



**CITY COUNCIL REPORT – PUBLIC HEARING**

**TO: HONORABLE MAYOR AND CITY COUNCIL**

**THROUGH: GEORGE RODERICKS, CITY MANAGER**

**FROM: LISA COSTA SANDERS, TOWN PLANNER**

**DATE: JUNE 17, 2020**

**SUBJECT: CONDITIONAL USE PERMIT, DENSITY BONUS, AND TREE PROTECTION ZONE (TPZ) EXCEPTION - 1000 EL CAMINO REAL/MENLO COLLEGE (APN 070-360-100)**

**RECOMMENDATION**

Staff recommends that the City Council approve the Conditional Use Permit, Density Bonus, and Tree Protection Zone (TPZ) Exception Certificate.

**BACKGROUND**

This project proposes to construct a three-story on campus residence hall at Menlo College located at 1000 El Camino Real. The building is proposed to be a 57,267 square foot, T-shaped building, and consists of 147 student living units with a total of 291 beds, two beds per each living unit. The proposed residence hall is to be located amongst the interior of the campus surrounded by existing on campus housing and college facilities. The proposed location will replace landscaping, paving, a small pool and request a Tree Protection Zone (TPZ) Exception for one on site Heritage Tree, Tree #58. The proposed location is the only area on site that would allow for the construction of a new residence hall.

The addition of campus housing was included in Menlo College's July 2019 Master Plan Update presented to the Planning Commission in August 2019. The 2019 Master Plan indicated there are currently 584 beds in 5 residence halls and an immediately adjacent building across El Camino Real. Menlo College's current enrollment is approximately 875 students. Proposed housing is planned to serve existing enrollment at Menlo College.

The proposed residence hall is to include 147 units, which includes 19 units dedicated to low-income student housing. With the provision of affordable housing, the project is eligible for State Density bonus provisions which includes additional units, waivers of development standards and

concessions. The applicant has applied the Density Bonus provision and requests, a waiver from the building height limit requirements to accommodate the additional units. The project requires approval of a Conditional Use Permit to construct the residence hall.

The Planning Commission, at its May 27, 2020 meeting voted 4-1 to recommend the City Council approve the Conditional Use Permit, Density Bonus and Tree Protections Exception.

**ANALYSIS:**

The proposed project is located in the Public Facilities and Schools (PFS) Zoning District therefore required to meet development standards and requirements set forth in Atherton Municipal Code (AMC) 17.36. As such the proposed use of residential associated with primary nonresidential use of property on the same site can be permitted upon issuance of a Conditional Use Permit (Attachment 1). Any application for Conditional Use Permit shall be compared to the School's Master Plan for consistency. The proposed residence hall was included in Menlo College's 2019 Master Plan presented to the Planning Commission in July 2019.

AMC 17.36 requires that maximum building height in the PFS Zoning District is 34 feet, the proposed residence hall is to be three stories tall, with a maximum height of 43 feet. A development standard waiver may be granted for density bonus projects that would otherwise physically preclude construction of the project at the densities permitted under the State law. The proposed residence hall is to be located amongst the interior of the campus surrounded by existing on campus housing and facilities. The proposed location will replace landscaping paving and a small pool. Given existing site conditions the proposed location is the only area that would allow for the addition of a residence hall. The setbacks for buildings constructed in the PFS Zoning District require a minimum front set back of 60 feet, rear setback of 75 feet and side setback of 75 feet. The proposed residence hall is setback well into the property and exceeds all of the required setbacks, the closest setback is approximately 156' feet from Alejandra Avenue, 455 ft from El Camino Real, 518 feet from the residential neighborhood to the south, and 636 feet from the residential neighborhood to the west.

The project site is surrounded by the neighboring campus of Menlo School, Atherton residential neighborhoods, and Menlo Park commercial uses. Onsite surrounding buildings consist of 2-3 story buildings that range in height between 28 to 43 feet. Existing buildings as well as increased setbacks minimizes impacts associated with the proposed building noise and visibility from the road and neighboring properties.

**TREE PROTECTION ZONE (TPZ) EXCEPTION:**

The applicant is proposing a Tree Protection Zone (TPZ) exception for one heritage tree, Tree #58, to 4 times (4x) the tree's diameter. The Atherton Heritage Tree Ordinance Standards and Specifications ("Guidelines") defines a TPZ as, "...the designated protection area sufficiently large enough to protect a Heritage tree and its roots from Disturbance and/or Damage." The guidelines further specify the TPZ radius shall be 10 times (10x) the diameter at breast height. An exception request of a reduced TPZ down to 8x would be processed at the staff level by the Town Arborist. An exception request of an even further reduced TPZ is required to be considered by the Planning Commission.

Details on Tree #58 provided in the table below:

<b>Heritage Trees Requested for TPZ Exception</b>						
<b>Tree #</b>	<b>Species</b>	<b>Condition</b>	<b>Size (Diameter)</b>	<b>Location</b>	<b>Required 10X TPZ</b>	<b>Proposed TPZ Exception</b>
58	Valley Oak	Fair	55"	In front of Michaels Building	45.8'	4x = 18'

The Town Arborist has reviewed the plans in regard to onsite Heritage Trees and the requested Tree Protection Zone (TPZ) Exception and provided a Memo (Attachment 2). The Town Arborist does not recommend the Tree Protection Zone (TPZ) Exceptions for tree #58 due to the risk of impacts on the health of the tree. The Town Arborist does provide conditions should the City Council decide to approve the Tree Protection Zone (TPZ) Exception, in order to preserve and make sure the tree is as safe as possible. The recommendations have been included as conditions within the Conditional Use Permit and Tree Protection Zone (TPZ) Exception Certificate.

Although the Town Arborist does not recommend the Tree Protection Zone (TPZ) Exception, it is Planning Staff's professional opinion that the Tree Protection Zone (TPZ) Exception and Town Arborist recommendations may be granted as Concession for Density Bonus in compliance with AMC 17.58. An analysis of feasibility indicates that the proposed residence hall could not be constructed in any other location onsite based on existing site improvements and other onsite Heritage Trees.

**STATE DENSITY BONUS:**

AMC 17.58, Density Bonuses and Other Concessions or Incentives, provides incentives for the production of lower income housing pursuant to California Health and Safety Code Section 50079.5. AMC 17.58 directs the town to provide density bonus and/or other concessions or incentives in order to encourage the construction of low-income housing pursuant to California Code 65195. In exchange for providing 20% low-income units, the Town is required to provide a density bonus and waiver or reduction of development standards. The applicant is entitled to the density bonus and waiver by right with no further review authority by the Town. Per AMC 17.58.020, the Town Planner and Planning Commission provide recommendations and the City Council approves, conditionally approves or denies the density bonuses and other concessions or incentives in accordance with requirements AMC 17.58, and California Code 65195.

The applicant's base proposal is for a two-story residence hall made up of 96 living units. To take advantage of the Density Bonus Provisions, the applicant has elected 20 % of the units to be reserved for low-income housing. As such, the project is entitled to a 35% density bonus, resulting in an increase of thirty-four (34) units. To accommodate the additional units, the applicant is requesting a waiver of the building height, and further, an additional 17 units to be allowed to compliment building efficiency and design and Menlo College Master Plan Goals related to transportation and student housing, bringing the proposal to a total of 147 units. As the Town does not have floor area or residential density provisions in the PFS Zoning district, the applicant may elect to construct the additional units within the allowed building footprint and within the height waiver provision. The

applicant is requesting a Tree Protection Zone (TPZ) Exception, and as stated earlier, Planning Staff recommends granting such exceptions along with Town Arborist recommendation as a concession to accommodate Density Bonus requirements.

It is Planning Staff's professional opinion that the proposed density bonus request meets the findings set forth in 17.58 and California Code 65195. The requested concessions and incentives of the requested height waiver and Tree Protections Zone (TPZ) Exception are considered adequate and would not have an adverse impact on surrounding land uses, given the existing onsite improvements and Heritage Tree locations.

### **CONDITIONAL USE PERMIT:**

In order to grant a Conditional Use Permit, the City Council is required to base its determination that the proposed project meets the following findings per AMC 17.12.030:

- A. The proposed use is consistent with the General Plan and all applicable provisions of this title; and
- B. 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 the general welfare of the town.

It is Planning Staff's professional opinion that the proposed residence hall is consistent with the land use, "residential associated with primary nonresidential use of property on same site" that requires the issuance of a Conditional Use Permit pursuant to Section 17.36.030 of the Atherton Municipal Code. Further, it is Planning Staff's professional opinion that the proposed use would not be detrimental or injurious, is consistent with the primary use of the site as a school, is consistent with the School's Master Plan, that the number of trees proposed for removal has been minimized, that adequate provisions have been made to accommodate traffic, that adequate parking is available both during and after construction and that proposed conditions of approval will minimize impacts. Planning Staff recommends the City Council adopt the Conditional Use Permit with the conditions of approval contained in the draft Conditional Use Permit.

### **ALTERNATIVES:**

The City Council could deny, or modify the Conditional Use Permit and Tree Protection Zone (TPZ) Exception Certificate.

### **FISCAL IMPACT:**

All costs covering the processing of this application are paid for by the applicants.

### **ENVIRONMENTAL IMPACT:**

A CEQA Exemption (Attachment 2) associated with the proposed construction of the residence hall was prepared in accordance with the California Environmental Quality Act (CEQA). The CEQA Exemption found there was "substantial evidence to support a conclusion that the Project

qualifies for an exemption under CEQA Guidelines 15332 as a Class 32 urban Infill Development.” It is Planning Staff’s professional opinion that the CEQA Exemption is adequate, complete and prepared in compliance with the California Environmental Quality Act.

### **PUBLIC NOTICE**

Public notification was achieved by posting the agenda, with this agenda item being listed, at least 72 hours prior to the meeting in print and electronically. Notice was mailed to all property owners within 500’ of the site on June 4, 2020. Information about the project is also disseminated via the Town’s electronic News Flash and Atherton Online. There are approximately 1,200 subscribers to the Town’s electronic News Flash publications. Subscribers include residents as well as stakeholders – to include, but be not limited to, media outlets, school districts, Menlo Park Fire District, service providers (water, power, and sewer), and regional elected officials.

### **COMMISSION/COMMITTEE FEEDBACK/REFERRAL**

This item   X   has or        has not been before a Town Committee or Commission.

- Audit/Finance Committee (meets every other month)
- Bicycle/Pedestrian Committee (meets as needed)
- Civic Center Advisory Committee (meets as needed)
- Environmental Programs Committee (meets every other month)
- Park and Recreation Committee (meets each month)
- X   Planning Commission (meets each month) - May 27, 2020
- Rail Committee (meets every other month)
- Transportation Committee (meets every other month)
- Tree Committee (meets each month)

### **Attachments:**

1. Draft Conditional Use Permit and Tree Protection Zone (TPZ) Exception Certificate
2. Arborist Memo
3. CEQA Exemption
4. Project Description
5. Project Plans
6. Arborist Report
7. Arborist Report Impact Assessment

***DRAFT***  
**TOWN OF ATHERTON**  
**CITY COUNCIL**  
**CONDITIONAL USE PERMIT AND TREE PROTECTION ZONE (TPZ)**  
**EXCEPTION CERTIFICATE**

THIS IS TO CERTIFY THAT the Atherton City Council at a regular meeting thereof, held on Wednesday, June 17, 2020, did grant a Conditional Use Permit, Density Bonus and Tree Protection Zone (TPZ) Exception Certificate to Menlo College pursuant to Atherton Municipal Code Sections 8.10, 17.12, 17.36 and 17.58 to permit the construction of new on campus dormitory housing. The approved use is located at 1000 El Camino Real (Assessor's Parcel Number 070-360-100). The Permit was approved subject to the following conditions:

1. The project shall be constructed in accordance with the plans submitted as part of the conditional use permit application, to the satisfaction of the Town Planner.
2. Improvements to the property shall comply with PFS Zoning provisions and other applicable ordinances.
3. The applicant shall follow San Mateo County Storm Water Pollution Prevention Program (STOPPP) recommended practices and prohibit the occurrence of any non-storm water discharges into the storm drain system.
4. The applicant shall follow The Town of Atherton Tree Preservation Guidelines, Standards and Specifications (The Guide) to ensure the preservation of heritage trees and other trees on the site during construction Town Arborist.
5. As described in the CEQA Exemption, the applicant shall use construction equipment with Tier 4 engines as part of their project. The equipment shall comply with the following requirement:
  - The off-road equipment used on-site to construct the project would need to achieve a fleet-wide average 50-percent reduction in DPM exhaust emissions or greater to reduce impact levels to below thresholds. To achieve this, at least 80 percent of the diesel powered off-road equipment, larger than 25 horsepower, operating on the site for more than two days continuously shall, at a minimum, meet U.S. EPA particulate matter emissions standards for Tier 4 interim engines. Where Tier 4 equipment is not available, exceptions could be made for equipment that includes CARB-certified Level 3 DieselParticulate Filters or equivalent. Equipment that is electrically powered or uses non-diesel fuels would also meet this requirement. Up to 20 percent of the equipment could be rated Tier 3.
6. Prior to occupancy, the applicant shall enter in to a “density bonus agreement” or an “affordable housing agreement” with the Town of Atherton to the satisfaction of the City Manager.

## ATTACHMENT 1

7. The applicant shall agree to, the continued affordability of all low-income rental units that qualified the applicant for the award of the density bonus for at least 55 years or a longer period of time if required by the construction or mortgage financing assistance program, mortgage insurance program, or rental subsidy program.
8. A Tree Protection Zone of 6 times (4x) the trees diameter, shall be limited to Tree #58 (55" Valley Oak) to the satisfaction of the Town Arborist.
9. Applicant will comply with recommendations set forth by the Town Arborist, to the satisfaction of the Town Arborist. Including the following during the course of construction;
  - A monthly arborist report is to be submitted to the Town Arborist on the 1st of each month by the private arborist stating the work that has been, any damage, and mitigation with photos of work within 8x of the tree. Report is to, note the health of the trees at the time.
  - Require the private arborist to be on site during grading, foundation work, irrigation, hardscape, storm water and utilities that is within 6x of the trees.
  - Require the private arborist to monitor the tree protection fencing to make sure it remains up and is not moved.
  - Require the arborist is on site to advise and limit the pruning of the trees for the 3-story building, crane access, window install, and scaffolding so that the pruning is only done to a minimum.
  - Where paving is proposed within existing planters (i.e. existing unpaved areas), the soil cut should be avoided altogether (i.e. a no-dig design); however, if essential, then restrict the depth to 3 or 4 inches, avoid compacting the soil subgrade (cover by Geogrid before base material is placed), and retain and protect encountered roots with diameters of  $\geq 2$  inches. Preferably, pavement within existing planter areas should be avoided altogether, or at least within the one west of #33's trunk (as represented on C8.0).
  - Impacts can also occur during installation of new paving, including for base material, curbs, gutters, edging and forms. This work can avoid potential impacts within the TPZ by avoiding excavation beneath the asphalt surface, as well as compaction of the soil subgrade; this can be achieved by utilizing existing base material underlying the existing asphalt. Should new base material be absolutely necessary for the future hardscape, work would need to be manually and slowly performed, perhaps in combination with a pneumatic air device (e.g. Air spade); roots of  $\geq 2$  inches in diameter retained during the process, not damaged, and kept continually moist; subgrade be no deeper than existing (i.e. beneath current base) and not directly compacted;

## ATTACHMENT 1

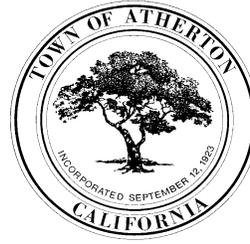
Geogrid laid on the subgrade and around retained roots; and the future base consist of Class II with no fines, or perhaps CU-structural soil (and simply manually place around retained roots).

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Lisa Costa Sanders,  
Town Planner

Effective Date:

Atherton, CA



# Memo

**To:** The Atherton Planning Commission  
**From:** Sally D Bentz-Dalton, Town Arborist  
**CC:** Stephanie B Davis, Principal Planner  
**Date:** 5/21/2020  
**Re:** Application for TPZ exception, Menlo College

I have reviewed the application at Menlo College and offer the following observations and recommendation for your review:

The applicant wishes to have a Tree Protection Zone (TPZ) exception for tree:

Trees:

1. Tree #58- Valley Oak – 55” dbh – This tree is located 18’ away from the new building. The tree is showing signs of dieback throughout the canopy.

The supplemental arborist report was submitted by Arbor Resources David L. Babby on May 20<sup>th</sup>. He establishes that implementing the proposed design can achieve retention and adequate protection.

Tree #58 is a Valley Oak tree and under the Town Muni Code Oak trees are protected in the buildable area. The new building is only located 4x away TPZ from the tree. The current town code allows for 10x away TPZ with a possible staff exception to 8x. The Planning Commission can allow for less than 8x TPZ. The Critical Root Zone is located within 6x the trunk. This is the area where when roots are cut are impacted can cause the tree stress and harm. This tree has an existing building on the other side that is 24’ away and hardscape surrounding it. It is unclear if and when roots were cut for the driveway and building prior to this project.

For this tree the private arborist David Babby stated that the building's foundation is proposed 22 feet east of its trunk and that the actual setback for root loss will be less to accommodate soil over excavation, sub excavation and/or compaction required to construct the foundation, and should be confined to 24 inches beyond the foundation (i.e. 20 feet from the trunk) where within 35 feet from the trunk; this represents a distance of 4 to 5 times the trunk diameter. I regard this setback along one side of its root zone as minimally tolerable to avoid potential significant impacts, and accounts for an estimated root loss of 30- to 35-percent.

I will not be able to recommend such a small TPZ exception due to the fact of the current health of Tree #58. The tree is a large old Oak and has deadwood throughout meaning the tree is in fair health. I do not feel comfortable with 4x TPZ zone. However, the client is willing to retain the tree and work around it. They updated their design to preserve the tree and updated the Civil plans due to David Babby's comments.

However, if the Planning Commission wishes to move forward with the project and allow the TPZ exception then this is my recommendation to preserve and make sure the tree is safe as possible:

A monthly arborist report is to be submitted to the Town Arborist on the 1<sup>st</sup> of each month by the private arborist stating the work that has been, any damage, and mitigation with photos of work within 8x of the tree. Also, note the health of the trees at the time.

I would also require the private arborist to be on site during grading, foundation work, irrigation, hardscape, storm water and utilities that is within 6x of the trees.

I would require the private arborist to monitor the tree protection fencing to make sure it remains up and is not moved.

I would also make sure the arborist is on site to advise and limit the pruning of the tree for the 3 story building, crane access, window install, and scaffolding so that the pruning is only done to a minimum.

Specifically, I would also recommend following Mr. Babby's specific recommendations:

- Where paving is proposed within existing planters (i.e. existing unpaved areas), the soil cut should be avoided altogether (i.e. a no-dig design); however, if essential, then restrict the depth to 3 or 4 inches, avoid compacting the soil subgrade (cover by Geogrid before base material is placed), and retain and protect encountered roots with diameters of  $\geq 2$  inches. Preferably, pavement within existing planter areas should be avoided altogether, or at least within the one west of #33's trunk (as represented on C8.0).
- Impacts can also occur during installation of new paving, including for base material, curbs, gutters, edging and forms. This work can avoid potential impacts within the TPZ by avoiding excavation beneath the asphalt surface, as well as compaction of the soil subgrade; this can be achieved by utilizing existing base material underlying the existing asphalt. Should new base material be absolutely necessary for the future hardscape, work would need to be manually and slowly performed, perhaps in combination with a pneumatic air device (e.g. Air spade); roots of  $\geq 2$  inches in diameter retained during the process, not damaged, and kept continually moist; subgrade be no deeper than existing (i.e. beneath current base) and not directly compacted; Geogrid laid on the subgrade and around retained roots; and the future base consist of Class II with no fines, or perhaps CU-structural soil (and simply manually place around retained roots).

The information included in this memo is believed to be true and based on sound arboricultural principles and practices.

Sincerely,

Sally Bentz- Dalton  
Town Arborist, Certified Arborist WE#9238AM

# Menlo College Residence Hall Project

## Class 32 CEQA Exemption

May, 2020

Prepared for:

Town of Atherton  
150 Watkins Avenue  
Atherton, CA 94027



Prepared by:

Lamphier-Gregory  
1944 Embarcadero  
Oakland, CA 94606

## General Project Information

- 1. Project Title:** Menlo College Residence Hall
- 2. Lead Agency Name and Address:** Town of Atherton  
150 Watkins Avenue  
Atherton, CA 94027
- 3. Contact Person and Phone Number:** Lisa Costa Sanders, Town Planner  
150 Watkins Avenue  
Atherton, CA 94027  
650-333-0248  
lcostasanders@ci.atherton.ca.us
- 4. Project Location:** 1000 El Camino Real  
Atherton, California 94027  
APN 070-360-100
- 5. Project Sponsor's Name and Address:** Attn: Steven Weiner, President  
Menlo College  
1000 El Camino Real  
Atherton, California 94027
- 6. Existing General Plan Designations:** Public and Quasi-Public Land Use
- 7. Existing Zoning:** Public Facilities and Schools (PFS)

**8. Project Description:** The Project proposes to construct a three-story, 57,267 square-foot residence hall consisting of 147 student living units with a total of 288 beds. The residence hall would be located on Menlo College campus within an area surrounded by existing residence halls and would replace some courtyard paving, landscaping, and a small pool. The intent of the new residence hall is to provide additional housing for some of the existing Menlo College student population that live off campus because there is no available on-campus housing for them.

As a project consistent with the General Plan, Zoning, and Menlo College Master Plan, the Project requires a Conditional Use Permit from the Town of Atherton.

**9. Surrounding Land Uses and Setting:** Menlo College is located at 1000 El Camino Real in the Town of Atherton near the boundary with the City of Menlo Park.

Menlo School (a college preparatory middle and high school), is located to the south of Menlo College.

Residential homes are located to the north, east, and west.

**10. Other Agencies Whose Approval is required:** (e.g., permits, participation agreements, etc.) No other discretionary approvals are known to be required from other agencies.

**Incorporated Source Documents:**

- Town of Atherton General Plan and Associated IS/MND
- Town of Atherton Municipal Code
- Applicant-submitted project application and associated plan sets
- Hexagon Transportation Consultants, *Transportation Analysis (included as Attachment A)*
- Illingworth & Rodkin, *Air Quality Community Risk Assessment (included as Attachment B)*

## Project Description

### Existing Setting and Neighboring Land Uses

The proposed site for the new building is interior to the Menlo College campus and immediately adjacent to the existing residence halls. See Figure 1.

Menlo College is located at 1000 El Camino Real. The main entrance to the College is provided on El Camino Real at the intersection of Encinal Avenue and Menlo College Road. The second entrance to the campus is provided via Alejandra Avenue and is used primarily by the College's student residents. A third entrance to the campus is located further west down Alejandra Avenue at Wunderlich Field.

Menlo School, which is a college preparatory school comprised of a middle school and a high school, is located to the south of Menlo College. The main entrance to Menlo School is provided on Valparaiso Avenue. Although Menlo College and Menlo School are two independent entities, vehicular access between them is provided via internal roads.

Single family homes are located to the north, east, and west. El Camino Real marks the boundary of Atherton and Menlo Park at this location. Across El Camino Real to the northeast from the site are commercial buildings and apartments in Menlo Park. A predominately single family residential neighborhood stretches farther to the northeast in Menlo Park.

### Description of the Project

The Project proposes to construct a three-story, 57,267 square-foot residence hall consisting of 147 student living units with a total of 288 beds. The T-shaped layout is traditional dormitory-style, with rooms accessed off central hallways. The proposed height of the structure is 43 feet. Amenities would include study spaces, lounges, game rooms, kitchens, and laundry rooms.

The intent of the new residence hall is to provide additional housing for Menlo College's existing student population, approximately 325 of whom currently (2020 enrollment) live off campus because there is insufficient available on-campus housing for them. The residence hall is intended to address the existing demand for on-campus housing and is not necessary for nor tied to changes in enrollment. Similarly, because the number of students is not proposed to change with the Project (only where they live), there is also no proposed change to parking provisions. Existing parking on campus accommodates students who live on campus and those who commute to campus.

The residence hall was included in Menlo College's most recent Master Plan in compliance with section 17.36.050 of the Atherton Zoning Code. Approval of a conditional use permit (CUP) is required. Per Government Code sections 65915(e)(3)(c) and 65915(e)(1), the State Density Bonus Law allows for the proposed density (97 units are allowed under the base case zoning) and height waiver (34 feet is allowed under the base zoning), which is applicable due to inclusion of 20% affordable units.

Construction of the new building would replace courtyard-area paving, lawn and landscaping, and a small pool. Some trees would be removed though none of them would be heritage trees under the Town's tree ordinance. The residence hall would be constructed on-grade. The applicants have estimated the construction would take about 12 months but for purposes of this analysis an estimate of 14 months has been conservatively used, consistent with emission modeling defaults for a project of this size. Utilities are available to be extended to the new building from the surrounding campus.



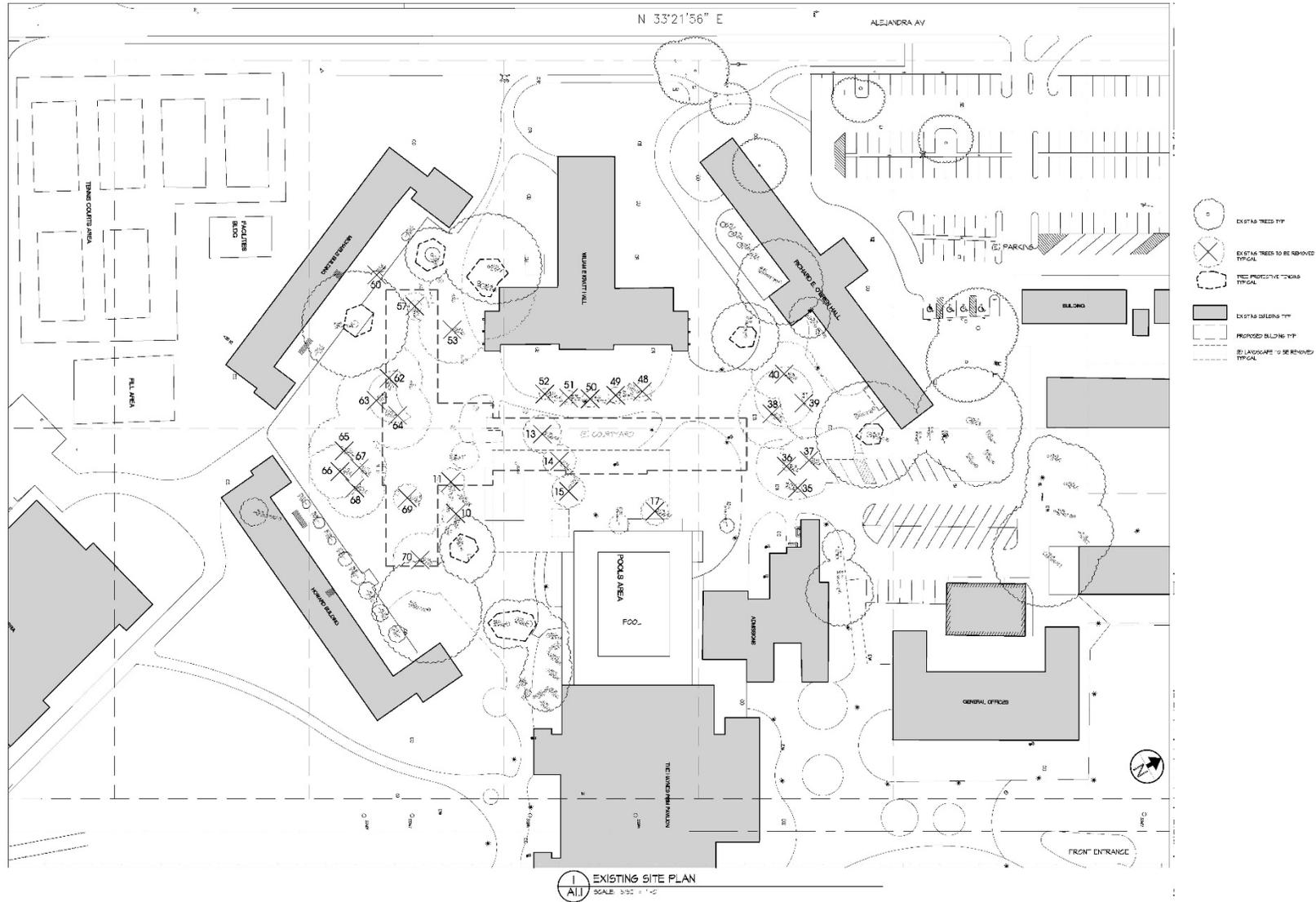


Figure 2: Existing Site Plan/Demolition Plan

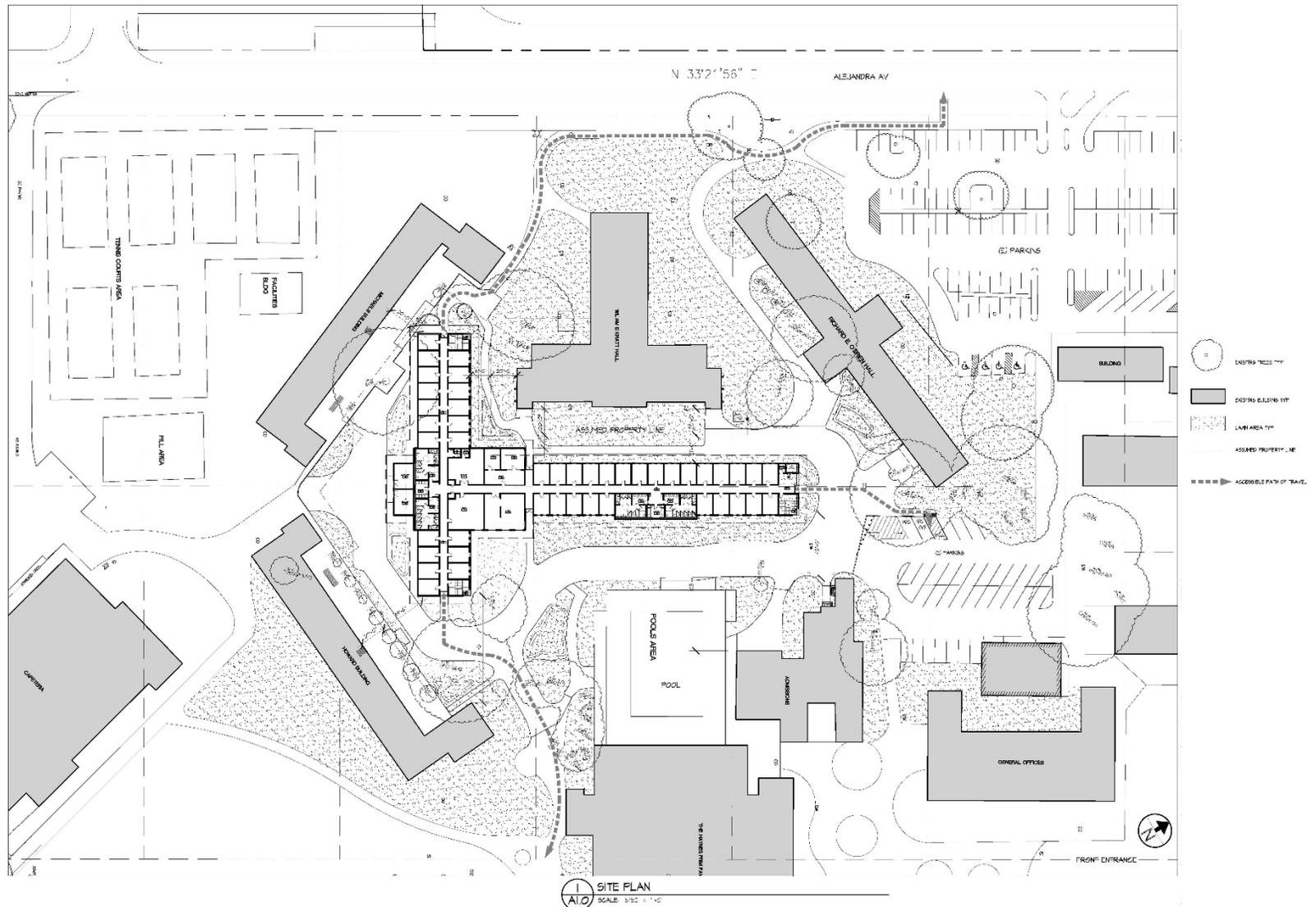


Figure 3: Proposed Site Plan

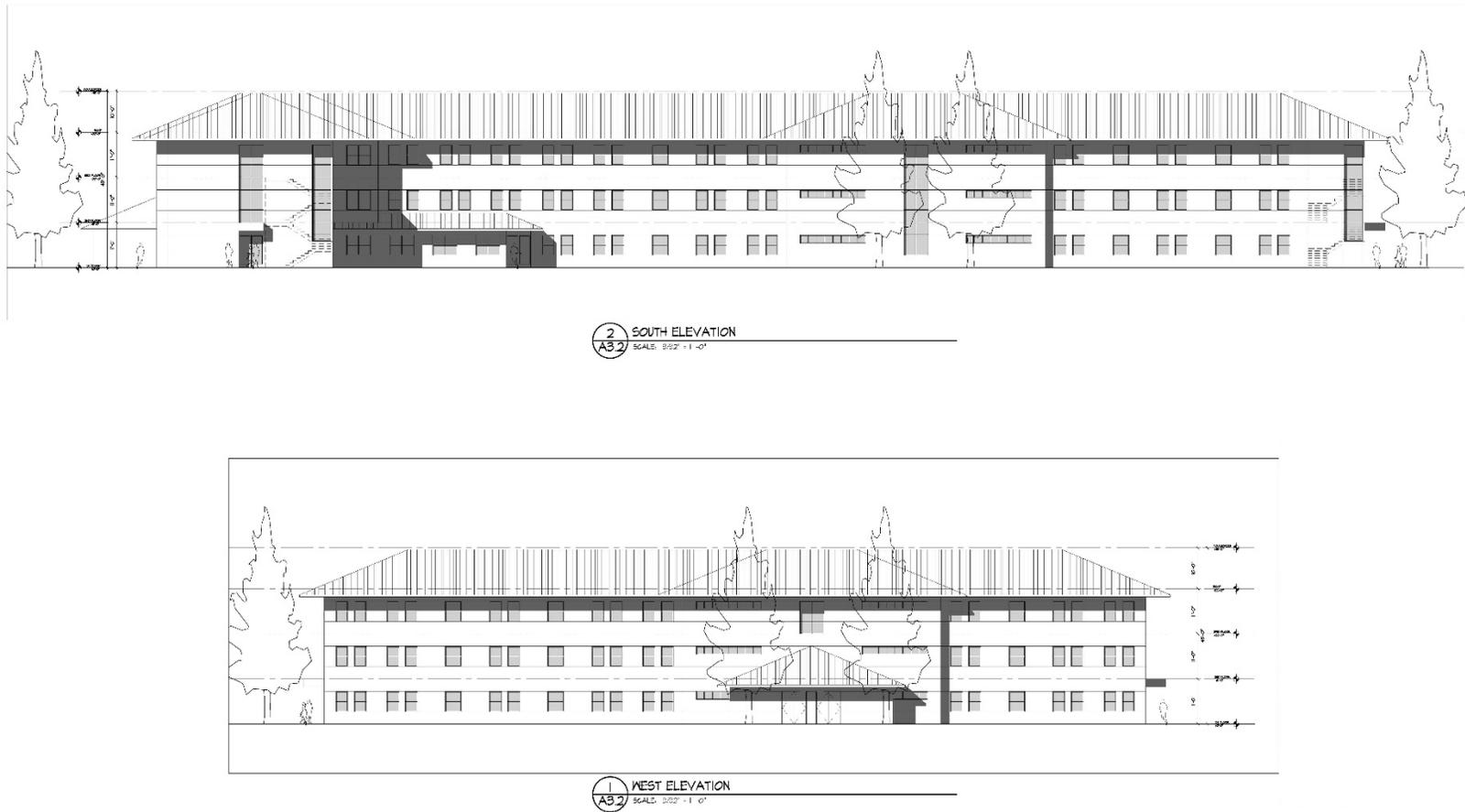


Figure 4: Proposed Elevations

## Categorical Exemption Criteria

Article 19 of the California Environmental Quality Act (CEQA Guidelines Sections 15300 to 15333), includes a list of classes of projects that have been determined to not have a significant effect on the environment and as a result, are exempt from review under CEQA.

### Class 32 (In-Fill Development)

Among the classes of projects that are exempt from CEQA review are those projects that are specifically identified as urban infill development. CEQA Guidelines §15332 defines infill development (or Class 32 exemptions) as being applicable to projects characterized as in-fill development meeting the following conditions:

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

The analysis presented in the following section provides substantial evidence that the Project properly qualifies for an exemption under CEQA Guidelines §15332 as a Class 32 urban infill development, and would not have a significant effect on the environment.

### Exceptions

Even if a project is ordinarily exempt under any of the potential categorical exemptions, CEQA Guidelines Section 15300.2 provides specific instances where exceptions to otherwise applicable exemptions apply. Exceptions to a categorical exemption apply in the following circumstances, effectively nullifying a CEQA categorical exemption:

- (a) Location. Classes 3, 4, 5, 6, and 11 are qualified by consideration of where the project is to be located. A project that is ordinarily insignificant in its impact on the environment may in a particularly sensitive environment be significant. Therefore, these classes are considered to apply in all instances, except where the project may impact on an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies.*
- (b) Cumulative Impact. All exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant.*
- (c) Significant Effect. A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.*
- (d) Scenic Highways. A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic*

*highway. This does not apply to improvements which are required as mitigation by an adopted negative declaration or certified EIR.*

*(e) Hazardous Waste Sites. A categorical exemption shall not be used for a project located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code.*

*(f) Historical Resources. A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource.*

The following analysis also presents substantial evidence that there are no exceptions that apply to the Project or its site, that the Project would not have a significant effect on the environment, and that the Class 32 exemption remains applicable.

**CEQA Exemption Checklist**

The following analysis provides substantial evidence to support a conclusion that the Project qualifies for an exemption under CEQA Guidelines Section 15332 as a Class 32 urban infill development.

**Exemption Criterion §15332(a): General Plan & Zoning Consistency**

Yes      No

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

General Plan and Zoning

The proposed residence hall is located on lands designated for public, quasi-public, and educational uses under the Town of Atherton’s General Plan. The Project is consistent with this general plan designation, which allows for schools and requires CUPs for new buildings on school campuses consistent with the school’s master plan. The Project is consistent with the Menlo College Master Plan Update (July 2019), which includes a goal to develop “new or significantly improved residence hall(s).”

The Project is also consistent with Town zoning designations and regulations. Menlo College is located in the Public Facilities and Schools (PFS) District, which allows for the development of public and private schools, as well as the development of residential uses associated with the primary nonresidential use on the same property (§ 17.36.020). The Project is consistent with PFS District permitted uses.

Under the Public Facilities and Schools (PFS) zoning, there are no Floor Area Ratio or density standards. However, there is a height limit of 34 feet. At 34 feet, the height of the proposed residence hall would be limited to two stories, which would allow the construction of approximately 96 units of student housing in the proposed location. The Project proposes to provide 20% of the proposed “base case” student living units to lower income students as defined in Government Code section 65915(b)(1)(F) and, as such, would qualify as a state density bonus project. Under the state density bonus law, student housing projects that provide 20% of the units allowed under the zoning to lower income students qualify for a 35% density bonus under section 65915(e)(3)(C). Density bonus projects are also entitled to a waiver of development standards that would physically preclude construction of the project at the densities permitted under state law per section 65915(e)(1).

Because it is a density bonus project, the Project is entitled to 35% more units than could otherwise be built under the applicable zoning, which allows the construction of a total of 131 student living units. (96 x 0.35 = 34 units.) To accommodate the 130 units in the proposed location, the residence hall must be three stories (43 feet in height) and cannot physically “fit” in the proposed location with the height limit

of 34 feet. It is therefore entitled to a waiver of the 34-foot height requirement under Government Code section 65915(e). The applicant is proposing a full third floor to accommodate additional students, which would include an additional 17 units for a total of 147 units (45 units on the first floor, 51 units on the second floor and 51 units on the third floor.) As the Town does not have floor area or density limitations, and the only waiver requested is height, the additional 17 units may be permitted at this location.

Given the facts above, the Project adheres to the criteria of CEQA Guidelines §15332(a) as being consistent with the General Plan and applicable zoning regulations for the site.

**Criterion §15332(b): Project Location, Size & Context**

Yes      No

- 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 within the incorporated limits of the Town of Atherton and would disturb approximately 1.3 acres within the Menlo College campus. The Project site is within the Menlo College campus, surrounded by Menlo Campus development, which is itself surrounded by developed urban land uses and/or paved public streets within Atherton and Menlo Park (see **Figure 2**). The Project adheres to the criteria of CEQA Guidelines §15332(b) as a site of no more than five acres substantially surrounded by urban uses.

**Criterion §15332(c): Endangered, Rare or Threatened Species**

Yes      No

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

The Project site is in a courtyard area surrounded by existing Menlo College residence halls and consists of paving, managed landscaping, and a small pool and is under active use. Construction of the Project would involve removal of 29 trees but none of those trees would qualify as Heritage Trees under the Town’s municipal code. As noted previously, the site is surrounded by urban uses and roadways. As an urban site under active use, the Project site is highly unlikely to support any species identified as a candidate, sensitive or special status species.<sup>1</sup> The Project site has no value as habitat for endangered, rare or threatened species and impacts would be **less than significant**. Therefore, the Project is consistent with Section 15332(c).

**Criterion §15332(d): Transportation**

Yes      No

- Approval of the project would not result in any significant effects relating to traffic.

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<sup>1</sup> Town of Atherton, April 2019. Initial Study/Mitigated Negative Declaration for the 2019 General Plan Update, p.13.

A transportation analysis has been prepared by Hexagon Transportation Consultants to evaluate the potential for the Project to result in transportation impacts. The complete analysis is included as Attachment A. Based on counts at Menlo College driveways from 2019, Hexagon concluded that because students living on campus would not drive to get to and from classes, AM and PM peak hour trips would be reduced with the proposed residence hall compared to the existing trip generation. Since the residence hall would result in a reduction in the number of AM and PM peak hour trips, the Project would not exacerbate traffic delays on El Camino Real and other surrounding roadways or otherwise have the potential to result in negative traffic-related impacts.

Hexagon also looked at Vehicles Miles Traveled (VMT) and concluded that the Project would reduce VMT because it would replace students driving to campus with students living on campus. The trip length for primary trips (between home and school) for these students would be reduced to zero. While the exact VMT reduction cannot be quantified because it is not known how far students are driving to school now, this information is not necessary to reach the conclusion that VMT would be reduced as a result of the proposed residence hall Project and the resultant reduction in student trips between home and school.

Based on the conclusions in the Hexagon Transportation Study (attached) as summarized above, the Project would result in a reduction in trips and VMT and would not have the potential to result in significant transportation-related impacts. Therefore, the Project is consistent with Section 15332(d) as it relates to Transportation.

**Criterion §15332(d): Noise**

Yes      No

           Approval of the project would not result in any significant effects relating to noise.

The Project would result in intermittent short-term noise and vibration resulting from construction activities. These noise impacts would not be considered significant, however, since the proposed Project would be required to comply with the Town of Atherton’s Noise Ordinance, including limiting the construction activities to day-time hours.

The Project is located within an area that currently houses Menlo College students and the proposed residence hall would have operational noise levels consistent with other surrounding residence hall uses. As discussed under transportation above, with students living within walking-distance to classes, the Project is anticipated to reduce traffic and therefore also reduce traffic-related noise along roadways near the site. Other operational noise from the Project will be from mechanical equipment associated with heating and cooling of the living units. Mechanical noise associated with heating, ventilation or air conditioning systems would be required to comply with standards applicable in the Town’s Noise Ordinance.

With compliance with the Town of Atherton Noise Ordinance related to construction and operational noise, the Project would not result in significant noise impacts. Therefore, the Project is consistent with Section 15332(d) as it relates to Noise.

**Criterion §15332(d): Air Quality**

Yes      No

           Approval of the project would not result in any significant effects relating to air quality.<sup>2</sup>

The Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines include operational and construction-period screening criteria that provide lead agencies and project applicants with a conservative indication of whether a proposed project could result in potentially significant air quality impacts related to emission of criteria air pollutants. If a proposed project does not exceed the screening criteria for the applicable period, then the lead agency or applicant need not perform a detailed air quality assessment of the Project’s criteria air pollutant emissions, and impacts are deemed to be less than significant.

With 147 units, the proposed residence hall would be below the mid-rise apartment building screening sizes for construction (290 dwelling units) and operational (494 dwelling units) periods. While a residence hall is not included specifically on the table, it would have the same or reduced emissions than a mid-rise apartment building because a residence hall would generally have smaller units, lower population per unit, and related lower utility use and traffic than an apartment building. The Project can therefore be determined to be below threshold levels with respect to construction and operational criteria air pollutants.

Being a residence hall, the Project is not of a type that results in significant potential for health risk due to operations. However, construction activities associated with the Project would generate construction-related dust and TAC emissions, specifically diesel particulate matter, from on-road haul trucks and off-road equipment exhaust emissions, resulting in increased cancer risk or non-cancer health concerns for nearby sensitive receptors. As part of their project description, the applicants have included BAAQMD-recommended construction-period best management practices for control of dust and emissions and use of Tier-4 engines with lower emissions levels and these would be formalized in conditions of project approval.

A health risk assessment has been prepared by Illingworth & Rodkin to evaluate the potential for the Project to result in emissions-related health risk impacts during the construction period. The complete analysis is included as Attachment B. Based on modeling of emissions from construction activities including the applicant’s proposed use of Tier 4 engines, Illingworth & Rodkin concluded that maximum health risk levels for nearby sensitive receptor would be below threshold levels and therefore less than significant. As shown in detail in Attachment B, modeled cancer risk was 5.8 per million compared to a threshold of 10, an annual particulate matter (2.5 microns in diameter) concentration of 0.02 micrograms per cubic meter compared to a threshold of 0.30, and a hazard index of less than 0.01

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<sup>2</sup> In May 2011, the Bay Area Air Quality Management District (BAAQMD) released an update to its CEQA Guidelines, an advisory document that provides lead agencies, consultants and project applicants with uniform procedures for addressing air quality in environmental documents. The updated guidelines were challenged, and the Alameda County Superior Court ordered the BAAQMD to set aside its recommended thresholds of these Guidelines until it complied with CEQA requirements. In view of this court order, the BAAQMD ceased recommending that their thresholds be used as a generally applicable measure of a project’s significant air quality impacts, and instead recommended that lead agencies determine appropriate air quality thresholds of significance based on substantial evidence in the record. The BAAQMD has not yet taken action to reinstate the CEQA thresholds or otherwise respond to the Court of Appeal decision. However, in accordance with state CEQA guidelines and in the absence of specific agency thresholds, this CEQA document relies on significance determinations based on the substantial evidence in the record as contained in the May 2011 BAAQMD CEQA Guidelines document.

compared to a threshold of 1. Considering cumulative exposure, including from the nearby Cartan Field Stormwater Capture project, health risks would also be below cumulative threshold levels. Therefore, the Project is consistent with Section 15332(d) as it relates to Air Quality.

**Criterion §15332(d): Water Quality**

Yes      No

- Approval of the project would not result in any significant effects relating to water quality.

The Project is located within an urbanized environment and there are no lakes, creeks or other surface waters in the immediate proximity. Construction of the Project would be on-grade and would require limited grading (approximately 485 cubic yards of cut and 75 cubic yards of fill) and all construction activities would be of limited scope and duration on a flat site, far from natural water bodies. The Project is required to implement a Storm Water Pollution Prevention Plan (SWPPP) in accordance with the National Pollution Discharge Elimination System (NPDES) General Permit for Discharges of Storm Water Associated with Construction Activity, and incorporates operational stormwater treatment measures in compliance with the NPDES permit requirements. With compliance with applicable regulations as discussed above, the Project would not result in erosion and/or sedimentation of downstream receiving waters or have other adverse effects to water quality. The Project adheres to the criteria of CEQA Guidelines §15332(d) regarding water quality.

**Exceptions to Categorical Exemptions Checklist**

In addition to investigating the applicability of CEQA Guidelines §15332 (Class 32), this technical report also assess whether any of the exceptions to qualifying for an exemption are present. The following analysis compares the criteria of CEQA Guidelines §15300.2 (Exceptions) to the Project

**Criterion 15300.2(a): Location**

Yes      No

- Is there an exception to the exemption (Classes 3, 4, 5, 6 or 11) for the project due to its location in a particularly sensitive environment, such that the project may impact an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies?

This exception applies only to CEQA exemptions under Classes 3, 4, 5, 6 or 11. Since the Project qualifies as a Class 32 urban infill exemption, this criterion is not applicable and is provided here for informational purposes only. There are no environmental resources of hazardous or critical concern that are designated, precisely mapped or officially adopted near the Project site, or that could be adversely affected by the Project. Therefore, exception under CEQA Guidelines Section 15300.2(a) does not apply.

**Criterion 15300.2(b): Cumulative Impact**

Yes      No

- Is there an exception to the Class 32 exemption for the project due to significant cumulative impacts of successive projects of the same type and in the same place, over time?

According to this criterion, the exemption would be inapplicable if the cumulative impact of “successive projects of the same type in the same place, over time” is significant. As discussed above, the Project would have generally beneficial (reduced traffic) or de minimis (controlled stormwater, consistent noise levels) environmental impacts, which would not have the potential to contribute to significant negative cumulative operational impacts. Menlo College has no current plans for additional residence hall projects. The Town approved the Cartan Field Stormwater project on the nearby Cartan Field and this has been included in the cumulative analysis. There are no other known construction projects planned in the immediate vicinity. However, even if there were other vicinity construction projects, compliance with applicable construction noise requirements, construction-period stormwater pollution prevention, and proposed project-specific construction emissions controls would ensure that the Project would not have the potential to result in a cumulatively considerable contribution to significant construction-related cumulative impacts. Therefore, exception under CEQA Guidelines Section 15300.2(b) does not apply.

**Criterion 15300.2(c): Unusual Circumstances**

Yes      No

- Is there an exception to the Class 32 exemption for the project because there is a reasonable possibility that the project will have a significant effect on the environment due to unusual circumstances?

There are no known unusual circumstances applicable to the Project or its site which may result in a significant effect on the environment. The Project constitutes infill on a site within the active Menlo College campus area. Such infill development on an underutilized area within an existing developed area is specific to the Class 32 exemption criteria and would therefore not be considered an unusual circumstance from an environmental perspective. Through the course of this analysis, there have been no identified unique or unusual circumstances that suggest the Project would have the potential to have a significant impact on the environment where other qualifying Class 32 Exemption projects would not. The exception under CEQA Guidelines Sec. 15300.2(c) does not apply to the Project.

**Criterion 15300.2(d): Scenic Highway**

Yes      No

- Is there an exception to the Class 32 exemption for the project because project may result in damage to scenic resources including but not limited to, trees, historic buildings, rock outcroppings or similar resources, within a highway officially designated as a state scenic highway?

The Project is not located proximate to a state scenic highway.<sup>3</sup> The nearest scenic highway is U.S. 280, which is over 2 miles from the Project site. The proposed site for the new building is interior to the campus and immediately adjacent to the existing residence halls. Due to its interior location, the building would have limited, if any, visibility from outside of the campus grounds due to the distance of the building site from nearby roads and residential neighborhoods and would certainly not be prominent in views from U.S. 280 over 2 miles from the site. Therefore, the exception under CEQA Guidelines §15300.2(d) does not apply to the Project.

**Criterion 15300.2(e): Hazardous Waste Sites**

Yes      No

- Is there an exception to the Class 32 exemption for the project because the project is located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code?

The provisions of Government Code Section 65962.5 are commonly referred to as the "Cortese List." The provisions require the Department of Toxic Substance Control (DTSC), the SWRCB, the California Department of Public Health (DPH), and the California Department of Resources Recycling and Recovery to submit information pertaining to sites associated with solid waste disposal, hazardous waste disposal, leaking underground tank sites, and/or hazardous materials releases to the Secretary of California Environmental Protection Agency (CalEPA). The Project site is not identified on any lists compiled pursuant to Section 65962.5 of the Government Code;<sup>4</sup> therefore, an exception to the exemption under CEQA Guidelines Section 15300.2(e) does not apply to the Project.

**Criterion 15300.2(f): Historical Resources**

Yes      No

- Is there an exception to the Class 32 exemption for the project because the project may cause a substantial adverse change in the significance of a historical resource?

The Menlo College campus contains two historic buildings, the Phar Lap barn in the Cartan Field area, and El Camino Hall along El Camino. Neither of these buildings is adjacent to the Project location. Project construction would not require removal of any buildings or construction adjacent to existing historic buildings and would therefore not have an effect on historic resources.

The Project site is located within an urbanized portion of the Town of Atherton, has been previously developed, and is surrounded by other urban development. The proposed building would be constructed on-grade and would require minimal grading unlikely to disturb soil that has not been previously disturbed. However, in the event of an unanticipated discovery of underground cultural resources, existing requirements pursuant to state law require that work must be halted and a qualified

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<sup>3</sup> California Department of Transportation, Scenic Highways. Website accessed 4/28/20 at: <https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways>.

<sup>4</sup> State Water Resources Control Board GeoTracker Database, website accessed 4/28/2020 at <http://geotracker.waterboards.ca.gov/>; Department of Toxic Substances Control EnviroStor Database, website accessed 4/28/2020 at <http://www.envirostor.dtsc.ca.gov/public/>.

archaeologist consulted. Further, in accordance with Public Resources Code (PRC) Section 5097.98, should human remains be found on the site, no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains shall be disturbed until the County Coroner is contacted to determine that no investigation of the cause of death is required, and if the Coroner determines the remains to be Native American then the Coroner shall contact the Native American Heritage Commission and the most likely descendent to determine means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98.

Implementation of these existing regulations would ensure that in the unlikely event any underground resources are discovered, appropriate procedures are followed to ensure significant impacts to those resources would not result.

Therefore, given the above conclusions, the exception under CEQA Guidelines §15300.2(e) does not apply.

**Criterion 15300.2(c): Other Potential Effects**

Yes      No

           Is there an exception to the Class 32 exemption for the project because the project may result in substantial adverse impacts other than those discussed above?

No other potential adverse effects of the Project have been identified, as summarized in the statements below.

- There are no known Earthquake Fault Zones in the Town of Atherton (or on the Project site).<sup>5</sup> The Town’s building Code requires all development to submit an engineering geology report and soils engineering report to demonstrate proposed construction is in compliance with safety and building code requirements given specific of site conditions.
- The Project site and surroundings are generally flat and not subject to landslides or slope instability.
- The Project is not located in the 100-year flood plain.<sup>6</sup>
- The Project would not remove existing structures or therefore displace any people or existing housing.
- The Project is located in an area served by existing utilities and services and do to the limited size and nature of the Project would not necessitate new or physically altered utilities or public facilities which could result in physical impacts on the environment.

There is nothing unusual or peculiar about the Project that would indicate that it would have any substantial adverse effects, and the exception under CEQA Guidelines Sec. 15300.2(c) does not apply to the Project.

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<sup>5</sup> Town of Atherton, April 2019. Initial Study/Mitigated Negative Declaration for the 2019 General Plan Update, p.16.

<sup>6</sup> FEMA Flood Maps accessed on 4/26/2020 at <https://msc.fema.gov/portal/home>.

Hexagon Transportation Consultants, Transportation Analysis

Attachment A

to the

Menlo College Residence Hall Project  
Class 32 CEQA Exemption



# HEXAGON TRANSPORTATION CONSULTANTS, INC.

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April 17, 2020

Ms. Rebecca Auld  
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***Technical Memorandum: Transportation Analysis for the Proposed New Residence Hall at the Menlo College in Atherton, California***

Hexagon Transportation Consultants, Inc has completed a trip generation and vehicle miles traveled (VMT) analysis for the proposed new residence hall at Menlo College in Atherton, California. Menlo College is a private college specializing in business.

The proposed 3-story new residence hall would provide additional housing comprising 147 rooms with 288 beds for Menlo College's existing student population (894 students as of Fall 2019), approximately 325 of whom currently live off campus because there is no available on-campus housing for them. Amenities would include study spaces, lounges, game rooms, kitchens, and laundry rooms.

## **Project Trip Generation**

A college residence hall is not one of the specific land use categories defined in the 10<sup>th</sup> Edition of the *ITE Trip Generation Manual*. Therefore, site driveway counts obtained from the 2019 Menlo College Master Plan Update were used to estimate the trip rates for students living outside of campus. It is noted that trips are associated with a certain number of students but are generated by other entities as well, as described below.

The main entrance to the College is provided on El Camino Real at the intersection of Encinal Avenue and Menlo College Road. The second entrance to the campus is provided via Alejandra Avenue and is used primarily by the College's student residents. A third entrance to the campus is located further west down Alejandra Avenue at Wunderlich Field. Menlo School, which is a college preparatory school comprised of a middle school and a high school, is located to the south of Menlo College. The main entrance to Menlo School is provided on Valparaiso Avenue. Although Menlo College and Menlo School are two independent entities, vehicular access between them is provided via internal roads.

The College monitored traffic patterns over a peak week (Monday to Friday) in April 2019 and counted the number of vehicle trips to and from campus during the peak hours via the three campus entrances. The peak AM hours are defined as 7:30 AM to 10:30 AM, and peak PM hours are defined as 2:30 PM to 5:30 PM. Most of the traffic that is generated by the College occurs during these time periods. These time periods also coincide with the street peak, when traffic on adjacent street is highest.

It should be noted that in addition to trips associated with Menlo College, the driveway counts at the three entrances included the following:

1. Menlo School parents, students, faculty, and staff utilize all of the Menlo College campus entrances for student drop-off/pick-up, as well as faculty, staff, and visitor parking



- (including access by school faculty and staff through the Menlo College campus in order to park in a lot on the school property), and
2. Based on field observations conducted when the trip generation counts were done, non-affiliated traffic routinely enters Menlo College's El Camino entrance, only to immediately exit, as a method to either avoid waiting for the El Camino light to turn green, or to avoid navigating across El Camino in order to turn left back at Encinal Avenue.
  3. For use by the College as well as Atherton and Menlo Park residents, the College maintains three Zip Car parking spaces and four electronic charging stations.

The trip generation study did not attempt to estimate traffic associated with the Menlo School and non-affiliated traffic patterns.

At the time of the counts in 2019, there were 875 students, 110 full-time faculty and staff, and 75 part-time faculty associated with Menlo College. During that time, there were 584 student beds provided in five residence halls. Therefore, there were approximately 291 (875 – 584) students living off-campus. Students living on campus would be expected to have a lower trip generation because they would not drive to get to/from classes. Combined with faculty and staff, that makes 476 persons commuting to/from campus and 584 persons in residence at the campus during the trip generation study.

According to trip generation data provided in the 2019 Menlo College Master Plan Update, there were a total of 261 AM peak hour trips and 307 PM peak hour trips that occurred at the three driveways serving Menlo College. The trip generation study noted that the limited number of trips recorded relative to the size of the community reflects the largely-residential nature of the College, as well as the incentives the College provides to faculty and staff who choose to commute by public transportation or bicycle (which together account for 10 – 15% of the faculty and staff transportation on working days).

The adopted Menlo College Master Plan includes a plan for increased student enrollment over time up to 1,000 students in the 2012-2022 school year whether or not a new residence hall is constructed. The current project is not required for nor linked to increased enrollment but rather helps satisfy existing student demand for housing. Consistent with the Master Plan, as of the 2020 school year, there are 894 students enrolled at Menlo College, 325 of which are living off-campus. The proposed new residence hall would provide an additional 288 beds for students who would otherwise need to live off-campus and commute to school. As discussed above, students living on campus would be expected to have a lower trip generation because they would not drive to get to and from classes. Therefore, it is estimated that the AM and PM peak hour trips would be reduced with the proposed residence hall compared to the existing trip generation.

The exact reduction in peak hour trips cannot be quantified because the trip generation data includes non-affiliated traffic (see discussion above) and therefore trip generation rates cannot authoritatively be assigned to students. However, because students residing in the residence hall would not drive to classes, it can be authoritatively concluded that the trip generation of students would be reduced with more of the students living on campus, which would be the result of the proposed residence hall project. Since the residence hall would result in a reduction in the number of AM and PM peak hour trips, the project would not exacerbate traffic delays on El Camino Real and other surrounding roadways or otherwise have the potential to result in negative traffic-related impacts.



**Vehicle Miles Traveled (VMT) Analysis**

In December 2018, the California Natural Resources Agency certified and adopted the CEQA Guidelines update package, including the Guidelines section implementing Senate Bill 743. The guidelines state that level of service will no longer be considered to be an environmental impact under CEQA and that vehicle-miles-travelled (VMT) is the most appropriate measure of transportation impact. Cities and Towns have until July 2020 to adopt the new procedures.

This project would reduce VMT because it would replace students driving to campus with students living on campus. The trip length for primary trips (between home and school) for these students would be reduced to zero. While the exact VMT reduction cannot be quantified because it is not known how far students are driving to school now, this information is not necessary to reach the conclusion that VMT would be reduced as a result of the proposed residence hall project and resultant reduction in student trips between home and school.

**HEXAGON TRANSPORTATION CONSULTANTS, INC.**

Trisha Dudala, P.E.  
Senior Associate

Eric Tse, P.E., PTOE  
Associate

Illingworth & Rodkin, Air Quality Community Risk Assessment

**Attachment B**

to the

Menlo College Residence Hall Project  
Class 32 CEQA Exemption

# ***MENLO COLLEGE RESIDENCE HALL AIR QUALITY COMMUNITY RISK ASSESSMENT***

***Atherton, California***

**May 19, 2020**

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I&R Project#: 20-080

**Introduction**

The purpose of this report is to address community risk impacts associated with the proposed Menlo College Residence Hall project located at 1000 El Camino Real in Atherton, California. The air quality impacts would be associated with the construction of the new building and infrastructure and operation of the project. Air pollutant emissions associated with the construction and operation of the project were predicted using models. In addition, the potential construction community risk impact to nearby sensitive receptors were evaluated. This analysis addresses those issues following the guidance provided by the Bay Area Air Quality Management District (BAAQMD).<sup>1</sup>

**Project Description**

The proposed site for the new building is interior to the campus and immediately adjacent to the existing residence halls. The project proposes to construct a three-story, 56,453 square-foot (sf)<sup>2</sup> residence hall consisting of 147 student living units (288 beds). Amenities will include study spaces, lounges, game rooms, kitchens, and laundry rooms. Only adult students would be living in the building and no additional parking is proposed.

**Project Design Features – Construction Fugitive Dust Emissions Control**

The project design includes features to minimize air quality impacts that may occur during construction. During any construction period ground disturbance, the applicant will ensure that the project contractor implement measures to control dust and exhaust. The contractor will implement the following best management practices that are required of all projects:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be kept damp.
2. All haul trucks transporting soil, sand, or other loose material off-site will be covered.
3. All visible mud or dirt track-out onto adjacent public roads will 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 will be limited to 15 miles per hour (mph).
5. All roadways, driveways, and sidewalks to be paved will be completed as soon as possible. Building pads will be laid as soon as possible after grading unless seeding or soil binders are used.
6. All grading activities shall be suspended when average wind speeds exceed 20 mph and visible dust extends beyond site boundaries.

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<sup>1</sup> Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2017.

<sup>2</sup> The updated project now proposes 57,267-sf. This small increase does not make a measurable difference in the level of emissions and does not affect the analysis.

7. Avoid staging of construction equipment near occupied residence hall boundaries or classroom facilities.
8. Idling times will 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.
9. All construction equipment will be maintained and properly tuned in accordance with manufacturer's specifications. All equipment will be checked by a certified mechanic and determined to be running in proper condition prior to operation.
10. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person will respond and take corrective action within 48 hours. The Air District's phone number will also be visible to ensure compliance with applicable regulations.

Project Design Feature – Construction Diesel Particulate Matter (DPM) Emissions Control

The project applicant has proposed the use of construction equipment with Tier 4 engines as part of their project description, which will be formalized as a condition of project approval. The following wording of such a requirement is recommended to account for availability of Tier 4 engines and consistency with the analysis in this report.

- The off-road equipment used on-site to construct the project would need to achieve a fleet-wide average 50-percent reduction in DPM exhaust emissions or greater to reduce impact levels to below thresholds. To achieve this, at least 80 percent of the diesel-powered off-road equipment, larger than 25 horsepower, operating on the site for more than two days continuously shall, at a minimum, meet U.S. EPA particulate matter emissions standards for Tier 4 interim engines. Where Tier 4 equipment is not available, exceptions could be made for equipment that includes CARB-certified Level 3 Diesel Particulate Filters or equivalent. Equipment that is electrically powered or uses non-diesel fuels would also meet this requirement. Up to 20 percent of the equipment could be rated Tier 3.

**Setting**

The project is located in San Mateo County, which is in the San Francisco Bay Area Air Basin. Ambient air quality standards have been established at both the State and federal level. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM<sub>10</sub>), and fine particulate matter (PM<sub>2.5</sub>).

Air Pollutants of Concern

High ozone levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO<sub>x</sub>). These precursor pollutants react under certain meteorological conditions

to form high ozone levels. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ozone levels. The highest ozone levels in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. High ozone levels aggravate respiratory and cardiovascular diseases, reduced lung function, and increase coughing and chest discomfort.

Particulate matter is another problematic air pollutant of the Bay Area. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM<sub>10</sub>) and fine particulate matter where particles have a diameter of 2.5 micrometers or less (PM<sub>2.5</sub>). Elevated concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

### Toxic Air Contaminants

Toxic air contaminants (TAC) are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer) and include, but are not limited to, the criteria air pollutants. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter [DPM] near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the Federal Hazardous Air Pollutants programs. The most recent Office of Environmental Health Hazard Assessment (OEHHA) risk assessment guidelines were published in February of 2015.<sup>3</sup> See *Attachment 1* for a detailed description of the community risk modeling methodology used in this assessment.

### Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, and elementary schools. For cancer risk assessments, infants and children are the most

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<sup>3</sup> OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.

sensitive receptors, since they are more susceptible to cancer causing TACs. Residential locations are assumed to include infants and small children. The closest off-site sensitive receptors to the project site are the single-family residences to the west. There are also more single- and multi-family residences to the west, east, south, and north of the site at slightly further distances. In addition, the Menlo School (children Grades 6<sup>th</sup> – 12<sup>th</sup>) is southeast of the project site. There are adult students in the college's existing residence halls adjacent to the north, west, and south of the project site, but they are considered on-site receptors as part of Menlo College and are not deemed sensitive receptors for purposes of CEQA analysis.

### Regulatory Agencies

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways. These regulations include the solid waste collection vehicle (SWCV) rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2008, CARB approved a new regulation to reduce emissions of DPM and nitrogen oxides from existing on-road heavy-duty diesel fueled vehicles.<sup>4</sup> The regulation requires affected vehicles to meet specific performance requirements between 2014 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or equivalent by 2023. These requirements are phased in over the compliance period and depend on the model year of the vehicle.

The BAAQMD is the regional agency tasked with managing air quality in the region. At the State level, the CARB (a part of the California Environmental Protection Agency [EPA]) oversees regional air district activities and regulates air quality at the State level. The BAAQMD has published California Environmental Quality Act (CEQA) Air Quality Guidelines that are used in this assessment to evaluate air quality impacts of projects.<sup>5</sup> The detailed community risk modeling methodology used in this assessment is contained in *Attachment 1*.

### Significance Thresholds

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA and these significance thresholds were contained in the District's 2011 *CEQA Air Quality Guidelines*. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA. The thresholds were challenged through a series of court challenges and were mostly upheld. BAAQMD updated the *CEQA Air Quality Guidelines* in 2017 to include the latest significance thresholds that were used in this analysis are summarized in Table 1.

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<sup>4</sup> Available online: <http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm>. Accessed: November 21, 2014.

<sup>5</sup> Bay Area Air Quality Management District. 2017. *BAAQMD CEQA Air Quality Guidelines*. May.

**Table 1. Community Risk Significance and GHG Thresholds**

Health Risks and Hazards	Single Sources Within 1,000-foot Zone of Influence	Combined Sources (Cumulative from all sources within 1,000-foot zone of influence)
Excess Cancer Risk	>10.0 per one million	>100 per one million
Hazard Index	>1.0	>10.0
Incremental annual PM <sub>2.5</sub>	>0.3 µg/m <sup>3</sup>	>0.8 µg/m <sup>3</sup>
Note: PM <sub>10</sub> = coarse particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, PM <sub>2.5</sub> = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less.		

### Community Health Risk Assessment

Project impacts related to increased community risk would occur by introducing a new source of TACs during construction that could affect existing sensitive receptors in the project vicinity. Temporary project construction activity would generate dust and equipment exhaust on a temporary basis that could affect nearby sensitive receptors. A construction community health risk assessment was prepared to address project construction impacts on the surrounding off-site sensitive receptors. Operation of the project is not expected to be a source of TAC or localized air pollutant emissions, as the project would not generate substantial truck traffic or include stationary sources of emissions, such as generators powered by diesel engines.

There are existing sources of TACs and localized air pollutants in the vicinity of the project. The impact of the existing and new sources of TACs upon the existing sensitive receptors was assessed to address cumulative community risk impacts.

Community risk impacts are addressed by predicting increased lifetime cancer risk, the increase in annual PM<sub>2.5</sub> concentrations, and computing the Hazard Index (HI) for non-cancer health risks. The methodology for computing community risks impacts is contained in *Attachment 1*.

#### Construction Community Health Risk Impacts

##### *Project Construction Activity*

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM<sub>10</sub> and PM<sub>2.5</sub>. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. The BAAQMD CEQA Air Quality Guidelines consider these impacts to be less-than-significant if best management practices are implemented to reduce these emissions. *The project design features for construction emissions control would implement BAAQMD-recommended best management practices.*

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. These exhaust air pollutant emissions would not be considered to contribute substantially to existing or projected air quality violations. Construction exhaust emissions may

still pose health risks for sensitive receptors such as surrounding residents. The primary community risk impact issue associated with construction emissions are cancer risk and exposure to PM<sub>2.5</sub>. Diesel exhaust poses both a potential health and nuisance impact to nearby receptors. A community health risk assessment of the project construction activities was conducted that evaluated potential health effects to nearby sensitive receptors from construction emissions of DPM and PM<sub>2.5</sub>.<sup>6</sup> This assessment included dispersion modeling to predict the concentrations resulting from project construction at sensitive receptors, so that lifetime cancer risks and non-cancer health effects could be evaluated.

### *Construction Emissions*

The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to predict annual emissions for construction. CalEEMod provided annual emissions for construction and estimates emissions for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic. A construction build-out scenario, including equipment list and schedule, was based on CalEEMod defaults for a project of this type and size. The proposed project land uses and demolition/earthwork volumes were entered into CalEEMod as follows:

- 147 dwelling units and 56,453-sf entered as “Apartments Mid Rise” on 3.87 acres. The larger default construction acreage was used to account for grading and trenching and the height of building construction, and
- 410 cubic yards of soil export during grading.

The estimated construction start date of July 2021 was used. The CalEEMod default construction schedule included approximately 299 construction workdays over 14 months. *Attachment 2* includes the CalEEMod output values for construction emissions, information for schedule, equipment usage, and truck hauling.

Emissions estimates also include construction related local traffic. CalEEMod trip rates and travel distances for workers, vendors and haul trucks were combined with mobile emissions factors from CARB’s EMFAC2017 model.<sup>7</sup> A trip length of one mile was used to represent vehicle travel while at or near the construction site. *Attachment 3* includes the EMFAC2017 emissions modeling outputs.

The CalEEMod model provided total annual PM<sub>10</sub> exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles. The total emissions from all construction stages as 0.1435 tons (287 pounds) without design feature controls and 0.0132 tons (27 pounds) with Tier 4 engine design feature controls. The on-road emissions are a result of haul truck travel during demolition and grading activities, worker travel, and vendor deliveries during construction. It was assumed that these emissions from on-road vehicles traveling at or near the site would occur at the construction site. Fugitive PM<sub>2.5</sub> dust emissions were calculated by CalEEMod as 0.0388 tons (78 pounds) without design feature

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<sup>6</sup> DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

<sup>7</sup> Note that CalEEMod uses the older EMFAC2014 model.

controls and 0.0091 tons (18 pounds) with Tier 4 engine design feature controls for the overall construction period.

### *Dispersion Modeling*

The U.S. EPA AERMOD dispersion model was used to predict DPM and PM<sub>2.5</sub> concentrations at sensitive receptors (residences, school children) in the vicinity of the project construction area. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.<sup>8</sup> The modeling utilized two area sources to represent the on-site construction emissions, one for exhaust emissions and one for fugitive dust emissions. To represent the construction equipment exhaust emissions, an emission release height of 19.7 feet (6 meters) was used for the area source. The elevated source height reflects the height of the equipment exhaust pipes plus an additional distance for the height of the exhaust plume above the exhaust pipes to account for plume rise of the exhaust gases. For modeling fugitive PM<sub>2.5</sub> emissions, a near-ground level release height of 6.6 feet (2 meters) was used for the area source. Emissions from the construction equipment and on-road vehicle travel were distributed throughout the modeled area sources. Construction emissions were modeled as occurring daily between 7:00 a.m. to 4:00 p.m. when the majority of construction activity would occur.

The modeling used a five-year data set (2009-2013) of hourly meteorological data from the Palo Alto Airport that was prepared for use with the AERMOD model by CARB. Annual DPM and PM<sub>2.5</sub> concentrations from construction activities during the 2021-2022 period were calculated using the model. DPM and PM<sub>2.5</sub> concentrations were calculated at nearby sensitive receptors. Receptor heights of 4.9 feet (1.5 meters) and 14.8 feet (4.5 meters) were used to represent the breathing height on the first and second floors of nearby single- and multi-family residences and the school children in 6<sup>th</sup> through 12<sup>th</sup> Grades.

### *Construction Community Risk Summary*

The maximum-modeled annual DPM and PM<sub>2.5</sub> concentrations, which includes both the DPM and fugitive PM<sub>2.5</sub> concentrations, were identified at nearby sensitive receptors (as shown in Figure 1) to find the maximally exposed individuals (MEIs). The MEI is used as an indicator because risk for all receptors will be at or below that level. Using the maximum annual modeled DPM concentrations, the maximum increased cancer risks were calculated using BAAQMD recommended methods and exposure parameters described in *Attachment 1*. Non-cancer health hazards and maximum PM<sub>2.5</sub> concentrations were also calculated and identified. *Attachment 4* to this report includes the emission calculations used for the construction area source modeling and the cancer risk calculations.

Results of this assessment indicated that the construction residential MEI was located on the first floor (4.9 feet above ground) of the single-family residence to the southeast of the project site (as seen in Figure 1). The maximum increased cancer risk, maximum PM<sub>2.5</sub> concentration, and maximum computed HI from construction (with Tier 4 engine design feature controls) do not

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<sup>8</sup> Bay Area Air Quality Management District (BAAQMD), 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0*. May.

exceed their respective BAAQMD single-source thresholds of greater than 10.0 per million for cancer risk, greater than 0.3  $\mu\text{g}/\text{m}^3$  for  $\text{PM}_{2.5}$  concentration, and greater than 1.0 for HI. Table 2 summarizes the maximum cancer risks,  $\text{PM}_{2.5}$  concentrations, and health hazard indexes for project related construction activities affecting the residential MEI.

**Table 2. Construction Risk Impacts at the Off-site Residential MEI**

Source		Cancer Risk (per million)	Annual $\text{PM}_{2.5}$ ( $\mu\text{g}/\text{m}^3$ )	Hazard Index
Project Construction	Without Tier 4	19.1 (infant)	0.14	0.02
	With 80% Tier 4	5.8 (infant)	0.02	<0.01
<b>BAAQMD Single-Source Threshold</b>		<b>&gt;10.0</b>	<b>&gt;0.3</b>	<b>&gt;1.0</b>
Exceed Threshold?	Without Tier 4	Yes	No	No
	With 80% Tier 4	No	No	No

**Figure 1. Project Construction Site, Locations of Off-Site Sensitive Receptors, and Locations of TAC Impacts**



Additionally, modeling was conducted to predict the cancer risks, non-cancer health hazards, and maximum PM<sub>2.5</sub> concentrations associated with construction activities at the nearby Menlo School. Children attending the school were assumed to be in Grades 6<sup>th</sup> through 12<sup>th</sup>. The maximum increased cancer risks were adjusted using child exposure parameters. Results of this assessment indicated that the maximum cancer risks (with 80 percent Tier 4 engine design feature controls) would be 2.2 per million for child exposure. The maximum-modeled annual PM<sub>2.5</sub> concentration, which is based on combined exhausted and fugitive dust emissions, would be 0.03 µg/m<sup>3</sup> and the HI based on the DPM concentration would be less than 0.01. The cancer risks, PM<sub>2.5</sub> concentrations, and HI at the school MEI do not exceed their respective BAAQMD single-source significance thresholds.

### Combined Impact of All TAC Sources on the Off-Site Residential MEI

Community health risk assessments typically look at all substantial sources of TACs located within 1,000 feet of project site. These sources include highways, rail lines, busy surface streets, and stationary sources identified by BAAQMD. A review of the project area indicates that traffic on State Route 82 (El Camino Real) has an average daily traffic (ADT) of over 10,000 vehicles. All other roadways within the area are assumed to have an ADT less than 10,000 vehicles. No stationary sources were identified within the 1,000-foot influence area using the BAAQMD's stationary source website map. In addition, there are development projects whose construction would contribute to the cumulative risk. The risk impacts from these developments are included within the analysis.

#### *Highways – S.R. 82 (El Camino Real)*

BAAQMD provides raster files with cancer risk and PM<sub>2.5</sub> values for all highways/freeways, roadways (ADT > 30,000), and rail lines within the Bay Area. The risk values shown in the raster files were modeled in AERMOD in 20x20-meter grid cells. The files incorporate AADT for the highway using EMFAC 2014 data for fleet mix and include the OEHHA 2015 factor. These raster files were used to screen the S.R. 82 (El Camino Real) risk values upon the off-site MEI. At the off-site MEI, the cancer risk would be 0.6 per million and the PM<sub>2.5</sub> concentration would be 0.01 µg/m<sup>3</sup>. No data was provided for the HI.

#### *Construction Risk Impacts from Nearby Developments*

Within the 1,000-ft influence area, the construction of the Cartan Field Stormwater Capture development located at 30 Alejandra Avenue was assumed to occur around the same time as the proposed project. The Cartan Field Stormwater Capture's IS/MND analyzed the construction risk impacts for this project.<sup>9</sup> It was assumed that Cartan Field Stormwater Capture development incorporated construction mitigation measures. The mitigated construction risk values from this development was used within the cumulative community risk table. Note that the mitigated risk values used are at the location of the development's MEI, which is not the project's MEI

<sup>9</sup> Town of Atherton, 2020. *Cartan Field Stormwater Capture Project, Chapter 3.3 Air Quality*. January. Web: [http://www.ci.atherton.ca.us/DocumentCenter/View/7329/CartanStormwaterCapture\\_ISMND\\_2020\\_01\\_06\\_format-for-web](http://www.ci.atherton.ca.us/DocumentCenter/View/7329/CartanStormwaterCapture_ISMND_2020_01_06_format-for-web)

identified in Figure 1. Therefore, the construction risk impacts from the Cartan Field Stormwater Capture development at the proposed project’s MEI would be less.

*Combined Community Health Risk at Off-site Construction MEI*

Table 3 reports both the project and cumulative community risk impacts at the sensitive receptor most affected by construction (i.e. the residential MEI). With 80 percent Tier 4 engine design feature controls, the project’s community risk from project construction activities would not exceed the single-source significance thresholds for increased cancer risk, PM<sub>2.5</sub> concentration, and HI. In addition, the combined annual cancer risk, PM<sub>2.5</sub> concentrations and Hazard Index values would also not exceed the BAAQMD cumulative-source thresholds.

**Table 3. Cumulative Risk Impacts from Combined TAC Sources at Residential MEI**

Source		Maximum Cancer Risk (per million)	PM <sub>2.5</sub> concentration (µg/m <sup>3</sup> )	Hazard Index
<b>Project Impacts</b>				
Project Construction	Without Tier 4	<b>19.1 (infant)</b>	0.14	0.02
	With 80% Tier 4	5.8 (infant)	0.02	<0.01
<b>BAAQMD Single-Source Threshold</b>		<b>&gt;10.0</b>	<b>&gt;0.3</b>	<b>&gt;1.0</b>
<i>Exceed Threshold?</i>	Without Tier 4	<i>Yes</i>	<i>No</i>	<i>No</i>
	With 80% Tier 4	<i>No</i>	<i>No</i>	<i>No</i>
<b>Cumulative Sources</b>				
S.R. 82 (El Camino Real)		0.6	0.01	--
Cartan Field Stormwater Capture Mitigated Construction Emissions		<6.9	<0.3	<0.01
<i>Combined Sources</i>	Without Tier 4	<26.6 (infant)	<0.45	<0.03
	With 80% Tier 4	<13.3 (infant)	<0.33	<0.02
<b>BAAQMD Cumulative Source Threshold</b>		<b>&gt;100</b>	<b>&gt;0.8</b>	<b>&gt;10.0</b>
<i>Exceed Threshold?</i>	Without Tier 4	<i>No</i>	<i>No</i>	<i>No</i>
	With 80% Tier 4	<i>No</i>	<i>No</i>	<i>No</i>

## Supporting Documentation

*Attachment 1* is the methodology used to compute community risk impacts, including the methods to compute lifetime cancer risk from exposure to project emissions.

*Attachment 2* includes the CalEEMod output for project construction emissions. Also included are any modeling assumptions.

*Attachment 3* is the EMFAC2017 emissions modeling. The input files for these calculations are voluminous and are available upon request in digital format.

*Attachment 4* is the construction community health risk assessment. AERMOD dispersion modeling files for this assessment, which are quite voluminous, are available upon request and would be provided in digital format.

## Attachment 1: Health Risk Calculation Methodology

A health risk assessment (HRA) for exposure to Toxic Air Contaminates (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.<sup>10</sup> These guidelines incorporate substantial changes designed to provide for enhanced protection of children, as required by State law, compared to previous published risk assessment guidelines. CARB has provided additional guidance on implementing OEHHA's recommended methods.<sup>11</sup> This HRA used the 2015 OEHHA risk assessment guidelines and CARB guidance. The BAAQMD has adopted recommended procedures for applying the newest OEHHA guidelines as part of Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants.<sup>12</sup> Exposure parameters from the OEHHA guidelines and the recent BAAQMD HRA Guidelines were used in this evaluation.

### Cancer Risk

Potential increased cancer risk from inhalation of TACs is calculated based on the TAC concentration over the period of exposure, inhalation dose, the TAC cancer potency factor, and an age sensitivity factor to reflect the greater sensitivity of infants and children to cancer causing TACs. The inhalation dose depends on a person's breathing rate, exposure time and frequency and duration of exposure. These parameters vary depending on the age, or age range, of the persons being exposed and whether the exposure is considered to occur at a residential location or other sensitive receptor location.

The current OEHHA guidance recommends that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), and ages 16 to 70 (adult exposure). Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposures, an ASF of 3 for a child exposure, and an ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, expressed as liters per kilogram of body weight per day (L/kg-day) or liters per kilogram of body weight per 8-hour period for the case of worker or school child exposures. As recommended by the BAAQMD for residential exposures, 95<sup>th</sup> percentile breathing rates are used for the third trimester and infant exposures, and 80<sup>th</sup> percentile breathing rates for child and adult exposures. For children at schools and daycare facilities, BAAQMD recommends using the 95<sup>th</sup> percentile 8-hour breathing rates. Additionally, CARB and the BAAQMD recommend the use of a

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<sup>10</sup> OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.

<sup>11</sup> CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.

<sup>12</sup> BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.

residential exposure duration of 30 years for sources with long-term emissions (e.g., roadways). For workers, assumed to be adults, a 25-year exposure period is recommended by the BAAQMD. For school children a 9-year exposure period is recommended by the BAAQMD.

Under previous OEHHA and BAAQMD HRA guidance, residential receptors are assumed to be at their home 24 hours a day, or 100 percent of the time. In the 2015 Risk Assessment Guidance, OEHHA includes adjustments to exposure duration to account for the fraction of time at home (FAH), which can be less than 100 percent of the time, based on updated population and activity statistics. The FAH factors are age-specific and are: 0.85 for third trimester of pregnancy to less than 2 years old, 0.72 for ages 2 to less than 16 years, and 0.73 for ages 16 to 70 years. Use of the FAH factors is allowed by the BAAQMD if there are no schools in the project vicinity have a cancer risk of one in a million or greater assuming 100 percent exposure (FAH = 1.0).

Functionally, cancer risk is calculated using the following parameters and formulas:

$$\text{Cancer Risk (per million)} = \text{CPF} \times \text{Inhalation Dose} \times \text{ASF} \times \text{ED/AT} \times \text{FAH} \times 10^6$$

Where:

- CPF = Cancer potency factor (mg/kg-day)<sup>-1</sup>
- ASF = Age sensitivity factor for specified age group
- ED = Exposure duration (years)
- AT = Averaging time for lifetime cancer risk (years)
- FAH = Fraction of time spent at home (unitless)

$$\text{Inhalation Dose} = C_{\text{air}} \times \text{DBR}^* \times A \times (\text{EF}/365) \times 10^{-6}$$

Where:

- C<sub>air</sub> = concentration in air (µg/m<sup>3</sup>)
- DBR = daily breathing rate (L/kg body weight-day)
- 8HrBR = 8-hour breathing rate (L/kg body weight-8 hours)
- A = Inhalation absorption factor
- EF = Exposure frequency (days/year)
- 10<sup>-6</sup> = Conversion factor

\* An 8-hour breathing rate (8HrBR) is used for worker and school child exposures.

The health risk parameters used in this evaluation are summarized as follows:

Parameter	Exposure Type →	Infant		Child	Adult
	Age Range →	3 <sup>rd</sup> Trimester	0<2	2 < 16	16 - 30
DPM Cancer Potency Factor (mg/kg-day) <sup>-1</sup>		1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day) 80 <sup>th</sup> Percentile Rate		273	758	572	261
Daily Breathing Rate (L/kg-day) 95 <sup>th</sup> Percentile Rate		361	1,090	745	335
8-hour Breathing Rate (L/kg-8 hours) 95 <sup>th</sup> Percentile Rate		-	1,200	520	240
Inhalation Absorption Factor		1	1	1	1
Averaging Time (years)		70	70	70	70
Exposure Duration (years)		0.25	2	14	14*
Exposure Frequency (days/year)		350	350	350	350*
Age Sensitivity Factor		10	10	3	1
Fraction of Time at Home (FAH)		0.85-1.0	0.85-1.0	0.72-1.0	0.73*

### Non-Cancer Hazards

Non-cancer health risk is usually determined by comparing the predicted level of exposure to a chemical to the level of exposure that is not expected to cause any adverse effects (reference exposure level), even to the most susceptible people. Potential non-cancer health hazards from TAC exposure are expressed in terms of a hazard index (HI), which is the ratio of the TAC concentration to a reference exposure level (REL). OEHHA has defined acceptable concentration levels for contaminants that pose non-cancer health hazards. TAC concentrations below the REL are not expected to cause adverse health impacts, even for sensitive individuals. The total HI is calculated as the sum of the HIs for each TAC evaluated and the total HI is compared to the BAAQMD significance thresholds to determine whether a significant non-cancer health impact from a project would occur.

Typically, for residential projects located near roadways with substantial TAC emissions, the primary TAC of concern with non-cancer health effects is diesel particulate matter (DPM). For DPM, the chronic inhalation REL is 5 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ).

### Annual PM<sub>2.5</sub> Concentrations

While not a TAC, fine particulate matter (PM<sub>2.5</sub>) has been identified by the BAAQMD as a pollutant with potential non-cancer health effects that should be included when evaluating potential community health impacts under the California Environmental Quality Act (CEQA). The thresholds of significance for PM<sub>2.5</sub> (project level and cumulative) are in terms of an increase in the annual average concentration. When considering PM<sub>2.5</sub> impacts, the contribution from all sources of PM<sub>2.5</sub> emissions should be included. For projects with potential impacts from nearby local roadways, the PM<sub>2.5</sub> impacts should include those from vehicle exhaust emissions, PM<sub>2.5</sub> generated from vehicle tire and brake wear, and fugitive emissions from re-suspended dust on the roads.

**Attachment 2: CalEEMod Modeling Inputs and Outputs**

Menlo College Residence Hall, Atherton - San Mateo County, Annual

**Menlo College Residence Hall, Atherton  
San Mateo County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	147.00	Dwelling Unit	3.87	56,453.00	291

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	70
<b>Climate Zone</b>	5			<b>Operational Year</b>	2022
<b>Utility Company</b>	User Defined				
<b>CO2 Intensity (lb/MW hr)</b>	0	<b>CH4 Intensity (lb/MW hr)</b>	0	<b>N2O Intensity (lb/MW hr)</b>	0

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - No GHG analysis

Land Use - Based on plan sheet, using default acreage

Construction Phase - Default Const Schedule, trenching added

Off-road Equipment -

Off-road Equipment - Note that worker, vendor and haul trips modeled in Emfac2017 using CalEEMod trip rates and 1 mile local distance

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Trenching added

Off-road Equipment -

Trips and VMT - 1 mile trips, 0 trips EMFAC2017

Construction Off-road Equipment Mitigation - BMPs, Tier 4 interim mitigation

Grading - grading = 410cy export

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	12.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim

tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	PhaseEndDate	2/23/2022	1/28/2022
tblConstructionPhase	PhaseEndDate	1/28/2022	2/23/2022
tblConstructionPhase	PhaseStartDate	1/29/2022	1/5/2022
tblConstructionPhase	PhaseStartDate	1/5/2022	1/29/2022
tblGrading	MaterialExported	0.00	410.00
tblLandUse	LandUseSquareFeet	147,000.00	56,453.00
tblLandUse	Population	420.00	291.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripNumber	16.00	0.00

tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	106.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	21.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	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					
2021	0.2690	2.5204	2.2445	3.7100e-003	0.0714	0.1354	0.2068	0.0383	0.1269	0.1652	0.0000	320.0255	320.0255	0.0803	0.0000	322.0336
2022	0.4097	0.1140	0.1424	2.2000e-004	0.0000	5.9300e-003	5.9300e-003	0.0000	5.5500e-003	5.5500e-003	0.0000	19.3535	19.3535	5.3400e-003	0.0000	19.4868
<b>Maximum</b>	<b>0.4097</b>	<b>2.5204</b>	<b>2.2445</b>	<b>3.7100e-003</b>	<b>0.0714</b>	<b>0.1354</b>	<b>0.2068</b>	<b>0.0383</b>	<b>0.1269</b>	<b>0.1652</b>	<b>0.0000</b>	<b>320.0255</b>	<b>320.0255</b>	<b>0.0803</b>	<b>0.0000</b>	<b>322.0336</b>

**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										M1/yr					
2021	0.0711	1.4682	2.4436	3.7100e-003	0.0322	0.0107	0.0428	8.6200e-003	0.0107	0.0193	0.0000	320.0251	320.0251	0.0803	0.0000	322.0332
2022	0.4010	0.0911	0.1562	2.2000e-004	0.0000	3.8000e-004	3.8000e-004	0.0000	3.8000e-004	3.8000e-004	0.0000	19.3534	19.3534	5.3400e-003	0.0000	19.4868
<b>Maximum</b>	<b>0.4010</b>	<b>1.4682</b>	<b>2.4436</b>	<b>3.7100e-003</b>	<b>0.0322</b>	<b>0.0107</b>	<b>0.0428</b>	<b>8.6200e-003</b>	<b>0.0107</b>	<b>0.0193</b>	<b>0.0000</b>	<b>320.0251</b>	<b>320.0251</b>	<b>0.0803</b>	<b>0.0000</b>	<b>322.0332</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>30.44</b>	<b>40.81</b>	<b>-8.92</b>	<b>0.00</b>	<b>54.98</b>	<b>92.18</b>	<b>79.70</b>	<b>77.50</b>	<b>91.66</b>	<b>88.48</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2021	3-31-2021	0.8915	0.4146
2	4-1-2021	6-30-2021	0.6283	0.3720
3	7-1-2021	9-30-2021	0.6352	0.3761
4	10-1-2021	12-31-2021	0.6352	0.3761
5	1-1-2022	3-31-2022	0.5145	0.4800
		<b>Highest</b>	<b>0.8915</b>	<b>0.4800</b>

**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	1/1/2021	1/28/2021	5	20	
2	Site Preparation	Site Preparation	1/29/2021	2/4/2021	5	5	
3	Grading	Grading	2/5/2021	2/16/2021	5	8	

4	Trenching	Trenching	2/5/2021	2/16/2021	5	8
5	Building Construction	Building Construction	2/17/2021	1/4/2022	5	230
6	Architectural Coating	Architectural Coating	1/5/2022	1/28/2022	5	18
7	Paving	Paving	1/29/2022	2/23/2022	5	18

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 114,317; Residential Outdoor: 38,106; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36

Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Excavators	1	8.00	158	0.38
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37

**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	6	0.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	0.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Grading	6	0.00	0.00	51.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	0.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Paving	8	0.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Trenching	2	0.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

- Use Cleaner Engines for Construction Equipment
- Use Soil Stabilizer
- Replace Ground Cover
- Water Exposed Area
- Reduce Vehicle Speed on Unpaved Roads

**3.2 Demolition - 2021**

**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					

Off-Road	0.0317	0.3144	0.2157	3.9000e-004		0.0155	0.0155		0.0144	0.0144	0.0000	34.0008	34.0008	9.5700e-003	0.0000	34.2400
<b>Total</b>	<b>0.0317</b>	<b>0.3144</b>	<b>0.2157</b>	<b>3.9000e-004</b>		<b>0.0155</b>	<b>0.0155</b>		<b>0.0144</b>	<b>0.0144</b>	<b>0.0000</b>	<b>34.0008</b>	<b>34.0008</b>	<b>9.5700e-003</b>	<b>0.0000</b>	<b>34.2400</b>

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>							

**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	5.8400e-003	0.1356	0.2467	3.9000e-004		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	34.0007	34.0007	9.5700e-003	0.0000	34.2400
<b>Total</b>	<b>5.8400e-003</b>	<b>0.1356</b>	<b>0.2467</b>	<b>3.9000e-004</b>		<b>6.2000e-004</b>	<b>6.2000e-004</b>		<b>6.2000e-004</b>	<b>6.2000e-004</b>	<b>0.0000</b>	<b>34.0007</b>	<b>34.0007</b>	<b>9.5700e-003</b>	<b>0.0000</b>	<b>34.2400</b>

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>							

**3.3 Site Preparation - 2021**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7200e-003	0.1012	0.0529	1.0000e-004		5.1100e-003	5.1100e-003		4.7000e-003	4.7000e-003	0.0000	8.3589	8.3589	2.7000e-003	0.0000	8.4265
<b>Total</b>	<b>9.7200e-003</b>	<b>0.1012</b>	<b>0.0529</b>	<b>1.0000e-004</b>	<b>0.0452</b>	<b>5.1100e-003</b>	<b>0.0503</b>	<b>0.0248</b>	<b>4.7000e-003</b>	<b>0.0295</b>	<b>0.0000</b>	<b>8.3589</b>	<b>8.3589</b>	<b>2.7000e-003</b>	<b>0.0000</b>	<b>8.4265</b>

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>							

**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					0.0203	0.0000	0.0203	5.5900e-003	0.0000	5.5900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7400e-003	0.0304	0.0574	1.0000e-004		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	8.3589	8.3589	2.7000e-003	0.0000	8.4265
<b>Total</b>	<b>1.7400e-003</b>	<b>0.0304</b>	<b>0.0574</b>	<b>1.0000e-004</b>	<b>0.0203</b>	<b>1.6000e-004</b>	<b>0.0205</b>	<b>5.5900e-003</b>	<b>1.6000e-004</b>	<b>5.7500e-003</b>	<b>0.0000</b>	<b>8.3589</b>	<b>8.3589</b>	<b>2.7000e-003</b>	<b>0.0000</b>	<b>8.4265</b>

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>															

**3.4 Grading - 2021**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.1600e-003	0.0990	0.0634	1.2000e-004		4.6400e-003	4.6400e-003		4.2700e-003	4.2700e-003	0.0000	10.4215	10.4215	3.3700e-003	0.0000	10.5057
<b>Total</b>	<b>9.1600e-003</b>	<b>0.0990</b>	<b>0.0634</b>	<b>1.2000e-004</b>	<b>0.0262</b>	<b>4.6400e-003</b>	<b>0.0309</b>	<b>0.0135</b>	<b>4.2700e-003</b>	<b>0.0177</b>	<b>0.0000</b>	<b>10.4215</b>	<b>10.4215</b>	<b>3.3700e-003</b>	<b>0.0000</b>	<b>10.5057</b>

**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	5.0000e-005	2.3800e-003	8.0000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.2662	0.2662	3.0000e-005	0.0000	0.2670
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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>5.0000e-005</b>	<b>2.3800e-003</b>	<b>8.0000e-004</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2662</b>	<b>0.2662</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.2670</b>

**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					0.0118	0.0000	0.0118	3.0300e-003	0.0000	3.0300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0800e-003	0.0413	0.0760	1.2000e-004		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	10.4215	10.4215	3.3700e-003	0.0000	10.5057
<b>Total</b>	<b>2.0800e-003</b>	<b>0.0413</b>	<b>0.0760</b>	<b>1.2000e-004</b>	<b>0.0118</b>	<b>1.9000e-004</b>	<b>0.0120</b>	<b>3.0300e-003</b>	<b>1.9000e-004</b>	<b>3.2200e-003</b>	<b>0.0000</b>	<b>10.4215</b>	<b>10.4215</b>	<b>3.3700e-003</b>	<b>0.0000</b>	<b>10.5057</b>

**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	5.0000e-005	2.3800e-003	8.0000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.2662	0.2662	3.0000e-005	0.0000	0.2670
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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>5.0000e-005</b>	<b>2.3800e-003</b>	<b>8.0000e-004</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2662</b>	<b>0.2662</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.2670</b>

**3.5 Trenching - 2021**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.6700e-003	0.0162	0.0222	3.0000e-005		8.7000e-004	8.7000e-004		8.0000e-004	8.0000e-004	0.0000	2.9116	2.9116	9.4000e-004	0.0000	2.9351
<b>Total</b>	<b>1.6700e-003</b>	<b>0.0162</b>	<b>0.0222</b>	<b>3.0000e-005</b>		<b>8.7000e-004</b>	<b>8.7000e-004</b>		<b>8.0000e-004</b>	<b>8.0000e-004</b>	<b>0.0000</b>	<b>2.9116</b>	<b>2.9116</b>	<b>9.4000e-004</b>	<b>0.0000</b>	<b>2.9351</b>

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>							

**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	5.3000e-004	0.0146	0.0251	3.0000e-005		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	2.9116	2.9116	9.4000e-004	0.0000	2.9351

Total	5.3000e-004	0.0146	0.0251	3.0000e-005		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	2.9116	2.9116	9.4000e-004	0.0000	2.9351
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**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>							

**3.6 Building Construction - 2021**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2167	1.9873	1.8896	3.0700e-003		0.1093	0.1093		0.1028	0.1028	0.0000	264.0665	264.0665	0.0637	0.0000	265.6592
<b>Total</b>	<b>0.2167</b>	<b>1.9873</b>	<b>1.8896</b>	<b>3.0700e-003</b>		<b>0.1093</b>	<b>0.1093</b>		<b>0.1028</b>	<b>0.1028</b>	<b>0.0000</b>	<b>264.0665</b>	<b>264.0665</b>	<b>0.0637</b>	<b>0.0000</b>	<b>265.6592</b>

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>							

**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	0.0608	1.2440	2.0376	3.0700e-003		9.6400e-003	9.6400e-003		9.6400e-003	9.6400e-003	0.0000	264.0662	264.0662	0.0637	0.0000	265.6589
<b>Total</b>	<b>0.0608</b>	<b>1.2440</b>	<b>2.0376</b>	<b>3.0700e-003</b>		<b>9.6400e-003</b>	<b>9.6400e-003</b>		<b>9.6400e-003</b>	<b>9.6400e-003</b>	<b>0.0000</b>	<b>264.0662</b>	<b>264.0662</b>	<b>0.0637</b>	<b>0.0000</b>	<b>265.6589</b>

**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
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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
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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>															

**3.6 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	1.7100e-003	0.0156	0.0164	3.0000e-005		8.1000e-004	8.1000e-004		7.6000e-004	7.6000e-004	0.0000	2.3173	2.3173	5.6000e-004	0.0000	2.3311
<b>Total</b>	<b>1.7100e-003</b>	<b>0.0156</b>	<b>0.0164</b>	<b>3.0000e-005</b>		<b>8.1000e-004</b>	<b>8.1000e-004</b>		<b>7.6000e-004</b>	<b>7.6000e-004</b>	<b>0.0000</b>	<b>2.3173</b>	<b>2.3173</b>	<b>5.6000e-004</b>	<b>0.0000</b>	<b>2.3311</b>

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>															

**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	5.3000e-004	0.0109	0.0179	3.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	2.3173	2.3173	5.6000e-004	0.0000	2.3311
<b>Total</b>	<b>5.3000e-004</b>	<b>0.0109</b>	<b>0.0179</b>	<b>3.0000e-005</b>		<b>8.0000e-005</b>	<b>8.0000e-005</b>		<b>8.0000e-005</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>2.3173</b>	<b>2.3173</b>	<b>5.6000e-004</b>	<b>0.0000</b>	<b>2.3311</b>

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>							

**3.7 Architectural Coating - 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					
Archit. Coating	0.3974					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8400e-003	0.0127	0.0163	3.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	2.2979	2.2979	1.5000e-004	0.0000	2.3017
<b>Total</b>	<b>0.3992</b>	<b>0.0127</b>	<b>0.0163</b>	<b>3.0000e-005</b>		<b>7.4000e-004</b>	<b>7.4000e-004</b>		<b>7.4000e-004</b>	<b>7.4000e-004</b>	<b>0.0000</b>	<b>2.2979</b>	<b>2.2979</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>2.3017</b>

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>							

**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
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Category	tons/yr									MT/yr							
Archit. Coating	0.3974					0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Off-Road	4.9000e-004	9.5400e-003	0.0165	3.0000e-005		4.0000e-005	4.0000e-005			4.0000e-005	4.0000e-005	0.0000	2.2979	2.2979	1.5000e-004	0.0000	2.3017
<b>Total</b>	<b>0.3979</b>	<b>9.5400e-003</b>	<b>0.0165</b>	<b>3.0000e-005</b>		<b>4.0000e-005</b>	<b>4.0000e-005</b>			<b>4.0000e-005</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>2.2979</b>	<b>2.2979</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>2.3017</b>

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>							

**3.8 Paving - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	tons/yr										MT/yr						
Off-Road	8.7900e-003	0.0857	0.1098	1.7000e-004		4.3900e-003	4.3900e-003			4.0500e-003	4.0500e-003	0.0000	14.7383	14.7383	4.6300e-003	0.0000	14.8540
Paving	0.0000					0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

Total	8.7900e-003	0.0857	0.1098	1.7000e-004		4.3900e-003	4.3900e-003		4.0500e-003	4.0500e-003	0.0000	14.7383	14.7383	4.6300e-003	0.0000	14.8540
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**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>							

**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	2.6200e-003	0.0706	0.1218	1.7000e-004		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	14.7383	14.7383	4.6300e-003	0.0000	14.8540
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>2.6200e-003</b>	<b>0.0706</b>	<b>0.1218</b>	<b>1.7000e-004</b>		<b>2.6000e-004</b>	<b>2.6000e-004</b>		<b>2.6000e-004</b>	<b>2.6000e-004</b>	<b>0.0000</b>	<b>14.7383</b>	<b>14.7383</b>	<b>4.6300e-003</b>	<b>0.0000</b>	<b>14.8540</b>

**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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>							

**Attachment 3: EMFAC2017 Calculations**

# ATTACHMENT 3

PhaseName	WorkerTrip Number	VendorTrip Number	HaulingTrip Number	WorkerTripL ength	VendorTripL ength	HaulingTripL ength	WorkerVehicleCl ass	VendorVehicleCl ass	HaulingVehicleCl ass	Worker VMT	Vendor VMT	Hauling VMT
Demolition	300	0	0	1	1	1	LD_Mix	HDT_Mix	HHDT	300	0	0
Site Preparation	90	0	0	1	1	1	LD_Mix	HDT_Mix	HHDT	90	0	0
Grading	120	0	51	1	1	1	LD_Mix	HDT_Mix	HHDT	120	0	51
Trenching	40	0	0	1	1	1	LD_Mix	HDT_Mix	HHDT	40	0	0
Building Construction	24380	3680	0	1	1	1	LD_Mix	HDT_Mix	HHDT	24380	3680	0
Architectural Coating	378	0	0	1	1	1	LD_Mix	HDT_Mix	HHDT	378	0	0
Paving	360	0	0	1	1	1	LD_Mix	HDT_Mix	HHDT	360	0	0

2021	1/1/2021	12/31/2021	365
2022	1/1/2022	2/23/2022	54

419 299

### CalEEMod Trips

WorkerTrip Number	VendorTrip Number
15	0
18	0
15	0
5	0
106	16
21	0
20	0

PhaseType	PhaseStartDat	PhaseEndDat	NumDaysWe	NumDays
Demolition	2021/01/01	2021/01/28	5	20
Site Preparat	2021/01/29	2021/02/04	5	5
Grading	2021/02/05	2021/02/16	5	8
Trenching	2021/02/05	2021/02/16	5	8
Building Cons	2021/02/17	2022/01/04	5	230
Architectural	2022/01/05	2022/01/28	5	18
Paving	2022/01/29	2022/02/23	5	18

# ATTACHMENT 3

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2	
Hauling		25.92	637.63	293.20646	1.226	0.78	8.21	9.0	0.78	4.99	5.77	139771.0846
Vendor		1500.52	22524.83	11636.0	53.926	56.23	707.94	764.2	56.23	411.04	467.27	5839334.175
Worker		433542.46	6982.19	81042.0	86.743	392.21	1238.35	1630.6	392.21	538.15	930.35	8586464.967
Total (g)		435068.90	30144.65059	92971.224	141.8961319	449.21672	1954.491692	2403.7084	449.21672	954.1817409	1403.398461	14565570.23
Total (lbs)		959.16	66.46	204.97	0.31	0.99	4.3	5.30	0.99	2.10	3.09	32111.58562
Total (tons)		0.4796	0.033	0.102	0.000	0.000	0.0022	0.0026	0.0005	0.001	0.002	16.06
Total (MT)												14.57
	2021	0.4178	0.0289	0.0893	0.0001	0.0004	0.0019	0.0023	0.0004	0.0009	0.0013	12.6884
	2022	0.0618	0.0043	0.0132	0.0000	0.0001	0.0003	0.0003	0.0001	0.0001	0.0002	1.8772
	2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000



**Attachment 4: Construction Community Health Risk Calculations**

**Menlo College Residence Hall, Atherton, CA**

**DPM Emissions and Modeling Emission Rates - Without Design Feature Controls**

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions			Modeled Area (m <sup>2</sup> )	DPM Emission Rate (g/s/m <sup>2</sup> )
				(lb/yr)	(lb/hr)	(g/s)		
2021-2022	Construction	0.1435	CON_DPM	287.0	0.08736	1.10E-02	3443.4	3.20E-06

*Construction Hours*

hr/day =	9	(7am - 4pm)	0.011007
days/yr =	365		
hours/year =	3285		

**Menlo College Residence Hall, Atherton, CA**

**PM2.5 Fugitive Dust Emissions for Modeling - Without Design Feature Controls**

Construction Year	Activity	Area Source	Area (ton/year)	PM2.5 Emissions			Modeled Area (m <sup>2</sup> )	PM2.5 Emission Rate g/s/m <sup>2</sup>
				(lb/yr)	(lb/hr)	(g/s)		
2021-2022	Construction	CON_FUG	0.0388	77.6	0.02362	2.98E-03	3443.4	8.64E-07

*Construction Hours*

hr/day =	9	(7am - 4pm)	0.0030
days/yr =	365		
hours/year =	3285		

**DPM Emissions and Modeling Emission Rates - With Design Feature Controls**

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions			Modeled Area (m <sup>2</sup> )	DPM Emission Rate (g/s/m <sup>2</sup> )
				(lb/yr)	(lb/hr)	(g/s)		
2021-2022	Construction	0.01323	CON_DPM	26.5	0.00806	1.02E-03	3443.4	2.95E-07

*Construction Hours*

hr/day =	9	(7am - 4pm)	0.0010152
days/yr =	365		
hours/year =	3285		

**PM2.5 Fugitive Dust Emissions for Modeling - With Design Feature Controls**

Construction Year	Activity	Area Source	PM2.5 Emissions				Modeled Area (m <sup>2</sup> )	PM2.5 Emission Rate g/s/m <sup>2</sup>
			(ton/year)	(lb/yr)	(lb/hr)	(g/s)		
2021-2022	Construction	CON_FUG	0.0091	18.2	0.00555	6.99E-04	3443.4	2.03E-07

*Construction Hours*

hr/day =	9	(7am - 4pm)	0.0006992
days/yr =	365		
hours/year =	3285		

**Menlo College Residence Hall, Atherton, CA**

**Maximum Impacts at MEI Location - Without Design Feature Controls**

Emissions Year	Maximum Concentrations		Cancer Risk (per million)		Hazard Index (-)	Maximum Annual PM2.5 Concentration (µg/m <sup>3</sup> )
	Exhaust PM10/DPM (µg/m <sup>3</sup> )	Fugitive PM2.5 (µg/m <sup>3</sup> )	Infant/Child	Adult		
	2021-2022	0.1077	0.0305	19.1	0.3	0.02

**Maximum Impacts at MEI Location - With Design Feature Controls**

Emissions Year	Maximum Concentrations		Cancer Risk (per million)		Hazard Index (-)	Maximum Annual PM2.5 Concentration (µg/m <sup>3</sup> )
	Exhaust PM10/DPM (µg/m <sup>3</sup> )	Fugitive PM2.5 (µg/m <sup>3</sup> )	Infant/Child	Adult		
	2021-2022	0.0099	0.0072	5.8	0.0	0.002

- 80% Tier 4 Interim Design Feature Controls

**Maximum Impacts at Menlo 6th-12th School - Without Design Feature Controls**

Construction Year	Unmitigated Emissions				
	Maximum Concentrations		Infant/Child Cancer Risk (per million)	Hazard Index (-)	Maximum Annual PM2.5 Concentration (µg/m <sup>3</sup> )
	Exhaust PM2.5/DPM (µg/m <sup>3</sup> )	Fugitive PM2.5 (µg/m <sup>3</sup> )			
2021-2022	0.1698	0.0478	7.7	0.03	0.22

**Maximum Impacts at Menlo 6th-12th School - With Design Feature Controls**

Construction Year	Maximum Concentrations		Infant/Child Cancer Risk (per million)	Hazard Index (-)	Maximum Annual PM2.5 Concentration (µg/m <sup>3</sup> )
	Exhaust PM2.5/DPM (µg/m <sup>3</sup> )	Fugitive PM2.5 (µg/m <sup>3</sup> )			
	2021-2022	0.0157	0.0112	2.2	0.003

- 80% Tier 4 Interim Design Feature Controls

**Menlo College Residence Hall, Atherton, CA - Construction Impacts - Without Design Feature Controls**  
**Maximum DPM Cancer Risk and PM2.5 Calculations From Construction**  
**Impacts at Off-Site SF-Home - 1.5 meter receptor height**

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor (mg/kg-day)<sup>-1</sup>  
 ASF = Age sensitivity factor for specified age group  
 ED = Exposure duration (years)  
 AT = Averaging time for lifetime cancer risk (years)  
 FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C<sub>air</sub> x DBR x A x (EF/365) x 10<sup>-6</sup>

Where: C<sub>air</sub> = concentration in air (µg/m<sup>3</sup>)  
 DBR = daily breathing rate (L/kg body weight-day)  
 A = Inhalation absorption factor  
 EF = Exposure frequency (days/year)  
 10<sup>-6</sup> = Conversion factor

Values

Age -> Parameter	Infant/Child			Adult
	3rd Trimester	0 - 2	2 - 16	16 - 30
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

\* 95th percentile breathing rates for infants and 80th percentile for children and adults

**Construction Cancer Risk by Year - Maximum Impact Receptor Location**

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information			Infant/Child Cancer Risk (per million)	Adult - Exposure Information			Adult Cancer Risk (per million)	Maximum	
			DPM Conc (ug/m3)		Age Sensitivity Factor		Modeled		Age Sensitivity Factor		Fugitive PM2.5	Total PM2.5
			Year	Annual			Year	Annual				
0	0.25	-0.25 - 0*	2021-2022	0.1077	10	1.46	2021-2022	0.1077	-	-		
1	1	0 - 1	2021-2022	0.1077	10	17.68	2021-2022	0.1077	1	0.31	0.0305	0.1382
2	1	1 - 2	0	0.0000	10	0.00		0.0000	1	0.00		
3	1	2 - 3	0	0.0000	3	0.00		0.0000	1	0.00		
4	1	3 - 4	0	0.0000	3	0.00		0.0000	1	0.00		
5	1	4 - 5	0	0.0000	3	0.00		0.0000	1	0.00		
6	1	5 - 6	0	0.0000	3	0.00		0.0000	1	0.00		
7	1	6 - 7	0	0.0000	3	0.00		0.0000	1	0.00		
8	1	7 - 8	0	0.0000	3	0.00		0.0000	1	0.00		
9	1	8 - 9	0	0.0000	3	0.00		0.0000	1	0.00		
10	1	9 - 10	0	0.0000	3	0.00		0.0000	1	0.00		
11	1	10 - 11	0	0.0000	3	0.00		0.0000	1	0.00		
12	1	11 - 12	0	0.0000	3	0.00		0.0000	1	0.00		
13	1	12 - 13	0	0.0000	3	0.00		0.0000	1	0.00		
14	1	13 - 14	0	0.0000	3	0.00		0.0000	1	0.00		
15	1	14 - 15	0	0.0000	3	0.00		0.0000	1	0.00		
16	1	15 - 16	0	0.0000	3	0.00		0.0000	1	0.00		
17	1	16-17	0	0.0000	1	0.00		0.0000	1	0.00		
18	1	17-18	0	0.0000	1	0.00		0.0000	1	0.00		
19	1	18-19	0	0.0000	1	0.00		0.0000	1	0.00		
20	1	19-20	0	0.0000	1	0.00		0.0000	1	0.00		
21	1	20-21	0	0.0000	1	0.00		0.0000	1	0.00		
22	1	21-22	0	0.0000	1	0.00		0.0000	1	0.00		
23	1	22-23	0	0.0000	1	0.00		0.0000	1	0.00		
24	1	23-24	0	0.0000	1	0.00		0.0000	1	0.00		
25	1	24-25	0	0.0000	1	0.00		0.0000	1	0.00		
26	1	25-26	0	0.0000	1	0.00		0.0000	1	0.00		
27	1	26-27	0	0.0000	1	0.00		0.0000	1	0.00		
28	1	27-28	0	0.0000	1	0.00		0.0000	1	0.00		
29	1	28-29	0	0.0000	1	0.00		0.0000	1	0.00		
30	1	29-30	0	0.0000	1	0.00		0.0000	1	0.00		
<b>Total Increased Cancer Risk</b>						<b>19.1</b>				<b>0.31</b>		

\* Third trimester of pregnancy

**Menlo College Residence Hall, Atherton, CA - Construction Impacts - Without Design Feature Controls**  
**Maximum DPM Cancer Risk and PM2.5 Calculations From Construction**  
**Impacts at Off-Site MF-Home - 4.5 meter receptor height**

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor (mg/kg-day)<sup>-1</sup>  
 ASF = Age sensitivity factor for specified age group  
 ED = Exposure duration (years)  
 AT = Averaging time for lifetime cancer risk (years)  
 FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C<sub>air</sub> x DBR x A x (EF/365) x 10<sup>-6</sup>

Where: C<sub>air</sub> = concentration in air (µg/m<sup>3</sup>)  
 DBR = daily breathing rate (L/kg body weight-day)  
 A = Inhalation absorption factor  
 EF = Exposure frequency (days/year)  
 10<sup>-6</sup> = Conversion factor

Values

Age -> Parameter	Infant/Child			Adult
	3rd Trimester	0 - 2	2 - 16	16 - 30
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

\* 95th percentile breathing rates for infants and 80th percentile for children and adults

**Construction Cancer Risk by Year - Maximum Impact Receptor Location**

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information			Infant/Child Cancer Risk (per million)	Adult - Exposure Information			Adult Cancer Risk (per million)	Maximum	
			DPM Conc (ug/m3)		Age Sensitivity Factor		Modeled		Age Sensitivity Factor		Fugitive PM2.5	Total PM2.5
			Year	Annual			Year	Annual				
0	0.25	-0.25 - 0*	2021-2022	0.0070	10	0.10	2021-2022	0.0070	-	-		
1	1	0 - 1	2021-2022	0.0070	10	1.16	2021-2022	0.0070	1	0.02	0.0020	0.0091
2	1	1 - 2	0	0.0000	10	0.00		0.0000	1	0.00		
3	1	2 - 3	0	0.0000	3	0.00		0.0000	1	0.00		
4	1	3 - 4	0	0.0000	3	0.00		0.0000	1	0.00		
5	1	4 - 5	0	0.0000	3	0.00		0.0000	1	0.00		
6	1	5 - 6	0	0.0000	3	0.00		0.0000	1	0.00		
7	1	6 - 7	0	0.0000	3	0.00		0.0000	1	0.00		
8	1	7 - 8	0	0.0000	3	0.00		0.0000	1	0.00		
9	1	8 - 9	0	0.0000	3	0.00		0.0000	1	0.00		
10	1	9 - 10	0	0.0000	3	0.00		0.0000	1	0.00		
11	1	10 - 11	0	0.0000	3	0.00		0.0000	1	0.00		
12	1	11 - 12	0	0.0000	3	0.00		0.0000	1	0.00		
13	1	12 - 13	0	0.0000	3	0.00		0.0000	1	0.00		
14	1	13 - 14	0	0.0000	3	0.00		0.0000	1	0.00		
15	1	14 - 15	0	0.0000	3	0.00		0.0000	1	0.00		
16	1	15 - 16	0	0.0000	3	0.00		0.0000	1	0.00		
17	1	16-17	0	0.0000	1	0.00		0.0000	1	0.00		
18	1	17-18	0	0.0000	1	0.00		0.0000	1	0.00		
19	1	18-19	0	0.0000	1	0.00		0.0000	1	0.00		
20	1	19-20	0	0.0000	1	0.00		0.0000	1	0.00		
21	1	20-21	0	0.0000	1	0.00		0.0000	1	0.00		
22	1	21-22	0	0.0000	1	0.00		0.0000	1	0.00		
23	1	22-23	0	0.0000	1	0.00		0.0000	1	0.00		
24	1	23-24	0	0.0000	1	0.00		0.0000	1	0.00		
25	1	24-25	0	0.0000	1	0.00		0.0000	1	0.00		
26	1	25-26	0	0.0000	1	0.00		0.0000	1	0.00		
27	1	26-27	0	0.0000	1	0.00		0.0000	1	0.00		
28	1	27-28	0	0.0000	1	0.00		0.0000	1	0.00		
29	1	28-29	0	0.0000	1	0.00		0.0000	1	0.00		
30	1	29-30	0	0.0000	1	0.00		0.0000	1	0.00		
<b>Total Increased Cancer Risk</b>						<b>1.3</b>				<b>0.02</b>		

\* Third trimester of pregnancy

**Menlo College Residence Hall, Atherton, CA - Construction Impacts - With Design Feature Controls**  
**Maximum DPM Cancer Risk and PM2.5 Calculations From Construction**  
**Impacts at Off-Site SF-Home - 1.5 meter receptor height**

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor (mg/kg-day)<sup>-1</sup>  
 ASF = Age sensitivity factor for specified age group  
 ED = Exposure duration (years)  
 AT = Averaging time for lifetime cancer risk (years)  
 FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C<sub>air</sub> x DBR x A x (EF/365) x 10<sup>-6</sup>

Where: C<sub>air</sub> = concentration in air (µg/m<sup>3</sup>)  
 DBR = daily breathing rate (L/kg body weight-day)  
 A = Inhalation absorption factor  
 EF = Exposure frequency (days/year)  
 10<sup>-6</sup> = Conversion factor

Values

Age -> Parameter	Infant/Child			Adult
	3rd Trimester	0 - 2	2 - 16	16 - 30
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

\* 95th percentile breathing rates for infants and 80th percentile for children and adults

**Construction Cancer Risk by Year - Maximum Impact Receptor Location**

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information			Infant/Child Cancer Risk (per million)	Adult - Exposure Information			Adult Cancer Risk (per million)	Maximum	
			DPM Conc (ug/m3)		Age Sensitivity Factor		Modeled		Age Sensitivity Factor		Fugitive PM2.5	Total PM2.5
			Year	Annual			Year	Annual				
0	0.25	-0.25 - 0*	2021-2022	0.0099	10	0.14	2021-2022	0.0099	-	-		
1	1	0 - 1	2021-2022	0.0099	10	1.63	2021-2022	0.0099	1	0.03	0.0072	0.0171
2	1	1 - 2	0	0.0000	10	0.00		0.0000	1	0.00		
3	1	2 - 3	0	0.0000	3	0.00		0.0000	1	0.00		
4	1	3 - 4	0	0.0000	3	0.00		0.0000	1	0.00		
5	1	4 - 5	0	0.0000	3	0.00		0.0000	1	0.00		
6	1	5 - 6	0	0.0000	3	0.00		0.0000	1	0.00		
7	1	6 - 7	0	0.0000	3	0.00		0.0000	1	0.00		
8	1	7 - 8	0	0.0000	3	0.00		0.0000	1	0.00		
9	1	8 - 9	0	0.0000	3	0.00		0.0000	1	0.00		
10	1	9 - 10	0	0.0000	3	0.00		0.0000	1	0.00		
11	1	10 - 11	0	0.0000	3	0.00		0.0000	1	0.00		
12	1	11 - 12	0	0.0000	3	0.00		0.0000	1	0.00		
13	1	12 - 13	0	0.0000	3	0.00		0.0000	1	0.00		
14	1	13 - 14	0	0.0000	3	0.00		0.0000	1	0.00		
15	1	14 - 15	0	0.0000	3	0.00		0.0000	1	0.00		
16	1	15 - 16	0	0.0000	3	0.00		0.0000	1	0.00		
17	1	16-17	0	0.0000	1	0.00		0.0000	1	0.00		
18	1	17-18	0	0.0000	1	0.00		0.0000	1	0.00		
19	1	18-19	0	0.0000	1	0.00		0.0000	1	0.00		
20	1	19-20	0	0.0000	1	0.00		0.0000	1	0.00		
21	1	20-21	0	0.0000	1	0.00		0.0000	1	0.00		
22	1	21-22	0	0.0000	1	0.00		0.0000	1	0.00		
23	1	22-23	0	0.0000	1	0.00		0.0000	1	0.00		
24	1	23-24	0	0.0000	1	0.00		0.0000	1	0.00		
25	1	24-25	0	0.0000	1	0.00		0.0000	1	0.00		
26	1	25-26	0	0.0000	1	0.00		0.0000	1	0.00		
27	1	26-27	0	0.0000	1	0.00		0.0000	1	0.00		
28	1	27-28	0	0.0000	1	0.00		0.0000	1	0.00		
29	1	28-29	0	0.0000	1	0.00		0.0000	1	0.00		
30	1	29-30	0	0.0000	1	0.00		0.0000	1	0.00		
<b>Total Increased Cancer Risk</b>						<b>1.8</b>				<b>0.03</b>		
<b>Total Increased Cancer Risk with 80% Tier 4</b>						<b>5.8</b>						

\* Third trimester of pregnancy

**Menlo College Residence Hall, Atherton, CA - Construction Impacts - Without Design Feature Control  
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction  
Impacts at Menlo School (6th-12th Grade) - 1.5 meter receptor height**

Student Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x 1.0E6

Where: CPF = Cancer potency factor (mg/kg-day)<sup>-1</sup>  
 ASF = Age sensitivity factor for specified age group  
 ED = Exposure duration (years)  
 AT = Averaging time for lifetime cancer risk (years)

Inhalation Dose = C<sub>air</sub> x SAF x 8-Hr BR x A x (EF/365) x 10<sup>-6</sup>

Where: C<sub>air</sub> = concentration in air (µg/m<sup>3</sup>)  
 SAF = Student Adjustment Factor (unitless)  
 = (24 hrs/9 hrs) x (7 days/5 days) = 3.73  
 8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)  
 A = Inhalation absorption factor  
 EF = Exposure frequency (days/year)  
 10<sup>-6</sup> = Conversion factor

**Values**

	<b>Infant</b>	<b>School Child</b>	<b>Adult</b>
<b>Age --&gt;</b>	<b>0 - &lt;2</b>	<b>2 - &lt;16</b>	<b>16 - 30</b>
<b>Parameter</b>			
ASF =	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00
8-Hr BR* =	1200	520	230
A =	1	1	1
EF =	350	180	250
AT =	70	70	70
SAF =	1.00	3.73	1.00

\* 95th percentile 8-hr breathing rates for moderate intensity activities

**Construction Cancer Risk by Year - Maximum Impact Receptor Location**

Exposure Year	Exposure Duration (years)	Child - Exposure Information		Age* Sensitivity Factor	Child Cancer Risk (per million)
		DPM Conc (ug/m3)			
		Year	Annual		
1	1	2021-2022	0.1698	3	7.7

Maximum		
Hazard Index	Fugitive PM2.5	Total PM2.5
0.034	0.0478	0.2176

\* Children assumed to be 6th-12th Grade

**Menlo College Residence Hall, Atherton, CA - Construction Impacts - Without Design Feature Control  
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction  
Impacts at Menlo School (6th-12th Grade) - 4.5 meter receptor height**

Student Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x 1.0E6

Where: CPF = Cancer potency factor (mg/kg-day)<sup>-1</sup>  
 ASF = Age sensitivity factor for specified age group  
 ED = Exposure duration (years)  
 AT = Averaging time for lifetime cancer risk (years)

Inhalation Dose = C<sub>air</sub> x SAF x 8-Hr BR x A x (EF/365) x 10<sup>-6</sup>

Where: C<sub>air</sub> = concentration in air (µg/m<sup>3</sup>)  
 SAF = Student Adjustment Factor (unitless)  
 = (24 hrs/9 hrs) x (7 days/5 days) = 3.73  
 8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)  
 A = Inhalation absorption factor  
 EF = Exposure frequency (days/year)  
 10<sup>-6</sup> = Conversion factor

**Values**

	<b>Infant</b>	<b>School Child</b>	<b>Adult</b>
<b>Age --&gt;</b>	<b>0 - &lt;2</b>	<b>2 - &lt;16</b>	<b>16 - 30</b>
<b>Parameter</b>			
ASF =	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00
8-Hr BR* =	1200	520	230
A =	1	1	1
EF =	350	180	250
AT =	70	70	70
SAF =	1.00	3.73	1.00

\* 95th percentile 8-hr breathing rates for moderate intensity activities

**Construction Cancer Risk by Year - Maximum Impact Receptor Location**

Exposure Year	Exposure Duration (years)	Child - Exposure Information		Age* Sensitivity Factor	Child Cancer Risk (per million)
		DPM Conc (ug/m3)			
		Year	Annual		
1	1	2021-2022	0.1596	3	7.2

Maximum		
Hazard Index	Fugitive PM2.5	Total PM2.5
0.032	0.0452	0.2048

\* Children assumed to be 6th-12th Grade

**Menlo College Residence Hall, Atherton, CA - Construction Impacts - With Design Feature Controls  
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction  
Impacts at Menlo School (6th-12th Grade) - 1.5 meter receptor height**

Student Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x 1.0E6

Where: CPF = Cancer potency factor (mg/kg-day)<sup>-1</sup>  
 ASF = Age sensitivity factor for specified age group  
 ED = Exposure duration (years)  
 AT = Averaging time for lifetime cancer risk (years)

Inhalation Dose = C<sub>air</sub> x SAF x 8-Hr BR x A x (EF/365) x 10<sup>-6</sup>

Where: C<sub>air</sub> = concentration in air (µg/m<sup>3</sup>)  
 SAF = Student Adjustment Factor (unitless)  
 = (24 hrs/9 hrs) x (7 days/5 days) = 3.73  
 8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)  
 A = Inhalation absorption factor  
 EF = Exposure frequency (days/year)  
 10<sup>-6</sup> = Conversion factor

**Values**

	<b>Infant</b>	<b>School Child</b>	<b>Adult</b>
<b>Age --&gt;</b>	<b>0 - &lt;2</b>	<b>2 - &lt;16</b>	<b>16 - 30</b>
<b>Parameter</b>			
ASF =	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00
8-Hr BR* =	1200	520	230
A =	1	1	1
EF =	350	180	250
AT =	70	70	70
SAF =	1.00	3.73	1.00

\* 95th percentile 8-hr breathing rates for moderate intensity activities

**Construction Cancer Risk by Year - Maximum Impact Receptor Location**

Exposure Year	Exposure Duration (years)	Child - Exposure Information		Child Cancer Risk (per million)	
		DPM Conc (ug/m3)			Age*
		Year	Annual	Sensitivity Factor	
1	1	2021-2022	0.0157	3	0.7

Maximum		
Hazard Index	Fugitive PM2.5	Total PM2.5
0.003	0.0112	0.0269

**Total Increased Cancer Risk with 80% Tier 4 2.2**

\* Children assumed to be 6th-12th Grade

Planning Commission  
Town of Atherton  
150 Watkins Avenue  
Atherton, California 94027

**Menlo College Residence Hall Project**

To provide additional housing for Menlo College’s existing student population, approximately 325 of whom currently live off campus because there is no available on-campus housing for them, the College proposes a conditional use permit (CUP) to construct and operate a three-story, on-grade new residence hall. This residence hall has been included in Menlo College’s most recent Master Plan in compliance with section 17.36.050 of the Atherton Zoning Code. The project is designed with 147 student living units (291 beds), 45 on the first floor, 51 on the second floor and 51 on the third floor. Amenities will include study spaces, lounges, game rooms, kitchens, and laundry rooms. Access for people with disabilities will be provided, and all building mechanical systems will be part of the construction project. The proposed height of the structure is 43 feet. Twenty percent of the units that could be constructed in the proposed location under the zoning “base case” (96 units in two stories or up to 34 feet) or 20 units will be reserved for lower income students in accordance with Government Code section 65915(b)(1)(F).

As described more below, a density bonus of 35% is allowed under the state density bonus law where a project reserves 20% of the student housing project for lower income students, allowing a total of 130 student living units (96 + 34 = 130). To accommodate the additional 34 bonus units, a third story is needed. The College proposes 17 more units for a total of 45 units on the first floor and 51 units on the second and third floors (147 living units). The additional 17 dorm rooms create a harmonious and efficient building design for a residence hall, maximize the number of beds and thus provide more on-campus housing, which will reduce vehicle trips by students now forced to live off-campus. The building area is proposed to be approximately 57,267 square feet. The T-shaped layout is traditional dormitory-style, with rooms accessed off central hallways. Upper division students will serve as live-in resident assistants to provide on-site supervision and support for the student-residents.

The proposed site for the new building is interior to the campus (see preliminary site plan below) and immediately adjacent to the existing residence halls. Due to its interior location, the building will have limited, if any, visibility from outside of the campus grounds due to the distance of the building site from nearby roads and residential neighborhoods. The project more than meets the required setback requirements.

Construction is estimated to be completed within 12 months. Upon its completion, Menlo College will be able to respond to the existing demand for on-site housing, thus reducing commuter traffic, vehicle trips and parking demand.

General Plan: Public and Quasi-Public Land Use

Zoning: Public Facilities and Schools (PFS)

Maximum FAR: none

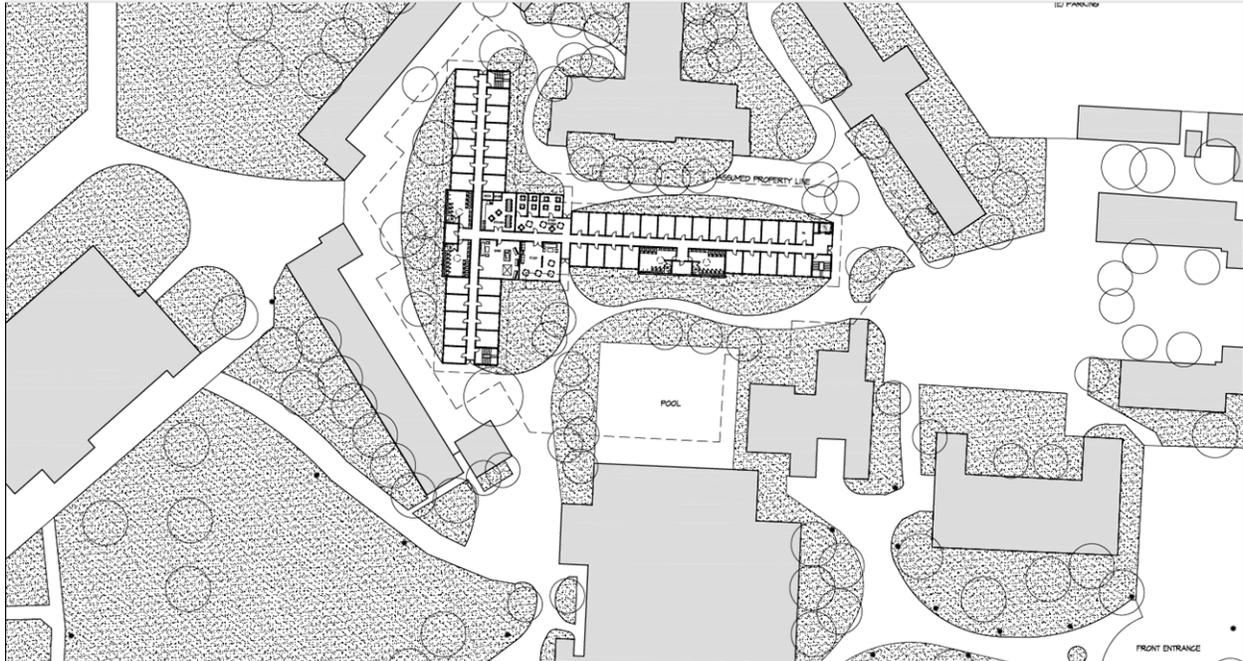
Maximum density/acre: none

Height limit= 34 feet

Front and rear yard minimum set back: 60 feet

Minimum side yard: 50 feet

Conditional use permit required for “dorms ... associated with a school site.” Section 17.36.030.



### **Preliminary Site Plan—New Residence Hall—Menlo College**

#### **Density Bonus Law as Applied to Proposal:**

The project proposes to provide 20% of the proposed “base case” student living units to lower income students as defined in Government Code section 65915(b)(1)(F) and, as such, qualifies as a state density bonus project. Under the state density bonus law, with which the Town of Atherton must comply, student housing projects that provide 20% of the units allowed under the zoning to lower income students qualify for a 35% density bonus under section 65915(e)(3)(C). Density bonus projects are also entitled to a waiver of development standards that would physically preclude construction of the project at the densities permitted under state law. See section 65915(e)(1).

Here, under the Public Facilities and Schools (PFS) zoning, there are no FAR or density standards. However, there is a height limit of 34 feet. At 34 feet, the height of the proposed residence hall would be limited to two stories, which would allow the construction of approximately 96 units of student housing in the proposed location. Because it is a density bonus project, the project is entitled to 35% more units than could otherwise be built under the applicable zoning, which allows the construction of a total of 130 student living units. ( $96 \times 0.35 = 34$  units.) To accommodate the 130 units in the proposed location, the residence hall must be three stories (43 feet in height) and cannot physically “fit” in the proposed location with the height limit of 34 feet. It is therefore entitled to a waiver of the 34-foot height requirement under Government Code section 65915(e). As noted, the College proposes to provide 17 more units for a total of 147 units (45 units on the first floor, 51 units on the second floor and 51 units on the third floor.) Maximizing the living space on the third floor will allow more students to live on campus, reduce vehicle trips and create a harmonious and efficient building design for a residence hall. A waiver may only be denied if the Town can show there would be a specific,

adverse impact upon health, safety, or the physical environment and for which there is no feasible method to satisfactorily mitigate or avoid the specific adverse impact. Here, the applicant is aware of no adverse health, safety or environmental impact that would result from allowing the residence hall to be three stories instead of two stories.

### **CEQA Infill Development Exemption as Applied to Proposed Residence Hall:**

The requirements for the infill development exemption are as follows:

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

(14 CCR § 15332.)

**Consistency with General Plan and zoning.** The proposed residence hall is located on lands designated for public, quasi-public, and educational uses under the Town of Atherton's Existing General Plan and 2019 General Plan Update. (Existing General Plan, at p. LU-8; 2019 General Plan Update, Final Draft, at p. LU-17.) The Project is consistent with this general plan designation, which allows for schools and requires that CUPs for new buildings on school campuses be consistent with the school's master plan. (Existing General Plan, at p. LU-6; 2019 General Plan Update, Final Draft, at pp. LU-11.) The Project meets this additional consistency requirement, as it directly supports specific goals outlined in the Menlo College Master Plan Update (July 2018).<sup>1</sup> In particular, the Project supports the updated Master Plan's goal to develop "new or significantly improved residence hall(s)."<sup>2</sup> (Master Plan Update, at p. 8.)

The Project is also consistent with Town zoning designations and regulations. Menlo College is located in the PFS District, which allows for the development of public and private schools, as well as the development of residential uses associated with the primary nonresidential use on the same property. (§ 17.36.020.) The Project is consistent with PFS District permitted uses.

The proposal will also not conflict with the Town's Regional Housing Needs Allocation analysis in the Housing Element of the General Plan. While the project will not

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<sup>1</sup> Available at <https://www.ci.atherton.ca.us/DocumentCenter/View/5745/Menlo-College-Master-Plan-Update-2018-Final-PC-Packet>.

<sup>2</sup> The Project is also consistent with the Menlo College Strategic Plan 2020, which seeks to "[i]mprove and expand ... campus housing." (Menlo College Strategic Plan 2020, at p. 12.) The Project directly supports this goal.

qualify as “affordable housing” for purposes of the RNHA allocation, it will not preclude the development of affordable housing units envisioned in the Housing Element as the proposed residence hall would be located in a different part of campus than the affordable units.

**Within City Limits and Surrounded by Urban Uses.** The Project occurs within city limits on a project site of no more than five acres. The Project is substantially surrounded by urban uses, including commercial, residential, and other school uses.

**No Habitat For Special Status Species.** While a habitat assessment has yet to be completed, it is unlikely the project site serves as habitat for endangered, rare, or threatened species, given that the site is already substantially developed with Menlo College’s existing facilities.

**No Significant Traffic, Noise or Other Impacts.** Pending formal evaluations, it is projected that the Project would not result in significant traffic, noise, air quality, or water quality impacts. The Project would not increase enrollment at Menlo College, but would rather accommodate existing students that currently live off-campus. By housing those students on-campus, the Project may actually reduce traffic. And, apart from limited, temporary noise and air quality impacts due to construction, the Project likely will not result in noise or air quality impacts. It is also unlikely the Project would increase runoff or otherwise degrade water quality, based on the existing development at the site. Technical memoranda could be prepared to further discuss these impacts.

**Adequate Service by Existing Utilities.** The Project can likely be adequately served by all required utilities and public services. The Project will not increase existing enrollment at Menlo College and, therefore, should not require additional public services or utilities. As above, technical memoranda could be prepared to substantiate these conclusions.

Under 14 CCR § 15300.2, categorical exemptions may be inapplicable based on the following:

- a) **Location.** Classes 3, 4, 5, 6, and 11 are qualified by consideration of where the project is to be located – a project that is ordinarily insignificant in its impact on the environment may in a particularly sensitive environment be significant. Therefore, these classes are considered to apply in all instances, except where the project may impact on an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies.
- b) **Cumulative Impact.** All exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant.
- c) **Significant Effect.** A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.
- d) **Scenic Highways.** A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway. This does not apply to improvements which are required as mitigation by an adopted negative declaration or certified EIR.

- e) Hazardous Waste Sites. A categorical exemption shall not be used for a project located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code.
- f) Historical Resources. A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource.

None of the above exceptions are applicable here. The first exception does not apply because the infill development exemption is the Class 32 exemption and is not the Class 3, 4, 5, 6, or 11 exemption. It is also unlikely that the cumulative impact exception would apply, as the Project proposes to accommodate existing students, and not to encourage increased enrollment at the College, and we are not aware of any residence halls being proposed in the Town. There do not appear to be any unusual circumstances, scenic resources, hazardous waste sites, or historical resources on or in the vicinity of the Project site.

For all of the above reasons, the Class 32 exemption would appear to apply to the Project.

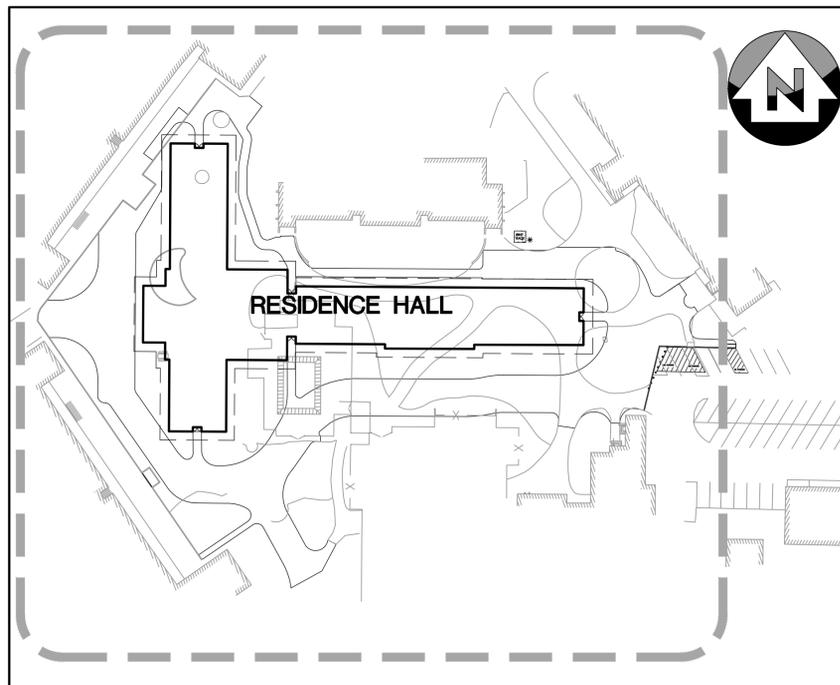
**LEGEND**

EXISTING	PROPOSED
SAWCUT AND CONFORM LINE	---
RETAINING WALL	=====
A.C. PAVEMENT	=====
CONC. VALLEY GUTTER	=====
CONC. SIDEWALK OR PAD	=====
6" CURB & GUTTER	=====
EDGE OF A.C. PAVEMENT	=====
6" VERTICAL CURB	=====
CENTER LINE	-----
SANITARY SEWER MAIN	8" SS
STORM DRAIN MAIN	12" SD
PERFORATED PIPE	6" SD
WATER MAIN	6" W
FIRE WATER MAIN	6" FW
DOMESTIC WATER MAIN	6" DW
CHILLED WATER MAIN	6" CHW
IRRIGATION LINE	2" IRR
HOT WATER SUPPLY & RETURN	HWS-HWR
STEAM LINE	ST
TRENCH DRAIN	-----
CONDENSATE RETURN	-----
METAL BEAM GUARD RAIL	-----
SILT FENCE	-----
FLOW LINE	-----
CHAIN LINK FENCE	x x
GAS MAIN	G
ELECTRIC AND SIGNAL DUCT BANK	E
OVERHEAD ELECTRIC LINE	OHE
UNDERGROUND ELECTRIC LINE	UGE
STREET LIGHT CONDUIT	SL
CONTOUR ELEVATION LINE	90
SPOT ELEVATION	95.94
DIRECTION OF SLOPE	2:1 1%
GAS METER	GM
GAS VALVE	GV
WATER METER	WM
WATER VALVE	WV
FIRE HYDRANT	FH
BACK FLOW PREVENTOR	BFP
POST INDICATOR VALVE	PIV
FIRE DEPARTMENT CONNECTION	FDC
WATER LINE TEE	WT
CAP AND PLUG END	CP
AIR RELEASE VALVE	ARV
SIGN	S
ACCESSIBLE RAMP	AR
CONCRETE THRUST BLOCK	CTB
REDUCER	R
SANITARY SEWER MANHOLE	SSM
SANITARY SEWER CLEANOUT	SSCO
STORM DRAIN MANHOLE	SDM
STORMDCEPTOR	SDC
STORM DRAIN AREA DRAIN	SDAD
STORM DRAIN CATCH BASIN	SDCB
STORM DRAIN CURB INLET	SDCI
STORM DRAIN CLEANOUT	SDCO
ELECTROLIER	EL
JOINT POLE	JP
OVERLAND RELEASE	OR
CONSTRUCTION DETAIL REFERENCE	15 C5.2

**ABBREVIATIONS**

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
AD	AREA DRAIN
ADA	AMERICANS WITH DISABILITIES ACT
ASB	AGGREGATE SUBBASE
BC	BEGINNING OF CURVE
BFP	BACK FLOW PREVENTOR
BLDC	BUILDING CORNER
BUDG	BOTTOM OF DOCK
BOL	BOLLARD
BOS	BOTTOM OF STEP
BOW	FG @ BOTTOM OF WALL
BVC	BEGIN VERTICAL CURVE
BW	BANK OF WALK
C	CONCRETE OR CIVIL
C&G	CURB AND GUTTER
CB	CATCH BASIN
CI	CURB INLET
CI	CAST IRON PIPE
CL	CENTER LINE OR CLASS
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
CONC	CONCRETE
CONC	CONSTRUCTION OR CONSTRUCT
CY	CUBIC YARD
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY
DI	DROP INLET
DIP	DUCTILE IRON PIPE
DOM	DOMESTIC
DW	DOMESTIC WATER
DWG	DRAINING
E	EAST
EC	END OF CURVE
EP	EDGE OF PAVEMENT
ER	END OF RETURN
EVC	END VERTICAL CURVE
ELEV	ELEVATION
EX, EXST.	EXISTING
FC	FACE CURB
FDC	FIRE DEPARTMENT CONNECTION
FF	FINISHED FLOOR
FG	FINISHED GRADE
FH	FIRE HYDRANT
FL	FLOW LINE
FOUND	FOUNDATION
FS	FINISHED SURFACE
FT	FOOT
FW	FIRE WATER
G	GROUND ELEVATION
GB	GRADE BREAK
GV	GATE VALVE
HCR	ACCESSIBLE RAMP
HP	HIGH POINT
INV	INVERT ELEVATION
JP	JOINT POLE
JT	JOINT TRENCH
LP	LIP OF GUTTER
LSA	LANDSCAPE ARCHITECT
MAX	MAXIMUM
MEP	MECHANICAL/ELECTRICAL/PLUMBING
MH	MANHOLE
MHW	MIDPOINT OF VERTICAL CURVE
MON	MONUMENT
N	NORTH
NTS	NOT IN CONTRACT
NO	NUMBER
NTS	NOT TO SCALE
P	PAVEMENT ELEVATION
PCC	PORTLAND CEMENT CONCRETE /
PIV	POST INDICATOR VALVE
PL	PROPERTY LINE
PMH	POWER MANHOLE
PP	POINT ON CURVE
PP	POWER POLE
PRC	POINT OF REVERSE CURVATURE
PVC	POLYVINYL CHLORIDE PIPE
R	RADIUS
RC	RELATIVE COMPACTION
RCP	REINFORCED CONCRETE PIPE
RPPA	REDUCED PRESSURE PRINCIPLE ASSEMBLY
R/W	RIGHT OF WAY
S	SLOPE OR SOUTH
S.A.D.	SEE ARCHITECTURAL DRAWINGS
SD	SEDIMENT BASIN
SD	STORM DRAIN
S.E.D.	SEE ELECTRICAL DRAWINGS
SF	SILT FENCE
SUB	SUBGRADE
S.L.D.	SEE LANDSCAPE DRAWINGS
S.M.D.	SEE MECHANICAL DRAWINGS
SMH	SIGNAL MANHOLE
S.P.D.	SEE PLUMBING DRAWINGS
SS	SANITARY SEWER
STA	STATION
STD	STANDARD
S/W	SIDEWALK
TC	TOP OF CURB
TD	TRENCH DRAIN
TD	TOP OF DOCK
TOE	TOE OF SLOPE
TOS	TOP OF STAIR
TOW	FG @ TOP OF WALL
TS	TOP OF SLAB
TYP	TYPICAL
UNLESS OTHERWISE NOTED	
UNDERGROUND	
VC	VERTICAL CURVE
W	WATER METER
WV	WATER VALVE
W	WEST
WVF	WELDED WIRE FABRIC
W/	WITH

# RESIDENCE HALL PLANNING SET FOR MENLO COLLEGE ATHERTON CALIFORNIA



**KEY MAP**

NTS

**EARTHWORK QUANTITIES**

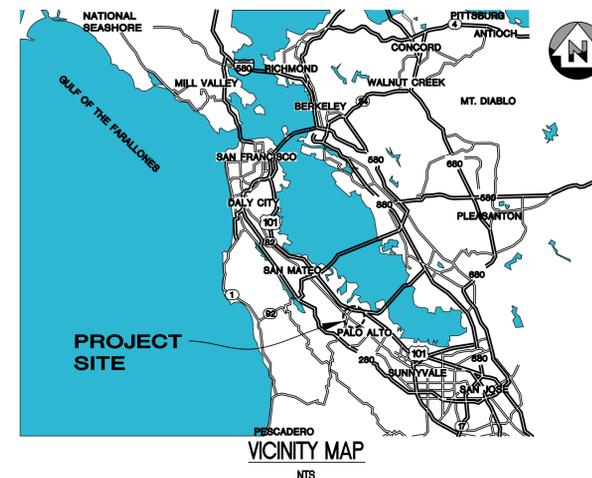
CUT 485 CY  
FILL 75 CY  
BALANCE 410 CY EXPORT

THE EARTHWORK QUANTITIES SHOWN ARE PROVIDED FOR THE PURPOSE OF GRADING PERMIT APPROVAL ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CARRY OUT THE CUT/FILL, IMPORT/EXPORT AS NECESSARY TO MEET THE DESIGN GRADES AS SHOWN ON THE PLANS REGARDLESS OF THE ESTIMATED EARTHWORK QUANTITIES AS INDICATED. SIGNIFICANT REVISIONS TO THE QUANTITIES NEED REVIEW BY THE TOWN. FILL SHORTAGE IS ANTICIPATED TO COME FROM ON-SITE SPOILS ACQUIRED FROM UTILITY TRENCHES AND FOOTING SPOILS.

CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM SOLE NEGLIGENCE OF DESIGN PROFESSIONAL.

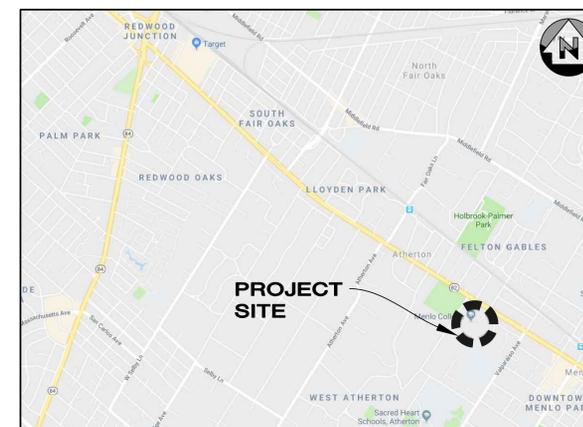
**UNAUTHORIZED CHANGES AND USES**

**CAUTION:** THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THE PLANS.



**VICINITY MAP**

NTS



**LOCATION MAP**

NTS

**PROJECT DESCRIPTION**

CONSTRUCTION OF A NEW RESIDENCE HALL AND FIRE ACCESS WITH ASSOCIATED HARDSCAPE, SOFTSCAPE, AND STORMWATER MITIGATION IMPROVEMENTS.

**OWNER INFO**

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C8.0	LANDSCAPE PLAN

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Issues and Revisions			
No.	Date	Issues and Revisions	By
	12/19/2019	PLANNING SUBMITTAL	JW
1	02/25/2020	PLANNING RESUBMITTAL	JW

**CIVIL COVER SHEET**

Project Number: 2019A105  
Date: 12/19/2019  
Scale: N.T.S.

**C1.0**

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## CONSTRUCTION NOTES

- ALL OFF-SITE CONSTRUCTION MATERIAL AND METHODS SHALL COMPLY WITH THE LATEST EDITION OF THE TOWN OF ATHERTON AND THE LATEST CALTRANS STANDARD PLANS & SPECIFICATIONS.
- CONTRACTOR SHALL LEAVE AN EMERGENCY PHONE NUMBER WITH THE TOWN OF ATHERTON POLICE AND FIRE DEPARTMENTS.
- CONTRACTOR SHALL POST ON THE SITE, EMERGENCY TELEPHONE NUMBERS FOR PUBLIC WORKS, AMBULANCE, POLICE, AND FIRE DEPARTMENTS.
- CONTRACTOR SHALL NOTIFY ALL PUBLIC OR PRIVATE UTILITY OWNERS 48 HOURS PRIOR TO COMMENCEMENT OF WORK ADJACENT TO THE UTILITY UNLESS AN EXCAVATION PERMIT SPECIFIES OTHERWISE.
- THE CONTRACTOR SHALL HIRE A STREET CLEANING CONTRACTOR TO CLEAN UP DIRT AND DEBRIS FROM CITY STREETS THAT ARE ATTRIBUTABLE TO THE DEVELOPMENT'S CONSTRUCTION ACTIVITIES.
- ALL GRADING SHALL BE PERFORMED IN SUCH A MANNER AS TO COMPLY WITH THE STANDARDS ESTABLISHED BY THE AIR QUALITY MAINTENANCE DISTRICT FOR AIRBORNE PARTICULATES (DUST).
- ALL GRADING SHALL CONFORM TO APPROVED SPECIFICATIONS PRESENTED HEREON OR ATTACHED HERETO. ALL GRADING WORK SHALL BE OBSERVED AND APPROVED BY THE SOILS ENGINEER, THE GEOTECHNICAL ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS BEFORE BEGINNING ANY GRADING. UNOBSERVED AND UNAPPROVED GRADING WORK SHALL BE REMOVED AND REDONE AT THE CONTRACTORS EXPENSE.
- ALL MATERIALS, REQUIRED FOR THE COMPLETE EXECUTION OF THE PROJECT, SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FLAGMEN OR OTHER DEVICES NECESSARY TO PROVIDE FOR PUBLIC SAFETY DURING THE CONSTRUCTION PERIOD.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR OR REPLACE ANY EXISTING IMPROVEMENTS OF UNDERGROUND FACILITIES DAMAGED DURING THE CONSTRUCTION PERIOD.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL ENCROACHMENT, EXCAVATION, CONCRETE, ELECTRICAL, PLUMBING, ETC. PERMITS NECESSARY PRIOR TO BEGINNING CONSTRUCTION FOR ANY WORK.
- THE CONTRACTOR SHALL HAVE A SUPERINTENDENT OR REPRESENTATIVE ON SITE AT ALL TIMES DURING CONSTRUCTION.
- STORAGE OF CONSTRUCTION MATERIAL AND EQUIPMENT ON CITY STREETS WILL NOT BE PERMITTED.
- CONSTRUCTION EQUIPMENT SHALL BE PROPERLY MUFFLED. UNNECESSARY IDLING OF GRADING CONSTRUCTION EQUIPMENT IS PROHIBITED.
- CONSTRUCTION EQUIPMENT, TOOLS, ETC. SHALL NOT BE CLEANED OR RINSED INTO A STREET, GUTTER OR STORM DRAIN.
- A CONTAINED AND COVERED AREA ON-SITE SHALL BE USED FOR STORAGE OF CEMENT BAGS, PAINTS, FLAMMABLE OILS, FERTILIZERS, PESTICIDES, OR ANY OTHER MATERIALS THAT HAVE POTENTIAL FOR BEING DISCHARGED TO THE STORM DRAIN SYSTEM BY WIND OR IN THE EVENT OF A MATERIAL SPILL.
- ALL CONSTRUCTION DEBRIS SHALL BE GATHERED ON A REGULAR BASIS AND PLACED IN A DUMPSTER WHICH IS EMPTIED OR REMOVED WEEKLY. WHEN FEASIBLE, TARPS SHALL BE USED ON THE GROUND TO COLLECT FALLEN DEBRIS OR SPLATTERS THAT COULD CONTRIBUTE TO STORMWATER POLLUTION.
- ANY TEMPORARY ON-SITE CONSTRUCTION PILES SHALL BE SECURELY COVERED WITH A TARP OR OTHER DEVICE TO CONTAIN DEBRIS.
- CONCRETE TRUCKS AND CONCRETE FINISHING OPERATIONS SHALL NOT DISCHARGE WASH WATER INTO THE STREET GUTTERS OR DRAINS.

## DISCREPANCIES

IF THERE ARE ANY DISCREPANCIES BETWEEN DIMENSIONS IN DRAWINGS AND EXISTING CONDITIONS WHICH WILL AFFECT THE WORK, THE CONTRACTOR SHALL BRING SUCH DISCREPANCIES TO THE ATTENTION OF THE ENGINEER FOR ADJUSTMENT BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER FITTING OF ALL WORK AND FOR THE COORDINATION OF ALL TRADES, SUBCONTRACTORS, AND PERSONS ENGAGED UPON THIS CONTRACT.

## UTILITY/POTHOLE NOTE

THE TYPES, LOCATIONS, SIZES AND /OR DEPTHS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ARE APPROXIMATE AND WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. ONLY ACTUAL EXCAVATION WILL REVEAL THE TYPES, EXTENT, SIZES, LOCATIONS AND DEPTHS OF SUCH UNDERGROUND UTILITIES. A REASONABLE EFFORT HAS BEEN MADE TO LOCATE AND DELINEATE ALL KNOWN UNDERGROUND UTILITIES; HOWEVER, THE ENGINEER CAN ASSUME NO RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF ITS DELINEATION OF SUCH UNDERGROUND UTILITIES WHICH MAY BE ENCOUNTERED, BUT WHICH ARE NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND FACILITIES AND UTILITIES BY POTHOLES PRIOR TO COMMENCING CONSTRUCTION.

## DIMENSIONS

ALL DIMENSIONS ON THE PLANS ARE IN FEET OR DECIMALS THEREOF UNLESS SPECIFICALLY CALLED OUT AS FEET AND INCHES.

## ENCROACHMENT NOTE:

A SEPARATE ENCROACHMENT PERMIT IS REQUIRED FOR ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THIS ENCROACHMENT PERMIT AND FOLLOW ALL CONSTRUCTION RELATED REQUIREMENTS OF SUCH PERMIT. NOTE THAT NO WORK IN THE RIGHT-OF-WAY IS PROPOSED.

## FLOODZONE

THIS PROJECT IS IN FLOOD ZONE X: AREAS OUTSIDE OF 0.2% ANNUAL CHANCE FLOOD.

INFORMATION OBTAINED FROM THE FLOOD INSURANCE RATE MAP (FIRM) NO. 060810C0304E DATED OCTOBER 16, 2012 PRODUCED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).

## FIRE DESIGN NOTE:

THE CONTRACTOR SHALL DESIGN, PREPARE SHOP DRAWINGS FOR, OBTAIN ALL REQUIRED APPROVALS, AND CONSTRUCT THE FIRE SYSTEM FOR THE PROPOSED PROJECT. CONTRACTOR SHALL HAVE SHOP DRAWINGS STAMPED BY A FIRE PROTECTION ENGINEER AS REQUIRED BY THE LOCAL AUTHORITY.

## UNDERGROUND WORK CAUTION

CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT FOR LOCATION OF UNDERGROUND UTILITIES AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION. FOR NORTHERN CALIFORNIA DIAL 811 OR (800) 227-2600. FOR OTHER AREAS CALL (800) 642-2444. CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES PRIOR TO BEGINNING ANY WORK ON THIS SITE.

## DEMOLITION NOTES

- CONTRACTOR IS TO COMPLY WITH ALL GENERAL AND STATE REQUIREMENTS INVOLVING THE REMOVAL AND DISPOSAL OF HAZARDOUS MATERIAL(S).
- CONTRACTOR'S BID IS TO INCLUDE ALL VISIBLE SURFACE AND ALL SUBSURFACE FEATURES IDENTIFIED TO BE REMOVED OR ABANDONED IN THESE DOCUMENTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR A SITE INSPECTION TO FULLY ACKNOWLEDGE THE EXTENT OF THE DEMOLITION WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY AND ALL PERMITS NECESSARY FOR ENCROACHMENT, GRADING, DEMOLITION, AND DISPOSAL OF SAID MATERIALS AS REQUIRED BY PRIVATE, LOCAL AND STATE JURISDICTIONS. THE CONTRACTOR SHALL PAY ALL FEES ASSOCIATED WITH THE DEMOLITION WORK.
- BACKFILL ALL DEPRESSIONS AND TRENCHES FROM DEMOLITION TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER.
- REMOVAL OF LANDSCAPING SHALL INCLUDE ROOTS AND ORGANIC MATERIALS TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER.
- PRIOR TO BEGINNING DEMOLITION WORK ACTIVITIES, CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES OUTLINED IN THE EROSION CONTROL PLAN & DETAILS AND THE PROJECT SWPPP IF APPLICABLE.
- THE CONTRACTOR SHALL MAINTAIN ALL SAFETY DEVICES, AND SHALL BE RESPONSIBLE FOR CONFORMANCE TO ALL LOCAL, STATE AND FEDERAL SAFETY AND HEALTH STANDARDS LAWS AND REGULATIONS.
- THE CONTRACTOR SHALL PROTECT FROM DAMAGE ALL EXISTING IMPROVEMENTS FACILITIES AND STRUCTURES WHICH ARE TO REMAIN. ANY ITEMS DAMAGED BY THE CONTRACTOR OR THEIR AGENTS OR ANY ITEMS REMOVED FOR HIS USE SHALL BE REPLACED IN EQUAL OR BETTER CONDITION AS APPROVED BY THE ARCHITECT OR OWNER'S REPRESENTATIVE.
- COORDINATE WITH ELECTRICAL, MECHANICAL, LANDSCAPING AND ARCHITECTURAL DRAWINGS FOR UTILITY SHUT-DOWN/DISCONNECT LOCATIONS. CONTRACTOR IS TO SHUT OFF ALL UTILITIES AS NECESSARY PRIOR TO DEMOLITION. CONTRACTOR IS TO COORDINATE SERVICE INTERRUPTIONS WITH THE UTILITY OWNER AND ANY AFFECTED PROPERTIES OR BUILDINGS. SEE ARCHITECTURAL PLANS FOR ADDITIONAL DEMOLITION SCOPE OF WORK.
- THIS PLAN IS NOT INTENDED TO BE A COMPLETE CATALOGUE OF ALL EXISTING STRUCTURES AND UTILITIES. THIS PLAN INTENDS TO DISCLOSE GENERAL INFORMATION KNOWN BY THE ENGINEER AND TO SHOW THE LIMITS OF THE AREA WHERE WORK WILL BE PERFORMED. THIS PLAN SHOWS THE EXISTING FEATURES TAKEN FROM A FIELD SURVEY, FIELD INVESTIGATIONS AND AVAILABLE INFORMATION. THIS PLAN MAY OR MAY NOT ACCURATELY REFLECT THE TYPE OR EXTENT OF THE ITEMS TO BE ENCOUNTERED AS THEY ACTUALLY EXIST. WHERE EXISTING FEATURES ARE NOT SHOWN, IT IS NOT IMPLIED THAT THEY ARE NOT TO BE DEMOLISHED OR RELOCATED. THE CONTRACTOR SHALL PERFORM A THOROUGH FIELD INVESTIGATION AND REVIEW OF THE SITE WITHIN THE LIMIT OF WORK SHOWN IN THIS PLAN SET TO DETERMINE THE TYPE, QUANTITY AND EXTENT OF ANY AND ALL ITEMS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR DETERMINING THE EXTENT OF EXISTING STRUCTURES AND UTILITIES AND QUANTITY OF WORK INVOLVED IN REMOVING THESE ITEMS FROM THE SITE.
- CONTRACTOR TO DEMOLISH AND REMOVE ALL IRRIGATION IN LANDSCAPE AREAS WITHIN THE LIMIT OF WORK. IF ANY IRRIGATION LINES OR MAINS ARE IN THE LIMIT OF WORK OR ARE DAMAGED THAT SERVE LANDSCAPE TO REMAIN, CONTRACTOR TO RECONNECT OR RELOCATE AT NO ADDITIONAL COST TO OWNER.
- PROTECT ALL EXISTING UTILITIES IN PLACE UNLESS OTHERWISE NOTED. REPLACE ANY DAMAGED UTILITY TO REMAIN TO KEEP OPERABLE DURING CONSTRUCTION.
- ALL UTILITY SHUT DOWNS ARE TO BE AVOIDED. IF SHUT DOWNS ARE NECESSARY, CONTRACTOR TO COORDINATE SHUT DOWN WITH UTILITY OWNER WITH 48 HOUR MINIMUM NOTICE.
- ALL EXISTING STORM DRAIN, SANITARY SEWER, AND WATER MAINS THAT SERVE EXISTING BUILDINGS MUST REMAIN OPERABLE DURING CONSTRUCTION. CONTRACTOR TO SET UP TEMPORARY SERVICE OR PUMP AS NECESSARY TO ENSURE UNINTERRUPTED SERVICE.

## RECORD DRAWING NOTE

THE CONTRACTOR SHALL KEEP UP-TO-DATE AND ACCURATE A COMPLETE RECORD SET OF PRINTS OF THE CONTRACT DRAWINGS SHOWING EVERY CHANGE FROM THE ORIGINAL DRAWINGS MADE DURING THE COURSE OF CONSTRUCTION INCLUDING EXACT FINAL LOCATION, ELEVATION, SIZES, MATERIALS, AND DESCRIPTION OF ALL WORK. RECORDS SHALL BE "REDLINED" ON A SET OF CONSTRUCTION PLAN DRAWINGS. A COMPLETE SET OF CORRECTED AND COMPLETED RECORD DRAWING PRINTS SHALL BE SUBMITTED TO THE CITY ENGINEER AND DEVELOPER'S CIVIL ENGINEER PRIOR TO FINAL ACCEPTANCE FOR REVIEW AND APPROVAL BY THE CITY ENGINEER.

## APPLICABLE FIRE CODE NOTES

APPLICABLE CODES AS OF DECEMBER 3, 2019:

2019 CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE (PART 1, TITLE 24, CCR)

2019 CALIFORNIA BUILDING CODE, VOLUMES 1 AND 2 (PART 2, TITLE 24, CCR) (2018 EDITION INTERNATIONAL BUILDING CODE)

2019 CALIFORNIA ELECTRICAL CODE (PART 3, TITLE 24, CCR) (2017 EDITION NATIONAL ELECTRICAL CODE)

2019 CALIFORNIA MECHANICAL CODE (PART 4, TITLE 24, CCR) (2018 EDITION UNIFORM MECHANICAL CODE)

2019 CALIFORNIA PLUMBING CODE (PART 5, TITLE 24, CCR) (2018 EDITION UNIFORM PLUMBING CODE)

2019 CALIFORNIA ENERGY CODE (PART 6, TITLE 24, CCR)

2019 CALIFORNIA ELEVATOR SAFETY ORDERS (CHAPTER 6, TITLE 8, CCR)

2019 CALIFORNIA FIRE CODE (PART 9, TITLE 24, CCR)

2019 CALIFORNIA REFERENCED STANDARDS CODE (PART 12, TITLE 24, CCR) TITLE 19 C.C.R., PUBLIC SAFETY; STATE FIRE MARSHAL REGULATIONS

PARTIAL LIST OF APPLICABLE STANDARDS:

NFPA 13 – AUTOMATIC SPRINKLER SYSTEMS – 2019 EDITION  
 NFPA 14 – STANDPIPE SYSTEMS – 2019 EDITION  
 NFPA 17A – WET CHEMICAL SYSTEMS – 2019 EDITION  
 NFPA 24 – PRIVATE FIRE MAINS – 2019 EDITION  
 NFPA 72 – NATIONAL FIRE ALARM CODE (CALIFORNIA AMENDED) (NOTE: SEE UL STANDARD 1971 FOR \* VISUAL DEVICES) – 2019 EDITION  
 NFPA 253 – CRITICAL RADIANT FLUX OF FLOOR COVERING SYSTEMS – 2019 EDITION  
 NFPA 20 – STATIONARY PUMPS FOR FIRE PROTECTION – 2019 EDITION  
 NFPA 99 – HEALTH CARE FACILITIES – 2019 EDITION

UNDERGROUND FIRE SERVICE TO FIRE HYDRANTS REQUIREMENTS:

NFPA 24, SEC. 10.1.1.3: ALL FERROUS METAL PIPE SHALL BE LINED IN ACCORDANCE WITH THE APPLICABLE STANDARDS IN TABLE 10.1.1.1

NFPA 24, SEC. 10.4.1.1: ALL BOLTED JOINT ACCESSORIES SHALL BE CLEANED AND THOROUGHLY COATED WITH ASPHALT OR OTHER CORROSION-RETARDING MATERIAL AFTER INSTALLATION.

NFPA 24, SEC. 10.6.2.5: CORROSION RESISTANCE. AFTER INSTALLATION, RODS, NUTS, BOLTS, WASHERS, CLAMPS, AND OTHER RESTRAINING DEVICES SHALL BE CLEANED AND THOROUGHLY COATED WITH BITUMINOUS OR OTHER ACCEPTABLE CORROSION-RETARDING MATERIAL.

NFPA 24, SEC. 10.6.1.1 – 10.6.1.4: THRUST BLOCKS SHALL BE CONSIDERED SATISFACTORY WHERE SOIL IS SUITABLE FOR THEIR USE. THRUST BLOCKS SHALL BE OF A CONCRETE MIX NOT LEANER THAN ONE PART CEMENT, TWO AND ONE HALF PARTS SAND, AND FIVE PARTS STONE. THRUST BLOCKS SHALL BE PLACED BETWEEN UNDISTURBED EARTH AND THE FITTING TO BE RESTRAINED, AND SHALL BE CAPABLE OF RESISTING THE CALCULATED THRUST FORCES. WHEREVER POSSIBLE, THRUST BLOCKS SHALL BE PLACED SO THAT THE JOINTS ARE ACCESSIBLE FOR REPAIR.

NFPA 24, SEC. 10.10.2.1.1 – 10.10.2.1.3: UNDERGROUND PIPING, FROM THE WATER SUPPLY TO THE SYSTEM RISER, AND LEAD-IN CONNECTIONS TO THE SYSTEM RISER SHALL BE COMPLETELY FLUSHED BEFORE THE CONNECTION IS MADE TO THE DOWNSTREAM FIRE PROTECTION SYSTEM PIPING. THE FLUSHING OPERATION SHALL BE CONTINUED FOR A SUFFICIENT TIME TO ENSURE THOROUGH CLEANING. THE MINIMUM RATE OF FLOW SHALL BE NOT LESS THAN THAT SPECIFIED IN SECTION 10.10.2.1.3.

NFPA 24, SEC. 10.10.2.2.1: ALL PIPING AND ATTACHED APPURTENANCES SUBJECT TO SYSTEM WORKING PRESSURE SHALL BE HYDROSTATICALLY TESTED AT 200 PSI OR 50 PSI IN EXCESS OF THE SYSTEM WORKING PRESSURE, WHICHEVER IS GREATER, AND SHALL MAINTAIN THAT PRESSURE AT +/-5 PSI FOR 2 HOURS.

NFPA 24, SEC. 10.10.1: THE INSTALLING CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING: (1) NOTIFYING THE AUTHORITY HAVING JURISDICTION AND THE OWNER'S REPRESENTATIVE OF THE TIME AND DATE TESTING IS TO BE PERFORMED; (2) PERFORMING ALL REQUIRED ACCEPTANCE TESTS; (3) COMPLETING AND SIGNING THE CONTRACTOR'S MATERIAL AND TEST CERTIFICATE(S) SHOWN IN FIGURE 10.10.1.

NFPA 24, SEC. 10.4.2.2.1 – 10.4.2.2.4: THE DEPTH OF COVER OVER WATER PIPES SHALL NOT BE LESS THAN 2-1/2 FEET TO PREVENT MECHANICAL DAMAGE. PIPE UNDER DRIVEWAYS SHALL BE BURIED AT A MINIMUM DEPTH OF 3 FEET. PIPE UNDER RAILROAD TRACKS SHALL BE BURIED AT A MINIMUM DEPTH OF 4 FEET.

NFPA 24, SEC. 10.4.3: PIPE SHALL NOT BE RUN UNDER BUILDINGS EXCEPT WHERE PERMITTED IN 10.4.3.1 – 10.4.3.2.1.5

## HAZARDOUS MATERIALS NOTE

THERE MAY BE ASBESTOS CONTAINING PIPE AND PIPE INSTALLATION OR OTHER HAZARDOUS MATERIALS WITHIN THE PROJECT AREA. THE CONTRACTOR WILL PROTECT ALL HAZARDOUS CONTAINING ITEMS DURING THE EXECUTION OF THIS CONTRACT. ADDITIONALLY THE CONTRACTOR WILL COMPLY WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS REGARDING CONSTRUCTION ACTIVITIES NEAR HAZARDOUS MATERIALS.

## CONSTRUCTION FENCE

- CONTRACTOR SHALL PROVIDE A CONSTRUCTION FENCE AROUND THE ENTIRE AREA OF DEMOLITION AND CONSTRUCTION, INCLUDING ALL STAGING, STORAGE, CONSTRUCTION OFFICE AND LAYDOWN AREAS.
- CONSTRUCTION FENCE SHALL BE A MINIMUM OF A 6" HIGH GALVANIZED CHAIN LINK WITH GREEN WINDSCREEN FABRIC ON THE OUTSIDE OF THE FENCE.
- CONSTRUCTION FENCE ADDRESSED IN THESE NOTES IS ONLY FOR VISUAL CONFORMANCE OF THIS CONSTRUCTION SITE TO THE TOWN STANDARDS. CONTRACTOR MAY BE REQUIRED TO PROVIDE ADDITIONAL FENCING, BARRICADES OR OTHER SAFETY DEVICES TO KEEP THE SITE SECURE AND SAFE.

## GENERAL UTILITY NOTES

- ALL TRENCHES SHALL BE BACK FILLED PER THE GEOTECHNICAL REPORT OR UTILITY OWNERS STANDARD DETAILS AND SPECIFICATIONS.
- CONTRACTOR SHALL STAKE LOCATION OF ABOVE GROUND UTILITY EQUIPMENT (TRANSFORMER, GAS METER, ETC.) . PLANNING DEPARTMENT MUST SPECIFICALLY AGREE WITH LOCATION PRIOR TO PROCEEDING WITH ANY REVISIONS TO APPROVED LOCATIONS.
- CATHODIC PROTECTION SHALL BE REQUIRED ON ALL METALLIC FITTINGS AND ASSEMBLIES THAT ARE IN CONTACT WITH THE SOIL, UNLESS SPECIFICALLY DEEMED UNNECESSARY BY THE GEOTECHNICAL REPORT. CONTRACTOR IS RESPONSIBLE TO FULLY ENGINEER AND INSTALL THIS SYSTEM AND COORDINATE ANODE AND TEST STATION LOCATIONS WITH THE UTILITY OWNER.
- COMPLETE SYSTEMS: ALL UTILITY SYSTEMS ARE DELINEATED IN A SCHEMATIC MANNER ON THESE PLANS. CONTRACTOR IS TO PROVIDE ALL FITTINGS, ACCESSORIES AND WORK NECESSARY TO COMPLETE THE UTILITY SYSTEM SO THAT IT IS FULLY FUNCTIONING FOR THE PURPOSE INTENDED.
- UNDERGROUND UTILITIES OR STRUCTURES ARE SHOWN IN THEIR APPROXIMATE LOCATION AND EXTENT BASED UPON RECORD INFORMATION. LOCATIONS MAY NOT HAVE BEEN VERIFIED IN THE FIELD AND NO GUARANTEE IS MADE TO THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE CLIENT, BY ACCEPTING THESE PLANS OR PROCEEDING WITH IMPROVEMENTS PURSUANT THERETO, AGREES TO ASSUME LIABILITY AND TO HOLD UNDERSIGNED HARMLESS FOR ANY DAMAGES RESULTING FROM THE EXISTENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED; NOT INDICATED ON THE PUBLIC RECORDS EXAMINED, LOCATED AT VARIANCE WITH THOSE REPORTED OR SHOWN ON RECORDS EXAMINED.
- CONTRACTOR SHALL VERIFY ALL EXISTING INVERT ELEVATIONS FOR STORM DRAIN AND SANITARY SEWER CONSTRUCTION PRIOR TO COMMENCEMENT OF ANY WORK. ALL WORK FOR STORM AND SANITARY SEWER INSTALLATION SHALL BEGIN AT THE DOWNSTREAM CONNECTION POINT. THIS WILL ALLOW FOR ANY NECESSARY ADJUSTMENTS TO BE MADE PRIOR TO THE INSTALLATION OF THE ENTIRE LINE. IF THE CONTRACTOR FAILS TO BEGIN AT THE DOWNSTREAM CONNECTION POINT AND WORK UP-STREAM, AND SHALL PROCEED AT HIS OWN RISK AND BE RESPONSIBLE FOR ANY ADJUSTMENTS NECESSARY.
- EXISTING UTILITY CROSSINGS OF NEW PIPELINE ARE SHOWN ACCORDING TO THE BEST AVAILABLE INFORMATION. GAS, WATER AND SEWER SERVICE LATERALS ARE SHOWN ACCORDING TO THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL VERIFY THE TYPE, SIZE, LOCATION AND DEPTH OF ALL THE UTILITY CROSSING (BOTH MAINS AND LATERALS) ARE CORRECT AS SHOWN. NO GUARANTEE IS MADE THAT ALL EXISTING UTILITIES (BOTH MAINS AND LATERALS) ARE SHOWN. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN EXCAVATING AND SHALL PROTECT ALL EXISTING UTILITIES (BOTH MAINS AND LATERALS) FROM DAMAGE DUE TO HIS OPERATION.

VERTICAL SEPARATION REQUIREMENTS (UNLESS SPECIFICALLY SHOWN OTHERWISE ON PLANS):

A MINIMUM OF SIX (6) INCHES VERTICAL CLEARANCE, MEASURED FROM OUTSIDE EDGE OF PIPE, SHALL BE PROVIDED BETWEEN CROSSING UTILITY PIPES, EXCEPT THAT THE MINIMUM VERTICAL CLEARANCE BETWEEN WATER AND SANITARY SEWER PIPELINES SHALL BE 12 INCHES AND ALL NEW WATER PIPES SHALL BE PROPERLY INSTALLED TO CROSS ABOVE/OVER EXISTING SANITARY SEWER PIPELINES.

WHERE NEW WATER PIPELINES ARE REQUIRED TO CROSS UNDER EXISTING AND/OR NEW SANITARY SEWER PIPELINES, THE MINIMUM VERTICAL SEPARATION SHALL BE 12 INCHES. WATER LINE PIPE ENDS SHALL BE INSTALLED NO CLOSER THAN 10' MINIMUM HORIZONTAL DISTANCE FROM CENTERLINE OF UTILITY CROSSINGS, WHERE FEASIBLE.

HORIZONTAL SEPARATION REQUIREMENTS (UNLESS SPECIFICALLY SHOWN OTHERWISE ON PLANS):

A MINIMUM HORIZONTAL SEPARATION BETWEEN NEW PIPELINES AND ANY EXISTING UTILITIES SHALL BE 5' FEET, EXCEPT THAT THE MINIMUM HORIZONTAL SEPARATION FOR WATER AND SANITARY SEWER MAIN PIPELINES SHALL BE 10' MINIMUM.

A MINIMUM HORIZONTAL SEPARATION BETWEEN NEW PIPELINES AND JOINT TRENCH SHALL BE 5 FEET.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING APPROPRIATE UTILITIES AND REQUESTING VERIFICATION OF SERVICE POINTS, FIELD VERIFICATION OF LOCATION, SIZE, DEPTH, ETC. FOR ALL THEIR FACILITIES AND TO COORDINATE WORK SCHEDULES.

ANY EXISTING UNDERGROUND UTILITY LINES TO BE ABANDONED, SHALL BE REMOVED FROM WITHIN THE PROPOSED BUILDING ENVELOPE AND THEIR ENDS CAPPED OUTSIDE OF THE BUILDING ENVELOPE.

ANY PIPING TO BE ABANDONED IN PLACE SHALL BE FILLED WITH GROUT AND CAPPED.

## PAVEMENT SECTIONS

- SEE STRUCTURAL DRAWINGS FOR BUILDING SLAB SECTIONS AND PAD PREPARATIONS.
- SEE GEOTECHNICAL REPORT FOR ALL FLATWORK AND VEHICULAR PAVEMENT SECTIONS AND BASE REQUIREMENTS.
- THE FINAL OR SURFACE LAYER OF ASPHALT CONCRETE SHALL NOT BE PLACED UNTIL ALL ON-SITE IMPROVEMENTS HAVE BEEN COMPLETED, INCLUDING ALL GRADING, AND ALL UNACCEPTABLE CONCRETE WORK HAS BEEN REMOVED AND REPLACED, UNLESS OTHERWISE APPROVED BY THE TOWN ENGINEER AND/OR DEVELOPER'S CIVIL ENGINEER.
- ALL PAVING SHALL BE IN CONFORMANCE WITH SECTION 26 "AGGREGATE BASE" AND SECTION 39 "ASPHALT CONCRETE" PER LATEST EDITION OF CALTRANS STANDARD SPECIFICATIONS.

## EARTHWORK NOTE

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INCLUDE ALL MATERIAL AND LABOR REQUIRED WITHIN THE BID PRICE, FOR EARTHWORK CONSTRUCTION, TO CARRY OUT THE CUT/FILL AND/OR IMPORT/EXPORT AS NECESSARY TO MEET THE DESIGN GRADES SHOWN ON THE PLANS. CONTRACTOR IS TO DELIVER TO OWNER THE PROJECT IN A COMPLETE AND OPERATIONAL MANNER. EARTHWORK QUANTITIES SHOWN ON THE PLANS OR REPRESENTED BY THE ENGINEER ARE APPROXIMATE AND ARE FOR GRADING PERMIT APPROVAL ONLY. THE CONTRACTOR IS RESPONSIBLE FOR ANY INVESTIGATION OR STUDIES THAT ARE REQUIRED BY THE CONTRACTOR TO SATISFY THIS REQUIREMENT. NO ADDITIONAL COMPENSATION SHALL BE PAID FOR SAID CUT/FILL AND/OR IMPORT/EXPORT.

## DUST CONTROL NOTES

- WATER TRUCKS SHALL BE PRESENT AND IN USE AT THE CONSTRUCTION SITE. ALL PORTIONS OF THE SITE SUBJECT TO BLOWING DUST SHALL BE WATERED AS OFTEN AS DEEMED NECESSARY BY THE CLIENT/INSPECTOR IN ORDER TO INSURE PROPER CONTROL OF BLOWING DUST FOR THE DURATION OF THE PROJECT.
- ALL PUBLIC STREETS AND MEDIANS SOLED OR LITTERED DUE TO THIS CONSTRUCTION ACTIVITY SHALL BE CLEANED AND SWEEP ON A DAILY BASIS DURING THE WORK WEEK, OR AS OFTEN AS DEEMED NECESSARY BY THE CLIENT/INSPECTOR, OR TO THE SATISFACTION OF THE TOWN'S DEPARTMENT OF PUBLIC WORKS.
- ALL TRUCKS HAULING SOIL, SAND, AND OTHER LOOSE MATERIALS SHALL BE COVERED WITH TARPULINS OR OTHER EFFECTIVE COVERS.
- WHEEL WASHERS SHALL BE INSTALLED AND USED TO CLEAN ALL TRUCKS AND EQUIPMENT LEAVING THE CONSTRUCTION SITE. IF WHEEL WASHERS CANNOT BE INSTALLED, TIRES OR TRACKS OF ALL TRUCKS AND EQUIPMENT SHALL BE WASHED OFF BEFORE LEAVING THE CONSTRUCTION SITE.
- THE CONTRACTOR SHALL DEMONSTRATE DUST SUPPRESSION MEASURES, SUCH AS REGULAR WATERING, WHICH SHALL BE IMPLEMENTED TO REDUCE EMISSIONS DURING CONSTRUCTION AND GRADING IN A MANNER MEETING THE APPROVAL OF THE CONSULTING MANAGER. THIS SHALL ASSIST IN REDUCING SHORT-TERM IMPACTS FROM PARTICLES WHICH COULD RESULT IN NUISANCES THAT ARE PROHIBITED BY RULE 403 (FUGITIVE DUST).
- GRADING OR ANY OTHER OPERATIONS THAT CREATES DUST SHALL BE STOPPED IMMEDIATELY IF DUST AFFECTS ADJACENT PROPERTIES. THE CONTRACTOR SHALL PROVIDE SUFFICIENT DUST CONTROL FOR THE ENTIRE PROJECT SITE IN ACCORDANCE WITH THE PROJECT SWPPP (IF ONE EXISTS) OR AS APPLICABLE PER LOCAL REGULATIONS AT ALL TIMES. THE SITE SHALL BE SPRINKLERED AS NECESSARY TO PREVENT DUST NUISANCE. IN THE EVENT THAT THE CONTRACTOR NEGLECTS TO USE ADEQUATE MEASURES TO CONTROL DUST, THE CLIENT RESERVES THE RIGHT TO TAKE WHATEVER MEASURES ARE NECESSARY TO CONTROL DUST AND CHARGE THE COST TO THE CONTRACTOR.
- THE CONTRACTOR IS RESPONSIBLE FOR DUST CONTROL MEASURES AND FOR OBTAINING ALL REQUIRED PERMITS AND APPROVALS. ALL GRADING OPERATIONS SHALL BE SUSPENDED DURING SECOND (OR WORSE) STAGE SMOG ALERTS.

## GENERAL SITE NOTES

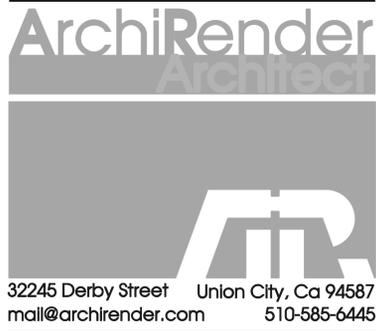
- CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING ON THIS WORK AND CONSIDER THE EXISTING CONDITIONS AND SITE CONSTRAINTS IN THE BID. CONTRACTOR SHALL BE IN THE POSSESSION OF AND FAMILIAR WITH ALL APPLICABLE GOVERNING AGENCIES STANDARD DETAILS AND SPECIFICATIONS PRIOR TO SUBMITTING OF A BID.
- ALL WORK ON-SITE AND IN THE PUBLIC RIGHT-OF-WAY SHALL CONFORM TO ALL APPLICABLE GOVERNING AGENCIES STANDARD DETAILS & SPECIFICATIONS.
- PRIOR TO BEGINNING WORK, AND AFTER INITIAL HORIZONTAL CONTROL STAKING, CONTRACTOR SHALL FIELD CHECK ALL ELEVATIONS MARKED WITH (E) AND REPORT ANY DISCREPANCIES GREATER THAN 0.05' TO THE ENGINEER.
- DAMAGE TO ANY EXISTING SITE IMPROVEMENTS, UTILITIES AND/OR SERVICES TO REMAIN SHALL BE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL REPAIR AND/OR REPLACE IN KIND.
- CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT INCLUDING SAFETY OF ALL PERSONS AND PROPERTY THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AND THAT THE CONTRACTOR SHALL DEFEND INDEMNIFY AND HOLD THE CLIENT, THE CONSULTING ENGINEER AND THE CITY HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE CLIENT OR THE CONSULTING ENGINEER.

## TREE PROTECTION

- PRIOR TO BEGINNING CONSTRUCTION ON SITE, CONTRACTOR SHALL IDENTIFY AND PROTECT EXISTING TREES AND PLANTS DESIGNATED AS TO REMAIN.
- PROTECT EXISTING TREES TO REMAIN FROM SPILLED CHEMICALS, FUEL OIL, MOTOR OIL, GASOLINE AND ALL OTHER CHEMICALLY INJURIOUS MATERIAL; AS WELL AS FROM PUDDING OR CONTINUOUSLY RUNNING WATER. SHOULD A SPILL OCCUR, STOP WORK IN THAT AREA AND CONTACT THE CITY'S ENGINEER/INSPECTOR IMMEDIATELY. CONTRACTOR SHALL BE RESPONSIBLE TO MITIGATE DAMAGE FROM SPILLED MATERIAL AS WELL AS MATERIAL CLEAN UP.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ONGOING MAINTENANCE OF ALL TREES DESIGNATED TO REMAIN AND FOR MAINTENANCE OF RELOCATED TREES STOCKPILED DURING CONSTRUCTION. CONTRACTOR WILL BE REQUIRED TO REPLACE TREES THAT DIE DUE TO LACK OF MAINTENANCE.
- REFER TO LANDSCAPE PLANS, SPECIFICATIONS OR ARBORIST REPORT FOR TREE PROTECTION REQUIREMENTS AND MEASURES.

## PROJECT SITE MAINTENANCE

- REMOVE ALL DIRT, GRAVEL, RUBBISH, REFUSE, AND GREEN WASTE FROM STREET PAVEMENT AND STORM DRAINS ADJOINING THE SITE. LIMIT CONSTRUCTION ACCESS ROUTES ONTO THE SITE AND PLACE GRAVEL PADS AT THESE LOCATIONS. DO NOT DRIVE VEHICLES AND EQUIPMENT OFF THE PAVED OR GRAVELED AREAS DURING WET WEATHER.
- SWEEP OR VACUUM THE STREET PAVEMENT AND SIDEWALKS ADJOINING THE PROJECT SITE AND THE ON-SITE PAVED AREAS ON A DAILY BASIS. SCRAPE CAKED-ON MUD AND DIRT FROM THESE AREAS BEFORE SWEEPING. CORNERS AND HARD TO REACH AREAS SHALL BE SWEEP MANUALLY.
- CREATE A CONTAINED AND COVERED AREA ON THE SITE FOR THE STORAGE OF BAGS, CEMENT, PAINTS, OILS, FERTILIZERS, PESTICIDES, OR OTHER MATERIALS USED ON THE SITE THAT HAVE THE POTENTIAL OF BEING DISCHARGED INTO THE STORM DRAIN SYSTEM THROUGH EITHER BEING WIND-BLOWN OR IN THE EVENT OF A MATERIAL SPILL.
- NEVER CLEAN MACHINERY, EQUIPMENT OR TOOLS INTO A STREET, GUTTER OR STORM DRAIN.
- ENSURE THAT CEMENT TRUCKS, PAINTERS, OR STUCCO/PLASTER FINISHING CONTRACTORS DO NOT DISCHARGE WASH WATER FROM EQUIPMENT, TOOLS OR RINSE CONTAINERS INTO GUTTERS OR DRAINS.



## MENLO COLLEGE NEW RESIDENCE HALL

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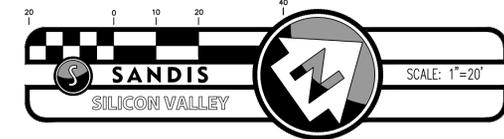
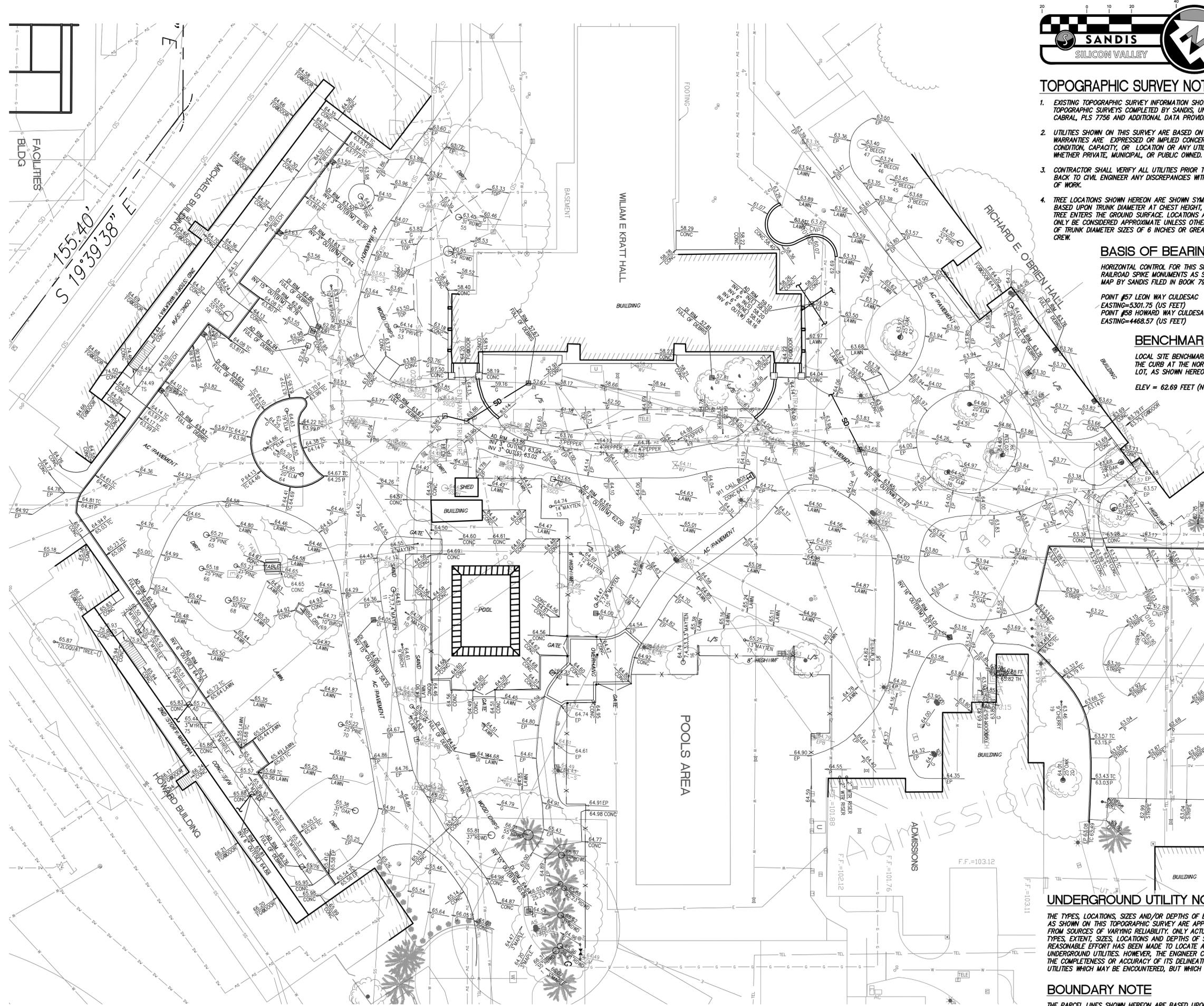
Issues and Revisions			
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	12/19/2019	PLANNING SUBMITTAL	JW
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## CONSTRUCTION NOTES

Project Number: 2019A105  
 Date: 12/19/2019  
 Scale: N.T.S.

C1.1

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**TOPOGRAPHIC SURVEY NOTES**

- EXISTING TOPOGRAPHIC SURVEY INFORMATION SHOWN HEREON IS BASED UPON TOPOGRAPHIC SURVEYS COMPLETED BY SANDIS, UNDER THE DIRECTION OF LAURA CABRAL, PLS 7756 AND ADDITIONAL DATA PROVIDED BY MENO COLLEGE.
- UTILITIES SHOWN ON THIS SURVEY ARE BASED ON SURFACE OBSERVATIONS. NO WARRANTIES ARE EXPRESSED OR IMPLIED CONCERNING THE EXISTENCE, SIZE, DEPTH, CONDITION, CAPACITY, OR LOCATION OF ANY UTILITY EXISTING ON THE SITE, WHETHER PRIVATE, MUNICIPAL, OR PUBLIC OWNED.
- CONTRACTOR SHALL VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION AND REPORT BACK TO CIVIL ENGINEER ANY DISCREPANCIES WITH PLAN PRIOR TO COMMENCEMENT OF WORK.
- TREE LOCATIONS SHOWN HEREON ARE SHOWN SYMBOLICALLY WITH SYMBOL SIZES BASED UPON TRUNK DIAMETERS AT CHEST HEIGHT, AT THE LOCATION WHERE THE TREE ENTERS THE GROUND SURFACE. LOCATIONS AND SIZES OF TREE TRUNKS CAN ONLY BE CONSIDERED APPROXIMATE UNLESS OTHERWISE STATED ON THE MAP. TREES OF TRUNK DIAMETER SIZES OF 6 INCHES OR GREATER WERE LOCATED BY THE FIELD CREW.

**BASIS OF BEARING**

HORIZONTAL CONTROL FOR THIS SURVEY WAS BASED ON FOUND RAILROAD SPIKE MONUMENTS AS SHOWN ON THAT CERTAIN PARCEL MAP BY SANDIS FILED IN BOOK 79 OF MAPS AT PAGE 13-17.

POINT #57 LEON WAY CULDESAC NORTHING=4701.98,  
EASTING=5301.75 (US FEET)  
POINT #58 HOWARD WAY CULDESAC NORTHING=3702.53,  
EASTING=4468.57 (US FEET)

**BENCHMARK CONTROL NOTE**

LOCAL SITE BENCHMARK IS A CUT "X" IN THE TOP OF THE CURB AT THE NORTHERLY SIDE OF THE PARKING LOT, AS SHOWN HEREON.

ELEV = 62.69 FEET (NGVD 29)

**UNDERGROUND UTILITY NOTE**

THE TYPES, LOCATIONS, SIZES AND/OR DEPTHS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS TOPOGRAPHIC SURVEY ARE APPROXIMATE AND WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. ONLY ACTUAL EXCAVATION WILL REVEAL THE TYPES, EXTENT, SIZES, LOCATIONS AND DEPTHS OF SUCH UNDERGROUND UTILITIES. A REASONABLE EFFORT HAS BEEN MADE TO LOCATE AND DELINEATE ALL KNOWN UNDERGROUND UTILITIES. HOWEVER, THE ENGINEER CAN ASSUME NO RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF ITS DELINEATION OF SUCH UNDERGROUND UTILITIES WHICH MAY BE ENCOUNTERED, BUT WHICH ARE NOT SHOWN ON THIS SURVEY.

**BOUNDARY NOTE**

THE PARCEL LINES SHOWN HEREON ARE BASED UPON RECORD INFORMATION AS SHOWN ON THE MAP FILED IN BOOK 79 OF MAPS, PAGE 13-17, SAN MATEO COUNTY RECORDS

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**TOPOGRAPHIC SURVEY**

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Date: 12/19/2019  
Scale 1"=20'

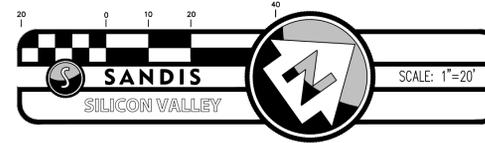
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ADA NOTES

- ALL HARDSCAPE ALONG THE ADA PATH OF TRAVEL SHALL BE IN CONFORMANCE WITH TITLE 24 OF THE CALIFORNIA ADMINISTRATIVE CODE.
- SLOPED WALKS ALONG THE DESIGNATED ADA PATH OF TRAVEL SHALL NOT EXCEED A SLOPE OF 1:20 (5%) WITHOUT HANDRAILS. THE MAXIMUM SLOPE WITH HANDRAILS OR FOR CURB RAMPS IS 1:12 (8.33%). LEVEL LANDINGS ARE REQUIRED AT THE TOP AND BOTTOM OF ALL SLOPED WALKWAYS AND RAMPS.
- WALKWAYS ON ANY PATH OF TRAVEL SHALL HAVE A MINIMUM WIDTH OF 48". WALKWAYS AND ADA PARKING STALLS OR LOADING ZONES SHALL HAVE A 2% MAXIMUM CROSS SLOPE.
- A LEVEL LANDING (2% MAX SLOPE) SHALL BE PROVIDED AT ALL ACCESSIBLE ENTRANCES TO BUILDINGS, THE LANDINGS SHALL HAVE A MINIMUM WIDTH OF 60" AND A MINIMUM DEPTH OF 60" WHEN THE DOOR OPENS INTO THE BUILDING, AND 42" PLUS THE WIDTH OF THE DOOR WHEN THE DOOR OPENS ONTO THE LANDING.
- RAMPS GREATER THAN 1:20 SLOPE AND EXCEEDING 30" IN VERTICAL ELEVATION CHANGE SHALL HAVE INTERMEDIATE LEVEL LANDINGS.

TREE DATA			
REMOVE		REPLACE	
TREE	28	NEW TREES	8
HERITAGE TREE	0	TRANSPLANTED TREES	3
TOTAL	28	TOTAL	11



GRADING PLAN LEGEND

- ASPHALT CONCRETE PAVING
- CONCRETE PAVING
- LANDSCAPE AREA, SEE LANDSCAPE PLANS FOR DETAILS
- STORMWATER TREATMENT AREA
- LIMIT OF WORK LINE
- GRADE BREAK
- FLOWLINE
- TREE TO BE REMOVED
- HERITAGE TREE TO BE REMOVED

GRADING NOTES

- PROVIDE POSITIVE SURFACE DRAINAGE AWAY FROM ALL STRUCTURES BY SLOPING ALL HARDSCAPE SURFACES AT 2% AND LANDSCAPE SURFACES AT 5% AWAY FROM STRUCTURES UNLESS OTHERWISE NOTED ON PLANS.
- STRUCTURE WALLS: PER CBC 2304.11.2.2 (WOOD SUPPORTED BY FOUNDATION) PROVIDE 8" MINIMUM CLEAR TO EXTERIOR GRADE.
- ALL FILL, IMPORT SOILS AND GRADING SHALL BE IN CONFORMANCE WITH THE GEOTECHNICAL REPORT
- COORDINATE THE PLACEMENT OF ALL SLEEVES FOR LANDSCAPE IRRIGATION (WATER AND CONTROL WIRING) AND SITE LIGHTING PRIOR TO THE PLACEMENT OF ANY ASPHALT, BASEROCK OR CONCRETE SURFACING. SEE LANDSCAPING AND SITE ELECTRICAL DRAWINGS.
- ROUGH GRADING TO BE WITHIN 0.1' AND FINISH GRADES ARE TO BE WITHIN 0.05', HOWEVER CONTRACTOR SHALL NOT CONSTRUCT ANY IMPROVEMENTS THAT WILL CAUSE WATER TO POND OR NOT MEET REQUIREMENTS IN GRADING NOTE #1 OR THE ADA REQUIREMENTS BELOW. DO NOT ADJUST GRADES ON THIS PLAN WITHOUT PRIOR WRITTEN APPROVAL OF THE ENGINEER/ARCHITECT.
- THE CONTRACTOR SHALL EXERCISE EXTREME CARE TO CONFORM TO THE LINES, GRADES, SECTIONS, AND DIMENSIONS AS SET FORTH ON THESE PLANS. ALL GRADED AREAS SHALL CONFORM TO THE VERTICAL ELEVATIONS SHOWN WITH A TOLERANCE OF ONE-TENTH OF A FOOT. WHERE GRADED AREAS DO NOT CONFORM TO THESE TOLERANCES, THE CONTRACTORS SHALL BE REQUIRED TO DO CORRECTIVE GRADING, AT NO EXTRA COST TO THE CLIENT.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM THE GROUND ELEVATIONS AND OVERALL TOPOGRAPHY OF THE SITE PRIOR TO THE START OF CONSTRUCTION AS TO THE ACCURACY BETWEEN THE WORK SET FORTH ON THESE PLANS AND THE WORK IN THE FIELD. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND CIVIL ENGINEER IN WRITING PRIOR TO START OF CONSTRUCTION WHICH MAY REQUIRE CHANGES IN DESIGN AND/OR AFFECT THE EARTHWORK QUANTITIES.
- ALL GRADING SHALL CONFORM TO APPROVED SPECIFICATIONS PRESENTED HEREON OR ATTACHED HERETO. ALL GRADING WORK SHALL BE OBSERVED AND APPROVED BY THE SOILS ENGINEER. THE SOILS ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS BEFORE BEGINNING ANY GRADING. UNOBSERVED AND UNAPPROVED GRADING WORK SHALL BE REMOVED AND REDONE AT THE CONTRACTORS EXPENSE.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR OR REPLACE ANY EXISTING IMPROVEMENTS OF UNDERGROUND FACILITIES DAMAGED DURING THE CONSTRUCTION PERIOD.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL ENCROACHMENT, EXCAVATION, CONCRETE, ELECTRICAL, PLUMBING, ETC. PERMITS NECESSARY PRIOR TO BEGINNING CONSTRUCTION FOR ANY WORK.
- THE RISE/ RUN/ STEP COUNT IS FOR REFERENCE ONLY. THE CONTRACTOR SHALL VERIFY ELEVATIONS AND BUILDING CODE COMPLIANCE PRIOR TO ANY WORK.
- AREAS LACKING TOPOGRAPHIC INFORMATION (ELEVATIONS) HAVE BEEN INTERPOLATED USING STANDARD ENGINEERING METHODS. CONTRACTOR SHALL FIELD VERIFY ALL ELEVATIONS AT CONFORMS PRIOR TO COMMENCEMENT OF CONSTRUCTION AND REPORT BACK ANY DISCREPANCIES TO THE CIVIL ENGINEER.
- ADJUST ANY MANHOLE OR UTILITY STRUCTURES TO PROPOSED GRADE PRIOR TO INSTALLING FINAL LIFT OF AC OR POURING CONCRETE.



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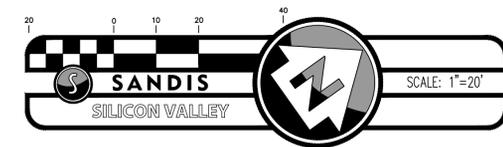
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GRADING AND  
 DRAINAGE PLAN

Project Number: 2019A105  
 Date: 12/19/2019  
 Scale 1"=20'

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**STORM WATER MANAGEMENT PLAN LEGEND**

- PROPOSED PERVIOUS AREA
- PROPOSED IMPERVIOUS AREA
- BIO-RETENTION AREA
- PERVIOUS PAVER/PAVEMENT AREA
- DRAINAGE AREA BOUNDARY
- FLOWLINE
- FLOW DIRECTION
- TREE CREDIT AREA

**HYDROMODIFICATION NOTE:**

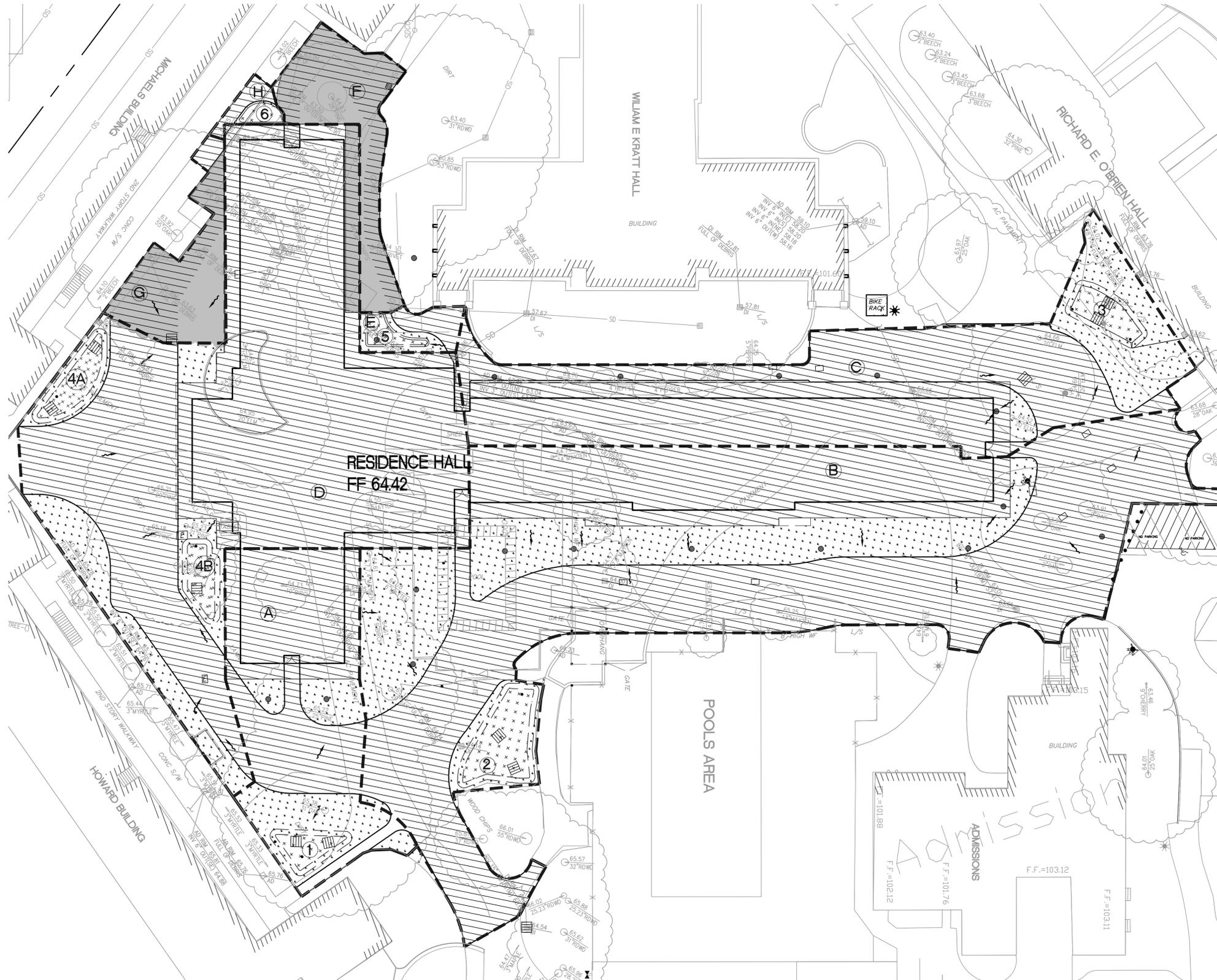
THE PROJECT IS SUBJECT TO HYDROMODIFICATION REQUIREMENTS PER THE SAN MATEO C.3 TECHNICAL GUIDANCE DOCUMENT. THE PROJECT IS SUBJECT TO HYDROMODIFICATION DUE TO CREATION OR REPLACEMENT OF IMPERVIOUS AREA EXCEEDING 1 ACRE AND THE SITE IS LOCATED IN HYDROMODIFICATION APPLICABLE AREA.

**SITE TREATMENT AREA NOTE:**

THIS PROJECT IS NOT REPLACING MORE THAN 50% OF THE EXISTING IMPERVIOUS AREA AND THEREFORE MUST TREAT ONLY THE AREA THAT IS REDEVELOPED.

**STORMWATER MANAGEMENT NOTES:**

1. THIS PLAN PRESENTS METHODS AND CALCULATIONS FOR COMPLYING WITH THE REQUIREMENTS OF PROVISION C.3 OF THE MUNICIPAL REGIONAL STORMWATER PERMIT IN ACCORDANCE WITH THE SAN MATEO COUNTY PROGRAM AND THE TOWN OF ATHERTON REQUIREMENTS.
2. THE FOLLOWING TREATMENT MEASURES ARE PROPOSED TO REGULATE THE QUALITY OF STORM WATER LEAVING THE SITE.
  - 2.1. BIO-RETENTION AREA - RUNOFF IN THIS AREA IS DIRECTED TO A BIO-RETENTION PLANTER/AREA FOR FILTRATION, INFILTRATION AND EVAPOTRANSPIRATION PRIOR TO EXISTING THE SITE. PLANTING AND SOIL REQUIREMENTS APPLY, SEE DETAIL.



**STORMWATER TREATMENT SUMMARY TABLES**

FLOW/VOLUME CALCULATION DATA	SITE	DMA B	DMA C	DMA D
RAINFALL REGION:	4			
REGIONAL MAP (IN):	14.6			
SITE MAP (IN):	18			
MAP ADJUSTMENT FACTOR:	1.25			
UNIT BASIN STORAGE VOLUME (CF):		0.64	0.64	0.64
ADJUSTED UBS VOLUME (CF):		0.8	0.8	0.8
EVENT DURATION (HR):	3.99			
REQUIRED VOLUME (CF):		1,106	333	889
REQUIRED AREA (SF):		512	154	548

DMA	Treatment Control Measure #	Area (sf)	New/Replaced Impervious Area (sf)	Type of Impervious Area	Self-Treating/Pervious Area (sf)	Treatment Control Measure Type	TCM Sizing Method	Treatment Area Required (sf)	Treatment Area Provided (sf)
A	1	6,192	4,265	Roof, Driveway, Sidewalk	1,927	Bio-Retention Area	4% Rule	171	198
B	2	25,796	19,029	Roof, Driveway, Sidewalk	6,767	Bio-Retention Area	Flow-Volume Combo	605	605
C	3	11,340	8,925	Roof, Driveway, Sidewalk	2,415	Bio-Retention Area	Flow-Volume Combo	282	282
D	4A & 4B	20,476	17,526	Roof, Driveway, Sidewalk	2,950	Bio-Retention Area	Flow-Volume Combo	548	550
E	5	627	277	Landscaping, Sidewalk	350	Self Retaining	Self Retaining	139	145
F	NA	2,034	1,376	Roof, Sidewalk	658	Tree Interceptor	NA	NA	NA
G	NA	1,734	1,161	Roof, Sidewalk	573	Tree Interceptor	NA	NA	NA
H	6	311	182	Sidewalk	129	Self Retaining	Self Retaining	91	95

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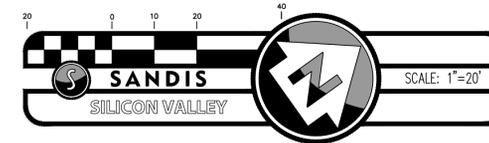
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**STORMWATER**  
**MANAGEMENT PLAN**

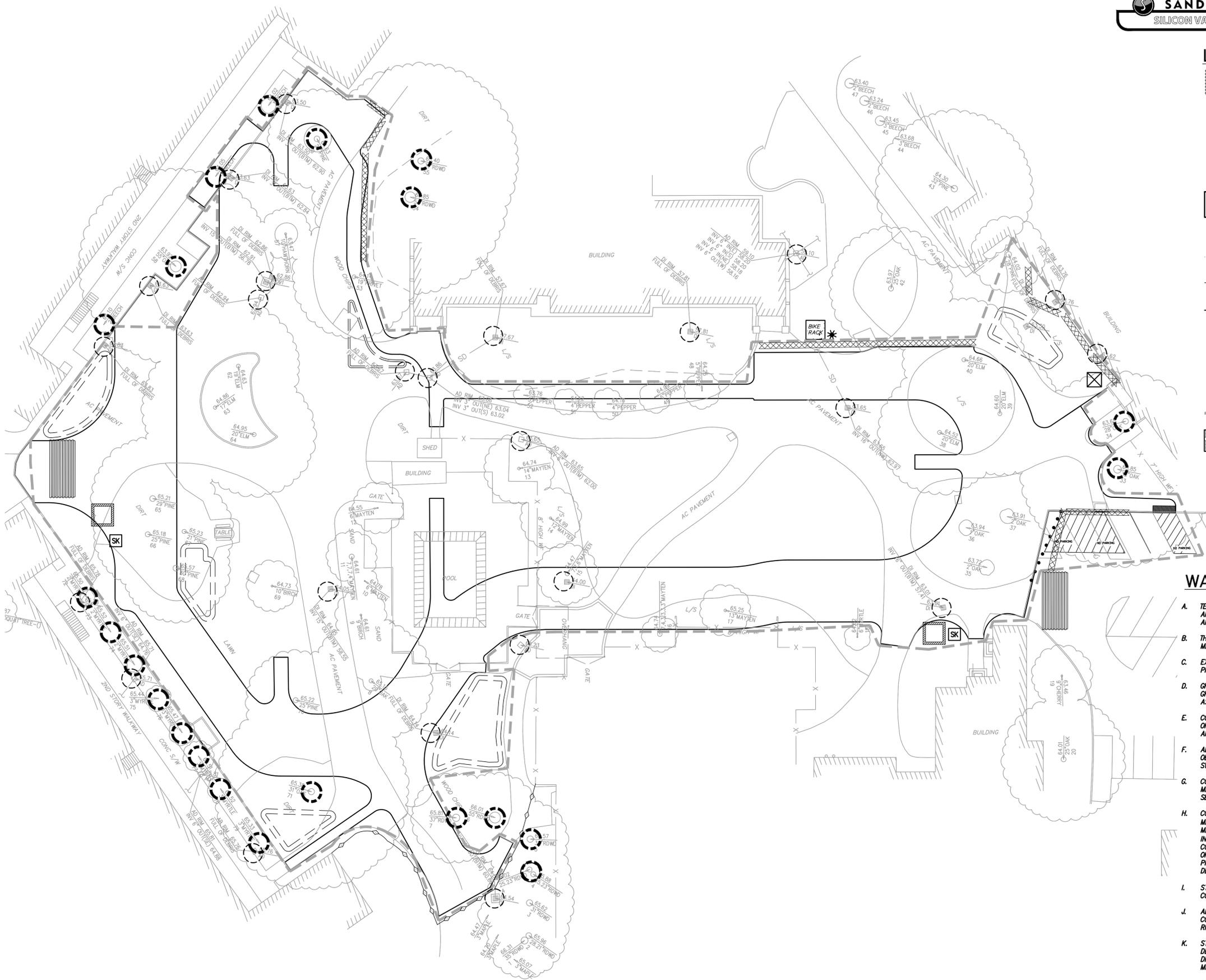
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**LEGEND**

- STABILIZED EXIT
- CONCRETE WASHOUT
- SPILL KIT
- PORTABLE RESTROOM
- CONSTRUCTION TRAILER
- PATH OF SURFACE DRAINAGE
- FIBER ROLL
- SILT FENCE
- GRAVEL BAG BERM
- INLET PROTECTION
- TREE PROTECTION
- SITE STORMWATER DISCHARGE POINT / SAMPLING LOCATION
- APPROXIMATE AREA OF CONSTRUCTION DISTURBANCE
- ROLLED EROSION CONTROL PRODUCT



**WATER POLLUTION NOTES:**

- A. TEMPORARY CONSTRUCTION ENTRANCE/EXIT LOCATION SHOWN IS APPROXIMATE. CONTRACTOR TO PROVIDE LOCATION WHERE APPROPRIATE.
- B. THIS PLAN REPRESENTS POSSIBLE WATER POLLUTION CONTROL MEASURES INCLUDING EROSION CONTROL AND SEDIMENT CONTROL.
- C. EXISTING SURFACES SHALL BE UNDISTURBED TO THE EXTENT PRACTICAL.
- D. GROUND WATER SHALL NOT BE DISCHARGED WITH STORM WATER. GROUND WATER DEWATERING OPERATIONS SHALL BE COORDINATED AS NEEDED WITH OWNER.
- E. CONTRACTOR SHALL PROVIDE EFFECTIVE SOIL COVER FOR AREAS OF CONSTRUCTION ACTIVITY THAT HAVE BEEN DISTURBED AND ARE NOT SCHEDULED TO BE ACTIVE FOR AT LEAST 14 DAYS.
- F. ALL EROSION CONTROL AND SEDIMENT CONTROLS TO BE OBTAINED INSTALLED AND MAINTAINED AS REQUIRED IN PROJECT SWPPP.
- G. CONTRACTOR TO INSTALL RUN-ON AND RUN-OFF CONTROL MEASURES ACCORDING TO PLANS OR AS NECESSARY TO ENSURE SEDIMENT IS NOT TRANSPORTED FROM SITE.
- H. CONTRACTOR TO PROVIDE BACK-UP EROSION PREVENTION MEASURES (SOIL STABILIZATION) WITH SEDIMENT CONTROL MEASURES SUCH AS STRAW WATTLES, SILT FENCE, GRAVEL INLET FILTERS, AND/OR SEDIMENT TRAPS OR BASINS. ENSURE CONTROL MEASURES ARE ADEQUATE, IN PLACE, AND IN OPERABLE CONDITIONS. SEDIMENT CONTROLS, INCLUDING INLET PROTECTION, ARE NECESSARY BUT SHOULD BE A SECONDARY DEFENSE BEHIND GOOD EROSION CONTROL MEASURES.
- I. STOCKPILE LOCATION(S) TO BE DETERMINED BY THE CONTRACTOR. COORDINATE WITH SITE QSP.
- J. ALL CONCRETE TRUCKS TO USE CHUTE WASH BUCKETS FOR CONCRETE RINSE, ALL CONCRETE PUMPS TO CAPTURE CONCRETE RINSE IN SECONDARY CONTAINMENT AND PROPERLY DISPOSE.
- K. STREET SWEEPING SHALL BE CHECKED DAILY TO ENSURE DEPOSITED SEDIMENT AND DEBRIS DOES NOT ENTER THE STORM DRAIN SYSTEM. USE REGENERATIVE VACUUM STREET CLEANER TO MITIGATE AIR AND WATER POLLUTION.
- L. RUNOFF THAT HAS CONTACTED AMENDED SOIL AREAS SHALL NOT BE ALLOWED TO LEAVE THE SITE OR ENTER THE STORM DRAIN SYSTEM.
- M. THE PROJECT SWPPP HAS BEEN ACTIVATED THROUGH THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD. THE WQID # FOR THIS PROJECT IS [REDACTED]. \*PROJECT SWPPP TO BE ACTIVATED AFTER PLANNING APPROVAL.

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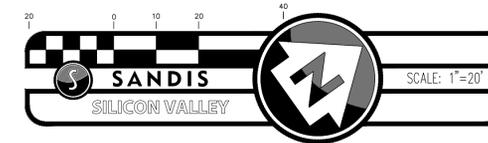
**WATER POLLUTION CONTROL DRAWING**

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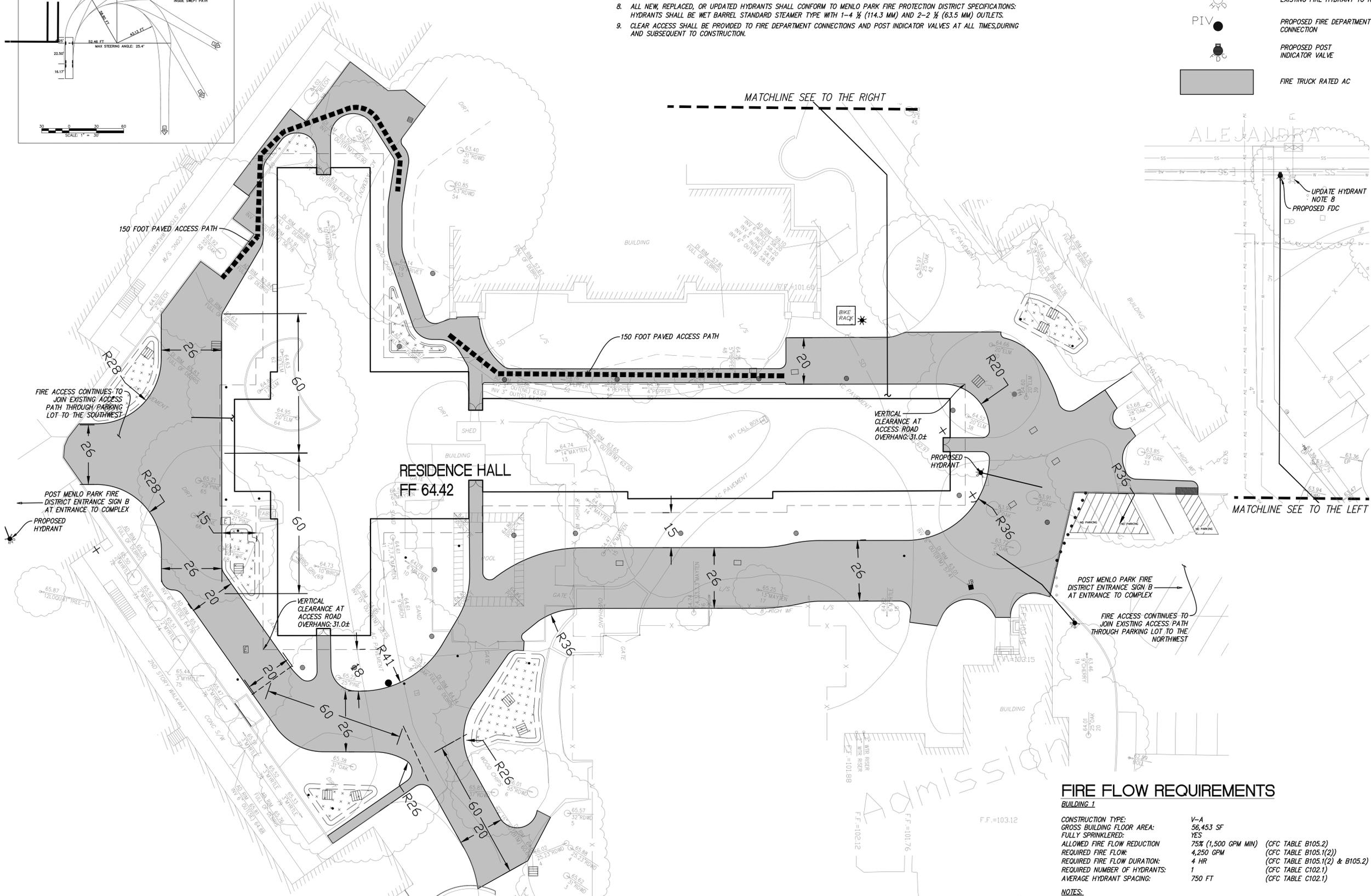
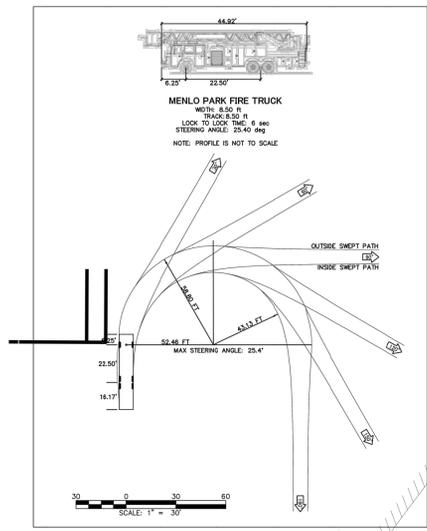
**FIRE PROTECTION NOTES**

1. FIRE APPARATUS ROADWAYS, INCLUDING PUBLIC OR PRIVATE STREETS OR ROADS USED FOR VEHICLE ACCESS SHALL BE INSTALLED AND IN SERVICE PRIOR TO BUILDING CONSTRUCTION, OR TEMPORARY FIRE ACCESS AND WATER PROVIDED DURING CONSTRUCTION PER THE APPROVED FIRE AGENCY'S REQUIREMENTS. CONTRACTOR TO SUBMIT A CONSTRUCTION LOGISTICS PLAN TO BE APPROVED BY THE FIRE DEPARTMENT PRIOR TO STARTING WORK.
2. FIRE PROTECTION WATER SERVING ALL HYDRANTS SHALL BE PROVIDED PRIOR TO COMBUSTIBLE MATERIAL ARRIVING ON SITE.
3. PRIOR TO COMBUSTIBLE MATERIAL ARRIVING ON THE SITE, CONTACT THE MENLO PARK FIRE PROTECTION DISTRICT TO SCHEDULE AN INSPECTION OF ROADWAYS AND FIRE HYDRANTS. CFC 2016.
4. FIRE ACCESS FOR AERIAL EQUIPMENT IS REQUIRED FOR BUILDINGS EXCEEDING 30 FEET IN HEIGHT.
5. "NO PARKING - FIRE LANE" SIGNS SHALL BE INSTALLED AT COMPLEX ENTRANCES IN CONFORMANCE WITH MENLO PARK FIRE PROTECTION DISTRICT REGULATIONS.
6. THE CONTRACTOR SHALL COORDINATE INSPECTIONS WITH MENLO PARK FIRE PROTECTION DISTRICT PRIOR TO COMBUSTIBLE MATERIAL ARRIVING ON SITE.
7. MENLO PARK FIRE PROTECTION DISTRICT REQUIRES INSTALLATION OF AN OPTICOM SYSTEM. CONTRACTOR IS RESPONSIBLE OF INSTALLATION AND FOR OBTAINING ANY REQUIRED ENCROACHMENT OR OTHER PERMITS.
8. ALL NEW, REPLACED, OR UPDATED HYDRANTS SHALL CONFORM TO MENLO PARK FIRE PROTECTION DISTRICT SPECIFICATIONS: HYDRANTS SHALL BE WET BARREL STANDARD STEAMER TYPE WITH 1-4 1/4" (114.3 MM) AND 2-2 1/4" (63.5 MM) OUTLETS.
9. CLEAR ACCESS SHALL BE PROVIDED TO FIRE DEPARTMENT CONNECTIONS AND POST INDICATOR VALVES AT ALL TIMES, DURING AND SUBSEQUENT TO CONSTRUCTION.



**LEGEND**

- PROPOSED FIRE HYDRANT
- BACKFLOW PREVENTER
- EXISTING FIRE HYDRANT TO REMAIN
- PROPOSED FIRE DEPARTMENT CONNECTION
- PROPOSED POST INDICATOR VALVE
- FIRE TRUCK RATED AC



**FIRE FLOW REQUIREMENTS**

**BUILDING 1**

CONSTRUCTION TYPE:	V-A
GROSS BUILDING FLOOR AREA:	56,453 SF
FULLY SPRINKLERED:	YES
ALLOWED FIRE FLOW REDUCTION:	75% (1,500 GPM MIN) (CFC TABLE B105.2)
REQUIRED FIRE FLOW:	4,250 GPM (CFC TABLE B105.1(2))
REQUIRED FIRE FLOW DURATION:	4 HR (CFC TABLE B105.1(2) & B105.2)
REQUIRED NUMBER OF HYDRANTS:	1 (CFC TABLE C102.1)
AVERAGE HYDRANT SPACING:	750 FT (CFC TABLE C102.1)

**NOTES:**

1. VALUES LISTED PER 2019 CALIFORNIA FIRE CODE APPENDIX B AND C.

**ArchiRender Architect**

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 mail@archirender.com 510-585-6445

**SANDIS CIVIL ENGINEERS SURVEYORS & PLANNERS**  
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 SILICON VALLEY TRI-VALLEY CENTRAL VALLEY SACRAMENTO EAST BAY/ SF

**MENLO COLLEGE  
NEW RESIDENCE HALL**

1000 EL CAMINO REAL  
ATHERTON, CA

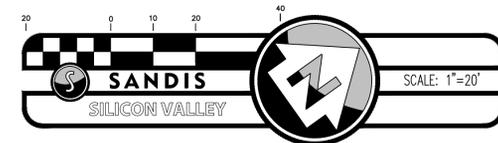
Issues and Revisions

No.	Date	Issues and Revisions	By
	12/19/2019	PLANNING SUBMITTAL	JW
1	02/25/2020	PLANNING RESUBMITTAL	JW

**FIRE ACCESS PLAN**

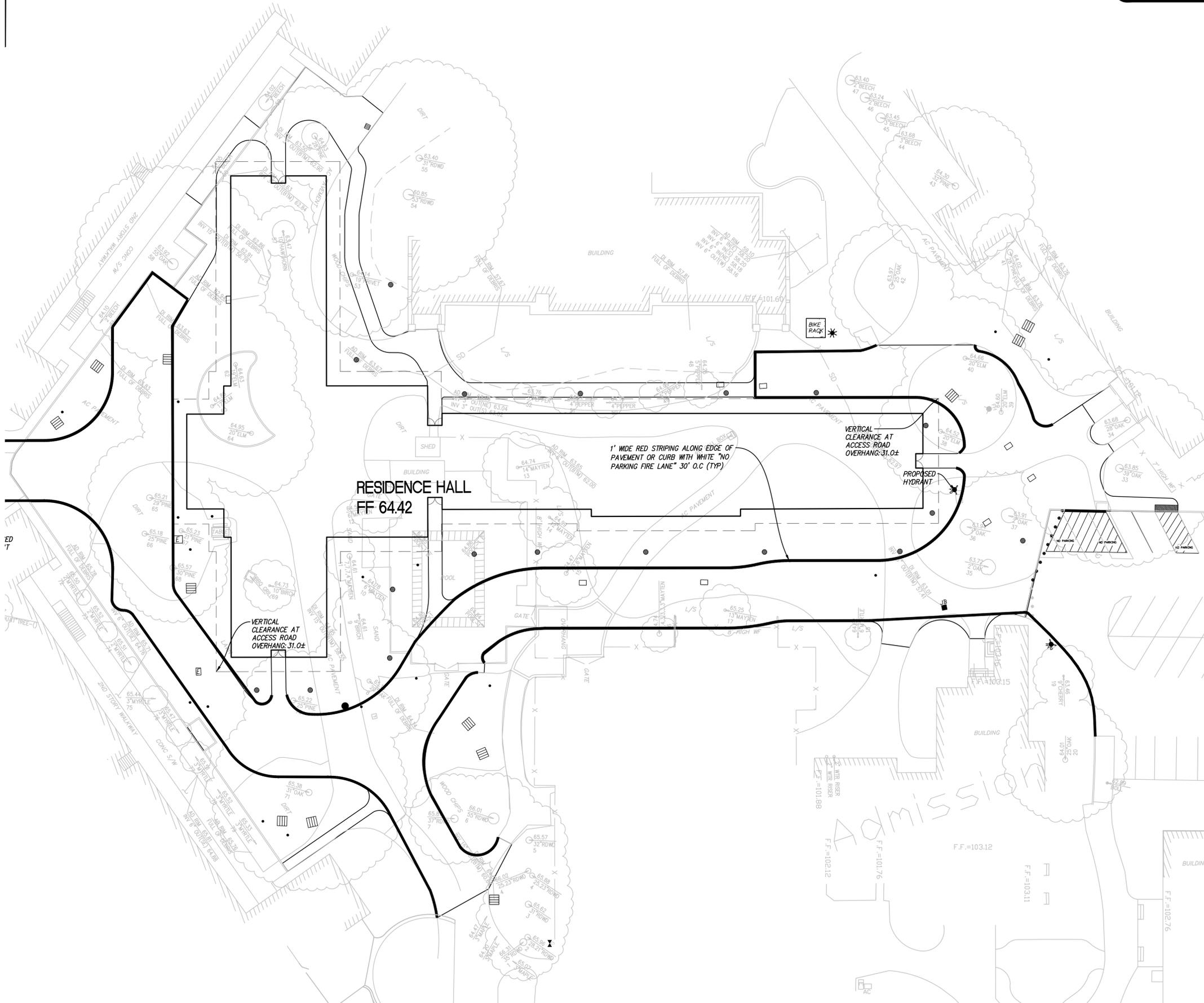
Project Number: 2019A105  
 Date: 12/19/2019  
 Scale 1"=20'

**C7.0**



LEGEND

— 1' WIDE RED STRIPING WITH WHITE "NO PARKING FIRE LANE" 30' ON CENTER



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NEW RESIDENCE HALL

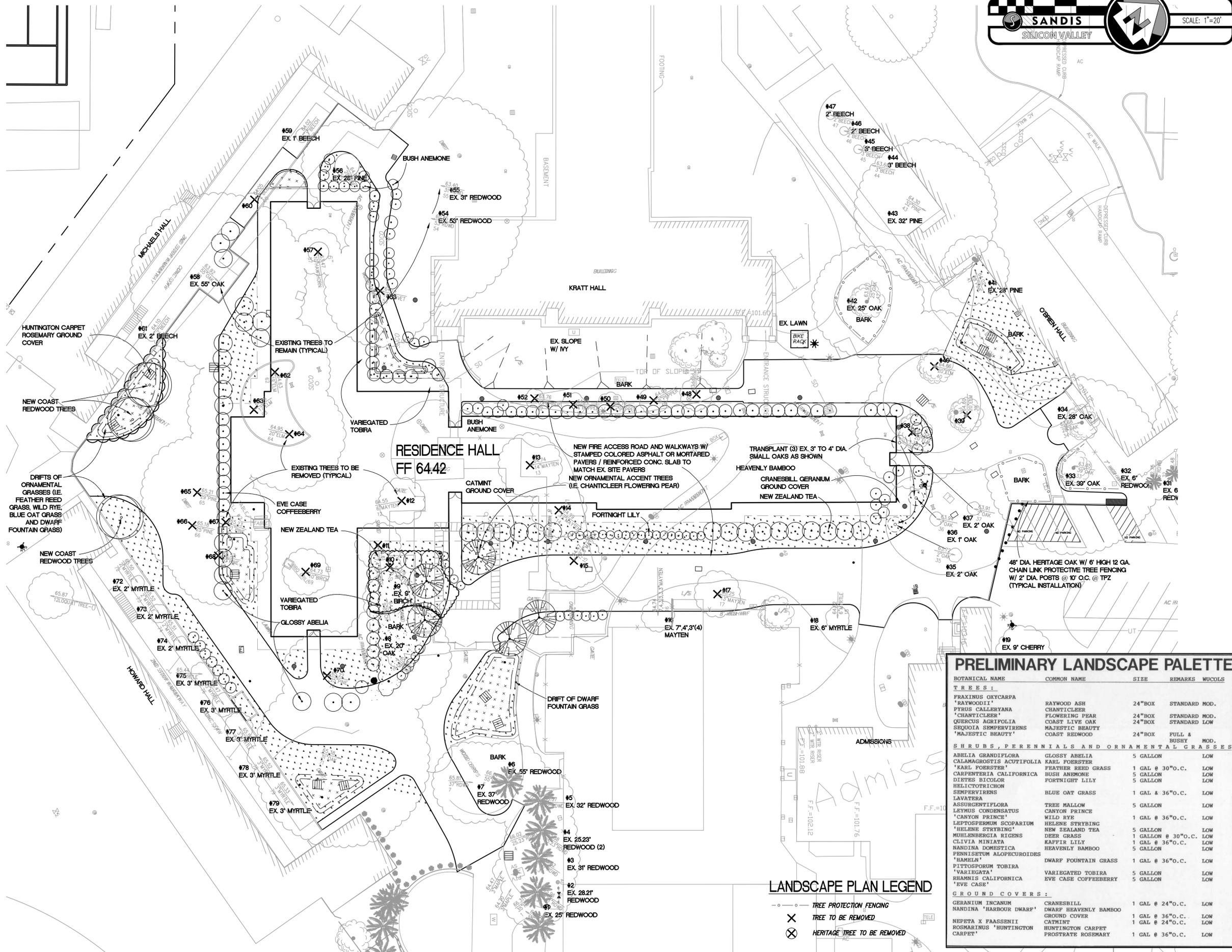
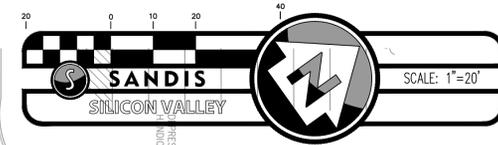
1000 EL CAMINO REAL  
ATHERTON, CA

Issues and Revisions			
No.	Date	Issues and Revisions	By
	12/19/2019	PLANNING SUBMITTAL	JW
1	02/25/2020	PLANNING RESUBMITTAL	JW

FIRE ACCESS SIGN AND  
STRIPING PLAN

Project Number: 2019A105  
Date: 12/19/2019  
Scale: 1"=20'

C7.1



**PRELIMINARY LANDSCAPE PALETTE**

BOTANICAL NAME	COMMON NAME	SIZE	REMARKS	WUCOLS
<b>TREES:</b>				
FRAXINUS OXYCARPA 'RAYWOODII'	RAYWOOD ASH	24"BOX	STANDARD MOD.	
PYRUS CALLERYANA 'CHANTICLEER'	CHANTICLEER	24"BOX	STANDARD MOD.	
QUERCUS AGRIFOLIA 'MAJESTIC BEAUTY'	MAJESTIC BEAUTY COAST REDWOOD	24"BOX	STANDARD LOW	
QUERCUS AGRIFOLIA 'MAJESTIC BEAUTY'	MAJESTIC BEAUTY COAST REDWOOD	24"BOX	FULL & BUSHY MOD.	
<b>SHRUBS, PERENNIALS AND ORNAMENTAL GRASSES:</b>				
ABELIA GRANDIFLORA	GLOSSY ABELIA	5 GALLON	LOW	
CALAMAGROSTIS ACUTIFOLIA 'CANYON PRINCE'	KARL POERSTER WILD RYE	1 GAL @ 30"O.C.	LOW	
CARPENTERIA CALIFORNICA	BUSH ANEMONE	5 GALLON	LOW	
DIETES BICOLOR	FORTNIGHT LILY	5 GALLON	LOW	
HELIOTRICHON SEMPERVIRENS	BLUE OAT GRASS	1 GAL @ 36"O.C.	LOW	
LAVATERA	TREE MALLOW	5 GALLON	LOW	
LEPTOSPERMUM SCOPARIUM 'HELENE STRYBING'	CANYON PRINCE WILD RYE	1 GAL @ 36"O.C.	LOW	
MUHLENBERGIA RIGENS	HELENE STRYBING NEW ZEALAND TEA	5 GALLON	LOW	
CLIVIA MINIATA	DEER GRASS	1 GALLON @ 30"O.C.	LOW	
NANDINA DOMESTICA	KAFFIR LILY	1 GAL @ 36"O.C.	LOW	
PENNISSETUM ALOPECUROIDES 'HAMELIN'	HEAVENLY BAMBOO	5 GALLON	LOW	
PITIOSPORUM TOBIRA 'VARIEGATA'	DWARF FOUNTAIN GRASS	1 GAL @ 36"O.C.	LOW	
RHAMNIS CALIFORNICA 'EVE CASE'	VARIEGATED TOBIRA	5 GALLON	LOW	
	EVE CASE COFFEEBERRY	5 GALLON	LOW	
<b>GROUND COVERS:</b>				
GERANIUM INCANUM	CRANESBILL	1 GAL @ 24"O.C.	LOW	
NANDINA 'HARBOR DWARF'	DWARF HEAVENLY BAMBOO	1 GAL @ 36"O.C.	LOW	
NEPETA X PAASSENII	GROUND COVER	1 GAL @ 24"O.C.	LOW	
ROSMARINUS 'HUNTINGTON CARPET'	HUNTINGTON CARPET PROSTRATE ROSEMARY	1 GAL @ 36"O.C.	LOW	

**MENLO COLLEGE**  
NEW RESIDENCE HALL

1000 EL CAMINO REAL  
ATHERTON, CA

Issues and Revisions

No.	Date	Issues and Revisions	By
	12/19/2019	PLANNING SUBMITTAL	

**LANDSCAPE PLAN**

Project Number: 2019A105  
Date: 12/19/2019  
Scale: 1"=20'

**C8.0**



# **ARBORIST REPORT**

## **MENLO COLLEGE NEW RESIDENCE HALL 1000 EL CAMINO REAL ATHERTON, CALIFORNIA**

**Submitted to:**

Sandis  
1700 Winchester Blvd., Suite 200  
Campbell, CA 95008

**Prepared by:**

David L. Babby  
*Registered Consulting Arborist® #399*  
*Board-Certified Master Arborist® #WE-4001B*

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December 6, 2019

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**EXHIBITS**

<b><u>EXHIBIT</u></b>	<b><u>TITLE</u></b>
A	TREE INVENTORY TABLE (eleven sheets)
B	SITE MAP (one sheet)
C	PHOTOGRAPHS (ten sheets)

## 1.0 INTRODUCTION

Sandis, the project civil engineer, has retained me to prepare this *Arborist Report* in connection with constructing a new, three-story residence hall at Menlo College; 1000 El Camino Real, Atherton. Specific tasks assigned to execute are as follows:

- Visit the site on 11/22/19 to inventory and evaluate 79 trees located on the site survey map provided to me for this report.
- Measure each tree's trunk diameter at 48 inches above grade and round to the nearest inch.
- Estimate each tree's average canopy spread (most all are rounded to the nearest fifth).
- Ascertain each tree's health, structural integrity and form, and assign an overall condition rating (e.g. good, fair, poor or dead).
- Rate each tree's suitability for preservation (e.g. high, moderate or low).
- Obtain photographs of each tree; see Exhibit C.
- Document any observed health, structural or hardscape issues for each tree.
- Identify which trees qualify as a "heritage tree"<sup>1</sup> pursuant the Atherton Municipal Code.
- Assign numbers, and show them on the site map in Exhibit B (base map is a copy of a site survey prepared by Sandis, dated 11/21/19).
- Affix round metal tags with engraved corresponding numbers onto each tree (not to be confused with other round tags found on many trees).
- Develop preliminary design guidelines and protection measures to help mitigate or avoid impacts to retained trees.
- Prepare a written report which presents the above information, and submit via email as a PDF document.

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<sup>1</sup> Section 8.10.020(A) of the Atherton Municipal Code defines a "heritage tree" as having a trunk diameter of  $\geq 15.2$  inches at 48 inches above grade and is [1] either a native oak (*Quercus agrifolia*, *lobata* or *douglasii*) located throughout the property or [2] any other species located within the building area. Trees exempt from heritage tree status include *Acacia baileyana*, *Mimosa julibrissin*, *Acacia decurrens*, *Acacia melanoxylon* and *Ailanthus altissima*.

## 2.0 TREE COUNT AND COMPOSITION

Seventy-nine (79) trees of 15 various species were inventoried for this report. They are sequentially numbered as 1 thru 79, and the table below identifies their common names, assigned numbers, counts and overall percentages.

NAME	TREE NUMBER(S)	COUNT	% OF TOTAL
Bloodgood London plane	22-25	4	5%
Canary Island pine	56, 65-68, 70	6	8%
Chinese elm	38-40, 62-64	6	8%
Coast live oak	8, 21, 26, 33-37, 42, 71	10	13%
Coast redwood	1-7, 27-32, 54, 55	15	19%
Crape myrtles	18, 72-79	9	11%
European beech	44-47, 59-61	7	9%
European white birch	9, 69	2	3%
Fern pine	41, 43	2	3%
Glossy privet	53	1	1%
Japanese flowering cherry	19	1	1%
Mayten	10-17	8	10%
English hawthorn	57	1	1%
Peruvian pepper tree	48-52	5	6%
Valley oak	20, 58	2	3%
	<b>Total</b>	<b>79</b>	<b>100%</b>

Specific information regarding each tree is presented within the table in Exhibit A. The trees' numbers and approximate locations can be viewed on the site map in Exhibit B, and photographs are presented in Exhibit C.

As illustrated in the prior table, trees most frequently encountered include coast redwoods and native oaks (i.e. coast live and valley).

Nine (9) trees are defined as heritage trees pursuant to Atherton Municipal Code; they include #8, 20, 21, 26, 33, 34, 42, 58 and 71. Except for three very small and recently installed oaks #35 thru 37, these account for all inventoried coast live and valley oaks (i.e. native oaks) due to having trunk diameters exceeding 15.2 inches at 4 feet above grade.

To my understanding, each inventoried tree is situated within the building area. As a result, no trees other than the nine oaks mentioned above qualify as being of heritage status.

### 3.0 SUITABILITY FOR TREE PRESERVATION

Each tree has been assigned either a “high,” “moderate” or “low” suitability for preservation rating as a means to cumulatively measure its health, structural integrity, anticipated life span; remaining life expectancy, location, size, particular species, tolerance to construction impacts, growing space, and safety to property and persons within striking distance. Descriptions of these ratings are presented below; the high category comprises 7 trees (or 9% of the total), the moderate category 61 (or 77%), and the low category 11 (or 14%).

**High:** Applies to #7, 20, 21, 26, 29, 33 and 71.

These trees appear relatively healthy and structurally stable; have no apparent, significant health issues or structural defects; present a good potential for contributing long-term to the site; and seemingly require only periodic or regular care and monitoring to maintain their longevity and structural integrity.

**Moderate:** Applies to #1-6, 8, 9, 11, 13-19, 22-24, 27, 28, 31, 32, 34-40, 42-46, 48-52, 54-61, 64-68, 70 and, 72-78.

These trees contribute to the site, but at levels less than those assigned a high suitability; might have health and/or structural issues which may or may not be reasonably addressed and properly mitigated; and frequent care is typically required for their remaining lifespan.

**Low:** Applies to #10, 12, 25, 30, 41, 47, 53, 62, 63, 69 and 79.

These trees have significant health and/or structural issues expected to worsen regardless of tree care measures employed (i.e. beyond likely recovery). As a general guideline, they are not suitable for incorporating into the future landscape, regardless of future site development, and any which are retained require frequent monitoring and care throughout their remaining lifespans to minimize risk to any persons or property within striking distance.

## 4.0 TREE PROTECTION MEASURES

Recommendations presented within this section serve as preliminary measures to help mitigate or avoid impacts to trees being retained. They should be incorporated into project plans; carefully followed throughout the design, demolition, utility installation, construction and landscaping process; and are subject to revision upon reviewing future project plans. I (hereinafter, "project arborist") should be consulted in the event any cannot be feasibly implemented. Please note all referenced distances from trunks are intended to be from the closest edge, face of, their outermost perimeter at soil grade.

### 4.1 Design Guidelines

1. For each retained tree, designate a Tree Protection Zone (TPZ) for the purpose of restricting or significantly mitigating activities and access inside a specified area to help achieve a reasonable assurance of its vigor, longevity and anchoring capacity. For general design purposes, the TPZ of a particular tree should be a minimum radial distance from its trunk of 7 to 10 times the trunk's diameter (e.g. an 18-inch diameter tree would have a TPZ of 11 to 15 feet). This applies to all directions away from the trunk and existing foundations, and for trees with multiple trunks, utilize the largest diameter. Activities which should be avoided and/or restricted within a TPZ includes, but are not necessarily limited to, include: trenching, soil scraping, compaction, mass and finish-grading, overexcavation, subexcavation, tilling, ripping, swales, bioswales, storm drains, dissipaters, equipment cleaning, removal of underground utilities and vaults, altering existing water/drainage flows, stockpiling and dumping of materials, and equipment and vehicle operation. Where an impact encroaches slightly within a setback, it can be reviewed on a case-by-case basis by the project arborist to determine appropriate mitigation measures.
2. All design changes occurring near retained trees should be reviewed with the project arborist prior to executing, for the purpose of identifying potential impacts and any possible mitigation measures.
3. For large trees, the future building should avoid needing to remove limbs >3 inches in diameter or eliminate a significant portion of their canopies (e.g. >25- to 30-percent).

4. On all site-related plans, add the assigned tree numbers and canopy dimensions; delineate TPZs; and add notes instructing contractors to comply with recommendations provided in this report, and to contact the project arborist prior to any work being performed near or within TPZs. Also, on a designated tree removal or disposition plan, reflect proposed removals by showing an "X" across their trunks.
5. Any segments of existing and unused underground lines, pipes, manholes and vaults within a TPZ shall be abandoned and cut off at existing soil grade (rather than being dug up and causing root damage). Add a note to this effect on the demolition plan.
6. Ensure specifications by the geotechnical, soils and structural engineers do not require compaction, overexcavation, subexcavation or fill beyond foundations, parking lots or other features where within 10 to 20 feet from a TPZ (20 feet for large trees, e.g. >24" in diameter). Shoring shall be utilized where needed to achieve this setback, and note that any pile driver or drill rig shall not be used where significant damage to a tree's canopy would occur (can be determined on a case-by-case basis).
7. Also where within 10 to 20 feet from a TPZ, overexcavation, subexcavation and compaction shall not exceed 24 inches beyond foundations and retaining walls, 6 inches beyond inside of curbs (including for gutters), and avoided for trenches. Where needed, shoring shall be required for any underground feature or utility trench to avoid excavation within 10 to 20 feet from a TPZ.
8. Any new walkway proposed on existing unpaved ground within a TPZ shall be designed and built entirely above existing soil grade and surface roots (i.e. a no-dig design), including for base material, edging and forms. Also, direct compaction of soil shall be avoided (levels comparable to foot-tamping are acceptable), and soil fill used to bevel the top of walk to existing grade should not exceed 18 to 24 inches from the walk's edge, not be compacted, nor placed closer than 10 to 20 feet from a tree's trunk. Tensar® BX Geogrid ([www.tensarcorp.com](http://www.tensarcorp.com)) is a material that can be utilized to help achieve these limited excavation and compaction requirements.
9. Route all underground utilities and services beyond TPZs. Where this is not feasible, the section of line(s) within a TPZ should be directionally-bored by at least 4 feet

below existing grade; tunneled using a pneumatic air device, such as an AirSpade®; or installed by other means (e.g. pipe-bursting) to avoid an open trench. Ground above any tunnel must remain undisturbed, and access pits and above-ground infrastructure (e.g. splice boxes, meters and vaults) established beyond TPZs.

10. Design any bioswales, storm drains and swales well-beyond TPZs.
11. Any new wall constructed within a TPZ shall utilize a pier and above-grade beam system, the beam between footings established above-grade (i.e. a no-dig design except for footings), and fill and compaction between footings is avoided.
12. All electrical routes shall be designed and shown beyond TPZs.
13. The permanent and temporary drainage design, including downspouts, should not require water being discharged beneath an oak's canopy.
14. The erosion control design for demolition and construction should represent silt fence and/or straw rolls away from a tree's trunk (not against it), and as close to the canopy edges as possible. Additionally, where within a TPZ, the material should not be embedded into the ground by more than 2 inches, nor require the severance of shallow roots (a rule of thumb being  $\geq 2$  inches for larger trees).
15. On the final site plan, represent the future staging area and route(s) of access beyond unpaved areas beneath or near canopies.
16. The landscape design should conform to the following additional guidelines:
  - a. On irrigation plans, add a note or callout specifying that routes shall be reviewed with the project arborist prior to trenching within 20 feet from a tree's trunk.
  - b. Tilling, ripping, surface scraping and compaction within TPZs shall be avoided.
  - c. New tree(s) should be installed, including necessary irrigation, by an experienced California state-licensed landscape contractor (C-27) or tree service company (D-49), and performed to professional industry standards. Only if necessary to stand upright, they should be double-staked (no cross-brace) with rubber tree ties or equivalent, and the support stakes cut below the first main lateral branch. All nursery stakes shall be removed. Root crowns of new trees shall be visible and absent of encircling roots.

- d. Irrigation should not strike within 12 inches from trunks of existing trees, nor applied against trunks of new trees.
- e. Future irrigation supply for existing and any new redwoods needs to be from a potable source (versus reclaimed, which damages redwoods).
- f. Plant material installed within TPZs of oaks must be drought-tolerant, limited in amount, and planted at least 3 feet from their trunks. Plant material installed beneath canopies of other trees should be >24 inches from their trunks.
- g. Irrigation and lighting features (e.g. main line, laterals, valve boxes, wiring and controllers) should not require trenching inside TPZs, including header/lateral lines. In the event this is not feasible, they may require being installed in a radial direction to, and terminate a specific distance from a trunk (versus crossing past it). In certain instances, a pneumatic air device, such as an AirSpade,® may be needed to avoid root damage, and any Netafim tubing placed on grade.
- h. Irrigation for new trees should be supplied through an automatic timer, separate from other plant material, and supplied by one to two bubblers (minimum two for a 48-inch box). The bubblers should be placed and staked on the rootball's surface (not against a trunk, in a sleeve or on mulch), at around 1/2 to 1/3 the distance between the trunk and rootball edge. Additionally, an 8-inch tall circular berm formed by soil should be established around a rootball's perimeter, and a 3-inch layer of mulch spread over their tops, kept 1-inch from the trunks' bases.
- i. Ground cover beneath canopies of existing trees should be comprised of a 3-inch layer of coarse wood chips or other high-quality mulch (gorilla hair, rock, stone, gravel, black plastic or other synthetic ground cover should be avoided). Mulch should be kept off the trees' trunks or visible root collars.
- j. Bender board or other edging material proposed beneath the canopies should be established on top of existing soil grade (such as by using vertical stakes).
- k. Herbicides should be avoided within a TPZ, and where used on site, labeled for safe use near trees. Liming shall not occur within 50 feet from a trunk.

#### **4.2 Before Demolition, Grading and Construction**

17. Several weeks prior to mobilizing equipment to the site, conduct a site meeting between the general contractor and project arborist for the purpose of reviewing tree fencing and locations, pruning, supplemental watering, trench routes, routes of access, staging, and other items and protection measures presented in this report. Where possible, also stake limits of grading to review.

18. Ensure there is no interruption with the current irrigation cycle, and increase amounts provided. The supply should be from a potable source (reclaimed water damages redwoods), and apply to all ground within a TPZ. Further review and discussion regarding the watering methodology, frequency and amounts can be provided closer to site demolition. Various application methods seemingly include periodically flooding the planter area at a slow discharge rate (via a garden hose), using soaker hoses, or by deep-root injection.
19. Tree protection fencing shall be installed prior to mobilizing equipment to the site and along the specific TPZ zone. It shall consist of 6-foot tall chain link mounted on 8-foot tall, 2-inch diameter steel posts driven into the ground. Where necessary due to close proximity of existing hardscape and/or buildings, trunk wrap protection may be needed in lieu of chain link, and consists of wrapping a single straw wattle horizontally around the trunk at roughly 10 feet high and another around its base (loosely); placing boards (2"x4") vertically around the outside, from ground to the 10-foot height; then wrapping orange-plastic fencing around the boards two to three times and tying together. All fencing and protection shall remain in place until otherwise instructed by the Town or project arborist.
20. Regarding any relocated trees, the company contracted to perform the work should be engaged at least several months prior to relocation for purposes of reviewing the specific trees, logistics, future locations, watering program, etc. They shall be a California licensed tree-service contractor (D-49) that has an ISA certified arborist in a supervisory role, carries General Liability and Worker's Compensation insurance, and adheres to the most recent ANSI A300 (Part 6) standards.
21. Fertilization may benefit a tree's health, vigor and appearance. If applied, however, soil samples should first be obtained to identify the pH levels and nutrient levels so a proper fertilization program can be established. I further recommend any fertilization is performed under the direction and supervision of a certified arborist, and in accordance with the most recent ANSI A300 Fertilization standards.
22. Continue to monitor the condition of oaks which have discolored bark tissue (e.g. #33 and 71) to help increase the opportunity for beneficial treatment(s).

### 4.3 During Demolition, Grading and Construction

23. Take great care during the demolition of all existing hardscape and features within and near TPZs, to avoid excavating into the ground and disturbing roots. Equipment operators must also be aware to avoid trunks and branches, including the scorching of foliage. Contact the project arborist well in advance of any potential conflict.
24. Shoring installation must avoid damaging a tree's canopy, and equipment utilized must not operate or travel within TPZs.
25. Approved digging or trenching within a TPZ, as well as any plant material removed from within a TPZ, shall be manually performed without the use of heavy equipment, including small tractors.
26. Any necessary pruning shall only be performed under direction of the project arborist, conducted in accordance with the most recent ANSI A300 standards, and performed by a California licensed tree-service contractor (D-49) with an ISA certified arborist in a supervisory role.
27. For any trenching approved within a TPZ, although I strongly caution against this as damage is nearly certain to occur, roots encountered with diameters of  $\geq 2$  inches shall be retained, buried by soil or covered by wet burlap that remains continually moist until the root is buried, and assessed by the project arborist. For small trees (e.g.  $< 6$  inches in trunk diameter),  $\geq 1$ -inch diameter roots apply. If authorized by the project arborist for cutting, cleanly severe at  $90^\circ$  to the angle of root growth against the cut line using sharp cutting tools (e.g. loppers or handsaw), and then immediately after, the cut end shall be either buried with soil or kept continually moist by burlap until the dug area is backfilled. Roots encountered with diameters  $<$  the 2- and 1-inch thresholds can be cleanly severed at a  $90^\circ$  angle to the direction of root growth.
28. Spoils generated during demolition and trenching digging must not be piled or spread within a TPZ. If necessary, they can be temporarily piled on plywood or a tarp.
29. All electrical and irrigation routes shall be staked, reviewed and approved by the project arborist prior to trenching occurring within a TPZ.

30. In the event root collars<sup>2</sup> become inadvertently buried by soil, they shall be cleared. This work must be manually and carefully performed to avoid damaging the trunk and roots during the process, and preferably by a tree-service company using an AirSpade® to avoid unnecessary root and/or trunk damage.
31. Tree trunks shall not be used as winch supports for moving or lifting heavy loads.
32. Dust accumulating on trunks and canopies during dry weather periods may need to be periodically washed away (e.g. every three to four months).
33. Avoid disposing harmful products (such as cement, paint, chemicals, oil and gasoline) beneath canopies or anywhere on site that allows drainage within or near TPZs. Herbicides should not be used with a TPZ; where used on site, they should be labeled for safe use near trees. Liming shall not occur within 50 feet from a canopy.

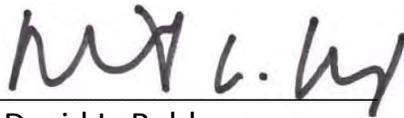
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<sup>2</sup> A root collar is the distinct swollen area near the ground where buttress roots and the main trunk merge.

## 5.0 ASSUMPTIONS AND LIMITING CONDITIONS

- All information presented herein covers only the inventoried trees, and reflects their size, condition, and areas viewed from the ground on 11/22/19.
- Condition and suitability ratings of dormant or nearly dormant trees are subject to change once they can be observed following regrowth of leaves.
- Observations were performed visually without probing, coring, dissecting or excavating.
- The assignment pertains solely to trees listed in Exhibit A. I hold no opinion towards other trees on or surrounding the project area.
- I cannot provide a guarantee or warranty, expressed or implied, that deficiencies or problems of any trees or property in question may not arise in the future.
- No assurance can be offered that if all my recommendations and precautionary measures (verbal or in writing) are accepted and followed the desired results may be achieved.
- I cannot guarantee or be responsible for the accuracy of information provided by others.
- I assume no responsibility for the means and methods used by any person or company implementing the recommendations provided in this report.
- Information provided herein represents my opinion. Accordingly, my fee is in no way contingent upon the reporting of a specified finding, conclusion or value.
- Numbers shown on the site map in Exhibit B are solely intended to represent a tree's approximate location.
- This report is proprietary to me and may not be copied or reproduced in whole or part without prior written consent. It has been prepared for the sole and exclusive use of the parties to who submitted for the purpose of contracting services provided by David L. Babby.
- If any part of this report or copy thereof be lost or altered, the entire evaluation shall be invalid.

Prepared By:



David L. Babby

Registered Consulting Arborist® #399

Board-Certified Master Arborist® #WE-4001B

CA Licensed Tree Service Contractor #796763 (C61/D49)

Date: December 6, 2019

**EXHIBIT A:**

**TREE INVENTORY TABLE**

(eleven sheets)



**TREE INVENTORY TABLE**

TREE/ TAG NO.	TREE NAME	SIZE		CONDITION				Suitability for Preservation (High/Moderate/Low)	"Heritage Tree"
		Trunk Diameter (in.)	Canopy Spread (ft.)	Health Condition (100%=Best, 0%=Worst)	Structural Integrity (100%=Best, 0%=Worst)	Form (100%=Best, 0%=Worst)	Overall Condition (Good/Fair/Poor/Dead)		
1	Coast redwood ( <i>Sequoia sempervirens</i> )	35	30	40%	70%	70%	Fair	Moderate	
Comments: Thin canopy with deadwood. Has a pronounced root crown (aka "lignotuber" for redwoods).									
2	Coast redwood ( <i>Sequoia sempervirens</i> )	28, 21	30	40%	60%	50%	Poor	Moderate	
Comments: Two trunks originate at grade. Pronounced root crown and a very thin top with deadwood.									
3	Coast redwood ( <i>Sequoia sempervirens</i> )	31	25	50%	60%	70%	Fair	Moderate	
Comments: Has a thin top with deadwood. Pipe located against east side of a pronounced root crown.									
4	Coast redwood ( <i>Sequoia sempervirens</i> )	25, 23	20	60%	30%	40%	Poor	Moderate	
Comments: Two trunks originate at grade.									
5	Coast redwood ( <i>Sequoia sempervirens</i> )	32	25	40%	60%	50%	Fair	Moderate	
Comments: Has a thin top.									
6	Coast redwood ( <i>Sequoia sempervirens</i> )	55	25	70%	40%	40%	Fair	Moderate	
Comments: Wound along trunk. Has a northerly lean. Trunk bifurcates into two leaders at 6' high.									
7	Coast redwood ( <i>Sequoia sempervirens</i> )	37	30	60%	70%	60%	Fair	High	
Comments: Dominant tree of the redwood grove.									
8	Coast live oak ( <i>Quercus agrifolia</i> )	20	40	60%	50%	30%	Poor	Moderate	X
Comments: Has a very thin, sparse and elevated canopy. The sparse condition appears indicative of oak worm infestation. Some discoloration at buttress roots. Injection sites surround trunk's circumference.									

To Be Demol'd



**TREE INVENTORY TABLE**

TREE/ TAG NO.	TREE NAME	SIZE		CONDITION				Suitability for Preservation (High/Moderate/Low)	"Heritage Tree"	To Be Demol'd
		Trunk Diameter (in.)	Canopy Spread (ft.)	Health Condition (100%=Best, 0%=Worst)	Structural Integrity (100%=Best, 0%=Worst)	Form (100%=Best, 0%=Worst)	Overall Condition (Good/Fair/Poor/Dead)			
9	European white birch ( <i>Betula pendula</i> )	9	20	40%	50%	60%	Poor	Moderate		
Comments: Basal wound and has small girdling roots. Deadwood along top.										
10	Mayten tree ( <i>Maytenus boaria</i> )	6	10	40%	30%	20%	Poor	Low		X
Comments: Pronounced easterly lean. Wound along trunk's top side. One-sided, asymmetrical crown due to crowded-growing conditions. Dieback. Buried root collar.										
11	Mayten tree ( <i>Maytenus boaria</i> )	7, 7, 7, 4	25	40%	40%	40%	Poor	Moderate		X
Comments: Very sparse canopy with dead branches. Limb structure begins at 3.5' high and has a wide form. Comprised of four leaders, two of which form a weak attachment. Diameter is 12" below union.										
12	Mayten tree ( <i>Maytenus boaria</i> )	6	15	40%	10%	20%	Poor	Low		X
Comments: Dieback and deadwood. Advanced level of decay. Codominant trunks originate at 3.5' high. Asymmetrical canopy.										
13	Mayten tree ( <i>Maytenus boaria</i> )	13	25	40%	60%	60%	Poor	Moderate		X
Comments: Dieback and deadwood. Limb structure begins at 5' high.										
14	Mayten tree ( <i>Maytenus boaria</i> )	12	25	70%	40%	40%	Fair	Moderate		X
Comments: Leans SW and has a sinuous crown. Three leaders originate at 4.5' high and form a weak attachment. Canopy is slightly asymmetrical.										
15	Mayten tree ( <i>Maytenus boaria</i> )	7, 7, 6	20	60%	40%	50%	Fair	Moderate		X
Comments: Multi-trunk form. Wound along the 6" trunk. Has a small girdling root.										



**TREE INVENTORY TABLE**

TREE/ TAG NO.	TREE NAME	SIZE		CONDITION				Suitability for Preservation (High/Moderate/Low)	"Heritage Tree"	To Be Demo'd
		Trunk Diameter (in.)	Canopy Spread (ft.)	Health Condition (100%=Best, 0%=Worst)	Structural Integrity (100%=Best, 0%=Worst)	Form (100%=Best, 0%=Worst)	Overall Condition (Good/Fair/Poor/Dead)			
16	Mayten tree ( <i>Maytenus boaria</i> )	7, 4, 3, 3, 3, 3	20	40%	50%	60%	Poor	Moderate		
Comments: Branching begins at 3.5' high, and diameter below their union is 9". Declining with deadwood.										
17	Mayten tree ( <i>Maytenus boaria</i> )	13	25	60%	40%	50%	Fair	Moderate		X
Comments: Branches along roof of pool shed. Three leaders originate at 4.5' high and form a narrow angle of attachment. Has a small girdling root.										
18	Crape myrtle ( <i>Lagerstroemia indica</i> )	6	15	60%	30%	40%	Poor	Moderate		
Comments: Branching begins at 4' high. Large scar along trunk. Pollarded or headed back in past. Has a buried root collar and asymmetrical canopy.										
19	Japanese flowering cherry ( <i>Prunus serrulata</i> )	9	25	70%	40%	40%	Fair	Moderate		
Comments: Located partly beneath #20. Trunk bifurcates 5' high into codominant leaders with a narrow narrow attachment. A limb grows from trunk at 3.5' high and forms a weak attachment. Has a partial girdling root, and decay is observed along root collar at and below grade.										
20	Valley oak ( <i>Quercus lobata</i> )	25	60	60%	70%	60%	Fair	High		X
Comments: Bark checking along S/SW sides from grade to 6.5' high. Canopy overhangs, and some branches lie on roof. Deadwood.										
21	Coast live oak ( <i>Quercus agrifolia</i> )	33	75	70%	60%	70%	Fair	High		X
Comments: Within a small planter and has a favorably exposed root crown. Large old cut at 4' high. Multi-leader and vase-shaped crown begins at 9' high. Low canopy over parking lot. Tussock moths.										
22	Bloodgood London plane ( <i>Platanus</i> × <i>h.</i> 'Bloodgood')	20	60	60%	60%	60%	Fair	Moderate		
Comments: Becoming dormant.										



**TREE INVENTORY TABLE**

TREE/ TAG NO.	TREE NAME	SIZE		CONDITION				Suitability for Preservation (High/Moderate/Low)	"Heritage Tree"
		Trunk Diameter (in.)	Canopy Spread (ft.)	Health Condition (100%=Best, 0%=Worst)	Structural Integrity (100%=Best, 0%=Worst)	Form (100%=Best, 0%=Worst)	Overall Condition (Good/Fair/Poor/Dead)		
23	Bloodgood London plane ( <i>Platanus</i> × <i>h.</i> 'Bloodgood')	18	30	60%	50%	30%	Fair	Moderate	
Comments: Becoming dormant. Asymmetrical canopy.									
24	Bloodgood London plane ( <i>Platanus</i> × <i>h.</i> 'Bloodgood')	21	65	60%	60%	60%	Fair	Moderate	
Comments: Becoming dormant.									
25	Bloodgood London plane ( <i>Platanus</i> × <i>h.</i> 'Bloodgood')	20	30	40%	30%	30%	Poor	Low	
Comments: Becoming dormant. Decay along upper trunk, and atypical swelling along lower; these features represent weakening of the tree's structure. Has an asymmetrical canopy.									
26	Coast live oak ( <i>Quercus agrifolia</i> )	35	70	70%	60%	40%	Fair	High	X
Comments: Within a large planter. Trunk bifurcates into codominants at 5' high, and diameter obtained just below bulge. Asymmetrical canopy with deadwood. Branches lie one, and overhang roof of adjacent building. Tussock moths.									
27	Coast redwood ( <i>Sequoia sempervirens</i> )	10	20	60%	30%	40%	Poor	Moderate	
Comments: Top was cut away sometime ago (i.e. height was reduced).									
28	Coast redwood ( <i>Sequoia sempervirens</i> )	20	30	70%	30%	40%	Poor	Moderate	
Comments: Top was cut away sometime ago (i.e. height was reduced).									
29	Coast redwood ( <i>Sequoia sempervirens</i> )	30	20	70%	70%	70%	Good	High	
Comments: Has a pronounced root crown.									
30	Coast redwood ( <i>Sequoia sempervirens</i> )	4	10	80%	20%	40%	Poor	Low	
Comments: Top was cut away sometime ago (i.e. height was reduced). Located beneath #29.									

To Be Demo'd



**TREE INVENTORY TABLE**

TREE/ TAG NO.	TREE NAME	SIZE		CONDITION				Suitability for Preservation (High/Moderate/Low)	"Heritage Tree"
		Trunk Diameter (in.)	Canopy Spread (ft.)	Health Condition (100%=Best, 0%=Worst)	Structural Integrity (100%=Best, 0%=Worst)	Form (100%=Best, 0%=Worst)	Overall Condition (Good/Fair/Poor/Dead)		
31	Coast redwood ( <i>Sequoia sempervirens</i> )	6	20	90%	60%	70%	Good	Moderate	
Comments: Section of lower canopy along the fence side was pruned.									
32	Coast redwood ( <i>Sequoia sempervirens</i> )	6	15	90%	60%	70%	Good	Moderate	
Comments: Section of lower canopy along fence side was pruned.									
33	Coast live oak ( <i>Quercus agrifolia</i> )	39	80	80%	70%	60%	Good	High	X
Comments: Has a slight southerly lean. Numerous bleeding areas along trunk, perhaps from sycamore borers or other. Small deadwood throughout and has Ehrhorn scale along limbs. Three codominant leaders originate at 9' high, then divide into multiple leaders higher up. Tussock moths.									
34	Coast live oak ( <i>Quercus agrifolia</i> )	28	60	70%	30%	30%	Poor	Moderate	X
Comments: Asymmetrical canopy growing partly beneath, and sweeps entirely away from #33. Base is within 2.5' from adjacent building, and canopy overhangs roof. Comprised of three main leaders. Tussock moths.									
35	Coast live oak ( <i>Quercus agrifolia</i> )	2	8	70%	50%	60%	Fair	Moderate	
Comments: Recent install. Has some dieback. Buried root collar.									
36	Coast live oak ( <i>Quercus agrifolia</i> )	1	7	80%	60%	60%	Good	Moderate	
Comments: Recent install. Sinuous trunk.									
37	Coast live oak ( <i>Quercus agrifolia</i> )	2	5	60%	60%	80%	Fair	Moderate	
Comments: Recent install. Has some branch dieback.									

To Be Demol'd



**TREE INVENTORY TABLE**

TREE/ TAG NO.	TREE NAME	SIZE		CONDITION				Suitability for Preservation (High/Moderate/Low)	"Heritage Tree"	To Be Demo'd
		Trunk Diameter (in.)	Canopy Spread (ft.)	Health Condition (100%=Best, 0%=Worst)	Structural Integrity (100%=Best, 0%=Worst)	Form (100%=Best, 0%=Worst)	Overall Condition (Good/Fair/Poor/Dead)			
38	Chinese elm ( <i>Ulmus parvifolia</i> )	20	35	60%	40%	30%	Poor	Moderate		X
<p>Comments: Leans west and has a history of limb failure. Mostly one-sided. Significantly pruned in past, including being reduced along top.</p>										
39	Chinese elm ( <i>Ulmus parvifolia</i> )	20	40	40%	40%	30%	Poor	Moderate		X
<p>Comments: Leans east. Asymmetrical and very thin canopy with large deadwood.</p>										
40	Chinese elm ( <i>Ulmus parvifolia</i> )	20	50	40%	40%	40%	Poor	Moderate		X
<p>Comments: Elevated and thin canopy with large deadwood.</p>										
41	Fern pine ( <i>Podocarpus gracilior</i> )	28	35	60%	30%	30%	Poor	Low		
<p>Comments: Adjacent to building and #43's canopy. Leans south and has a pronounced buttress root mass opposite the lean. Mounds formed in adjacent walk and patio. Overhangs building.</p>										
42	Coast live oak ( <i>Quercus agrifolia</i> )	25	60	70%	50%	70%	Fair	Moderate		X
<p>Comments: Canopy near 5' over lawn. Small deadwood. Multiple leaders originate at 10' high. Has an elevated crown. Tussock moths.</p>										
43	Fern pine ( <i>Podocarpus gracilior</i> )	32	60	70%	40%	70%	Fair	Moderate		
<p>Comments: Adjacent to building and #41's canopy. Small deadwood. Located within a large planter. Multiple leaders originate at 7' high. Small deadwood. Overhangs building.</p>										
44	European beech ( <i>Fagus sylvatica</i> )	3	50	60%	50%	60%	Fair	Moderate		
<p>Comments: For all beech mentioned herein, they are of a columnar form variety. Becoming dormant. At edge of #43's canopy. Staked.</p>										



**TREE INVENTORY TABLE**

TREE/ TAG NO.	TREE NAME	SIZE		CONDITION				Suitability for Preservation (High/Moderate/Low)	"Heritage Tree"	To Be Demo'd
		Trunk Diameter (in.)	Canopy Spread (ft.)	Health Condition (100%=Best, 0%=Worst)	Structural Integrity (100%=Best, 0%=Worst)	Form (100%=Best, 0%=Worst)	Overall Condition (Good/Fair/Poor/Dead)			
45	European beech ( <i>Fagus sylvatica</i> )	3	5	60%	60%	60%	Fair	Moderate		
Comments: Staked. Dormant and leaves are currently bound to canopy.										
46	European beech ( <i>Fagus sylvatica</i> )	2	5	40%	60%	70%	Poor	Moderate		
Comments: Staked. Growing new leaves, an atypical condition for this time of year.										
47	European beech ( <i>Fagus sylvatica</i> )	2	5	30%	20%	60%	Poor	Low		
Comments: Staked. Dormant and leaves are currently bound to canopy. Extensive decay at base and has girdling kinked roots (rootbound).										
48	Peruvian pepper tree ( <i>Schinus molle</i> )	5	15	70%	60%	40%	Fair	Moderate		X
Comments: Small, young tree.										
49	Peruvian pepper tree ( <i>Schinus molle</i> )	5	20	90%	70%	60%	Good	Moderate		X
Comments: Small, young tree.										
50	Peruvian pepper tree ( <i>Schinus molle</i> )	4	15	80%	50%	50%	Fair	Moderate		X
Comments: Small, young tree. Branches encroach onto security light. Asymmetrical canopy.										
51	Peruvian pepper tree ( <i>Schinus molle</i> )	4	15	70%	50%	60%	Fair	Moderate		X
Comments: Small, young tree. Trunk sweeps SW.										
52	Peruvian pepper tree ( <i>Schinus molle</i> )	3	10	60%	50%	60%	Fair	Moderate		X
Comments: Small, young tree. Leans NW.										



**TREE INVENTORY TABLE**

TREE/ TAG NO.	TREE NAME	SIZE		CONDITION				Suitability for Preservation (High/Moderate/Low)	"Heritage Tree"	To Be Demol'd
		Trunk Diameter (in.)	Canopy Spread (ft.)	Health Condition (100%=Best, 0%=Worst)	Structural Integrity (100%=Best, 0%=Worst)	Form (100%=Best, 0%=Worst)	Overall Condition (Good/Fair/Poor/Dead)			
53	Glossy privet ( <i>Ligustrum lucidum</i> )	19	40	30%	30%	10%	Poor	Low		X
<p>Comments: Significant dieback with large deadwood throughout. Multiple leaders originate at 6' high and form narrow attachments. Trunk has a large crack indicating decline.</p>										
54	Coast redwood ( <i>Sequoia sempervirens</i> )	53	60	70%	50%	40%	Fair	Moderate		
<p>Comments: Along and very close to building. Has an asymmetrical top and deadwood. Excessive limb weight. Situated near bottom of slope.</p>										
55	Coast redwood ( <i>Sequoia sempervirens</i> )	31	40	40%	50%	40%	Poor	Moderate		
<p>Comments: On a slope. Extremely thin top and deadwood. Excessive limb weight.</p>										
56	Canary Island pine ( <i>Pinus canariensis</i> )	28	40	80%	60%	40%	Fair	Moderate		
<p>Comments: Within a small circular planter. Asymmetrical canopy, being dominant towards west side. Deadwood, including a large limb at bottom of canopy.</p>										
57	Paul's Scarlet English Hawthorn ( <i>Crataegus l. 'Paul's Scarlet'</i> )	10	25	50%	60%	60%	Fair	Moderate		X
<p>Comments: Leans south. Going dormant.</p>										
58	Valley oak ( <i>Quercus lobata</i> )	55	100+	50%	40%	60%	Poor	Moderate		X
<p>Comments: Massive oak with numerous large old wounds which have closed. Leans southwest and overhangs residence hall. Has a very thin, sparse, high and asymmetrical canopy. Deadwood, and canopy was significantly pruned/thinned over the many years.</p>										
59	European beech ( <i>Fagus sylvatica</i> )	1	5	70%	60%	60%	Fair	Moderate		
<p>Comments: Going dormant.</p>										



**TREE INVENTORY TABLE**

TREE/ TAG NO.	TREE NAME	SIZE		CONDITION				Suitability for Preservation (High/Moderate/Low)	"Heritage Tree"	To Be Demol'd
		Trunk Diameter (in.)	Canopy Spread (ft.)	Health Condition (100%=Best, 0%=Worst)	Structural Integrity (100%=Best, 0%=Worst)	Form (100%=Best, 0%=Worst)	Overall Condition (Good/Fair/Poor/Dead)			
60	European beech ( <i>Fagus sylvatica</i> )	2	5	60%	60%	60%	Fair	Moderate		X
Comments: Going dormant.										
61	European beech ( <i>Fagus sylvatica</i> )	2	5	80%	60%	60%	Fair	Moderate		
Comments: Going dormant.										
62	Chinese elm ( <i>Ulmus parvifolia</i> )	19	35	40%	30%	30%	Poor	Low		X
Comments: Shares planter with #63 and 64. Trunk bifurcates at 4.5' high, and a prior limb cut at 4' high is decaying. Many other old large cuts. Diameter obtained at 2.5' high below the bulge. High crown. Leans away from #63 and 64, and ground opposite is flat. Has somewhat of a leggy form. Canopy is sparse with excessive limb weight.										
63	Chinese elm ( <i>Ulmus parvifolia</i> )	17	35	40%	20%	30%	Poor	Low		X
Comments: Shares planter with, and grows away from #62 and 64. Opposite the lean is a pronounced mound, indicating this tree partially uprooted sometime ago and presents an elevated risk of falling down. Has a one-sided canopy and history of limb failure. Excessive limb weight. Small girdling roots.										
64	Chinese elm ( <i>Ulmus parvifolia</i> )	20	60	70%	40%	30%	Fair	Moderate		X
Comments: Shares planter with #62 and 63, and grows away from both, resulting in an asymmetrical canopy. Excessive limb weight.										
65	Canary Island pine ( <i>Pinus canariensis</i> )	29	35	80%	50%	50%	Fair	Moderate		X
Comments: Asymmetrical canopy formed away from #66 and 67.										
66	Canary Island pine ( <i>Pinus canariensis</i> )	25	30	70%	50%	30%	Fair	Moderate		X
Comments: Asymmetrical canopy.										



**TREE INVENTORY TABLE**

TREE/ TAG NO.	TREE NAME	SIZE		CONDITION				Suitability for Preservation (High/Moderate/Low)	"Heritage Tree"	To Be Demol'd
		Trunk Diameter (in.)	Canopy Spread (ft.)	Health Condition (100%=Best, 0%=Worst)	Structural Integrity (100%=Best, 0%=Worst)	Form (100%=Best, 0%=Worst)	Overall Condition (Good/Fair/Poor/Dead)			
67	Canary Island pine ( <i>Pinus canariensis</i> )	21	25	70%	40%	30%	Fair	Moderate		X
Comments: Crowded conditions forming a nearly one-sided canopy away from #66 and 68. Excessive limb weight and deadwood.										
68	Canary Island pine ( <i>Pinus canariensis</i> )	30	40	80%	50%	20%	Fair	Moderate		X
Comments: Highly asymmetrical canopy being dominant towards west side. Entire trunk with a slight westerly lean, and ground opposite lean is flat.										
69	European white birch ( <i>Betula pendula</i> )	10	20	40%	20%	50%	Poor	Low		X
Comments: Massive decaying hollow along trunk. Dieback along top.										
70	Canary Island pine ( <i>Pinus canariensis</i> )	25	30	80%	60%	40%	Fair	Moderate		X
Comments: Has somewhat of an asymmetrical canopy.										
71	Coast live oak ( <i>Quercus agrifolia</i> )	31	70	80%	60%	30%	Fair	High	X	X
Comments: Broad and asymmetrical canopy. A few locations of discolored bark along the lower trunk, possibly by sycamore borers or other. Deadwood. Tussock moths. Injection sites around base.										
72	Crape myrtle ( <i>Lagerstroemia indica</i> )	2	5	70%	50%	50%	Fair	Moderate		
Comments: Has a stem wound. Dormant. Significantly pruned in past.										
73	Crape myrtle ( <i>Lagerstroemia indica</i> )	2	10	70%	50%	60%	Fair	Moderate		
Comments: Significantly pruned in past.										
74	Crape myrtle ( <i>Lagerstroemia indica</i> )	2	10	70%	50%	70%	Fair	Moderate		
Comments: Dormant. Significantly pruned in past.										



**TREE INVENTORY TABLE**

TREE/ TAG NO.	TREE NAME	SIZE		CONDITION				Suitability for Preservation (High/Moderate/Low)	"Heritage Tree"
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75	Crape myrtle <i>(Lagerstroemia indica)</i>	3	10	70%	50%	60%	Fair	Moderate	
Comments:									
76	Crape myrtle <i>(Lagerstroemia indica)</i>	3	15	80%	80%	80%	Good	Moderate	
Comments:									
77	Crape myrtle <i>(Lagerstroemia indica)</i>	3	15	70%	60%	60%	Fair	Moderate	
Comments:									
78	Crape myrtle <i>(Lagerstroemia indica)</i>	3	15	80%	60%	70%	Fair	Moderate	
Comments: At edge of #71 oak's canopy.									
79	Crape myrtle <i>(Lagerstroemia indica)</i>	3	10	70%	20%	20%	Poor	Low	
Comments: Highly crowded-growing conditions beneath #71 oak's canopy. Has old stem wounds.									

To Be Demol'd

**EXHIBIT B:**

**SITE MAP**

(one sheet)



**EXHIBIT C:**  
**PHOTOGRAPHS**  
(ten sheets)

**Photo Index**

**Page C-1:** Trees #1 thru 9

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**Page C-2:** Trees #10 thru 17

**Page C-7:** Trees #44 thru 57

**Page C-3:** Trees #18 thru 22

**Page C-8:** Trees #58 thru 61

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**Page C-9:** Trees #62 thru 69

**Page C-5:** Trees #30 thru 37

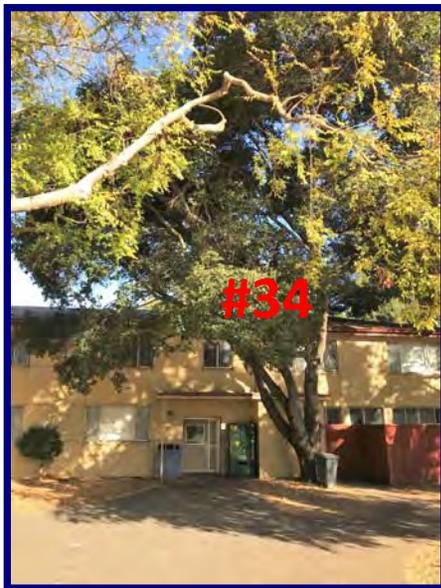
**Page C-10:** Trees #70 thru 79

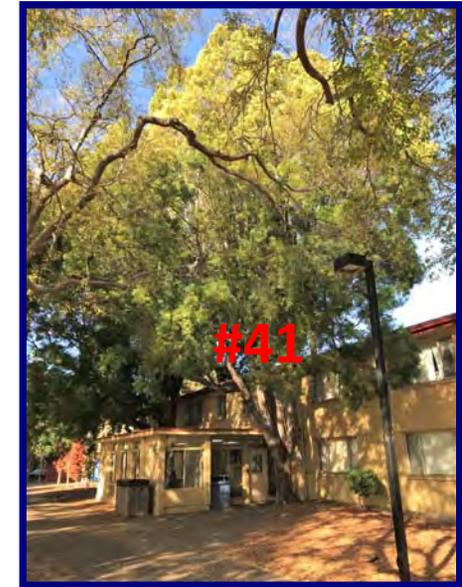




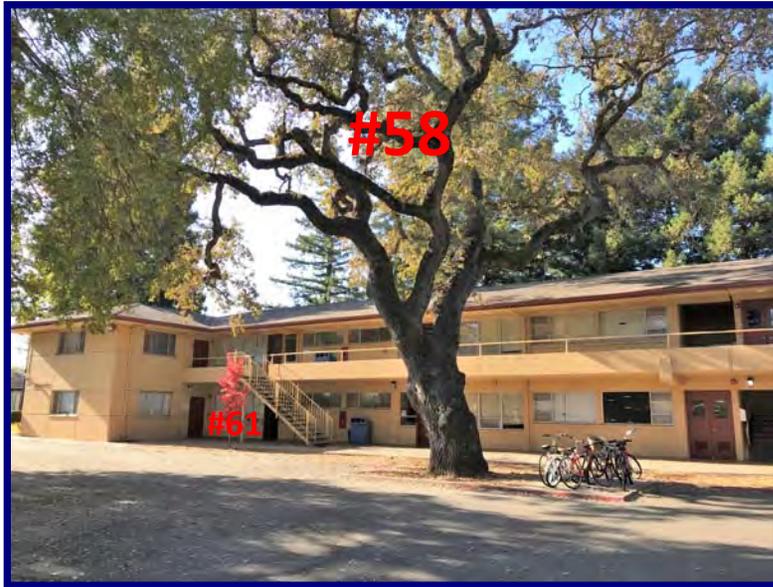


















May 20, 2020

via: email

Josh Wolff, P.E.  
Sandis  
1700 Winchester Blvd., Suite 200  
Campbell, CA 95008

RE: IMPACT ASSESSMENT | Trees #33, 34, 56 & 58  
Menlo College New Residence Hall | 1000 El Camino Real, Atherton

Dear Mr. Wolff:

This letter supplements my Arborist Report, dated 12/6/19; establishes that implementing the proposed design can achieve retention and adequate protection of all four, above-referenced trees; addresses the potential impacts anticipated during site work and building construction; and provides recommendations to achieve this protection (all recommendations presented herein are intended to be used in conjunction with those contained within my report). Plans reviewed for my analysis include your civil set dated 2/25/20, and a subsequent draft revision of C4.0 produced by you on 5/19/20. Comments consider site visits performed on 11/22/19 and 5/19/20, and specific information regarding each tree can be viewed within my 12/6/19 report. Directional references mentioned consider north being towards the top of plan sheets.

**TREE #58: Valley oak (55" trunk diameter)**

This is the massive oak in front of Michaels Hall. The building's foundation is proposed 22 feet east of its trunk, a distance being slightly inside 5 times the trunk diameter. The actual setback for root loss will be less to accommodate soil overexcavation, subexcavation and/or compaction required to construct the foundation, and should be confined to 24 inches beyond the foundation (i.e. 20 feet from the trunk) where within 35 feet from the trunk; this represents a distance of 4 to 5 times the trunk diameter. I regard this setback along one side of its root zone as minimally tolerable to avoid potential significant impacts, and accounts for an estimated root loss of 30- to 35-percent.



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The utility, grading and drainage design reviewed for this letter was found to present severe conflicts. Revisions have since been made, and provide protection of existing roots located up to 24 inches from the proposed foundation and 35 feet in all other directions; these setbacks can be regarded as this oak's Tree Protection Zone (TPZ). Note for this oak, my most recent site visit reveals it has declined slightly as compared to last year, evidenced by the additional dieback and deadwood throughout its canopy.

Impacts can also occur during installation of new paving, including for base material, curbs, gutters, edging and forms. This work can avoid potential impacts within the TPZ by avoiding excavation beneath the asphalt surface, as well as compaction of the soil subgrade; this can be achieved by utilizing existing base material underlying the existing asphalt. Should new base material be absolutely necessary for the future hardscape, work would need to be manually and slowly performed, perhaps in combination with a pneumatic air device (e.g. Airspade); roots of  $\geq 2$  inches in diameter retained during the process, not damaged, and kept continually moist; subgrade be no deeper than existing (i.e. beneath current base) and not directly compacted; Geogrid laid on the subgrade and around retained roots; and the future base consist of Class II with no fines, or perhaps CU-structural soil (and simply manually place around retained roots).

An additional impact consideration includes the amount of large limbs and branches (i.e. crown) requiring removal to facilitate constructing the three-story building and related exterior finish work. My assessment reveals this requires removing roughly 15- to 20-percent of the total crown, predominantly from its northeast side. The majority of its crown is currently concentrated towards the opposite, southwest direction over the building, and reduction of its northeast side will increase the asymmetry. Measures to minimize crown loss include establishing a maximum 6-foot width alongside the building's west side for scaffolding and manlift operation, and pruning work being highly selective and performed under my direction and supervision.



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**TREE #56: Canary Island pine (28" trunk diameter)**

This pine is situated within the paved courtyard area near and immediately northeast of oak #58. The building's foundation is proposed 15 feet from its trunk, and by minimizing the required overexcavation, etc. beyond the foundation to 24 inches, root loss will occur along one side of the tree at 13 feet from its trunk; this represents a distance slightly within 6 times the trunk diameter, and accounts for an estimated root loss of 25- to 30-percent. This is a minimally acceptable distance away to achieve retention. Revisions to the utility, grading and drainage design reviewed for this letter also align with this pine's TPZ of up to 24 inches from the building's foundation and 20 feet in all other directions.

One additional impact includes installing new hardscape within the TPZ, and can be appropriately addressed by adhering to specifications presented for paving around tree #58.

Another impact includes the loss of canopy to accommodate constructing the building, in which I found the amount and size of limbs requiring removal will be quite minor, less than 5- to 10-percent of the total crown. As with #58, in an effort to minimize canopy loss, the width for scaffolding and manlifts should be minimized to be 6 feet from the foundation.

**TREES #33 & 34: Coast live oaks (39" and 28" trunk diameters, respectively)**

These oaks are located along O'Brien Hall, flanking a walkway entering the west side near the building's southwest corner. Tree #33's TPZ is up to the existing building foundation and parking lot, and at least 25 feet in all other directions from its trunk. Tree #34's TPZ is up to the existing building foundation and at least 25 feet in all other directions from its trunk. The only potential impacts within their TPZs include proposed hardscape, which can be addressed by incorporating specifications mentioned for #56 and 58.



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Furthermore, where paving is proposed within existing planters (i.e. existing unpaved areas), the soil cut should be avoided altogether (i.e. a no-dig design); however, if essential, then restrict the depth to 3 or 4 inches, avoid compacting the soil subgrade (cover by Geogrid before base material is placed), and retain and protect encountered roots with diameters of  $\geq 2$  inches. Preferably, pavement within existing planter areas should be avoided altogether, or at least within the one west of #33's trunk (as represented on C8.0).

This concludes my letter, and please do not hesitate to contact me with any questions regarding the particular trees or proposed disposition.

Sincerely,

David L. Babby

Registered Consulting Arborist® #399

Board-Certified Master Arborist® #WE-4001B

CA Licensed Tree Service Contractor #796763 (C61/D49)

