity of the former on-site UST, vapor points VP-2, VP-3, and VP-4 were advanced in current and former exterior storage areas at 1106 San Pablo Avenue, vapor points VP-5 and VP-6 were advanced downgradient of the gasoline station at 1230 San Pablo Avenue, vapor points VP7 and VP-8 were advanced downgradient of the gasoline station at 600 Roble Avenue, and vapor point

VP-9 was advanced downgradient of the former paint booth at 600 Roble Avenue. The borings were advanced between 5 and 8.5 feet deep.

No TPH-cc concentrations were detected above the applicable residential or commercial RSLs in the soil samples collected during this assessment. No VOC concentrations were detected in soil above applicable residential or commercial RSLs. Title 22 (CAM-17) metals were detected above laboratory reporting limits (RLs) for 12 of the 17 listed metals. Naturally-occurring metals were detected including antimony, barium, cadmium, chromium, cobalt, copper, molybdenum, nickel, vanadium, zinc and mercury. Concentrations of CAM 17 metals detected in the soil samples collected from this investigation were below applicable residential and commercial RSLs.

The reported concentrations of VOCs in soil vapor samples, when detected, indicated a general presence of chlorinated- and gasoline-related VOCs on the subject property, likely from groundwater associated with the offsite gasoline station situated to the southeast. The concentrations of VOCs in soil vapor did not exceed the calculated future residential and current commercial soil gas SGSLs for these compounds.

Although a minor release of petroleum was found in soil at the former onsite UST, which did not translate to TPH in soil vapor in that area, no TPH-cc or VOC concentrations were detected in soil above applicable residential or commercial RSLs. Metals detected in the soil samples collected from this investigation were known to be naturally-occurring and were below California background metal concentrations or applicable residential and commercial RSLs.

The reported concentrations of VOCs in soil vapor samples through the subject property, when detected, did not exceed the calculated future residential and current commercial soil gas SGSLs for these compounds. The risk of vapor intrusion is low based on the concentrations.

Partner recommended no further investigation at the subject property, but noted that the continued presence of the active upgradient/adjacent gasoline station could alter environmental conditions for the area.

Asbestos and Lead-Based Paint Survey, Partner Engineering and Science, Inc., September 14, 2018

During the course of the onsite ACM and lead paint survey, a total of 34 bulk samples (59 sample layers) of presumed ACM were collected for analysis. Out of the 34 bulk samples collected, only two samples of roof patch and penetration mastic at 600 Roble Avenue were found to contain 3 to 5% chrysotile asbestos. For the lead-based paint survey, a total of 122 XRF readings (including 6 calibration readings) were collected throughout the subject property. Of the 116 actual XRF readings taken, none contained a lead content greater than 1.0 mg/cm2, which is the current regulatory threshold for the requirement of lead-safe work practices in the City of Pinole. Recommendations to safely handle potential ACM and painted surfaces during building demolitions were provided in the report.

Groundwater Investigation Report, Partner Engineering and Science, Inc., December 27, 2018

Partner performed a Groundwater Investigation to assess groundwater downgradient of the off-site gasoline station. The investigation scope included a geophysical survey and the advancement of four

borings to facilitate the collection and analysis of grab groundwater samples to evaluate the presence of VOCs. Due to poor recovery, only three groundwater samples were collected from the subject property and submitted for VOC analysis. Based on the results of the Groundwater Investigation, there were no indication of impacts to groundwater at the subject property from the upgradient off-site gasoline station. Therefore, Partner recommended no further investigation at that time.

Copies of pertinent pages reviewed are included in Appendix B of this report.

6.0 SITE RECONNAISSANCE

The weather at the time of the site visit was sunny and clear. Refer to Section 1.5 for limitations encountered during the field reconnaissance and Sections 2.1 and 2.2 for subject property operations. The table below provides the site assessment details:

Site Assessment Data	
Site Assessment Performed By:	Marc Hachey
Site Assessment Conducted On:	February 24, 2021

The table below provides the subject property personnel interviewed during the field reconnaissance:

Site Visit Personnel for 600 Roble Avenue, 1106 San Pablo Avenue, and 1230 San Pablo Avenue (Subject Property)			
Name	**Title/Role**	**Contact Number**	**Site Walk* Yes/No**
N/A	Key Site Manager	N/A	No

* Accompanied Partner during the field reconnaissance activities and provided information pertaining to the current operations and maintenance of the subject property

No potential environmental concerns were identified during the onsite reconnaissance.

6.1 General Site Characteristics

6.1.1 Solid Waste Disposal

Solid waste generated at the subject property is disposed of in plastic roll-off bins located at various locations on the subject property. An independent solid waste disposal contractor, Waste Management, removes solid waste from the subject property. No evidence of illegal dumping of solid waste was observed during the Partner site reconnaissance.

6.1.2 Sewage Discharge and Disposal

Sanitary discharges on the subject property are directed into the municipal sanitary sewer system. The City of Pinole services the subject property vicinity. No wastewater treatment facilities or septic systems are observed or reported on the subject property.

6.1.3 Surface Water Drainage

Storm water is removed from the subject property primarily by sheet flow action across the paved surfaces towards storm water drains located throughout the subject property or by percolation into the ground. Storm water from roofs, landscaped areas, and paved areas is directed to on-site concrete swales, which drain to the public right of way, and to on-site storm water drains. The subject property is connected to a municipal owned and maintained sewer system.

The subject property does not appear to be a designated wetland area, based on information obtained from the United States Fish & Wildlife Service; however, a comprehensive wetlands survey would be required in order to formally determine actual wetlands on the subject property. No surface

impoundments, wetlands, natural catch basins, settling ponds, or lagoons are located on the subject property. No drywells were identified on the subject property.

6.1.4 Source of Heating and Cooling

Pacific Gas & Electric Company (PG&E) provides electrical and natural gas service to the subject property; however, no active heating or air conditioning systems or domestic hot water equipment were identified.

6.1.5 Wells and Cisterns

No aboveground evidence of wells or cisterns was observed during the site reconnaissance.

6.1.6 Wastewater

Domestic wastewater generated at the subject property is disposed by means of the sanitary sewer system. No industrial process is currently performed at the subject property.

6.1.7 Septic Systems

No septic systems were observed or reported on the subject property.

6.1.8 Additional Site Observations

No additional general site characteristics were observed during the site reconnaissance.

6.2 Potential Environmental Hazards

6.2.1 Hazardous Substances and Petroleum Products Used or Stored at the Site

No evidence of the use of reportable quantities of hazardous substances was observed on the subject property. Construction supplies and paints were observed various locations at 1106 San Pablo Avenue. Although no significant evidence of leaks, spills, or a release was observed, housekeeping appeared to be generally poor.

6.2.2 Aboveground & Underground Hazardous Substance or Petroleum Product Storage Tanks (ASTs/USTs)

No evidence of current or former ASTs or USTs was observed during the site reconnaissance.

6.2.3 Evidence of Releases

No spills, stains, or other indications that a surficial release has occurred at the subject property were observed.

6.2.4 Polychlorinated Biphenyls (PCBs)

No potential PCB-containing equipment (transformers, oil-filled switches, hoists, lifts, dock levelers, hydraulic elevators, etc.) was observed on the subject property during Partner's reconnaissance.

6.2.5 Strong, Pungent or Noxious Odors

No strong, pungent, or noxious odors were evident during the site reconnaissance.

6.2.6 Pools of Liquid

No pools of liquid were observed on the subject property during the site reconnaissance.

6.2.7 Drains, Sumps and Clarifiers

No drains, sumps, or clarifiers, other than those associated with storm water removal, were observed on the subject property during the site reconnaissance.

6.2.8 Pits, Ponds and Lagoons

No pits, ponds, or lagoons were observed on the subject property.

6.2.9 Stressed Vegetation

No stressed vegetation was observed on the subject property.

6.2.10 Additional Potential Environmental Hazards

No additional environmental hazards, including landfill activities or radiological hazards, were observed.

6.3 Non-ASTM Services

6.3.1 Asbestos-Containing Materials (ACMs)

Asbestos is the name given to a number of naturally occurring, fibrous silicate minerals mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. The Occupational Safety and Health Administration (OSHA) regulation 29 CFR 1926.1101 requires certain construction materials to be *presumed* to contain asbestos, for purposes of this regulation. All thermal system insulation (TSI), surfacing material, and asphalt/vinyl flooring that are present in a building constructed prior to 1981 and have not been appropriately tested are "presumed asbestos-containing material" (PACM).

The subject property buildings were constructed in 1948 and 1985. Partner conducted an onsite ACM and lead paint survey in 2018. A total of 34 bulk samples (59 sample layers) of presumed ACM were collected for analysis. Out of the 34 bulk samples collected, only two samples of roof patch and penetration mastic at 600 Roble Avenue were found to contain 3 to 5% chrysotile asbestos. A written O&M Plan for safe management of these materials was recommended at that time.

According to the US EPA, ACM and PACM that is intact and in good condition can, in general, be managed safely in-place under an Operations and Maintenance (O&M) Program until removal is dictated by renovation, demolition, or deteriorating material condition. Prior to any disturbance of the construction materials within this facility, a comprehensive ACM survey is recommended.

6.3.2 Lead-Based Paint (LBP)

Lead is a highly toxic metal that affects virtually every system of the body. LBP is defined as any paint, varnish, stain, or other applied coating that has 1 mg/cm^2 (or 5,000 µg/g or 0.5% by weight) or more of lead. Congress passed the Residential Lead-Based Paint Hazard Reduction Act of 1992, also known as "Title X", to protect families from exposure to lead from paint, dust, and soil. Under Section 1017 of Title X, intact LBP on most walls and ceilings is not considered a "hazard," although the condition of the paint

should be monitored and maintained to ensure that it does not become deteriorated. Further, Section 1018 of this law directed the Housing and Urban Development (HUD) and the US EPA to require the disclosure of known information on LBP and LBP hazards before the sale or lease of most housing built before 1978.

Based on the age of the subject property buildings, there is a potential that LBP is present. Interior and exterior painted surfaces were observed in good condition and therefore not expected to represent a "hazard," although the condition of the paint should be monitored and maintained to ensure that it does not become deteriorated. Partner conducted an onsite ACM and lead paint survey in 2018. For the lead-based paint survey, a total of 122 XRF readings (including 6 calibration readings) were collected throughout the subject property. Of the 116 actual XRF readings taken, none contained a lead content greater than 1.0 mg/cm2, which was the current regulatory threshold for the requirement of lead-safe work practices in the City of Pinole at that time. A written O&M Plan for safe management of these materials was recommended at that time.

6.3.3 Radon

Radon is a colorless, odorless, naturally occurring, radioactive, inert, gaseous element formed by radioactive decay of radium (Ra) atoms. The US EPA has prepared a map to assist National, State, and local organizations to target their resources and to implement radon-resistant building codes. The map divides the country into three Radon Zones, according to the table below:

EPA Radon Zones

EPA Zones	Average Predicted Radon Levels	Potential
Zone 1	Exceed 4.0 pCi/L	Highest
Zone 2	Between 2.0 and 4.0 pCi/L	Moderate
Zone 3	Less than 2.0 pCi/L	Low

It is important to note that the EPA has found homes with elevated levels of radon in all three zones, and the US EPA recommends site-specific testing in order to determine radon levels at a specific location. However, the map does give a valuable indication of the propensity of radon gas accumulation in structures.

Radon sampling was not conducted as part of this assessment. Review of the US EPA Map of Radon Zones places the subject property in Zone 2. Based upon the radon zone classification, radon is not considered to be a significant environmental concern.

6.3.4 Lead in Drinking Water

According to available information, a public water system operated by EBMUD serves the subject property vicinity. The 2019 Annual Water Quality Report indicates water supplied to the subject property is in compliance with all State and Federal regulations pertaining to drinking water standards, including those for lead and copper.

6.3.5 *Mold*

Molds are microscopic organisms found virtually everywhere, indoors and outdoors. Mold will grow and multiply under the right conditions, needing only sufficient moisture (e.g., in the form of very high humidity, condensation, or water from a leaking pipe, etc.) and organic material (e.g., ceiling tile, drywall, paper, or natural fiber carpet padding).

Building access was not granted. The buildings were accessed for the 2018 ESA and Partner observed accessible, interior areas for the subject property buildings for significant evidence of mold growth with the exceptions detailed in Section 1.5 of this report; however, this ESA should not be used as a mold survey or inspection. Additionally, this limited assessment was not designed to assess all areas of potential mold growth that may be affected by mold growth on the subject property. Rather, it is intended to give the client an indication as to whether or not conspicuous (based on observed areas) mold growth is present at the subject property. This evaluation did not include a review of pipe chases, mechanical systems, or areas behind enclosed walls and ceilings.

No obvious indications of water damage or mold growth were observed during Partner's visual assessment.

6.4 Adjacent Property Reconnaissance

The adjacent property reconnaissance consisted of observing the adjacent properties from the subject property premises and from public right of ways. Other than discussed below, no items of environmental concern were identified on the adjacent properties during the site assessment, including hazardous substances, petroleum products, ASTs, USTs, evidence of releases, PCBs, strong or noxious odors, pools of liquids, sumps or clarifiers, pits or lagoons, stressed vegetation, or any other potential environmental hazards.

6.4.1 *Hazardous Substances and Petroleum Products Used or Stored at the Site*

The adjacent property to the southeast is developed with an active gasoline station; this facility is discussed in Section 4.2.3.

6.4.2 *ASTs/USTs for Hazardous Substances or Petroleum Products*

The adjacent property to the southeast is developed with an active gasoline station; this facility is discussed in Section 4.2.3.

6.4.3 *PCBs*

Pole-mounted transformers were observed on the adjacent properties. No staining or leakage was observed in the vicinity of the transformers. The presence of adjacent transformers is not expected to represent a significant environmental concern.

7.0 FINDINGS AND CONCLUSIONS

Findings

A *REC* refers to the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: due to release to the environment; under conditions indicative of a release to the environment; or under conditions that pose a material threat of a future release to the environment. The following was identified during the course of this assessment:

- Partner did not identify RECs during the course of this assessment.

A *CREC* refers to a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls. The following was identified during the course of this assessment:

- Partner did not identify CRECs during the course of this assessment.

A *HREC* refers to a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls. The following was identified during the course of this assessment:

- Partner did not identify HRECs during the course of this assessment.

An *environmental issue* refers to environmental concerns identified by Partner, which do not qualify as RECs; however, warrant further discussion. The following was identified during the course of this assessment:

- An active gasoline station (Pinole Flyers) is located adjacent to the southeast of the subject property and is situated hydrologically upgradient from the subject property. Available information indicates this location has been an active gasoline station since at least 1985. Based on the environmental database report, a release of gasoline was reported in January 1999 following the replacement of two gasoline USTs and one diesel UST. The Regional Water Quality Control Board (RWQCB) closed the case on June 1, 2000. No additional leaks, spills, or releases were recorded in association with this facility. The reported concentrations of volatile organic compounds (VOCs) in soil vapor samples collected during a 2018 limited subsurface investigation performed by Partner, indicated a general presence of chlorinated- and gasoline-related VOCs on the subject property, which were thought to be likely from groundwater associated with the offsite gasoline station situated to the southeast. The concentrations of VOCs in soil vapor did not exceed the calculated future residential and current commercial soil gas screening levels (SGSLs) for these compounds. Additional investigation of groundwater was performed by Partner in 2018 that concluded that there were no indications of impacts to groundwater from the upgradient off-site gasoline station and recommended no further investigation of the subject property.

- The subject property was formerly equipped with one 400-gallon petroleum (possibly lube oil) UST, reportedly installed in the late 1940s and associated with former truck repair operations. The UST was located adjacent to the west of the 1106 San Pablo Avenue building. The UST was removed on August 13, 2002 when the property was occupied by OJ Erikson (formerly Erikson, Inc.) with Contra Costa Health Services oversight, and was reported to be intact upon removal with no apparent leaks. The Contra Costa County Health Services required no further action with regard to the UST. Subsequently, in 2018, Partner performed a limited subsurface investigation of soils and soil vapor including investigation of the former UST area for the presence of TPH, VOCs, and metals. A minor release of petroleum was found in soil at the former on-site UST area, which did not translate to TPH in soil vapor in that area, no TPH-cc or VOC concentrations were detected in soil above applicable residential or commercial RSLs. Since the UST was not found to have been associated with a significant release and the removal was conducted with regulatory oversight and closed, this UST is not anticipated to be a significant environmental concern for the subject property.
- The building at 1106 San Pablo Avenue is currently used as by an HVAC contractor, and was formerly used for auto repair. Limited records were reviewed regarding the operations conducted in the building and if hazardous materials were used, although it can be assumed that at least some hazardous materials were used as part of auto repair operations. Additionally, the yard area to the east of the building is currently used for exterior storage and appears to have been used for undocumented storage since at least 1963 (based on aerial photography). The undocumented industrial use of this area of the subject property, exterior storage, and the assumed use of hazardous materials in auto repair operations, is an environmental concern for the subject property;
- According to building permits, the subject property building at 600 Roble Avenue was formerly equipped with a spray booth, which was installed without the appropriate permits. This facility was a listed as a generator of hazardous waste. A City of Pinole letter dated January 18, 1988 outlined several violations to be corrected (regarding air controls and reporting). However, no subsequent correspondence was available. No additional information is available regarding possible operations at this facility involving the use of the spray booth or the location of the booth. No evidence of a spray booth was observed during the site reconnaissance. The presumed use of a spray booth at 600 Roble Avenue for an indeterminate period of time is an environmental concern, but since no releases have been detected and Partner assumes that there was no regulatory use, the spray booth does not appear to be a significant environmental concern. The reported concentrations of VOCs in soil vapor samples throughout the subject property based on the 2018 limited subsurface investigation performed by Partner, did not exceed the calculated future residential and current commercial soil gas SGSLs for these compounds.
- Due to the age of the subject property buildings, there is a potential that asbestos-containing material (ACM) and/or lead-based paint (LBP) are present. Overall, suspect ACMs and painted

surfaces were observed in good condition and do not pose a health and safety concern to the occupants of the subject property at this time. During the course of the onsite ACM and lead paint survey performed in 2018, two samples of roof patch and penetration mastic at 600 Roble Avenue were found to contain 3 to 5% chrysotile asbestos. For the lead-based paint survey, no readings of lead greater than 1.0 mg/cm^2 (the current regulatory threshold for the requirement of lead-safe work practices in the City of Pinole) were detected. A written Operations and Maintenance (O&M) Plan for safe management of these materials was recommended at that time.

Conclusions, Opinions and Recommendations

Partner has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-13 of 600 Roble Avenue, 1106 San Pablo Avenue, and 1230 San Pablo Avenue in the City of Pinole, Contra Costa County, California (the "subject property"). Any exceptions to, or deletions from, this practice are described in Section 1.5 of this report.

This assessment has revealed no evidence of recognized environmental conditions in connection with the subject property; however, environmental issues were identified. Based on the conclusions of this assessment, Partner recommends no further investigation of the subject property at this time.

8.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

Partner has performed a Phase I Environmental Site Assessment of the property located at 600 Roble Avenue, 1106 San Pablo Avenue, and 1230 San Pablo Avenue in the City of Pinole, Contra Costa County, California in conformance with the scope and limitations of the protocol and the limitations stated earlier in this report. Exceptions to or deletions from this protocol are discussed earlier in this report.

By signing below, Partner declares that, to the best of our professional knowledge and belief, we meet the definition of *Environmental Professional* as defined in §312.10 of 40 CFR §312. Partner has the specific qualifications based on education, training, and experience to assess a *property* of the nature, history, and setting of the subject *property*. Partner has developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Prepared By:

Marc Hachey
Environmental Professional

Reviewed By:

Caroline Ziegler
Project Manager

9.0 REFERENCES

Reference Documents

American Society for Testing and Materials, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, ASTM Designation: E1527-13

Environmental Data Resources (EDR), Radius Report, February 2021

Federal Emergency Management Agency, Federal Insurance Administration, National Flood Insurance Program, Flood Insurance Map, accessed via internet, February 2021

Partner Engineering and Science, *Phase I Environmental Site Assessment*, September 14, 2018

Partner Engineering and Science, *Limited Phase II Subsurface Investigation*, October 16, 2018

Partner Engineering and Science, *Asbestos and Lead-Based Paint Survey*, September 14, 2018

Partner Engineering and Science, *Groundwater Investigation Report*, December 27, 2018

United States Department of Agriculture, Natural Resources Conservation Service, accessed via internet, February 2021

United States Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey, accessed via the internet, February 2021

United States Environmental Protection Agency, EPA Map of Radon Zones (Document EPA-402-R-93-071), accessed via the internet, February 2021

United States Geological Survey, accessed via the Internet, February 2021

United States Geological Survey Topographic Map 2015, 7.5 minute series

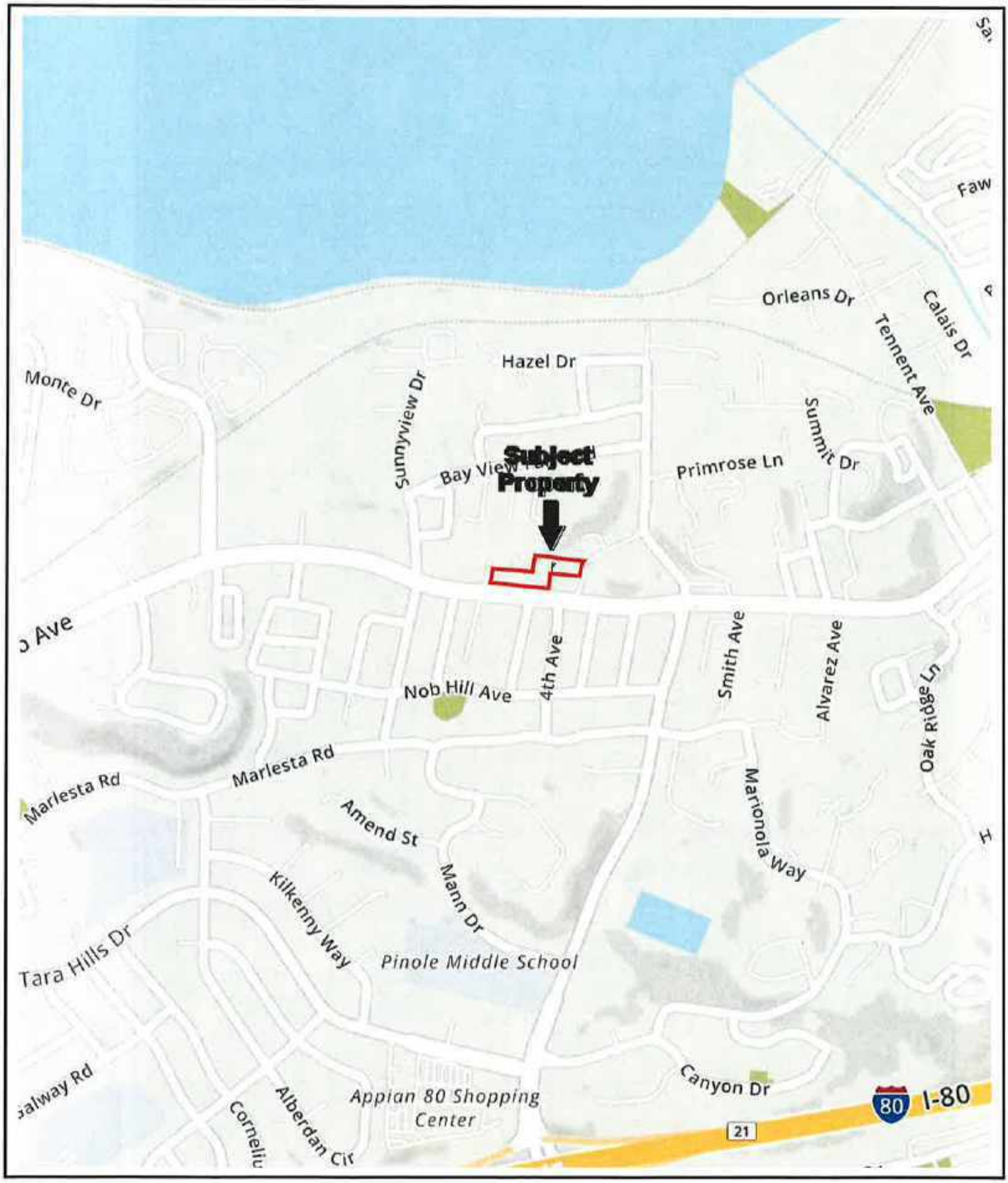
FIGURES

1 SITE LOCATION MAP

2 SITE PLAN

3 TOPOGRAPHIC MAP

PARTNER



N

Drawing Not To Scale

KEY:
Subject Property

FIGURE 1: SITE LOCATION MAP
Project No. 18-224911.8

PARTNER

N

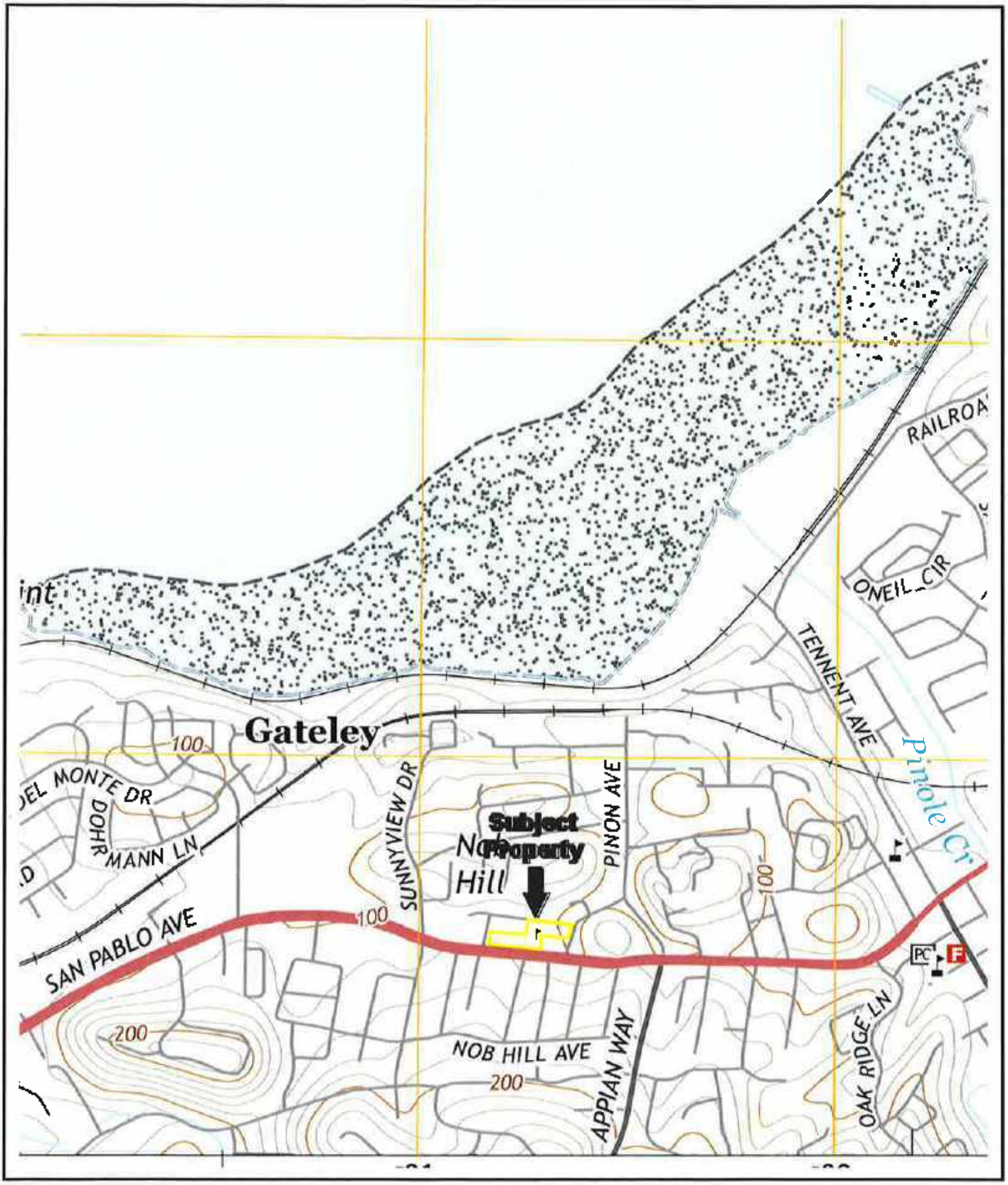
GROUNDWATER FLOW

Former UST

KEY:
Subject Property

FIGURE 2: SITE PLAN
Project No. 18-224911.8

PARTNER



N

USGS 7.5 Minute *Mare Island, California* Quadrangle
Created: 2015

KEY:
Subject Property

FIGURE 3: TOPOGRAPHIC MAP
Project No. 18-224911.8

PARTNER

APPENDIX F. PHASE I REPORT APPENDICES AVAILABLE AT:

PINOLE CITY HALL

DEVELOPMENT SERVICES DEPARTMENT

2131 PEAR STREET

PINOLE, CA 94564

SiteSafe
A QUALTEK Company

8618 Westwood Center Drive, Suite 315, Vienna, VA 22182
703.276.1100 • 703.276.1169 fax
info@sitesafe.com • www.sitesafe.com

Radio Frequency (RF) Site Report
Partner Assessment Corporation
Site ID – 10101900-47538-CCL04305
Assessment Purpose – MRSFR043240
Site Name – Roble Avenue & Encina Avenue

1106 San Pablo Avenue
Pinole, CA 94564

Latitude: N38-0-16.45
Longitude: W122-18-11.99
Structure Type: Monopole

Report generated date: August 24, 2021
Report by: Benjamin Schnable
Customer Contact: Caroline Ziegler

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A QualCOMM Company

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2 Analysis

2.1 RF Exposure Diagram

The RF diagram(s) below display theoretical percentage of the Maximum Permissible Exposure for all systems at the site. These diagrams use modeling as prescribed in OET Bulletin 65 and assumptions detailed in Appendix B.

The key at the bottom of each diagram indicates if percentages displayed are referenced to FCC **General Public** Maximum Permissible Exposure (MPE) limits. Color coding on the diagrams is as follows:

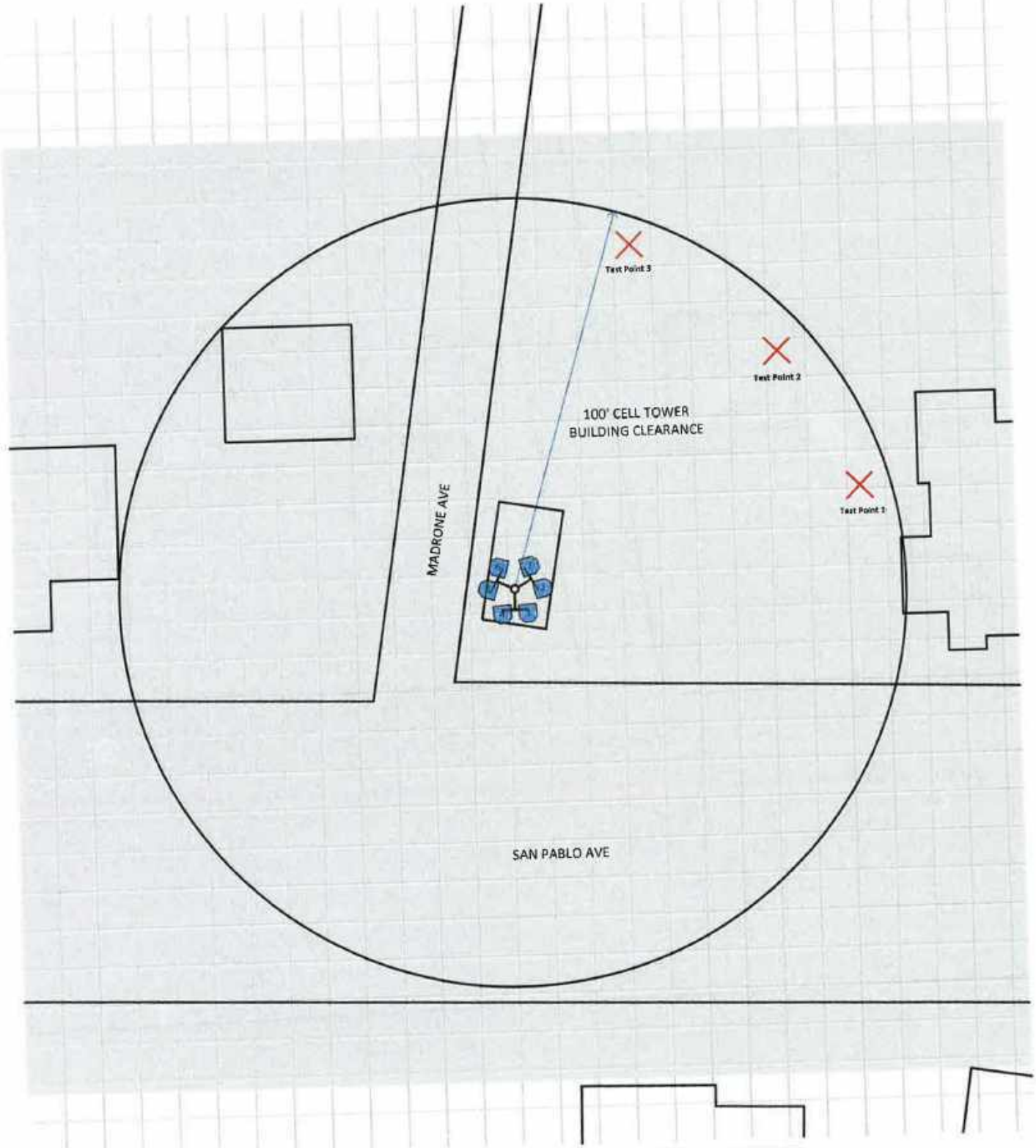
% of FCC Public Exposure Limit

0-100	100-500	500-5000	5000+

Note: In the RF exposure simulations below, exposure is calculated appropriately based on the relative height and location of that area to all antennas. The analyzed elevations in the RF exposure simulations are as follows:

- GROUND LEVEL = 0'
- 10' (AGL)
- 20' (AGL)
- 30' (AGL)
- 40' (AGL)
- 50' (AGL)

RF Exposure Simulation For: Roble Avenue & Encina Avenue
Composite View at 10' (AGL)



% of FCC Public Exposure Limit

0-100	100-500	500-5000	5000+

AT&T MOBILITY LLC

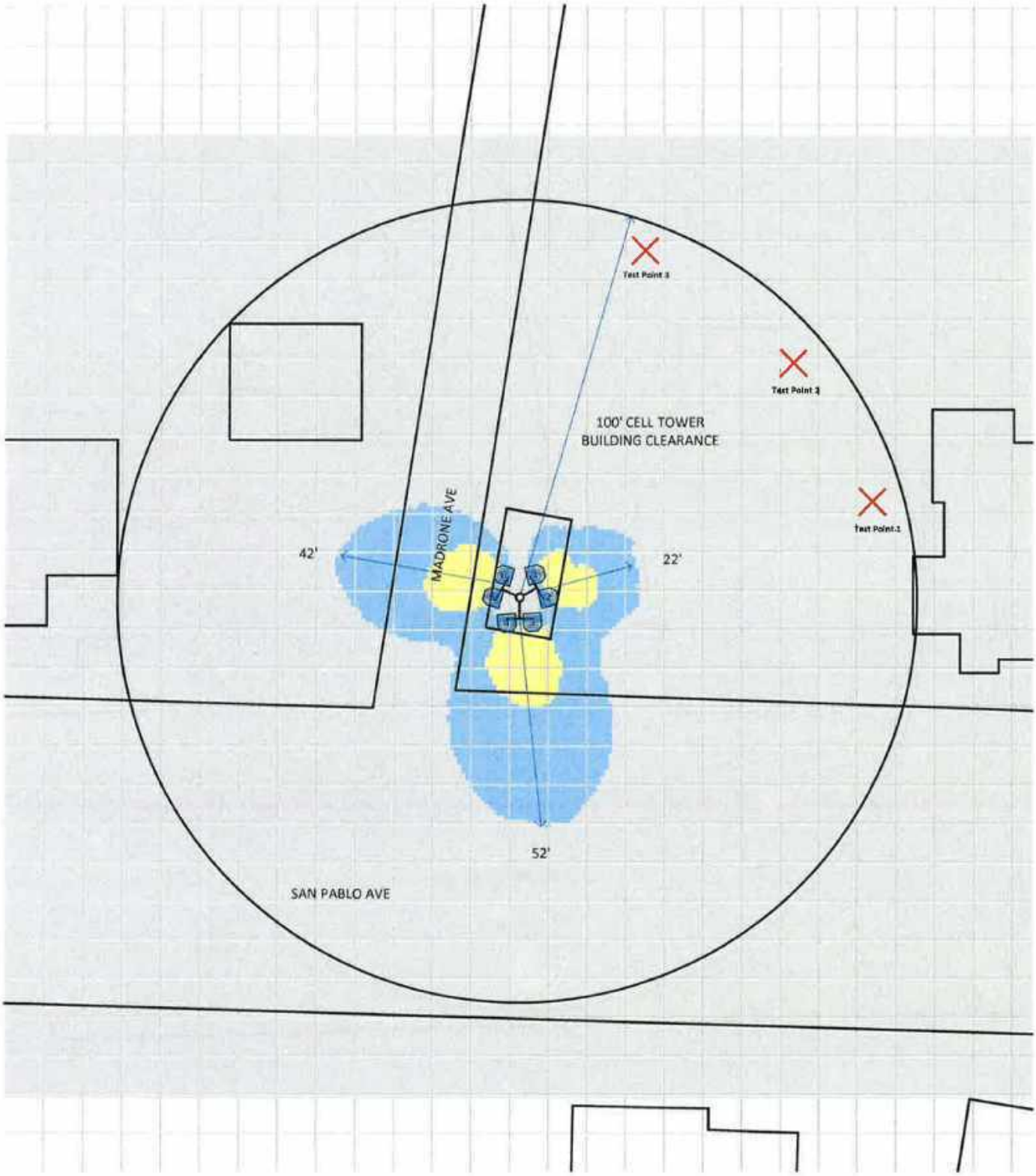
(Feet)

0 17.6 35.2

www.sitesafe.com
8/24/2021 11:30:52 AM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Single Level (0)

RF Exposure Simulation For: Roble Avenue & Encina Avenue
Composite View at 30' (AGL)
AT&T Centerline = 30.6' (AGL)



% of FCC Public Exposure Limit

0-100	100-500	500-5000	5000+

AT&T MOBILITY LLC

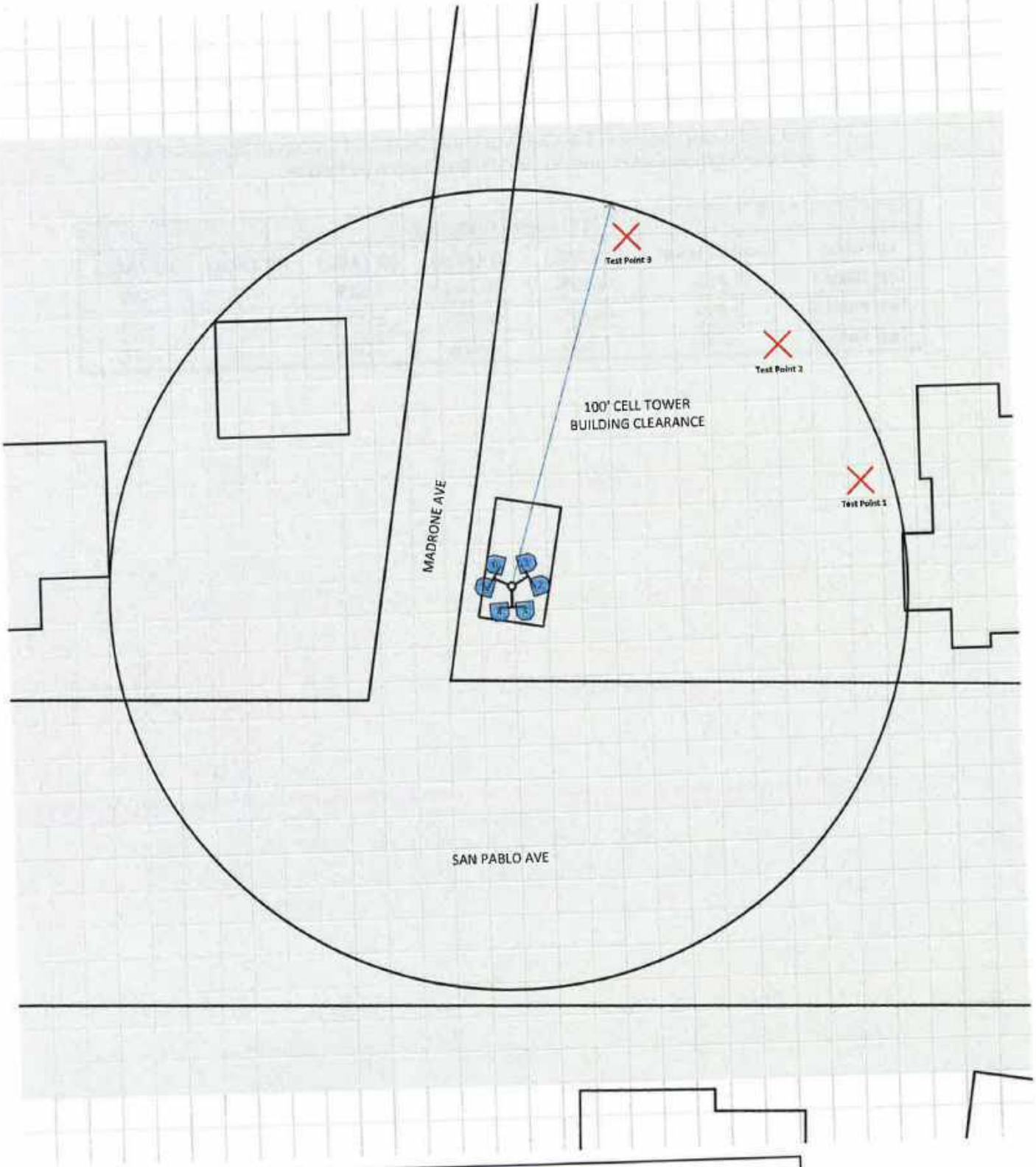
(Feet)

0 17.7 35.4

www.sitesafe.com
8/24/2021 11:34:12 AM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Single Level (0)

RF Exposure Simulation For: Roble Avenue & Encina Avenue
Composite View at 50' (AGL)



% of FCC Public Exposure Limit

0-100	100-500	500-5000	5000+

AT&T MOBILITY LLC

(Feet)
0 17.5 35

www.sitesafe.com
8/24/2021 11:39:14 AM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Single Level (0)

4 Reviewer Certification

The reviewer whose signature appears below hereby certifies and affirms:

That I am an employee of Site Safe, LLC, in Vienna, Virginia, at which place the staff and I provide RF compliance services to clients in the wireless communications industry; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission (FCC) as well as the regulations of the Occupational Safety and Health Administration (OSHA), both in general and specifically as they apply to the FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields; and

That I have thoroughly reviewed this Site Report and believe it to be true and accurate to the best of my knowledge as assembled by and attested to by Benjamin Schnable.

August 24, 2021

Appendix B – Assumptions and Definitions

General Model Assumptions

In this site report, it is assumed that all antennas are operating at **full power at all times**. Software modeling was performed for all transmitting antennas located on the site. Sitesafe has further assumed a 100% duty cycle and maximum radiated power.

The site has been modeled with these assumptions to show the maximum RF energy density. Sitesafe believes this to be a *worst-case* analysis, based on best available data. Areas modeled to predict exposure exposure greater than 100% of the applicable MPE level may not actually occur but are shown as a *worst-case* prediction that could be realized real time. Sitesafe believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

The Monopole at 1106 San Pablo Avenue, Pinole CA, is a camouflaged Pine Tree type structure standing at the Southeast corner of lot at a height of 35 feet. This monopole is supporting six (6) cellular antennas that AT&T operates. These six (6) antennas are grouped into 3 sectors at various degrees around the monopole. The operating equipment are located in a gated enclosure at the base of this monopole.

The information used to develop the RF Emissions plots on pages 5 through 10 in this report was developed using the provided AT&T site antenna data. This antenna data included the azimuth, down tilts, powers and antenna center lines for each of the six (6) antennas. With this information SiteSafe was able to upload into out RF tool to make these calculation of the RF Emissions see in this report

Thus, at any time, if power density measurements were made, we believe the real-time measurements would indicate levels below those depicted in the RF exposure diagram(s) in this report. By modeling in this way, Sitesafe has conservatively shown exclusion areas – areas that should not be entered without the use of a personal monitor, carriers reducing power, or performing real-time measurements to indicate real-time exposure levels.

OET Bulletin 65 – Technical guideline developed by the FCC's Office of Engineering and Technology to determine the impact of RF exposure on humans. The guideline was published in August 1997.

OSHA (Occupational Safety and Health Administration) – Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health. For more information, visit www.osha.gov.

Radio Frequency Exposure or Electromagnetic Fields – Electromagnetic waves that are propagated from antennas through space.

Spatial Average Measurement – A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy a 6-foot tall human body will absorb while present in an electromagnetic field of energy.

Transmitter Power Output (TPO) – The radio frequency output power of a transmitter's final radio frequency stage as measured at the output terminal while connected to a load.

Appendix D – Exposure Diagram Color Coding

The following provides further details on the colors in the RF exposure diagrams in Section 2.1.

1. For a General Public environment the five color levels identified in this analysis can be interpreted in the following manner:

- Gray represents areas predicted to be at 100% or less of the General Public MPE limits. *The General Public can access these areas with no restrictions.*
- Blue represents areas predicted to be between 100% and 500% of the General Public MPE limits. *The General Public should be restricted from accessing these areas.*
- Yellow represents areas predicted to be between 500% and 5000% of the General Public MPE limits. *The General Public should be restricted from accessing these areas.*
- Red represents areas predicted to be greater than 5000% of the General Public MPE limits. *The General Public should be restricted from accessing these areas.*

2. For an Occupational environment the five color levels identified in this analysis can be interpreted in the following manner:

- Gray represents areas predicted to be at 20% or less of the Occupational MPE limits. *Workers can access these areas with no restrictions.*
- Blue represents areas predicted to be between 20% and 100% of the Occupational MPE limits. *Workers can access these areas assuming they have basic understanding of EME awareness and RF safety procedures and understand how to limit their exposure.*
- Yellow represents areas predicted to be between 100% and 1000% of the Occupational MPE limits. *Workers can access these areas assuming they have basic understanding of EME awareness and RF safety procedures and understand how to limit their exposure. Transmitter power reduction and/or time-averaging may be required.*
- Red represents areas predicted to be greater than 1000% of the Occupational MPE limits. *These areas are not safe for workers to be in for prolonged periods of time. Special procedures must be adhered to, such as lockout/tagout or transmitter power reduction, to minimize worker exposure to EME.*

Additional Information

Additional RF information is available at the following sites:
https://www.fcc.gov/general/radio-frequency-safety-0
https://www.fcc.gov/engineering-technology/electromagnetic-compatibility-division/radio-frequency-safety/faq/rf-safety

OSHA has additional information available at:
https://www.osha.gov/SLTC/radiofrequencyradiation/index.html

Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f^2)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f^2)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz *Plane-wave equivalent power density

1 SW COLUMBIA STREET
PORTLAND, OREGON 97204
T 971.930.1700

MEMORANDUM

To:	Ben Kurzius, MRK Partners
From:	Mike Greene, Dudek
Subject:	Technical Noise Memo – Vista Woods Apartments Project
Date:	4/27/2021
cc:	
Attachment(s):	Figure 1, Noise Modeling Locations
	Attachment A; Noise Model Input/Output Data

This technical noise memo summarizes the results of the traffic noise analysis conducted for onsite uses of the Vista Woods Apartments Project located at 600 Roble Avenue in Pinole, California.

1 Background

1.1 Project Description

The Vista Woods Apartments Project ("project") is a new construction affordable housing project on currently occupied lots located at 600 Roble Avenue in Pinole, California. The project involves demolition of existing structures on-site, sitework, and construction of a new 4-story building which would provide 179 units of affordable housing for seniors. Tenant amenities will include a variety of community gathering spaces, a fitness room, shared laundry in addition to in-unit washer/dryer hook-ups, exterior and garage parking and offices for on-site management staff. The landscape design incorporates a diverse set of outdoor passive and active recreation spaces for residents and their pets to encourage healthy living, designed with sustainability in mind. The development will introduce a new bus shelter on San Pablo Avenue in addition to producing renewable energy through rooftop solar photovoltaic panels.

1.2 Noise Fundamentals and Terminology

Vibrations, traveling as waves through air from a source, exert a force perceived by the human ear as sound. Sound pressure level (referred to as sound level) is measured on a logarithmic scale in decibels (dB) that represent the fluctuation of air pressure above and below atmospheric pressure. Frequency, or pitch, is a physical characteristic of sound and is expressed in units of cycles per second or hertz (Hz). The normal frequency range of hearing for most people extends from about 20 to 20,000 Hz. The human ear is more sensitive to middle and high frequencies, especially when the noise levels are quieter. As noise levels get louder, the human ear starts to hear the frequency spectrum more evenly. To accommodate for this phenomenon, a weighting system to evaluate how loud a noise level is to a human was developed. The frequency weighting called "A" weighting is typically used for quieter noise levels, which de-emphasizes the low-frequency components of the sound in a manner similar to the response of a human ear. This A-weighted sound level is called the "noise level" and is referenced in units of dBA.

Because sound is measured on a logarithmic scale, a doubling of sound energy results in a 3 dBA increase in the noise level. Changes in a community noise level of less than 3 dB are not typically noticed by the human ear (Caltrans 2013a). Changes from 3 to 5 dB may be noticed by some individuals who are extremely sensitive to changes in noise. A 5 dB increase is readily noticeable. The human ear perceives a 10 dB increase in sound level as a doubling of the sound level (i.e., 65 dBA sounds twice as loud as 55 dBA to a human ear).

An individual's noise exposure occurs over a period of time; however, noise level is a measure of noise at a given instant in time. The equivalent continuous sound level (L_{eq}), also referred to as the average sound level, is a single number representing the fluctuating sound level in A-weighted decibels (dBA) over a specified period of time. It is a sound-energy average of the fluctuating level and is equal to a constant unchanging sound of that dB level. Community noise sources vary continuously, being the product of many noise sources at various distances, all of which constitute a relatively stable background or ambient noise environment.

Noise levels are generally higher during the daytime and early evening when traffic (including airplanes), commercial, and industrial activity is the greatest. However, noise sources experienced during nighttime hours when background levels are generally lower can be potentially more conspicuous and irritating to the receiver. In order to evaluate noise in a way that considers periodic fluctuations experienced throughout the day and night, a concept termed "community noise equivalent level" (CNEL) was developed, The CNEL scale represents a time-weighted 24-hour average noise level based on the A-weighted sound level. CNEL accounts for the increased noise sensitivity during the evening hours (7 p.m. to 10 p.m.) and nighttime hours (10 p.m. to 7 a.m.) by adding 5 dB to the average sound levels occurring during the evening hours and 10 dB to the sound levels occurring during nighttime hours. Additional noise definitions are provided below.

Ambient Noise Level. The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.

A-Weighted Sound Level (dBA). The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighting filter deemphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with community equivalent sound level.

Community Noise Equivalent Level (CNEL). CNEL is the A-weighted equivalent continuous sound exposure level for a 24-hour period with a 10 dB adjustment added to sound levels occurring during the nighttime hours (10 p.m.–7 a.m.) and 5 dB added to the sound during the evening hours (7 p.m.–10 p.m.).

Day Night Average Sound Level (DNL or L_{dn}). Similar to the CNEL noise metric, except that no penalty is added during the evening hours (7 p.m.–10 p.m.). Typically, the CNEL and L_{dn} noise metrics vary by approximately 1 decibel or less and are often considered to be functionally equivalent.

Decibel (dB). The decibel is a unit for measuring sound pressure level and is equal to 10 times the logarithm to the base 10 of the ratio of the measured sound pressure squared to a reference pressure, which is 20 micropascals.

2 Noise Analysis Methodology

2.1 Applicable Noise Standards

Because the proposed project may receive funding from the U.S. Department of Housing and Urban Development (HUD), the noise standards specified by HUD were used for this analysis. HUD's noise standards may be found in 24 CFR Part 51, Subpart B (CFR 2013). Exterior uses with a day night average sound level (DNL) of 65 dBA or less are considered normally acceptable. Sites at which the environmental or community noise exposure exceeds 65 decibels DNL are considered noise-impacted areas. For new construction proposed in high noise areas, grantees shall incorporate noise attenuation features to the extent required by HUD environmental criteria and standards contained in Subpart B (Noise Abatement and Control) of 24 CFR Part 51.

The "Normally Unacceptable" noise zone includes community noise levels from above 65 decibels to 75 decibels. Approvals in this noise zone require a minimum of 5 dB additional sound attenuation for buildings having noise-sensitive uses if the day-night average sound level is greater than 65 dBA but does not exceed 70 dBA, or a minimum of 10 decibels of additional sound attenuation if the day-night average sound level is greater than 70 dBA but does not exceed 75 dBA.

The interior noise standard is 45 dBA DNL.

2.2 Preliminary Noise Modeling

Based upon an examination of aerial imagery, the only major noise source in the project vicinity is from motor vehicle traffic on San Pablo Avenue. The proposed project is directly adjacent to San Pablo Avenue. The other nearby roads are minor "feeder" streets which would have a negligible contribution to the on-site noise environment. The nearest rail line is located approximately 1,700 feet away[1] and no airports are located within 10 miles of the project site. An initial noise analysis of traffic noise from San Pablo Avenue using HUD's DNL Calculator[2] indicated that worst-case exterior building façade noise levels would be approximately 68 dBA DNL. However, because the DNL Calculator does not account for site conditions such as elevated receivers, a more detailed traffic noise model was used.

2.3 Detailed Noise Modeling

The proposed project site has several receiver locations of interest including multiple building facades, each four (4) stories high, with varying traffic noise exposures and several open space areas. Because of these factors, it was determined that the Federal Highway Administration's (FHWA) Traffic Noise Model (TNM) version 2.5 (FHWA 2004) would be ideal for a more detailed analysis. The TNM traffic noise

[1] Based upon the City of Pinole General Plan (City of Pinole 2010), the project site is approximately 600 feet outside of the 60 dBA CNEL rail noise contour, not accounting for intervening terrain, buildings, or other features which would reduce the noise levels further. Numerous rows of buildings exist between the rail lines and the project site.

[2] https://www.hudexchange.info/programs/environmental-review/dnl-calculator/

prediction model calculates the noise levels based on specific information including traffic volumes, vehicle fleet mix, speed limits, roadway geometrics, receiver elevations, intervening structures and lateral distances between the noise receivers and the roadways.

Project site, surrounding structures and roadway geometry were input using aerial photography information upon which the project's site plan was overlain; this was subsequently digitized into the TNM model.

Modeled receiver locations (shown in Figure 1) consisted of the following:

- Proposed building façade exteriors facing San Pablo Avenue, grouped by building wings (receivers R1 – R4 for Wing 1; receivers R5 – R8 for Wing 2, and receivers R9 – R12 for Wings 3 and 4);
- Proposed common area adjacent to Wings 1 and 2 (R13);
- Proposed common area adjacent to Wings 2 and 3 (R14)

In order to accurately estimate the project site's noise levels in terms of the 24-hour weighted DNL noise metric, the TNM model was run for three 1-hour traffic volume cases: AM/PM peak-hour (assumed to be approximately 10% of the roadways' Average Daily Traffic (ADT); off-peak daytime (assumed to be approximately 6% of ADT), and nighttime volumes (assumed to be approximately 15 % of ADT over the 9-hour period from 10 PM to 7 AM, per HUD noise modeling guidance) The 15% of ADT was then divided by 9, to arrive at the hourly average level suitable for input into TNM. The resultant traffic noise levels for each of these cases was then averaged in the energy (i.e., the logarithmic) domain after applying the 10-decibel noise "penalty" to the nighttime noise levels.

ADT volumes used for the analysis were from the City of Pinole Public Works Department (City of Pinole 2016). The most recent traffic volume counts available (Year 2016) were used. The modeled ADTs are shown in Table 1 below. Modeled traffic speeds were used based upon the posted roadway speed limits using Google Earth Street View.

Table 1 – Modeled Traffic Volumes

Modeled Roadway	Average Daily Traffic (ADT) Volume
San Pablo Avenue between Appian Way & Sunnyview Drive	22,127

Source: City of Pinole 2016

3 Traffic Noise Analysis Results

The results of the traffic noise analysis for the modeled on-site receivers (shown in Figure 1) are summarized in Table 2. The modeled input and output data are provided in Attachment A. As shown in Table 2, the highest noise levels would occur at Receivers 1 through 4, which are representative of the habitable rooms in Wing 1 facing San Pablo Avenue. At Receivers 1 through 4, the traffic noise levels at

the building façade are predicted to range from 67.8 to 68.4 dBA DNL (i.e., 68 dBA DNL when rounded to whole decibels). Thus, the exposure from traffic noise along San Pablo Avenue would exceed the HUD exterior noise standard of 65 dBA DNL by 3 dB at the façade of units facing San Pablo Avenue in Wing 1, putting these receivers in the "normally unacceptable" noise range. At the other portions of the building (Wings 2, 3 and 4) traffic noise levels would not exceed the HUD exterior noise standard. Similarly, at the common outdoor areas with an exposure to San Pablo Avenue (represented by Receivers 13 and 14), the traffic noise levels would not exceed 65 dBA DNL and thus would be within the "normally acceptable" noise range.

Table 2 – Traffic Noise Level Results Summary	
Receiver # - Location	DNL (dBA)
R1 - Facade 1st Floor -Wing 1	68.4
R2 - Facade 2nd Floor - Wing 1	68.3
R3 - Façade 3rd Floor - Wing 1	67.9
R4 - Facade 4th Floor - Wing 1	67.8
R5 - Facade 1st Floor - Wing 2	60.6
R6 - Facade 2nd Floor - Wing 2	63.8
R7 - Façade 3rd Floor - Wing 2	63.7
R8 - Facade 4th Floor - Wing 2	63.3
R9 - Facade 1st Floor - Wings 3 and 4	61.1
R10 - Facade 2nd Floor - Wings 3 and 4	61.5
R11 - Façade 3rd Floor - Wings 3 and 4	61.7
R12 - Facade 4th Floor - Wings 3 and 4	61.9
R13 - Common Area - Near Wings 1 and 2	58.6
R14 - Common Area - Near Wings 2 and 3	59.4

Source: Attachment A.

As detailed in Section 2.1, 24 CFR Part 51, Subpart B states that sites at which environmental or community noise exposure exceeds the day night average sound level (DNL) of 65 dBA are considered to be noise-impacted. For new construction proposed in high noise areas, grantees shall incorporate noise attenuation features to the extent required. Approvals in the "normally unacceptable" noise zone require a minimum of 5 dB additional sound attenuation for buildings having noise-sensitive uses if the day-night average sound level is greater than 65 dBA but does not exceed 70 dBA.

Typical new construction of multi-family homes with windows closed provides a minimum of 25 dB exterior to interior noise reduction. All residential units will be equipped with a forced air heating ventilation air conditioning (HVAC) unit that allows for a "windows closed" condition (i.e., windows do not need to be left open for ventilation). As such, the interiors of the proposed habitable rooms facing San Pablo Avenue in Wing 1 (as well as the other rooms with lower levels of traffic noise exposure) are anticipated to be approximately 43 dBA DNL (i.e. 68 dBA exterior – 25 dBA attenuation = 43 dBA interior). Nonetheless, in order to ensure compliance with 24 CFR Part 51, Subpart B and that the HUD noise standard of 45 dBA

DNL is not exceeded, the detailed architectural design plans (when these are prepared) shall provide the following specification for upgraded windows:

- All windows in the south-facing residential units of Wing 1 shall have a Sound Transmission Class (STC) rating of 30 or greater.

Please see Table 3. With implementation of this requirement the proposed project would not exceed the HUD interior noise standard of 45 dBA DNL and would be within the "normally acceptable" noise range for interior noise.

Table 3. Interior Noise Levels (DNL (dBA))

Receivers / Location	Maximum Noise Level at Façade[1]	Required Interior Noise Reduction[2]	Minimum Anticipated Interior Noise Reduction[3]	Upgraded Windows ?[4]	Interior Noise Level[5]	Exceedance of Interior Noise Standard ?
R1 - R4	68.4	23.4	28	Yes	40.4	No
R5 - R8	63.8	18.8	25	No	38.8	No
R9 - R12	61.9	16.9	25	No	36.9	No

1 - Estimated exterior noise level at the building façade based upon Table 3.

2 - Noise reduction required to satisfy the interior noise standards.

3 - Minimum interior noise reduction with windows closed and upgraded windows for south-facing units within Wing 1, standard windows elsewhere.

4 - Does the required interior noise reduction trigger upgraded windows with an STC greater than 27 ?

5 - Estimated noise level based upon minimum anticipated noise reduction.

4 Construction and Operation

Project Construction

A temporary increase in noise levels would be expected during the construction phase of the proposed project. Noise would be generated by construction equipment and the delivery of materials among other activities. Construction activities, and related increases in ambient noise levels, would be restricted to permitted hours and remain within applicable thresholds. Specifically, Section 15.02.070 of the City's Municipal Code includes the following hourly restrictions and nuisance provisions related to construction activities:

- Work is allowed from 7:00 AM to 5:00 PM on non-federal holidays, but no inspections would be performed. Saturday work is allowed in commercial zones only, from 9:00 AM to 6:00 PM, as long as it is interior work and does not generate significant noise.

- The City Council designates the City Manager (or his/her designee) to further modify on a case-by-case basis the hours of construction in commercial zones.

- Additionally, the City Manager (or his/her designee) has the ability to modify the construction hours on a case-by-case basis based on inclement weather conditions or certain construction procedures (such as setting up from a concrete pour) that may require working beyond 5:00 PM on weekdays or 6:00 PM on Saturday.

- Administrative citations and penalties penalize responsible parties who fail or refuse to comply with any City ordinance or fail to promptly abate a public nuisance.

Operational Noise

Following project construction, the proposed project would result in increased noise from project-related traffic. Based upon trip generation rates from the Institute of Transportation Engineers (ITE) 10th Edition trip rates (2017), the proposed project would generate approximately 662 daily trips (3.7 trips per day * 179 dwelling units). Most if not all of these vehicle trips would use San Pablo Avenue as the means to travel to and from the project site. Based upon the traffic count data provided by the City and as summarized in Table 1, San Pablo Avenue in the project vicinity carries approximately 22,127 vehicles per day. The incremental increase added to San Pablo Avenue traffic from the project would be approximately 3 percent. Typically, a doubling of the energy of a noise source, such as a doubling of traffic volume (a 100 percent increase), would result in a noise level increase of 3 dBA. Under normal circumstances (i.e., outside of a controlled setting such as a listening laboratory), a 3 dBA change in noise levels is barely perceptible to the human ear. The noise level increase corresponding to a 3 percent increase in traffic volume would be approximately 0.1 dBA and would not be perceptible. Therefore, impacts associated with off-site project-generated traffic noise would be less than significant.

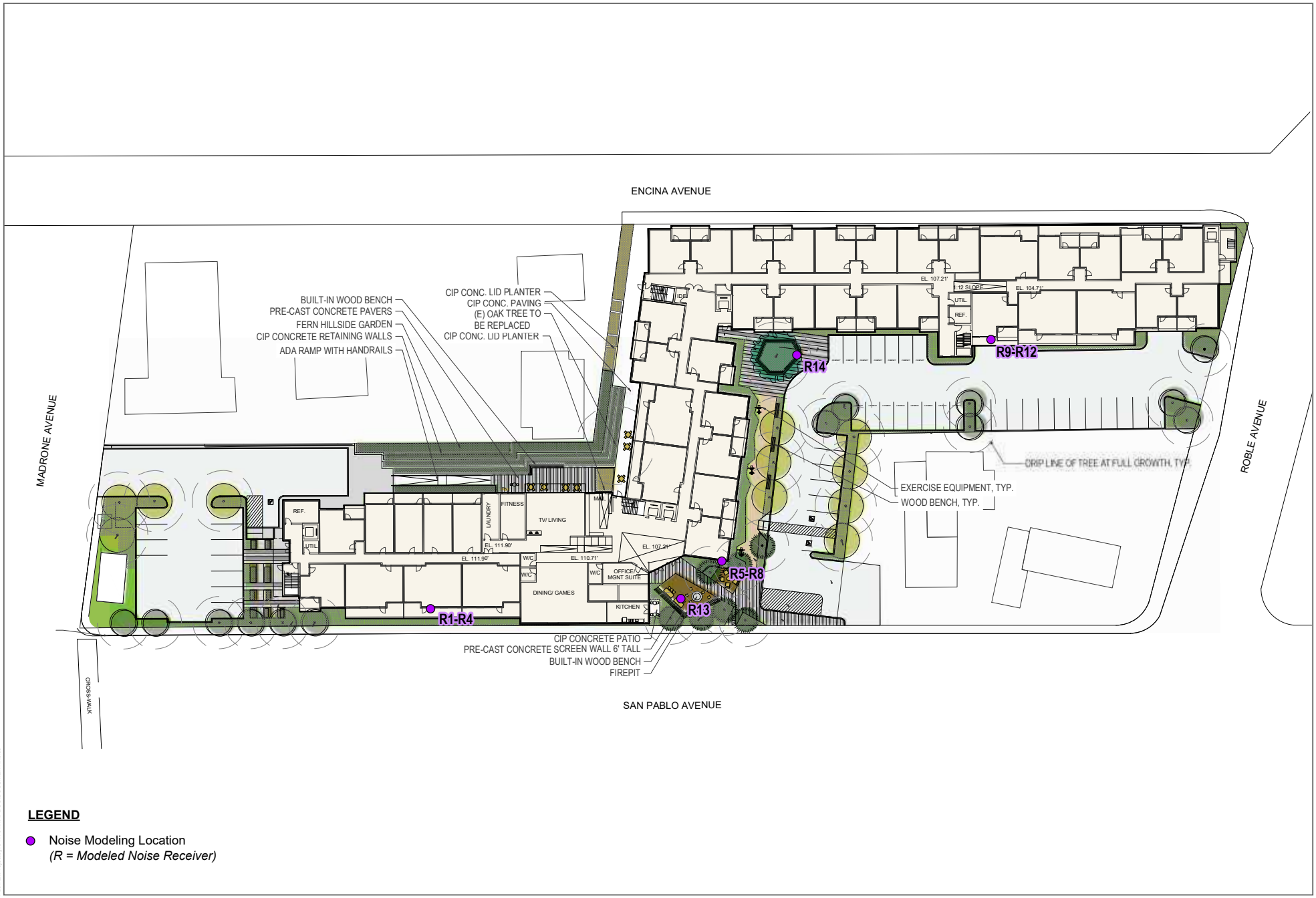
References

City of Pinole. 2010. Pinole, California General Plan Update. Chapter 9, Health and Safety. November 2010.

City of Pinole. 2016. Public Works, Administration & Engineering Traffic Count Data. San Pablo Avenue between Appian Way & Sunnyview Drive. 9/15/2016.

CFR (United States Code of Federal Regulations). 2013. Title 24, Volume 1, Title 51 Subpart B. Accessed 4/22/21: https://www.govinfo.gov/content/pkg/CFR-2013-title24-vol1/pdf/CFR-2013-title24-vol1-part51-subpartB.pdf

Federal Highway Administration (FHWA). 2004. FHWA Traffic Noise Model, Version 2.5. Office of Environment and Planning. Washington, DC. February.



LEGEND

- Noise Modeling Location
  (R = Modeled Noise Receiver)

SOURCE: Relativity Architects 2021

DUDEK

FIGURE 1

Noise Modeling Locations

Vista Woods Apartments Noise Technical Memo

Attachment A

Traffic Noise Model Input/Output Files

Dudek **23 April 2021**
MG **TNM 2.5**

INPUT: ROADWAYS
PROJECT/CONTRACT: **13417**
RUN: **Vista Woods Apts 600 Roble Ave PkHr**

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
San Pablo Avenue WB	45.0	point1	3	100.0	118.0	100.00				Average	
		point2	4	10,000.0	118.0	100.00					
San Pablo Avenue EB	45.0	point1	5	100.0	82.0	100.00				Average	
		point2	6	10,000.0	82.0	100.00					

Dudek
MG

23 April 2021
TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Percentages

PROJECT/CONTRACT: 13417
RUN: Vista Woods Apts 600 Roble Ave PkHr

Roadway	Points													
Name	Name	No.	Segment											
			Total	Autos		MTrucks		HTrucks		Buses		Motorcycles		
			Volume	P	S	P	S	P	S	P	S	P	S	
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph	
San Pablo Avenue WB	point1	3	1050	97	35	2	35	1	30	0	0	0	0	
	point2	4												
San Pablo Avenue EB	point1	5	1163	97	35	2	35	1	30	0	0	0	0	
	point2	6												

Dudek
MG

23 April 2021
TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: 13417
RUN: Vista Woods Apts 600 Roble Ave PkHr

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Facade 1st Flr -Wing 1	6	1	5,000.0	152.0	100.00	5.00	0.00	66	10.0	8.0	Y
Facade 2nd Flr - Wing 1	7	1	5,000.0	152.0	100.00	15.00	0.00	66	10.0	8.0	Y
Façade 3rd Flr - Wing 1	8	1	5,000.0	152.0	100.00	25.00	0.00	66	10.0	8.0	Y
Facade 4th Flr - Wing 1	9	1	5,000.0	152.0	100.00	35.00	0.00	66	10.0	8.0	Y
Facade 1st Flr - Wing 2	12	1	5,110.0	185.0	100.00	5.00	0.00	66	10.0	8.0	Y
Facade 2nd Flr - Wing 2	13	1	5,110.0	185.0	100.00	15.00	0.00	66	10.0	8.0	Y
Façade 3rd Flr - Wing 2	14	1	5,110.0	185.0	100.00	25.00	0.00	66	10.0	8.0	Y
Facade 4th Flr - Wing 2	15	1	5,110.0	185.0	100.00	35.00	0.00	66	10.0	8.0	Y
Facade 1st Flr - Wings 3_4	16	1	5,300.0	270.0	100.00	5.00	0.00	66	10.0	8.0	Y
Facade 2nd Flr - Wings 3_4	17	1	5,300.0	270.0	100.00	15.00	0.00	66	10.0	8.0	Y
Façade 3rd Flr - Wings 3_4	18	1	5,300.0	270.0	100.00	25.00	0.00	66	10.0	8.0	Y
Facade 4th Flr - Wings 3_4	19	1	5,300.0	270.0	100.00	35.00	0.00	66	10.0	8.0	Y
Common Area - Near Wings 1_2	20	1	5,120.0	162.0	100.00	5.00	0.00	66	10.0	8.0	Y
Common Area - Near Wings 2_3	21	1	5,140.0	260.0	100.00	5.00	0.00	66	10.0	8.0	Y

Dudek 23 April 2021
MG TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: 13417
RUN: Vista Woods Apts 600 Roble Ave PkHr

Barrier Name	Type	Height Min	Height Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	Top Width	Run:Rise	Add'tnl $ per Unit Length	Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Increment	Perturbs #Up	Perturbs #Dn	On Struct?	Important Reflections?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier1	W	0.00	99.99	0.00				0.00	point1	1	4,800.0	155.0	100.00	45.00	0.00	0	0		
									point2	2	5,100.0	155.0	100.00	45.00	0.00	0	0		
									point3	3	5,130.0	275.0	100.00	45.00	0.00	0	0		
									point4	4	5,525.7	275.0	100.00	45.00					
Screen Wall	W	0.00	99.99	0.00				0.00	point5	5	5,107.0	165.0	100.00	6.00	0.00	0	0		
									point6	6	5,120.0	155.0	100.00	6.00	0.00	0	0		
									point7	7	5,140.0	162.0	100.00	6.00					

Dudek
MG

23 April 2021
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS

PROJECT/CONTRACT: 13417
RUN: Vista Woods Apts 600 Roble Ave PkHr
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Facade 1st Flr -Wing 1	6	1	0.0	68.2	66	68.2	10	Snd Lvl	68.2	0.0	8	-8.0
Facade 2nd Flr - Wing 1	7	1	0.0	68.0	66	68.0	10	Snd Lvl	68.0	0.0	8	-8.0
Façade 3rd Flr - Wing 1	8	1	0.0	67.7	66	67.7	10	Snd Lvl	67.7	0.0	8	-8.0
Facade 4th Flr - Wing 1	9	1	0.0	67.5	66	67.5	10	Snd Lvl	67.5	0.0	8	-8.0
Facade 1st Flr - Wing 2	12	1	0.0	60.3	66	60.3	10	----	60.3	0.0	8	-8.0
Facade 2nd Flr - Wing 2	13	1	0.0	63.5	66	63.5	10	----	63.5	0.0	8	-8.0
Façade 3rd Flr - Wing 2	14	1	0.0	63.4	66	63.4	10	----	63.4	0.0	8	-8.0
Facade 4th Flr - Wing 2	15	1	0.0	63.1	66	63.1	10	----	63.1	0.0	8	-8.0
Facade 1st Flr - Wings 3_4	16	1	0.0	60.8	66	60.8	10	----	60.8	0.0	8	-8.0
Facade 2nd Flr - Wings 3_4	17	1	0.0	61.2	66	61.2	10	----	61.2	0.0	8	-8.0
Façade 3rd Flr - Wings 3_4	18	1	0.0	61.4	66	61.4	10	----	61.4	0.0	8	-8.0
Facade 4th Flr - Wings 3_4	19	1	0.0	61.6	66	61.6	10	----	61.6	0.0	8	-8.0
Common Area - Near Wings 1_2	20	1	0.0	58.3	66	58.3	10	----	58.3	0.0	8	-8.0
Common Area - Near Wings 2_3	21	1	0.0	59.2	66	59.2	10	----	59.2	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	14	0.0	0.0	0.0
All Impacted	4	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Dudek					23 April 2021						
MG					TNM 2.5						
INPUT: ROADWAYS							Average pavement type shall be used unless				
PROJECT/CONTRACT:	13417						a State highway agency substantiates the use				
RUN:	Vista Woods Apts 600 Roble Ave Off Pk						of a different type with the approval of FHWA				
Roadway		Points									
Name	Width	Name	No.	Coordinates (pavement)			Flow Control			Segment	
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
San Pablo Avenue WB	45.0	point1	3	100.0	118.0	100.00				Average	
		point2	4	10,000.0	118.0	100.00					
San Pablo Avenue EB	45.0	point1	5	100.0	82.0	100.00				Average	
		point2	6	10,000.0	82.0	100.00					

Dudek
MG

23 April 2021
TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Percentages

PROJECT/CONTRACT: 13417
RUN: Vista Woods Apts 600 Roble Ave Off Pk

Roadway	Points													
Name	Name	No.	Segment											
			Total	Autos		MTrucks		HTrucks		Buses		Motorcycles		
			Volume	P	S	P	S	P	S	P	S	P	S	
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph	
San Pablo Avenue WB	point1	3	630	97	35	2	35	1	30	0	0	0	0	
	point2	4												
San Pablo Avenue EB	point1	5	698	97	35	2	35	1	30	0	0	0	0	
	point2	6												

Dudek
MG

23 April 2021
TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: 13417
RUN: Vista Woods Apts 600 Roble Ave Off Pk

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Facade 1st Flr -Wing 1	6	1	5,000.0	152.0	100.00	5.00	0.00	66	10.0	8.0	Y
Facade 2nd Flr - Wing 1	7	1	5,000.0	152.0	100.00	15.00	0.00	66	10.0	8.0	Y
Façade 3rd Flr - Wing 1	8	1	5,000.0	152.0	100.00	25.00	0.00	66	10.0	8.0	Y
Facade 4th Flr - Wing 1	9	1	5,000.0	152.0	100.00	35.00	0.00	66	10.0	8.0	Y
Facade 1st Flr - Wing 2	12	1	5,110.0	185.0	100.00	5.00	0.00	66	10.0	8.0	Y
Facade 2nd Flr - Wing 2	13	1	5,110.0	185.0	100.00	15.00	0.00	66	10.0	8.0	Y
Façade 3rd Flr - Wing 2	14	1	5,110.0	185.0	100.00	25.00	0.00	66	10.0	8.0	Y
Facade 4th Flr - Wing 2	15	1	5,110.0	185.0	100.00	35.00	0.00	66	10.0	8.0	Y
Facade 1st Flr - Wings 3_4	16	1	5,300.0	270.0	100.00	5.00	0.00	66	10.0	8.0	Y
Facade 2nd Flr - Wings 3_4	17	1	5,300.0	270.0	100.00	15.00	0.00	66	10.0	8.0	Y
Façade 3rd Flr - Wings 3_4	18	1	5,300.0	270.0	100.00	25.00	0.00	66	10.0	8.0	Y
Facade 4th Flr - Wings 3_4	19	1	5,300.0	270.0	100.00	35.00	0.00	66	10.0	8.0	Y
Common Area - Near Wings 1_2	20	1	5,120.0	162.0	100.00	5.00	0.00	66	10.0	8.0	Y
Common Area - Near Wings 2_3	21	1	5,140.0	260.0	100.00	5.00	0.00	66	10.0	8.0	Y

Dudek 23 April 2021
MG TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: 13417
RUN: Vista Woods Apts 600 Roble Ave Off Pk

Barrier Name	Type	Height Min	Height Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	Top Width	Run:Rise	Add'tnl $ per Unit Length	Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Increment	Perturbs #Up	Perturbs #Dn	On Struct?	Important Reflections?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier1	W	0.00	99.99	0.00				0.00	point1	1	4,800.0	155.0	100.00	45.00	0.00	0	0		
									point2	2	5,100.0	155.0	100.00	45.00	0.00	0	0		
									point3	3	5,130.0	275.0	100.00	45.00	0.00	0	0		
									point4	4	5,525.7	275.0	100.00	45.00					
Screen Wall	W	0.00	99.99	0.00				0.00	point5	5	5,107.0	165.0	100.00	6.00	0.00	0	0		
									point6	6	5,120.0	155.0	100.00	6.00	0.00	0	0		
									point7	7	5,140.0	162.0	100.00	6.00					

Dudek
MG

23 April 2021
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS

PROJECT/CONTRACT: 13417
RUN: Vista Woods Apts 600 Roble Ave Off Pk
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Facade 1st Flr -Wing 1	6	1	0.0	65.9	66	65.9	10	----	65.9	0.0	8	-8.0
Facade 2nd Flr - Wing 1	7	1	0.0	65.8	66	65.8	10	----	65.8	0.0	8	-8.0
Façade 3rd Flr - Wing 1	8	1	0.0	65.4	66	65.4	10	----	65.4	0.0	8	-8.0
Facade 4th Flr - Wing 1	9	1	0.0	65.3	66	65.3	10	----	65.3	0.0	8	-8.0
Facade 1st Flr - Wing 2	12	1	0.0	58.1	66	58.1	10	----	58.1	0.0	8	-8.0
Facade 2nd Flr - Wing 2	13	1	0.0	61.3	66	61.3	10	----	61.3	0.0	8	-8.0
Façade 3rd Flr - Wing 2	14	1	0.0	61.2	66	61.2	10	----	61.2	0.0	8	-8.0
Facade 4th Flr - Wing 2	15	1	0.0	60.8	66	60.8	10	----	60.8	0.0	8	-8.0
Facade 1st Flr - Wings 3_4	16	1	0.0	58.6	66	58.6	10	----	58.6	0.0	8	-8.0
Facade 2nd Flr - Wings 3_4	17	1	0.0	59.0	66	59.0	10	----	59.0	0.0	8	-8.0
Façade 3rd Flr - Wings 3_4	18	1	0.0	59.2	66	59.2	10	----	59.2	0.0	8	-8.0
Facade 4th Flr - Wings 3_4	19	1	0.0	59.4	66	59.4	10	----	59.4	0.0	8	-8.0
Common Area - Near Wings 1_2	20	1	0.0	56.1	66	56.1	10	----	56.1	0.0	8	-8.0
Common Area - Near Wings 2_3	21	1	0.0	56.9	66	56.9	10	----	56.9	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	14	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Dudek					**23 April 2021**						
MG					**TNM 2.5**						
INPUT: ROADWAYS							**Average pavement type shall be used unless**				
PROJECT/CONTRACT:	**13417**						**a State highway agency substantiates the use**				
RUN:	**Vista Woods Apts 600 Roble Ave Nighttm**						**of a different type with the approval of FHWA**				
Roadway		**Points**									
Name	**Width**	**Name**	**No.**	**Coordinates (pavement)**			**Flow Control**			**Segment**	
				X	**Y**	**Z**	**Control Device**	**Speed Constraint**	**Percent Vehicles Affected**	**Pvmt Type**	**On Struct?**
	ft			ft	ft	ft		mph	%		
San Pablo Avenue WB	45.0	point1	3	100.0	118.0	100.00				Average	
		point2	4	10,000.0	118.0	100.00					
San Pablo Avenue EB	45.0	point1	5	100.0	82.0	100.00				Average	
		point2	6	10,000.0	82.0	100.00					

Dudek
MG

23 April 2021
TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Percentages

PROJECT/CONTRACT: 13417
RUN: Vista Woods Apts 600 Roble Ave Nighttm

Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos		MTrucks		HTrucks		Buses		Motorcycles	
			Volume	P	S	P	S	P	S	P	S	P	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
San Pablo Avenue WB	point1	3	175	97	35	2	35	1	30	0	0	0	0
	point2	4											
San Pablo Avenue EB	point1	5	194	97	35	2	35	1	30	0	0	0	0
	point2	6											

Dudek
MG

23 April 2021
TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: 13417
RUN: Vista Woods Apts 600 Roble Ave Nighttm

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Facade 1st Flr -Wing 1	6	1	5,000.0	152.0	100.00	5.00	0.00	66	10.0	8.0	Y
Facade 2nd Flr - Wing 1	7	1	5,000.0	152.0	100.00	15.00	0.00	66	10.0	8.0	Y
Façade 3rd Flr - Wing 1	8	1	5,000.0	152.0	100.00	25.00	0.00	66	10.0	8.0	Y
Facade 4th Flr - Wing 1	9	1	5,000.0	152.0	100.00	35.00	0.00	66	10.0	8.0	Y
Facade 1st Flr - Wing 2	12	1	5,110.0	185.0	100.00	5.00	0.00	66	10.0	8.0	Y
Facade 2nd Flr - Wing 2	13	1	5,110.0	185.0	100.00	15.00	0.00	66	10.0	8.0	Y
Façade 3rd Flr - Wing 2	14	1	5,110.0	185.0	100.00	25.00	0.00	66	10.0	8.0	Y
Facade 4th Flr - Wing 2	15	1	5,110.0	185.0	100.00	35.00	0.00	66	10.0	8.0	Y
Facade 1st Flr - Wings 3_4	16	1	5,300.0	270.0	100.00	5.00	0.00	66	10.0	8.0	Y
Facade 2nd Flr - Wings 3_4	17	1	5,300.0	270.0	100.00	15.00	0.00	66	10.0	8.0	Y
Façade 3rd Flr - Wings 3_4	18	1	5,300.0	270.0	100.00	25.00	0.00	66	10.0	8.0	Y
Facade 4th Flr - Wings 3_4	19	1	5,300.0	270.0	100.00	35.00	0.00	66	10.0	8.0	Y
Common Area - Near Wings 1_2	20	1	5,120.0	162.0	100.00	5.00	0.00	66	10.0	8.0	Y
Common Area - Near Wings 2_3	21	1	5,140.0	260.0	100.00	5.00	0.00	66	10.0	8.0	Y

Dudek 23 April 2021
MG TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: 13417
RUN: Vista Woods Apts 600 Roble Ave Nighttm

Barrier Name	Type	Height Min	Height Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	Top Width	Run:Rise	Add'tnl $ per Unit Length	Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Increment	Perturbs #Up	Perturbs #Dn	On Struct?	Important Reflections?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier1	W	0.00	99.99	0.00				0.00	point1	1	4,800.0	155.0	100.00	45.00	0.00	0	0		
									point2	2	5,100.0	155.0	100.00	45.00	0.00	0	0		
									point3	3	5,130.0	275.0	100.00	45.00	0.00	0	0		
									point4	4	5,525.7	275.0	100.00	45.00					
Screen Wall	W	0.00	99.99	0.00				0.00	point5	5	5,107.0	165.0	100.00	6.00	0.00	0	0		
									point6	6	5,120.0	155.0	100.00	6.00	0.00	0	0		
									point7	7	5,140.0	162.0	100.00	6.00					

Dudek 23 April 2021
MG TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 13417
RUN: Vista Woods Apts 600 Roble Ave Nighttm
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Facade 1st Flr -Wing 1	6	1	0.0	60.4	66	60.4	10	----	60.4	0.0	8	-8.0
Facade 2nd Flr - Wing 1	7	1	0.0	60.2	66	60.2	10	----	60.2	0.0	8	-8.0
Façade 3rd Flr - Wing 1	8	1	0.0	59.9	66	59.9	10	----	59.9	0.0	8	-8.0
Facade 4th Flr - Wing 1	9	1	0.0	59.7	66	59.7	10	----	59.7	0.0	8	-8.0
Facade 1st Flr - Wing 2	12	1	0.0	52.5	66	52.5	10	----	52.5	0.0	8	-8.0
Facade 2nd Flr - Wing 2	13	1	0.0	55.7	66	55.7	10	----	55.7	0.0	8	-8.0
Façade 3rd Flr - Wing 2	14	1	0.0	55.6	66	55.6	10	----	55.6	0.0	8	-8.0
Facade 4th Flr - Wing 2	15	1	0.0	55.3	66	55.3	10	----	55.3	0.0	8	-8.0
Facade 1st Flr - Wings 3_4	16	1	0.0	53.1	66	53.1	10	----	53.1	0.0	8	-8.0
Facade 2nd Flr - Wings 3_4	17	1	0.0	53.4	66	53.4	10	----	53.4	0.0	8	-8.0
Façade 3rd Flr - Wings 3_4	18	1	0.0	53.7	66	53.7	10	----	53.7	0.0	8	-8.0
Facade 4th Flr - Wings 3_4	19	1	0.0	53.8	66	53.8	10	----	53.8	0.0	8	-8.0
Common Area - Near Wings 1_2	20	1	0.0	50.5	66	50.5	10	----	50.5	0.0	8	-8.0
Common Area - Near Wings 2_3	21	1	0.0	51.4	66	51.4	10	----	51.4	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	14	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

DUDEK

2280 HISTORIC DECATUR ROAD, SUITE 200
SAN DIEGO, CALIFORNIA 92106
619.591.1370

August 17, 2021 13417

Michael Laughlin
2131 Pear Street
City of Pinole, CA

Re: *Predictive Analysis of Drilling Operation at Vista Woods Apartments Project near Existing Residence*

Dear Mr. Laughlin,

Dudek has performed a predictive estimation of groundborne vibration propagation attributed to anticipated drilling for the installation of soldier piles that will support site excavation and subsequent construction of the Vista Woods Apartments mixed-use project (Project). These calculations and their findings herein intend to respond to what we understand is the City of Pinole, CA (City) request to provide a "ground borne vibration study relating to adjoining residential structures." Dudek understands that the residence of concern is an older two-story wood-frame home atop an existing ridge north of the Project and south of Encina Avenue.

The accompanying worksheet shows the input parameters and predicted peak particle velocity (PPV) values to support the following summarized findings for what is envisioned—after a brief telephone discussion with structural engineer Mr. Arne Halterman—as a two-stage process for excavating holes prior to soldier pile insertion:

1. Assuming the soldier pile drill-hole locations are no closer than 2.33 horizontal feet to the nearest façade of the existing residential structure, continuous digging and related site preparation using hand tools or small powered equipment (exhibiting up to 0.003 inches per second [ips] PPV at 25 feet, such as a small bulldozer) and infrequent (a.k.a., transient) operation of powered equipment that exhibits vibration velocity no greater than 0.035 ips PPV (at a reference distance of 25 feet) could provide the initial 4.5-foot hole depth and not be expected to exceed the California Department of Transportation (Caltrans) guidance-based continuous and transient vibration velocity thresholds of 0.3 ips PPV and 0.5 ips PPV, respectively, for "older residential structures".[1]

2. Usage of an auger drill rig, having an operating reference vibration velocity of 0.011 ips PPV (at a distance of 100 feet), to then continue the drilling work from the 4.5-foot hole depth and proceed downward, would not be expected to cause continuous-type groundborne vibration that exceeds the Caltrans guidance-based above-mentioned threshold of 0.3 ips PPV at the receiving residential façade.

Thus, while groundborne vibration from Project soldier pile drilling received at the structure may be "distinctly perceptible" to occupants,[2] it is not expected to cause risk of building damage. Nevertheless, and with concurrence from Mr. Halterman, Dudek recommends that prior to the start of soldier pile drilling site work,

[1] California Department of Transportation, 2020, Transportation and Construction Vibration Guidance Manual, Table 19.
[2] *Ibid.*, Table 20.

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2280 HISTORIC DECATUR ROAD, SUITE 200
SAN DIEGO, CALIFORNIA 92106
619.591.1370

detailed photographic documentation of existing conditions at the offsite residence of concern should be performed by an experienced engineer, inspector, or other qualified professional. This should collect information to establish a baseline, against which a similar post-drilling inspection and photographic documentation effort may help verify that no such building damage attributed to this Project construction activity discussed herein has occurred. Such pro-active risk management activities would be considered typical for drilling contractors. Because predicted vibration levels are not expected to exceed relevant Caltrans thresholds, vibration velocity monitoring would not be considered necessary; but, if optionally performed by the drilling contractor, would likely help collect data to demonstrate that actual vibration velocity levels are not excessive or otherwise help support assertions that damage to the residential structure has been avoided.

The accompanying worksheet includes citations for reference input parameters, along with other information that Dudek has received regarding the Project at this time. Should you have questions or would like to discuss how this concise technical memorandum may better suit your needs, please do not hesitate to contact me at 760-271-1439 or mstorm@dudek.com.

Sincerely,

Mark Storm, INCE Bd. Cert.
Acoustic Services Manager

To User : outlined cells are inputs, remaining cells are labels or contain formulae.

Vibration-producing source (equipment)	PPV (ips) at Ref. Distance	Reference Distance (D_{ref}, ft)	Receiver Distance (D_{rcvr}, ft)	Wiss Exponent [A]	Est. PPV at Receiver (ips)	Caltrans Criterion (ips) [B]	Vibration Type [B]
Jackhammer [C]	0.035	25	2.33	1.1	**0.48**	0.5	transient
Small bulldozer [C]	0.003	25	2.33	1.1	**0.04**	0.3	continuous
Auger Drilling Rig [D]	0.01125	100	5.07	1.1	**0.30**	0.3	continuous

All estimated PPV at Receiver position are compliant with (i.e., less than or equal to) the indicated Caltrans guidance-based criteria.

Notes

A. Wiss exponent assumes soil class III per Caltrans Transportation and Construction Vibration Guidance Manual (2020), Table 17, based on client data request response and discussion with Mr. Arne Halterman.
B. Caltrans TaCVGM (2020), Table 19
C. Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment (2018)
D. https://wsdot.wa.gov/sites/default/files/2018/06/19/SR520ReportConstructionNoiseAndVibrationI5toMedinaMarch2013.pdf

horizontal distance from soldier pile drill hole to receptor:	2.33	feet
vertical depth (from surface) of digging until auger drill bit used:	4.5	feet
hypoteneuse distance from drill-bit contact point to ground surface receptor:	5.07	feet

Groundborne vibration velocity propagation formula: **PPV at Receiver Distance = PPV at Reference Distance * (D_{ref} / D_{rcvr}) ^ Wiss Exponent**

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MEMORANDUM

To:	Ben Kurzius, MRK Partners
From:	Amanda Meroux, EIT, Assistant Transportation Engineer Dennis Pascua, Transportation Services Manager
Subject:	Vehicle Miles Traveled (VMT) Screening Analysis for the Vista Woods Apartments, City of Pinole
Date:	May 3, 2021
cc:	Jonathan Rigg, Dudek
Attachment(s):	Attachment A – VMT Screening Maps

Dudek has prepared the following vehicle miles traveled (VMT) technical memorandum to support the California Environmental Quality Act (CEQA) environmental analysis for the proposed Vista Woods Apartments (project) located at 600 Roble Avenue in the City of Pinole (City), California. This memorandum provides a VMT screening analysis for the project based on the State of California Governor's Office of Planning and Research (OPR) guidance in their *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018).

Project Description

The project involves demolition of existing structures, sitework, and construction a new 4-story building providing 179 units of affordable housing for seniors. Tenant amenities will include a variety of community gathering spaces, a fitness room, shared laundry in addition to in-unit washer/dryer hook-ups, exterior and garage parking, and offices for on-site management staff.

Vehicle Miles Traveled

On September 27, 2013, Senate Bill (SB) 743 was signed into law, which created a process to change the way that transportation impacts are analyzed under CEQA. SB 743 required OPR to amend the CEQA Guidelines to provide an alternative to level of service (LOS) for evaluating transportation impacts. Under the new transportation guidelines, LOS, or vehicle delay, is no longer considered an environmental impact under CEQA. OPR recommended vehicle miles traveled (VMT) as the most appropriate measure of project transportation impacts for land use projects and land use plans. The updates to the CEQA Guidelines required under SB 743 were approved on December 28, 2018.

Under the new guidelines, VMT has been adopted as the most appropriate measure of transportation impacts under CEQA, and those guidelines were required to be implemented statewide on July 1, 2020. At this time, the City of Pinole has not adopted VMT specific guidelines or thresholds regarding VMT. Section 15064.3(b), "Criteria for Analyzing Transportation Impacts," states *"If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis may be appropriate."* As such, the screening

criteria and thresholds provided in OPR's Technical Advisory have been used for this project and is discussed in the following analysis.

VMT Screening Criteria for Land Use Projects

The Technical Advisory indicates that agencies may screen out VMT impacts or further (quantified) VMT analysis from land use projects based on: 1) project size; 2) provision of 100% affordable housing; 3) VMT-based screening maps; 4) proximity to transit; and/or, 5) provision of local-serving retail uses. The project would need to meet at least one of the five criteria to be screened-out from further VMT analysis, and the project can be presumed to have a less than significant impact.

The following screening criteria per the OPR Technical Advisory are reviewed below for their applicability to the proposed project.

- **Screening Threshold for Small Projects** (110 daily trips or less): Daily trip generation estimates for the project are based on Senior Adult Housing – Attached (ITE Code 252) trip generation rates obtained from the Institute of Transportation Engineers (ITE) *Trip Generation, 10th Edition* (2017). As shown in Table 1 below, the project would generate more than 110 trips per day (662 daily trips); therefore, the project ***cannot be screened out*** from further VMT analysis under this criterion.

Table 1 – Trip Generation Summary

Land Use	ITE Code	Size/Units	Daily
Trip Rates[1]			
Senior Adult Housing – Attached	252	DU	3.70
Trip Generation			
Vista Woods Apartments	252	179 DU	662

Notes: DU = dwelling unit
[1]Trip rates from the Institute of Transportation Engineers (ITE), *Trip Generation, 10th Edition, 2017.*

- **Presumption of Less Than Significant Impact for Affordable Residential Development:** Per the OPR Technical Advisory: *"adding affordable housing to infill locations generally improves jobs-housing match, in turn shortening commutes and reducing VMT. Further, '…low-wage workers in particular would be more likely to choose a residential location close to their workplace, if one is available.' In areas where existing jobs-housing match is closer to optimal, low income housing nevertheless generates less VMT than market-rate housing. Therefore, a project consisting of a high percentage of affordable housing may be a basis for the lead agency to find a less-than-significant impact on VMT. Evidence supports a presumption of less than significant for a 100 percent affordable residential development (or the residential component of a mixed-use development) in infill locations."*

  The proposed project is and infill housing project that would provide 100% restricted affordable housing for seniors. Per the ITE's Senior Adult Housing description, residents of senior housing may contain a mix of retirees and those still in the workforce. Those residents still in the workforce may likely choose to live at the project based on proximity to their place of employment or may work from home (telecommute). With

the mix of senior residents, the proposed project would generate less VMT than market-rate housing. Therefore, since the project is providing 100% affordable housing, it ***can be screened out*** from further VMT analysis under this criterium and can be presumed to have a less than significant impact.

- **Map Based Screening for Residential and Office Projects:** Per the OPR Technical Advisory, *"residential and office projects that are located in areas with low VMT, and that incorporate similar features (i.e., density, mix of uses, transit accessibility), will tend to exhibit similarly low VMT. Maps created with VMT data, for example from a travel survey or travel demand model, can illustrate areas that area currently below threshold VMT. Because new development in such locations would likely result in a similar level of VMT, such maps can be used to screen out residential and office projects from needing to prepare a detailed VMT analysis."* The Technical Advisory indicates that residential developments generating vehicle travel that is 15 or more percent below the existing VMT per capita of the region could indicate a less-than-significant transportation impact.

  Currently, the City does not have VMT maps that can be utilized to identify areas with low VMT for projects. However, the Metropolitan Transportation Commission (MTC) for the nine-county San Francisco Bay Area provides simulated VMT per capita maps based on place of residence from the MTC Travel Model, which were reviewed for the purposes of this analysis. The VMT per capita maps are divided into various transportation analysis zones (TAZs), which allow neighborhoods within various jurisdictions to be expressed geographically for transportation modeling and planning purposes. As shown in Attachment A and summarized in Table 2 below, the proposed project is located within the Gateley neighborhood area (TAZ 1082), and has an average VMT per Capita of 16.09 and 15.07 per the 2020 and 2040 MTC Travel Models, respectively, which is greater than the forecasted VMT per Capita over the nine-county Plan Bay Area region. Therefore, as the proposed project is not located within a TAZ that is 15 or more percent below the regional average VMT per Capita, the project ***cannot be screened out*** from further VMT analysis under this criterium.

Table 2 – Summary of Project TAZ VMT

	Average VMT per Capita (2020)	Average VMT per Worker (2040)
Project TAZ (1082)	16.09	15.07
Plan Bay Area Average	15.00	13.80
% Difference (Project TAZ – Plan Bay Area Average)	*+7.27%*	*+15.21%*

Source: Plan Bay Area 2040 Simulated VMT per Capita by Place of Residence (Attachment A)

- **Presumption of Less Than Significant Impact Near Transit Stations:** Proposed CEQA Guideline Section 15064.3, subdivision (b)(1), states that lead agencies generally should presume that certain projects (including residential, retail, and office projects, as well as projects that are a mix of these uses) proposed

within ½ mile of an existing major transit stop[1] or an existing stop along a high quality transit corridor[2] will have a less-than-significant impact on VMT. This presumption would not apply, if the project:

- Has a Floor Area Ratio (FAR) of less than 0.75
- Includes more parking for use by residents, customers, or employees of the project than required by the jurisdiction (if the jurisdiction requires the project to supply parking)
- Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Planning Organization)
- Replaces affordable residential units with a smaller number of moderate- or high-income residential units

Transit service in the City of Pinole is provided by WestCAT, a service of the Western Contra Costa Transit Authority. The nearest WestCAT bus routes include C3 and JL/JR, which operate along San Pablo Avenue, immediately south of the project site. Bus route C3 operates Monday through Friday with a frequency of 30 minutes during peak commute hours, and bus route JL/JR operates Monday through Friday with a peak service frequency of 40 minutes.

Additionally, Transit Priority Areas (TPAs) developed by MTC in accordance with Public Resources Code (PRC) 21099[3] and derived from the Planned Transit Systems identified in the Plan Bay Area 2040 Regional Transportation Plan and existing transit locations extracted from the 511 Regional Transit Database, were reviewed in the area. As shown in Attachment A, the project is not located within a TPA boundary. Therefore, as the project site is not located within a TPA and neither WestCAT bus route operates with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods, the project site is not located within one-half mile of high-quality transit corridor (i.e. a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours) and ***cannot be screened out*** from further VMT analysis under this criterium.

- **Presumption of Less Than Significant Impact for Local Serving Retail:** For development projects, if the project leads to a net increase in provision of locally-serving retail, transportation impacts from the retail portion of the development should be presumed to be less than significant. Generally, local-serving retail less than 50,000 square feet can be assumed to cause a less-than-significant transportation impact. The proposed project is not a retail development; therefore, the project ***cannot be screened out*** from further VMT analysis under this criterium.

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[1] Pub. Resources Code, § 21064.3 ("'Major transit stop' means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.")

[2] Pub. Resources Code, § 21155 ("For purposes of this section, a high-quality transit corridor means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.")

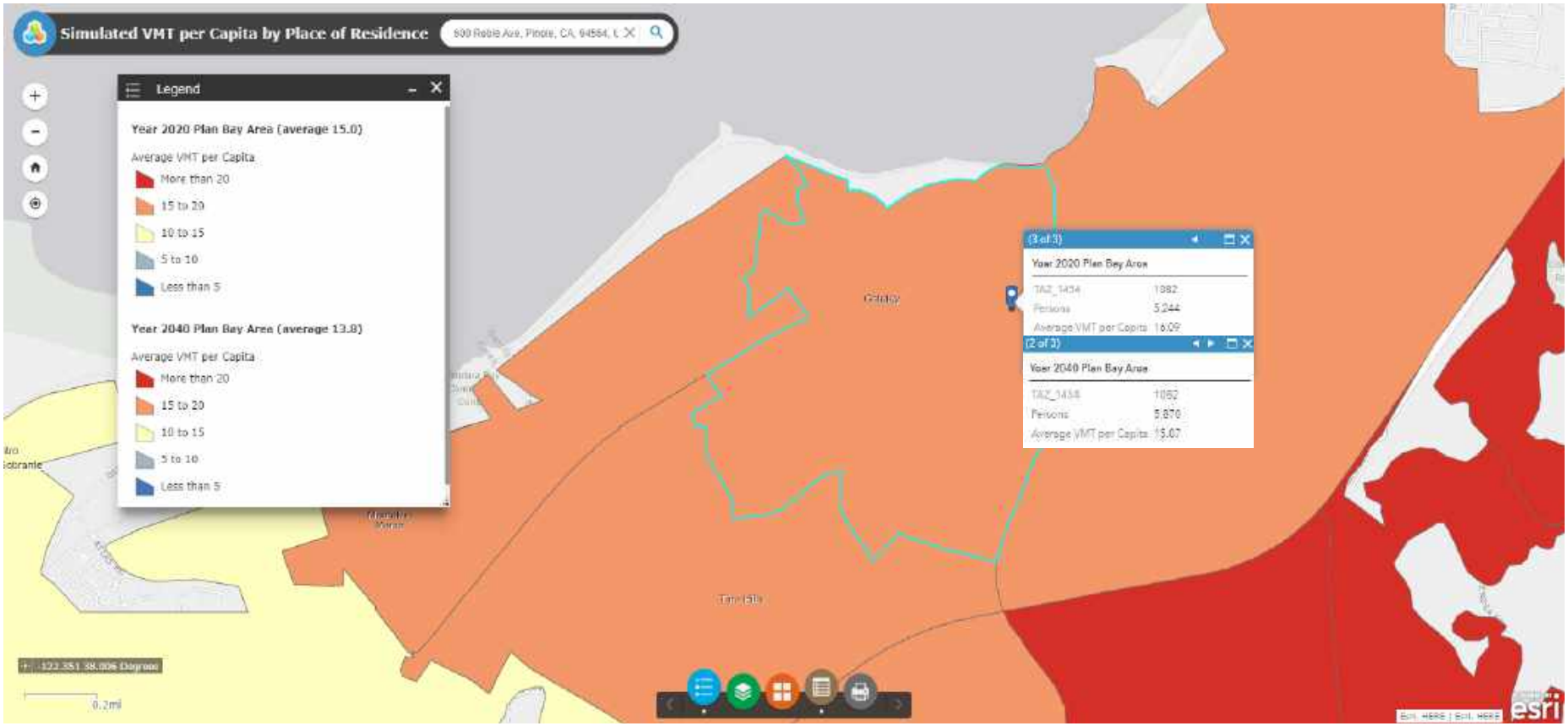
[3] Pub. Resources Code, § 21099 ("'Transit priority area' means an area within one-half mile of a major transit stop that is existing or planned, if the planned stop is scheduled to be completed within the planning horizon included in a Transportation Improvement Program or applicable regional transportation plan.")

Conclusions

The proposed project meets one of the five OPR VMT screening criteria provided above based on presumption of less than significant impact for 100% affordable housing developments. Therefore, further VMT analysis is not required, and the proposed project can be presumed to have a less-than-significant VMT impact under CEQA.

Attachment A

VMT Screening Maps



MTC Model results at https://www.arcgis.com/apps/webappviewer/index.html?id=5dac76d69b3d41e583882e146491568b, accessed April, 2021.

TPA boundaries derived from the Plan Bay Area 2040 Regional Transportation Plan and the 511 Regional Transit Database, provided at https://opendata.mtc.ca.gov/datasets/MTC::transit-priority-areas-2017?geometry=-132.217%2C36.246%2C-112.167%2C39.285, accessed April, 2021.

VISTA WOODS APARTMENTS

4 STORY, 179 UNIT AFFORDABLE SENIOR LIVING APARTMENTS

ATTACHMENT C

PROJECT DESCRIPTION

CONSTRUCTION OF A NEW 4-STORY, 179-UNIT SENIOR, 100% AFFORDABLE APARTMENT BUILDING, USING CALIFORNIA STATE CODE SECTION 65915 (STATE DENSITY BONUS LAW); PUBLICLY FUNDED THROUGH TCAC

OVERALL SCOPE:

- DEMOLITION OF EXISTING STRUCTURES AND SITEWORK
- CONSTRUCTION OF NEW 4-STORY BUILDING OVER PARTIAL UNDERGROUND PARKING

DESCRIPTION:

VISTA WOODS APARTMENTS INVOLVES DEMOLITION OF EXISTING STRUCTURES, SITEWORK AND CONSTRUCTION OF A NEW 4-STORY BUILDING PROVIDING 179 UNITS OF AFFORDABLE HOUSING FOR SENIORS. TENANT AMENITIES WILL INCLUDE A VARIETY OF COMMUNITY GATHERING SPACES, A FITNESS ROOM, SHARED LAUNDRY IN ADDITION TO IN-UNIT WASHER/DRYER HOOK-UPS, EXTERIOR AND GARAGE PARKING AND OFFICES FOR ON-SITE MANAGEMENT STAFF. THE LANDSCAPE DESIGN INCORPORATES A DIVERSE SET OF OUTDOOR PASSIVE AND ACTIVE RECREATION SPACES FOR RESIDENTS TO ENCOURAGE HEALTHY LIVING . DESIGNED WITH SUSTAINABILITY IN MIND, THE DEVELOPMENT WILL INTRODUCE A NEW BUS SHELTER ON SAN PABLO AVENUE IN ADDITION TO PRODUCING RENEWABLE ENERGY THROUGH ROOFTOP SOLAR PV PANELS.

PROJECT INFORMATION

SITE ADRESS:
600 ROBLE AVENUE PINOLE CA 94564 USA
1106 SAN PABLO AVENUE PINOLE CA 94564 USA
1230 SAN PABLO AVENUE PINOLE CA 94564 USA

APN:
402-023-007-6 (600 ROBLE AVENUE)
402-023-003-5 (1106 SAN PABLO AVENUE)
405-023-002-7 (1230 SAN PABLO AVENUE)

EXISTING USE:
VACANT LAND W/ ABANDONED COMMERCIAL STRUCTURES

PROPOSED USES:
PERMANENT SUPPORTIVE, RESTRICTED AFFORDABLE HOUSING FOR SENIORS

LOT AREA:
2.01 ACRES (87,555.6 SQ FT)

APPLICABLE CODES:
2019 CBC, 2019 CPC, 2019 CMC, 2019 CEC, 2019 TITLE 24,
2019 CalGreen, City of Pinole Municipal Code, City of Pinole Zoning Code, City of Pinole Three Corridors Specific Plan

LEGAL DESCRIPTIONS

TRACT ONE:
PARCEL ONE:
PORTION OF LOT E, MAP OF NOB HILL SUBDIVISION, FILED JUNE 9, 1906, MAP BOOK B, PAGE 39, CONTRA COSTA COUNTY RECORDS, DESCRIBED AS FOLLOWS:
BEGINNING ON THE NORTH LINE OF SAN PABLO AVENUE, AS DESIGNATED ON SAID MAP, AT THE SOUTHWEST CORNER OF THE PARCEL OF LAND DESCRIBED IN THE DEED TO WM. P. TERRY, RECORDED MAY 18, 1916, BOOK 270, DEEDS, PAGE 86, WHICH POINT BEARS WEST 174 FEET ALONG THE NORTH LINE OF SAID SAN PABLO AVENUE FROM THE WEST LINE OF ROBLE AVENUE; THENCE FROM SAID POINT OF BEGINNING WEST ALONG THE NORTH LINE OF SAID SAN PABLO AVENUE, 150 FEET TO THE LINE BETWEEN LOTS D AND E; THENCE NORTHERLY ALONG THE LINE BETWEEN SAID LOTS D AND E, 126.04 FEET TO THE CORNER COMMON TO LOTS C, D, E AND F; THENCE EAST ALONG THE LINE BETWEEN SAID LOTS E AND F, 150 FEET TO THE WEST LINE OF SAID TERRY PARCEL (270 D 86); THENCE SOUTHERLY ALONG SAID WEST LINE, 126.04 FEET TO THE POINT OF BEGINNING. EXCEPTING FROM PARCEL ONE: THAT PARCEL OF LAND DESCRIBED IN THE DEED TO THE STATE OF CALIFORNIA, RECORDED NOVEMBER 18, 1930, BOOK 258, OFFICIAL RECORDS, PAGE 154.
PARCEL TWO:
RIGHT OF WAY GRANTED IN THE DEED TO ENNIS L. RIEMER, ET UX, RECORDED JULY 6, 1962, BOOK 4154, OFFICIAL RECORDS, PAGE 755, DESCRIBED AS FOLLOWS:
AN UNRESTRICTED EASEMENT FOR THE PURPOSE OF ALLOWING TRESPASS OF PEDESTRIANS, VEHICLES AND ANIMALS, ALSO FOR THE CONSTRUCTION AND MAINTENANCE OF SEWER, WATER, GAS AND DRAINAGE PIPES, ALSO THE CONSTRUCTION AND MAINTENANCE OF POWER POLES AND TELEPHONE POLES, TOGETHER WITH THEIR RESPECTIVE ENCUMBRANCES, DESCRIBED AS FOLLOWS:
COMMENCING AT THE SOUTHWEST CORNER OF LOT F, MAP OF NOB HILL SUBDIVISION, FILED JUNE 9, 1906, MAP BOOK B, PAGE 39, CONTRA COSTA COUNTY RECORDS, WHICH POINT IS ALSO THE NORTHWEST CORNER OF LOT E, AS ALSO DESIGNATED ON SAID MAP OF NOB HILL; THENCE SOUTH 84° 51' EAST ALONG THE COMMON LINE BETWEEN SAID LOTS E AND F, 150.56 FEET (DEED DISTANCE OF 150 FEET) TO THE TRUE POINT OF BEGINNING; THENCE CONTINUING SOUTH 83° 20' EAST ALONG LAST MENTIONED COMMON LINE BETWEEN LOTS E AND F, 12.41 FEET; THENCE SOUTH 6° 04' WEST, 102.68 FEET TO THE NORTHERLY LINE OF SAN PABLO AVENUE (FORMERLY U.S. 40); THENCE NORTH 83° 56' WEST ALONG SAID LAST MENTIONED NORTHERLY LINE, 28.20 FEET; THENCE NORTH 14° 48' 16" EAST ALONG A LINE COMMON ALSO TO PARCEL ONE OF THIS DESCRIPTION, 104.02 FEET TO THE TRUE POINT OF BEGINNING.
TRACT TWO:
PARCEL ONE:
LOT F, MAP OF NOB HILL SUBDIVISION, FILED JUNE 9, 1906, MAP BOOK B, PAGE 39, CONTRA COSTA COUNTY RECORDS.
PARCEL TWO:
77.15 FEET TO THE POINT OF COMMENCEMENT.
RIGHT OF WAY GRANTED IN THE DEED TO DONALD H. ARBUCKLE, ET UX, RECORDED JULY 6, 1962, BOOK 4154, OFFICIAL RECORDS, PAGE 756, DESCRIBED AS FOLLOWS:
AN UNRESTRICTED EASEMENT FOR THE PURPOSE OF ALLOWING TRESPASS OF PEDESTRIANS, VEHICLES AND ANIMALS, ALSO FOR THE CONSTRUCTION AND MAINTENANCE OF SEWER, WATER, GAS AND DRAINAGE PIPES, ALSO THE CONSTRUCTION AND MAINTENANCE OF POWER POLES AND TELEPHONE POLES, TOGETHER WITH THEIR RESPECTIVE ENCUMBRANCES, DESCRIBED AS FOLLOWS:
COMMENCING AT THE SOUTHWEST CORNER OF LOT F, MAP OF NOB HILL SUBDIVISION, FILED JUNE 9, 1906, MAP BOOK B, PAGE 39, CONTRA COSTA COUNTY RECORDS, WHICH POINT IS ALSO THE NORTHWEST CORNER OF LOT E, AS ALSO DESIGNATED ON SAID MAP OF NOB HILL; THENCE SOUTH 84° 51' EAST ALONG THE COMMON LINE BETWEEN SAID LOTS E AND F, 150.56 FEET (DEED DISTANCE OF 150 FEET) TO THE TRUE POINT OF BEGINNING; THENCE SOUTH 14° 48' 16" WEST, 104.02 FEET TO THE NORTHERLY LINE OF SAN PABLO AVENUE (FORMERLY U.S. 40); THENCE NORTH 83° 56' WEST ALONG SAID NORTHERLY LINE, 11.80 FEET; THENCE AT RIGHT ANGLES NORTH 8° 04' EAST, 102.37 FEET TO THE AFOREMENTIONED COMMON LINE BETWEEN LOTS E AND F OF NOB HILL SUBDIVISION; THENCE SOUTH 84° 51' EAST, 27.59 FEET TO THE TRUE POINT OF BEGINNING.
PARCEL THREE:
RIGHT OF WAY GRANTED IN THE DEED TO D.S.W., A PARTNERSHIP, RECORDED AUGUST 26, 1970, BOOK 6201, OFFICIAL RECORDS, PAGE 554, DESCRIBED AS FOLLOWS: A RIGHT OF WAY (NOT TO BE EXCLUSIVE) FOR USE AS A ROADWAY FOR VEHICLES OF ALL KINDS, PEDESTRIANS AND ANIMALS, FOR WATER, GAS, OIL AND SEWER PIPE LINES AND FOR TELEPHONE, TELEVISION SERVICE, ELECTRIC LIGHT AND POWER LINES, TOGETHER WITH THE NECESSARY POLES OR CONDUITS, AS AN APPURTENANCE TO PARCEL ONE ABOVE, OVER A PORTION OF LOT E, MAP OF NOB HILL SUBDIVISION, FILED JUNE 9, 1906, MAP BOOK B, PAGE 39, CONTRA COSTA COUNTY RECORDS. DESCRIBED AS FOLLOWS:
BEGINNING ON THE NORTH LINE OF THE PARCEL OF LAND DESCRIBED IN THE DEED TO EDGAR M. TILGHMAN, ET UX, RECORDED JULY 3, 1964, BOOK 4672, OFFICIAL RECORDS, PAGE 528, DISTANT THEREON SOUTH 83° 20' EAST, 12.41 FEET FROM THE NORTHWEST CORNER THEREOF; THENCE FROM SAID POINT OF BEGINNING NORTH 83° 20' WEST ALONG SAID NORTH LINE, 12.41 FEET TO THE WEST LINE OF SAID TILGHMAN PARCEL; THENCE SOUTH 14° 48' 16" WEST ALONG SAID WEST LINE, 104.02 FEET TO THE NORTH LINE OF THE PARCEL OF LAND DESCRIBED IN THE DEED TO THE STATE OF CALIFORNIA, RECORDED NOVEMBER 18, 1930, BOOK 262, OFFICIAL RECORDS, PAGE 86; THENCE SOUTH 83° 56' EAST ALONG SAID NORTH LINE, 28.20 FEET TO A POINT WHICH BEARS SOUTH 6° 04' WEST FROM THE POINT OF BEGINNING; THENCE NORTH 6° 04' EAST, 102.68 FEET TO THE POINT OF BEGINNING.
TRACT THREE:
LOT "D", AS DESIGNATED ON THE MAP ENTITLED, "MAP OF NOB HILL SUBDIVISION OF PINOLE", WHICH MAP WAS FILED IN THE OFFICE OF THE RECORDER OF THE COUNTY OF CONTRA COSTA, STATE OF CALIFORNIA, ON JUNE 9, 1906 IN VOLUME B OF MAPS, AT PAGE 39. EXCEPTING THEREFROM: THAT PARCEL OF LAND DESCRIBED IN THE DEED FROM PHILIP R. MOIGNARD, ET UX, TO STATE OF CALIFORNIA, DATED DECEMBER 4, 1924, AND RECORDED NOVEMBER 18, 1930 IN VOLUME 258 OF OFFICIAL RECORDS, AT PAGE 149, AS FOLLOWS: COMMENCING AT A POINT ON THE EASTERLY LINE OF LOT D, AS SHOWN ON MAP ENTITLED, "MAP OF THE NOB HILL SUBDIVISION OF PINOLE", FILED IN THE OFFICE OF THE RECORDER OF CONTRA COSTA COUNTY, CALIFORNIA, JUNE 9, 1906, WHICH POINT IS SOUTH 13° 14' WEST 103.79 FEET, MEASURED ALONG THE SAID EASTERLY LINE OF LOT D FROM THE NORTHEASTERLY CORNER OF SAID LOT D AND RUNNING THENCE AS FOLLOWS: SOUTH 13° 24' WEST ALONG THE SAID EASTERLY LINE OF LOT D, 22.25 FEET TO THE SOUTHEASTERLY CORNER OF SAID LOT D; THENCE NORTH 34° 51' WEST ALONG THE SOUTHERLY LINE OF SAID LOT D, 300.41 FEET TO THE SOUTHWESTERLY CORNER OF SAID LOT D; THENCE NORTH 13° 14' 30" EAST ALONG THE WESTERLY LINE OF SAID LOT D; 23.47 FEET; THENCE SOUTH 84° 54' EAST 132.51 FEET TO A POINT, FROM WHICH THE CENTER OF A CURVE TO THE RIGHT OF 10,040 FEET RADIUS, BEARS SOUTH 5° 08' WEST THENCE ALONG THIS CURVE 90.53 FEET; THENCE SOUTH 84° 21' EAST

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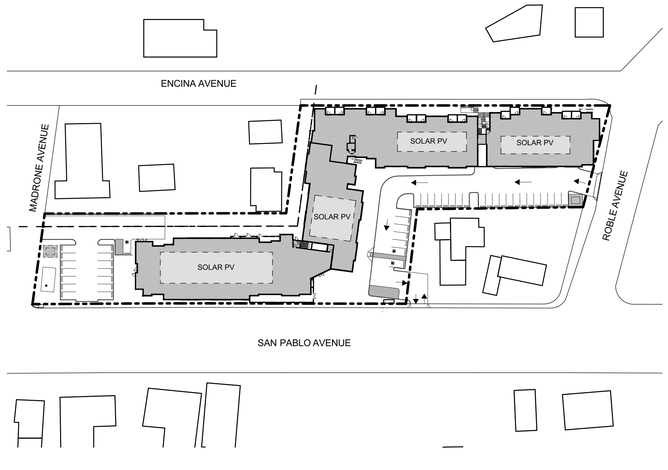
jpclancy@hotmail.com

PLOT MAP: NTS



VICINITY MAP: NTS

RELATIVITY ARCHITECTS
www.relativityarchitects.com
421 COLYTON STREET, FLOOR 2, LA, CA 90013 P.310.573.4300

LICENSED ARCHITECT
SCOTT BERNARD SULLIVAN
C-33139
03/31/2023
RENEWAL DATE
STATE OF CALIFORNIA

VISTA WOODS APARTMENTS
600 ROBLE AVENUE
1106 SAN PABLO AVENUE
1230 SAN PABLO AVENUE
PINOLE, CA, 94564

Title Sheet

DATE	ISSUE
02/26/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION 1

DRAWN BY	EC
ARCH. JOB NO.	2103A
SCALE	AS NOTED

SHEET
A000

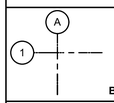
BIMcloud: JARVIS - BIMcloud Basic for ARCHICAD 24/Private/Private 6/18/2021

ABBREVIATIONS

A	
ACCES	ACCESSORY
ACOUS	ACOUSTIC(AL)
AFF	ABOVE FINISHED FLOOR
AL	ALUMINUM
ALT	ALTERNATE
ANUNC	ANNUNCIATOR
ANOD	ANODIZED
APPL	APPLIANCE
ARCH	ARCHITECT(URAL)
AUTO	AUTOMATIC
AVG	AVERAGE
B	
BLDG	BUILDING
BOLLD	BOLLARD
BD	BOARD
BLKG	BLOCKING
BRDLM	BROADLOOM
BU	BUILT UP
C	
CAB	CABINET
CPT	CARPET
CEM	CEMETITIOUS
CER	CERAMIC
CLG	CEILING
COATG	COATING
COILG	COILING
CONC	CONCRETE
CONSTR	CONSTRUCTION
CONT	CONTINUOUS(ATION)
CONTR	CONTRACT(OR)
COV	COVER
CMU	CONCRETE MASONRY UNIT
D	
DBL	DOUBLE
DEPT	DEPARTMENT
DES	DESIGN(ED)
DET	DETAIL
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIFF	DIFFUSER
DIM	DIMENSION
DISP	DISPENSER
DIV	DIVISION
DN	DOWN
DR	DOOR
DISCON	DISCONNECT
DW	DISHWASHER
DWR	DRAWER
E	
ELAST	ELASTOMERIC
ELEC	ELECTRICAL
EMBED	EMBED(DED)(DING)
ENGR	EINGEER(ED)
ENTR	ENTRANCE
EQ	EQUAL
EQUIP	EQUIPMENT
EXIST	EXISTING
EXP JT	EXPANSION JOINT
EXPS	EXPOSE(D)
EXT	EXTERIOR
F	
FAB	FABRICATION
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER & CABINET
FHC	FIRE HOSE CABINET
FIN	FINISH
FLDG	FOLDING
FPLC	FIREPLACE
FR	FIRE RATE(D)(ING)
FRMG	FRAMING
FXD	FIXED
FXTR	FIXTURE
FLR	FLOOR(ING)
FURN	FURNITURE
FWC	FABRIC WALL COVERING
G	
GA	GAUGE
GFRC	GLASS FIBER REINFORCED CONCRETE
GFRG	GLASS FIBER REINFORCED GYPSUM
GFRP	GLASS FIBER REINFORCED PLASTER
GL	GLASS
GR	GRADE(ING)
GYP	GYPSUM
H	
HD	HEAD
HDWD	HARDWOOD
HDWE	HARDWARE
HM	HOLLOW METAL
K	
KIT	KITCHEN
L	
LAV	
LB(S)	POUND(S)
LT	LIGHT
LVLG	LEVELING
LVR	LOUVER

M	
MAX	MAXIMUM
MFD	MANUFACTURED
MFR	MANUFACTURER
MECH	MECHANICAL
MEMB	MEMBRANE
MEZZ	MEZZANINE
MW	MICROWAVE OVEN
MIN	MINIMUM
MISC	MISCELLANEOUS
MLWK	MILLWORK
MOIST	MOISTURE
MOT	MOTOR(IZED)
MTD	MOUNTED
MTL	METAL
N	
NIC	NOT IN CONTRACT
NO	NUMBER
NTS	NOT TO SCALE
O	
ORNA	ORNAMENTAL
OVFL	OVERFLOW
OVHD	OVERHEAD
OPNG	OPENING(S)
OPR	OPERABLE
P	
PTN	PARTITION
PEDTR	PEDESTRIAN
PBD	PARTICLE BOARD
PNL	PANEL
POLYST	POLYSTYRENE
PORT	PORTABLE
PREFIN	PREFINISHED
PREFAB	PREFABRICATED
PLAM	PLASTIC LAMINATE
PLAS	PLASTER
PLSTC	PLASTIC LAMINATE
PLYWD	PLYWOOD
PRTECN	PROTECTION
R	
RDR	READER
RECES	RECESSED
RECPT	RECEPTACLE
REF	REFER(ENCE)
REFL	REFLECTED
REFR	REFRIGERATOR
REQD	REQUIRED
RESIS	RESIST(ANT)(IVE)
REINF	REINFORCE(D)(ING)(MENT)
RESIL	RESILIENT
RFG	ROOFING
RM	ROOM
RO	ROUGH OPENING
S	
SCR	SCRIBE
SECUR	SECURITY
SF	SQUARE FEET
SGL	SINGLE
SHORG	SHORING
SIM	SIMILAR
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STRFR	STOREFRONT
STRUCT	STRUCTURAL
SURF	SURFACE
SUSP	SYSTEM(S)
SYS	
T	
THK	THICK
TLT	TOILET
TRAF	TRAFFIC
TRANS	TRANSPARENT
TRTD	TREATED
T&G	TONGUE-AND-GROOVE
TYP	TYPICAL
U	
UNDERLAY	UNDERLAYMENT
UTIL	UTILITY
UNO	UNLESS NOTED OTHERWISE
V	
VEH	VEHICLE(ULAR)
VERT	VERTICAL
VIF	VERIFY IN FIELD
WD	
WD	STACKED WASHER AND DRYER
SYMBOLS	
@	AT
&	AND
~	ABOUT, APPROXIMATELY
%	PERCENT(AGE)
#	POUND
€	EURO(S)
£	POUND(S) STERLING
$	UNITED STATES DOLLAR(S)

SYMBOLS



Building Grid Lines

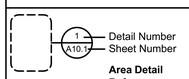
Reference Number

Window Symbol

Door Symbol

Detail Number
Sheet Number

Detail



Detail Number
Sheet Number

Area Detail Reference

Reference Number

Wall Type

Elevation Indication
Drawing Number
Sheet Number

Interior Elevation

Revision Number
Revision Cloud
(cloud around rev. optional)

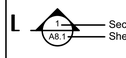
Reference Number

Appliance Symbol

Work Point
Control Point or Datum Point

Elevation Number
Sheet Number

Exterior Elevation



Section Number
Sheet Number

Wall Section

Room Number
Room Name

Room Identification

Sheet North
True North

North Arrow

3'-0"

Nominal Ceiling Height

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STATE OF CALIFORNIA

VISTA WOODS APARTMENTS
600 ROBLE AVENUE
1106 SAN PABLO AVENUE
1230 SAN PABLO AVENUE
PINOLE, CA, 94564

Abbreviations & Symbols

DATE	ISSUE
02/26/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION

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SCALE	AS NOTED

SHEET
A001

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		03/30/21	06/18/21 △
A000	Title Sheet	●	●
A001	Abbreviations & Symbols	●	●
A002	Sheet Index	●	●
A003	Incentives Letter		●
A004	3D Views	●	●
A010	Building Stats - Zoning, Parking & Area Analysis	●	●
A011	Building Stats - Occupancy & Egress, Fire Access	●	●
A012	Building Stats - Open Space	●	●
A013	Building Stats- Building Area and Occupancy		●
A090	Topo Survey	●	●
A091	Topo Survey	●	●
Civil			
C0.1	Civil Title Sheet	●	●
C1.1	Site and Paving Plan	●	●
C1.2	Site and Paving Plan	●	●
C1.4	Fire Protection Plan		●
C2.1	Precise Grading and Drainage Plan- Garage		●
C2.2	Precise Grading and Drainage Plan	●	●
C2.3	Precise Grading and Drainage Plan	●	●
C2.4	Site Cross Sections	●	●
C2.5	Site Cross Sections	●	●
C3.0	Utility Plan	●	●
C4.0	Storwater Control Plan	●	●
Landscape			
L1.01	Tree Removal Plan		●
L1.02	Tree Inventory		●
L2.01	Site Plan	●	●
L8.00	Plant Legend		●
L8.10	Planting Plan		●
L8.11	Planting Plan		●
L8.12	Planting Plan		●
L8.13	Planting Plan		●
Architectural			
A100	Site Plan	●	●
A200	Parking Overall Floor Plan	●	●
A210	Ground Floor Overall Floor Plan	●	●
A220	Second Floor Overall Floor Plan	●	●
A230	Third Floor Overall Floor Plan	●	●
A240	Fourth Floor Overall Floor Plan	●	●
A250	Roof Overall Floor Plan	●	●
A310	Wing A South & North - Exterior Elevation	●	●
A311	Wing A West & East - Exterior Elevations	●	●
A320	Wing B East & West - Exterior Elevations	●	●
A330	Wing C South & North - Exterior Elevations	●	●
A331	Wing D South & North - Exterior Elevations		●
A332	Wing D East - Exterior Elevation	●	●
A410	Wing A - Buiding Sections (N-S & E-W)	●	●
A420	Wing A & B - Building Sections (E-W)		●
A430	Wings C & D - Building Section (N-S & E-W)	●	●
A440	Wings D - Building Section (N-S)	●	●
A550	Type A Studio - Floor Plan	●	●
A554	Type B One-Bedroom - Floor Plan	●	●
A556	Type C Two Bedroom - Floor Plan	●	●

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03/31/2023
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VISTA WOODS APARTMENTS

600 ROBLE AVENUE
1106 SAN PABLO AVENUE
1230 SAN PABLO AVENUE
PINOLE, CA. 94564

Sheet Index

DATE	ISSUE
03/30/2021	DEVELOPMENT APPLICATION
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June 17, 2021

(INCENTIVES SUMMARY): **03**

PROJECT:	**Vista Woods Apartments**
PROJECT NO.:	**2103A**
PROJECT LOCATION:	**600 Roble Ave**
TO:	**City of Pinole**
RE:	**Zoning Incentives**
ISSUE DATE:	**June 18, 2021**

The Vista Woods Apartments is a proposed affordable housing development for seniors at a site located along San Pablo Avenue and Roble Avenue. This project will provide 179 units of housing with on-site management services, community amenities and landscaping. This document serves as a summary for the provisions of the project as it qualifies for development standard reductions and incentives through the State Density Bonus. It's conformance to the standards of this law preclude it from requiring any other discretionary approvals.

This project qualifies for incentives and exemptions per the State Density Bonus Law (SDBL), *California Code Section 65915 in effect 1/1/2021*:

1. Qualifications of building per the SDBL:
   a. 100% deed-restricted affordable to low-income households
   b. 100% deed-restricted dwelling units to senior housing
   c. Site is within ½ mile of a bus stop with service greater than 8 times per day (additionally, this project proposes to provide a new bus stop shelter on San Pablo Avenue on site)
2. Requests of this project that shall be automatically granted per the SDBL:
   a. Zero parking required
   b. 80% Density Bonus
   c. Four (4) incentives / concessions
   d. Waivers or reductions of development standards

This project requests the following, as proposed in the Planning Application, submitted June 18, 2021:

I. Zero parking as base requirement per SDBL 65915(p)(3)(B)
   a. Project proposes Eighty eight(88) parking stalls, which is 88 above required
II. 80% Density Bonus per SDBL 65915(d)(3)(D)(i)
   - Site Area = 2.017 acres
   - Minimum Base Density per Pinole Municipal Code: 35.1 units per acre
     - 35.1 * 2.017 acres = 70.79 units
   - Maximum Base Density per Pinole Municipal Code 50.0 units per acre
     - 50.0 * 2.017 acres = 100.85 units
   - State Density Bonus of 80%
     - 70.79 units * 1.80 = 127.42 which rounds up to 128 units min density
     - 100.85 units * 1.80 = 181.53 which rounds up to 182 units max density
     - Proposed total units is 179
III. Three (3) Incentives / Concessions per SDBL 65915(d)(2)(D)

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   a. Reduction of Setbacks
      i. Side Yard at northern property boundary along Encina Avenue to be between 1'-0" and 14'-10" in lieu of required 15'; all other setback requirements are met
   b. Reduction of Open Space (17.24.030) 300 sf/unit
      i. Per Zoning Code standard it requires a total of 53,700 total open space
   c. Increased Height
      i. At the Eastern portion of the building facing Roble Avenue (for 82'-11" of building length going east to west), the proposed height is 60'-7" at the tallest, measuring from the lowest adjacent grade most eastern moment. The remainder of the building is beneath the 50'-0" maximum height requirement
IV. Waivers of Development Standards per SDBL 65915(e)(1) and (2)
   a. Compact Parking (17.48.090) - 20% maximum compact parking stall ratio shall be waived to allow for proposed 62.5% ratio.
   b. Chapter 6, Section C, paragraph 2 (i) (Figure 6.4, Special Height Requirement {Rear and Side Setback}) - 45-degree step-backs at upper stories to be waived and are not provided in proposed building.
   c. Chapter 6, Section C, paragraph 2 (i) (Figure 6.4, Special Height Requirement {Across the Street Setback}) - 45-degree step-backs at upper stories to be waived and are not provided in proposed building.
   d. Parking lot shade standards (17.44.060-3) - Parking lot shade requirement per Pinole Municipal Code to be waived.

APPLICABLE STATE DENSITY BONUS LAW PROVISIONS
CALIFORNIA CODE SECTION 65915 (IN EFFECT 1/1/2021)

...
65915(a)(2):
(2) A local government shall not condition the submission, review, or approval of an application pursuant to this chapter on the preparation of an additional report or study that is not otherwise required by state law, including this section. This subdivision does not prohibit a local government from requiring an applicant to provide reasonable documentation to establish eligibility for a requested density bonus, incentives or concessions, as described in subdivision (d), waivers or reductions of development standards, as described in subdivision (e), and parking ratios, as described in subdivision (p).
...
65915(b)(1)(G):
(G) One hundred percent of all units in the development, including total units and density bonus units, but exclusive of a manager's unit or units, are for lower income households, as defined by Section 50079.5 of the Health and Safety Code, except that up to 20 percent of the units in the development, including total units and density bonus units, may be for moderate-income households, as defined in Section 50053 of the Health and Safety Code.
...
65915(d)(2):
(2) The applicant shall receive the following number of incentives or concessions:

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RELATIVITY ARCHITECTS

...
65915(d)(2)(D):
(D) Four incentives or concessions for projects meeting the criteria of subparagraph (G) of paragraph (1) of subdivision (b). If the project is located within one-half mile of a major transit stop, the applicant shall also receive a height increase of up to three additional stories, or 33 feet.
...
65915(d)(3)(D):
(D) For housing developments meeting the criteria of subparagraph (G) of paragraph (1) of subdivision (b), the following shall apply:
(i) Except as otherwise provided in clause (ii), the density bonus shall be 80 percent of the number of units for lower income households.
...
65915(e)(1)
(1) In no case may a city, county, or city and county apply any development standard that will have the effect of physically precluding the construction of a development meeting the criteria of subdivision (b) at the densities or with the concessions or incentives permitted by this section. Subject to paragraph (3), an applicant may submit to a city, county, or city and county a proposal for the waiver or reduction of development standards that will have the effect of physically precluding the construction of a development meeting the criteria of subdivision (b) at the densities or with the concessions or incentives permitted under this section, and may request a meeting with the city, county, or city and county.
...
65915(e)(2)
(2) A proposal for the waiver or reduction of development standards pursuant to this subdivision shall neither reduce nor increase the number of incentives or concessions to which the applicant is entitled pursuant to subdivision (d).
...
65915(p)(3)
(3) Notwithstanding paragraph (1), if a development consists solely of rental units, exclusive of a manager's unit or units, with an affordable housing cost to lower income families, as provided in Section 50052.5 of the Health and Safety Code, then, upon the request of the developer, a city, county, or city and county shall not impose vehicular parking standards if the development meets either of the following criteria:
...
65915(p)(3)(B)
(B) The development is a for-rent housing development for individuals who are 62 years of age or older that complies with Sections 51.2 and 51.3 of the Civil Code and the development has either paratransit service or unobstructed access, within one-half mile, to fixed bus route service that operates at least eight times per day.

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03/31/2023
RENEWAL DATE
STATE OF CALIFORNIA

VISTA WOODS APARTMENTS
600 ROBLE AVENUE
1106 SAN PABLO AVENUE
1230 SAN PABLO AVENUE
PINOLE, CA. 94564

Incentives Letter

DATE	ISSUE
03/30/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION Δ1

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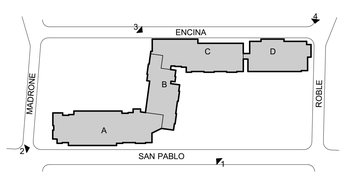
4.ENCINA AVENUE LOOKING SOUTH WEST

3.ENCINA AVENUE LOOKING SOUTH EAST

2. AERIAL VIEW LOOKING NORTH EAST

1. CONCEPTUAL VIEW FROM SAN PABLO AVENUE LOOKING WEST



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VISTA WOODS APARTMENTS

600 ROBLE AVENUE
1106 SAN PABLO AVENUE
1230 SAN PABLO AVENUE
PINOLE, CA, 94564

3D Views

DATE	ISSUE
03/30/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION △1

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ZONING ANALYSIS

APN
402-023-007-6 (600 ROBLE AVENUE)
402-023-003-5 (1106 SAN PABLO AVENUE)
405-023-002-7 (1230 SAN PABLO AVENUE)

ZONING
R-4: VERY HIGH DENSITY RESIDENTIAL
CMU: COMMERCIAL MIXED-USE
SITE FALLS WITHIN THE THREE CORRIDORS SPECIFIC PLAN, SAN PABLO AVENUE, MIXED-USE SUB-AREA

SITE AREA
88,053.8 SF = 2.01 ACRES

SITE UTILIZATION
Current Use: Vacant land w/ abandoned commercial structures
Proposed Use: Permanent Supportive, Restricted Affordable Housing for Seniors

RESIDENTIAL DENSITY
R-4:
35.1 min. units per acre: 35.1 * 2.01 acres = 70.5 units
State Density Bonus of 80%: 70.5 X 1.80 = 126.9 units
50.0 max. units per acre: 50.0 * 2.01 acres = 100.5 units
State Density Bonus of 80%: 100.5 X 1.80 = 180.9 units
TOTAL ALLOWED: 128-182 UNITS
TOTAL PROPOSED: 179 UNITS

SETBACKS
See setback diagram on this sheet, 01/A010.

ZONING MAX HEIGHT:
50'-0", 4 Stories

2019 CBC MAX HEIGHT:
60'-0" (CBC Table 504.3)

PROPOSED HEIGHT:
60'-7" (Max Height) 4 Stories + Parking
43'-6" (Avg. Height)

PROPOSED BLDG AREA:
184,349 sq ft

STATE DENSITY BONUS LAW

QUALIFICATIONS OF BUILDING UNDER SDBL:

1. 100% DEED RESTRICTED AFFORDABLE TO LOW-INCOME HOUSEHOLDS
2. 100% DEED RESTRICTED SENIOR HOUSING
3. WITHIN 1/2 MILE OF BUS STOP WITH SERVICE >8 TIMES/DAY

AUTOMATICALLY GRANTED UPON REQUEST BY SDBL:

1. 80% DENSITY BONUS PER 65915(d)(3)(D)(i)
2. FOUR INCENTIVES/CONCESSIONS PER 65915(d)(2)(D)
3. ZERO REQUIRED PARKING PER 65915(p)(3)(B)
4. WAIVERS OR REDUCTIONS OF DEVELOPMENT STANDARDS PER 65915(e)(1) & (2)

APPLICABLE STATE DENSITY BONUS LAW PROVISIONS
CALIFORNIA CODE SECTION 65915 (IN EFFECT 1/1/2021)

65915(b)(1)(G):
(G) One hundred percent of all units in the development, including total units and density bonus units, but exclusive of a manager's unit or units, are for lower income households, as defined by Section 50079.5 of the Health and Safety Code, except that up to 20 percent of the units in the development, including total units and density bonus units, may be for moderate-income households, as defined in Section 50053 of the Health and Safety Code.
...

65915(d)(2):
(2) The applicant shall receive the following number of incentives or concessions:
...

65915(d)(2)(D):
(D) Four incentives or concessions for projects meeting the criteria of subparagraph (G) of paragraph (1) of subdivision (b).
...

65915(d)(3)(D):
(D) For housing developments meeting the criteria of subparagraph (G) of paragraph (1) of subdivision (b), the following shall apply:

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...

65915(p)(3)
(3) Notwithstanding paragraph (1), if a development consists solely of rental units, exclusive of a manager's unit or units, with an affordable housing cost to lower income families, as provided in Section 50052.5 of the Health and Safety Code, then, upon the request of the developer, a city, county, or city and county shall not impose vehicular parking standards if the development meets either of the following criteria:
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65915(p)(3)(B)
(B) The development is a for-rent housing development for individuals who are 62 years of age or older that complies with Sections 51.2 and 51.3 of the Civil Code and the development has either paratransit service or unobstructed access, within one-half mile, to fixed bus route service that operates at least eight times per day.

BUILDING STATISTICS

CONSTRUCTION TYPE:
TYPE VA, OVER TYPE I PODIUM (PARTIAL)

MIXED OCCUPANCY:
PARKING - S2
OFFICES - B
ASSEMBLY - A3
MULTIFAMILY - R2

FIRE-RESISTANCE RATING FOR BUILDING ELEMENTS (TABLE 601) TYPE IA CONSTRUCTION

BUILDING ELEMENT	RATING IN HOURS
STRUCTURAL FRAME	3
EXTERIOR BEARING WALLS	3
INTERIOR BEARING WALLS	3
EXTERIOR NON-BEARING WALLS AND PARTITIONS	1
INTERIOR NON-BEARING WALLS AND PARTITIONS	0
FLOOR CONSTRUCTION	2
ROOF CONSTRUCTION	1.5

(FOOTNOTE 'g' FOR EXTERIOR BEARING WALLS, CBC TABLE 602 - X>30 = 0)

FIRE-RESISTANCE RATING FOR BUILDING ELEMENTS (TABLE 601) TYPE V-A CONSTRUCTION

BUILDING ELEMENT	RATING IN HOURS
STRUCTURAL FRAME	1
EXTERIOR BEARING WALLS	1
INTERIOR BEARING WALLS	1
EXTERIOR NON-BEARING WALLS AND PARTITIONS	1
INTERIOR NON-BEARING WALLS AND PARTITIONS	0
FLOOR CONSTRUCTION	1
ROOF CONSTRUCTION	1

(FOOTNOTE 'g' FOR EXTERIOR BEARING WALLS, CBC TABLE 602 - X>30 = 0)

UNIT TYPE SUMMARY

	0 BR	1 BR	2 BR	TOTAL
1ST FLOOR	4	29	8	41
2ND FLOOR	4	33	9	46
3RD FLOOR	4	33	9	46
4TH FLOOR	4	33	9	46
TOTAL	16	128	35	179

UNIT CALCULATIONS

AREA PER UNIT TYPE				
UNIT TYPE	0-BR UNIT	1-BR UNIT	2-BR UNIT	
NET AREA PER UNIT	446 SF	500 SF	770 SF	
QTY	16	128	35	**179**
TOTAL AREA PER UNIT TYPE	7,136 SF	64,000 SF	27,720 SF	

AUTOMOBILE PARKING SUMMARY

NO PARKING REQUIRED PER **SDBL 65915(p)(3)(B)**	
PROPOSED PARKING:	
STANDARD	27
COMPACT	56
ACCESSIBLE	3
ACCESSIBLE VAN	2
TOTAL PARKING PROVIDED	**88**
QTY PARKING W/ EV HOOK-UPS	2

100% STALLS WILL BE EV READY

BICYCLE PARKING SUMMARY

MULTI-FAMILY RESIDENTIAL PER CITY OF PINOLE THREE CORRIDOR SPECIFIC PLAN - CHAPTER 7.3.2.c.i

1 SPACE PER OCCUPANT FOR 30% OF THE PLANNED OCCUPANCY BUT NO FEWER THAN ONE PER UNIT
179 UNITS = 179 RESIDENTIAL BICYCLE PARKING SPACE

VISITOR BICYCLE RACKS ON SITE
1 BICYCLE SPACE PER 10 DWELLING UNITS
179/10 = 18 VISITOR BICYCLE PARKING SPACES

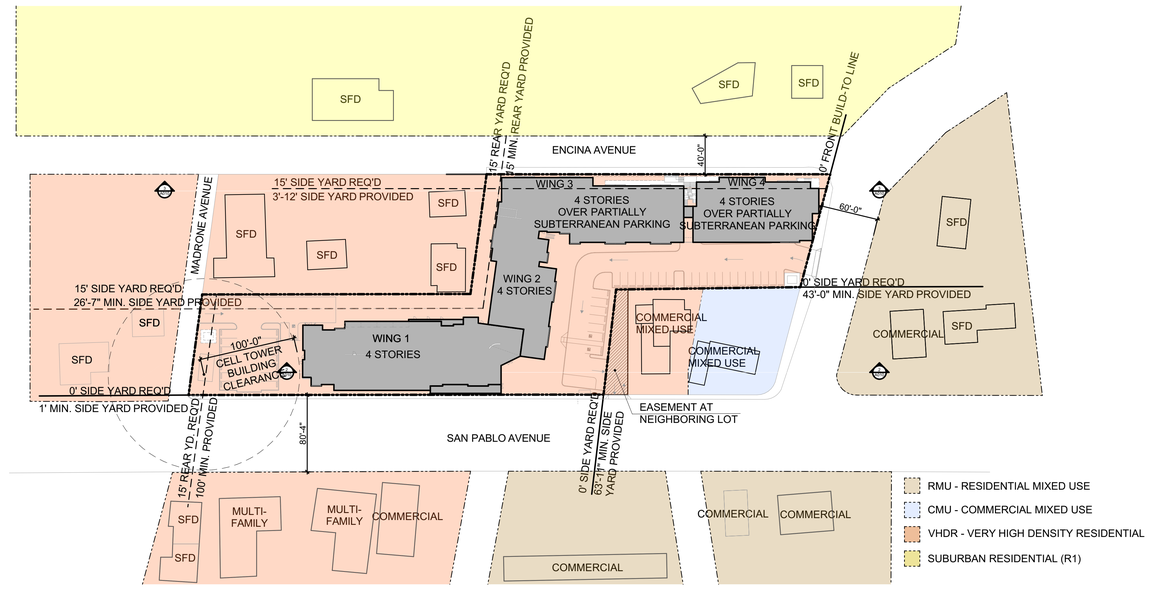
TOTAL REQUIRED = 197 BICYCLE SPACES
TOTAL PROVIDED = 207 BICYCLE SPACES

PER PINOLE MC 17.48.120.F.5
IF PROVIDED WITHIN UNIT, RACKS OR LOCKERS ARE NOT REQUIRED.
179 RESIDENTIAL BICYCLE PARKING SPACES WILL BE PROVIDED WITHIN UNIT.

ROOM AREAS SCHEDULE*

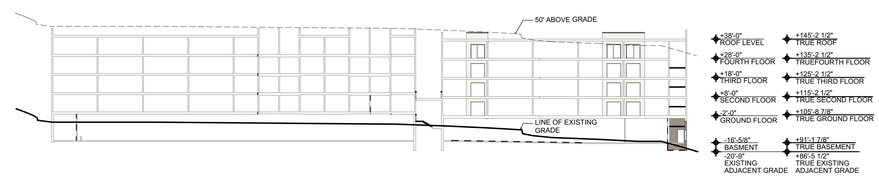
FLOOR	ROOM NAME	NET TOTAL AREA
UNDERGROUND PARKING		
	BOOSTER PUMP RM.	131
	ELEC. RM.	218
	ELECTRICAL ROOM	384
	ELVR	63
	MECH. ROOM	189
	PARKING	17,502
	STAIR	736
	TRASH	119
	UTIL.	47
		19,389 sq ft
GROUND FLOOR		
	0-BR UNIT	1,784
	1-BR UNIT	14,521
	2-BR UNIT	6,158
	DINING/ GAMES	854
	ELEC. RM.	229
	ELVR	256
	ELVR.	205
	ENTRY LOBBY	2,078
	FITNESS	489
	IDF	88
	IDF	104
	KITCHEN	583
	LAUNDRY	439
	OFFICE	678
	STAIR	1,557
	STO.	122
	TRASH	74
	TRASH RM.	146
	TV/ LIVING	633
	W/C	201
	WING 3 LOBBY	530
		31,729 sq ft
SECOND FLOOR		
	0-BR UNIT	1,776
	1-BR UNIT	16,503
	2-BR UNIT	6,904
	ELVR LOBBY 1	1,119
	ELVR.	205
	IDF	166
	STAIR	594
	STAIR.	565
	TRASH	158
	WING 3 LOBBY	530
		28,520 sq ft
THIRD FLOOR		
	0-BR UNIT	1,787
	1-BR UNIT	16,500
	2-BR UNIT	6,920
	ELVR LOBBY 1	1,095
	ELVR.	199
	IDF	166
	STAIR	1,081
	TRASH	158
	WING 3 LOBBY	534
		28,440 sq ft
FOURTH FLOOR		
	0-BR UNIT	1,776
	1-BR UNIT	16,499
	2-BR UNIT	6,912
	ELVR LOBBY 1	1,095
	ELVR.	199
	IDF	166
	STAIR	571
	STAIR.	508
	TRASH	154
	WING 3 LOBBY	535
BUILDING TOTAL		**28,415 sq ft**
		136,493 sq ft

**excludes exterior balconies, thickness of walls, parking, & shafts*



ZONING & SETBACKS DIAGRAM
SCALE: 1/64" = 1'-0" (1)

ZONING SECTION
SCALE: 1/32" = 1'-0" (2)



ZONING SECTION
SCALE: 1/32" = 1'-0" (3)

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C-33139
03/31/2023
RENEWAL DATE
STATE OF CALIFORNIA

VISTA WOODS APARTMENTS
600 ROBLE AVENUE
1106 SAN PABLO AVENUE
1230 SAN PABLO AVENUE
PINOLE, CA, 94564

Building Stats - Zoning, Parking & Area Analysis

DATE	ISSUE
03/30/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION 1

DRAWN BY	EC
ARCH. JOB NO.	2103A
SCALE	AS NOTED

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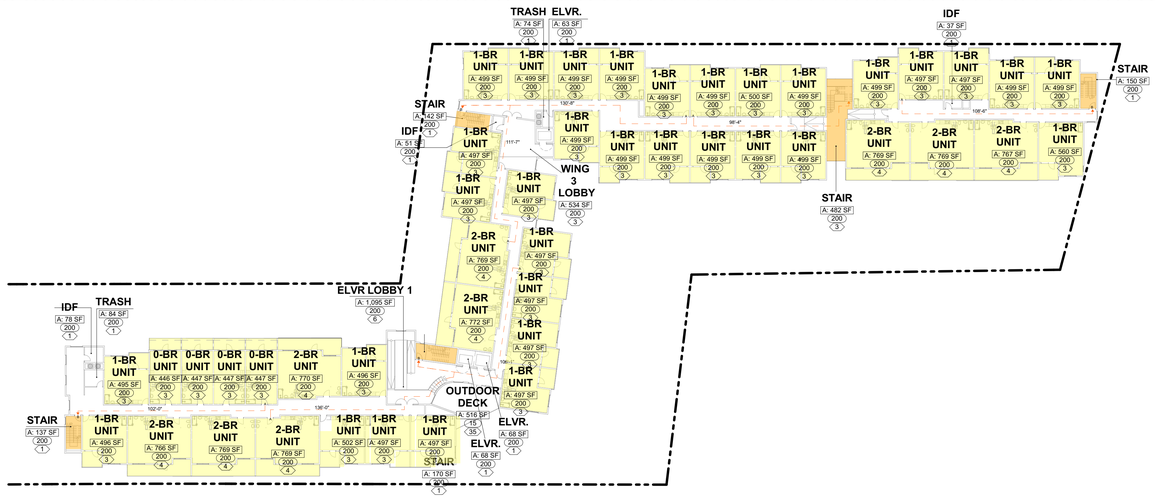
A010

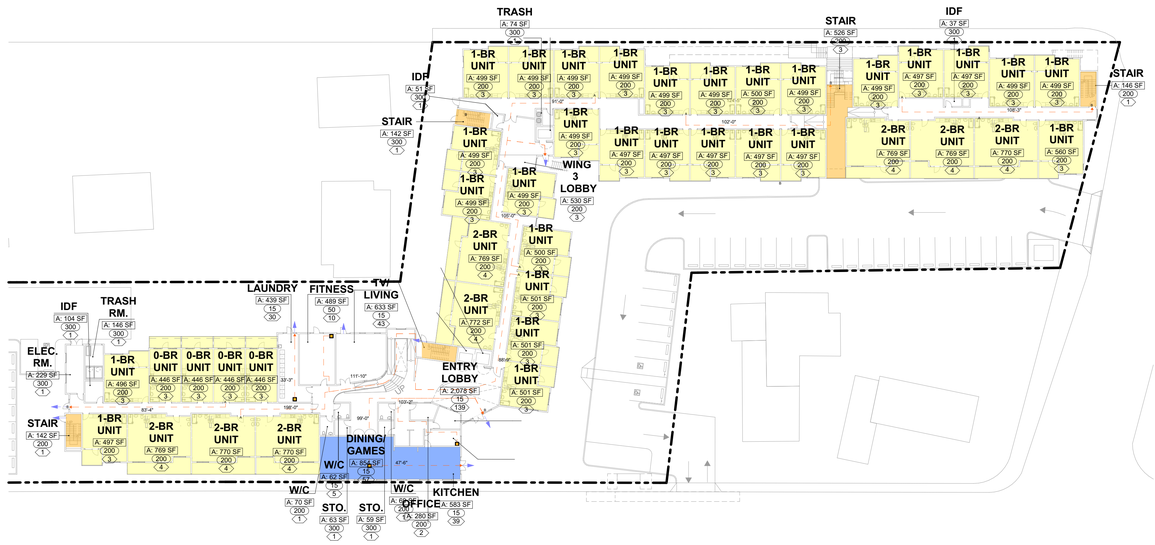
BIM cloud: JARVIS - BIMcloud Basic for ARCHICAD 24/Private/Private 6/18/2021

OCCUPANCY & OCCUPANT LOAD SCHEDULE: BUILDING 12

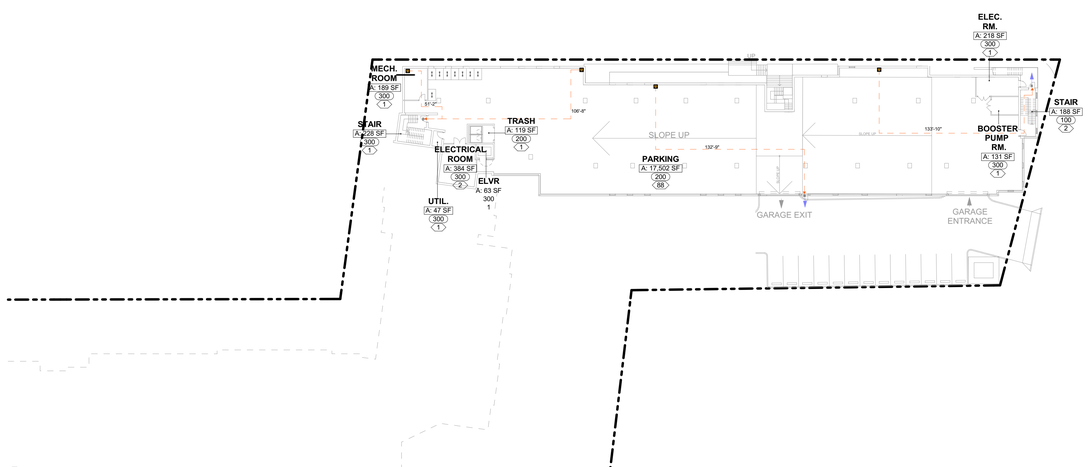
FLOOR	ROOM	QUANTITY	OCCUPANCY TYPE	FUNCTION OF SPACE	OCCUPANT LOAD FACTOR	MEASURED NET AREA	OCCUPANTS
UNDERGROUND PARKING							
	BOOSTER PUMP RM.	1	S-2	Accessory storage areas, mechanical equipment room	300	131	1
	ELEC. RM.	1	S-2	Accessory storage areas, mechanical equipment room	300	218	1
	ELECTRICAL ROOM	1	S-2	Accessory storage areas, mechanical equipment room	300	384	2
	ELVR	1	S-2	Accessory storage areas, mechanical equipment room	300	63	1
	MECH. ROOM	1	S-2	Accessory storage areas, mechanical equipment room	300	189	1
	PARKING	1	S-2	Parking garages	200	17,502	88
	TRASH	1	S-2	Residential	200	119	1
	UTIL.	1	S-2	Accessory storage areas, mechanical equipment room	300	47	1
						18,653 sq ft	**96**
GROUND FLOOR							
	0-BR UNIT	4	R-2	Residential	200	1,784	3
	1-BR UNIT	29	R-2	Residential	200	14,521	3
	2-BR UNIT	8	R-2	Residential	200	6,158	4
	DINING/ GAMES	1	A-3	Assembly without fixed seats Unconcentrated (tables and chairs)	15	854	57
	ELEC. RM.	1	R-2	Residential	200	229	1
	ELVR.	3	R-2	Residential	200	205	1
	ENTRY LOBBY	1	A-3	Assembly without fixed seats Unconcentrated (tables and chairs)	15	2,078	139
	FITNESS	1	R-2	Excercise rooms	50	489	10
	IDF	2	R-2	Residential	200	88	1
	IDF	1	R-2	Residential	200	104	1
	KITCHEN	1	R-2	Assembly without fixed seats Unconcentrated (tables and chairs)	15	583	39
	LAUNDRY	1	R-2	Assembly without fixed seats Unconcentrated (tables and chairs)	15	439	30
	OFFICE	3	B	Business areas	150	398	2
	OFFICE	1	R-2	Residential	200	280	2
	STO.	2	R-2	Residential	200	122	1
	TRASH	1	R-2	Residential	200	74	1
	TRASH RM.	1	R-2	Residential	200	146	1
	TV/ LIVING	1	A-3	Assembly without fixed seats Unconcentrated (tables and chairs)	15	633	43
	W/C	2	R-2	Residential	200	139	1
	W/C	1	R-2	Residential	200	62	5
	WING 3 LOBBY	1	R-2	Residential	200	530	3
						29,916 sq ft	**478**
SECOND FLOOR							
	0-BR UNIT	4	R-2	Residential	200	1,776	3
	1-BR UNIT	33	R-2	Residential	200	16,503	3
	2-BR UNIT	9	R-2	Residential	200	6,904	4
	ELVR LOBBY 1	1	R-2	Residential	200	1,119	6
	ELVR.	3	R-2	Residential	200	205	1
	IDF	3	R-2	Residential	200	166	1
	TRASH	2	R-2	Residential	200	158	1
	WING 3 LOBBY	1	R-2	Residential	200	530	3
						27,361 sq ft	**164**
THIRD FLOOR							
	0-BR UNIT	4	R-2	Residential	200	1,787	3
	1-BR UNIT	33	R-2	Residential	200	16,500	3
	2-BR UNIT	9	R-2	Residential	200	6,920	4
	ELVR LOBBY 1	1	R-2	Residential	200	1,095	6
	ELVR.	3	R-2	Residential	200	199	1
	IDF	3	R-2	Residential	200	166	1
	OUTDOOR DECK	1	R-2	Residential	200	516	35
	TRASH	2	R-2	Residential	200	158	1
	WING 3 LOBBY	1	R-2	Residential	200	534	3
						27,875 sq ft	**199**
FOURTH FLOOR							
	0-BR UNIT	4	R-2	Residential	200	1,776	3
	1-BR UNIT	33	R-2	Residential	200	16,499	3
	2-BR UNIT	9	R-2	Residential	200	6,912	4
	ELVR LOBBY 1	1	R-2	Residential	200	1,095	6
	ELVR.	3	R-2	Residential	200	199	1
	IDF	3	R-2	Residential	200	166	1
	OUTDOOR DECK	1	R-2	Residential	200	516	35
	TRASH	2	R-2	Residential	200	154	1
	WING 3 LOBBY	1	R-2	Residential	200	535	3
						27,852 sq ft	**199**
TOTAL						**131,657 sq ft**	**1136**



2ND-4TH FLOOR OCCUPANCY & EGRESS DIAGRAM (3)
SCALE: 1/32" = 1'-0"



GROUND FLOOR OCCUPANCY & EGRESS DIAGRAM (2)
SCALE: 1/32" = 1'-0"



BASEMENT FLOOR EGRESS PLAN (1)
SCALE: 1/32" = 1'-0"

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VISTA WOODS APARTMENTS
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1106 SAN PABLO AVENUE
1230 SAN PABLO AVENUE
PINOLE, CA, 94564

Building Stats - Occupancy & Egress, Fire Access

DATE	ISSUE
03/30/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION 1

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SCALE	AS NOTED

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BIMcloud: JARVIS - BIMcloud Basic for ARCHICAD 24/Private/Private 6/18/2021

OPEN SPACE CALCULATIONS

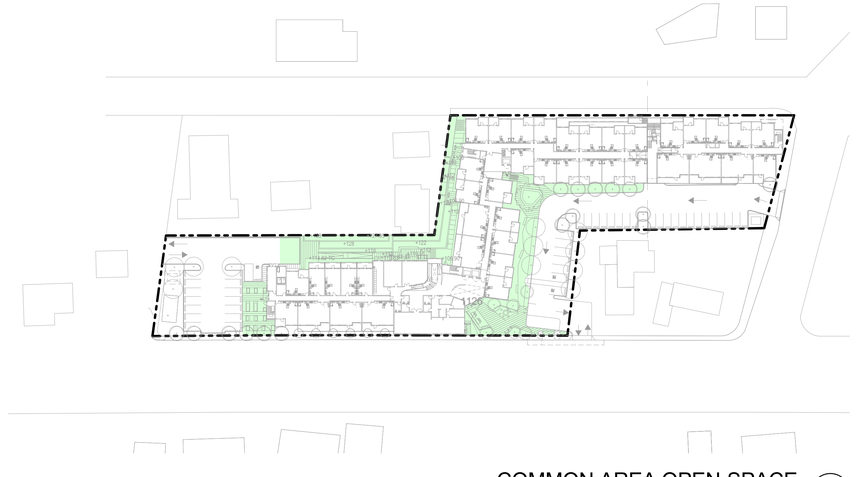
OPEN SPACE REQUIREMENTS PER PINOLE MC 17.24.030 SITE AREA: 88,053.8 SF	REQUIRED	PROVIDED
IMPROVED, USABLE OPEN SPACE (300SF/UNIT)	**53,700 SF**	**36,858 SF**
- PRIVATE OR SEMI-PRIVATE OPEN SPACE (20% OF LOT AREA)	17,611 SF	19,884 SF
- IMPROVED COMMON USABLE LANDSCAPE AREA		16,974 SF
IMPROVED, LANDSCAPED OPEN SPACE (30% OF LOT AREA)	**26,416 SF**	**26,653 SF**
- IMPROVED COMMON USABLE LANDSCAPE AREA		19,974 SF
- NON-RECREATIONAL SITE LANDSCAPE		9,679 SF

BALCONY/OUTDOOR DECK AREA (PRIVATE OR SEMI-PRIVATE OPEN SPACE)

	BALCONY SF	COUNT	TOTAL
STUDIO	96	16	1,536 SF
1 BEDROOM	81	128	10,368 SF
2 BEDROOM	222	35	7,770 SF
OUTDOOR DECK	532	2 (FLOOR 3 AND 4)	1,064 SF
			20,738 SF

NON-RECREATIONAL SITE LANDSCAPE (4)
SCALE: 1/64" = 1'-0"

TYPICAL FLOOR - PRIVATE OR SEMI-PRIVATE OPEN SPACE (2)
SCALE: 1/64" = 1'-0"



COMMON AREA OPEN SPACE (3)
SCALE: 1/64" = 1'-0"

GROUND FLOOR - PRIVATE OR SEMI-PRIVATE OPEN SPACE (1)
SCALE: 1/64" = 1'-0"

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Building Stats - Open Space

DATE	ISSUE
03/30/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION Δ

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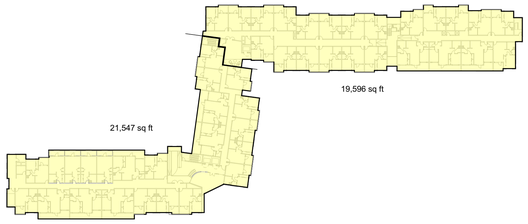
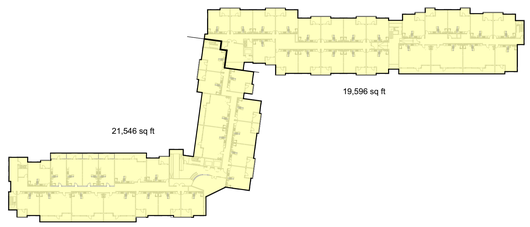
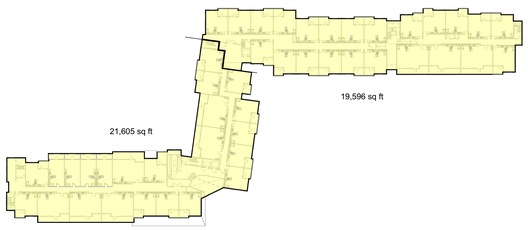


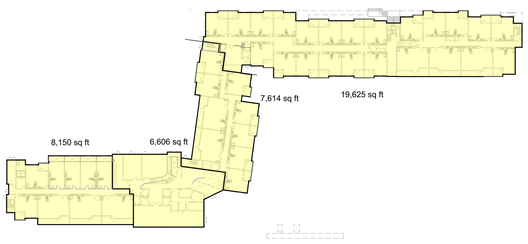
BUILDING AREA DIAGRAM 4TH FLOOR (6)
SCALE: 1/64" = 1'-0"



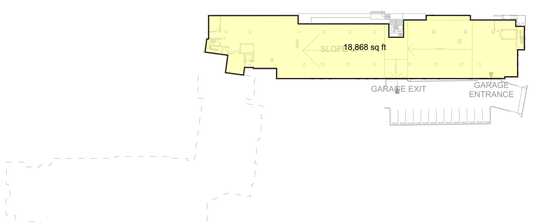
BUILDING AREA DIAGRAM 3RD FLOOR (5)
SCALE: 1/64" = 1'-0"



BUILDING AREA DIAGRAM 2ND FLOOR (4)
SCALE: 1/64" = 1'-0"



BUILDING AREA DIAGRAM GROUND FLOOR (3)
SCALE: 1/64" = 1'-0"



BUILDING AREA DIAGRAM UNDERGROUND PARKING (2)
SCALE: 1/64" = 1'-0"

CHAPTER 5: GENERAL BUILDING HEIGHTS AND AREAS; SEPARATION OF OCCUPANCIES

BUILDING 12:
MULTIPLE OCCUPANCY, MULTISTORY
CONSTRUCTION TYPE: VA
OCCUPANCY TYPE: R-2/A
SPRINKLER TYPE: NFPA 13
I_f = 0.75

506.2.4 Mixed-Occupancy, Multistory Buildings

Each story of a mixed-occupancy building with more than one story above grade plane shall individually comply with the applicable requirements of Section 508.1. For buildings with more than three stories above grade plane, the total building area shall be such that the aggregate sum of the ratios of the actual area of each story divided by the allowable area of such stories, determined in accordance with Equation 5-3 based on the applicable provisions of Section 508.1, shall not exceed three, provided the aggregate sum of the ratios for portions of mixed-occupancy, multistory buildings containing A, E, H, I, L and R occupancies, high-rise buildings, and other applications listed in Section 1.11 regulated by the Office of the State Fire Marshal, including any other associated non-separated occupancies, shall not exceed two.

Equation 5-3:

Story 1 (R-2 occupancy):

A_a=[A_t+(NS x I_f)]
A_t = 36,000
NS = 12,000
I_f = 0.68

Story 1 R-2 area: 15,764 SF
A_a=[36,000+(12,000 x .68)] = 44,160 SF
RATIO: 0.356

Story 1 (A-3 occupancy)

A_a=[A_t+(NS x I_f)]
A_t = 34,500
NS = 11,500
I_f = 0.68

Story 1 A-3 area: 6,606 SF
A_a=[34,500+(11,500 x .68)] = 42,320 SF
RATIO: 0.16

Story 2 R-2 area: 21,605 SF
A_a=[36,000+(12,000 x .68)] = 44,160 SF
RATIO: 0.489

Story 3 R-2 area: 21,546 SF
A_a=[36,000+(12,000 x .75)] = 44,160 SF
RATIO: 0.487

Story 4 R-2 area: 21,547 SF
A_a=[36,000+(12,000 x .75)] = 44,160 SF
RATIO: 0.487

SUM OF RATIOS: 1.979

ALLOWABLE HEIGHT, NUMBER OF STORIES (Table 504.3, Table 504.4):

	MAX HT & STORIES
Type VA:	
R-2	60', 4 STORIES
A-3	50', 2 STORIES

BUILDING 34:
SINGLE OCCUPANCY, MULTISTORY
CONSTRUCTION TYPE: VA
OCCUPANCY TYPE: R-2
SPRINKLER TYPE: NFPA 13
I_f = 0.71

Equation 5-2:

A_a=[A_t+(NS x I_f)] x S

A_t = 36,000
NS = 12,000
I_f = 0.71
S_a = 2

A_a=[36,000+(12,000 x 0.71)] x 2 = 89,040 SF

W = (L_1 X w_1 + L_2 X w_2 + L_3 X w_3 ...)/F = 30

F = PERIMETER THAT FRONTS ON >20' PUBLIC WAY OR OPEN SPACE = 807.3'

P = TOTAL PERIMETER OF BUILDING = 774.5'

I_f = [F/P - 0.25]W/30 (EQUATION 5-5)

I_f = [774.5'/807.3' - 0.25]W/30 = 0.70

W > 30', THUS 30' IS USED AS VALUE OF W.

GARAGE:
SINGLE OCCUPANCY, SINGLE STORY
CONSTRUCTION TYPE: IA
OCCUPANCY TYPE: S-2
SPRINKLER TYPE: NFPA 13

506.2.1 Single-Occupancy, One-Story Buildings

The allowable area of a single-occupancy building with no more than one story above grade plane shall be determined in accordance with Equation 5-1:

A_a=A_t+(NS x I_f)

A_t = UL
NS = UL
I_f = 0.65

A_a = UL+(UL x I_f) = UL

PROVIDED SEPARATION OF OCCUPANCIES (HOURS) (PER TABLE 508.4)

FIRE SEPARATION BETWEEN A-2/A-3 AND R-2 OCCUPANCIES: 1HR
FIRE PARTITION (AS PER 708) BETWEEN APARTMENTS: 1HR (508.2.4 Exception #2)

INCIDENTAL USE AREAS AND MIXED OCCUPANCIES (509)

ROOM OR AREA	FIRE SEPARATION PROTECTION PROVIDED
RESIDENTIAL	
WASTE AND LINEN COLLECTION ROOMS OVER 100 SF	1HR OR SPRINKLER
MECH. AND/OR ELECTRICAL EQUIP. ROOM	1HR
LAUNDRY OVER 100 SF	1HR OR SPRINKLER
GENERATOR RM	2HR

BUILDING AREA SCHEDULE PER STORY

BUILDING 1 - TYPE VA		
STORY	Occupancy	Area
GROUND FLOOR	A-3	6,606
GROUND FLOOR	R-2	7,614
GROUND FLOOR	R-2	8,150
SECOND FLOOR	R-2	21,605
THIRD FLOOR	R-2	21,546
FOURTH FLOOR	R-2	21,547
		87,068 sq ft

BUILDING 2 - TYPE VA	
STORY	Area
GROUND FLOOR	19,625
SECOND FLOOR	19,596
THIRD FLOOR	19,596
FOURTH FLOOR	19,596
	78,413 sq ft

PARKING - TYPE IA	
STORY	Area
UNDERGROUND PARKING	18,868
	18,868 sq ft

MAXIMUM EXIT TRAVEL DISTANCE: 250' PER TABLE 1017.2 (RESIDENTIAL, WITH SPRINKLER)

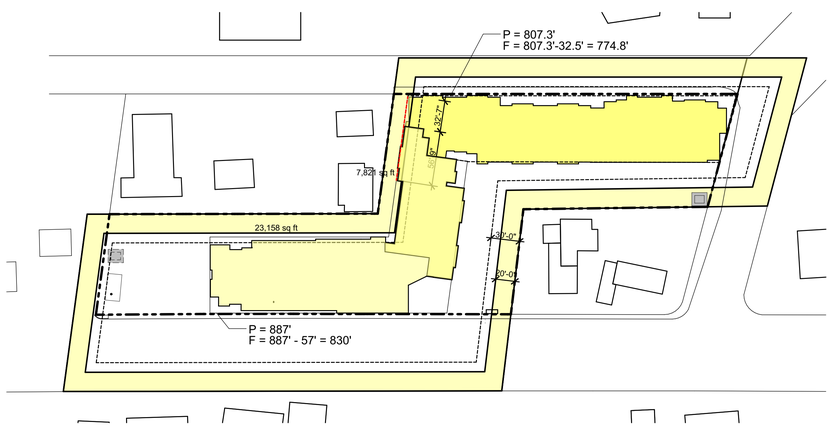
REQUIRED STAIR WIDTH PER 1005.3:

0.2"X Minimum

REQUIRED STAIR WIDTH FOR ACCESSIBLE MEANS OF EGRESS PER 1011.2:
44" Minimum

1005.5 Distribution of Minimum Width and Required Capacity

Where more than one exit, or access to more than one exit, is required, the means of egress shall be configured such that the loss of any one exit, or access to one exit, shall not reduce the available capacity or width to less than 50 percent of the required capacity or width.



FRONTAGE INCREASE DIAGRAM (1)
SCALE: 1/64" = 1'-0"

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RENEWAL DATE
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VISTA WOODS APARTMENTS
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1230 SAN PABLO AVENUE
PINOLE, CA, 94564

Building Stats- Building Area and Occupancy

DATE	ISSUE
03/30/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION 1

DRAWN BY	EC
ARCH. JOB NO.	2103A
SCALE	AS NOTED

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BIM cloud: JARVIS - BIM cloud Basic file: ARCHICAD 24/Private/Private 6/18/2021

SCALE: 1" = 20'

20' 10' 0 20'

IF PHYSICAL DISTANCE ACROSS SCALE BAR IS NOT EXACTLY TWO (2) INCHES, ADJUST SCALE ACCORDINGLY.

N
W E
S

CONTOUR INTERVAL NOTE

Contours shown on this survey are plotted at a 1 foot interval.

TITLE DESCRIPTION

The legal description for the property surveyed hereon is taken from the preliminary title report dated January 28, 2021, prepared by First American Title Insurance Company at 1850 Mt. Diablo Boulevard, Suite 530, Walnut Creek, California, 94596, under Order Number NCS-1050607-CC

Real property in the City of Pinole, County of Contra Costa, State of California, described as follows:

TRACT ONE:

PARCEL ONE:

PORTION OF LOT E, MAP OF NOB HILL SUBDIVISION, FILED JUNE 9, 1906, MAP BOOK B, PAGE 39, CONTRA COSTA COUNTY RECORDS, DESCRIBED AS FOLLOWS:

BEGINNING ON THE NORTH LINE OF SAN PABLO AVENUE, AS DESIGNATED ON SAID MAP, AT THE SOUTHWEST CORNER OF THE PARCEL OF LAND DESCRIBED IN THE DEED TO WM. P. TERRY, RECORDED MAY 18, 1916, BOOK 270, DEEDS, PAGE 86, WHICH POINT BEARS WEST 174 FEET ALONG THE NORTH LINE OF SAID SAN PABLO AVENUE FROM THE WEST LINE OF ROBLE AVENUE; THENCE FROM SAID POINT OF BEGINNING WEST ALONG THE NORTH LINE OF SAID SAN PABLO AVENUE, 150 FEET TO THE LINE BETWEEN LOTS D AND E; THENCE NORTHERLY ALONG THE LINE BETWEEN SAID
LOTS D AND E, 126.04 FEET TO THE CORNER COMMON TO LOTS C, D, E AND F; THENCE EAST ALONG THE LINE BETWEEN SAID LOTS E AND F, 150 FEET TO THE WEST LINE OF SAID TERRY PARCEL (270 D 86); THENCE SOUTHERLY ALONG SAID WEST LINE, 126.04 FEET TO THE POINT OF BEGINNING. EXCEPTING FROM PARCEL ONE: THAT PARCEL OF LAND DESCRIBED IN THE DEED TO THE STATE OF CALIFORNIA, RECORDED NOVEMBER 18, 1930, BOOK 258, OFFICIAL RECORDS, PAGE 154.

PARCEL TWO:

RIGHT OF WAY GRANTED IN THE DEED TO ENNIS L. RIEMER, ET UX, RECORDED JULY 6, 1962, BOOK 4154, OFFICIAL RECORDS, PAGE 755, DESCRIBED AS FOLLOWS:

AN UNRESTRICTED EASEMENT FOR THE PURPOSE OF ALLOWING TRESPASS OF PEDESTRIANS, VEHICLES AND ANIMALS, ALSO FOR THE CONSTRUCTION AND MAINTENANCE OF SEWER, WATER, GAS AND DRAINAGE PIPES, ALSO THE CONSTRUCTION AND MAINTENANCE OF POWER POLES AND TELEPHONE POLES, TOGETHER WITH THEIR RESPECTIVE ENCUMBRANCES, DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF LOT F, MAP OF NOB HILL SUBDIVISION, FILED JUNE 9, 1906, MAP BOOK B, PAGE 39, CONTRA COSTA COUNTY RECORDS, WHICH POINT IS ALSO THE NORTHWEST CORNER OF LOT E, AS ALSO DESIGNATED ON SAID MAP OF NOB HILL; THENCE SOUTH 84° 51' EAST ALONG THE COMMON LINE BETWEEN SAID LOTS E AND F, 150.56 FEET (DEED DISTANCE OF 150 FEET) TO THE TRUE POINT OF BEGINNING; THENCE CONTINUING SOUTH 83° 20' EAST ALONG LAST MENTIONED COMMON LINE BETWEEN LOTS E AND F, 12.41 FEET; THENCE SOUTH 6° 04' WEST, 102.68 FEET TO THE NORTHERLY LINE OF SAN PABLO AVENUE (FORMERLY U.S. 40); THENCE NORTH 83° 56' WEST ALONG SAID LAST MENTIONED NORTHERLY LINE, 28.20 FEET; THENCE NORTH 14° 48' 16" EAST ALONG A LINE COMMON ALSO TO PARCEL ONE OF THIS DESCRIPTION, 104.02 FEET TO THE TRUE POINT OF BEGINNING.

TRACT TWO:

PARCEL ONE:

LOT F, MAP OF NOB HILL SUBDIVISION, FILED JUNE 9, 1906, MAP BOOK B, PAGE 39, CONTRA COSTA COUNTY RECORDS.

PARCEL TWO:

RIGHT OF WAY GRANTED IN THE DEED TO DONALD H. ARBUCKLE, ET UX, RECORDED JULY 6, 1962, BOOK 4154, OFFICIAL RECORDS, PAGE 756, DESCRIBED AS FOLLOWS:

AN UNRESTRICTED EASEMENT FOR THE PURPOSE OF ALLOWING TRESPASS OF PEDESTRIANS, VEHICLES AND ANIMALS, ALSO FOR THE CONSTRUCTION AND MAINTENANCE OF SEWER, WATER, GAS AND DRAINAGE PIPES, ALSO THE CONSTRUCTION AND MAINTENANCE OF POWER POLES AND TELEPHONE POLES, TOGETHER WITH THEIR RESPECTIVE ENCUMBRANCES, DESCRIBED AS FOLLOWS:
COMMENCING AT THE SOUTHWEST CORNER OF LOT F, MAP OF NOB HILL SUBDIVISION, FILED JUNE 9, 1906, MAP BOOK B, PAGE 39, CONTRA COSTA COUNTY RECORDS, WHICH POINT IS ALSO THE NORTHWEST CORNER OF LOT E, AS ALSO DESIGNATED ON SAID MAP OF NOB HILL; THENCE SOUTH 84° 51' EAST ALONG THE COMMON LINE BETWEEN SAID LOTS E AND F, 150.56 FEET (DEED DISTANCE OF 150 FEET) TO THE TRUE POINT OF BEGINNING; THENCE SOUTH 14° 48' 16" WEST, 104.02 FEET TO THE NORTHERLY LINE OF SAN PABLO AVENUE (FORMERLY U.S. 40); THENCE NORTH 83° 56' WEST ALONG SAID NORTHERLY LINE, 11.80 FEET; THENCE AT RIGHT ANGLES NORTH 8° 04' EAST, 102.37 FEET TO THE AFOREMENTIONED COMMON LINE BETWEEN LOTS E AND F OF NOB HILL SUBDIVISION; THENCE SOUTH 84° 51' EAST, 27.59 FEET TO THE TRUE POINT OF BEGINNING.

PARCEL THREE:

RIGHT OF WAY GRANTED IN THE DEED TO D.S.W., A PARTNERSHIP, RECORDED AUGUST 26, 1970,
BOOK 6201, OFFICIAL RECORDS, PAGE 554, DESCRIBED AS FOLLOWS:

A RIGHT OF WAY (NOT TO BE EXCLUSIVE) FOR USE AS A ROADWAY FOR VEHICLES OF ALL KINDS, PEDESTRIANS AND ANIMALS, FOR WATER, GAS, OIL, AND SEWER PIPE LINES AND FOR TELEPHONE, TELEVISION SERVICE, ELECTRIC LIGHT AND POWER LINES, TOGETHER WITH THE NECESSARY POLES OR CONDUITS, AS AN APPURTENANCE TO PARCEL ONE ABOVE, OVER A PORTION OF LOT E, MAP OF NOB HILL SUBDIVISION, FILED JUNE 9, 1906, MAP BOOK B, PAGE 39, CONTRA COSTA COUNTY RECORDS, DESCRIBED AS FOLLOWS:

BEGINNING ON THE NORTH LINE OF THE PARCEL OF LAND DESCRIBED IN THE DEED TO EDGAR M. TILGHMAN, ET UX, RECORDED JULY 3, 1964, BOOK 4672, OFFICIAL RECORDS, PAGE 528, DISTANT THEREON SOUTH 83° 20' EAST, 12.41 FEET FROM THE NORTHWEST CORNER THEREOF; THENCE FROM SAID POINT OF BEGINNING NORTH 83° 20' WEST ALONG SAID NORTH LINE, 12.41 FEET TO THE WEST LINE OF SAID TILGHMAN PARCEL; THENCE SOUTH 14° 48' 16" WEST ALONG SAID WEST LINE, 104.02 FEET TO THE NORTH LINE OF THE PARCEL OF LAND DESCRIBED IN THE DEED TO THE STATE OF CALIFORNIA, RECORDED NOVEMBER 18, 1930, BOOK 262, OFFICIAL RECORDS, PAGE 86; THENCE SOUTH 83° 56' EAST ALONG SAID NORTH LINE, 28.20 FEET TO A POINT WHICH BEARS SOUTH 6° 04' WEST FROM THE POINT OF BEGINNING; THENCE NORTH 6° 04' EAST, 102.68 FEET TO THE POINT OF BEGINNING.

TRACT THREE:

LOT "D", AS DESIGNATED ON THE MAP ENTITLED, "MAP OF NOB HILL SUBDIVISION OF PINOLE", WHICH MAP WAS FILED IN THE OFFICE OF THE RECORDER OF THE COUNTY OF CONTRA COSTA, STATE OF CALIFORNIA, ON JUNE 9, 1906 IN VOLUME B OF MAPS, AT PAGE 39. EXCEPTING THEREFROM: THAT PARCEL OF LAND DESCRIBED IN THE DEED FROM PHILIP R. MOIGNARD, ET UX, TO STATE OF ALIFORNIA, DATED DECEMBER 4, 1924, AND RECORDED NOVEMBER 18, 1930 IN VOLUME 258 OF OFFICIAL RECORDS, AT PAGE 149, AS FOLLOWS:

COMMENCING AT A POINT ON THE EASTERLY LINE OF LOT D, AS SHOWN ON MAP ENTITLED, "MAP OF THE NOB HILL SUBDIVISION OF PINOLE", FILED IN THE OFFICE OF THE RECORDER OF CONTRA COSTA COUNTY, CALIFORNIA, JUNE 9, 1906, WHICH POINT IS SOUTH 13° 14' WEST 103.79 FEET, MEASURED ALONG THE SAID EASTERLY LINE OF LOT D FROM THE NORTHEASTERLY CORNER OF SAID LOT D AND RUNNING THENCE AS FOLLOWS: SOUTH 13° 24' WEST ALONG THE SAID EASTERLY LINE OF LOT D, 22.25 FEET TO THE SOUTHEASTERLY CORNER OF SAID LOT D; THENCE NORTH 34° 51' WEST ALONG THE SOUTHERLY LINE OF SAID LOT D, 300.41 FEET TO THE SOUTHWESTERLY CORNER OF SAID LOT D; THENCE NORTH 13° 14' 30" EAST ALONG THE WESTERLY LINE OF SAID LOT D, 23.47 FEET; THENCE SOUTH 84° 54' EAST 132.51 FEET TO A POINT, FROM WHICH THE CENTER OF A CURVE TO THE RIGHT OF 10,040 FEET RADIUS, BEARS SOUTH 5° 08' WEST THENCE ALONG THIS CURVE 90.53 FEET; THENCE SOUTH 84° 21' EAST 77.15 FEET TO THE POINT OF COMMENCEMENT.

APN: 402-023-002-7 (Affects Tract One);

SURVEYOR NOTES

1. All statements within the certification, and other references located elsewhere hereon, related to: utilities, improvements, structures, buildings, party walls, parking, easements, servitudes, and encroachments; are based solely on above ground, visible evidence, unless another source of information is specifically referenced hereon.

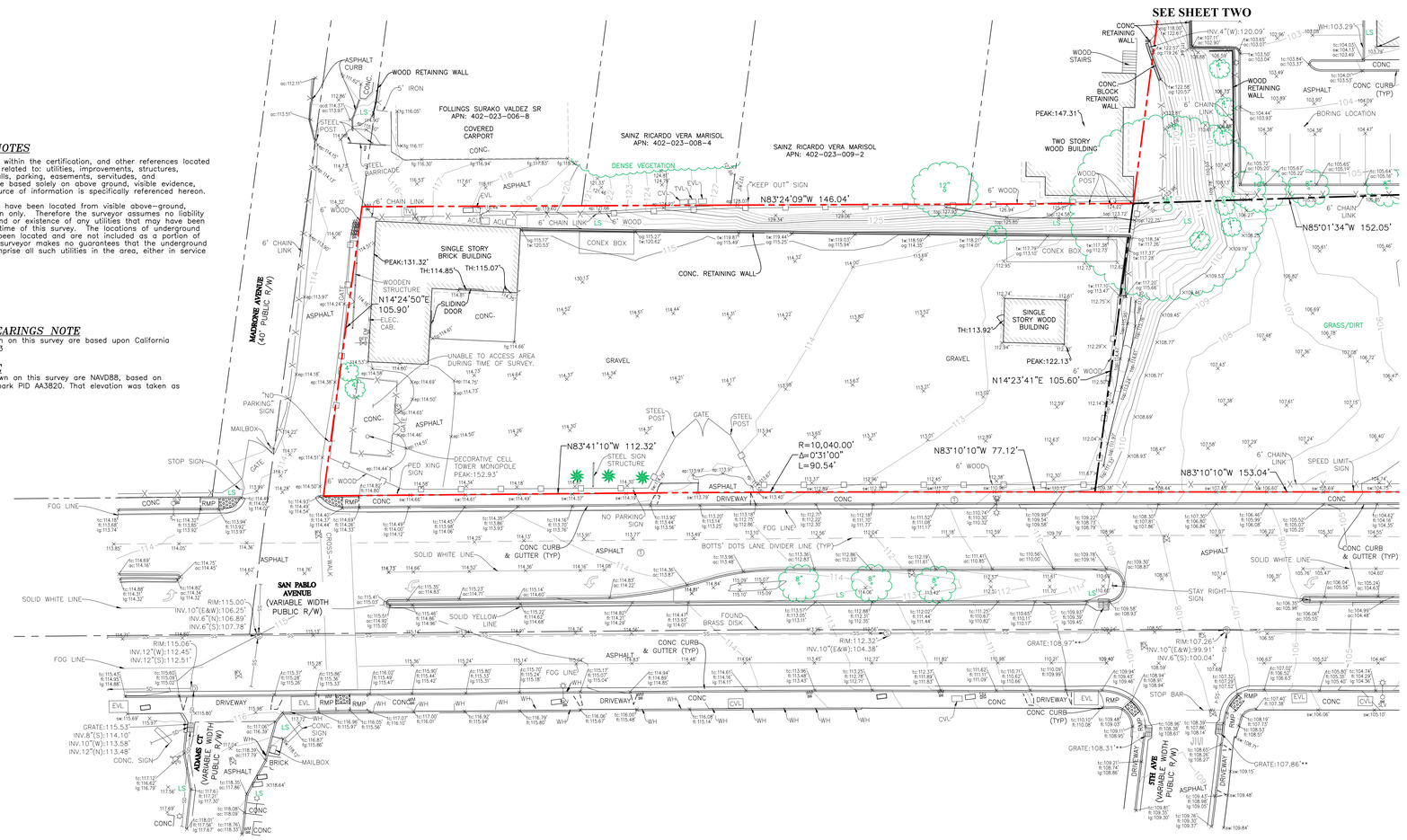
2. Utilities shown have been located from visible above-ground, on-site observation only. Therefore the surveyor assumes no liability for the location and or existence of any utilities that may have been concealed at the time of this survey. The locations of underground utilities have not been located and are not included as a portion of this survey. The surveyor makes no guarantees that the underground utilities shown comprise all such utilities in the area, either in service or abandoned.

BASIS OF BEARINGS NOTE

The bearings shown on this survey are based upon California State Plane Zone 3

DATUM NOTE

The elevations shown on this survey are NAVD88, based on found NGS Benchmark PID AA3820. That elevation was taken as 27.00'



TITLE EXCEPTIONS AND EXCLUSIONS

The exceptions and exclusions listed in said preliminary title report are as follows:

Items 1-8: Property taxes and the lien of supplemental taxes, if any. These items are not survey related and are not addressed hereon, refer to the title report for particulars.

Item 9: An easement in Favor of Donald H. Arbuckle, et ux, for the purpose of roadway, utilities, and incidental purposes, recorded July 6, 1962 as Book 4154, at Page 756 of Official Records. This item affects the subject area and is shown hereon.

Item 10: Terms and provisions contained in the document entitled "Agreement for Revocable License to to Construct a Fence" recorded June 26, 1996 Instrument No. 91-123190 in Book 16692, Page 965 of Official Records. (Affects Parcel One of Tract Two)

Item 11: The fact that the land lies within the boundaries of the Pinole Vista Redevelopment Project Area, as disclosed by the document recorded December 11, 1972 as Book 6818, Page 637 of Official Records. This item is blanket in nature and is not shown hereon, refer to the document for particulars.

Item 12: Deed of trust, this item is not survey related and is not addressed hereon, refer to the title report for particulars.

Item 13: The terms and provisions contained in the document entitled "Regulatory Agreement" recorded April 04, 2019 as Instrument No. 2019-0046380-00 of Official Records. (Affects Tracts One and Two)

Item 14: Financing Statement, this item is not survey related and is not addressed hereon, refer to the title report for particulars.

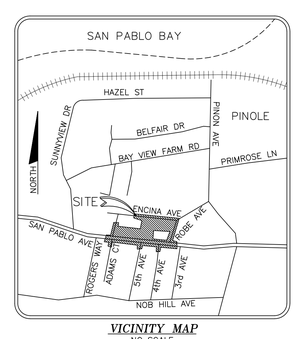
Item 15: Deed of Trust, This item is not survey related and is not addressed hereon, refer to the title report for particulars.

Item 16: Water rights, claims or title to water, whether or not shown by the Public Records.

Item 17: Rights of parties in possession

LEGEND

	Existing easement line
	Existing property boundary
	Existing parcel lines of adjacent properties
	Existing street centerline
OH	Overhead utility line
	Underground utility line as noted
	Existing building line at ground level
	Existing building overhang
	Existing fence line
	Existing wood fence
	Existing paint line
	Existing retaining wall as noted
	Existing minor contour
	Existing major contour
AC	Asphaltic concrete
ACU	Air Conditioning Unit
AD	Asphalt Dike
BFP	Water back flow preventer
C	Communication
CONC	Concrete
CI	Curb inlet w/ catch basin
DI	Drainage inlet
E	Electric
FDC	Fire dept. connection
FL	Flow line
FG	Finished Grade
G	Gas
LG	Lip of Gutter
LS	Landscaping
R/W	Right of way
SD	Storm Drain
SS	Sanitary Sewer
SW	Sidewalk
T	Telecommunication
TBC	Top Back of Curb
TC	Top of Curb
TH	Threshold
TS	Traffic signal
U	Unidentified utility vault
W	Water
WH	Weep hole through curb
AD	Area drain
	Bollard
E	Electric meter
	Fire department connection
	Fire hydrant
	Found survey monument
	Survey control point as noted
G	Gas meter
	Guy wire
	Irrigation control valve
	Sanitary sewer clean out
	Sanitary sewer manhole
	Sign
	Street light
	Street light vault
	Street light w/mast
	Storm drain manhole
	Telecommunication manhole
	Traffic signal vault
	Utility pole
	Utility vault as noted
	Water backflow device
	Water meter
	Water valve
305	Contour elevation
× 355.55	Spot elevation
	Tree w/ trunk ø



VICINITY MAP

NO SCALE

CERTIFICATION

The boundary and easement information shown hereon is based upon the preliminary title report dated January 28, 2021, prepared by First American Title Insurance Company at 1850 Mt. Diablo Boulevard, Suite 530, Walnut Creek, California, 94596, under Order Number NCS-1050607-CC

This map has been prepared for the sole purpose of showing the location of existing above ground improvements and surface elevations of the subject parcel. All other information shown hereon is for informational purposes only.

Brian L. Sousa, L.S. 7917 *Date: 04-27-2021*

LICENSED LAND SURVEYOR BRIAN L. SOUSA No. L 7917 STATE OF CALIFORNIA

Topographic Survey
of
1230 San Pablo Avenue

Being a portion of Lots D, E, and F
Map Book B, Page 39
County of Contra Costa, City of Pinole, California
Field Survey Date: March 12, 2021

Sousa Land Surveys

tel 707.425.4300 fax 707.425.4300
1650 N. Lincoln St. Dixon, California 95620
Page 1 of 2

RELATIVITY ARCHITECTS
www.relativityarchitects.com
42 COLTON STREET, FLOOR 2, LA, CA 90013 P.310.575.4080

LICENSED ARCHITECT BRIAN BERNARD BALLARD C-33139 03/31/2023 RENEWAL DATE STATE OF CALIFORNIA

VISTA WOODS APARTMENTS
600 ROBLE AVENUE
1106 SAN PABLO AVENUE
1230 SAN PABLO AVENUE
PINOLE, CA, 94564

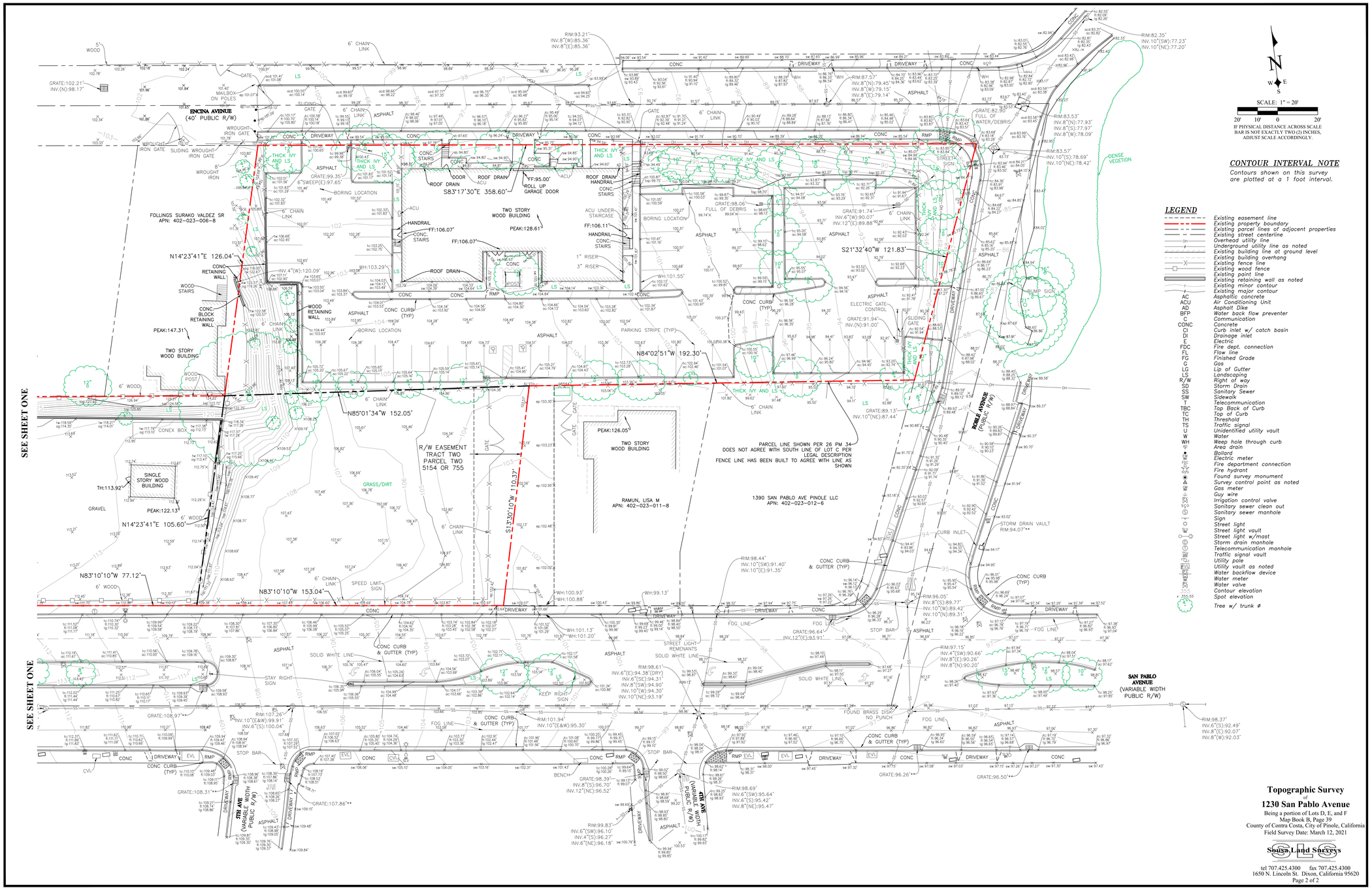
Topo Survey

DATE	ISSUE
03/30/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION 1

DRAWN BY	EC
ARCH. JOB NO.	2103A
SCALE	AS NOTED

SHEET
A090

BIMcloud: JARVIS - BIMcloud Basic for ARCHICAD 24/Pinole/Pinole, 6/18/2021



CONTOUR INTERVAL NOTE

Contours shown on this survey are plotted at a 1 foot interval.

LEGEND

- Existing easement line
- Existing property boundary
- Existing parcel lines of adjacent properties
- Existing street centerline
- Overhead utility line
- Underground utility line as noted
- Existing building line at ground level
- Existing building overhang
- Existing fence line
- Existing wood fence
- Existing paint line
- Existing retaining wall as noted
- Existing minor contour
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- AC — Asphaltic concrete
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- C — Communication
- CONC — Concrete
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- DI — Drainage inlet
- E — Electric
- FDC — Fire dept. connection
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- W — Water
- WH — Weep hole through curb
- Area drain
- Bollard
- Electric meter
- Fire department connection
- Fire hydrant
- Found survey monument
- Survey control point as noted
- Gas meter
- Guy wire
- Irrigation control valve
- Sanitary sewer clean out
- Sanitary sewer manhole
- Sign
- Street light
- Street light vault
- Street light w/mast
- Storm drain manhole
- Telecommunication manhole
- Traffic signal vault
- Utility pole
- Utility vault as noted
- Water backflow device
- Water meter
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- Contour elevation
- Spot elevation
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Page 2 of 2

RELATIVITY ARCHITECTS
www.relativityarchitects.com
42 CLINTON STREET, FLOOR 2, LA, CA 90013 P.310.575.4080

LICENSED ARCHITECT
BERNARD BALTUSIS
C-33139
03/31/2023
RENEWAL DATE
STATE OF CALIFORNIA

VISTA WOODS APARTMENTS
600 ROBLE AVENUE
1106 SAN PABLO AVENUE
1230 SAN PABLO AVENUE
PINOLE, CA, 94564

Topo Survey

DATE	ISSUE
03/30/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION 1

DRAWN BY	EC
ARCH. JOB NO.	2103A
SCALE	AS NOTED

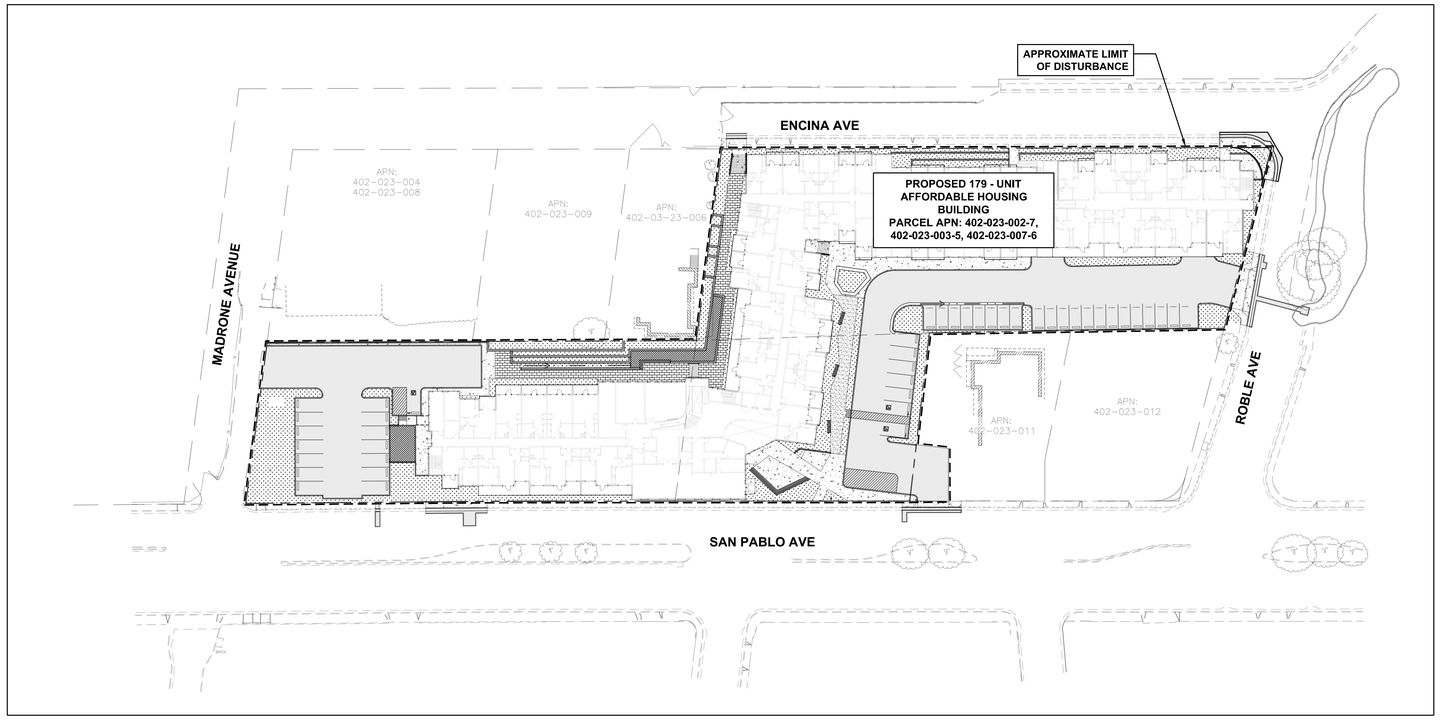
SHEET
A091

BIMcloud: LARVIS - BIMcloud Basic for ARCHICAD 24/Pinole/Pinole 6/18/2021

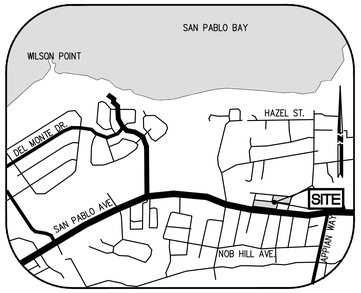
CIVIL ON-SITE IMPROVEMENT PLANS
VISTA WOODS SENIOR APARTMENT
1230 SAN PABLO AVENUE | PINOLE, CALIFORNIA 94564

LEGEND

PROPOSED		EXISTING
	PROPERTY LINE	
	EASEMENT LINE	
9	1-FOOT CONTOUR	9
10	5-FOOT CONTOUR	10
WTR	WATER LINE	WTR
FP	FIRE PROTECTION WATER LINE	WTR
IRR	IRRIGATION WATER LINE	WTR
SS	SANITARY SEWER LINE	SAN
SD	STORM DRAIN LINE	SD
	UNDERGROUND ELECTRIC	UE
	GAS LINE	G
	OVERHEAD ELECTRIC	OE
	FENCE	x
	APPROXIMATE LIMIT OF DISTURBANCE	
	TREE	
	WATER VALVE	WV
	FIRE HYDRANT/CONNECTION	FDC
WM WV	WATER METER OR BOX	WM WV
	SEWER MANHOLE	S
	SANITARY SEWER CLEANOUT	SSCO
	STORM DRAIN MANHOLE	D
	STORM DRAIN CLEANOUT	
	CATCH BASIN	
	LIGHT POLE, UTILITY POLE, OR PULLBOX	HSLB SB
	GAS VALVE	GV
	ELECTRIC VAULTS	EVLT SV
	ELECTRIC BOX	EVLT EM TSV SB
	SIGN	
	TRENCH DRAIN	
	TRANSFORMER	
	STANDARD PCC PAVEMENT.	
	STANDARD AC PAVEMENT.	
	STANDARD LANDSCAPE. SEE LANDSCAPE PLANS FOR DETAILS	
	STANDARD BIOTREATMENT PLANTER.	
	STANDARD PERVIOUS PAVEMENT	
	PROPOSED DECOMPOSED GRANITE. SEE LANDSCAPE PLANS FOR DETAILS	



ON-SITE LIMITS OF DISTURBANCE



VICINITY MAP
NOT TO SCALE

CIVIL SHEET INDEX

C0.1	CIVIL TITLE SHEET
C1.1	SITE AND PAVING PLAN
C1.2	SITE AND PAVING PLAN
C1.4	FIRE PROTECTION PLAN
C2.1	PRECISE GRADING AND DRAINAGE PLAN – GARAGE
C2.2	PRECISE GRADING AND DRAINAGE PLAN
C2.3	PRECISE GRADING AND DRAINAGE PLAN
C2.4	SITE CROSS SECTIONS
C2.5	SITE CROSS SECTIONS
C3.0	UTILITY PLAN
C4.0	STORMWATER CONTROL PLAN

SOILS REPORT NOTE:

A GEOTECHNICAL REPORT WAS PREPARED FOR THIS PROJECT DATED OCTOBER 10, 2018 BY PARTNER ASSESSMENT CORPORATION, SIGNED/STAMPED BY MATTHEW MARCUS, A STATE OF CALIFORNIA REGISTERED PROFESSIONAL GEOLOGIST. ALL COMPACTION, FILLING, EXCAVATION, AND PAVING RECOMMENDATIONS ARE BASED ON CONSERVATIVE ENGINEERING PRINCIPLES AND THE RECOMMENDATIONS AS LISTED IN AFOREMENTIONED GEOTECHNICAL REPORT.

SURVEY NOTE:

TOPOGRAPHIC SURVEY PROVIDED BY SOUSA LAND SURVEYS., DATED MARCH 03, 2021. ALL EXISTING INFORMATION PRESENTED IN THESE PLANS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR AND ANY DISCREPANCIES IN THE PLANS SHALL BE MADE AWARE TO THE ENGINEER PRIOR TO THE START OF CONSTRUCTION.

SITE INFORMATION:

PARCEL APN: 402-023-002-7, 402-023-003-5, 402-023-007-6
ZONING: R-4: VERY HIGH DENSITY RESIDENTIAL
FLOOD ZONE: THE PROPERTY LIES WITHIN FLOOD ZONE "X" PER FIRM PANEL NO: 06013C0043H, DATED MARCH 21, 2017. ZONE X IS DEFINED AS "AREAS TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN".

TOTAL PARCEL AREA	= 87,861±	SF (±2.02 ACRES)
AREA SUMMARY:		
TOTAL DISTURBED AREA	= 87,861±	SF (±2.02 ACRES)
EXISTING DISTURBED IMPERVIOUS AREA	= 33,301±	SF
EXISTING DISTURBED PERVIOUS AREA	= 54,560±	SF
PROPOSED IMPERVIOUS AREA	= 73,200±	SF
PROPOSED PERVIOUS AREA	= 14,661±	SF
TOTAL CHANGE IN DISTURBED IMPERVIOUS AREA	= 39,899±	SF (INCREASE)

ABBREVIATIONS

AC	ASPHALT CONCRETE
ADA	AMERICANS WITH DISABILITIES ACT
APN	ASSESSORS PARCEL NUMBER
APWA	AMERICAN PUBLIC WORK'S ASSOCIATION
AVE	AVENUE
BAAQMD	BAY AREA AIR QUALITY MANAGEMENT DISTRICT
BLDG	BUILDING
BLVD	BOULEVARD
BFP	BACKFLOW PREVENTOR
BM	BENCHMARK
BOP	BOTTOM OF PIPE
BSM	BIOTREATMENT SOIL MIX
C	CONCRETE
CA	CALIFORNIA
CASQA	CALIFORNIA STORMWATER QUALITY ASSOCIATION
CB	CATCH BASIN
CCTV	CLOSED-CIRCUIT TELEVISION
CL	CENTERLINE
CLR	CLEAR
COMM	COMMUNICATION
CONC	CONCRETE
CVLT	COMMUNICATION VAULT
DCV	DETECTOR CHECK VALVE
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY
DI	DROP INLET
DIA	DIAMETER
DWG	DRAWING
E	ELECTRIC / EAST
EBMUD	EAST BAY MUNICIPAL UTILITY DISTRICT
ECAB	ELECTRIC CABINET
EVLT	ELECTRIC VAULT
EX	EXISTING
FDC	FIRE DEPARTMENT CONNECTION
FF	FINISHED FLOOR
FG	FINISHED GRADE
FH	FIRE HYDRANT
FL	FLOW LINE
FND	FOUND
FOC	FACE OF CURB
FP	FIRE PROTECTION
FS	FINISHED SURFACE
FT	FEET
FW	FRONT OF WALK
FWC	FACE OF WALL CONCRETE
G	GAS
GB	GRADE BREAK
GV	GAS VALVE
HDPE	HIGH-DENSITY POLYETHYLENE
HWY	HIGHWAY
HYD	HYDRANT
IE	INVERT ELEVATION
INV	INVERT
IV	IRRIGATION VALVE
JP	JOINT POLE
L	LENGTH
L/S	LANDSCAPE
LF	LINEAL FEET
LT	LIGHT
LUM	LUMINAIRE
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MON	MONUMENT
MTR	METER
N	NORTH
NG	NATURAL GROUND
N.I.C.	NOT IN CONTRACT
NO	NUMBER
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
OH	OVERHANG
P	PAVEMENT
PB	PULL BOX
PCC	PORTLAND CEMENT CONCRETE
PGE	PACIFIC GAS AND ELECTRIC
PIV	POST INDICATOR VALVE
POC	POINT OF CONNECTION
PP	POWER POLE
PVC	POLYVINYL CHLORIDE
RD	ROAD
RPPA	REDUCED PRESSURE PRINCIPLE ASSEMBLY
S	SLOPE / SANITARY / SOUTH
SAN	SANITARY SEWER PVC
SDMH	STORM DRAIN MANHOLE
SDR35	STANDARD DIMENSIONAL RATIO 35
SF	SQUARE FEET
SL	STREET LIGHT
SLPB	STREET LIGHT PULL BOX
SP	SPECIFIC PLAN
SPEC	SPECIFICATION
SSCO	SANITARY SEWER CLEAN OUT
SSMH	SANITARY SEWER MANHOLE
ST	STREET
STD	STANDARD
STLT	STREET LIGHT
SW	SIDEWALK
T	TELEPHONE
TBM	TEMPORARY BENCHMARK
TC	TOP OF CURB
TCD	TRAFFIC CONTROL DEVICE
TEV	TELEPHONE VAULT
TL	TRAFFIC LIGHT
TOE	TOE OF SLOPE
TOP	TOP OF SLOPE / TOP OF PIPE
TS	TRAFFIC SIGNAL
TSPB	TRAFFIC SIGNAL PULL BOX
TVLT	TELEPHONE VAULT
TOW	TOP OF WALL
TYP	TYPICAL
UE	UNDERGROUND ELECTRIC
UT	UNDERGROUND TELEPHONE
UTIL	UTILITY
VAR	VARIABLE
VAT	VACUUM AIR TUBE
VLT	VAULT
W	WEST
W/	WITH
WM	WATER METER
WTR	WATER LINE
WV	WATER VALVE
WVLT	WATER VAULT

CALL 811 OR 1-800-227-2600
CALL BEFORE YOU DIG
USA
UNDERGROUND SERVICE ALERT
WWW.USANORTH.ORG
CALL TWO WORKING DAYS BEFORE YOU DIG

ENGINEERS NOTE TO THE CONTRACTOR:

THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITIES, PIPES AND/OR STRUCTURES SHOWN ON THESE PLANS WERE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO EXISTING UTILITIES EXCEPT AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL ASCERTAIN THE TRUE VERTICAL AND HORIZONTAL LOCATION AND SIZE OF ANY UNDERGROUND UTILITIES AND SHALL BE RESPONSIBLE FOR DAMAGE TO PUBLIC OR PRIVATE UTILITIES SHOWN OR NOT SHOWN HEREON.

RELATIVITY ARCHITECTS
www.relativityarchitects.com
427 COLLTON SQ., CA 95013 P:510.575.5000

CALICHI CIVIL ENGINEERS
CALICHI DESIGN GROUP
3240 PERALTA STREET, #3
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REGISTERED PROFESSIONAL ENGINEER
RECO VICENTE PRIANTO
C 69670
EXP. 6-30-2022
CIVIL
STATE OF CALIFORNIA
2021/06/18

VISTA WOODS APARTMENTS
600 ROBLE AVENUE
Pinole, CA, 94564

CIVIL TITLE SHEET

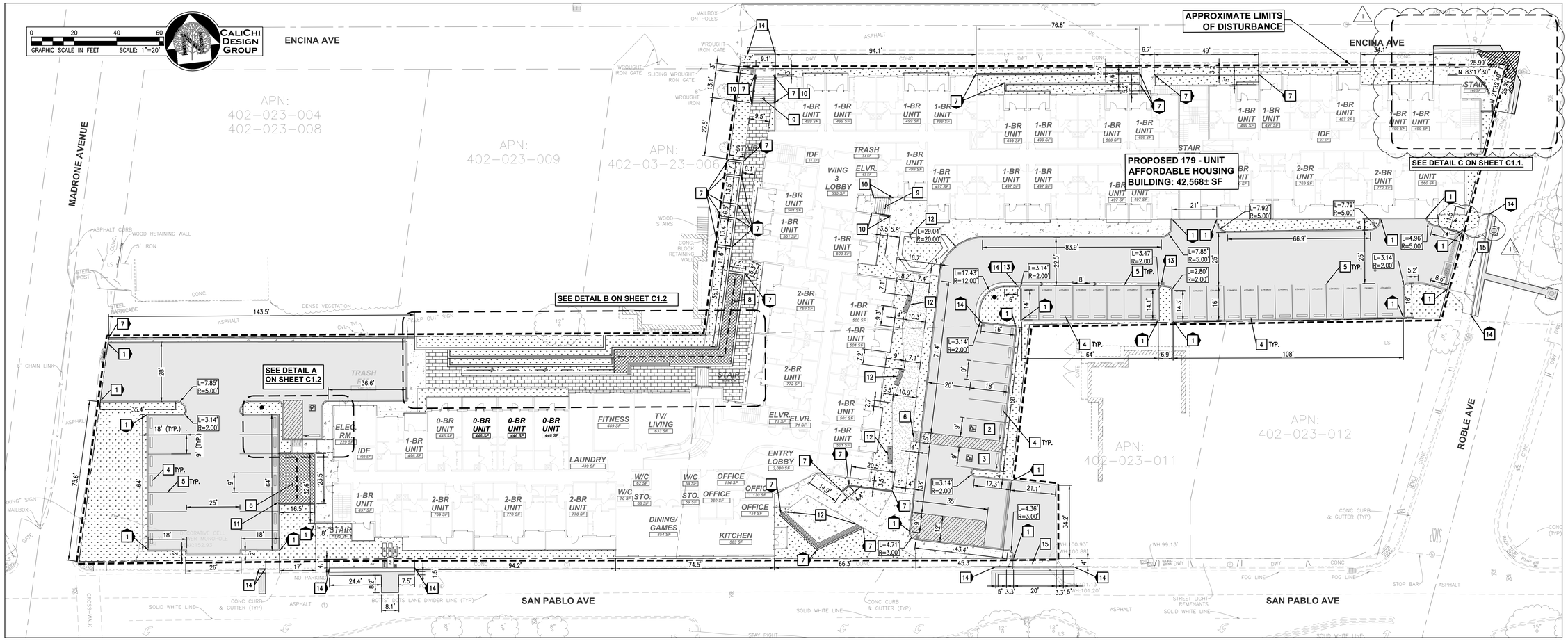
DATE 06/18/2021 ISSUE PLANNING RESUBMITTAL 1

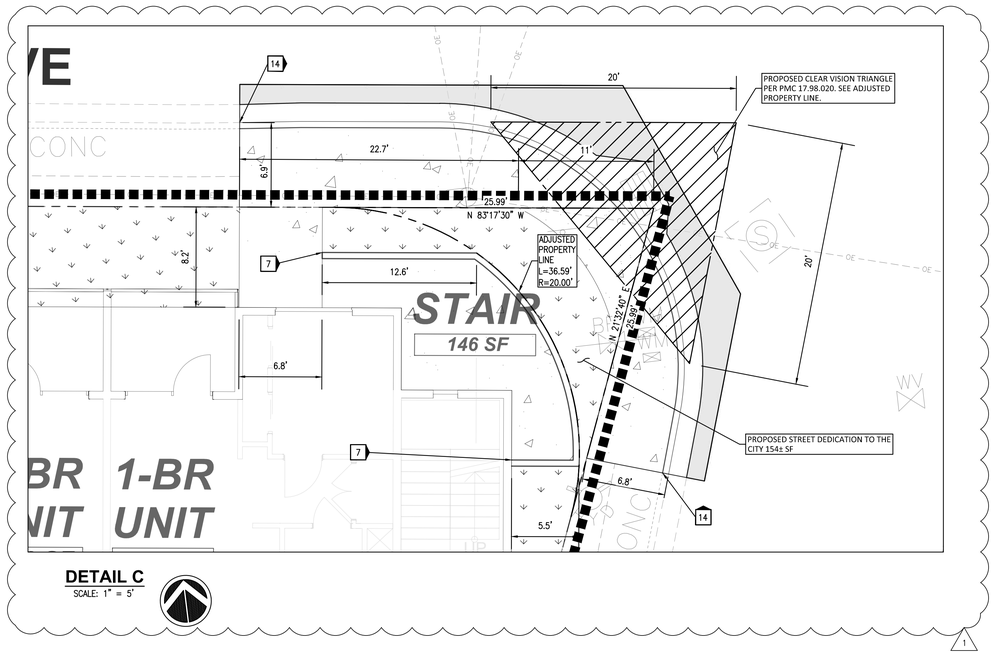
DEVELOPMENT APPLICATION

DRAWN BY	KL
JOB NO.	2021-350-001
SCALE	AS SHOWN

SHEET
C0.1

BIMcloud : JARVIS - BIMcloud Basic for ARCHICAD 24/Pinole/Pinole 3/9/2021





DETAIL C
SCALE: 1" = 5'

GENERAL NOTES:

1. ANY EXISTING INFRASTRUCTURE OR SITE ITEMS (ABOVE OR BELOW GRADE, READILY VISIBLE OR NOT) OR PROPERTY DAMAGED AS A RESULT OF CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE APPROPRIATE AGENCY.
2. ALL CONSTRUCTION SHALL CONFORM TO APPLICABLE STATE AND LOCAL CODES. WHEN CODES ARE IN CONFLICT, THE MORE STRINGENT SHALL APPLY. THE CONTRACTOR SHALL CAUSE A CURRENT COPY OF SAID CODES TO BE MAINTAINED ON SITE AT ALL TIMES.
3. ALL SIGNAGE AND PAINT MARKINGS SHALL COMPLY WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), OR AS OTHERWISE SPECIFIED. INSTALLATION OF SIGNS SHALL BE GOVERNED BY LOCAL CODES.
4. THE CONTRACTOR IS RESPONSIBLE TO LOCATE AND PROTECT ALL EXISTING UTILITIES DURING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE UTILITY PROTECTION CENTER AT LEAST THREE DAYS PRIOR TO ANY SITE WORK FOR PROPER IDENTIFICATION OF EXISTING UTILITIES.
5. THE CONTRACTOR SHALL VERIFY ALL EXISTING ITEMS AND DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO BEGINNING CONSTRUCTION.
6. THE CONTRACTOR SHALL VERIFY DIMENSIONS AT PROJECT SITE PRIOR TO BEGINNING CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
7. ALL DIMENSIONS ARE TO FACE OF WALL, FACE OF CURB, AND EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

ENGINEER'S ADA NOTES:

ALL SITE WORK SHALL BE IN CONFORMANCE WITH THE CURRENT AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG), THE AMERICANS WITH DISABILITIES ACT (ADA), AND MUNICIPAL AND STATE ADA REGULATIONS.

1. RAMPS SHALL NOT EXCEED A RUNNING SLOPE OF 1:12 (8.33%).
2. RAMPS ARE DEFINED AS ANY WALKWAY BETWEEN SLOPES 1:20 (5%) AND 1:12 (8.33%) AND SHALL HAVE A MINIMUM WIDTH OF 4 FEET (EXCEPT AT DOORWAYS) AND A MAXIMUM CROSS-SLOPE OF 2%. RAMPS EXCEEDING 30 INCHES VERTICAL CHANGE SHALL HAVE INTERMEDIATE (2% MAX SLOPE) LANDINGS HAVING A MINIMUM LENGTH IN THE DIRECTION OF TRAVEL OF 60 INCHES.
3. MAXIMUM CROSS-SLOPE ON ANY WALK OR RAMPS SHALL BE 2%. ALL ACCESSIBLE PARKING SPACES AND LOADING ZONES SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
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6. 1/8" MAXIMUM DEPTH TO TOP OF SEALANT AND 1/8" MAXIMUM PROTRUSION TO TOP OF SEALANT ALONG ADA ACCESS ROUTES.

SITE PLAN KEY NOTES

1. PROPOSED 6" VERTICAL CURB.
2. PROPOSED VAN ADA ACCESSIBLE PARKING STALL WITH ADJACENT LOADING AREA.
3. PROPOSED ACCESSIBLE PARKING STALL WITH ACCESSIBLE LOADING AND ACCESSIBLE MARKINGS.
4. PROPOSED CONCRETE WHEEL STOPS.
5. PROPOSED PAVEMENT STRIPING. 2 COATS OF WHITE LATEX TRAFFIC PAINT PER MUTCD STANDARD SPECIFICATIONS.
6. PROPOSED ADA ACCESSIBLE CURB RAMP WITH DETECTIBLE WARNING.
7. PROPOSED RETAINING WALL. SEE GRADING PLAN FOR WALL HEIGHT. SEE LANDSCAPE AND STRUCTURAL PLANS FOR CONSTRUCTION.
8. PROPOSED BIORETENTION PLANTER.
9. PROPOSED STAIRS. SEE LANDSCAPE PLANS FOR DETAILS.
10. PROPOSED HANDRAIL. SEE LANDSCAPE PLANS FOR DETAILS.
11. PROPOSED 18" WIDE CURB CUT.
12. PROPOSED BENCH – SEE LANDSCAPE PLANS FOR DETAILS.
13. PROPOSED VALLEY GUTTER.
14. PROPOSED CURB AND GUTTER.
15. PROPOSED 20' CLEAR VISION TRIANGLE PER PMC 17.98.020

LEGEND

PROPOSED		EXISTING
	PROPERTY LINE	
	EASEMENT LINE	
9	1-FOOT CONTOUR	9
10	5-FOOT CONTOUR	10
WTR	WATER LINE	WTR
FP	FIRE PROTECTION WATER LINE	WTR
IRR	IRRIGATION WATER LINE	WTR
SS	SANITARY SEWER LINE	SAN
SD	STORM DRAIN LINE	SD
	UNDERGROUND ELECTRIC	UE
	GAS LINE	G
	OVERHEAD ELECTRIC	OE
	FENCE	x
	APPROXIMATE LIMIT OF DISTURBANCE	
	TREE	
	WATER VALVE	WV
	FIRE HYDRANT/CONNECTION	FDC
WM WV	WATER METER OR BOX	WM WV
	SEWER MANHOLE	S
	SANITARY SEWER CLEANOUT	SSCO
	STORM DRAIN MANHOLE	D
	STORM DRAIN CLEANOUT	D
	CATCH BASIN	
	LIGHT POLE, UTILITY POLE, OR PULLBOX	LP PB
	GAS VALVE	GV
	ELECTRIC VAULTS	EM SV
	ELECTRIC BOX	EM SV
	SIGN	
	TRENCH DRAIN	
	TRANSFORMER	
	STANDARD PCC PAVEMENT.	
	STANDARD AC PAVEMENT.	
	STANDARD LANDSCAPE. SEE LANDSCAPE PLANS FOR DETAILS	
	STANDARD BIOTREATMENT PLANTER.	
	STANDARD PERVIOUS PAVEMENT	
	PROPOSED DECOMPOSED GRANITE. SEE LANDSCAPE PLANS FOR DETAILS	

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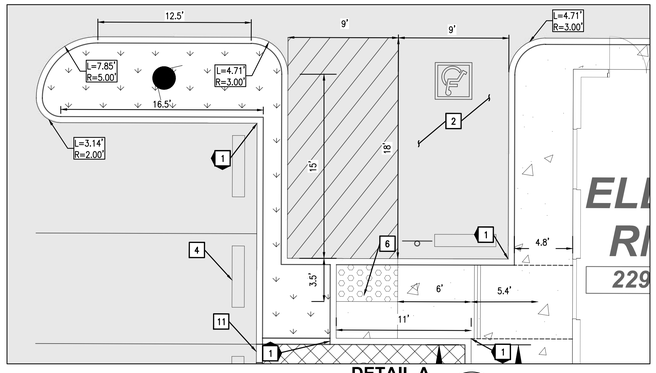
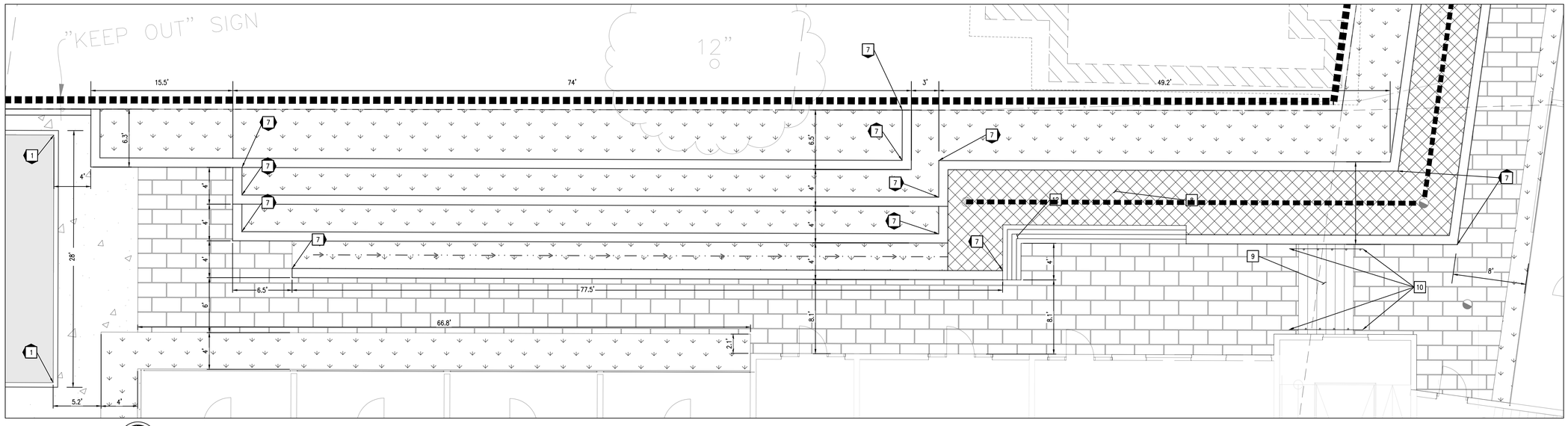


DETAIL A
SCALE: 1" = 5'



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SD	STORM DRAIN LINE	SD
	UNDERGROUND ELECTRIC	UE
	GAS LINE	G
	OVERHEAD ELECTRIC	OE
	FENCE	x
	APPROXIMATE LIMIT OF DISTURBANCE	
	TREE	
	WATER VALVE	
	FIRE HYDRANT/CONNECTION	FDC
WM WV	WATER METER OR BOX	WM WV
	SEWER MANHOLE	S
	SANITARY SEWER CLEANOUT	SSCO
	STORM DRAIN MANHOLE	D
	STORM DRAIN CLEANOUT	CO
	CATCH BASIN	
	LIGHT POLE, UTILITY POLE, OR PULLBOX	PB PP
	GAS VALVE	GV
	ELECTRIC VAULTS	VAULT SV
	ELECTRIC BOX	EM TSV
	SIGN	
	TRENCH DRAIN	
	TRANSFORMER	
	STANDARD PCC PAVEMENT.	
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	STANDARD PERVIOUS PAVEMENT	
	PROPOSED DECOMPOSED GRANITE. SEE LANDSCAPE PLANS FOR DETAILS	

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SITE AND PAVING PLAN

DATE 06/18/2021 ISSUE PLANNING RESUBMITTAL 1

DEVELOPMENT APPLICATION

DRAWN BY	KL
JOB NO.	2021-350-001
SCALE	AS SHOWN

SHEET
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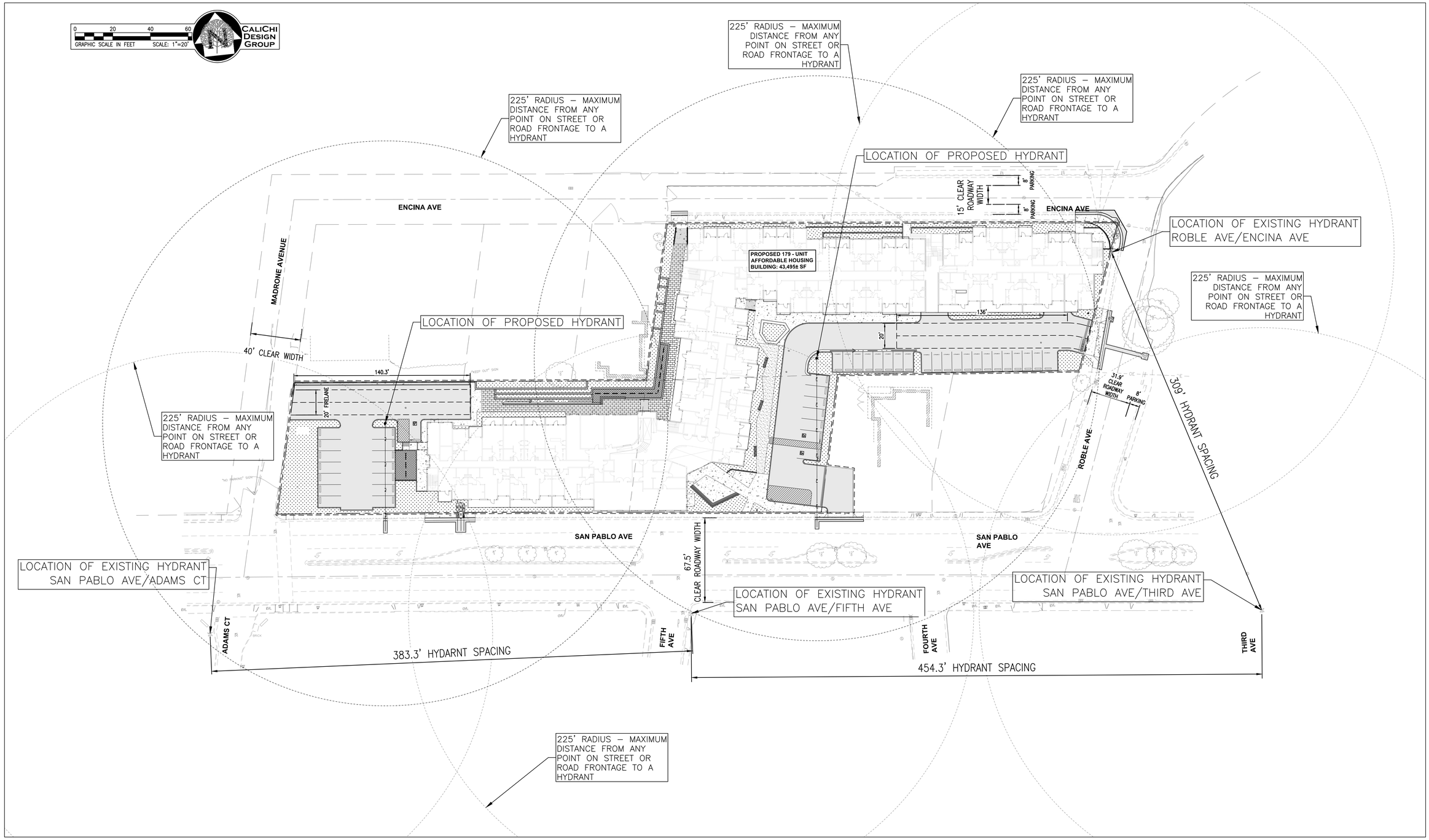
BIMcloud: JARVIS - BIMcloud Basic for ARCHICAD 24/Pinole/Pinole 3/9/2021



PUBLIC ROW CLEAR WIDTH:

SAN PABLO AVE:
TOTAL ROW WIDTH = 45.6–FT

PARALLEL PARKING:
NORTH = NA
SOUTH = 8.5–FT±

TOTAL CLEAR WIDTH =56–FT±

ROBLE AVE:
TOTAL ROW WIDTH = 40–FT

PARALLEL PARKING:
WEST = NA
EAST = NA

TOTAL CLEAR WIDTH =37–FT±

ENCINA AVE:
TOTAL ROW WIDTH = 31–FT

PARALLEL PARKING:
NORTH = NA±
SOUTH = NA±

TOTAL CLEAR WIDTH =28–FT±

SEE MEASUREMENTS ON THIS SHEET FOR MORE ACCURATE MEASUREMENTS.

LEGEND

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SS	SANITARY SEWER LINE	SAN
SD	STORM DRAIN LINE	SD
	UNDERGROUND ELECTRIC	UE
	GAS LINE	G
	OVERHEAD ELECTRIC	OE
	FENCE	x
	APPROXIMATE LIMIT OF DISTURBANCE	
	TREE	
	WATER VALVE	WV
	FIRE HYDRANT/CONNECTION	FDC
WM WV	WATER METER OR BOX	WM
	SEWER MANHOLE	S

LEGEND

PROPOSED		EXISTING
	STORM DRAIN MANHOLE	D
	STORM DRAIN CLEANOUT	
	CATCH BASIN	
	LIGHT POLE, UTILITY POLE, OR PULLBOX	PP, LP
	GAS VALVE	GV
	ELECTRIC VAULTS	EV, TV
	ELECTRIC BOX	EM, TM
	SIGN	
	TRENCH DRAIN	
	TRANSFORMER	
	STANDARD PCC PAVEMENT.	
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	STANDARD LANDSCAPE. SEE LANDSCAPE PLANS FOR DETAILS	
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FIRE PROTECTION PLAN

DATE 06/18/2021 ISSUE PLANNING RESUBMITTAL 1

DEVELOPMENT APPLICATION

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1
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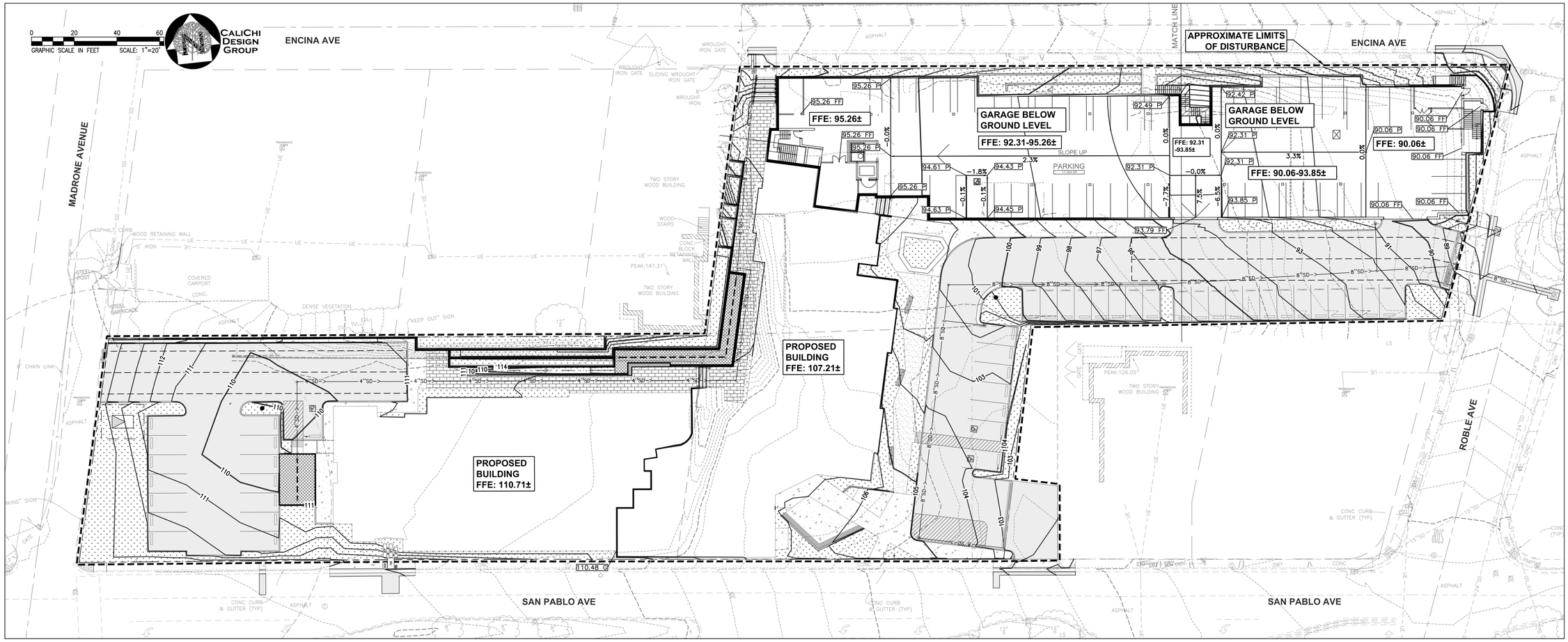

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GRADING NOTES:

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PAVEMENT ELEVATION NOTE:

UNLESS OTHERWISE NOTED, PAVEMENT ELEVATION (P) IS 6" BELOW THE TOP OF CURB (TC) ELEVATION.

SPOT GRADING LEGEND

80.00 X	INDICATES ELEVATION TO MATCH EXISTING ITEM
80.00 P	INDICATES ELEVATION AT TOP OF ASPHALT PAVEMENT
80.00 FF	INDICATES ELEVATION AT FLOOR FINISH
1.5%	DRAINAGE ARROW AND PROPOSED SLOPE

LEGEND

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PRECISE GRADING AND DRAINAGE PLAN- GARAGE

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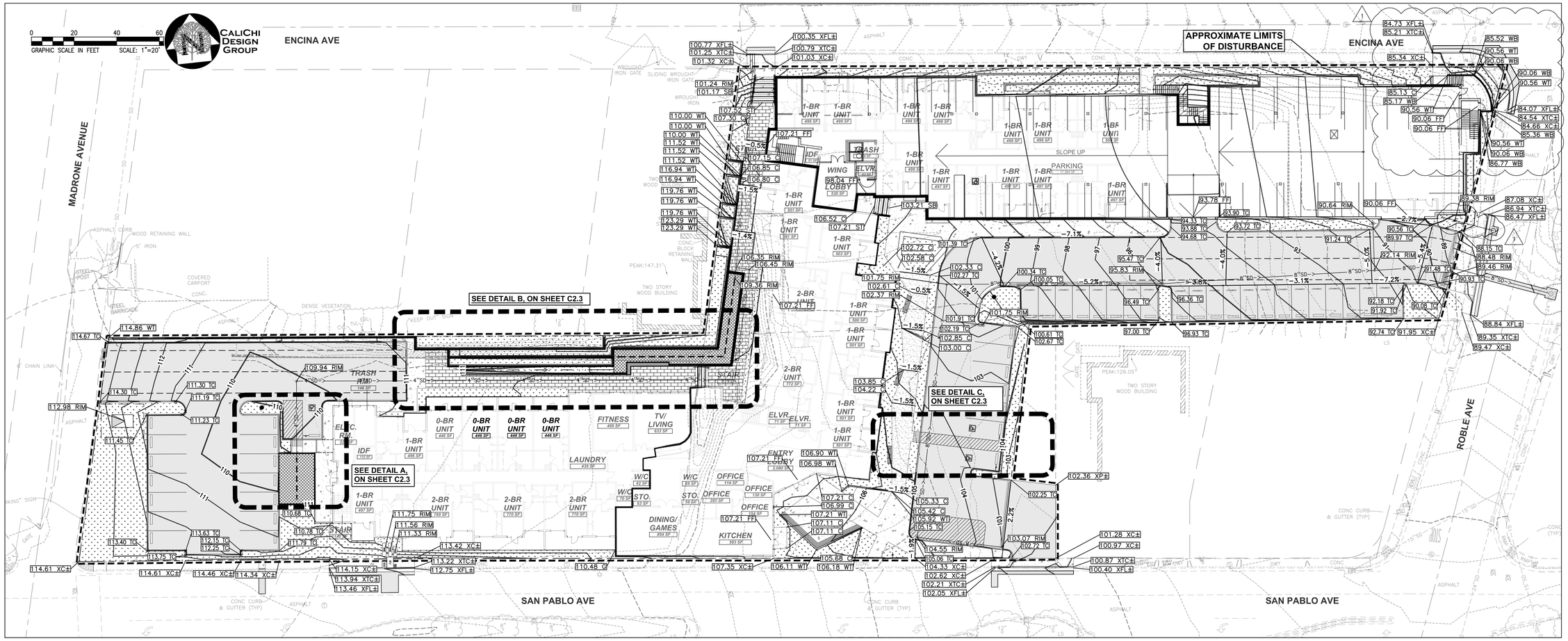

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3. ALL SIGNAGE AND PAINT MARKINGS SHALL COMPLY WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), OR AS OTHERWISE SPECIFIED. INSTALLATION OF SIGNS SHALL BE GOVERNED BY LOCAL CODES.
4. THE CONTRACTOR IS RESPONSIBLE TO LOCATE AND PROTECT ALL EXISTING UTILITIES DURING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE UTILITY PROTECTION CENTER AT LEAST THREE DAYS PRIOR TO ANY SITE WORK FOR PROPER IDENTIFICATION OF EXISTING UTILITIES.
5. THE CONTRACTOR SHALL VERIFY ALL EXISTING ITEMS AND DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO BEGINNING CONSTRUCTION.
6. THE CONTRACTOR SHALL VERIFY DIMENSIONS AT PROJECT SITE PRIOR TO BEGINNING CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
7. ALL DIMENSIONS ARE TO FACE OF WALL, FACE OF CURB, AND EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

GRADING NOTES:

1. THE CONTRACTOR SHALL VERIFY DIMENSIONS AT PROJECT SITE PRIOR TO BEGINNING CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL DIMENSIONS ARE TO FACE OF WALL, FACE OF CURB, AND EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

PAVEMENT ELEVATION NOTE:

UNLESS OTHERWISE NOTED, PAVEMENT ELEVATION (P) IS 6" BELOW THE TOP OF CURB (TC) ELEVATION.

SPOT GRADING LEGEND

00.00 X--	INDICATES ELEVATION TO MATCH EXISTING ITEM
00.00 TC	INDICATES ELEVATION AT TOP OF CURB
00.00 G	INDICATES ELEVATION AT FINISHED GROUND
00.00 C	INDICATES ELEVATION AT TOP OF CONCRETE
00.00 FL	INDICATES FLOWLINE ELEVATION OF PIPE, SWALE, OR GUTTER
00.00 RIM	INDICATES RIM ELEVATION OF UTILITY
00.00 P	INDICATES ELEVATION AT TOP OF ASPHALT PAVEMENT
00.00 SB	INDICATES ELEVATIONS AT BOTTOM OF STAIRS.
00.00 ST	INDICATES ELEVATION AT TOP OF STAIRS
00.00 WB	INDICATES ELEVATION AT BOTTOM OF WALL
00.00 WT	INDICATES ELEVATION AT TOP OF WALL
00.00 FF	INDICATES ELEVATION AT FLOOR FINISH
1.5%	DRAINAGE ARROW AND PROPOSED SLOPE

LEGEND

PROPOSED		EXISTING
	PROPERTY LINE	
	EASEMENT LINE	
9	1-FOOT CONTOUR	9
10	5-FOOT CONTOUR	10
WTR	WATER LINE	WTR
FP	FIRE PROTECTION WATER LINE	WTR
IRR	IRRIGATION WATER LINE	WTR
SS	SANITARY SEWER LINE	SAN
SD	STORM DRAIN LINE	SD
	UNDERGROUND ELECTRIC	UE
	GAS LINE	G
	OVERHEAD ELECTRIC	OE
	FENCE	x
	APPROXIMATE LIMIT OF DISTURBANCE	
	TREE	
	WATER VALVE	WV
	FIRE HYDRANT/CONNECTION	FDC
WM WV	WATER METER OR BOX	WM WV
	SEWER MANHOLE	S
	SANITARY SEWER CLEANOUT	SSCO
	STORM DRAIN MANHOLE	D
	STORM DRAIN CLEANOUT	
	CATCH BASIN	
	LIGHT POLE, UTILITY POLE, OR PULLBOX	LP PB
	GAS VALVE	GV
	ELECTRIC VAULTS	CVL SW
	ELECTRIC BOX	EVL EM SW
	SIGN	
	TRENCH DRAIN	
	TRANSFORMER	
	STANDARD PCC PAVEMENT.	
	STANDARD AC PAVEMENT.	
	STANDARD LANDSCAPE. SEE LANDSCAPE PLANS FOR DETAILS	
	STANDARD BIOTREATMENT PLANTER.	
	STANDARD PERVIOUS PAVEMENT	
	PROPOSED DECOMPOSED GRANITE. SEE LANDSCAPE PLANS FOR DETAILS	

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EXP. 6-30-2022
CIVIL
STATE OF CALIFORNIA
2021/06/18

VISTA WOODS APARTMENTS
600 ROBLE AVENUE
Pinole, CA, 94564

PRECISE GRADING AND DRAINAGE PLAN

DATE 06/18/2021 ISSUE PLANNING RESUBMITTAL

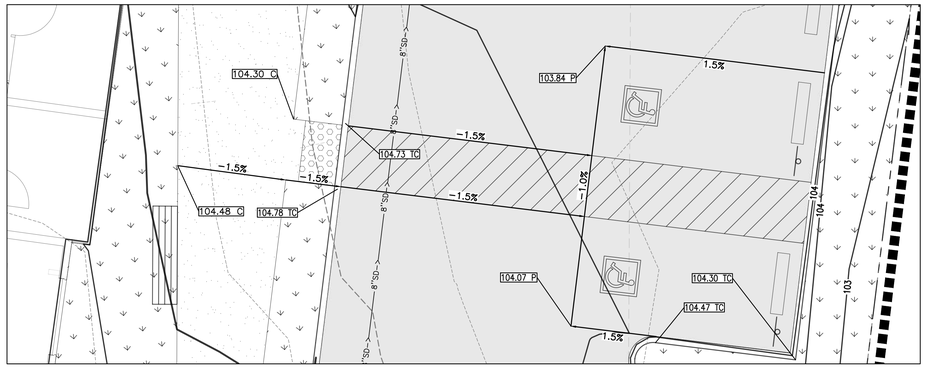
DEVELOPMENT APPLICATION

DRAWN BY	KL
JOB NO.	2021-350-001
SCALE	AS SHOWN

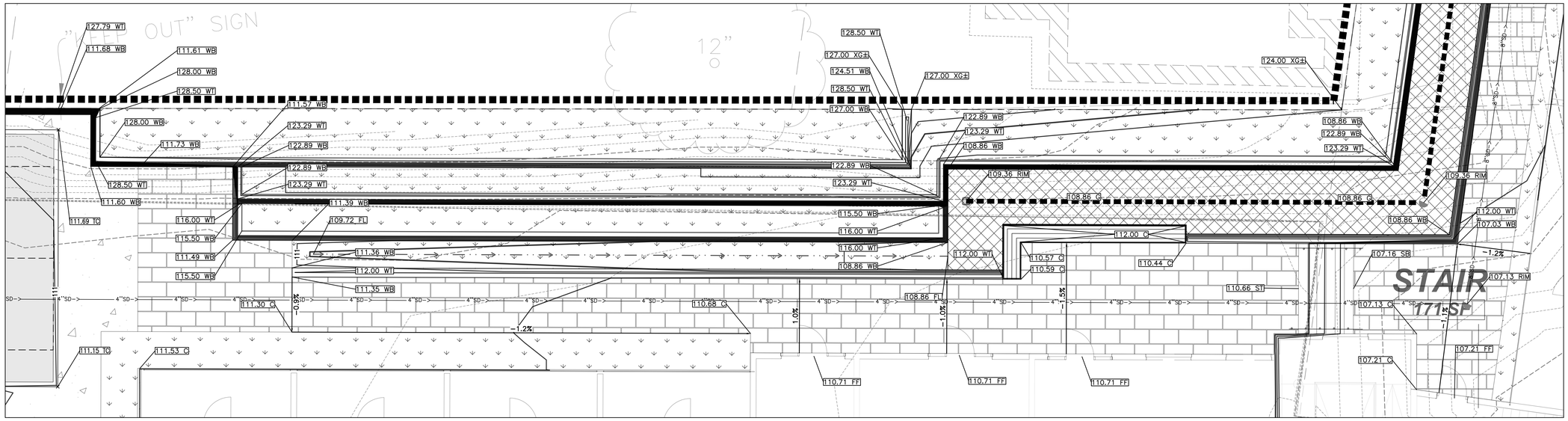
SHEET

C2.2

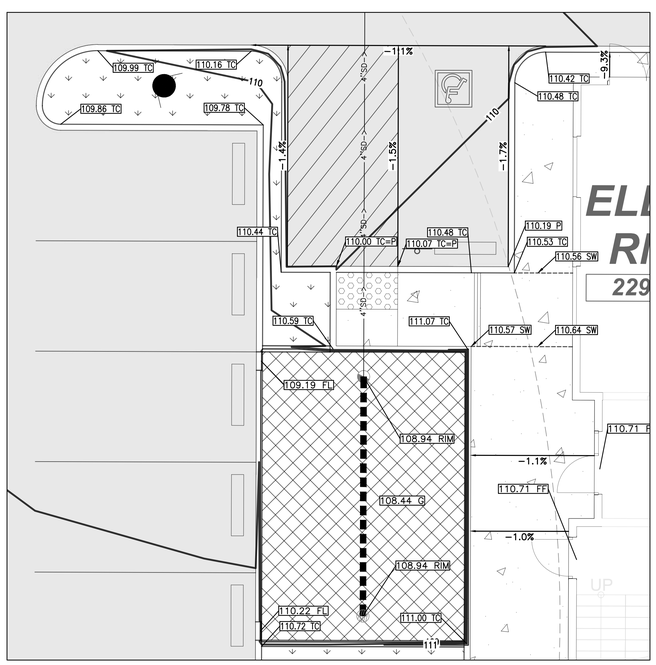
BIMcloud_JARVIS - BIMcloud Basic for ARCHICAD 24/Private/Private 3/9/2021



DETAIL C
SCALE: 1" = 5'



DETAIL B
SCALE: 1" = 5'



DETAIL A
SCALE: 1" = 5'

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SPOT GRADING LEGEND

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00.00 TC	INDICATES ELEVATION AT TOP OF CURB
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LEGEND

PROPOSED		EXISTING
	PROPERTY LINE	
	EASEMENT LINE	
9	1-FOOT CONTOUR	9
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WTR	WATER LINE	WTR
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	UNDERGROUND ELECTRIC	UE
	GAS LINE	G
	OVERHEAD ELECTRIC	OE
	FENCE	x
	APPROXIMATE LIMIT OF DISTURBANCE	
	TREE	
	WATER VALVE	
	FIRE HYDRANT/CONNECTION	FDC
WM WV	WATER METER OR BOX	WM
	SEWER MANHOLE	
	SANITARY SEWER CLEANOUT	SSCO
	STORM DRAIN MANHOLE	
	STORM DRAIN CLEANOUT	
	CATCH BASIN	
	LIGHT POLE, UTILITY POLE, OR PULLBOX	PULL BOX
	GAS VALVE	GV
	ELECTRIC VAULTS	CVL SV
	ELECTRIC BOX	EVL EM SW
	SIGN	
	TRENCH DRAIN	
	TRANSFORMER	
	STANDARD PCC PAVEMENT.	
	STANDARD AC PAVEMENT.	
	STANDARD LANDSCAPE. SEE LANDSCAPE PLANS FOR DETAILS	
	STANDARD BIOTREATMENT PLANTER.	
	STANDARD PERVIOUS PAVEMENT	
	PROPOSED DECOMPOSED GRANITE. SEE LANDSCAPE PLANS FOR DETAILS	

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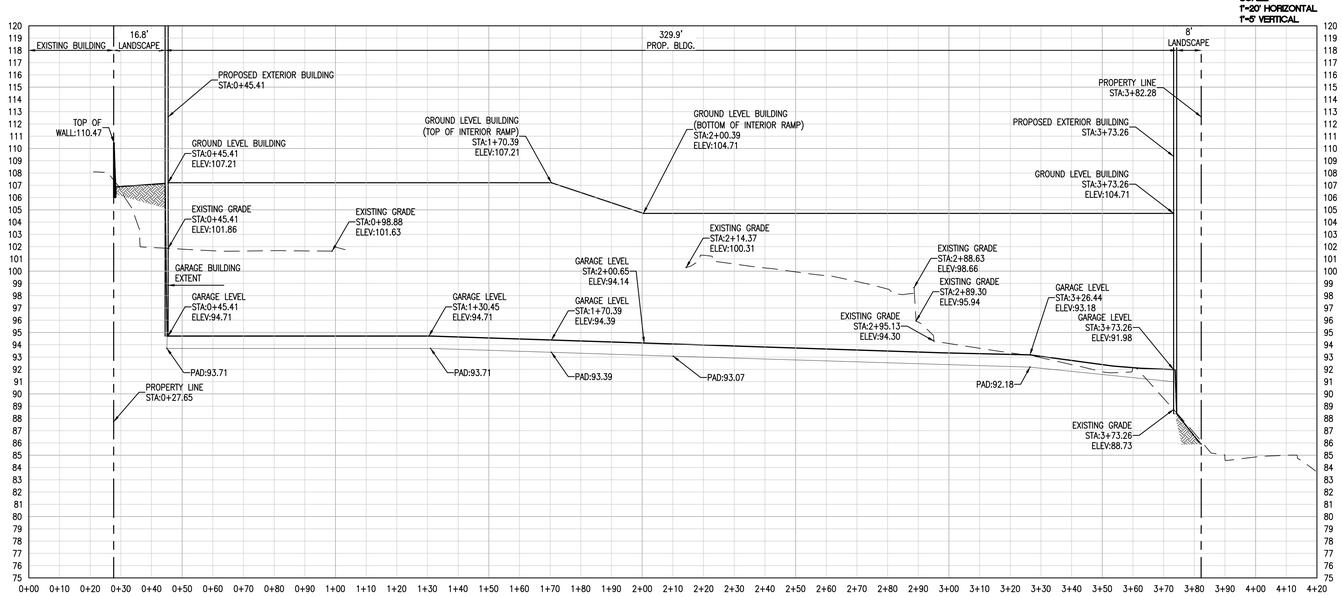
JOB NO.	2021-350-001
SCALE	AS SHOWN

SHEET
C2.3

BIMcloud: JARVIS - BIMcloud Basic for ARCHICAD 24/Pinole/Pinole 3/9/2021

SECTION A-A
SCALE:
1"=20' HORIZONTAL
1"=5' VERTICAL



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SITE CROSS SECTIONS

DATE 06/18/2021 ISSUE PLANNING RESUBMITTAL 1

DEVELOPMENT APPLICATION

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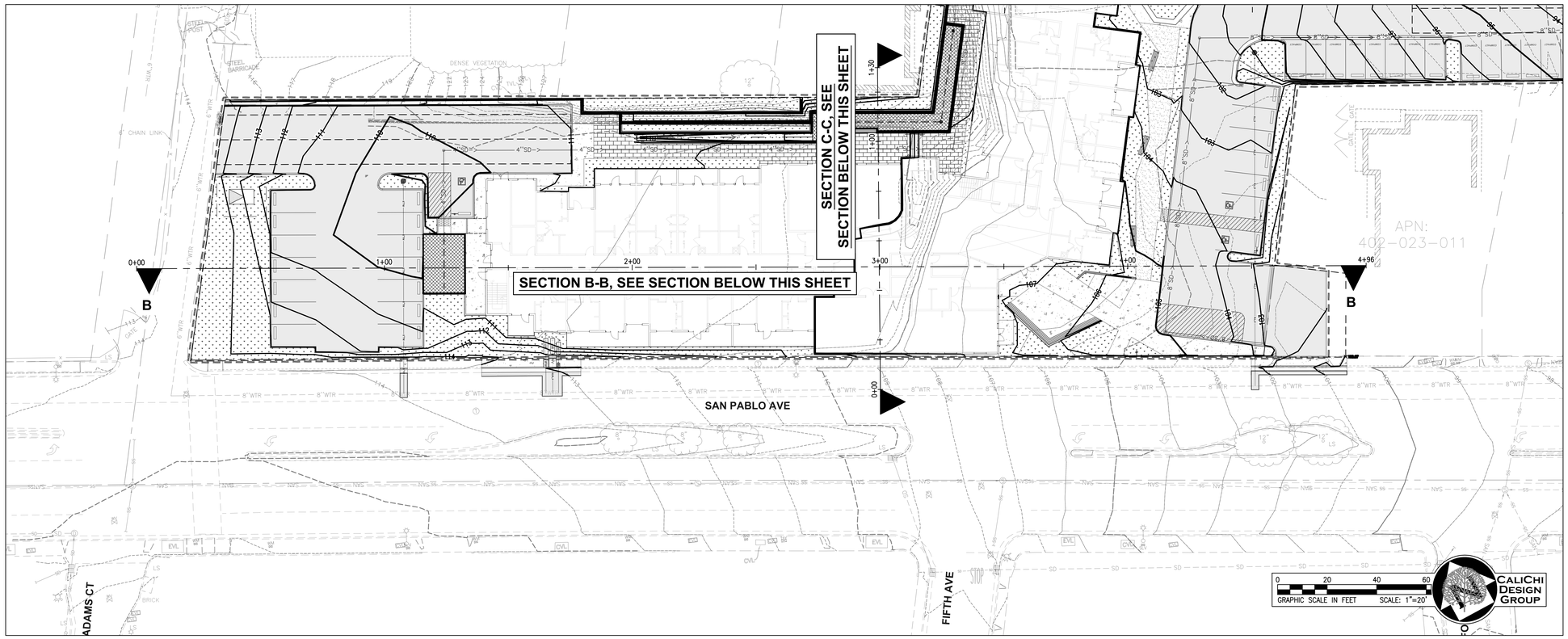

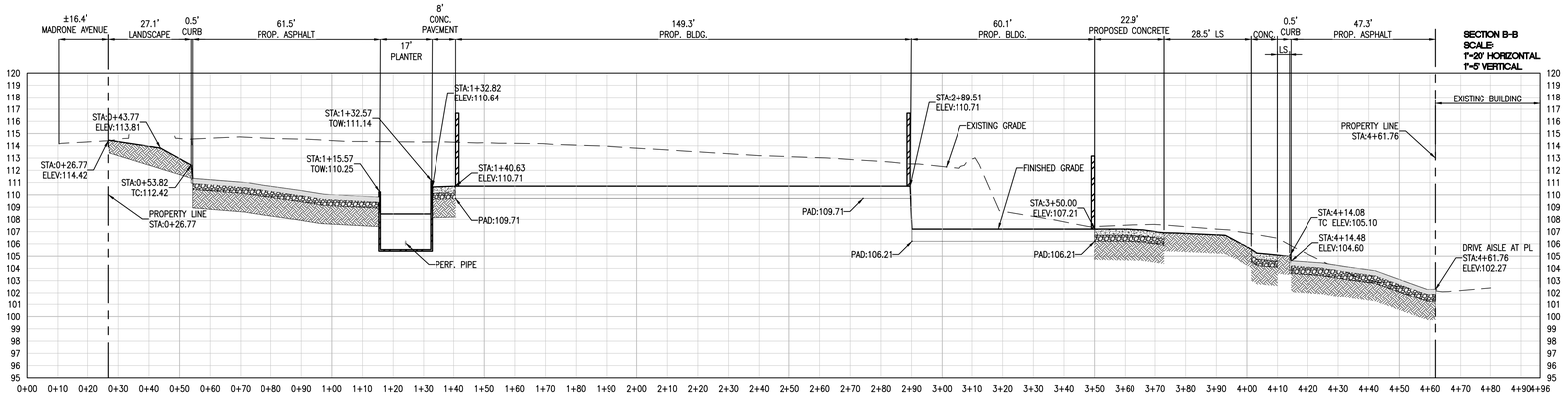

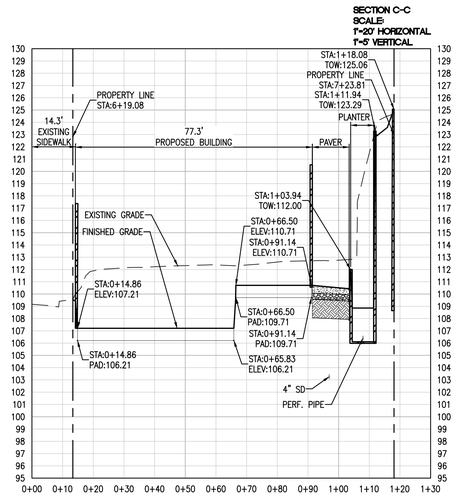

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SITE CROSS SECTIONS

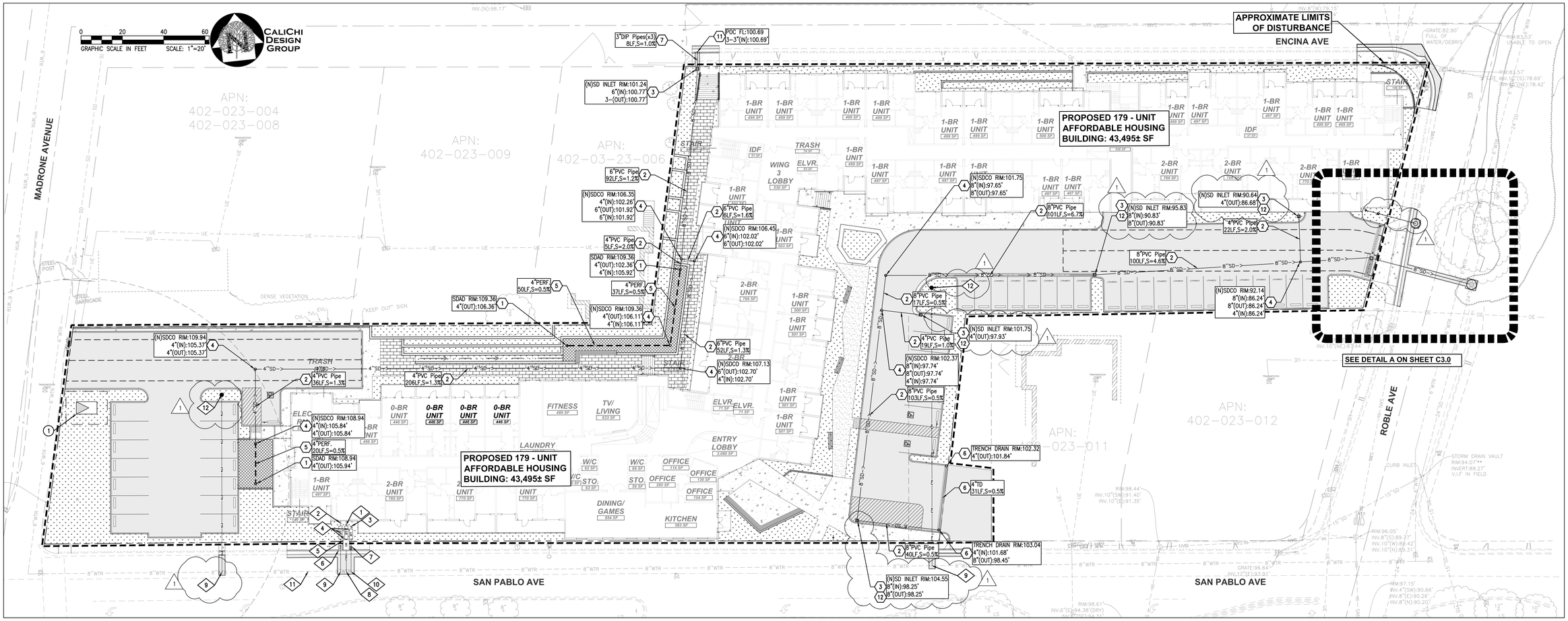
DATE 06/18/2021 ISSUE PLANNING RESUBMITTAL 1

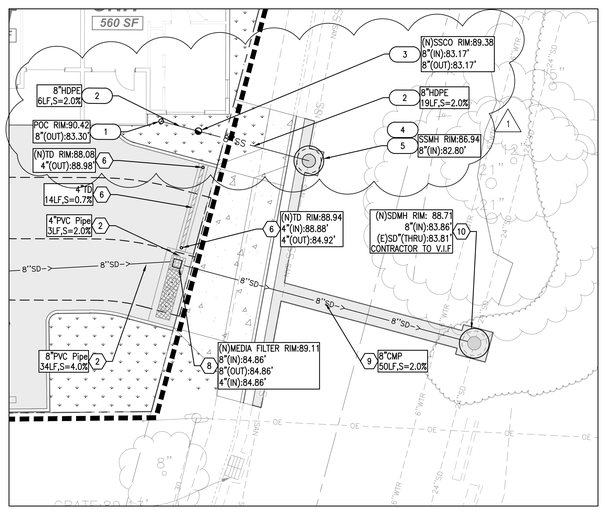
DEVELOPMENT APPLICATION

DRAWN BY	KL
JOB NO.	2021-350-001
SCALE	AS SHOWN

SHEET
C2.5

BIMcloud: JARVIS - BIMcloud Basic for ARCHICAD-24/Pinole/Pinole 3/9/2021





DETAIL A

SCALE: 1" = 5'

STORM DRAIN KEY NOTES

1. PROPOSED FLOW-THROUGH PLANTER OVERFLOW STRUCTURE. RIM AND INVERT PER PLAN.
2. PROPOSED PVC STORM DRAIN PIPE. SIZE, LENGTH AND SLOPE PER PLAN.
3. PROPOSED HARDSACPE AREA DRAIN INLET. RIM AND INVERT PER PLAN.
4. PROPOSED STORM DRAIN CLEAN-OUT. RIM AND INVERT PER PLAN.
5. PROPOSED 4" PVC PERFORATED PIPE UNDERDRAIN. LENGTH AND SLOPE PER PLAN.
6. PROPOSED ZURN 2886 HD OR APPROVED EQUIVALENT TRENCH DRAIN. RIM, SLOPE, AND INVERT PER PLAN.
7. PROPOSED 3" DUCTILE IRON PIPE STORM DRAIN PIPE. SIZE, LENGTH AND SLOPE PER PLAN.
8. PROPOSED PRE-CAST CONTECH CATCHBASIN STORMFILTER WITH 3-27" PHOSPHSORB CARTRIDGE FILTERS OPENING AT 0.028 CFS EACH WITH A TOTAL CAPACITY OF 0.112 CFS.
9. PROPOSED CMP STORM DRAIN PIPE. SIZE, LENGTH AND SLOPE PER PLAN.
10. PROPOSED STORM DRAIN MANHOLE AS PER STANDARD CITY DETAIL.
11. CONNECT PROPOSED STORM DRAIN TO ENCINA AVENUE GUTTER VIA SIDEWALK UNDER DRAIN. RIM, INVERT, AND PIPE SIZE PER PLAN.
12. INSTALL ENVIROPOD "LITTLETRAP" TRASH CAPTURE DEVICE UNDER PROPOSED CATCH BASIN.

NOTE: FOR ALL WORK OUTSIDE THE LIMITS OF DISTURBANCE SEE OFF-SITE PLANS FOR DETAILS.

GENERAL NOTES:

1. ANY EXISTING INFRASTRUCTURE OR SITE ITEMS (ABOVE OR BELOW GRADE, READILY VISIBLE OR NOT) OR PROPERTY DAMAGED AS A RESULT OF CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE APPROPRIATE AGENCY.
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6. THE CONTRACTOR SHALL VERIFY DIMENSIONS AT PROJECT SITE PRIOR TO BEGINNING CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
7. ALL DIMENSIONS ARE TO FACE OF WALL, FACE OF CURB, AND EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

UTILITY NOTES:

1. EXISTING OFF-SITE UTILITY LOCATIONS ARE APPROXIMATE AND BASED ON RECORD DRAWINGS OR AS-BUILT INFORMATION.
2. LOCATION OF EXISTING ON-SITE UNDERGROUND UTILITIES HAVE NOT BEEN SURVEYED AND ARE SHOWN BASED ON LOCATIONS OF EXISTING VISIBLE UTILITY STRUCTURES SURVEYED IN THE FIELD. EXACT LOCATIONS OF ALL UTILITIES MUST BE LOCATED IN THE FIELD BY THE CONTRACTOR AND ANY DISCREPANCIES REPORTED TO THE ENGINEER PRIOR TO STARTING CONSTRUCTION.
3. UNLESS NOTED OTHERWISE, ALL RAIN WATER LEADERS TO SPLASH ONTO PAVED SURFACES. IF RAINWATER LEADER TERMINATES IN A LANDSCAPE AREA, CONTRACTOR TO INSTALL SPLASH BLOCK OR APPROVED EQUIVALENT.
4. JOINT TRENCH, ELECTRICAL, DATA, AND GAS ARE SHOWN FOR REFERENCE ONLY. SEE PLANS BY EACH UTILITY COMPANY SERVICE PROVIDER AND ELECTRICAL PLANS FOR DETAILS. DRY UTILITIES ARE MEASURED 2'± FROM PROPOSED BUILDING WALL UNLESS OTHERWISE NOTED.
5. UNLESS NOTED OTHERWISE, ALL STORM DRAIN, WATER, FIRE, AND SANITARY SEWER ARE MEASURED FROM A POINT 5'± FROM PROPOSED BUILDING WALL.

SANITARY SEWER KEY NOTES

1. POINT OF CONNECTION FOR PROPOSED SANITARY SEWER. SEE PLUMBING PLANS FOR CONTINUATION.
2. PROPOSED HDPE SANITARY SEWER SERVICE PIPE SIZE, LENGTH AND SLOPE PER PLAN.
3. PROPOSED SANITARY SEWER CLEANOUT. RIM AND INVERT PER PLAN.
4. PROPOSED SANITARY SEWER MANHOLE AS PER STANDARD CITY DETAIL.
5. CONNECT PROPOSED SANITARY SEWER SERVICE TO EXISTING SANITARY SEWER LINE. SIZE AND INVERT PER PLAN.

NOTE: FOR ALL WORK OUTSIDE OF THE LIMITS OF DISTURBANCE SEE OFF-SITE PLANS FOR DETAILS.

WATER KEY NOTES

1. CONNECT PROPOSED 4" DOMESTIC WATER SERVICE TO BUILDING SERVICE STUB. SEE ONSITE PLUMBING PLANS FOR CONTINUATION.
2. POINT OF CONNECTION FOR PROPOSED 6" FIRE WATER SERVICE. SEE ONSITE PLUMBING PLANS FOR FIRE DEPARTMENT CONNECTION.
3. CONNECT PROPOSED 1" IRRIGATION WATER SERVICE TO BUILDING SERVICE STUB. SEE ONSITE PLUMBING PLANS FOR CONTINUATION.
4. PROPOSED ABOVE GROUND, LEAD FREE, EBMUD APPROVED BACKFLOW PREVENTION ASSEMBLY (BFP), FEBCO LF850 (UP TO 2") OR APPROVED EQUIVALENT PER EMBUD STANDARD DRAWINGS 1931-A-1. EXACT LOCATION BFP TO BE COORDINATED WITH EBMUD.
5. PROPOSED WATER METER BOX PER EBMUD STANDARD DRAWING 3684-B.
6. PROPOSED DETECTOR CHECK METER BOX PER EBMUD STANDARD DRAWING 3684-B AND 314-EA.
7. PROPOSED IRRIGATION WATER METER BOX PER EBMUD STANDARD DRAWING 186-EA & 291-EA.
8. CONNECT 4" DOMESTIC WATER SERVICE TO EXISTING WATER MAIN PER EBMUD STANDARD DRAWING 3684-B. SIZE AND LENGTH PER PLAN. TRENCH AND BACKFILL PER EBMUD STANDARD DRAWING 1992-A.
9. CONNECT 6" FIRE SERVICE TO EXISTING WATER MAIN PER EBMUD STANDARD DRAWING 3684-B. TRENCH AND BACKFILL PER EBMUD STANDARD DRAWING 1992-A.
10. CONNECT 1" IRRIGATION WATER SERVICE TO EXISTING WATER MAIN PER EBMUD STANDARD DRAWING 3684-B. SIZE AND LENGTH PER PLAN. TRENCH AND BACKFILL PER EBMUD STANDARD DRAWING 1992-A.
11. CONTRACTOR TO PROTECT EXISTING WATERLINE TO REMAIN.
12. PROPOSED FIRE HYDRANT PER EBMUD STANDARD DRAWING 9496-GB.

NOTE: EBMUD TO PERFORM ALL WATER LINE CONSTRUCTION IN THE PUBLIC ROW, UNLESS OTHERWISE NOTED.

LEGEND

PROPOSED		EXISTING
	PROPERTY LINE	
	EASEMENT LINE	
9	1-FOOT CONTOUR	9
10	5-FOOT CONTOUR	10
WTR	WATER LINE	WTR
FP	FIRE PROTECTION WATER LINE	WTR
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SS	SANITARY SEWER LINE	SAN
SD	STORM DRAIN LINE	SD
	UNDERGROUND ELECTRIC	UE
	GAS LINE	G
	OVERHEAD ELECTRIC	OE
	FENCE	x
	APPROXIMATE LIMIT OF DISTURBANCE	
	TREE	
	WATER VALVE	WV
	FIRE HYDRANT/CONNECTION	FDC
WM WV	WATER METER OR BOX	WM WV
	SEWER MANHOLE	S
	SANITARY SEWER CLEANOUT	SSCO
	STORM DRAIN MANHOLE	D
	STORM DRAIN CLEANOUT	D
	CATCH BASIN	
	LIGHT POLE, UTILITY POLE, OR PULLBOX	LP UP
	GAS VALVE	GV
	ELECTRIC VAULTS	CVL SV
	ELECTRIC BOX	EVL EM SV
	SIGN	
	TRENCH DRAIN	
	TRANSFORMER	
	STANDARD PCC PAVEMENT.	
	STANDARD AC PAVEMENT.	
	STANDARD LANDSCAPE. SEE LANDSCAPE PLANS FOR DETAILS	
	STANDARD BIOTREATMENT PLANTER.	
	STANDARD PERVIOUS PAVEMENT	
	PROPOSED DECOMPOSED GRANITE. SEE LANDSCAPE PLANS FOR DETAILS	

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2021/06/18

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UTILITY PLAN

DATE 06/18/2021 ISSUE PLANNING RESUBMITTAL

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SCALE	AS SHOWN

SHEET

C3.0

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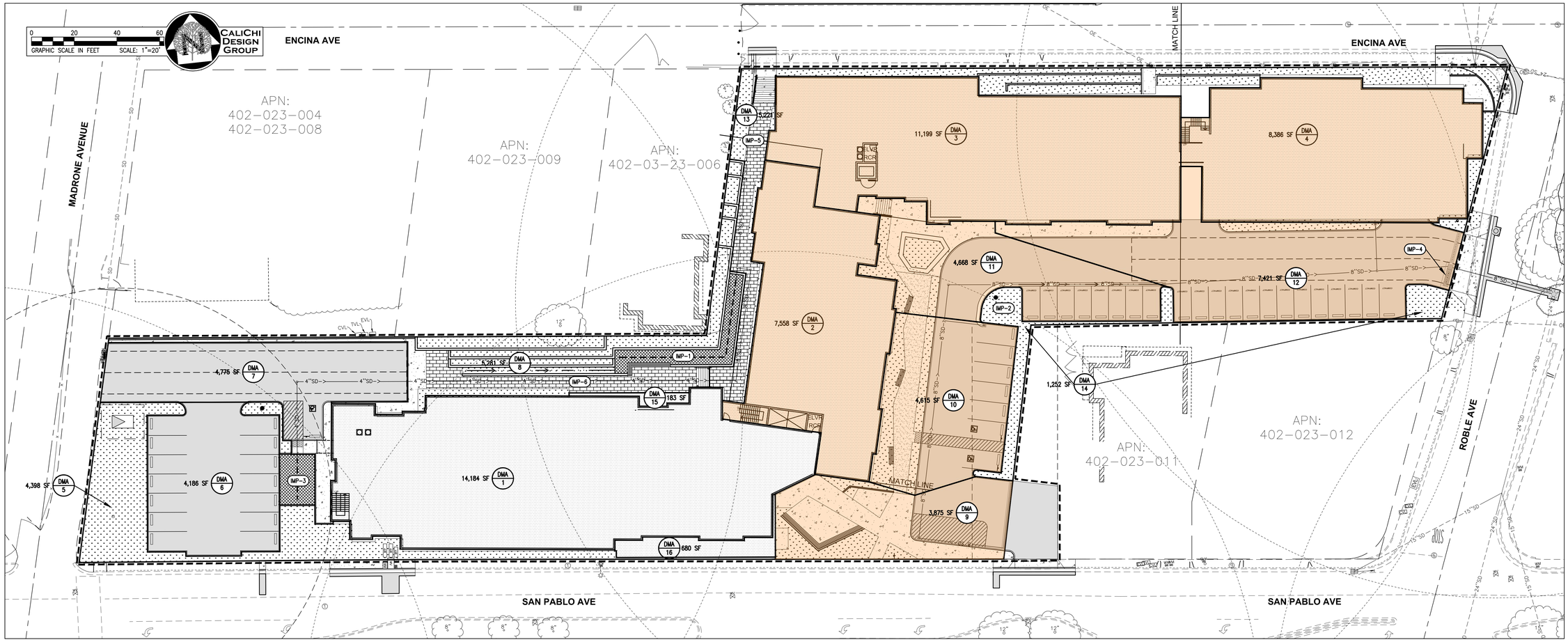

SITE DRAINAGE AREAS AND BMP'S								
BMP	AREA	BMP TYPE	TOTAL DRAINAGE AREA [SF]	IMPERVIOUS AREA [SF] / PERVIOUS AREA [SF]	PERCENT (%) / PERCENT (%)	BMP TREATMENT AREA REQUIRED [SF]	BMP AREA TREATMENT CAPACITY [SF]	BMP PONDING DEPTH [IN]
IMP 1	DMA-1	** TREATMENT CONTROL (BIO-TREATMENT AREA) (FLOW AND VOLUME APPROACH)	15047	15047	100.0%	602	621	6
				0	0.0%			
IMP 2	DMA-14	* TREATMENT CONTROL (SELF-RETAINING LANDSCAPING)	1252	0	0.0%	1252	2504	3
				1252	100.0%			
IMP 3	DMA-5 + DMA-6 + DMA-7	** TREATMENT CONTROL (BIO-TREATMENT AREA) (FLOW AND VOLUME APPROACH)	13359	9072	67.9%	380	388	6
				4287	32.1%			
IMP 4	DMA-2 + DMA-3 + DMA-4 + DMA-9 + DMA-10 + DMA-11 + DMA-12	*** TREATMENT CONTROL (MEDIA FILTER) (PRE-CAST CATCHBASIN STORMFILTER WITH 3-27" PHOSPHSORB CARTRIDGE FILTERS OPERATING AT 0.028 CFS EACH WITH A TOTAL CAPACITY OF 0.112 CFS)"	47722	45187	94.7%	45187	50242	N/A
				2535	5.3%			
IMP 5	DMA-13	* TREATMENT CONTROL (SELF-RETAINING LANDSCAPING)	5221	1086	20.8%	4135	8270	3
				4135	79.2%			

INSPECTION AND MAINTENANCE

RESPONSIBLE PARTY FOR BMP MAINTENANCE: TBD

STORMWATER NOTE:

1. THIS PROJECT IS A CATEGORY "C" SPECIAL PROJECT AND IS DETERMINED TO HAVE A 70% LID TREATMENT REDUCTION CREDIT FOR THE FOLLOWING:
   1.1. THE PROJECT WILL PROVIDE A PROPOSED TRANSIT HUB WITH A SHELTER AND ELECTRONIC ROUTE MESSAGING (SUPPORTING SERVICES) IN COORDINATION WITH WESTCAT LOCATED AT LEAST A 1/4 MILE OR LESS AWAY FROM THE PROPOSED PROJECT SITE FOR A 50% TREATMENT REDUCTION CREDIT. SEE ARCHITECTURAL PLANS FOR LOCATION OF BUS SHELTER.
   1.2. THE DWELLING UNITS PER ACRE GREATER THAN 60 UNITS PER ACRE FOR A 20% CREDIT
   1.3. THE MAXIMUM IMPERVIOUS SURFACE AREA ALLOWED TO BE TREATED WITH NON-LID TREATMENT MEASURE IS 51,304 SF. AS AN OPTION FOR A DEFINED CATEGORY "C" SPECIAL PROJECT A PROPOSED CONTECH MEDIA FILTER WILL BE USED. MEDIA FILTER SPECIFICATIONS TO BE DETERMINED PRIOR TO CONSTRUCTION DOCUMENT SUBMITTAL.
2. PROJECT IS LOCATED IN A TIDAL INFLUENCED AREA THEREFORE IT IS EXEMPT FROM HYDROMODIFICATION.

MEDIA FILTER MAINTENANCE PLAN

INITIAL INSPECTION (WITHIN 6-MONTHS OF INSTALLATION) AND BI-ANNUAL INSPECTION (AT LEAST TWICE PER YEAR):

- REMOVE THE MANHOLE COVERS AND OPEN ALL ACCESS HATCHES.
- BEFORE ENTERING THE SYSTEM MAKE SURE THE AIR IS SAFE PER OSHA STANDARDS OR USE A BREATHING APPARATUS. USE LOW O2, HIGH CO, OR OTHER APPLICABLE WARNING DEVICES PER REGULATORY REQUIREMENTS.
- USING A VACUUM TRUCK, REMOVE ANY LIQUID AND SEDIMENTS THAT CAN BE REMOVED PRIOR TO ENTRY.
- USING A SMALL LIFT OR THE BOOM OF THE VACUUM TRUCK, REMOVE THE USED CARTRIDGES BY LIFTING THEM OUT.
- ANY CARTRIDGES THAT CANNOT BE READILY LIFTED CAN BE EASILY SLID ALONG THE FLOOR TO A LOCATION THEY CAN BE LIFTED VIA A BOOM LIFT.
- WHEN ALL THE CARTRIDGES HAVE BEEN REMOVED, IT IS NOW PRACTICAL TO REMOVE THE BALANCE OF THE SOLIDS AND WATER. LOOSEN THE STAINLESS CLAMPS ON THE FERNCO COUPLINGS FOR THE MANIFOLD AND REMOVE THE DRAINPIPES AS WELL. CAREFULLY CAP THE MANIFOLD AND THE FERNCO'S COUPLINGS AND RINSE THE FLOOR, WASHING AWAY THE BALANCE OF ANY REMAINING COLLECTED SOLIDS.
- CLEAN THE MANIFOLD PIPES, INSPECT, AND REINSTALL..
- INSTALL THE EXCHANGE CARTRIDGES AND CLOSE ALL COVERS.
- THE USED CARTRIDGES MUST BE SENT BACK TO BAYSAVER TECHNOLOGIES FOR EXCHANGE/RECYCLING AND CREDIT ON UNDAMAGED UNITS.

PERIODIC INSPECTIONS (DURING WET SEASON AND AFTER LARGE RAIN EVENTS):

- DURING THE WET SEASON, INSPECT PERIODICALLY FOR STANDING WATER, SEDIMENT, TRASH AND DEBRIS, AND TO IDENTIFY POTENTIAL PROBLEMS.
- REMOVE ACCUMULATED TRASH AND DEBRIS IN THE SEDIMENTATION BASIN, FROM THE RISER PIPE, AND THE FILTER BED DURING ROUTINE INSPECTIONS.
- INSPECT THE MEDIA FILTER ONCE DURING THE WET SEASON AFTER A LARGE RAIN EVENT TO DETERMINE WHETHER THE FACILITY IS DRAINING COMPLETELY WITHIN FIVE DAYS.
- IF THE FACILITY DRAIN TIME EXCEEDS FIVE DAYS, REMOVE THE TOP 50 MILLIMETERS (2 INCHES) OF SAND AND DISPOSE OF SEDIMENT. RESTORE MEDIA DEPTH TO 450 MILLIMETERS (18 INCHES) WHEN OVERALL MEDIA DEPTH DROPS TO 300 MILLIMETERS (12 INCHES).

STORMWATER CONTROL LEGEND

- PROPOSED DRAINAGE MANAGEMENT AREA.
- PROPOSED ROOF DRAINAGE MANAGEMENT AREA. CONTRACTOR TO CONNECT ROOF DRAINAGE TO ON-SITE MEDIA FILTER.
- PROPOSED DRAINAGE MANAGEMENT AREA. CONTRACTOR TO CONNECT DRAINAGE TO ON-SITE MEDIA FILTER.
- PROPOSED PERFORATED PVC PIPE IN BOTTOM OF BIORETENTION TREATMENT PLANTER
- PROPOSED OVERFLOW DRAIN IN PLANTER
- DMA 1 / IMP-1 — PROPOSED DRAINAGE MAP AREA ((DMA)-(AREA NUMBER), DMA-1), AND IMP NUMBER (IMP-1) DESIGNATION
- PROPOSED STORM DRAIN INLET STENCILING "NO DUMPING! DRAINS TO BAY" PER CITY SPECIFICATIONS

ON-SITE FLOW-THROUGH PLANTER MAINTENANCE PLAN

ROUTINE MAINTENANCE (MONTHLY INSPECTIONS, OR AS NEEDED AFTER STORM EVENTS):

- INSPECT THE PLANTER SURFACE AREA, INLETS AND OUTLETS FOR OBSTRUCTIONS AND TRASH; CLEAR AND OBSTRUCTIONS AND REMOVE TRASH, FALLEN LEAVES, AND DEBRIS.
- INSPECT PLANTER BOX AFTER STORMS TO ENSURE STRUCTURAL INTEGRITY OF THE BOX AND THAT THE PLANTER IS NOT CLOGGING, AND IS DRAINING WITHIN 3-4 HOURS AFTER STORM IF PONDED WATER DOES NOT DRAIN, THE SURFACE SOILS SHOULD BE TILLED OR REPLACED AND REPLANTED AS NECESSARY. IF MOSQUITO LARVAE ARE OBSERVED, CONTACT THE COUNTY VECTOR CONTROL DISTRICT AT (510) 567-6800.
- • INSPECT THE ENERGY DISSIPATION AT THE INLET TO ENSURE IT IS FUNCTIONING ADEQUATELY, AND THAT THERE IS NO SCOUR OF THE SURFACE MULCH AND REMOVE ANY ACCUMULATION OF SEDIMENT.
- CHECK THAT MULCH IS AT APPROPRIATE DEPTH (2 INCHES PER SOIL SPECIFICATIONS) AND REPLENISH AS NECESSARY.

BI-ANNUAL INSPECTION (AT LEAST TWICE A YEAR):

- PRUNE AND WEED THE PLANTER AREA.
- REMOVE AND REPLACE ANY DEAD OR DYING PLANTS.
- TREAT DISEASED PLANTS, AS NEEDED, USING PREVENTATIVE AND LOW-TOXIC MEASURES TO THE EXTENT POSSIBLE.
- AVOID THE USE OF PESTICIDES AND QUICK-RELEASE SYTHETIC FERTILIZERS AND FOLLOW THE PRINCIPLES OF INTEGRATED PEST MANAGEMENT (IPM). CHECK WITH THE LOCAL JURISDICTION FOR ANY LOCAL POLICIES REGARDING THE USE OF PESTICIDES AND FERTILIZERS.
- MAINTAIN THE IRRIGATION SYSTEM AND ENSURE THAT PLANTS ARE RECEIVING THE CORRECT AMOUNT OF WATER (IF APPLICABLE).

ANNUAL INSPECTION (JUST PRIOR TO THE WET SEASON):

- APPLY 1" TO 2" OF COMPOSED MULCH TO BE APPLIED ONCE A YEAR AND WHEN EROSION IS EVIDENT; SPOT MULCHING MAY BE SUFFICIENT FOR RANDOM VOID AREAS.

LEGEND

PROPOSED		EXISTING
	PROPERTY LINE	
	EASEMENT LINE	
9	1-FOOT CONTOUR	9
10	5-FOOT CONTOUR	10
WTR	WATER LINE	WTR
FP	FIRE PROTECTION WATER LINE	WTR
IRR	IRRIGATION WATER LINE	WTR
SS	SANITARY SEWER LINE	SAN
SD	STORM DRAIN LINE	SD
	UNDERGROUND ELECTRIC	UE
	GAS LINE	G
	OVERHEAD ELECTRIC	OE
	FENCE	x
	APPROXIMATE LIMIT OF DISTURBANCE	
	TREE	
	WATER VALVE	WV
	FIRE HYDRANT/CONNECTION	FDC
WM WV	WATER METER OR BOX	WM WV
	SEWER MANHOLE	S
	SANITARY SEWER CLEANOUT	SSCO
	STORM DRAIN MANHOLE	D
	STORM DRAIN CLEANOUT	
	CATCH BASIN	
	LIGHT POLE, UTILITY POLE, OR PULLBOX	LP PB
	GAS VALVE	GV
	ELECTRIC VAULTS	EM SV
	ELECTRIC BOX	EM SV BR
	SIGN	
	TRENCH DRAIN	
	TRANSFORMER	
	STANDARD PCC PAVEMENT.	
	STANDARD AC PAVEMENT.	
	STANDARD LANDSCAPE. SEE LANDSCAPE PLANS FOR DETAILS	
	STANDARD BIOTREATMENT PLANTER.	
	STANDARD PERVIOUS PAVEMENT	
	PROPOSED DECOMPOSED GRANITE. SEE LANDSCAPE PLANS FOR DETAILS	

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REGISTERED PROFESSIONAL ENGINEER
REGO VICENTE PRANTO
C 69670
EXP. 6-30-2022
CIVIL
STATE OF CALIFORNIA
2021/06/18

VISTA WOODS APARTMENTS
600 ROBLE AVENUE
Pinole, CA, 94564

STORMWATER CONTROL PLAN

DATE 06/18/2021 ISSUE PLANNING RESUBMITTAL

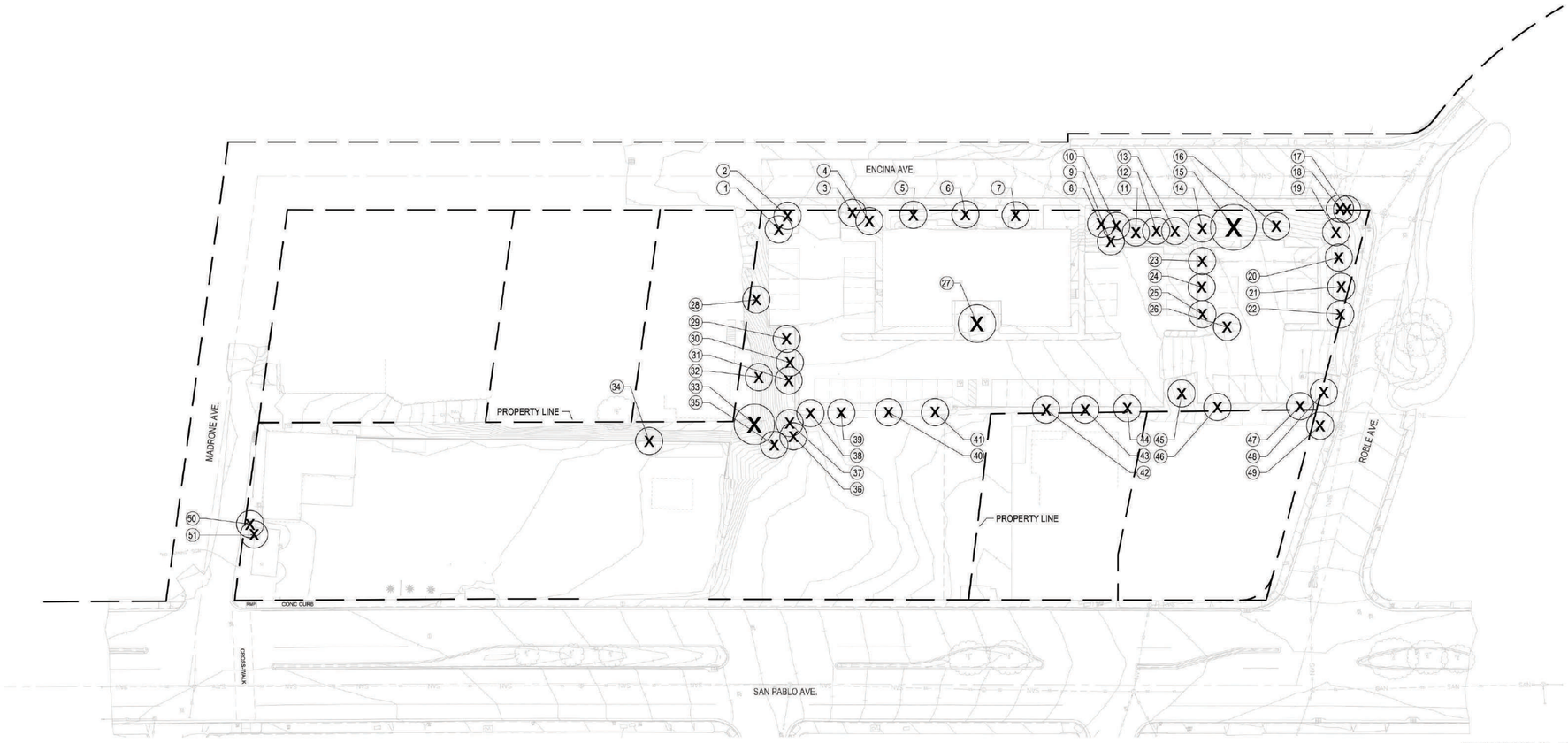
DEVELOPMENT APPLICATION

DRAWN BY	KL
JOB NO.	2021-350-001
SCALE	AS SHOWN

SHEET

C4.0

BIMcloud: JARVIS - BIMcloud Basic for ARCHICAD 24/Pinole/Pinole 3/9/2021



TREE REMOVAL PLAN 1

N Scale: 1/32" = 1'-0"

NOTES

1. REFER TO TREE INVENTORY TABLE ON L1.02 FOR INDIVIDUAL TREE DATA.

PROJECT

VISTA WOODS APARTMENTS
600 ROBLE AVE
PINOLE, CA 94564

PROJECT ID

AA #2101

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DATE

SCALE

DRAWING NUMBER

L1.01

TREE INVENTORY

TREE IDENTIFICATION NUMBER	TREE TYPE	DIAMETER AT BREAST HEIGHT (DBH)	PROTECTED
1	CANOPY	8"	
2	CANOPY	12"	
3	CANOPY	15"	
4	CANOPY	15"	
5	CANOPY	12"	
6	CANOPY	12"	
7	CANOPY	12"	
8	CANOPY	6"	
9	CANOPY	6"	
10	CANOPY	10"	
11	CANOPY	8"	
12	CANOPY	8"	
13	CANOPY	6"	
14	CANOPY	12"	
15	CANOPY	18"	X
16	CANOPY	15"	
17	CANOPY	8"	
18	CANOPY	18"	X
19	CANOPY	12"	
20	CANOPY	12"	
21	CANOPY	12"	
22	CANOPY	10"	
23	CANOPY	6"	
24	CANOPY	12"	
25	CANOPY	10"	
26	CANOPY	12"	
27	CANOPY	12"	
28	CANOPY	3"	
29	CANOPY	4"	
30	CANOPY	4"	
31	CANOPY	4"	
32	CANOPY	3"	
33	CANOPY	36"	X
34	CANOPY	4"	
35	CANOPY	4"	
36	CANOPY	4"	
37	CANOPY	4"	
38	CANOPY	10"	
39	CANOPY	8"	
40	CANOPY	8"	
41	CANOPY	12"	
42	CANOPY	12"	
43	CANOPY	12"	
44	CANOPY	4"	
45	CANOPY	10"	
46	CANOPY	12"	
47	CANOPY	8"	
48	CANOPY	10"	
49	CANOPY	8"	
50	CANOPY	4"	
51	CANOPY	4"	

TOTAL TREES REMOVED	51
TOTAL CALIPER INCHES REMOVED	491

NOTES
1. ADDITIONAL PROTECTED TREE SPECIES MAY BE PRESENT ON SITE. REFER TO CITY OF PINOLE LIST OF PROTECTED TREE SPECIES.

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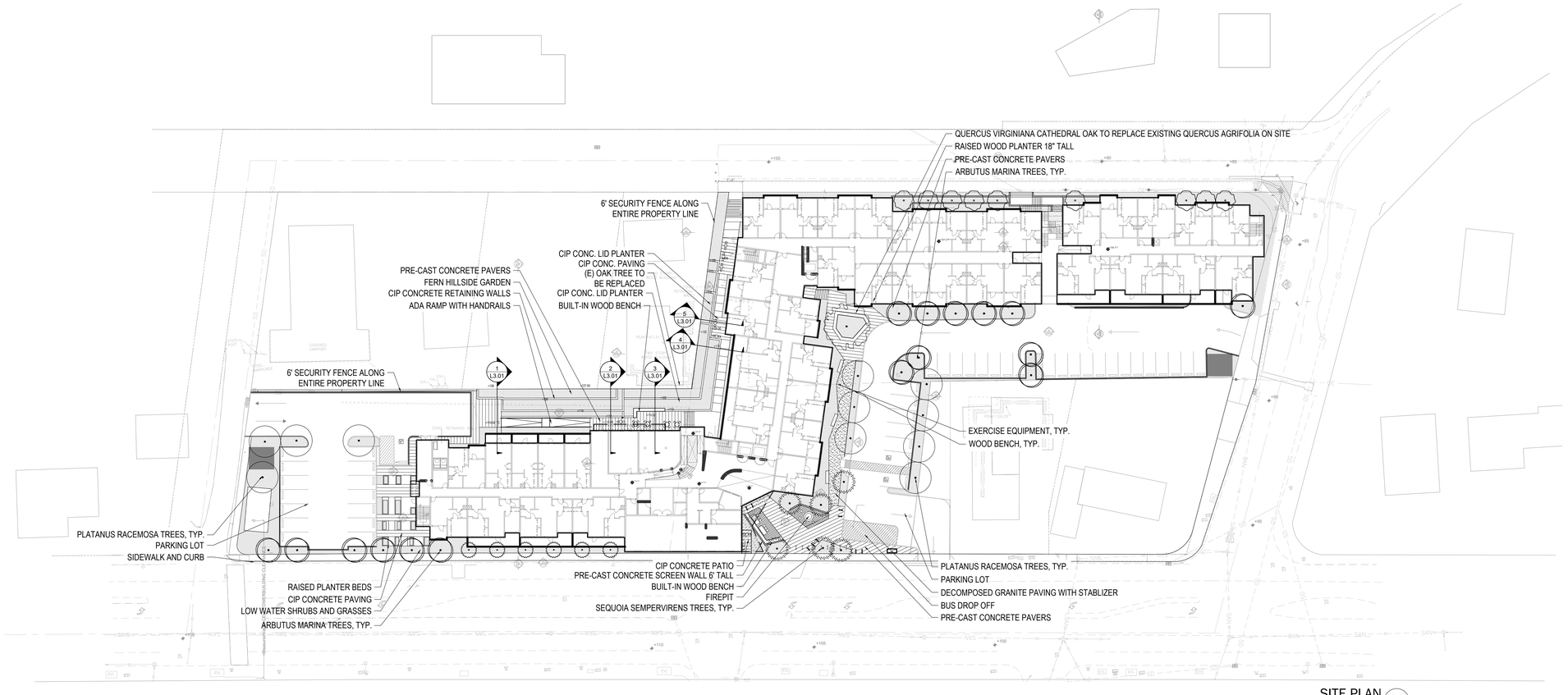

SITE PLAN 1

N Scale: 1/32" = 1'-0"

WOOD DECKING

PRECAST CONCRETE PAVERS

SCORED CONCRETE WITH TOP CAST FINISH

PROPOSED HARDSCAPE MATERIAL 2

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DRAWING TITLE: SITE PLAN

DATE: **05.16.2021**

SCALE: **1/32" =1'-0"**
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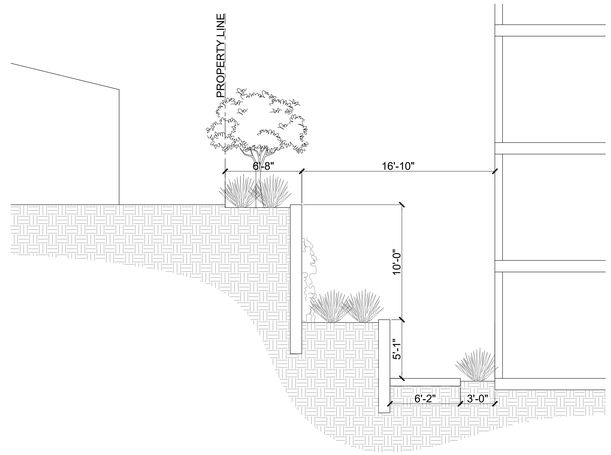
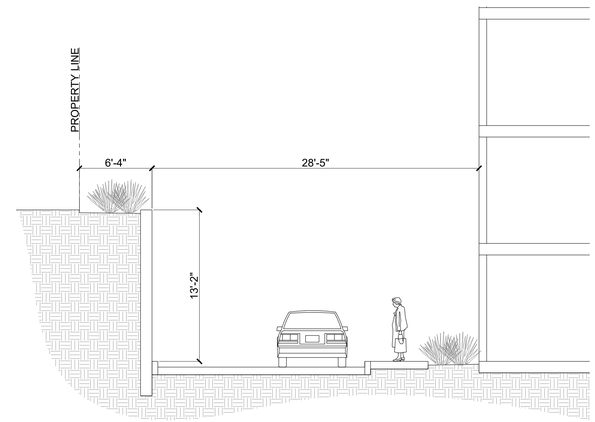
DRAWING NUMBER: **L2.01**



SECTION 4
Scale: 3/16" = 1'-0"



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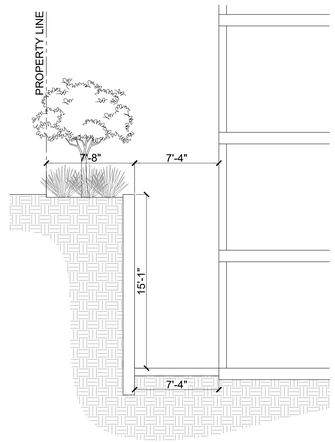

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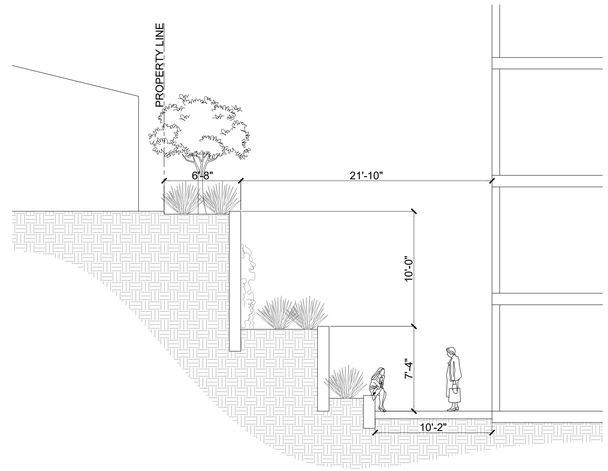

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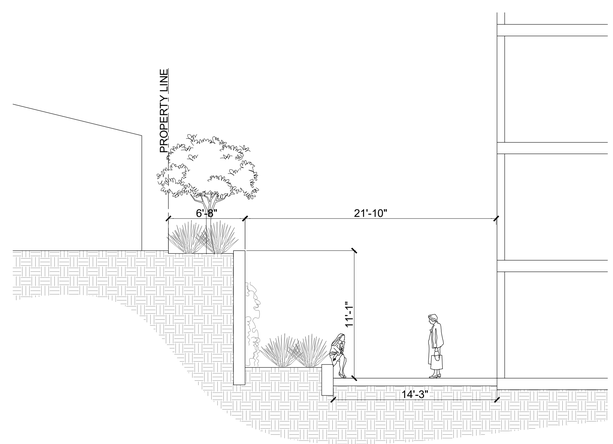

SECTION 3
Scale: 3/16" = 1'-0"

NOTES

1. WALL ELEVATIONS PROVIDED FOR DESIGN INTENT. FINAL WALL ELEVATIONS TO BE DETERMINED BY STRUCTURAL.
2. REFER TO STRUCTURAL DRAWINGS FOR WALL AND FOOTING DETAILS.

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TREE SCHEDULE

SYMBOL	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	WUCOLS	FULL GROWTH	NOTES
	21	ARBUTUS 'MARINA'	MARINA STRAWBERRY TREE	36" BOX	LOW	20-30' TALL, 15-25' WIDE	
	12	PLATANUS RACEMOSA	CALIFORNIA SYCAMORE	48" BOX	MODERATE		
	9	SEQUOIA SEMPERVIRENS	COAST REDWOOD	48" BOX	LOW	20'x15'	
	1	QUERCUS VIRGINIANA 'CATHEDRAL'	CATHEDRAL OAK	60" BOX	LOW	20'x15'	

PLANTING SCHEDULE

SYMBOL	SYMBOL #	QUANTITY	ABBREVIATION	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	WUCOLS	EXPOSURE	NOTES
	S-1	174	ADI ALE	ADIANTUM ALEUTICUM	NORTHERN MAIDENHAIR FERN	5 GAL.				
	S-2	14	ARC DEN	ARCTOSTAPHYLOS DENSIFLORA	HOWARD MCMINN MANZANITA	15 GAL.				
	S-3	31	ART CAL	ARTEMESIA CALIFORNICA	CALIFORNIA SAGEBRUSH	5 GAL.				
	S-4	127	CEA WHE	CEANOTHUS 'WHEELER'S CANYON'	WHEELERS CANYON CALIFORNIA LILIAC	5 GAL.				
	S-5	294	ERI ARB	ERIGONIUM ARBORESCENS	SANTA CRUZ ISLAND BUCKWHEART	5 GAL.				
	S-6	4	JUN PAT	JUNCUS PATENS	RUSH	5 GAL.				
	S-7	109	LEY CON	LEYMUS CONDENSTATUS 'CANYON PRINCE'	CANYON PRINCE WILD RHYE	5 GAL.				
	S-8	497	MUH CAP	MUHLENBERGIA CAPILLARIS 'LENCA'	PINK HAIR GRASS	5 GAL.				
	S-9	3	MUH RIG	MUHLENBERGIA RIGENS	DEER GRASS	5 GAL.				
	S-10	320	PEN FAI	PENNISETUM 'FAIRY TAILS'	EVERGREEN FOUNTAIN GRASS	5 GAL.				
	S-11	185	POL MUN	POLYSTICHUM MUNITUM	WESTERN SWORD FERN	5 GAL.				
	S-12	77	POL SCO	POLYPODIUM SCOULERI	LEATHER LEAF FERN	5 GAL.				
	S-13	426	SAL SOM	SALVIA SOMONENSIS	CREEPING SAGE	5 GAL.	24" O.C.			
	S-14	330	SEN MAN	SENECIO MANDRALISCAE	BLUE CHALKSTICKS	5 GAL.	24" O.C.			
	S-15	103	WOO FIM	WOODWARDIA FIMBRIATA	GIANT CHAIN FERN	5 GAL.				

LANDSCAPE NOTES

-TOTAL AMOUNT OF TREES PROPOSED: 24

- TOTAL AMOUNT OF STREET TREES IN PROJECT: 0 TREES

- THE MINIMUM ACCEPTABLE SIZE FOR STREET TREES AND ON-SITE TREES SHALL BE A 36" BOX. NEWLY PLANTED TREES SHALL BE SUPPORTED WITH STAKES OR GUY WIRE.

- SHRUBS SHALL BE A MINIMUM SIZE OF 5 GALLONS. WHEN PLANTING AS A HEDGE OR SCREEN.

- SHRUBS SHALL BE PLANTED WITH 2' TO 4' OF SPACING, DEPENDING ON THE PLANT SPECIES.

- GROUND COVER SHALL BE GENERALLY SPACED AT A MAXIMUM SIZE OF 6" TO 8" O.C. WHEN USED AS GROUND COVER. MINIMUM 1 GALLON SIZED SHRUB MAY BE PLANTED 18" TO 24" O.C.

- USE RECYCLED CONTENT MULCH OR OTHER LANDSCAPE AMENDMENTS.

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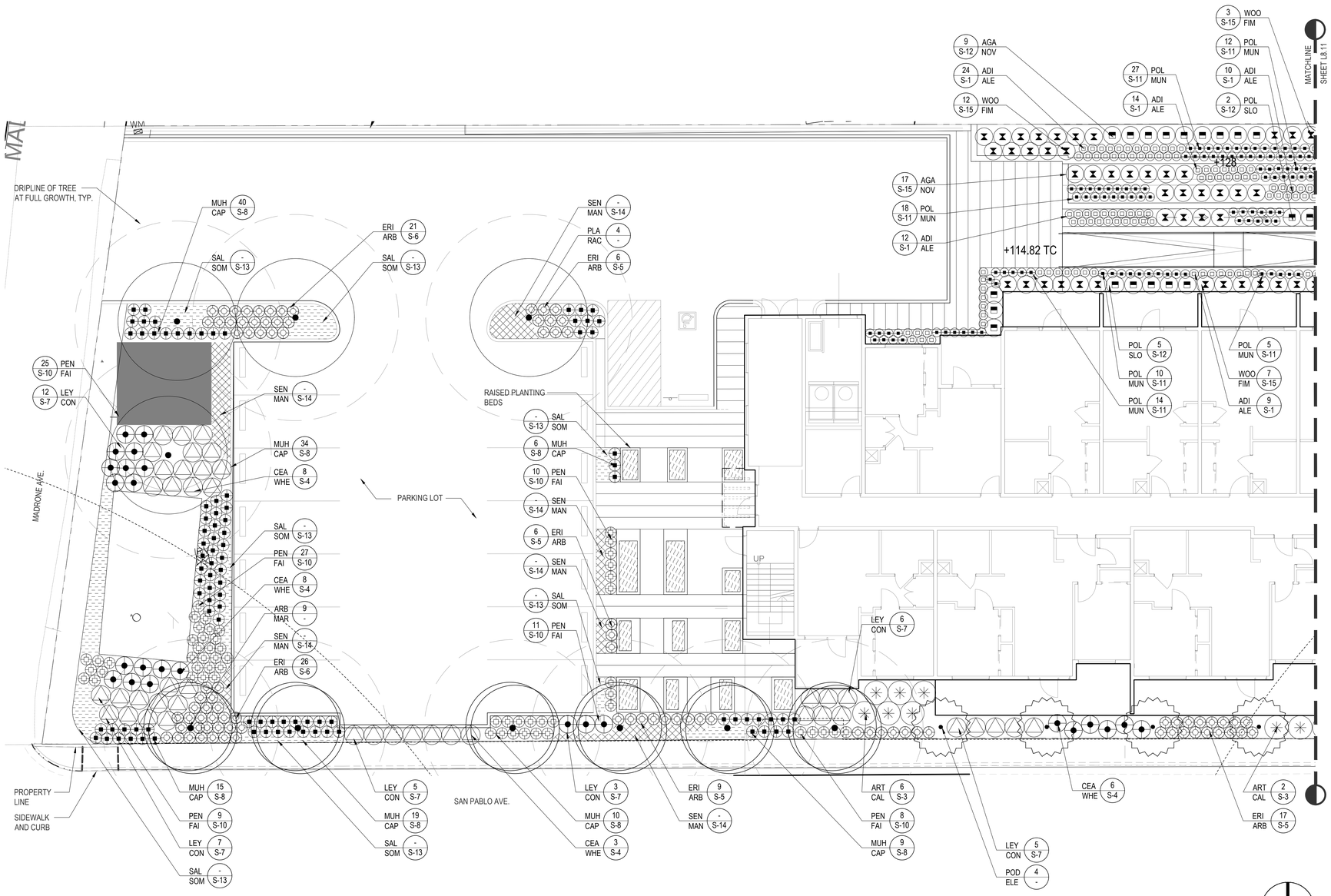

PLANTING PLAN 1
Scale: 1/8" = 1'-0"

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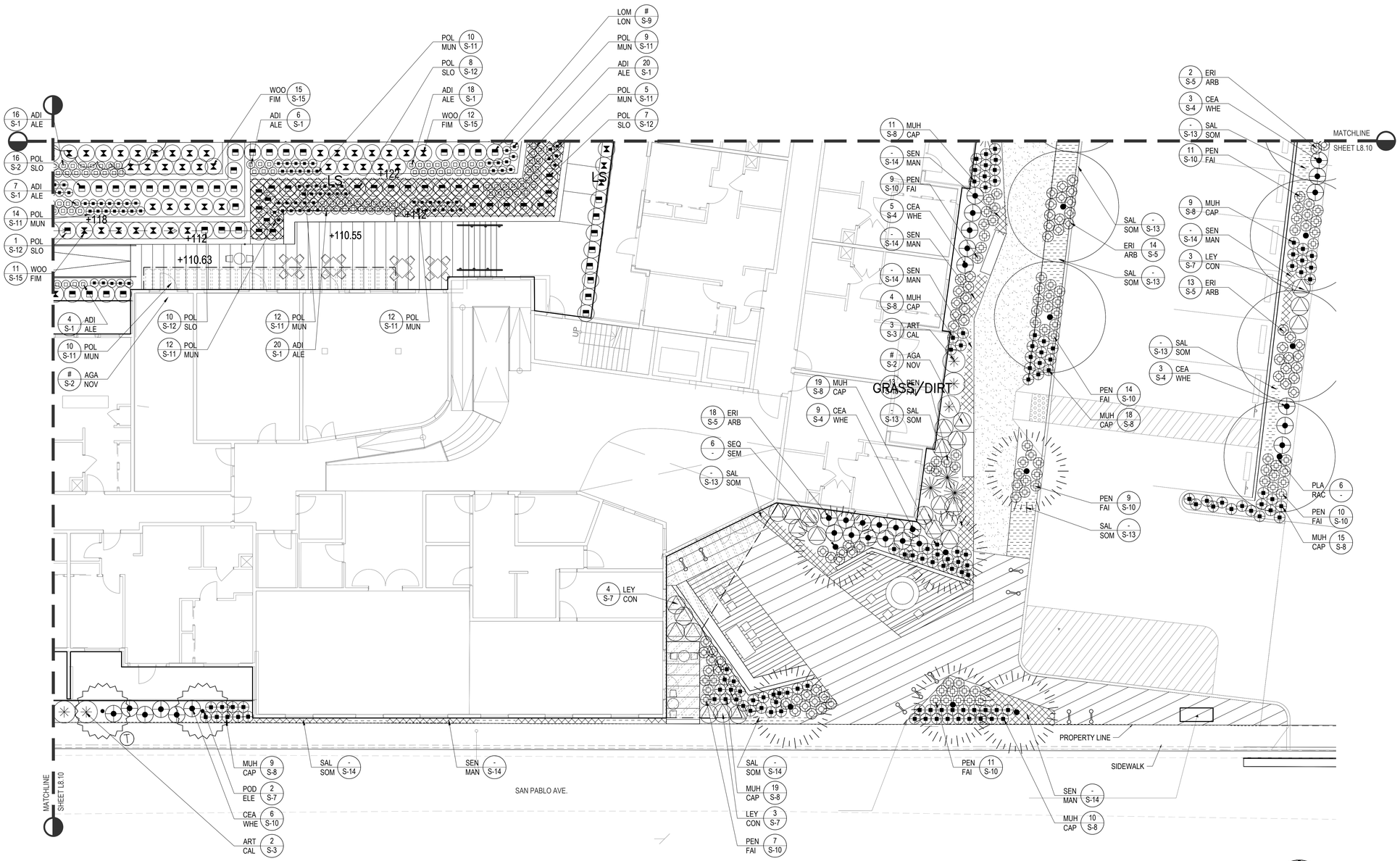

PLANTING PLAN 1
Scale: 1/8" = 1'-0"

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PLANTING PLAN

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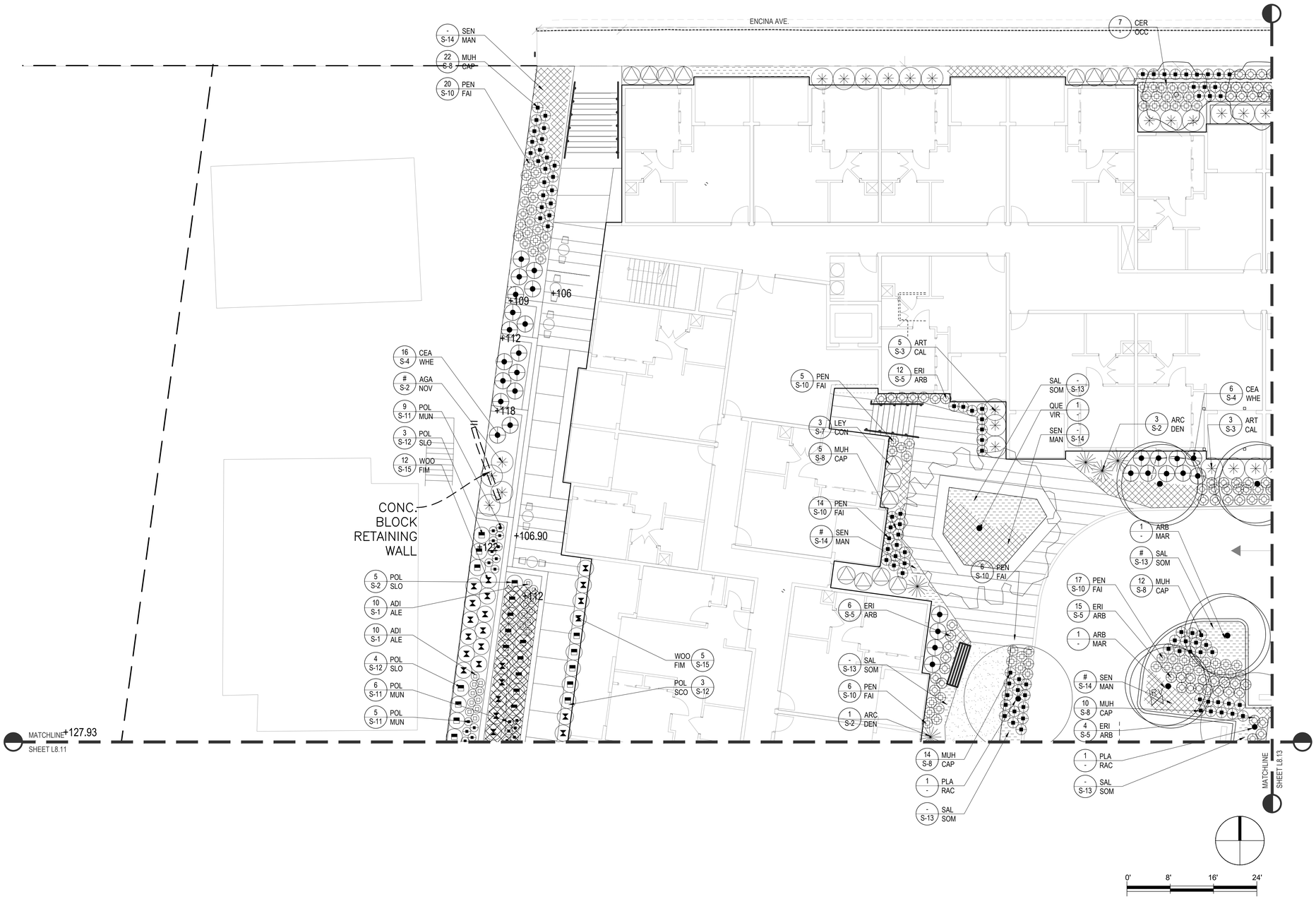


PLANTING PLAN 1
Scale: 1/8" = 1'-0"

PROJECT
VISTA WOODS APARTMENTS
600 ROBLE AVE
PINOLE, CA 94564

PROJECT ID
AA #2101

ARTIFACT
LANDSCAPE ARCHITECTURE + URBAN DESIGN
www.artifactlandscape.com
info@artifactlandscape.com

CONSULTANTS
NOT FOR CONSTRUCTION
CONEPTUAL PLAN ONLY

ISSUED FOR

REVISIONS
ENTITLEMENT SET

KEY PLAN

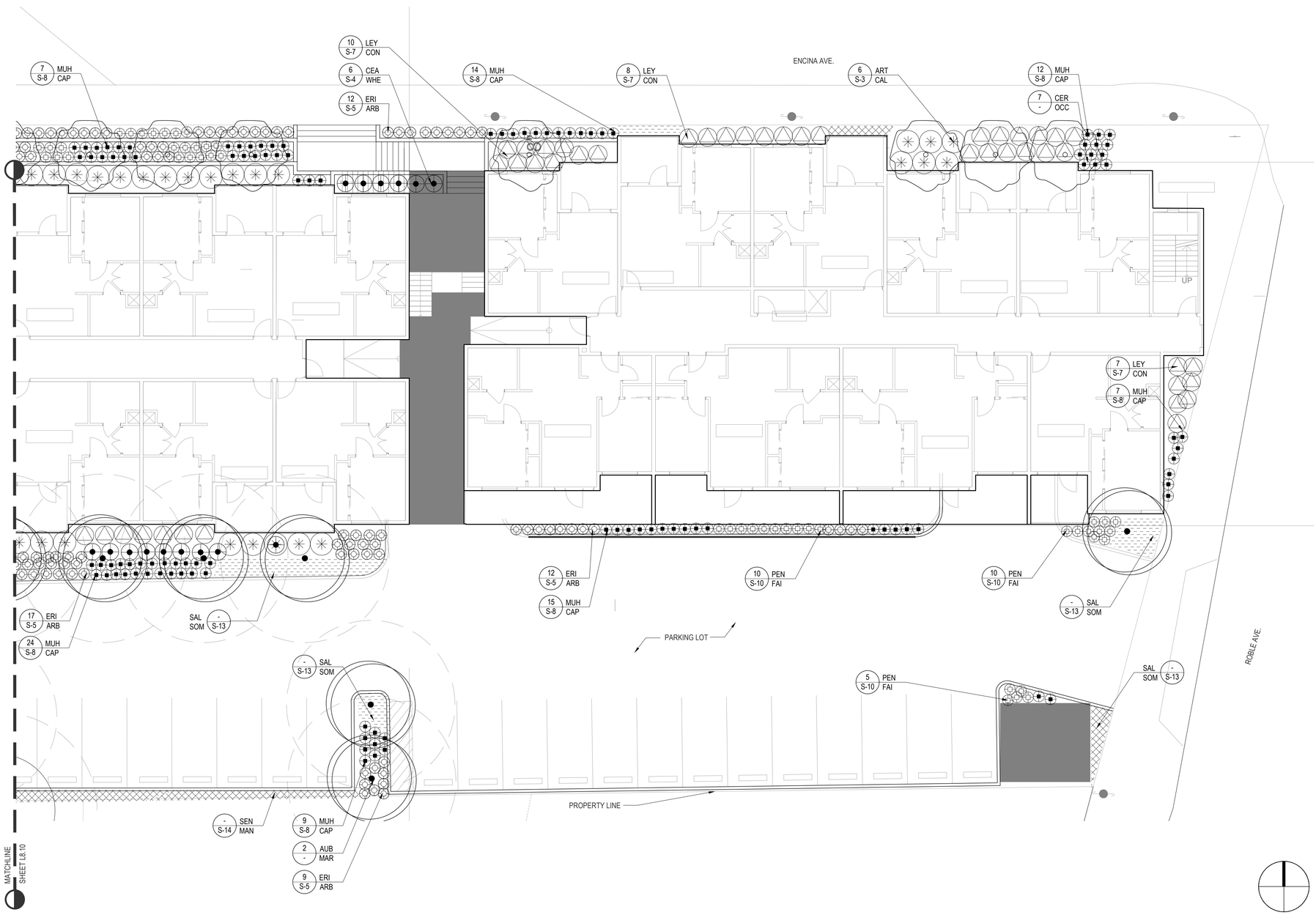
NOT FOR CONSTRUCTION

DRAWING TITLE
PLANTING PLAN

DATE
05.16.2021

SCALE
1/8" =1'-0"
(WHEN PRINTED ON 30X42" SHEET)

DRAWING NUMBER
L8.12



PLANTING PLAN 1
Scale: 1/8" = 1'-0"

PROJECT
VISTA WOODS APARTMENTS
600 ROBLE AVE
PINOLE, CA 94564

PROJECT ID
AA #2101

ARTIFACT
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KEY PLAN

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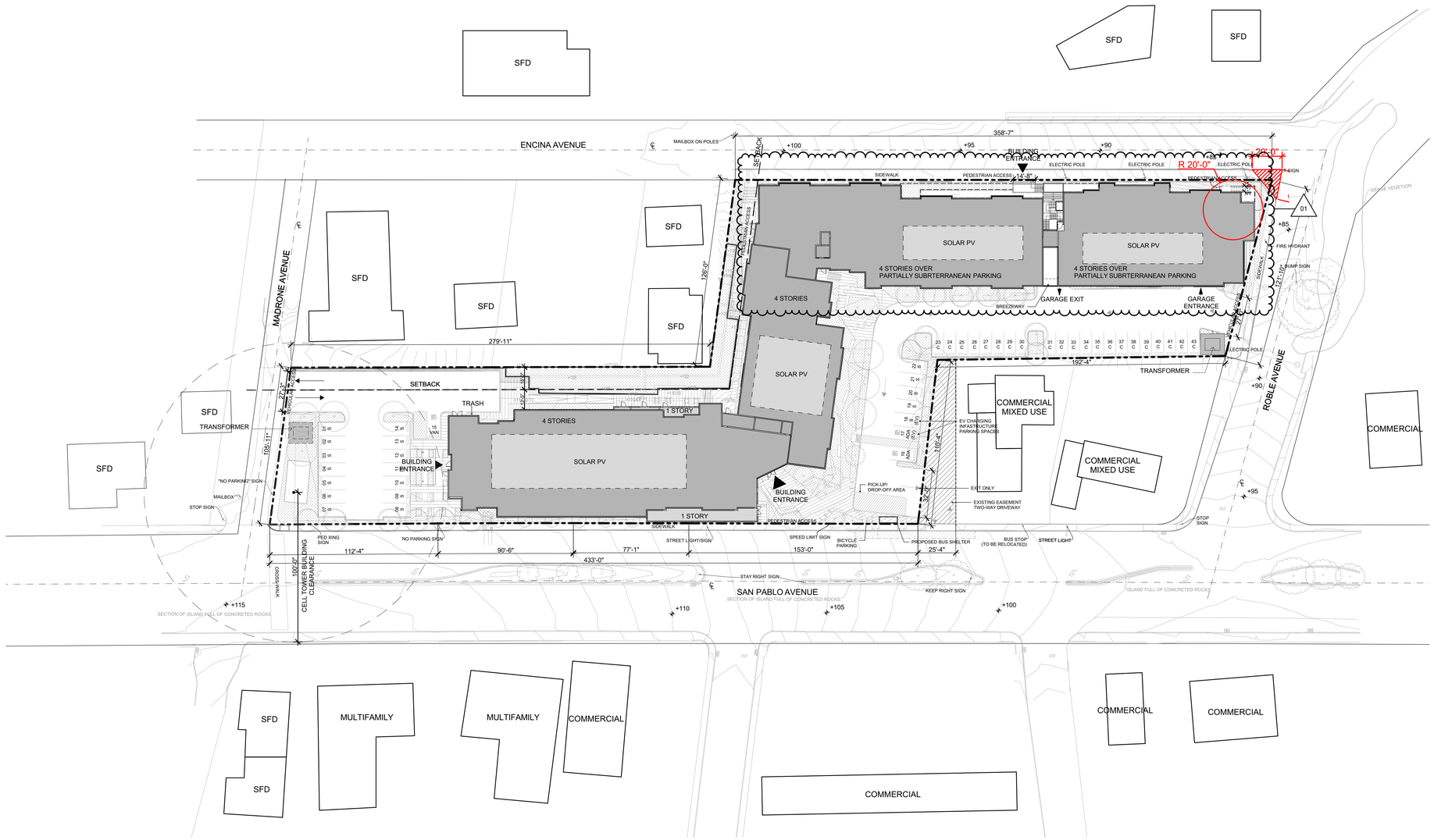
DRAWING TITLE
PLANTING PLAN

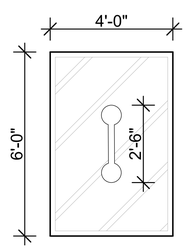
DATE
05.16.2021

SCALE
1/8" =1'-0"
(WHEN PRINTED ON 30X42" SHEET)

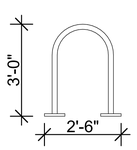
DRAWING NUMBER
L8.13



SITE PLAN
SCALE: 1/32" = 1'-0" (1)



TYP. ENLARGED BICYCLE PARKING
SCALE: 1/2" = 1'-0" (2)



BICYCLE STAND ELEVATION
SCALE: 1/2" = 1'-0" (3)

GENERAL NOTES

1.DEMO ALL EXISITING STRUCTURES
2.PREPARE SITE FOR PROPOSED NEW CONSTRUCTION; SEE CIVIL PLANS

LEGEND

- PROPERTY LINE
- SETBACK LINE
- STREET CENTER LINE
- EXISTING TREE
- ELECTRIC POLE
- STREET SIGN
- STREET LIGHT
- FIRE HYDRANT

N

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SCOTT BERNARD SULLIVAN
C-33139
03/31/2023
RENEWAL DATE
STATE OF CALIFORNIA

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Site Plan

DATE	ISSUE
03/30/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION 01

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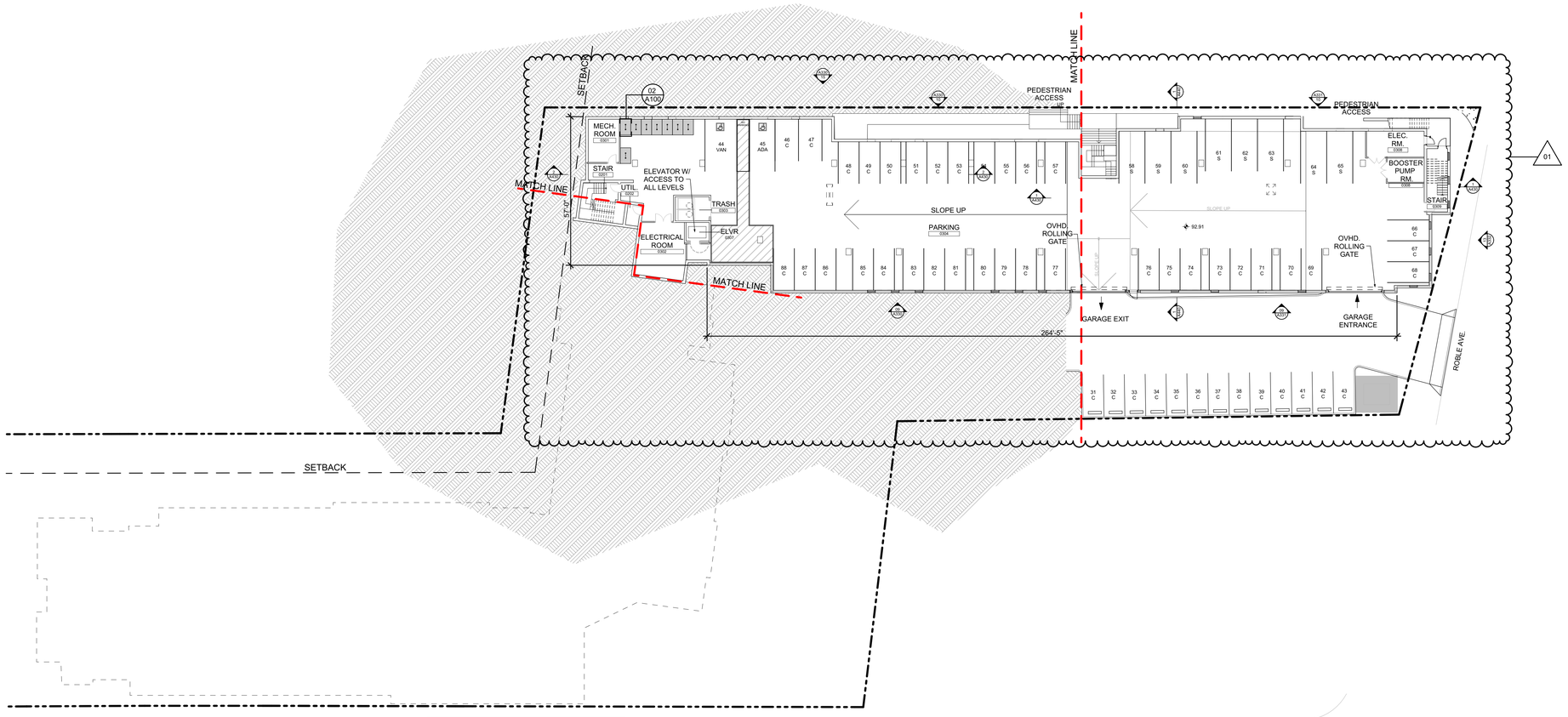
SCALE	AS NOTED

SHEET
A100

BIMcloud: JARVIS - BIMcloud Basic for ARCHICAD 24/Private/Private 6/18/2021

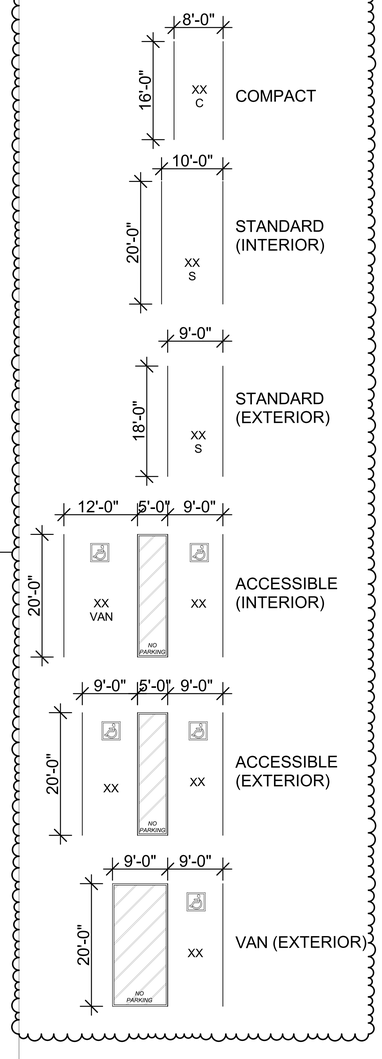


PROPOSED UNDERGROUND PARKING FLOOR PLAN (1)
SCALE: 1" = 20'

GENERAL NOTES

1. DEMO ALL EXISITING STRUCTURES
2. PREPARE SITE FOR PROPOSED NEW CONSTRUCTION; SEE CIVIL PLANS

PARKING LEGEND



LEGEND

- PROPERTY LINE
- SETBACK LINE
- OVHD. ROLLING GATE

N

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03/31/2023
RENEWAL DATE
STATE OF CALIFORNIA

VISTA WOODS APARTMENTS
600 ROBLE AVENUE
1106 SAN PABLO AVENUE
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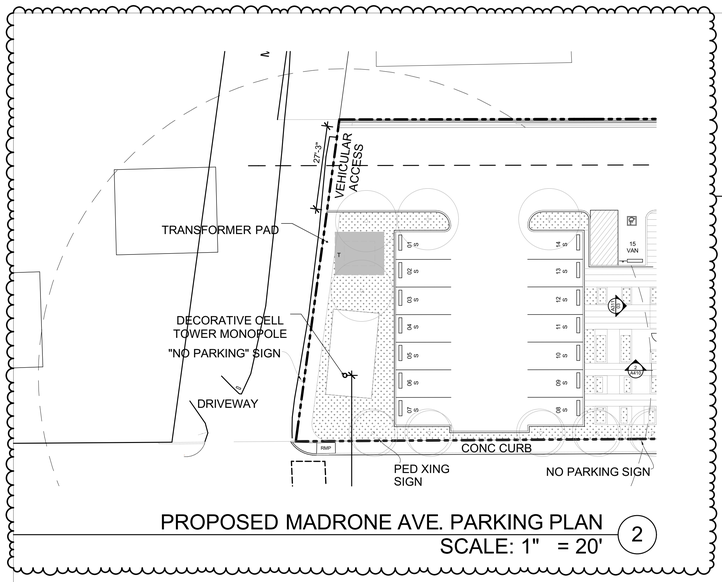
Parking Overall Floor Plan

DATE	ISSUE
03/30/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION

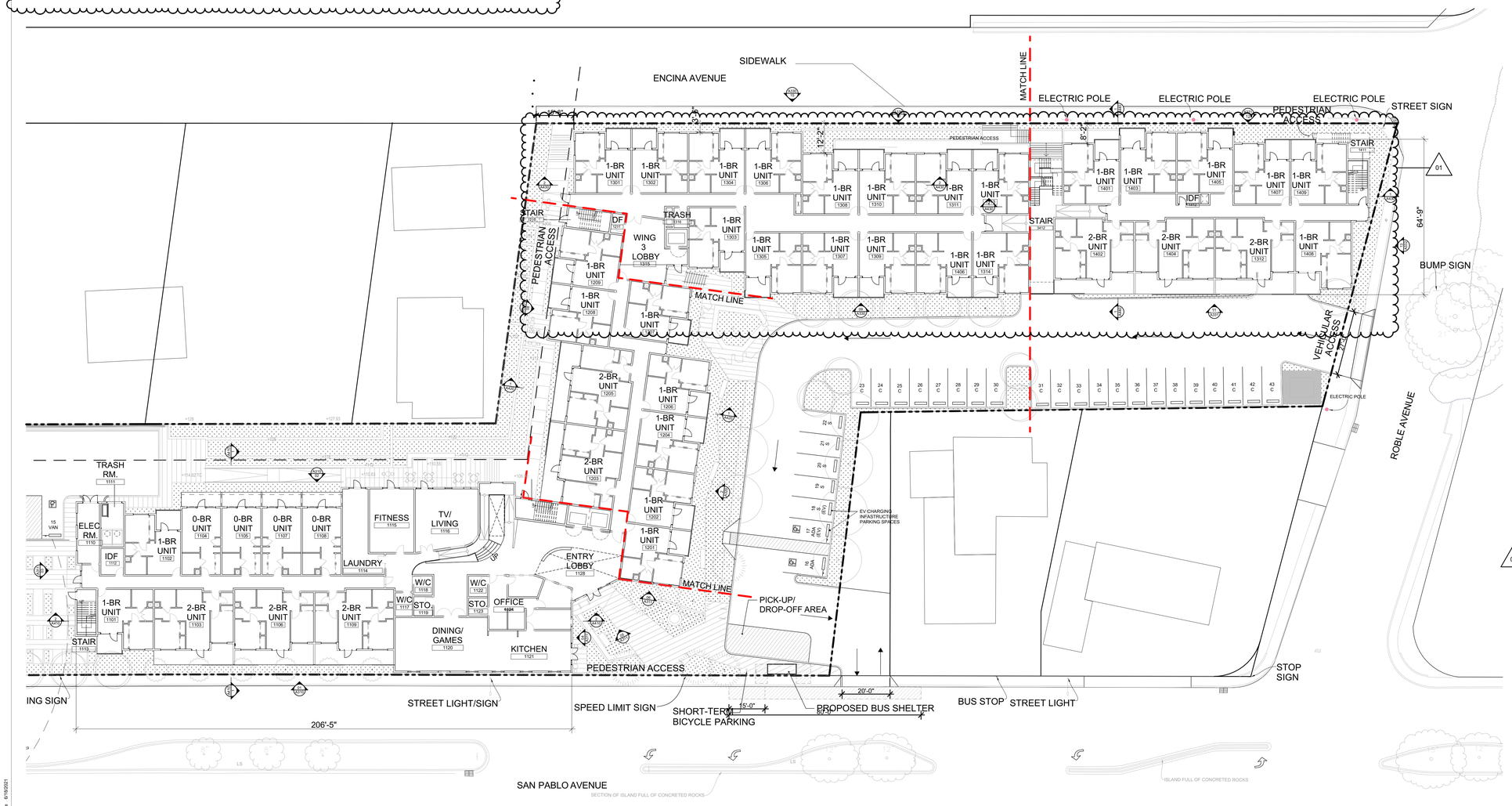
DRAWN BY	EC
ARCH. JOB NO.	2103A
SCALE	AS NOTED

SHEET
A200

BIMcloud: JARVIS - BIMcloud Basic for ARCHICAD 24/Private/Private 6/18/2021



PROPOSED MADRONE AVE. PARKING PLAN (2)
SCALE: 1" = 20'



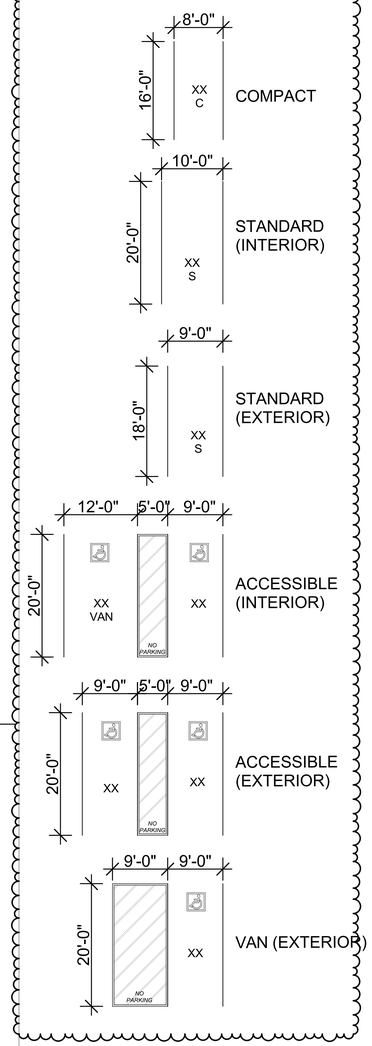
PROPOSED GROUND FLOOR PLAN (1)
SCALE: 1" = 20'

GENERAL NOTES

1.DEMO ALL EXISITING STRUCTURES
2.PREPARE SITE FOR PROPOSED NEW CONSTRUCTION; SEE CIVIL PLANS

Units Types Ground Floor	
Unit	Quantity
0-BR UNIT	4
1-BR UNIT	29
2-BR UNIT	8
	41

PARKING LEGEND



LEGEND

PROPERTY LINE
SETBACK LINE

N

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03/31/2023
RENEWAL DATE
STATE OF CALIFORNIA

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600 ROBLE AVENUE
1106 SAN PABLO AVENUE
1230 SAN PABLO AVENUE
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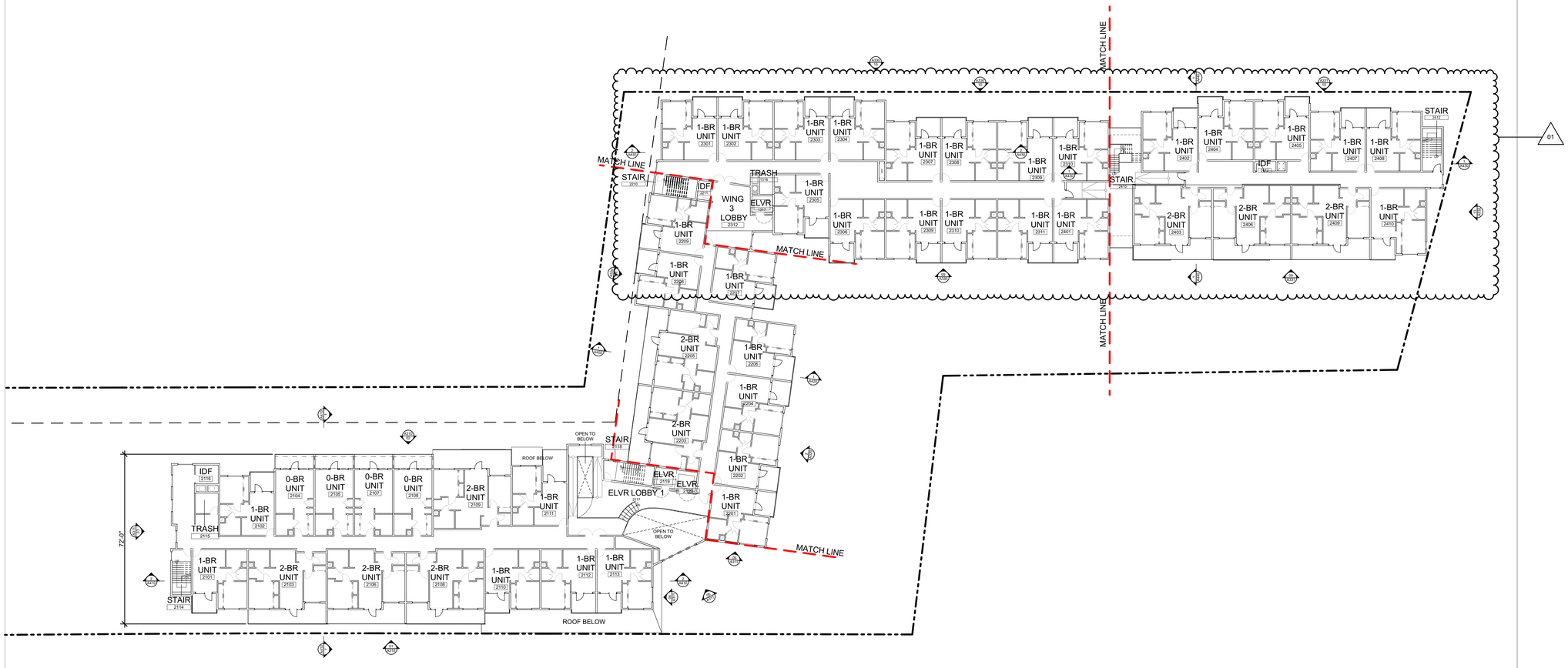
Ground Floor Overall Floor Plan

DATE	ISSUE
03/30/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION

DRAWN BY	EC
ARCH. JOB NO.	2103A
SCALE	AS NOTED

SHEET
A210

BIMcloud_JARVIS : BIMcloud Basic by ARCHICAD 24/Private/Private , 6/18/2021



PROPOSED SECOND FLOOR PLAN (1)
SCALE: 1" = 20'

GENERAL NOTES

1.DEMO ALL EXISITING STRUCTURES
2.PREPARE SITE FOR PROPOSED NEW CONSTRUCTION; SEE CIVIL PLANS

Units Types Second Floor	
Unit	Quantity
0-BR UNIT	4
1-BR UNIT	33
2-BR UNIT	9
	46

LEGEND

PROPERTY LINE

SETBACK LINE

N

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C-33139
03/31/2023
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STATE OF CALIFORNIA

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PINOLE, CA, 94564

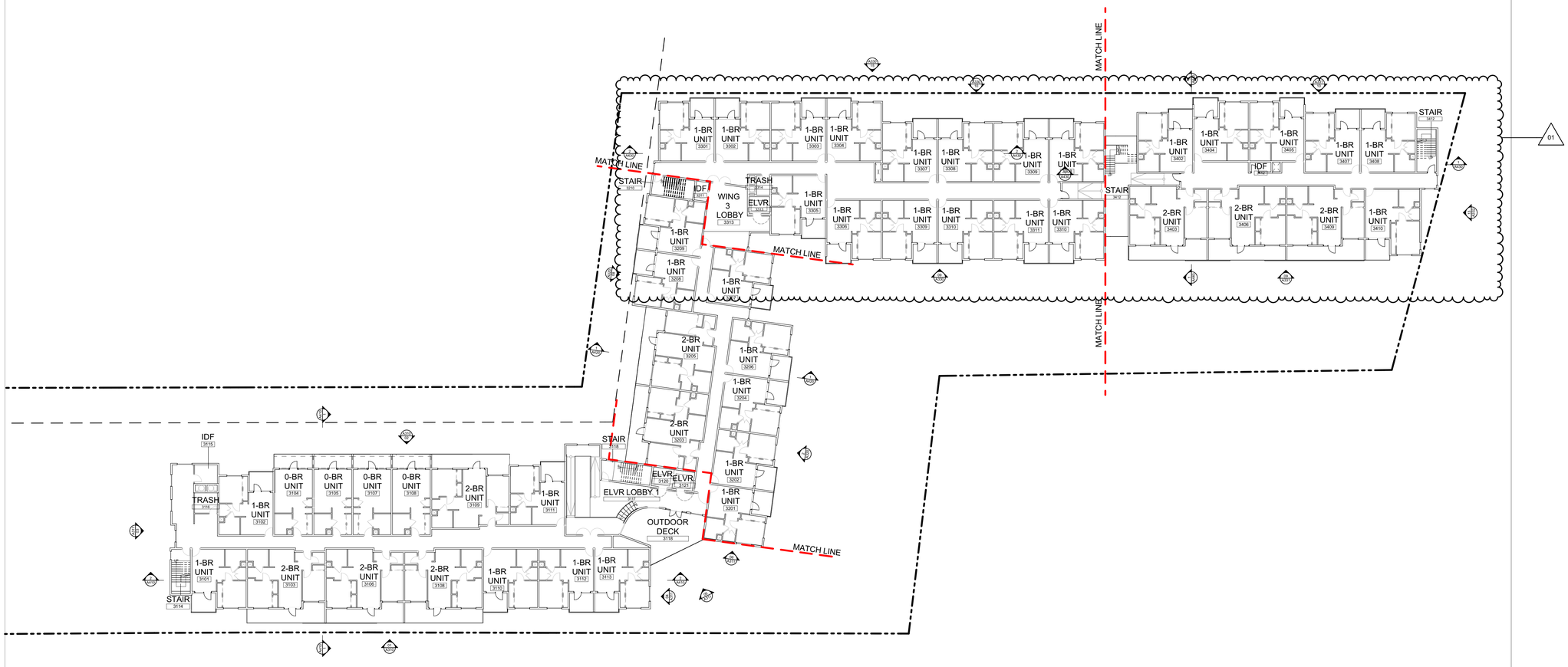
Second Floor Overall Floor Plan

DATE	ISSUE
03/30/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION (1)

DRAWN BY	EC
ARCH. JOB NO.	2103A
SCALE	AS NOTED

SHEET
A220

BIMcloud: JARVIS - BIMcloud Basic for ARCHICAD 24/Private/Private - 6/18/2021



PROPOSED THIRD FLOOR PLAN (1)
SCALE: 1" = 20'

GENERAL NOTES

1.DEMO ALL EXISITING STRUCTURES
2.PREPARE SITE FOR PROPOSED NEW CONSTRUCTION; SEE CIVIL PLANS

Units Types Third Floor	
Unit	Quantity
0-BR UNIT	4
1-BR UNIT	33
2-BR UNIT	9
	46

LEGEND

PROPERTY LINE

SETBACK LINE

N

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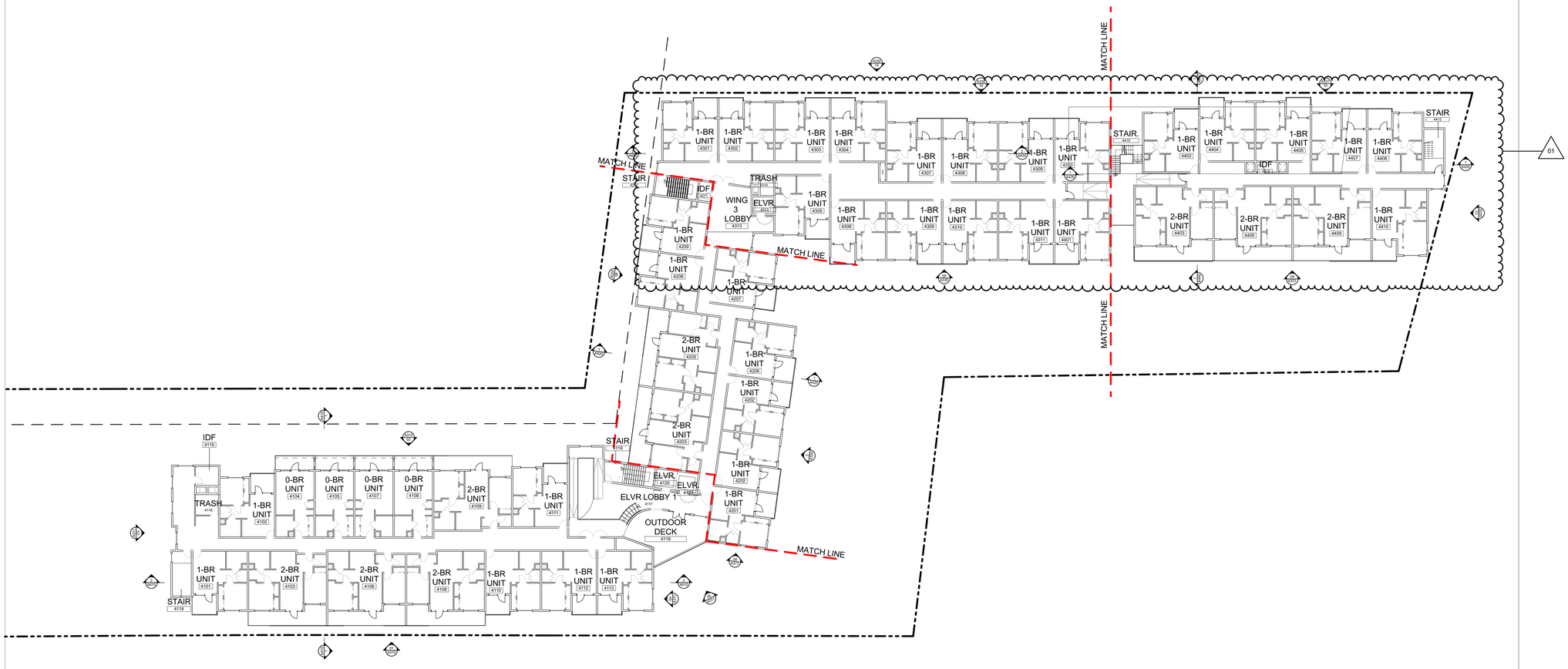
Third Floor Overall Floor Plan

DATE	ISSUE
03/30/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION

DRAWN BY	EC
ARCH. JOB NO.	2103A
SCALE	AS NOTED

SHEET
A230

BIMcloud: JARVIS - BIMcloud Basic for ARCHICAD 24/Private/Private 6/18/2021



PROPOSED FOURTH FLOOR PLAN (1)
SCALE: 1" = 20'

GENERAL NOTES

1.DEMO ALL EXISITING STRUCTURES
2.PREPARE SITE FOR PROPOSED NEW CONSTRUCTION; SEE CIVIL PLANS

Units Types Fourth Floor	
# BR	Quantity
0-BR UNIT	4
1-BR UNIT	33
2-BR UNIT	9
	46

LEGEND

PROPERTY LINE

SETBACK LINE

N

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Fourth Floor Overall Floor Plan

DATE	ISSUE
03/30/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION 1

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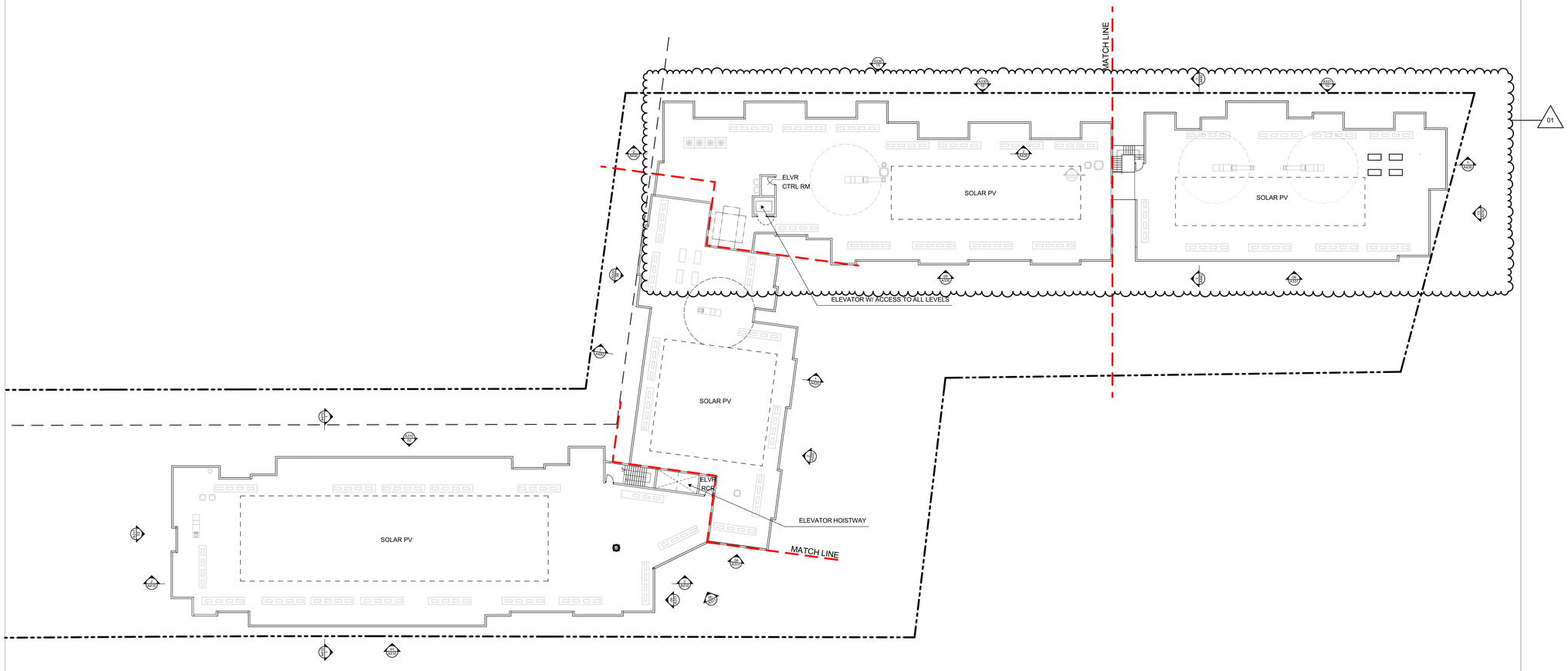
SCALE	AS NOTED

SHEET
A240

BIM360cloud: JARVIS - BIM360cloud Basics for ARCHICAD 24/Private/Private 6/18/2021



PROPOSED ROOF PLAN (1)
SCALE: 1" = 20'

GENERAL NOTES

1.DEMO ALL EXISITING STRUCTURES
2.PREPARE SITE FOR PROPOSED NEW CONSTRUCTION; SEE CIVIL PLANS

LEGEND

PROPERTY LINE
SETBACK LINE

N

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Roof Overall Floor Plan

DATE	ISSUE
03/30/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION 1

DRAWN BY	EC
ARCH. JOB NO.	2103A
SCALE	AS NOTED

SHEET
A250

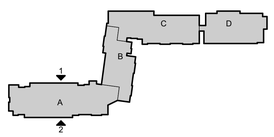
BIM cloud: JARVIS - BIM cloud Basic for ARCHICAD 24/Private/Private 6/18/2021

WING A - SOUTH ELEVATION (2)
SCALE: 1/8" = 1'-0"

WING A - NORTH ELEVATION (1)
SCALE: 1/8" = 1'-0"

MATERIALS LEGEND

- METAL CLADDING
- PERFORATED METAL SCREEN
- WINDOW FRAME
- METAL RAILING
- DARK TAN STUCCO
- LIGHT TAN STUCCO
- DARK TAN STUCCO
- PAINTED STUCCO AT BALCONY PARTITIONS
- PAINTED STUCCO AT BALCONY PARTITIONS
- PAINTED STUCCO AT BALCONY PARTITIONS
- PAINTED STUCCO AT BALCONY PARTITIONS



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PINOLE, CA, 94564

Wing A South & North - Exterior Elevation

DATE	ISSUE
03/30/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION △1

DRAWN BY	EC
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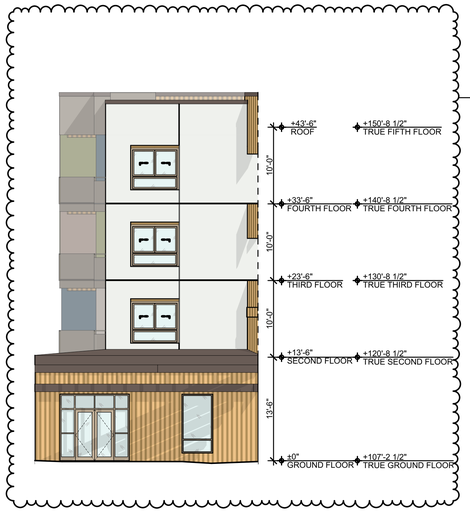
SCALE	AS NOTED

SHEET
A310

BIMcloud: JARVIS - BIMcloud Basic for ARCHICAD 24/Private/Private 6/18/2021

WING A - WEST ELEVATION (4)
SCALE: 1/8" = 1'-0"



WING A - EAST ELEVATION (3)
SCALE: 1/8" = 1'-0"

WING A - MAIN ENTRANCE ELEVATION (2)
SCALE: 1/8" = 1'-0"

WING B - SOUTH ELEVATION (1)
SCALE: 1/8" = 1'-0"

GENERAL NOTES

1.DEMO ALL EXISITING STRUCTURES
2.PREPARE SITE FOR PROPOSED NEW CONSTRUCTION; SEE CIVIL PLANS

MATERIALS LEGEND

- METAL CLADDING
- PERFORATED METAL SCREEN
- WINDOW FRAME
- METAL RAILING
- DARK TAN STUCCO
- LIGHT TAN STUCCO
- DARK TAN STUCCO
- PAINTED STUCCO AT BALCONY PARTITIONS
- PAINTED STUCCO AT BALCONY PARTITIONS
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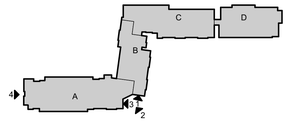

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PINOLE, CA. 94564

Wing A West & East - Exterior Elevations

DATE	ISSUE
03/30/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION 1

DRAWN BY	EC
ARCH. JOB NO.	2103A
SCALE	AS NOTED

SHEET
A311

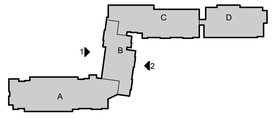
BIM360cloud: JARVIS - BIM360cloud Basic for ARCHICAD 24/Pinole/Pinole 6/18/2021

WING B - EAST ELEVATION (2)
SCALE: 1/8" = 1'-0"

WING B - WEST ELEVATION (1)
SCALE: 1/8" = 1'-0"

MATERIALS LEGEND

- METAL CLADDING
- PERFORATED METAL SCREEN
- WINDOW FRAME
- METAL RAILING
- DARK TAN STUCCO
- LIGHT TAN STUCCO
- DARK TAN STUCCO
- PAINTED STUCCO AT BALCONY PARTITIONS
- PAINTED STUCCO AT BALCONY PARTITIONS
- PAINTED STUCCO AT BALCONY PARTITIONS
- PAINTED STUCCO AT BALCONY PARTITIONS



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C-33139
03/31/2023
RENEWAL DATE
STATE OF CALIFORNIA

VISTA WOODS APARTMENTS

600 ROBLE AVENUE
1106 SAN PABLO AVENUE
1230 SAN PABLO AVENUE
PINOLE, CA, 94564

Wing B East & West - Exterior Elevations

DATE	ISSUE
03/30/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION 1

DRAWN BY	EC
ARCH. JOB NO.	2103A
SCALE	AS NOTED

SHEET
A320

BIM Cloud: JARVIS - BIM Cloud Basic for ARCHICAD 24/Private/Private 6/18/2021

WING C - NORTH ELEVATION (2)
SCALE: 1/8" = 1'-0"

WING C - SOUTH ELEVATION (1)
SCALE: 1/8" = 1'-0"

MATERIALS LEGEND

- METAL CLADDING
- PERFORATED METAL SCREEN
- WINDOW FRAME
- METAL RAILING
- DARK TAN STUCCO
- LIGHT TAN STUCCO
- DARK TAN STUCCO
- PAINTED STUCCO AT BALCONY PARTITIONS
- PAINTED STUCCO AT BALCONY PARTITIONS
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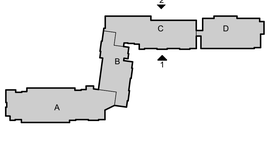

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C-33139
03/31/2023
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Wing C South & North - Exterior Elevations

DATE	ISSUE
03/30/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION 1

DRAWN BY	EC
ARCH. JOB NO.	2103A
SCALE	AS NOTED

SHEET
A330

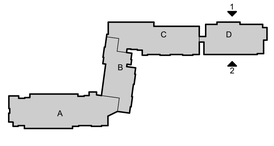
BIM360cloud: JARVIS : BIM360cloud Basic for ARCHICAD 24/Private/Private - 6/18/2021

WING D - SOUTH ELEVATION (2)
SCALE: 1/8" = 1'-0"

WING D - NORTH ELEVATION (1)
SCALE: 1/8" = 1'-0"

MATERIALS LEGEND

- METAL CLADDING
- PERFORATED METAL SCREEN
- WINDOW FRAME
- METAL RAILING
- DARK TAN STUCCO
- LIGHT TAN STUCCO
- DARK TAN STUCCO
- PAINTED STUCCO AT BALCONY PARTITIONS
- PAINTED STUCCO AT BALCONY PARTITIONS
- PAINTED STUCCO AT BALCONY PARTITIONS
- PAINTED STUCCO AT BALCONY PARTITIONS



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LICENSED ARCHITECT
SCOTT BERNARD BALLIET
C-33139
03/31/2023
RENEWAL DATE
STATE OF CALIFORNIA

VISTA WOODS APARTMENTS
600 ROBLE AVENUE
1106 SAN PABLO AVENUE
1230 SAN PABLO AVENUE
PINOLE, CA, 94564

Wing D South & North - Exterior Elevations

DATE	ISSUE
03/30/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION 1

DRAWN BY	EC
ARCH. JOB NO.	2103A
SCALE	AS NOTED

SHEET
A331

BIM cloud: JARVIS - BIM cloud Basic for ARCHICAD 24/Pinole/Pinole 6/18/2021

WING D - EAST ELEVATION (1)
SCALE: 1/8" = 1'-0"

MATERIALS LEGEND

- METAL CLADDING
- PERFORATED METAL SCREEN
- WINDOW FRAME
- METAL RAILING
- DARK TAN STUCCO
- LIGHT TAN STUCCO
- DARK TAN STUCCO
- PAINTED STUCCO AT BALCONY PARTITIONS
- PAINTED STUCCO AT BALCONY PARTITIONS
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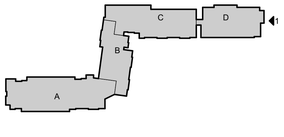

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LICENSED ARCHITECT
SCOTT BERNARD BULLOCK
C-33139
03/31/2023
RENEWAL DATE
STATE OF CALIFORNIA

VISTA WOODS APARTMENTS
600 ROBLE AVENUE
1106 SAN PABLO AVENUE
1230 SAN PABLO AVENUE
PINOLE, CA. 94564

Wing D East - Exterior Elevation

DATE	ISSUE
03/30/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION 1

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ARCH. JOB NO.	2103A
SCALE	AS NOTED

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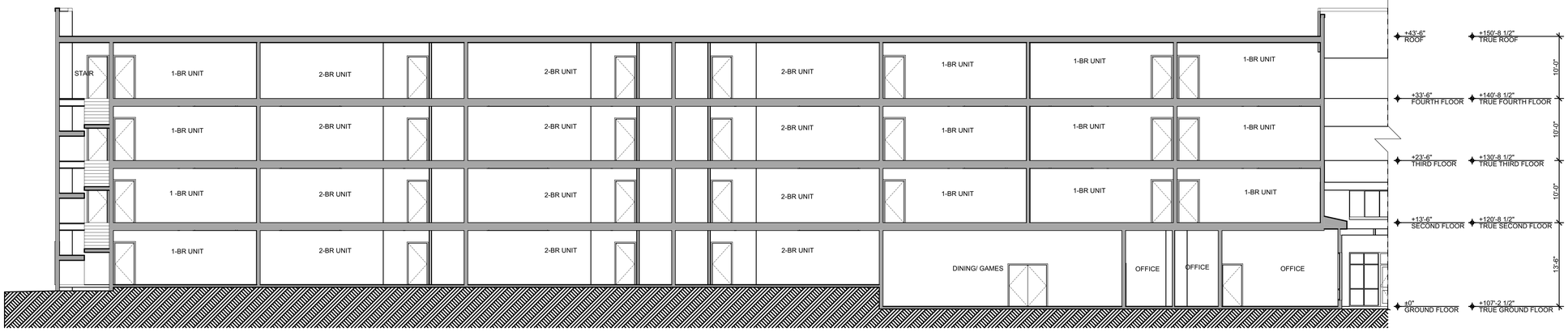
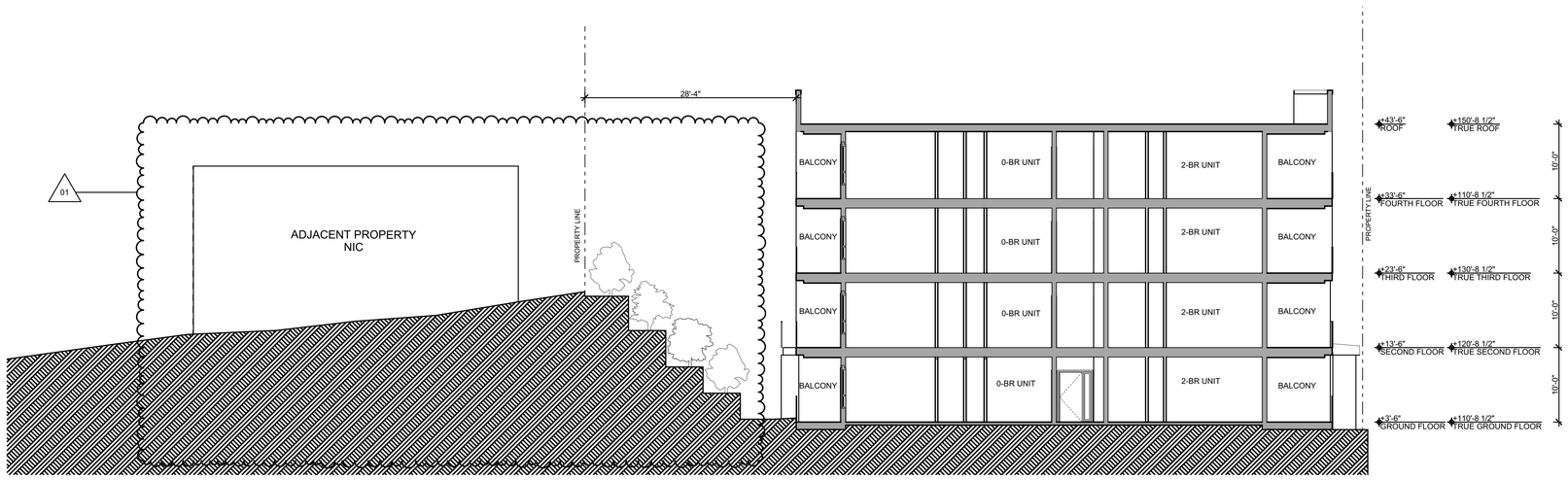
A332

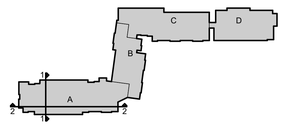
BIM360cloud: JARVIS - BIM360cloud Basic for ARCHICAD 24/Private/Private - 6/18/2021



WING A - E-W BUILDING SECTION (2)
SCALE: 1/8" = 1'-0"



WING A - N-S BUILDING SECTION (1)
SCALE: 1/8" = 1'-0"



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LICENSED ARCHITECT
SCOTT BERNARD BALLEW
C-33139
03/31/2023
RENEWAL DATE
STATE OF CALIFORNIA

VISTA WOODS APARTMENTS
600 ROBLE AVENUE
1106 SAN PABLO AVENUE
1230 SAN PABLO AVENUE
PINOLE, CA, 94564

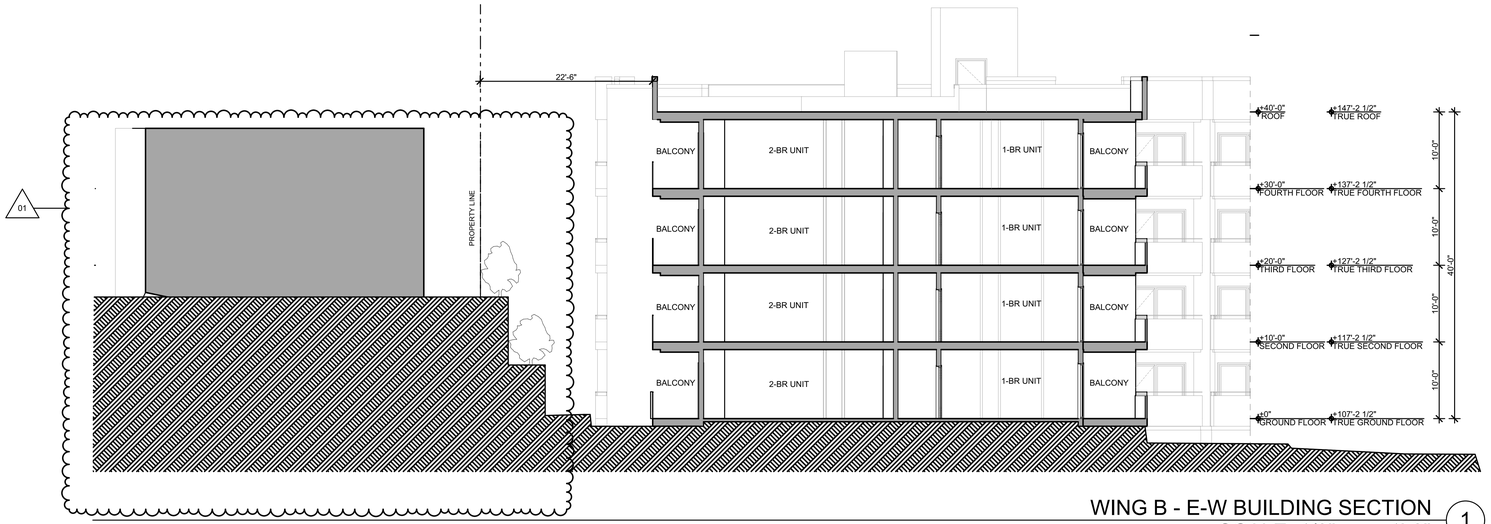
Wing A - Buiding Sections (N-S & E-W)

DATE	ISSUE
03/30/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION 1

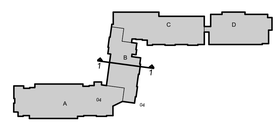
DRAWN BY	EC
ARCH. JOB NO.	2103A
SCALE	AS NOTED

SHEET
A410

BIMcloud_JARVIS - BIMcloud Basic for ARCHICAD 24/Private/Private 6/18/2021



WING B - E-W BUILDING SECTION (1)
SCALE: 1/8" = 1'-0"



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LICENSED ARCHITECT
ROY BERNARD BALTAZAR
C-33139
03/31/2023
RENEWAL DATE
STATE OF CALIFORNIA

VISTA WOODS APARTMENTS

600 ROBLE AVENUE
1106 SAN PABLO AVENUE
1230 SAN PABLO AVENUE
PINOLE, CA, 94564

Wing A & B - Building Sections (E-W)

DATE	ISSUE
03/30/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION 1

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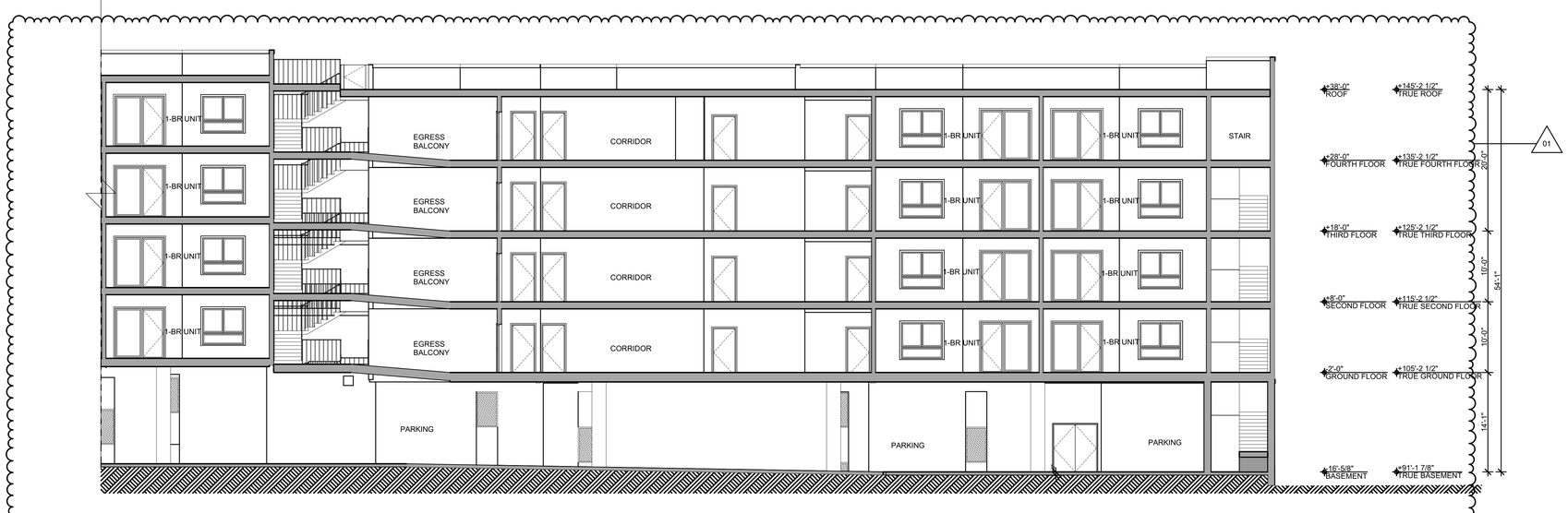
SCALE	AS NOTED

SHEET

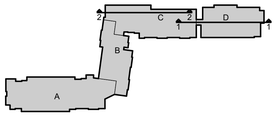
A420

BIMcloud_JARVIS - BIMcloud Basic for ARCHICAD 24/Private/Private 6/18/2021

WING C - E-W BUILDING SECTION (2)
SCALE: 1/8" = 1'-0"



WING D - E-W BUILDING SECTION (1)
SCALE: 1/8" = 1'-0"



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LICENSED ARCHITECT
JOHN BERNARD BALLINGER
C-33139
03/31/2023
RENEWAL DATE
STATE OF CALIFORNIA

VISTA WOODS APARTMENTS
600 ROBLE AVENUE
1106 SAN PABLO AVENUE
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PINOLE, CA, 94564

Wings C & D - Building Section (N-S & E-W)

DATE	ISSUE
03/30/2021	DEVELOPMENT APPLICATION
06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION △1

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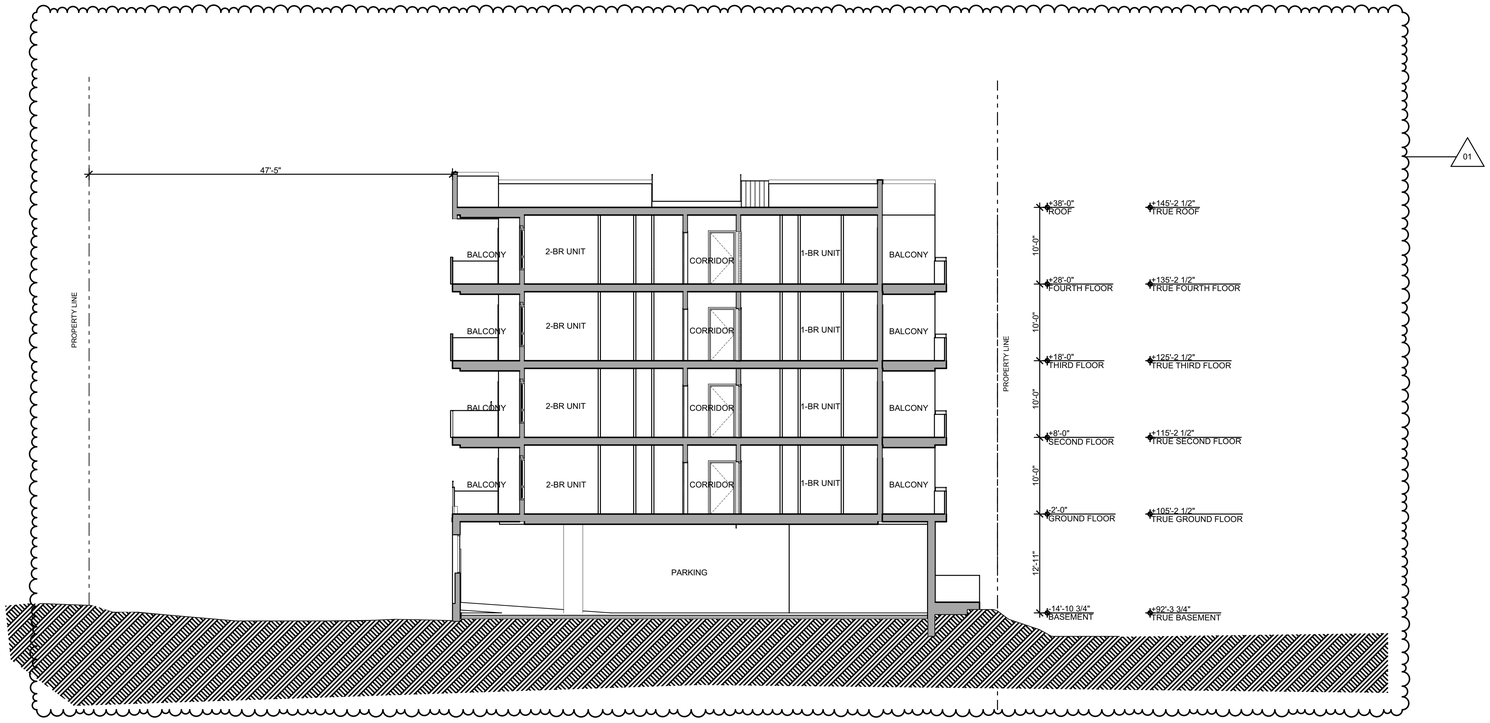
ARCH. JOB NO.	2103A
SCALE	AS NOTED

SHEET
A430

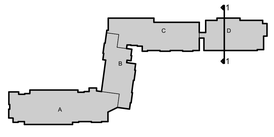
BIMcloud: JARVIS - BIMcloud Basic for ARCHICAD 24/Private/Private 6/18/2021



WING D- N-S BUILDING SECTION (1)
SCALE: 1/8" = 1'-0"

GENERAL NOTES

1.DEMO ALL EXISITING STRUCTURES
2.PREPARE SITE FOR PROPOSED NEW CONSTRUCTION; SEE CIVIL PLANS



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03/31/2023
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STATE OF CALIFORNIA

VISTA WOODS APARTMENTS
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Wings D - Building Section (N-S)

DATE	ISSUE
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06/18/2021	DEVELOPMENT APPLICATION RESUBMISSION 1

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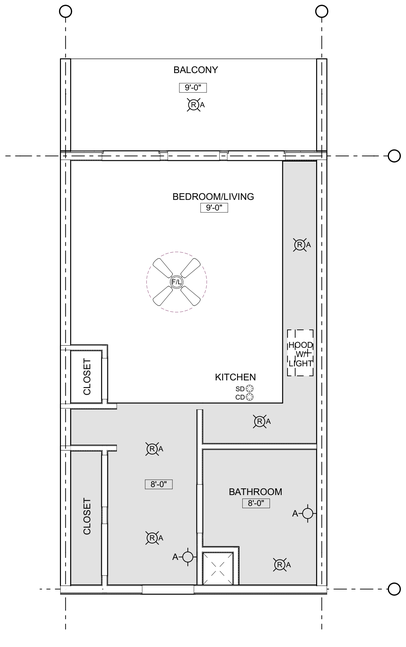
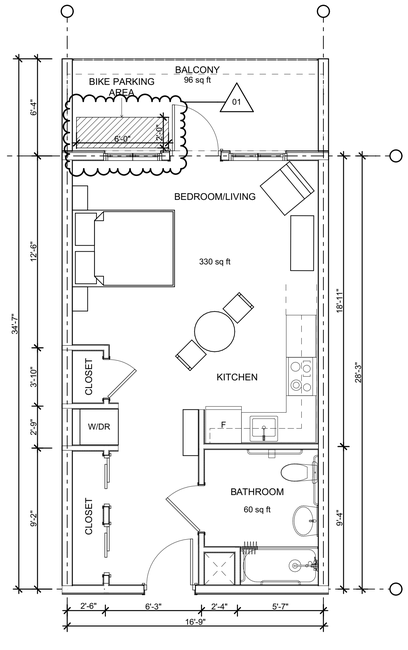
SCALE	AS NOTED

SHEET
01 - WING
A440

BIM/cloud: JARVIS - BIM/cloud Basic for ARCHICAD 24/Private/Private 6/18/2021



STUDIO UNIT - TYPICAL RCP (1)
SCALE: 1/4" = 1'-0"



STUDIO UNIT - TYPICAL FLOOR PLAN (2)
SCALE: 1/4" = 1'-0"

01

LEGEND

RA	RECESSED LIGHT
A	WALL LIGHT
SD	SMOKE DETECTOR
CD	C02 DETECTOR
F.L.	FAN W/ LIGHT

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LICENSED ARCHITECT
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VISTA WOODS APARTMENTS

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Type A Studio - Floor Plan

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SCALE	AS NOTED

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A550

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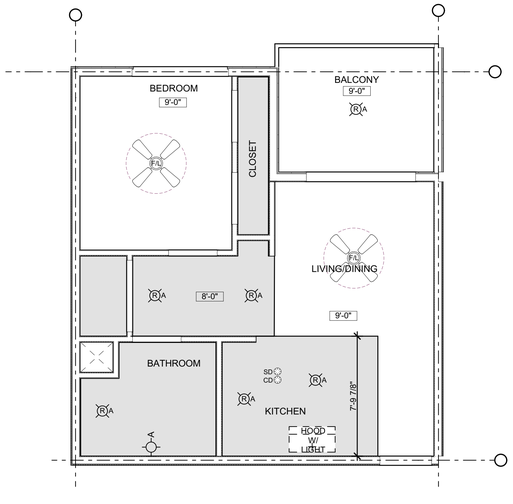
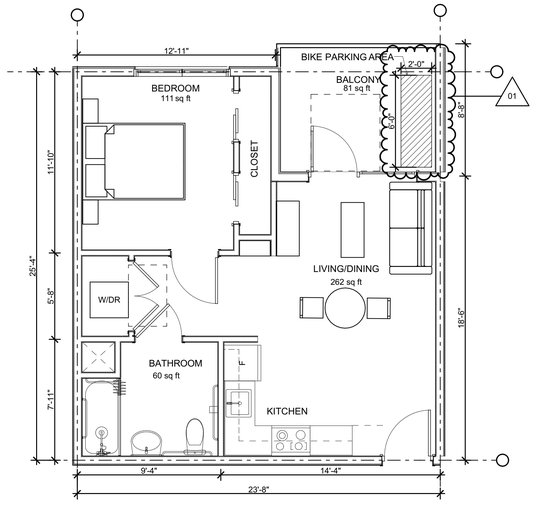


1 BEDROOM UNIT - TYPICAL RCP (1)
SCALE: 1/4" = 1'-0"



1 BEDROOM UNIT - TYPICAL FLOOR PLAN (2)
SCALE: 1/4" = 1'-0"

01

LEGEND

- RECESSED LIGHT
- WALL LIGHT
- SD SMOKE DETECTOR
- CD C02 DETECTOR
- FAN W/ LIGHT

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Type B One-Bedroom - Floor Plan

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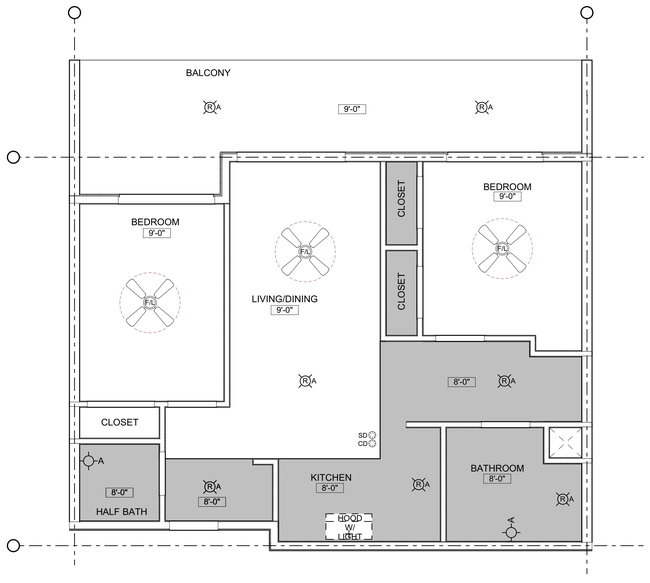
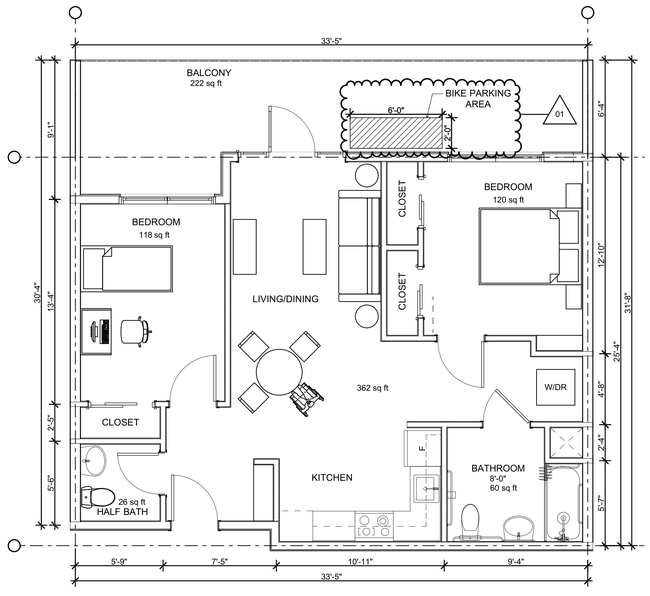
A554

BIM360cloud: JARVIS - BIM360cloud Basic for ARCHICAD 24/Private/Private 6/18/2021



TYPE C TWO-BEDROOM - TYPICAL RCP (1)
SCALE: 1/4" = 1'-0"



TYPE C TWO-BEDROOM - TYPICAL FLOOR PLAN (2)
SCALE: 1/4" = 1'-0"

01

LEGEND

- RECESSED LIGHT
- WALL LIGHT
- SD SMOKE DETECTOR
- CD C02 DETECTOR
- FAN W/ LIGHT

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Type C Two Bedroom - Floor Plan

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