COUNTY OF SAN MATEO
PLANNING AND BUILDING DEPARTMENT

DATE: January 24, 2024

TO: Planning Commission

FROM: Planning Staff

SUBJECT: EXECUTIVE SUMMARY: Consideration of a Coastal Development Permit, Design Review Permit, and Grading Permit, pursuant to Section 6328.4 and 6565.3 of the County Zoning Regulations and Section 9283 of the County Ordinance Code, respectively, to allow the construction of a 5,535 sq. ft., two-story single-family residence with an attached 644 sq. ft. two-car garage on a legal 26,571 sq. ft. blufftop lot located at 8322 Cabrillo Highway in the unincorporated Montara area of San Mateo County. The project involves 705 cubic yards (c.y.) of grading and the removal of five (5) significant trees. The property is located in the Cabrillo Highway County Scenic Corridor and the project is appealable to the California Coastal Commission. In conjunction with the requested permits, it is recommended that the Planning Commission determine that the project is categorically exempt from California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15303, Class 3(a).

County File Number: PLN2019-00299 (Lopes)

PROPOSAL

The applicant is seeking a Coastal Development Permit, Design Review Permit, and a Grading Permit to demolish an existing 3,000 sq. ft. home and construct a new 5,535 sq. ft. single-family residence with an attached 644 sq. ft. garage. The development is located on a legal 0.61-acre (26,571 sq. ft.) parcel on a coastal bluff top in Montara. The project includes 705 c.y. of grading (415 c.y. of cut and 290 c.y. of fill) for the house, garage, patio, driveway, and site/landscape improvements. The applicant is proposing the removal of five (5) significant Monterey cypress trees (18-36 inches in diameter at breast height) to facilitate development. As recommended by the County arborist, the applicant is required to replant two (2) Cypress trees for each of the trees to be removed.

RECOMMENDATION

That the Planning Commission approve the Coastal Development Permit, Design Review Permit, and Grading Permit, County File Number PLN 2019-00299, by adopting the required findings and conditions of approval listed in Attachment A.

SUMMARY

The proposed project has been evaluated and found to be in compliance with applicable General Plan and Local Coastal Program policies with regards to Sensitive Habitats, Visual Quality, Soil Resources, Hazards, Shoreline Access, Water and Wastewater policies. Grading of 705 cubic yards (415 c.y. of cut and 290 c.y. of fill) will be the minimum necessary to accommodate development. No vegetation in the public right of way will be removed as part of the project. All but five (5) of the existing trees on site will be retained and two (2) additional cypress trees will be replanted for the trees removed. Due to the existing vegetation the proposed single-family home will not be visible from Cabrillo Highway. All colors and materials will be neutral and blend into the surrounding environment. According to the California Natural Diversity Database (CNDDB), the site does not provide habitat and is not within the vicinity of known habitat for endangered or special-status plant or animal species. The site is developed with extensive impervious surfaces with no marsh or ponds on site, therefore, there is a low probability of new development impacting sensitive habitats.

The project is located on the west side of Cabrillo Highway with the bluff running along the west side of the parcel. The conditionally approved geological report shows that the granite has receded little in the past five decades. According to the geotechnical report which accounts for an estimated sea level rise of approximately 4 feet where the bluff top is approximately 75 feet above sea level, the economic lifespan of the proposed project will exceed the Local Coastal Program (LCP) requirement.

Staff has determined that the project is in compliance with all of the applicable Zoning Regulations, including the following:

	S-17 Development Standards	Proposed
Min. Building Site Area	5,000 sq. ft.	26,571 sq. ft.
Max. Site Coverage	35% (9,300 sq. ft)	6,005 sq. ft.
Max. Floor Area	6,200 sq. ft	6,179 sq. ft.
Min. Front Setback	20 ft.	37 ft.
Min. Rear Setback	20 ft.	20 ft.
Min. Side Setbacks	5 ft. min with combined total of 15 ft.	Left: 5 ft. Right: 10 ft.
Max. Building Height	28 ft.	22 ft. / 2 stories
Min. Parking Spaces	2 covered	2-car garage

Coastside Design Review Committee

On August 10, 2023, the Coastside Design Review Committee (CDRC) adopted the findings to recommend project approval with conditions, pursuant to the Design Review Standards for One-family Residential Development in the Midcoast, Section 6565.20 of the San Mateo County Zoning Regulations.

Midcoast Community Council

The Midcoast Community Council (MCC) reviewed the project and expressed concerns regarding the potential for shoreline armoring, proximity of development to the bluff edge, existing dense tree canopies blocking coastal views, encroachment of an existing concrete wall onto State Parks property, and inconsistent uses of the single-family residentially zoned property. The Midcoast Community Council's comment letter is included as Attachment F.

The project was reviewed by California Coastal Commission staff who recommended the bluff analysis for determining development placement onsite be completed pursuant to LCP Policy 9.8 (*Regulation of Development on Coastal Bluff Tops*), which includes consideration of a 50-year economic lifespan for structures. As discussed in Section A.2.d. of the staff report, the proposed development has been designed in accordance with the analysis and in compliance with LCP Policy 9.8. A previously proposed retaining wall on the west side of the property has been eliminated and a condition of approval has been included in Attachment A to prohibit shoreline armoring in the future. The proposed project would not block any existing coastal views, nor does the project propose changes to the existing trees along the front property line, within the Caltrans right-of-way. The existing concrete retaining wall was installed prior to the Coastal Act and the project does not propose any modifications to the structure. Any uses of the property that are not permitted within the single-family residential zone would be subject to action by the County's Code Compliance Section.

Environmental Review

The project is exempt from environmental review pursuant to the CEQA Guidelines, Section 15303, Class 3(a), which exempts construction of structures including new single-family residences in residential zones. The development is located in an urbanized residential zoning district and will be served by all public services.

2024_1_11_PLN2019-00299_PCES_WPC_FINAL

COUNTY OF SAN MATEO
PLANNING AND BUILDING DEPARTMENT

DATE: January 24, 2024

TO: Planning Commission

FROM: Planning Staff

SUBJECT: Consideration of a Coastal Development Permit, Design Review Permit, and Grading Permit, pursuant to Section 6328.4 and 6565.3 of the County Zoning Regulations and Section 9283 of the County Ordinance Code, respectively, to allow the construction of a 5,535 sq. ft., 2-story single family residence with an attached 644 sq. ft. two-car garage on a legal 26,571 sq. ft. blufftop lot located at 8322 Cabrillo Highway in the unincorporated Montara area of San Mateo County. The project involves 705 cubic yards of grading and the removal of five (5) significant trees. The property is located in the Cabrillo Highway County Scenic Corridor and the project is appealable to the California Coastal Commission. In conjunction with the requested permits, it is recommended that the Planning Commission determine that the project is categorically exempt from California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15303, Class 3(a).

County File Number: PLN 2019-00299 (Lopes)

PROPOSAL

The applicant is seeking a Coastal Development Permit, Design Review Permit, and a Grading Permit to demolish an existing 3,000 sq. ft. home and construct a new 5,535 sq. ft. single-family residence with an attached 644 sq. ft. garage. The development is located on a legal 0.61-acre (26,571 sq. ft.) parcel on a coastal bluff top in Montara. The project includes 705 cubic yards (c.y.) of grading (415 c.y. of cut and 290 c.y. of fill) for the house, garage, patio, driveway, and site/landscape improvements. The applicant is proposing the removal of five (5) significant Monterey cypress trees (18-36 inches in diameter at breast height) to facilitate development. As recommended by the County arborist, the applicant is required to replant two (2) Cypress trees for each of the trees to be removed.

Photo 1-Exterior Rendering -East

RECOMMENDATION

That the Planning Commission approve the Coastal Development Permit, Design Review Permit, and Grading Permit, County File Number PLN 2019-00299, by adopting the required findings and conditions of approval listed in Attachment A.

BACKGROUND

Report Prepared By: Kanoa Kelley, Project Planner; Email: kkelley@smcgov.org

Owner: Kehoe Properties LLC

Applicant: Pacific Peninsula Architecture - Sean Lopes

Public Notification: Ten (10) day advanced notification for the hearing was mailed to property owners within 300 feet of the project parcel and a notice for the hearing was posted in a newspaper (San Mateo Times and Half Moon Bay Review) of general public circulation.

Location: 8322 Cabrillo Highway, Montara

APN: 036-046-420

Parcel Size: 0.61 acres (26,571 sq. ft.)

Existing Zoning: R-1/S-17/DR/CD (One-family Residential/S-17 Combining District/Design Review/Coastal Development)
General Plan Designation: Medium Density Residential

Sphere-of-Influence: Half Moon Bay

Existing Land Use: Single-family Residential

Water Supply: Continued water service to be provided by Montara Water and Sanitary District.

Sewage Disposal: Continued sewer service to be provided by the Montara Water and Sanitary District.

Flood Zone: Zone X (areas of minimal flood), pursuant to Federal Emergency Management Agency, Flood Insurance Rate Map, Community Panel 06081C0117F, effective August 02, 2017.

Environmental Evaluation: The project is exempt from environmental review pursuant to the California Environmental Quality Act (CEQA) Guidelines, Section 15303, Class 3(a), which exempts construction of structures including new single-family residences in residential zones. The development is located in an urbanized residential zoning district and will be served by all public services.

Setting: The project site is currently developed with a 3,000 sq. ft. single-family residence with accompanying hardscape and trees. The property is located west of Cabrillo Highway, within the Cabrillo Highway County Scenic Corridor, on a coastal bluff. The site is surrounded by single-family residential development. Access to the property is provided off of Seacliff Court.

Chronology:

Date		Action
November 29, 2018	-	Design Review Pre-application, PRE2018-00063.
August 9, 2019	-	Subject application submitted.
September 7, 2022	-	Property sold to new owner. The new owner revised scope of the project and resubmitted plans.
July 14, 2023	-	Application deemed adequately complete for purpose of a Coastside Design Review Committee meeting.
August 10, 2023	-	Coastside Design Review Committee (CDRC) hearing; the CDRC recommended approval with conditions.

September 27, 2023 - Application deemed complete.

January 24, 2024 - Planning Commission public hearing.

DISCUSSION

A. KEY ISSUES

1. Conformance with the General Plan

Staff has reviewed the project for compliance with all of the applicable General Plan policies, including the following:

a. Vegetative, Water, Fish, and Wildlife Resources

Policies 1.28 (*Regulate Development to Protect Sensitive Habitats*) and 1.29 (*Establish Buffer Zones*) seek to regulate development activities within or adjacent to sensitive habitat to protect endangered plants and animals and establish necessary buffer zones to protect these areas from encroachment by development.

According to the California Natural Diversity Database (CNDDB), the site does not provide habitat and is not within the vicinity of known habitat for endangered or special-status plant or animal species. The site is developed with extensive impervious surfaces with no marsh or ponds on site, therefore, there is a low probability of new development impacting sensitive habitats.

b. Soil Resources

Policy 2.17 (*Regulate Development to Minimize Soil Erosion and Sedimentation*) seeks to minimize soil erosion and sedimentation. The project would include 705 cubic yards (c.y.) of grading. Specifically, the grading activities necessary to prepare the site for the new single-family home will require 415 c.y. of cut and 290 c.y. of fill to accommodate the building's foundation. The required implementation of erosion control measures will ensure that soil erosion is minimized during construction. All grading will be confined to already developed areas and will maintain a 20 feet or more buffer from the bluff edge. A geogrid and groundcover will be installed and maintained on the areas of the bluff identified as shallow landslide areas with sediment deposits. Additionally, impervious surfaces will be reduced as part of the project, which will improve drainage on site.

c. Visual Quality Policies

Policy 4.15 (*Appearance of New Development*) and Policy 4.22 (*Scenic Corridors*) seek to regulate development to promote good design, site relationships, and to protect and enhance the visual quality of development within designated scenic corridors.

General Plan Table 4.6 designates Cabrillo Highway (State Route 1) from Junipero Serra Freeway to the northern limits of the City of Half Moon Bay as a County Scenic Corridor. Adjacent to Cabrillo Highway, the project parcel and project site fall within the Cabrillo Highway County Scenic Corridor. The parcel is located west of Cabrillo Highway and the new single-family residence will be located approximately 70 feet west of Cabrillo Highway. As shown in Photo 2 below, due to existing vegetation in the right-of-way, which will be maintained, no structures will be visible from Cabrillo Highway. Of the 18 trees on or adjacent to the property all but 6 trees will be preserved, thus, further shielding proposed development from public view.

Photo 1-Existing View from Cabrillo Highway

Policy 4.36 (*Urban Area Design Concept*) calls for new development to maintain and, where possible, improve upon the appearance and visual character of development in urban areas and to ensure that new development in urban areas is designed and constructed to contribute to the orderly and harmonious development of the locality. The project, as reviewed by the Coastside Design Review Committee on August 10, 2023, was found to be compliant with the applicable design review standards. Based on the foregoing, the project would be compatible with the surrounding developments and the development pattern of the neighborhood.

d. Urban Land Uses Policies

Policies 8.9 (*Designation of Existing Urban Communities*), 8.30 (*Infilling*), and 8.36 (*Uses*) seek to designate Montara as an existing urban community, encourage infilling of urban areas where infrastructure and services are available, and allow uses in zoning districts that are consistent with the overall land use designation.

The project will be located on land that has already been developed and will utilize existing utility infrastructure. The single-family use is consistent with the R-1 zoning designation which allows low density residential uses.

Policy 8.40 (*Parking Requirements*) seeks to ensure minimum on-site parking requirements and standards are met in order to, among other things, accommodate the parking needs of the development, provide convenient and safe access, and prevent congestion of public streets. The project will provide a two-car garage which will meet the parking requirements outlined in Section 6119 of the County Zoning Regulations, calculated at 2 parking spaces for dwellings having 2 or more bedrooms.

e. Water Supply and Wastewater

Water Supply Policies 10.10 (*Water Suppliers in Urban Areas*) and 10.12 (*Coordination of Water Suppliers*) consider water systems as the appropriate water supply for urban areas and seek to ensure water providers have capacity commensurate with the level of development permitted by adopted land use plans. The project property is currently served by Montara Water and Sanitary District (MWSD). The proposed project has been preliminarily reviewed and MWSD did not raise any objections to the ability to continue providing service.

Wastewater Policies 11.4 (*Adequate Capacity for Unincorporated Areas*) and 11.5 (*Wastewater Management in Urban Areas*) consider sewerage systems as the appropriate method of wastewater management in urban areas and seek to ensure adequate capacity is available for unincorporated areas. The subject parcels are currently served by Montara Water and Sanitary District (MWSD). MWSD has indicated that there is capacity to serve the project but a new sewer lateral and grinder pump along with a mainline extension may be required.

2. Conformance with Local Coastal Program (LCP) Policies

Staff has determined that the proposed development conforms to all applicable LCP policies, specifically:

a. Locating and Planning New Development

Policy 1.19 (*Ensure Adequate Public Services and Infrastructure for New Development in Urban Areas*) states that new development in urban areas shall not be approved unless they can demonstrate adequate water and wastewater supplies.

As detailed in Section A.1.e of this staff report, Montara Water and Sanitary District have stated that there is adequate capacity to serve the project though a new sewer lateral and grinder pump, and a mainline extension may be required.

b. Sensitive Habitats Component

Policy 7.1 (*Definition of Sensitive Habitats*) defines sensitive habitats as “habitats containing or supporting rare and endangered species as defined by the State Fish and Game Commission” and includes riparian corridors and wetlands.

As mentioned previously, according to the CNDDB the site does not support any sensitive habitat and is not within the vicinity of known habitat for endangered or special-status plant or animal species. As the site is developed with extensive impervious surfaces with no marsh or ponds on site, there is low probability of development impacting sensitive habitats.

c. Visual Resources

Policy 8.12.a (*General Regulations*) seeks to apply design review regulations for one- and two-family developments in the midcoast. The Coastside Design Review Committee recommended approval of

the project at their August 10, 2023 meeting. See Section 3.b. for compliance with the County's Design Review regulations.

Policy 8.13.a (*Special Design Guidelines for Coastal Communities: Montara*) and 8.15 (*Coastal Views*) require that structures be designed to fit into existing topography and not require extensive cutting or grading, employ use of natural colors and materials and be designed to fit the scale and character of their setting and blend in with the natural environment. These policies also state that structures should be designed to minimize the blocking of views along the ocean shoreline.

The project employs a neutral color palette and the use of high-quality natural materials such as wood and stone that introduce textures and colors that blend into the natural environment. The project will be nestled into the existing topography ensuring the height stays below the maximum and will not intrude into the views from the scenic highway. Grading is not extensive and only limited to construction activity.

Policy 8.31 (*Regulation of Scenic Corridors in Rural Areas*) seeks to apply polices of the Scenic Road Element of the General Plan. See General Plan Visual Quality policies discussed in Section 1.c.

d. Hazards Component

Policy 9.8 (*Regulation of Development on Coastal Bluff Tops*) permits cliff top development only if the setback and design are adequate to ensure stability for at least 50 years. The project is located on the west side of Cabrillo Highway with the bluff running along the west side of the parcel. The conditionally approved geological report shows that the granite has receded little in the past 5 decades. According to the geotechnical report which accounts for an estimated sea level rise of approximately 4 feet where the bluff top is approximately 75 feet above sea level, the economic lifespan of the proposed project will exceed the LCP requirement.

e. Shoreline Access Component

Policies 10.1 (*Permit Conditions for Shoreline Access), 10.8 (Appropriate Locations for Shoreline Access*), and 10.9 (*Public Safety*) require some provision for shoreline access for projects between the sea and the nearest road when physical conditions allow for safe access improvements. The project site is located between the first public through road and the sea. The site is surrounded by existing residential development to the north and south. Due to the shear cliffs along this stretch of land west of Cabrillo Highway, there is no beach

access in this area and conditions would make it difficult to provide safe access improvements. Access to the bluff top is provided by Sea Cliff Court, a County maintained roadway that ends at the bluff edge. The project will maintain the property's development configuration and will not block existing public access to Sea Cliff Court or to any coastal beaches, bluffs or trails in the area.

3. Conformance with the Zoning Regulations

a. The project parcel is zoned R-1/S-17/DR/CD (One-family Residential/S-17 Combining District/Design Review/Coastal Development). Staff has determined that the project is in compliance with all of the applicable Zoning Regulations, including the following:

	S-17 Development Standards	**Proposed**
Min. Building Site Area	5,000 sq. ft.	26,571 sq. ft.
Max. Site Coverage	35% (9,300 sq. ft)	6,005 sq. ft.
Max. Floor Area	6,200 sq. ft	6,179 sq. ft.
Min. Front Setback	20 ft.	37 ft.
Min. Rear Setback	20 ft.	20 ft.
Min. Side Setbacks	5 ft. min with combined total of 15 ft.	Left: 5 ft. Right: 10 ft.
Max. Building Height	28 ft.	22 ft. / 2 stories
Min. Parking Spaces	2 covered	2-car garage

b. Conformance with Design Review Regulations

On August 10, 2023, the Coastside Design Review Committee (CDRC) adopted the findings to recommend project approval with conditions, pursuant to the Design Review Standards for One-family Residential Development in the Midcoast, Section 6565.20 of the San Mateo County Zoning Regulations, specifically elaborated as follows:

(1) Section 6565.20(C) SITE PLANNING AND STRUCTURE PLACEMENT; 1. Integrate Structures with the Natural Setting; a. Trees and Vegetation; Standards (1): Tree and vegetation removal has been minimized to the extent necessary for the

construction of the structure. The proposed structure is located and designed to retain and blend with the natural vegetation and landforms of the site and is complementary to adjacent neighborhood structures.

(2) Section 6565.20(C) SITE PLANNING AND STRUCTURE PLACEMENT; 2. Complement Other Structures in the Neighborhood; a. Privacy; Standards (1): Windows, entrances, and decks have been located, oriented, and designed to minimize and mitigate direct views into neighboring houses.

(3) Section 6565.20(C) SITE PLANNING AND STRUCTURE PLACEMENT; 2. Complement Other Structures in the Neighborhood; b. Views; Standards: The home design minimizes the effect on views from neighboring houses.

(4) Section 6565.20(D) ELEMENTS OF DESIGN; 1. Building Mass, Shape & Scale; a. Relationship to Existing Topography; Standards (1): The structures conform to the existing topography by stepping down the hillside in the same direction as the grade.

(5) Section 6565.20(D) ELEMENTS OF DESIGN; 1. Building Mass, Shape & Scale; a. Relationship to Existing Topography; Standards (2): The structures minimize unused, enclosed space between the lowest floor and the grade below.

(6) Section 6565.20(D) ELEMENTS OF DESIGN; 1. Building Mass, Shape & Scale; b. Neighborhood Scale; Standards (1): The proposed home respects the general scale of the neighborhood.

(7) Section 6565.20(D) ELEMENTS OF DESIGN; 4. Exterior Materials and Colors; Standards (c. Quantity): (1) A number of exterior materials and colors have been used that are consistent with the neighborhood and architectural style of the house. Standards (2)(3): The project uses three or more colors and materials that serve to reduce the appearance of bulk, emphasize architectural features, and break up large surfaces.

(8) Section 6565.20(D) ELEMENTS OF DESIGN; 3. Roof Design; a. Massing and Roof Forms; Standards (3): Non-reflective roof materials and colors have been specified.

(9) Section 6565.20(F) LANDSCAPING, PAVED AREAS, FENCES, LIGHTING AND NOISE; 1. Landscaping; Standards (a): A landscape plan has been prepared according to the County's Minimum Standards for Landscape Plans.

The following conditions were recommended by the CDRC and are included in the recommended project conditions in Attachment A:

(1) Section 6565.20(D) ELEMENTS OF DESIGN; 1. Building Mass, Shape & Scale; d. Daylight Plane/Facade Articulation; Standards (2): Facade Articulation Option - Facade articulation shall be provided on all building sides and is subject to approval by the Design Review Committee. Facade articulation is intended to break up the appearance of shear walls through the placement of projecting and recessing architectural details.

Modify the south elevation by insetting or outsetting the courtyard(s) louvered panels a min. 6-inch to max. 24-inch (maintaining zoning regulation compliance) to add articulation to the south elevation of the structure.

(2) All exterior lighting shall be "night sky" compliant.

(3) All windows shall include bird-sensitive glazing.

4. Conformance with the Grading Ordinance

The project proposes 705 cubic yards of grading (415 c.y. of cut and 290 c.y. of fill) to accommodate the proposed development. The following findings must be made pursuant to Section 9290 of the San Mateo County Grading Ordinance to approve the grading permit:

a. The granting of the permit will not have a significant adverse effect on the environment.

The project is in conformance with the applicable General Plan, LCP, and Zoning District policies and standards that seek to minimize impacts to soils, sensitive habitats, hazards, and visual quality. The proposed grading is necessary to support redevelopment of the property for single-family residential use.

Further, this project has been reviewed and recommended for conditional approval by the County's Department of Public Works, Drainage Section, Geotechnical Section, and the Building Inspection Section. The Coastside Fire Protection District has also reviewed and conditionally approved the project. Implementation of the proposed grading plans prepared by a licensed civil engineer, including the erosion and sediment control plan, and associated conditions of approval will ensure the project will not have a significant adverse effect on the environment.

b. The project conforms to the criteria of Chapter 5, Division VII, of the San Mateo County Ordinance Code, including the standards referenced in Section 9296.

The project will conform to standards in the Grading Ordinance, including those relative to an erosion and sediment control plan, dust control plan, fire safety, and the timing of grading activity. The project plans have been reviewed and recommended for approval by the Geotechnical Section, the Department of Public Works, and Drainage Review Section.

c. The project is consistent with the General Plan.

The project has been reviewed against the applicable policies of the San Mateo County General Plan and found to be consistent with its goals and objectives. See Section A.1 of this report for a detailed discussion regarding the project's compliance with the applicable General Plan policies.

B. MIDCOAST COMMUNITY COUNCIL

The Midcoast Community Council (MCC) reviewed the project and expressed concerns regarding the potential for shoreline armoring, proximity of development to the bluff edge, existing dense tree canopies blocking coastal views, encroachment of an existing concrete wall onto State Parks property, and inconsistent uses of the single-family residentially zoned property. MCC's comment letter is included as Attachment F.

The project was reviewed by California Coastal Commission staff who recommended the bluff analysis for determining development placement onsite be completed pursuant to LCP Policy 9.8 (*Regulation of Development on Coastal Bluff Tops*), which includes consideration of a 50-year economic lifespan for structures.

As discussed in Section A.2.d. above, the proposed development has been designed in accordance with the analysis and in compliance with LCP Policy 9.8. A previously proposed retaining wall on the west side of the property has been eliminated and a condition of approval has been included in Attachment A to prohibit shoreline armoring in the future. The proposed project would not block any existing coastal views, nor does the project propose changes to the existing trees along the front property line, within the Caltrans right-of-way. The existing concrete retaining wall was installed prior to the Coastal Act and the project does not propose any modifications to the structure. Any uses of the property that are not permitted within the single-family residential zone would be subject to action by the County's Code Compliance Section.

C. ENVIRONMENTAL REVIEW

The project is exempt from environmental review pursuant to the California Environmental Quality Act (CEQA) Guidelines, Section 15303, Class 3(a), which exempts construction of structures including new single-family residences in residential zones. The development is located in an urbanized residential zoning district and will be served by all public services.

D. REVIEWING AGENCIES

Building Inspection Section
Drainage Section
Geotechnical Section
Department of Public Works
Coastside Fire Protection District
Montara Water and Sanitary District (MWSD)
Midcoast Community Council
California Coastal Commission

ATTACHMENTS

A. Recommended Findings and Conditions of Approval
B. Vicinity Map
C. Project Plans
D. Geotechnical Report
E. Arborist Report
F. Midcoast Community Council Comment Letter (March 22, 2023)

2024_1_9_PLN2019-00299_PCSR_WPC_FINAL

Attachment A

County of San Mateo
Planning and Building Department

RECOMMENDED FINDINGS AND CONDITIONS OF APPROVAL

Project File Number: PLN 2019-00299 Hearing Date: January 24, 2023

Prepared By: Kanoa Kelley, Project Planner For Adoption By: Planning Commission

RECOMMENDED FINDINGS

Regarding Environmental Review, Find:

1. That the project is exempt from environmental review pursuant to the California Environmental Quality Act (CEQA) Guidelines, Section 15303, Class 3(a), which exempts construction of structures including new single-family residences in residential zones. The development is located in an urbanized residential zoning district and will be served by all public services.

Regarding the Coastal Development Permit, Find:

2. That the project, as described in the application and accompanying materials required by Section 6328.7 and as conditioned in accordance with Section 6328.14, conforms with the plans, policies, requirements and standards of the San Mateo County Local Coastal Program as described in Section A.2 of the staff report related to Locating and Planning New Development, Sensitive Habitats, Visual Resources, Shoreline Access, and Hazards Components.

3. That the project is located between the nearest public road and the sea, or the shoreline of Pescadero Marsh, and conforms with the public access and public recreation policies of Chapter 3 of the Coastal Act of 1976 (commencing with Section 30200 of the Public Resources Code) as the project will not obstruct existing public bluff top access to Sea Cliff Court, or any existing beaches, bluffs, or trails in the area; and physical limitations of the area, specifically the sheer cliffs of this stretch of coastline, prevent additional safe access improvements.

4. That the project conforms to specific findings required by policies of the San Mateo County Local Coastal Program with regard to Locating and Planning New Development, Sensitive Habitats, Visual Resources, Shoreline Access, and Hazards Components as the project incorporates conditions to comply with erosion control requirements and the design is consistent with Coastside Design Review standards for single-family residential buildings.

The project is not in or near a sensitive habitat area and conforms with the land use and density designations of the General Plan and Local Coastal Program. Furthermore, the project has been reviewed and conditionally approved by the geotechnical review section.

5. That the number of building permits for construction of single-family residences other than for affordable housing issued in the calendar year does not exceed the limitations of LCP Policy 1.23. San Mateo County is not projected to exceed the 40 unit maximum for the 2024 calendar year, based on the previous calendar year's total.

Regarding the Design Review Permit, Find:

6. Section 6565.20(C) SITE PLANNING AND STRUCTURE PLACEMENT; 1. Integrate Structures with the Natural Setting; a. Trees and Vegetation; Standards (1): Tree and vegetation removal has been minimized to the extent necessary for the construction of the structure. The proposed structure is located and designed to retain and blend with the natural vegetation and landforms of the site, and is complementary to adjacent neighborhood structures.

7. Section 6565.20(C) SITE PLANNING AND STRUCTURE PLACEMENT; 2. Complement Other Structures in the Neighborhood; a. Privacy; Standards (1): Windows, entrances, and decks have been located, oriented, and designed to minimize and mitigate direct views into neighboring houses.

8. Section 6565.20(C) SITE PLANNING AND STRUCTURE PLACEMENT; 2. Complement Other Structures in the Neighborhood; b. Views; Standards: The home design minimizes the effect on views from neighboring houses.

9. Section 6565.20(D) ELEMENTS OF DESIGN; 1. Building Mass, Shape & Scale; a. Relationship to Existing Topography; Standards (1): The structures conform to the existing topography by stepping down the hillside in the same direction as the grade.

10. Section 6565.20(D) ELEMENTS OF DESIGN; 1. Building Mass, Shape & Scale; a. Relationship to Existing Topography; Standards (2): The structures minimize unused, enclosed space between the lowest floor and the grade below.

11. Section 6565.20(D) ELEMENTS OF DESIGN; 1. Building Mass, Shape & Scale.; b. Neighborhood Scale; Standards (1): The home respects the general scale of the neighborhood.

12. Section 6565.20(D) ELEMENTS OF DESIGN; 4. Exterior Materials and Colors; Standards (c. Quantity): (1) A number of exterior materials and colors have been used that are consistent with the neighborhood and architectural style of the house. Standards (2)(3): The project uses three or more colors and materials that serve to reduce the appearance of bulk, emphasize architectural features, and break up large surfaces.

13. Section 6565.20(D) ELEMENTS OF DESIGN; 3. Roof Design; a. Massing and Roof Forms; Standards (3): Non-reflective roof materials and colors have been specified.

14. Section 6565.20(F) LANDSCAPING, PAVED AREAS, FENCES, LIGHTING AND NOISE; 1. Landscaping; Standards (a): A landscape plan has been prepared according to the County's Minimum Standards for Landscape Plans.

Regarding the Grading Permit, Find:

15. That the granting of the permit will not have a significant adverse effect on the environment as the project conforms with the applicable General Plan, LCP, and Zoning District policies and standards that seek to minimize impacts to soils, sensitive habitats, hazards, and visual quality. Further, this project has been reviewed and recommended for conditional approval by the County's Department of Public Works, Drainage Section, Geotechnical Section, and by the Coastside Fire Protection District. Implementation of the proposed grading plans prepared by a licensed civil engineer, including the erosion and sediment control plan, and associated conditions of approval will ensure the project will not have a significant adverse effect on the environment.

16. That the project conforms to the criteria of Chapter 5, Division VII, of the San Mateo County Ordinance Code, including the standards referenced in Section 9296 as it will conform to standards in the Grading Ordinance, including those related to an erosion and sediment control plan, dust control plan, fire safety, and the timing of grading activity.

17. That the project is consistent with the goals and objectives of the General Plan as discussed in Section A.1 of the staff report dated January 24, 2024.

RECOMMENDED CONDITIONS OF APPROVAL

Current Planning Section

1. The project shall be constructed in compliance with the plans reviewed by the Coastside Design Review Committee and approved by the Planning Commission on January 24, 2023. Any changes or revisions to the approved plans shall be submitted to the Director of Planning and Building for review and approval prior to implementation. Minor adjustments to the project design may be approved by the Design Review Officer if they are consistent with the intent of and are in substantial conformance with this approval. Alternatively, the Design Review Officer may refer consideration of the revisions to the Coastside Design Review Committee, with applicable fees to be paid.

2. The final approval of the subject permits shall be valid for five (5) years from the date of final approval, in which time a valid building permit shall be issued for the work and a completed inspection (to the satisfaction of the Building Official) shall have occurred within one (1) year of the associated building permit's issuance. This approval may be extended by a 1-year increment with submittal of an application for permit extension and payment of applicable extension fees sixty (60) days prior to the expiration date.

3. The applicant shall provide "finished floor elevation verification" to certify that the structure is actually constructed at the height shown on the submitted plans. The applicant shall have a licensed land surveyor or engineer establish a baseline elevation datum point in the vicinity of the construction site.

    a. The applicant shall maintain the datum point so that it will not be disturbed by the proposed construction activities until final approval of the building permit.

    b. This datum point and its elevation shall be shown on the submitted site plan. This datum point shall be used during construction to verify the elevation of the finished floors relative to the existing natural or to the grade of the site (finished grade).

    c. Prior to the County Planning Department approval of the building permit application, the applicant shall also have the licensed land surveyor or engineer indicate on the construction plans: (1) the natural grade elevations at the significant corners (at least four) of the footprint of the proposed structure on the submitted site plan, and (2) the elevations of proposed finished grades. In addition, (1) the natural grade elevations at the significant corners of the proposed structure, (2) the finished floor elevations, (3) the topmost elevation of the roof,

and (4) the garage slab elevation must be shown on the plan, elevations, and cross-section (if one is provided).

d. Once the building is under construction, prior to the below floor framing inspection or the pouring of the concrete slab (as the case may be) for the lowest floor(s), the applicant shall provide to the Building Inspection Section a letter from the licensed land surveyor or engineer certifying that the lowest floor height, as constructed, is equal to the elevation specified for that floor in the approved plans. Similarly, certifications on the garage slab and the topmost elevation of the roof are required.

e. If the actual floor height, garage slab, or roof height, as constructed, is different than the elevation specified in the plans, then the applicant shall cease all construction and no additional inspections shall be approved until a revised set of plans is submitted to and subsequently approved by both the Building Official and the Director of Planning and Building.

4. The applicant shall demonstrate the following on plans submitted for a building permit, as stipulated by the Coastside Design Review Committee:

a. Facade articulation shall be provided on all building sides, and is subject to approval by the Design Review Committee. Facade articulation is intended to break up the appearance of shear walls through the placement of projecting and recessing architectural details.

b. Modify the south elevation by insetting or outsetting the courtyard(s) louvered panels a min. 6-inch to max. 24-inch (maintaining zoning regulation compliance) to add articulation to the south elevation of the structure.

c. All exterior lighting shall be “night sky” compliant.

d. All windows shall include bird-sensitive glazing.

5. The applicant shall consider incorporating erosion/stabilizing plantings in the landscape, particularly in the bluff top areas of the property as suggested by the Coastside Design Review Committee:

6. Per Section 9296.5 of Division VII (Building Regulations) of the San Mateo County Ordinance Code, all equipment used in grading operations shall meet spark arrester and firefighting tool requirements, as specified in the California Public Resources Code.

7. The property owner shall submit a schedule of all grading operations to the Current Planning Section, subject to review and approval by the Current Planning Section. The submitted schedule shall include a schedule for winterizing the site. If the schedule of grading operations calls for the grading to be completed in one grading season, then the winterizing plan shall be considered a contingent plan to be implemented if work falls behind schedule. All submitted schedules shall represent the work in detail and shall project the grading operations through to completion.

8. No grading shall be allowed during the winter season (October 1 to April 30) or during any rain event to avoid potential soil erosion unless prior written request by the applicant is submitted to the Director of Planning and Building at least two (2) weeks prior to the projected commencement of grading activities and that request is approved. Exceptions will only be granted if dry weather is forecasted during scheduled grading operations, and the erosion control plan includes adequate winterization measures (amongst other determining factors).

9. The site is considered a Construction Stormwater Regulated Site (SWRS). Any grading activities conducted during the wet weather season (October 1 to April 30) will require monthly erosion and sediment control inspections by the Building Inspection Section, as well as prior authorization from the Director of Planning and Building to conduct grading during the wet weather season.

10. An Erosion Control and/or Tree Protection Pre-Site Inspection shall be conducted prior to the issuance of a grading permit “hard card” and building permit to ensure the approved erosion control and/or tree protection measures are installed adequately prior to the start of ground disturbing activities.

11. No grading activities shall commence until the applicant has been issued a grading permit “Hard Card”, which will only be issued concurrently with the associated building permit.

12. The engineer who prepared the approved grading plan shall be responsible for the inspection and certification of the grading as required by Section 9297.2 of the Grading Ordinance. The engineer’s responsibilities shall include those relating to non-compliance detailed in Section 9297.4 of the Grading Ordinance.

13. Erosion and sediment control during the course of grading work shall be installed and maintained according to a plan prepared and signed by the engineer of record, and approved by the Department of Public Works and the Current Planning Section. Revisions to the approved erosion and sediment control plan shall be prepared and signed by the engineer, and must be reviewed and approved by the Department of Public Works and the Current Planning Section.

14. It shall be the responsibility of the engineer of record to regularly inspect the erosion control measures for the duration of all grading activities, especially after major storm events, and determine that they are functioning as designed and that proper maintenance is being performed. Deficiencies shall be immediately corrected, as determined by and implemented under the observation of the engineer of record.

15. Noise sources associated with demolition, construction, repair, remodeling, or grading of any real property shall be limited to the hours from 7:00 a.m. to 6:00 p.m., weekdays and 9:00 a.m. to 5:00 p.m., Saturdays. Said activities are prohibited on Sundays, Thanksgiving, and Christmas (San Mateo County Ordinance Code Section 4.88.360).

16. At the building permit application stage, the project shall demonstrate compliance with the Water Efficient Landscape Ordinance (WELO) and provide the required information and forms if applicable.

17. The applicant shall plant on-site a total of two (2) Monterey cypress trees using at least 15-gallon size stock, for each of the five (5) trees approved for removal. Replacement planting shall be confirmed prior to building inspection final.

18. The property owner shall adhere to the San Mateo Countywide Stormwater Pollution Prevention Program “General Construction and Site Supervision Guidelines,” including, but not limited to, the following:

    a. Delineation with field markers of clearing limits, easements, setbacks, sensitive or critical areas, buffer zones, trees, and drainage courses within the vicinity of areas to be disturbed by construction and/or grading.

    b. Protection of adjacent properties and undisturbed areas from construction impacts using vegetative buffer strips, sediment barriers or filters, dikes, mulching, or other measures as appropriate.

    c. Performing clearing and earth-moving activities only during dry weather.

d. Stabilization of all denuded areas and maintenance of erosion control measures continuously between October 1 and April 30.

e. Storage, handling, and disposal of construction materials and wastes properly, so as to prevent their contact with stormwater.

f. Control and prevention of the discharge of all potential pollutants, including pavement cutting wastes, paints, concrete, petroleum products, chemicals, wash water or sediments, and non-stormwater discharges, to storm drains and watercourses.

g. Use of sediment controls or filtration to remove sediment when dewatering the site and obtain all necessary permits.

h. Avoiding cleaning, fueling, or maintaining vehicles on-site, except in a designated area where wash water is contained and treated.

i. Limiting and timing applications of pesticides and fertilizers to prevent polluted runoff.

j. Limiting construction access routes and stabilization of designated access points.

k. Avoiding tracking dirt or other materials off-site; cleaning off-site paved areas and sidewalks using dry sweeping methods.

l. Training and providing instruction to all employees and subcontractors regarding the Watershed Protection Maintenance Standards and construction Best Management Practices.

m. Additional Best Management Practices in addition to those shown on the plans may be required by the Building Inspector to maintain effective stormwater management during construction activities. Any water leaving the site shall be clear and running slowly at all times.

n. Failure to install or maintain these measures will result in stoppage of construction until the corrections have been made and fees paid for staff enforcement time.

19. The applicant shall require construction contractors to implement all the Bay Area Air Quality Management District's Basic Construction Mitigation Measures, listed below, and include these measures on permit plans submitted to the Building Department for permit:

a. Water all active construction areas at least twice daily.

b. Apply water two times daily or apply (non-toxic) soil stabilizers on all unpaved access roads, parking, and staging areas at construction sites. Also, hydroseed or apply non-toxic soil stabilizers to inactive construction areas.

c. Sweep adjacent public streets daily (preferably with water sweepers) if visible soil material is carried onto them.

d. Limit traffic speeds on unpaved roads within the project parcel to 15 miles per hour.

e. All construction equipment shall be maintained and properly tuned in accordance with manufacturers' specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

f. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure Title 13, Section 2485, of the California Code of Regulations (CCR)). Clear signage shall be provided for construction workers at all access points.

20. All new power and telephone utility lines from the street or nearest existing utility pole to the main dwelling and/or any other structure on the property shall be placed underground.

21. The exterior colors and materials as approved by the Planning Commission shall be implemented. Color verification shall occur in the field after the applicant has applied the approved materials and colors but before a final inspection has been scheduled.

22. Installation of the approved landscape plan is required prior to final building inspection.

23. A building permit shall be applied for and obtained from the Building Inspection Section prior to demolishing any existing on-site structures.

24. Prior to building permit issuance, the applicant shall pay to San Mateo County Planning and Building Department affordable housing impact fees. The fees will be calculated based on the adopted Affordable Housing Impact Fee Program Ordinance (No. 04758).

Coastal Commission

25. By acceptance of this CDP, the Permittee acknowledges and agrees, on behalf of itself and all successors and assigns, that:

    a. This site is subject to coastal hazards including but not limited to episodic and long-term shoreline retreat and coastal erosion, high seas, ocean waves, storms, tsunami, tidal scour, wave overtopping, coastal flooding, and their interaction, all of which may be exacerbated by sea level rise.

    b. The intent of this CDP is to allow for the approved project to be constructed and used consistently with the terms and conditions of this CDP for only as long as the development remains safe for occupancy, use, and access, without additional substantive measures beyond ordinary repair or maintenance to protect the development from coastal hazards.

    c. No shoreline armoring, including but not limited to piers or retaining walls, shall be constructed to protect the development approved pursuant to this CDP, including, but not limited to, residential buildings or other development improvements in the event that the approved development is threatened with damage or destruction from coastal hazards in the future. Any rights to construct such armoring that may exist under Coastal Act Section 30235 or under any other applicable law are waived, and no portion of the approved development may be considered an "existing" structure for purposes of Section 30235.

    d. The applicant shall remove or relocate, in part or in whole, the development authorized by this CDP, including, but not limited to, the residential buildings and other development authorized under this CDP, when any government agency with legal jurisdiction has issued a final order, not overturned through any appeal or writ proceedings, determining that the structures are currently and permanently unsafe for occupancy or use due to coastal hazards and that there are no measures that could make the structures suitable for habitation or use without the use of a shoreline protective device; or in the event that coastal hazards eliminate access for emergency vehicles, residents, and/or guests to the site due to the degradation and eventual failure of the coastal bluff. The County of San Mateo shall not be required to maintain access and/or utility infrastructure to serve the approved development in such circumstances. Development associated with removal or relocation of the residential buildings or other development authorized by this CDP shall be subject to issuance of all necessary permits required under applicable regulations, and may require review by the County of San Mateo and/or the California Coastal Commission prior to any such activities. In the event that portions of the

development fall into the ocean or the beach, or to the ground, before they are removed or relocated, the Permittee shall remove all recoverable debris associated with the development from such areas, and lawfully dispose of the material in an approved disposal site, all subject to Director of Planning and Building approval.

e. The Permittee assumes the risks to the Permittee and the properties that are the subject of this CDP of injury and damage from such hazards in connection with this permitted development; unconditionally waives any claim of damage or liability against the County of San Mateo, its officers, agents, and employees for injury or damage from such hazards; indemnifies and holds harmless the County, its officers, agents, and employees with respect to the County's approval of the CDP against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards; accepts full responsibility for any adverse effects to property caused by the permitted project; acknowledges and agrees that the boundary between public land (tidelands) and private land may shift with rising seas, the structure may eventually be located on public trust lands, and the development approval does not permit encroachment onto public trust land; and that any future encroachment must be removed unless the County determines that the encroachment is legally permissible pursuant to the Coastal Act and authorizes it to remain, and any future encroachment would also be subject to the State Lands Commission's (or other trustee agency's) leasing approval.

26. Disclosure documents related to any future marketing and/or sale of the property, including but not limited to marketing materials, sales contracts, and similar documents, shall notify potential buyers of the terms and conditions of this CDP, including explicitly the coastal hazard requirements of **Condition of Approval 25**. A copy of this CDP shall be provided in all real estate disclosures.

Department of Public Works

27. Prior to the issuance of the building permit (for Provision C3 Regulated Projects), the applicant shall have prepared, by a registered civil engineer, a drainage analysis of the proposed project and submit it to the Department of Public Works for review and approval. The drainage analysis shall consist of a written narrative and a plan. The flow of the stormwater onto, over, and off of the property shall be detailed on the plan and shall include adjacent lands as appropriate to clearly depict the pattern of flow. The analysis shall detail the measures necessary to certify adequate drainage. Post-development flows and velocities shall not exceed those that existed in the pre-developed state. Recommended measures shall be designed and

included in the improvement plans and submitted to the Department of Public Works for review and approval.

Montara Water and Sanitary District (MWSD)

28. The project will be considered a significant remodel and the applicant is required to file for an existing service application for a greater than 50% remodel with Montara Water and Sanitary District. The applicant is required to obtain permits prior to issuance of a building permit. All fees must be paid prior to issuance of a connection permit.

29. Encroachment into existing recorded or prescriptive sewer easements is prohibited. A sewer mainline extension and abandonment of the old mainline may be required. A sewer grinder pump and pressurized lateral may be required. In advance of any construction work, the existing sewer lateral is to be cut and capped in accordance with District standards. A sewer lateral TV review and possible upgrade may be required. Fixture unit upgrades may be required to be paid in accordance with MWSD significant remodel fees.

30. The applicant shall be responsible for the design and construction of new water mainline extensions (relocation of existing water main) and abandonment of the old water main. New water and PFP service lines are required for all affected properties.

31. A domestic water meter upgrade will be required.

32. Well abandonment may be required by the San Mateo County Environmental Health Services.

33. Connection to the District's fire protection system is required. A Certified Fire Protection Contractor must certify adequate fire flow calculations.

Geotechnical Section

34. A Final Geotechnical Report shall be submitted at the building permit review stage. The report shall be updated to the current adopted code (CBC 2022) and shall be updated and coordinated with all drainage recommendations. If any hazards are found, mitigation shall be provided in the foundation design and grading proposal.

Drainage Section

35. The following will be required at the time of building permit submittal:

    a. Final Drainage Report stamped and signed by a registered Civil Engineer.

    b. Final Grading and Drainage Plan stamped and signed by a registered Civil Engineer consistent with the requirements in the County's Drainage Manual.

    c. Final C.3 and C.6 Development Review Checklist.

    d. Updated plans and documents that have been coordinated with the Geotechnical report's recommendations.

Coastside Fire Protection District

36. Smoke Alarms which are hard wired: As per the California Building Code, and State Fire Marshal regulations, the applicant is required to install State Fire Marshal approved and listed smoke detectors which are hard wired, interconnected, and have battery backup. These detectors are required to be placed in each new and recondition sleeping room and at a point centrally located in the corridor or area giving access to each separate sleeping area. In existing sleeping rooms, areas may have battery powered smoke alarms. A minimum of one detector shall be placed on each floor. Smoke detectors shall be tested and approved prior to the building final. The date of installation must be added to the exterior of the smoke alarm and will be checked at final inspection.

37. Escape or rescue windows shall have a minimum net clear openable area of 5.7 sq. ft., 5.0 sq. ft. allowed at grade. The minimum net clear openable height dimension shall be 24 inches. The net clear openable width dimension shall be 20 inches. Finished sill height shall be not more than 44 inches above the finished floor. (CFC 2022 section 1030.2).

38. As per Coastside Fire Protection District Standard CI-013, building identification shall be conspicuously posted and visible from the street. (TEMPORARY ADDRESS NUMBERS SHALL BE POSTED PRIOR TO COMBUSTIBLES BEING PLACED ON SITE). The letters/numerals for permanent address signs shall be 4 inches in height with a minimum 1/2-inch stroke. Such letters/numerals shall be internally illuminated and facing the direction of access. Residential address numbers shall be at least six feet above the finished surface of the driveway. Where buildings are located remotely to the public roadway, additional signage at the driveway/roadway entrance leading to the building and/or on each individual building shall be required by the Coastside Fire Protection District. This

remote signage shall consist of a 6-inch by 18-inch green reflective metal sign with 3-inch reflective numbers/letters similar to Hy-Ko 911, or equivalent shall be placed at the entrance from the nearest public roadway.

39. Per Coastside Fire Protection District Ordinance 2019-03, the roof covering of every new building or structure, and materials applied as part of a roof covering assembly, shall have a minimum fire rating of Class "B" or higher as defined in the current edition of the California Building Code.

    a. The installation of an approved spark arrester is required on all (WOOD BURNING) chimneys. Spark arresters shall be made of 12-gage woven or welded wire screening having openings not exceeding ½-inch. If the fireplace is not wood burning disregard this note.

    b. Vegetation Management (LRA) – The Coastside Fire Protection District Ordinance 2019-03, the 2019 California Fire Code 304.1.2:

        (1) A fuel break of defensible space is required around the perimeter of all structures to a distance of not less than 30 feet and may be required to a distance of 100 feet or to the property line. This is neither a requirement nor an authorization for the removal of living trees.

        (2) Trees located within the defensible space shall be pruned to remove dead and dying portions, and limbed up 6 feet above the ground. New trees planted in the defensible space shall be located no closer than 10 feet to adjacent trees when fully grown or at maturity.

        (c) Remove that portion of any existing trees which extends within 10 feet of the outlet of a chimney or stovepipe or is within 5 feet of any structure. Maintain any tree adjacent to or overhanging a building free of dead or dying wood.

40. Fire Access Roads – The applicant must have a maintained asphalt surface road for ingress and egress of fire apparatus. The San Mateo County Department of Public Works, the Coastside Fire Protection District Ordinance 2019-03, and the California Fire Code shall set road standards. As per the 2019 CFC, dead-end roads exceeding 150 feet shall be provided with a turnaround in accordance with Coastside Fire Protection District specifications. As per the 2019 CFC, Section Appendix D, road width shall not be less than 20 feet. Fire access roads shall be installed and made serviceable prior to combustibles being placed on the project site and maintained during construction. Approved signs and painted curbs or lines shall be provided and maintained to identify fire access roads and state the prohibition of their obstruction. If the road width does not allow parking on

the street (20-foot road) and on-street parking is desired, an additional improved area shall be developed for that use.

41. Fire apparatus roads shall be a minimum of 20 feet wide with a minimum of 35 feet centerline radius and a vertical clearance of 15 feet CFC 503, D103, T-14 1273

42. A plan and profile of the driveway/roadway is required and shall be included on plans for building permit submittal.

43. Fire apparatus access roads to be an approved all-weather surface. Grades 15% or greater to be surfaced with asphalt, or brushed concrete. Grades 15% or greater shall be limited to 150 feet in length with a minimum of 500 feet between the next section. For roads approved less than 20 feet, 20 feet wide turnouts shall be on each side of a 15% or greater section. No grades shall exceed 20 percent. (Plan and profile required) CFC 503.

44. "No Parking - Fire Lane" signs shall be provided on both sides of roads 20 to 26 feet wide and on one side of roads 26 to 32 feet wide. CFC D103.611.

45. Approved fire apparatus access roads shall be provided for every facility, building or portion of a building hereafter constructed or moved into or within the jurisdiction. The fire apparatus access road shall comply with the requirements of this section and shall extend to within 150 feet (45,720 milimeters) of all portions of the facility and all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building or facility. CFC 503.1.1 15. All bridges used for fire department access shall meet Cal-Trans HS-20-44 loading standards and have a minimum rated capacity of 25 tons, (live load). A registered civil or structural engineer shall certify rated capacities. All bridges shall have the rated capacity posted on both entries. Turnouts are required at each end of one-lane bridges. A Knox padlock or key switch will be required if there is limited access to property. CFC 506.1. For application and instructions please email cfpdfiremarshal@fire.ca.gov or if you need further assistance, please contact Coastside Fire Protection District at 650/726-5213. Gates shall be a minimum of 2 feet wider than the access road/driveway they serve. Overhead gate structures shall have a minimum of 15 feet of vertical clearance. Locked gates shall be provided with a Knox Box or Knox Padlock. Electric gates shall have a Knox Key Switch. Electric gates shall automatically open during power failures. CFC 503.6, 506.

46. As per 2019 CFC, Appendix B and C, a fire district approved fire hydrant (Clow 960) shall be located within 500 feet of the proposed single-family dwelling unit measured by way of drivable access. As per 2019 CFC, Appendix B the hydrant must produce a minimum fire flow of 875 gallons per minute at 20 pounds-per-square-inch residual pressure for 2 hours. Contact the local water purveyor for water flow details.

47. Automatic Fire Sprinkler System: (Fire Sprinkler plans will require a separate permit). As per San Mateo County Building Standards and Coastside Fire Protection District Ordinance Number 2019-03, the applicant is required to install an automatic fire sprinkler system throughout the proposed or improved dwelling and garage. All attic access locations shall be provided with a pilot head on a metal upright. Sprinkler coverage shall be provided throughout the residence to include all bathrooms, garages, and any area used for storage. The only exception is small linen closets less than 24 sq. ft. with full depth shelving. The plans for this system must be submitted to the San Mateo County Planning and Building Department. A building permit will not be issued until plans are received, reviewed and approved. Upon submission of plans, the County will forward a complete set to the Coastside Fire Protection District for review.

48. Installation of underground sprinkler pipe shall be flushed and visually inspected by the Fire District prior to hook-up to the riser. Any soldered fittings must be pressure tested with trench open. Please call Coastside Fire Protection District to schedule an inspection. Fees shall be paid prior to plan review.

49. Exterior bell and interior horn/strobe are required to be wired into the required flow switch on your fire sprinkler system. The bell, horn/strobe and flow switch, along with the garage door opener are to be wired into a separate circuit breaker at the main electrical panel and labeled.

50. Add a note to the title page of the building plans that the building will be protected by an automatic fire sprinkler system.

51. Solar Photovoltaic Systems: These systems shall meet the requirements of the 2019 CFC Section 1204.2.1.

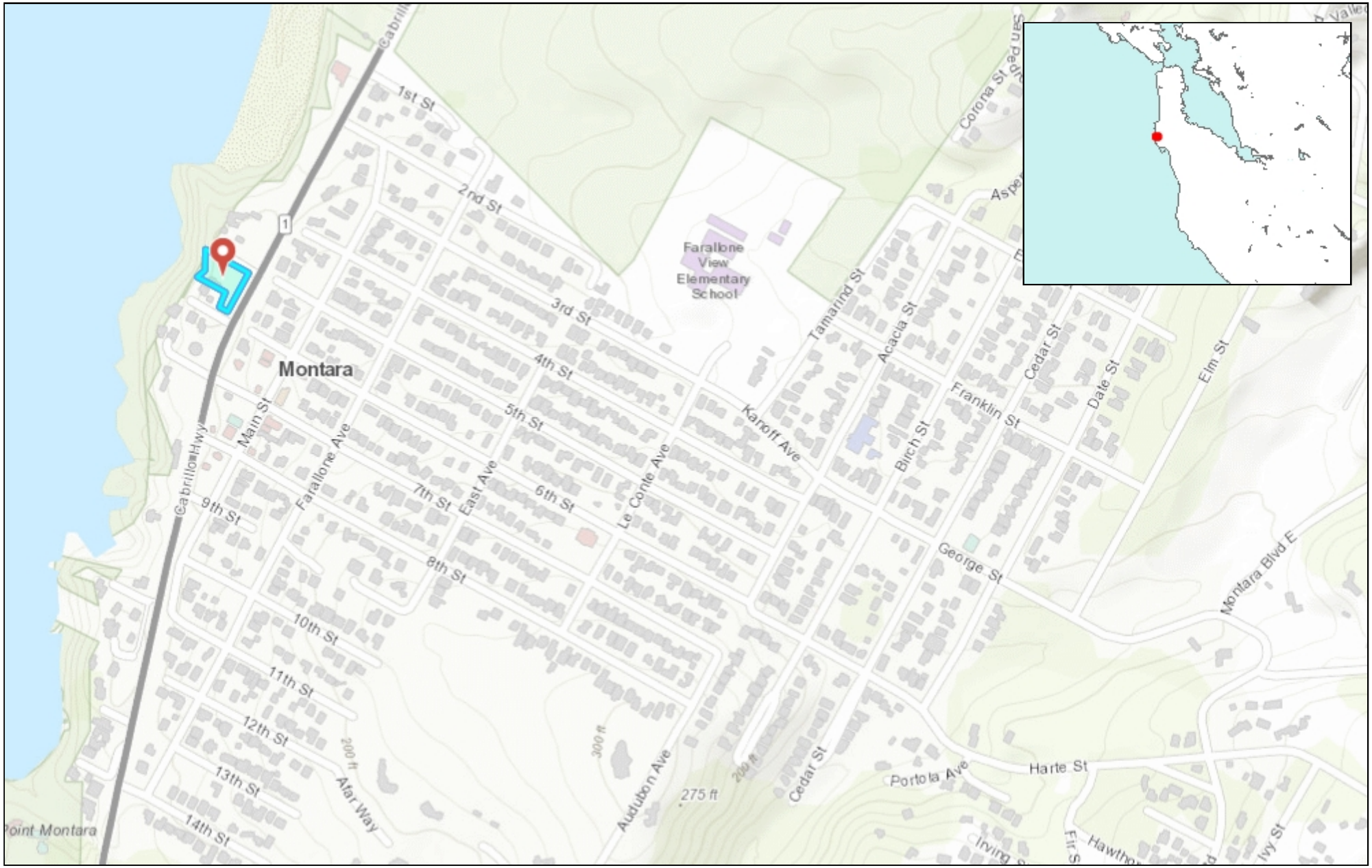
52. Traffic calming devices shall be prohibited unless approved by the fire official. CFC 2019 section 503.4.1.

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT B

San Mateo County

County San Mateo, CA



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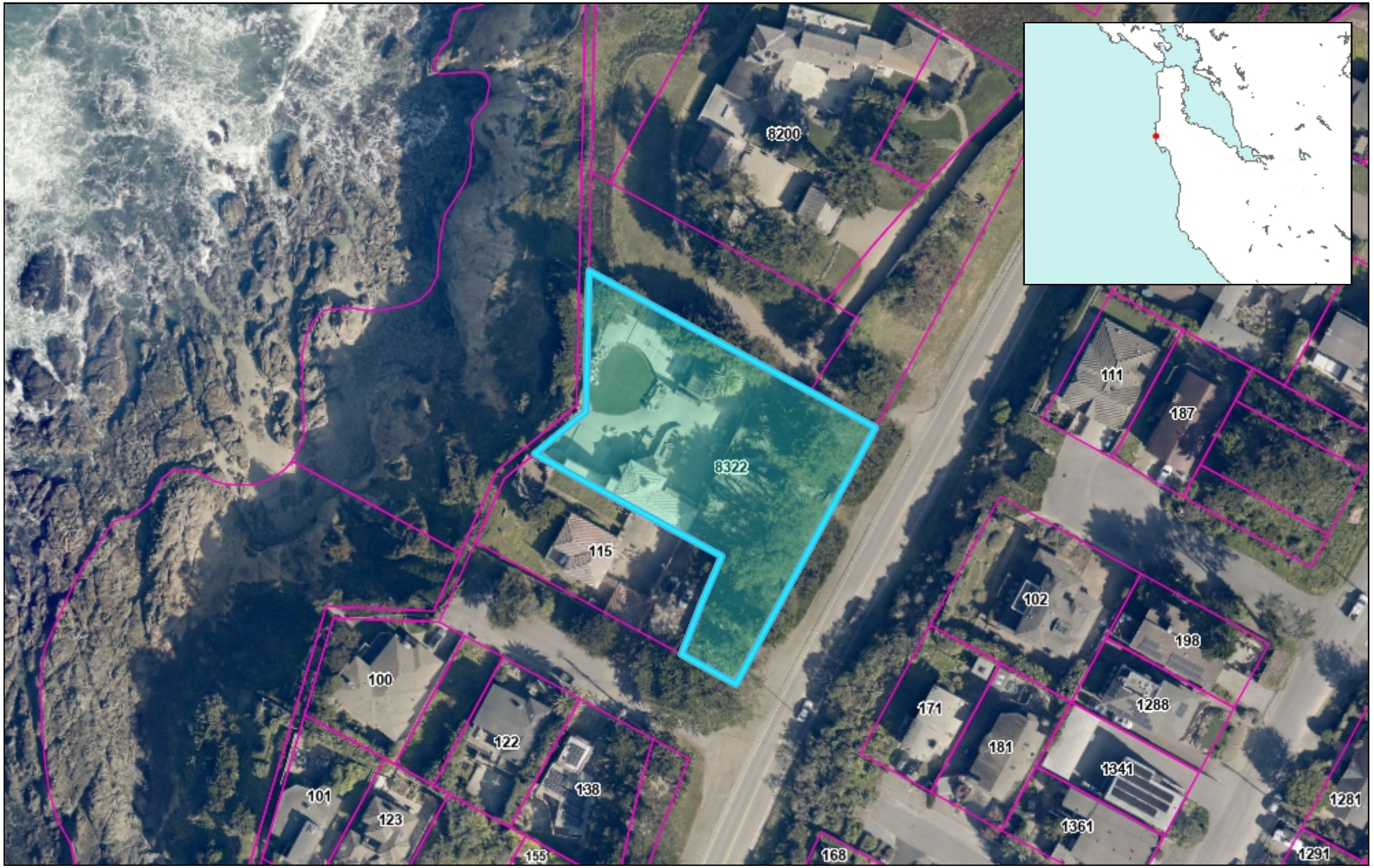
1: 9,028

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

San Mateo County

County San Mateo, CA



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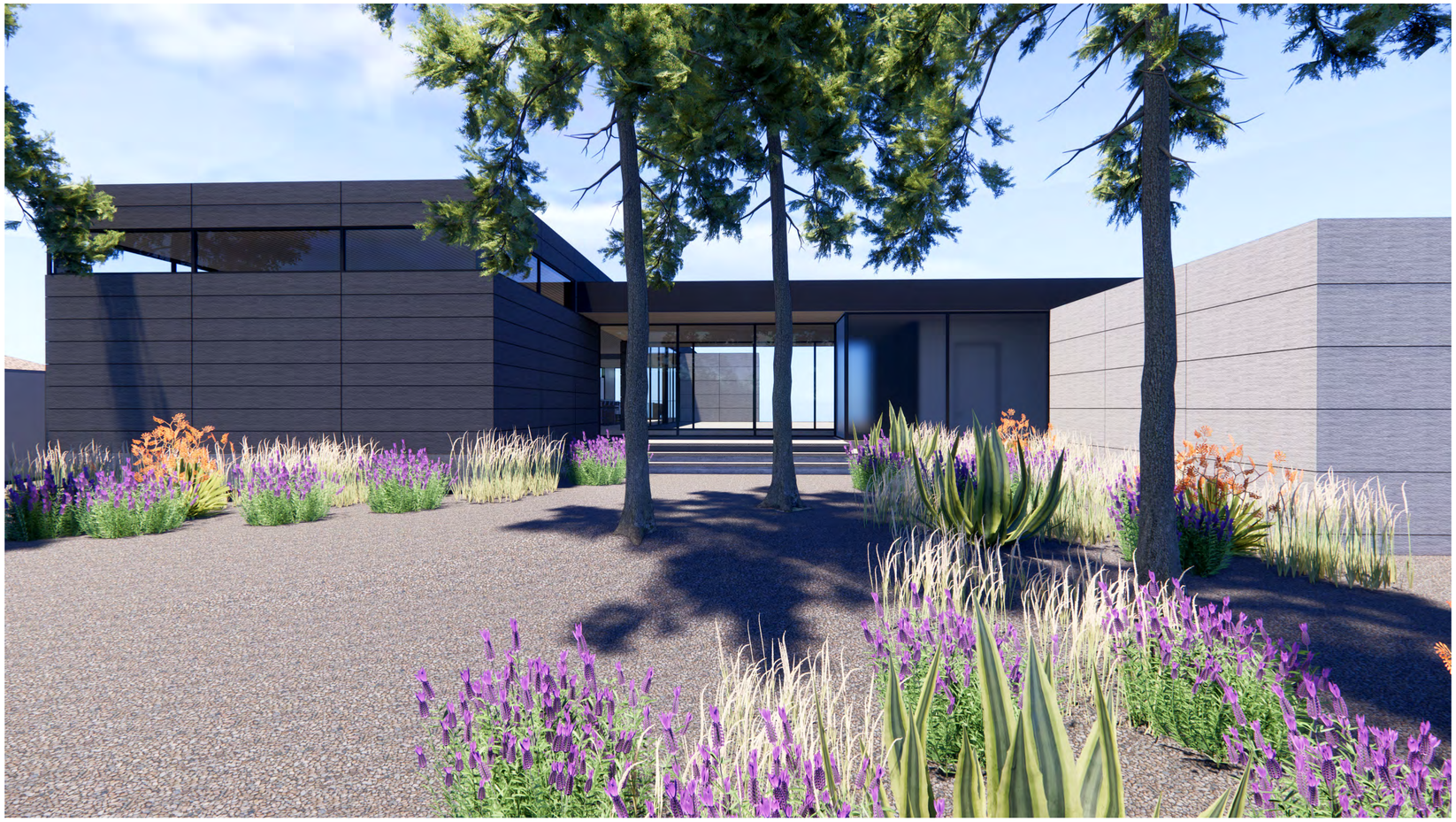
COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT C



COASTAL DEVELOPMENT PERMIT

PROJECT INFORMATION

PROJECT ADDRESS:	8322 CABRILLO HIGHWAY MONTARA CA 94037
APN:	036-046-420-0
ZONING:	R-1 / S-17 / DR / CD
CONSTRUCTION TYPE:	TYPE V-B
OCCUPANCY:	R-3
LOT SIZE:	0.61 ACRES (26,571 SF)

BUILDING ENVELOPE

SETBACKS:	**REQ'D**	**EXISTING**	**PROPOSED**
FRONT (EAST)	20'-0"	76'-0"	37'-0"
SIDE (NORTH)	5'-0"	96'-6"	5'-0"
SIDE (SOUTH)	10'-0"	0-0"	10'-0"
REAR (WEST)	20'-0"	13'-7"	20'-0"

BUILDING HEIGHT	**EXISTING**	**PROPOSED**
# OF STORIES	2	2
HEIGHT	27'-0"	22'-0"

BUILDING FLOOR AREA:		
EXISTING	3,011 SF	
PROPOSED	6,179 SF	< 6,200 SF MAX - OK

* SEE T1.1 FOR DETAILED AREA DIAGRAMS

PROJECT DIRECTORY

OWNER	**KEHOE PROPERIES LLC**
ARCHITECT	**JIM JENNINGS ARCHITECTURE** 415.551-0829
	PACIFIC PENINSULA ARCHITECTURE, INC. ATTN: SEAN LOPES 650.323.7900
CIVIL ENGINEER	**MACLEOD AND ASSOCIATES, INC.** 650.593.8580
LANDSCAPE ARCHITECT	**BERNARD TRAINOR**
GEOTECHNICAL ENGINEER	**C2EARTH & UPP GEOTECHNOLOGY** ATTN: CRAIG REID 408.866.5436
ARBORIST	**URBAN TREE MANAGEMENT** ATTN: COLIN BLACKIE 650.507.5666

PROJECT SHEET INDEX:

No.	Issue	Date	By.

PACIFIC PENINSULA ARCHITECTURE

718 OAK GROVE AVENUE
MENLO PARK CA 94025

T 650.323.7900
F 650.323.0625

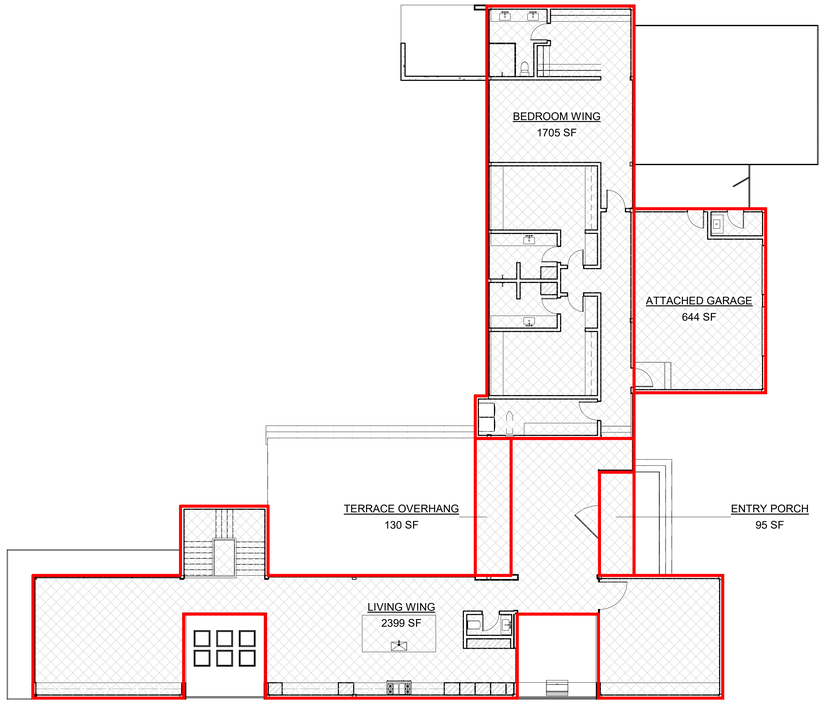
www.pacificpeninsula.com

NEW RESIDENCE FOR KEHOE PROPERTIES LLC

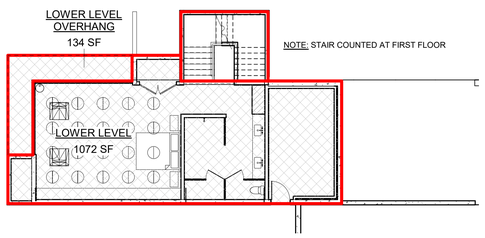
8322 CABRILLO HIGHWAY
MONTARA CA 94037

Date	7/8/22
Scale	
Drawn by	SL
Job	2208

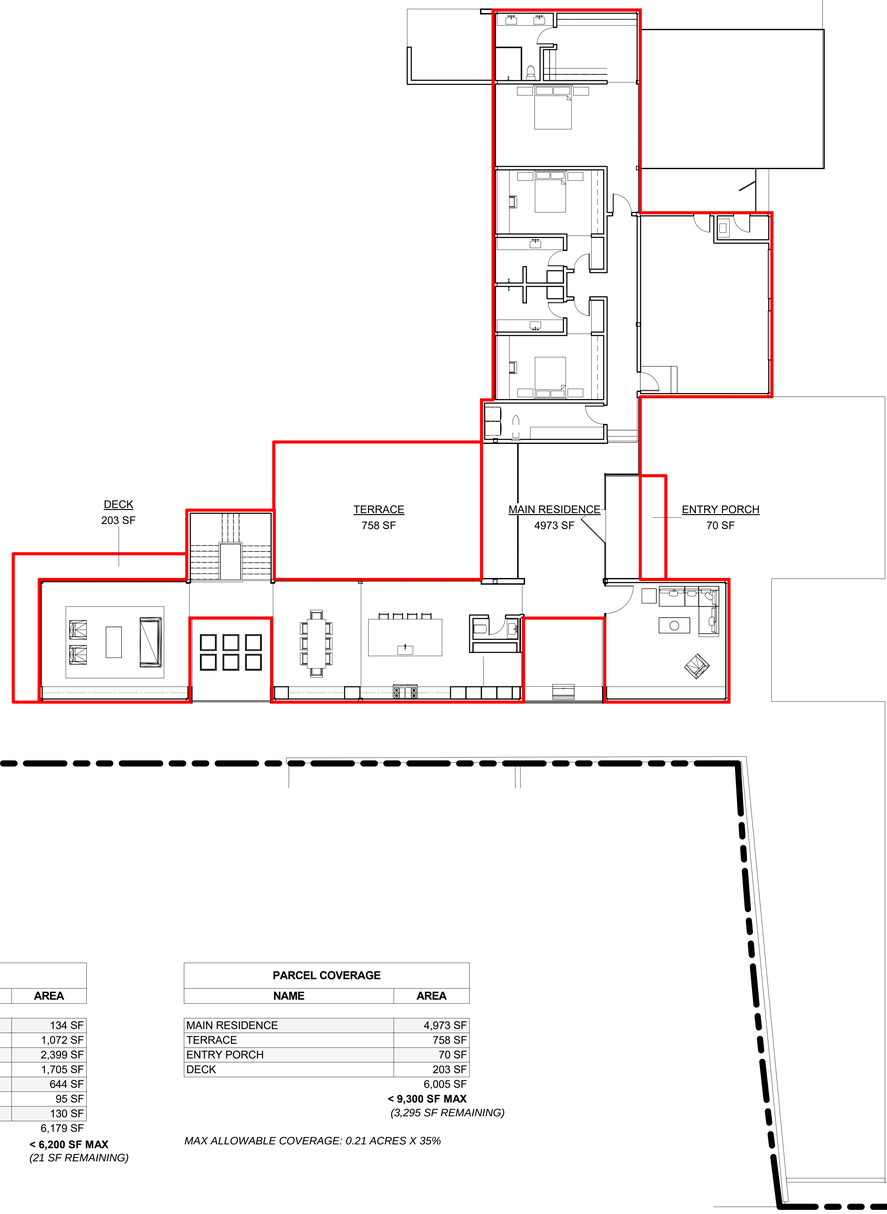
T1.0



FIRST FLOOR AREA CALCULATIONS



LOWER LEVEL AREA CALCULATIONS



FLOOR AREA	
NAME	**AREA**
LOWER LEVEL OVERHANG	134 SF
LOWER LEVEL	1,072 SF
LIVING WING	2,399 SF
BEDROOM WING	1,705 SF
ATTACHED GARAGE	644 SF
ENTRY PORCH	95 SF
TERRACE OVERHANG	130 SF
	6,179 SF
	< 6,200 SF MAX
	(21 SF REMAINING)

PARCEL COVERAGE	
NAME	**AREA**
MAIN RESIDENCE	4,973 SF
TERRACE	758 SF
ENTRY PORCH	70 SF
DECK	203 SF
	6,005 SF
	< 9,300 SF MAX
	(3,295 SF REMAINING)

MAX ALLOWABLE COVERAGE: 0.21 ACRES X 35%

AREA CALCULATIONS

No.	Issue	Date	By.

PACIFIC
PENINSULA
ARCHITECTURE

718 OAK GROVE AVENUE
MENLO PARK CA 94025

T 650.323.7900
F 650.323.0425

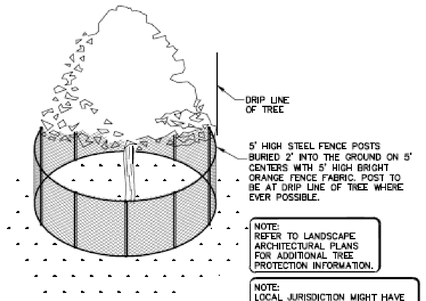
www.pacificpeninsula.com

NEW RESIDENCE FOR KEHOE PROPERTIES LLC

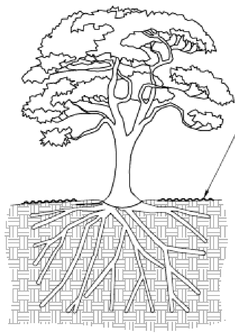
8322 CABRILLO HIGHWAY
MONTARA CA 94037

Date	7/8/22
Scale	1" = 10'-0"
Drawn by	SL
Job	2208

T1.1



TREE PROTECTION FENCING



STEEL PLATE @ BASE OF TREE

TREE INVENTORY urban **tree** management, inc.

Address: 83223 Cabrillo Hwy, Montara, Ca 94307
Inspection date: 2/14/19

Ratings for health and structure are given separately for each tree according to the table to right. IE, a tree may be rated "Good" under the health column for excellent/vigorous appearance and growth, while the same tree may be rated "Fair/Poor" in the structure column if structural mitigation is needed. Health is rated based on leaf color and size, canopy density, new shoot growth and presence of pests or disease.

KEY	Health	Structure
Good	excellent/vigorous	flawless
Fair/Good	no significant health concerns	very stable
Fair	declining; measures should be taken to improve health and appearance	routine maintenance needed
Fair/Poor	in decline; significant health issues	mitigation needed, it may or may not preserve this tree
Poor	dead or near dead	hazard

Tag no	Common Name	DBH	W/H	Health	Structure	PROTECTED (X)	REMOVAL (X)	PROTECTED REMOVAL (XX)	Notes/Recommendations
1	Monterey cypress	45.5	39/25	F	F/P	X			Leans east, Rec prop
2	Canary Island palm	21.5	30/20	G	F	X			Slight lean of crown at the top
3	Monterey cypress	37.7	60/50	G	F- F/P	X			Co-dominant leaders
4	Monterey cypress	18.5	32/24	F	P	X	X	XX	Extreme lean to the east
5	Monterey cypress	34	60/70	F	F/P	X			Leans east east, co-dominant leaders, all ends are heavy
6	Monterey cypress	18	35/18	F	P	X	X	XX	Leans and has fallen over
7	Monterey cypress	11, 18	20/18	F	P	X	X	XX	Leans east, on the ground
8	Monterey cypress	31	40/40	F	F/P	X			Leans east, very heavy
9	Monterey cypress	14	20/20	F	P	X	X	XX	All leans east
10	Monterey cypress	19	25/50	F	F/P	X			
11	Monterey cypress	48	80/70	F/G	F/P	X			Co-dominant leaders, heavy, leans east
12	Monterey cypress	31	50/60	F/G	F/P	X			Long, heavy limbs
13	Monterey cypress	26	55/65	F/G	F/P	X			Co-dominant leaders
14	Monterey cypress	48	70/75	F/G	F/P	X			Leans east, heavy limbs, heaving on tension side
15	Monterey cypress	31.5	60/80	F	F/P	X			Leans east, heaving co-dominant leaders
16	Monterey cypress	36		P	P	X	X	XX	DEAD
17	Monterey cypress	52	80/80	F/P	F	X			Thin, heavy, OFF PROPERTY
18	Monterey cypress	59	75/75	F/P	F/P	X	X	XX	Thin, whole tree leans strongly east, OFF PROPERTY
			TOTAL TREES				18		
			PROTECTED TOTAL				**18**		
			REMOVAL TOTAL					6	
			PROTECTED REMOVALS TOTAL						6

San Mateo County defines a significant tree as any live woody plant that is 12.1 inches DBH or just below lowest branch, whichever is lower.

Common Name	*Latin Name*
Canary Island palm	*Phoenix canariensis*
Monterey cypress	*Cupressus macrocarpa*

TREE PROTECTION NOTES:

A. FOR TREE PROTECTION FENCING AND TREE REMOVAL, SEE CIVIL SHEETS C2.0 & ER-1

B. REFER TO ARBORIST REPORT FOR FURTHER ASSESSMENT. EVALUATION OF TREE HEALTH DONE BY CERTIFIED ARBORIST MICHAEL YOUNG OF URBAN TREE MANAGEMENT ON JULY 30, 2019 AND REVISITED IN JUNE, 2022.

C. PROTECT EXISTING TREES SCHEDULED TO REMAIN AGAINST INJURY, COMPACTION OF ROOT ZONE, OR INJURY DUE TO CUTTING, BREAKING OR SKINNING OF ROOTS, TRUNKS, OR BRANCHES, SMOTHERING OF STOCKPILED OR DISPOSAL OF CONSTRUCTION MATERIALS, EXCAVATED MATERIALS OR VEHICULAR TRAFFIC WITHIN DRIP LINES OF TREES.

D. NO PRUNING OF EXISTING TREES SHALL BE COMPLETED WITHOUT PRIOR APPROVAL BY THE CLIENT / ARBORIST. CARE IS TO BE TAKEN IN EXCACATION UNDER TREE CANOPIES TO AVOID UNECESSARY DAMAGE TO THE ROOT SYSTEM OR CUTTING OF MAJOR STRUCTURAL ROOTS. IF MAJOR ROOTS ARE ENCOUNTERED, THE CONTRACTOR SHALL IMMEDIATELY CONSULT WITH THE PROJECT ARBORIST.

E. IF ANY PORTION OF THE PROTETIVE FENCE IS IN CONFLICT WITH THE CONSTRUCTION, THAT PORTION MUST BE RELOACTED, NOT REMOVED. CONSULT WITH PROJECT ARBORIST BEFORE ANY RELOCATION OCCURS.

F. NO STORAGE OR DISPOSAL OF MATERIALS TO BE ALLOWED WITHIN THE PROTECTIVE FENCING.

G. ALL SUBCONTRACTORS SHOULD BE WARNED IN WRITING AGAINST DISPOSING OF ANY MATERIAL OTHER THAN CLEAN WATER IN ANY AREA BENEATH THE CANOPY OF THE TREE OR WITHING THE PROTECTIVE FENCING.

TREE PLAN

No.	Issue	Date	By.

PACIFIC PENINSULA ARCHITECTURE
718 OAK GROVE AVENUE
MENLO PARK CA 94025
T 650.323.7900
F 650.323.0425
www.pacificpeninsula.com

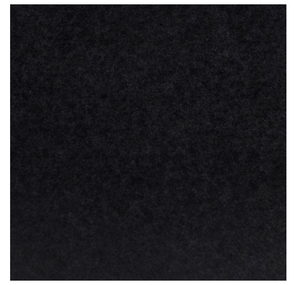
NEW RESIDENCE FOR KEHOE PROPERTIES LLC

8322 CABRILLO HIGHWAY
MONTARA CA 94037

Date	7/8/22
Scale	1" = 10'-0"
Drawn by	SL
Job	2208

T1.2

ALUMINUM WINDOW SYSTEM



COMPOSITE FASCIA PANEL
RICHLITE 'BLACK DIAMOND'

POURED IN PLACE CONCRETE
'SMOOTH FINISH'

NEOLITH STONE PANEL
'PHEDRA'

NEOLITH STONE PANEL
'BASALT GREY'

HORIZONTAL WOOD SLAT FENCING
IPE / TEAK

LANDSCAPE PLANTING
CALIFORNIA NATIVES

GRAVEL DRIVEWAY

EXTERIOR VISUALIZATIONS

No.	Issue	Date	By.

PACIFIC
PENINSULA
ARCHITECTURE

718 OAK GROVE AVENUE
MENLO PARK CA 94025

T 650.323.7900
F 650.323.0625

www.pacificpeninsula.com

NEW RESIDENCE FOR KEHOE PROPERTIES LLC

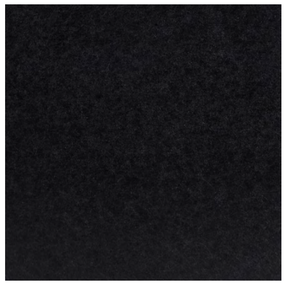
8322 CABRILLO HIGHWAY
MONTARA CA 94037

Date	7/8/22
Scale	
Drawn by	SL
Job	2208

T2.0

ALUMINUM WINDOW SYSTEM

POURED IN PLACE CONCRETE
'SMOOTH FINISH'



COMPOSITE FASCIA PANEL
RICHLITE 'BLACK DIAMOND'

NEOLITH STONE PANEL
'BASALT GREY'

NEOLITH STONE PANEL
'PHEDRA'

LANDSCAPE PATHWAY
GRAVEL / BOULDERS

GLASS GUADRAIL
'FRAMELESS'

POURED IN PLACE CONCRETE
'SMOOTH FINISH'

EXTERIOR VISUALIZATIONS

No.	Issue	Date	By.

PACIFIC
PENINSULA
ARCHITECTURE

718 OAK GROVE AVENUE
MENLO PARK CA 94025

T 650.323.7900
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NEW RESIDENCE FOR KEHOE PROPERTIES LLC

8322 CABRILLO HIGHWAY
MONTARA CA 94037

Date	7/8/22
Scale	
Drawn by	SL
Job	2208

T2.1

LEGEND

——— - - ———	PROPERTY LINE
AC PAVE	ASPHALT CONCRETE PAVEMENT
CO	CLEANOUT
COL	COLUMN
CONC	CONCRETE
EM	ELECTRIC METER
EP	EDGE OF PAVEMENT
FH	FIRE HYDRANT
INV	INVERT
JP	JOINT UTILITY POLE
SSMH	SANITARY SEWER MANHOLE
TW	TOP OF WALL
UB	UTILITY BOX
WV ⋈	WATER VALVE
● 12" TREE	TREE W/ SIZE
—x————x—	FENCE
————OH————	OVERHEAD UTILITY LINE
————SS————	SANITARY SEWER LINE

LOT AREA:

= 27,524 SQ. FT. ±
= 0.632 ACRES ±

UTILITY NOTE:

THE UTILITIES EXISTING ON THE SURFACE AND SHOWN ON THIS DRAWING HAVE BEEN LOCATED BY FIELD SURVEY. ALL UNDERGROUND UTILITIES SHOWN ON THIS DRAWING ARE FROM RECORDS OF THE VARIOUS UTILITY COMPANIES AND THE SURVEYOR/ENGINEER DOES NOT ASSUME RESPONSIBILITY FOR THEIR COMPLETENESS, INDICATED LOCATION, OR SIZE. RECORD UTILITY LOCATION SHOULD BE CONFIRMED BY EXPOSING THE UTILITY.

REV.	DESCRIPTION	BY:	DATE:

LICENSED LAND SURVEYOR
DANIEL G. MacLEOD
No. 5304
STATE OF CALIFORNIA

MacLEOD AND ASSOCIATES
CIVIL ENGINEERING • LAND SURVEYING
965 CENTER STREET • SAN CARLOS • CA 94070 • (650) 593-8580

PREPARED FOR:
KEHOE PROPERTIES LLC

TOPOGRAPHIC SURVEY PLAN

8322 CABRILLO HIGHWAY
A.P.N. 036-046-420
21 LLS 69

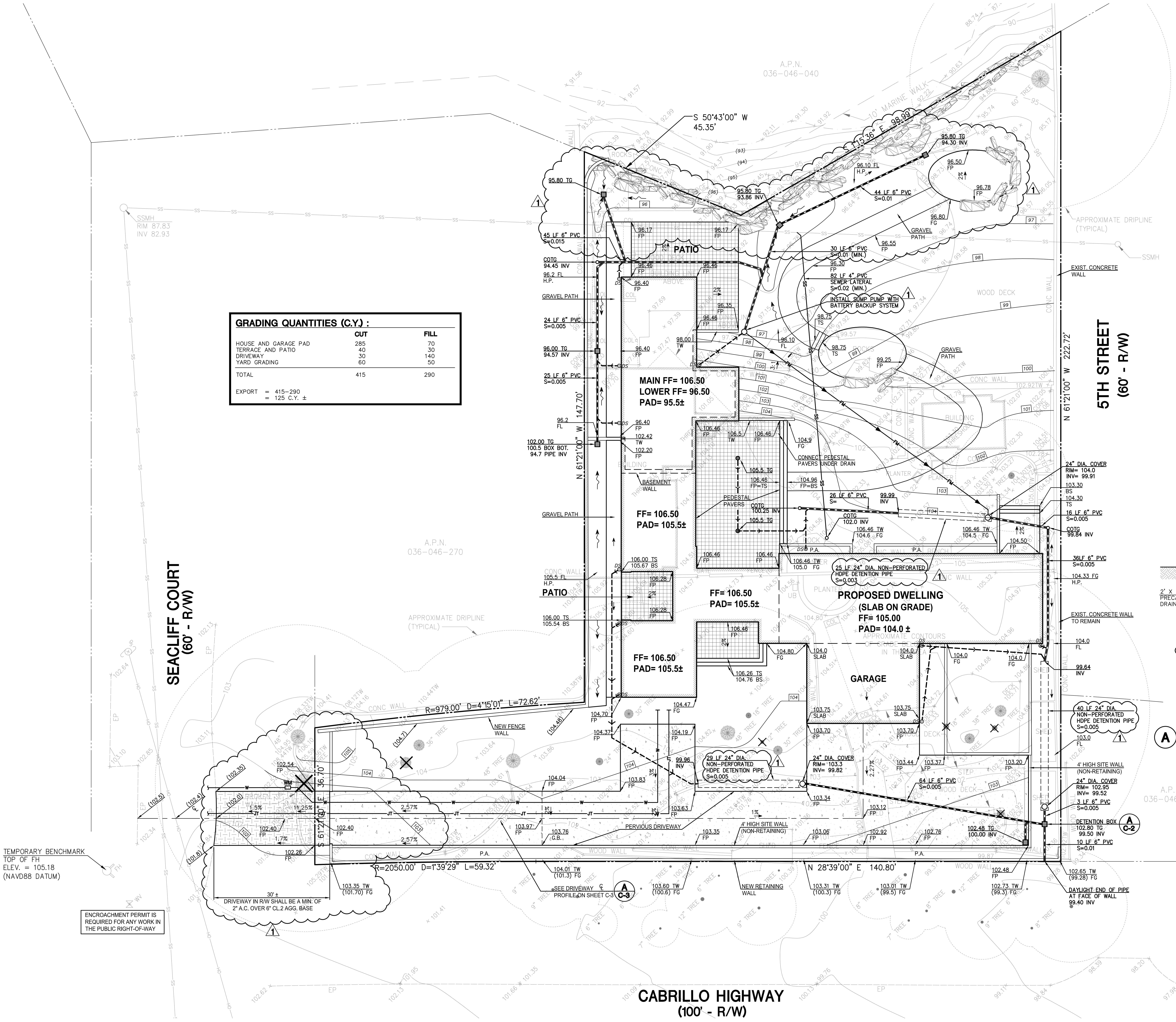
UNINCORPORATED
SAN MATEO COUNTY
CALIFORNIA

DRAWN BY:	MDL/EM
DESIGNED BY:	VPG
CHECKED BY:	DGM
SCALE:	1"=10'
DATE:	03-15-22
DRAWING NO.	5184-TOPO
SHEET	C-1
	1 OF 4

GRADING QUANTITIES (C.Y.) :

	CUT	FILL
HOUSE AND GARAGE PAD	285	70
TERRACE AND PATIO	40	30
DRIVEWAY	30	140
YARD GRADING	60	50
TOTAL	415	290

EXPORT = 415−290
= 125 C.Y. ±

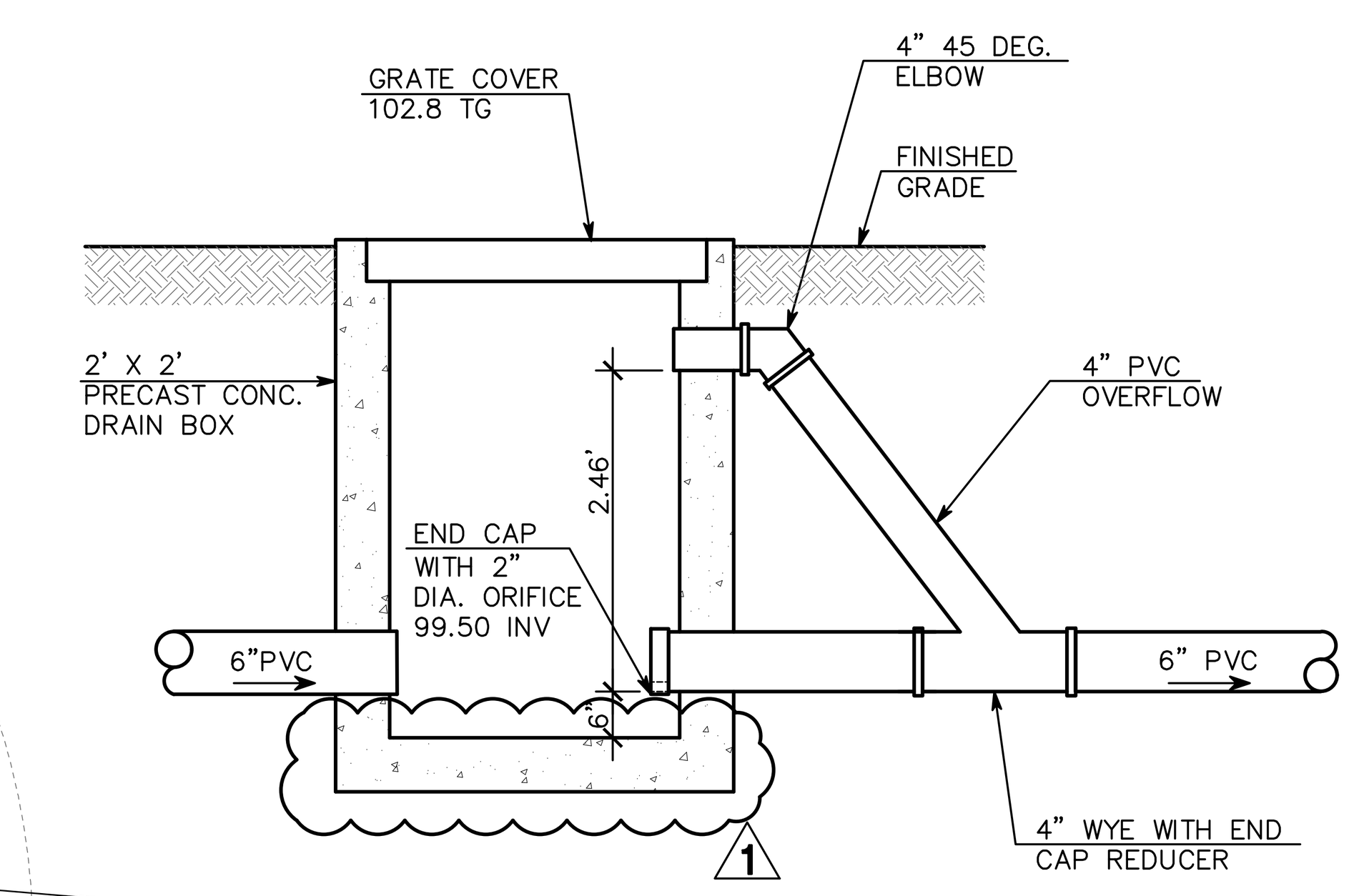


LEGEND:

	PROPERTY LINE
AC PAVE	ASPHALT CONCRETE PAVEMENT
BS	BOTTOM OF STEP
CONC	CONCRETE
COL	COLUMN
EM	ELECTRIC METER
EP	EDGE OF PAVEMENT
FF	FINISH FLOOR
FG	FINISHED GRADE
FL	FLOWLINE
FH	FIRE HYDRANT
FP	FINISH PAVE
GB	GRADE BREAK
H.P.	HIGH POINT
INV	INVERT
JP	JOINT UTILITY POLE
P.A.	PLANTING AREA
SSMH	SANITARY SEWER MANHOLE
TC	TOP OF CURB
TG	TOP OF GRATE
TS	TOP OF STEP
TW	TOP OF WALL
UB	UTILITY BOX
WV	WATER VALVE
12" TREE	TREE W/ SIZE
12" TREE	EXIST. TREE TO BE REMOVED
—X—	FENCE
—OH—	OVERHEAD UTILITY LINE
—SS—	SANITARY SEWER LINE
	NEW STORM DRAIN LINE
—G—	GAS LINE
—W—	WATER LINE
—JT—	JOINT TRENCH LINE (TEL, ELECTRIC, CATV)
DS	CONNECT DOWNSPOUT WITH 4" DIA. PVC (TYP)
	SWALE
	SURFACE RUNOFF DIRECTION
	NEW DRAIN INLET
104	NEW CONTOUR
—FM—	FORCEMAIN
(99.3)	EXISTING SPOT ELEVATION

UTILITY NOTE:

THE UTILITIES EXISTING ON THE SURFACE AND SHOWN ON THIS DRAWING HAVE BEEN LOCATED BY FIELD SURVEY. ALL UNDERGROUND UTILITIES SHOWN ON THIS DRAWING ARE FROM RECORDS OF THE VARIOUS UTILITY COMPANIES AND THE SURVEYOR/ENGINEER DOES NOT ASSUME RESPONSIBILITY FOR THEIR COMPLETENESS, INDICATED LOCATION, OR SIZE. RECORD UTILITY LOCATION SHOULD BE CONFIRMED BY EXPOSING THE UTILITY.



A DETENTION BOX DETAIL
SCALE: (NOT TO SCALE)

GRAPHIC SCALE
(IN FEET)
1 inch = 10 ft.

REV.	DESCRIPTION	BY:	DATE:
1	PER COUNTY COMMENTS	VPG	12/14/22

No. 35048 CIVIL STATE OF CALIFORNIA

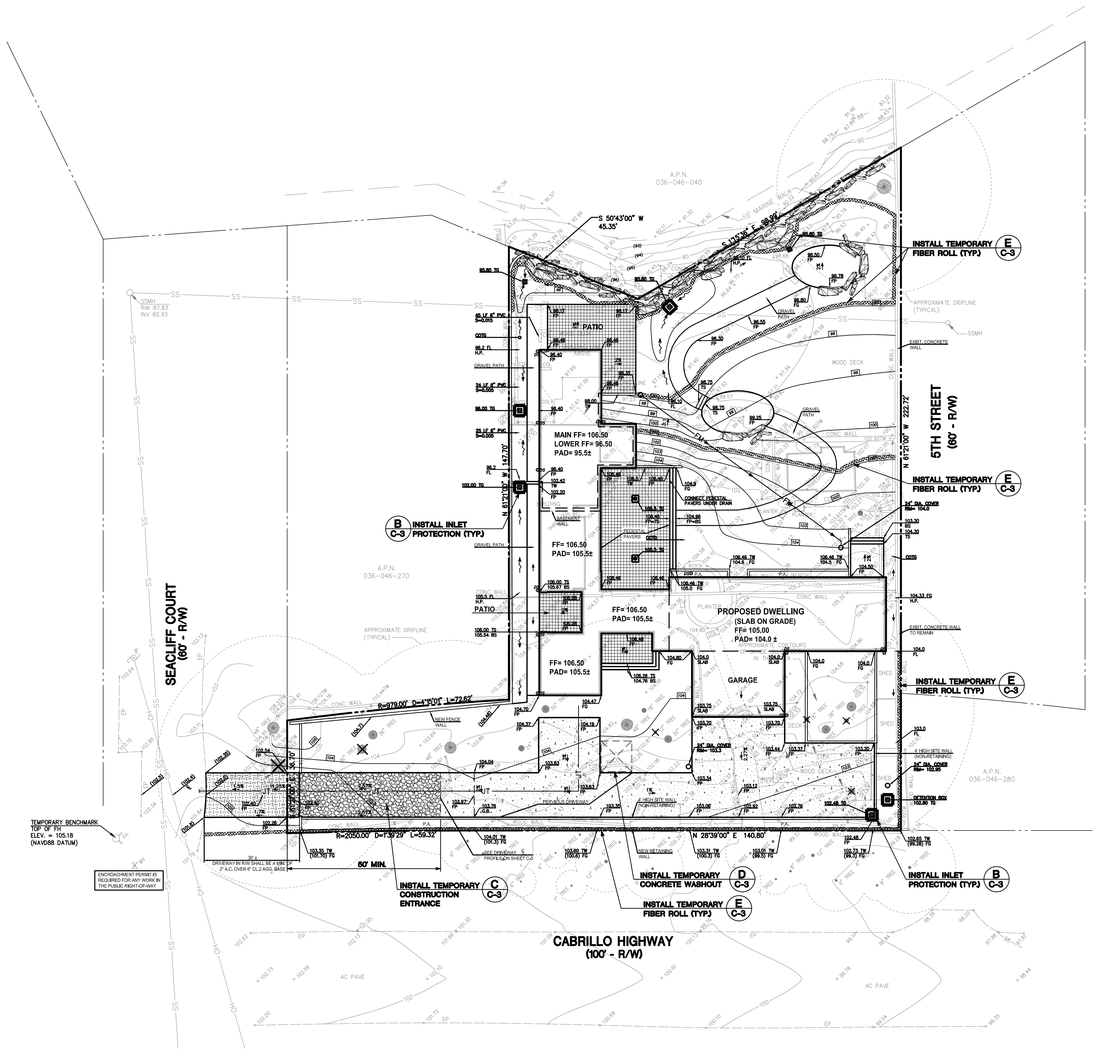
MacLEOD AND ASSOCIATES
CIVIL ENGINEERING • LAND SURVEYING
965 CENTER STREET • SAN CARLOS • CA 94070 • (650) 593-8580

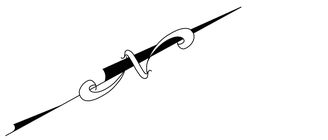
PREPARED FOR: PACIFIC PENINSULA ARCHITECTURE

PRELIMINARY GRADING / DRAINAGE AND UTILITY PLAN

8322 CABRILLO HIGHWAY
UNINCORPORATED SAN MATEO COUNTY CALIFORNIA

DRAWN BY:	DJK/AAP
DESIGNED BY:	VPG
CHECKED BY:	DGM
SCALE:	1"=10'
DATE:	07-06-22
DRAWING NO.	5184-GRAD
SHEET	C-2
	2 OF 4





GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

EROSION CONTROL NOTES:

1. THE INTENT OF THE EROSION CONTROL PLAN IS TO MINIMIZE ANY WATER QUALITY IMPACTS IN THE FORM OF SEDIMENT POLLUTION TO MAIN CREEK & TRIBUTARIES.
2. A CONSTRUCTION ENTRANCE WILL BE INSTALLED PRIOR TO OF GRADING. LOCATION OF THE ENTRANCE MAY BE ADJUSTED BY THE CONTRACTOR TO FACILITATE GRADING OPERATIONS. ALL CONSTRUCTION TRAFFIC ENTERING THE PAVED ROAD MUST CROSS THE CONSTRUCTION ENTRANCE. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS– OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITION DEMAND, AND REPAIR OF ANY MEASURES USED TO TRAP SEDIMENTS.
3. WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT–OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE THROUGH THE USE OF SAND BAGS, GRAVEL, BOARDS OR OTHER APPROVED METHODS.
4. THE EROSION AND SEDIMENT CONTROL MEASURES WILL BE OPERABLE DURING THE RAINY SEASON, OCTOBER 1 TO APRIL 15. BY OCTOBER 1, GRADING AND INSTALLATION OF STORM DRAINAGE AND EROSION AND SEDIMENT CONTROL FACILITIES WILL BE COMPLETED. NO GRADING WILL OCCUR BETWEEN OCTOBER 1 AND APRIL 15 UNLESS AUTHORIZED BY THE CITY REPRESENTATIVE.
5. DURING THE RAINY SEASON, ALL PAVED AREAS WILL BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE SITE WILL BE MAINTAINED SO THAT A MINIMUM OF SEDIMENT–LADEN RUNOFF ENTERS THE STORM DRAINAGE SYSTEM.
6. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE EROSION AND SEDIMENT CONTROL FIELD MANUAL OF THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD.

DUST CONTROL NOTES:

1. WATER ALL CONSTRUCTION AND GRADING AREA AT LEAST TWICE DAILY.
2. COVER ALL TRUCKS HAULING SOIL, SAND, AND OTHER LOOSE MATERIALS, OR REQUIRE ALL TRUCKS TO MAINTAIN AT LEAST 2 FEET OF FREEBOARD.

SAN MATEO COUNTY STANDARD NOTES:

1. EROSION CONTROL POINT OF CONTACT:
   OWNER: KEVIN KEHOE
   EMAIL: WHITEGLOVEMOVINGSF@YAHOO.COM
2. PERFORM CLEARING AND EARTH–MOVING ACTIVITIES ONLY DURING DRY WEATHER. MEASURES TO ENSURE ADEQUATE EROSION AND SEDIMENT CONTROL SHALL BE INSTALLED PRIOR TO EARTH–MOVING ACTIVITIES AND CONSTRUCTION
3. STABILIZE ALL DENUDED AREAS AND MAINTAIN EROSION CONTROL MEASURES CONTINUOUSLY BETWEEN OCTOBER 1 AND APRIL 30.
4. STORE, HANDLE, AND DISPOSE OF CONSTRUCTION MATERIALS AND WASTES PROPERLY, SO AS TO PREVENT THEIR CONTACT WITH STORMWATER.
5. CONTROL AND PREVENT THE DISCHARGE OF ALL POTENTIAL POLLUTANTS, INCLUDING PAVEMENT CUTTING WASTES, PAINTS, CONCRETE, PETROLEUM PRODUCTS, CHEMICAL, WASH WATER OR SEDIMENTS AND NON–STORMWATER DISCHARGES TO STORM DRAINS AND WATERCOURSES.
6. AVOID CLEANING, FUELING, OR MAINTAINING VEHICLES ON–SITE, EXCEPT IN A DESIGNATED AREA WHERE WASH WATER IS CONTAINED AND TREATED.
7. LIMIT AND TIME APPLICATIONS OF PESTICIDES AND FERTILIZERS TO PREVENT POLLUTED RUNOFF.
8. LIMIT CONSTRUCTION ACCESS ROUTES TO STABILIZED, DESIGNATED ACCESS POINTS.
9. AVOID TRACKING DIRT OR OTHER MATERIALS OFF–SITE; CLEAN OFF–SITE PAVED AREAS AND SIDEWALKS USING DRY SWEEPING METHODS.
10. TRAIN AND PROVIDE INSTRUCTION TO ALL EMPLOYEES AND SUBCONTRACTORS REGARDING THE WATERSHED PROTECTION MAINTENANCE STANDARDS AND CONSTRUCTION BEST MANAGEMENT PRACTICES.
11. THE AREAS DELINEATED ON THE PLANS FOR PARKING, GRUBBING, STORAGE ETC., SHALL NOT BE ENLARGED OR "RUN OVER".
12. CONSTRUCTION SITES ARE REQUIRED TO HAVE EROSION CONTROL METERIALS ON–SITE DURING THE "OFF–SEASON".
13. DUST CONTROL IS REQUIRED YEAR–ROUND.
14. EROSION CONTROL MATERIALS SHALL BE STORED ON–SITE.
15. USE OF PLASTIC SHEETING BETWEEN OCTOBER 1st. AND APRIL 30th IS NOT ACCEPTABLE, UNLESS FOR USE ON STOCKPILES WHERE THE STOCKPILE IS ALSO PROTECTED WITH FIBER ROLLS CONTAINING THE BASE OF THE STOCKPILE.
16. THE TREE PROTECTION SHALL BE IN PLACE BEFORE ANY GRADING, EXCAVATING OR GRUBBING IS STARTED.

LEGEND:

PROPERTY LINE	
AC PAVE	ASPHALT CONCRETE PAVEMENT
BS	BOTTOM OF STEP
CONC	CONCRETE
COL	COLUMN
EM	ELECTRIC METER
EP	EDGE OF PAVEMENT
FF	FINISH FLOOR
FG	FINISHED GRADE
FL	FLOWLINE
FH	FIRE HYDRANT
FP	FINISH PAVE
GB	GRADE BREAK
H.P.	HIGH POINT
INV	INVERT
JP	JOINT UTILITY POLE
SSMH	SANITARY SEWER MANHOLE
TC	TOP OF CURB
TG	TOP OF GRATE
TS	TOP OF STEP
TW	TOP OF WALL
UB	UTILITY BOX
WV	WATER VALVE
12" TREE	TREE W/ SIZE
12" TREE	EXIST. TREE TO BE REMOVED
X X	FENCE
OH	OVERHEAD UTILITY LINE
SS	SANITARY SEWER LINE
SD	NEW STORM DRAIN LINE
SS	SANITARY SEWER LINE
G	GAS LINE
W	WATER LINE
JT	JOINT TRENCH LINE (TEL, ELECTRIC, CATV)
	SWALE
	SURFACE RUNOFF DIRECTION
	NEW DRAIN INLET
104	NEW CONTOUR
(99.3)	EXISTING SPOT ELEVATION

UTILITY NOTE:

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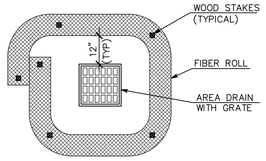
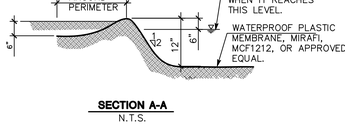
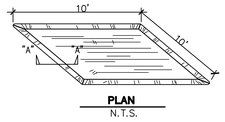


B DRAIN INLET PROTECTION DETAIL
SCALE: (NOT TO SCALE)

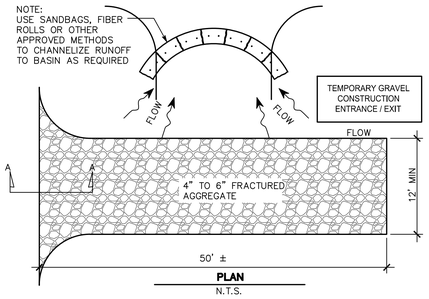


SECTION A-A
N.T.S.

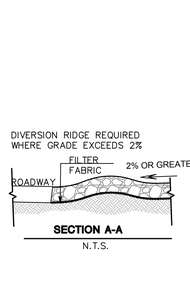


PLAN
N.T.S.

D CONCRETE WASHOUT DETAIL
SCALE: (NOT TO SCALE)



PLAN
N.T.S.

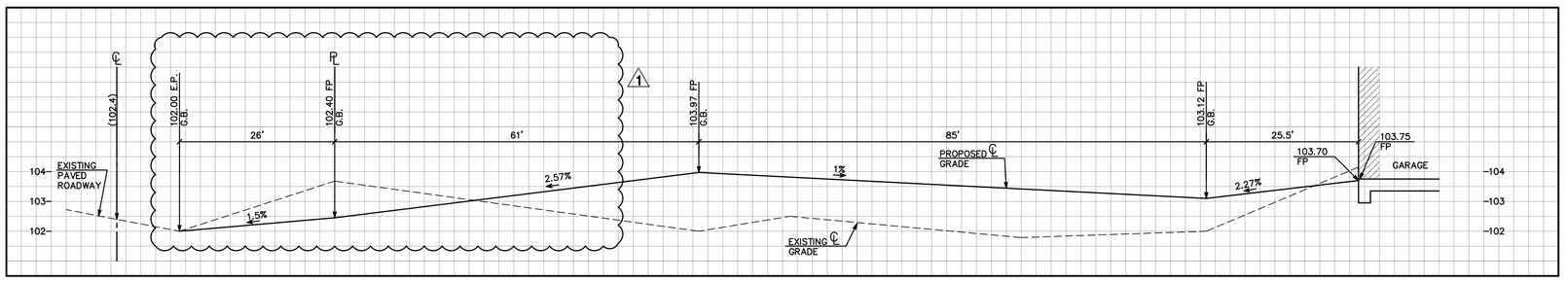


SECTION A-A
N.T.S.

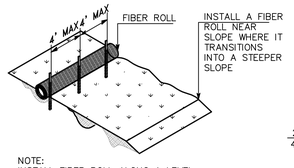
DESIGN AND CONSTRUCTION SPECIFICATIONS FOR CONSTRUCTION ENTRANCE:

1. THE MATERIAL FOR CONSTRUCTION OF THE PAD SHALL BE 4 TO 6 INCH FRACTURED AGGREGATE.
2. THE THICKNESS OF THE PAD SHALL NOT BE LESS THAN 12 INCHES.
3. THE WIDTH OF THE PAD SHALL NOT BE LESS THAN THE FULL WIDTH OF ALL POINTS OF INGRESS AND EGRESS.
4. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANUP OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY SHALL BE REMOVED IMMEDIATELY.
5. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

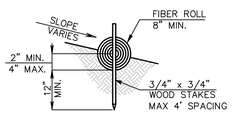
C CONSTRUCTION ENTRANCE DETAIL
SCALE: (NOT TO SCALE)



A DRIVEWAY ℄ PROFILE
SCALE: 1"=10' (H) 1"=2' (V)



TYPICAL FIBER ROLL INSTALLATION
N.T.S.



ENTRENCHMENT DETAIL
N.T.S.

E FIBER ROLL DETAIL
SCALE: (NOT TO SCALE)

MacLEOD AND ASSOCIATES
CIVIL ENGINEERING • LAND SURVEYING
965 CENTER STREET • SAN CARLOS • CA. 94070 • (650) 593–8580

REGISTERED PROFESSIONAL ENGINEER
DANIEL G. MacLEOD
No. 35048
CIVIL
STATE OF CALIFORNIA

NO.	DESCRIPTION	BY:	DATE:
1	PER COUNTY COMMENTS	VPC	12/14/22

PREPARED FOR:
PACIFIC PENINSULA ARCHITECTURE

EROSION & SEDIMENTATION CONTROL PLAN
8322 CABRILLO HIGHWAY
SAN MATEO COUNTY
CALIFORNIA
UNINCORPORATED

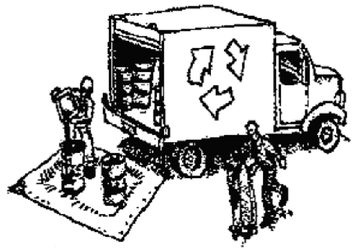
DRAWN BY:	DJK/AAP
DESIGNED BY:	VPG
CHECKED BY:	DGM
SCALE:	1"=20'
DATE:	07–06–22
DRAWING NO.	5184–EROS
SHEET	C-3
	3 OF 4

SAN MATEO COUNTYWIDE
Water Pollution Prevention Program
Clean Water. Healthy Community.

Construction Best Management Practices (BMPs)

Construction projects are required to implement the stormwater best management practices (BMP) on this page, as they apply to your project, all year long.

Materials & Waste Management



Non-Hazardous Materials

- ❑ Berm and cover stockpiles of sand, dirt or other construction material with tarps when rain is forecast or if not actively being used within 14 days.
- ❑ Use (but don't overuse) reclaimed water for dust control.

Hazardous Materials

- ❑ Label all hazardous materials and hazardous wastes (such as pesticides, paints, thinners, solvents, fuel, oil, and antifreeze) in accordance with city, county, state and federal regulations.
- ❑ Store hazardous materials and wastes in water tight containers, store in appropriate secondary containment, and cover them at the end of every work day or during wet weather or when rain is forecast.
- ❑ Follow manufacturer's application instructions for hazardous materials and be careful not to use more than necessary. Do not apply chemicals outdoors when rain is forecast within 24 hours.
- ❑ Arrange for appropriate disposal of all hazardous wastes.

Waste Management

- ❑ Cover waste disposal containers securely with tarps at the end of every work day and during wet weather.
- ❑ Check waste disposal containers frequently for leaks and to make sure they are not overfilled. Never hose down a dumpster on the construction site.
- ❑ Clean or replace portable toilets, and inspect them frequently for leaks and spills.
- ❑ Dispose of all wastes and debris properly. Recycle materials and wastes that can be recycled (such as asphalt, concrete, aggregate base materials, wood, gyp board, pipe, etc.)
- ❑ Dispose of liquid residues from paints, thinners, solvents, glues, and cleaning fluids as hazardous waste.

Construction Entrances and Perimeter

- ❑ Establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from site and tracking off site.
- ❑ Sweep or vacuum any street tracking immediately and secure sediment source to prevent further tracking. Never hose down streets to clean up tracking.

Equipment Management & Spill Control

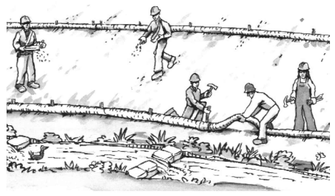
Maintenance and Parking

- ❑ Designate an area, fitted with appropriate BMPs, for vehicle and equipment parking and storage.
- ❑ Perform major maintenance, repair jobs, and vehicle and equipment washing off site.
- ❑ If refueling or vehicle maintenance must be done onsite, work in a bermed area away from storm drains and over a drip pan or drop cloths big enough to collect fluids. Recycle or dispose of fluids as hazardous waste.
- ❑ If vehicle or equipment cleaning must be done onsite, clean with water only in a bermed area that will not allow rinse water to run into gutters, streets, storm drains, or surface waters.
- ❑ Do not clean vehicle or equipment onsite using soaps, solvents, degreasers, or steam cleaning equipment.

Spill Prevention and Control

- ❑ Keep spill cleanup materials (e.g., rags, absorbents and cat litter) available at the construction site at all times.
- ❑ Inspect vehicles and equipment frequently for and repair leaks promptly. Use drip pans to catch leaks until repairs are made.
- ❑ Clean up spills or leaks immediately and dispose of cleanup materials properly.
- ❑ Do not hose down surfaces where fluids have spilled. Use dry cleanup methods (absorbent materials, cat litter, and/or rags).
- ❑ Sweep up spilled dry materials immediately. Do not try to wash them away with water, or bury them.
- ❑ Clean up spills on dirt areas by digging up and properly disposing of contaminated soil.
- ❑ Report significant spills immediately. You are required by law to report all significant releases of hazardous materials, including oil. To report a spill: 1) Dial 911 or your local emergency response number, 2) Call the Governor's Office of Emergency Services Warning Center, (800) 852-7550 (24 hours).

Earthmoving



- ❑ Schedule grading and excavation work during dry weather.
- ❑ Stabilize all denuded areas, install and maintain temporary erosion controls (such as erosion control fabric or bonded fiber matrix) until vegetation is established.
- ❑ Remove existing vegetation only when absolutely necessary, and seed or plant vegetation for erosion control on slopes or where construction is not immediately planned.
- ❑ Prevent sediment from migrating offsite and protect storm drain inlets, gutters, ditches, and drainage courses by installing and maintaining appropriate BMPs, such as fiber rolls, silt fences, sediment basins, gravel bags, berms, etc.
- ❑ Keep excavated soil on site and transfer it to dump trucks on site, not in the streets.

Contaminated Soils

- ❑ If any of the following conditions are observed, test for contamination and contact the Regional Water Quality Control Board:
  - Unusual soil conditions, discoloration, or odor.
  - Abandoned underground tanks.
  - Abandoned wells
  - Buried barrels, debris, or trash.

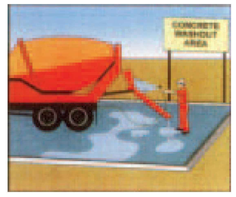
Paving/Asphalt Work

- ❑ Avoid paving and seal coating in wet weather or when rain is forecast, to prevent materials that have not cured from contacting stormwater runoff.
- ❑ Cover storm drain inlets and manholes when applying seal coat, tack coat, slurry seal, fog seal, etc.
- ❑ Collect and recycle or appropriately dispose of excess abrasive gravel or sand. Do NOT sweep or wash it into gutters.
- ❑ Do not use water to wash down fresh asphalt concrete pavement.

Sawcutting & Asphalt/Concrete Removal

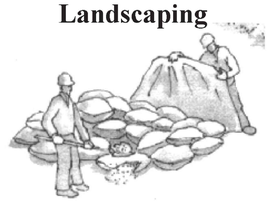
- ❑ Protect nearby storm drain inlets when saw cutting. Use filter fabric, catch basin inlet filters, or gravel bags to keep slurry out of the storm drain system.
- ❑ Shovel, abosorb, or vacuum saw-cut slurry and dispose of all waste as soon as you are finished in one location or at the end of each work day (whichever is sooner!).
- ❑ If sawcut slurry enters a catch basin, clean it up immediately.

Concrete, Grout & Mortar Application



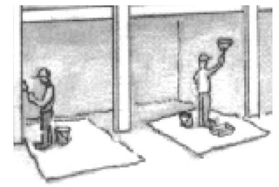
- ❑ Store concrete, grout, and mortar away from storm drains or waterways, and on pallets under cover to protect them from rain, runoff, and wind.
- ❑ Wash out concrete equipment/trucks offsite or in a designated washout area, where the water will flow into a temporary waste pit, and in a manner that will prevent leaching into the underlying soil or onto surrounding areas. Let concrete harden and dispose of as garbage.
- ❑ When washing exposed aggregate, prevent washwater from entering storm drains. Block any inlets and vacuum gutters, hose washwater onto dirt areas, or drain onto a bermed surface to be pumped and disposed of properly.

Landscaping



- ❑ Protect stockpiled landscaping materials from wind and rain by storing them under tarps all year-round.
- ❑ Stack bagged material on pallets and under cover.
- ❑ Discontinue application of any erodible landscape material within 2 days before a forecast rain event or during wet weather.

Painting & Paint Removal



Painting Cleanup and Removal

- ❑ Never clean brushes or rinse paint containers into a street, gutter, storm drain, or stream.
- ❑ For water-based paints, paint out brushes to the extent possible, and rinse into a drain that goes to the sanitary sewer. Never pour paint down a storm drain.
- ❑ For oil-based paints, paint out brushes to the extent possible and clean with thinner or solvent in a proper container. Filter and reuse thinners and solvents. Dispose of excess liquids as hazardous waste.
- ❑ Paint chips and dust from non-hazardous dry stripping and sand blasting may be swept up or collected in plastic drop cloths and disposed of as trash.
- ❑ Chemical paint stripping residue and chips and dust from marine paints or paints containing lead, mercury, or tributyltin must be disposed of as hazardous waste. Lead based paint removal requires a state-certified contractor.

Dewatering

- ❑ Discharges of groundwater or captured runoff from dewatering operations must be properly managed and disposed. When possible send dewatering discharge to landscaped area or sanitary sewer. If discharging to the sanitary sewer call your local wastewater treatment plant.
- ❑ Divert run-on water from offsite away from all disturbed areas.
- ❑ When dewatering, notify and obtain approval from the local municipality before discharging water to a street gutter or storm drain. Filtration or diversion through a basin, tank, or sediment trap may be required.
- ❑ In areas of known or suspected contamination, call your local agency to determine whether the ground water must be tested. Pumped groundwater may need to be collected and hauled off-site for treatment and proper disposal.

Storm drain polluters may be liable for fines of up to $10,000 per day!

REGISTERED PROFESSIONAL ENGINEER DANIEL G. MacLEOD No. 35048 CIVIL STATE OF CALIFORNIA

NO.	DESCRIPTION	BY:	DATE:

MacLEOD AND ASSOCIATES
CIVIL ENGINEERING • LAND SURVEYING
965 CENTER STREET • SAN CARLOS • CA. 94070 • (650) 593-8580

PREPARED FOR:
PACIFIC PENNINSULA ARCHITECTURE

CONSTRUCTION BEST MANAGEMENT PRACTICES PLAN
8322 CABRILLO HIGHWAY
SAN MATEO COUNTY
UNINCORPORATED
CALIFORNIA

DRAWN BY:	DJK/AAP
DESIGNED BY:	VPG
CHECKED BY:	DGM
SCALE:	NONE
DATE:	07-06-22
DRAWING NO.	5184-CBMPP
SHEET	C-4
	4 OF 4

AREA CALCULATION TABLES
**SEE T1.1 FOR MORE INFORMATION*

FLOOR AREA	
NAME	**AREA**
LOWER LEVEL OVERHANG	134 SF
LOWER LEVEL	1,072 SF
LIVING WING	2,399 SF
BEDROOM WING	1,705 SF
ATTACHED GARAGE	644 SF
ENTRY PORCH	95 SF
TERRACE OVERHANG	130 SF
	6,179 SF
	< 6,200 SF MAX
	(21 SF REMAINING)

PARCEL COVERAGE	
NAME	**AREA**
MAIN RESIDENCE	4,973 SF
TERRACE	758 SF
ENTRY PORCH	70 SF
DECK	203 SF
	6,005 SF
	< 9,300 SF MAX
	(3,295 SF REMAINING)

MAX ALLOWABLE COVERAGE: 0.21 ACRES X 35%

SITE PLAN

No.	Issue	Date	By.

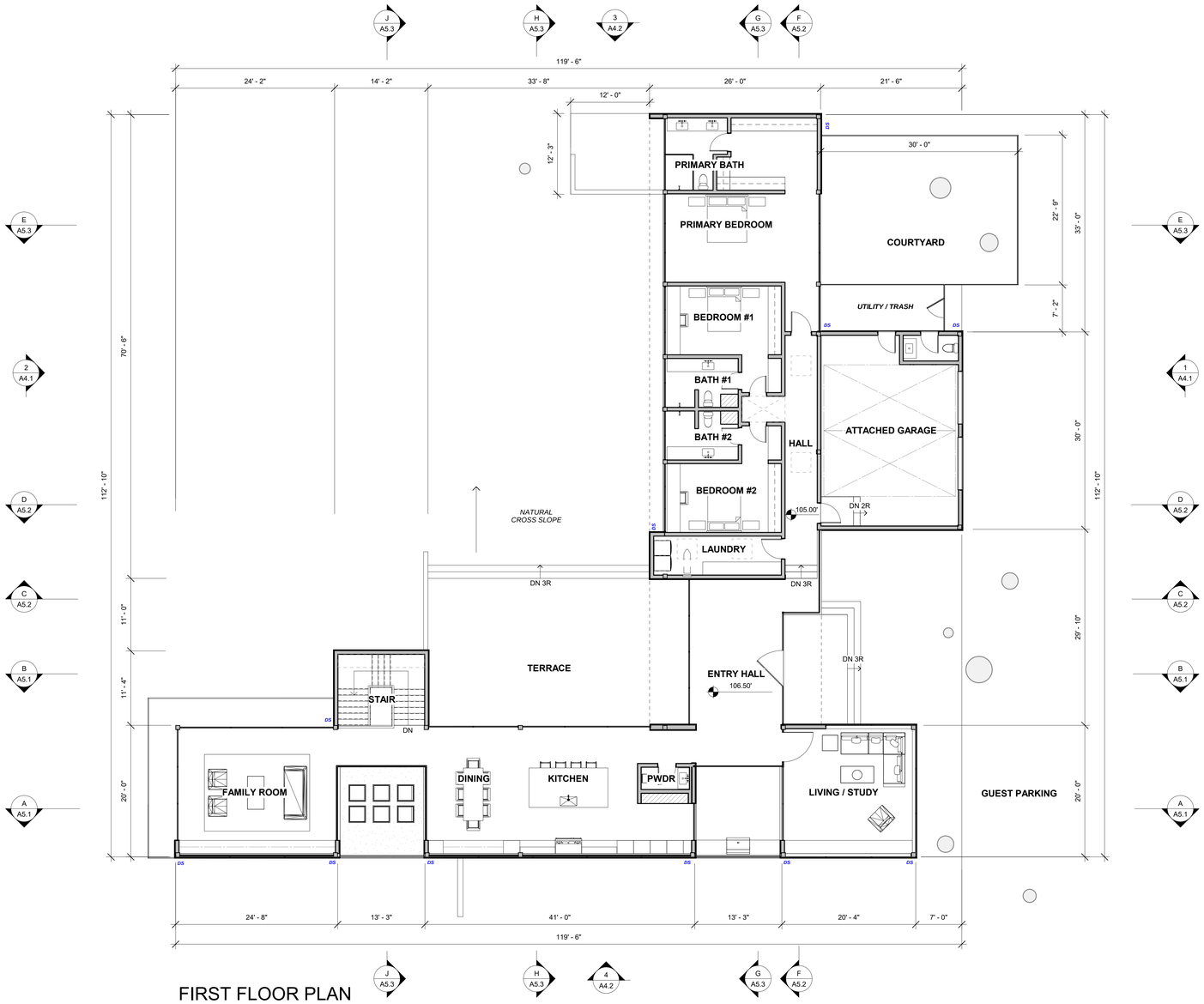
PACIFIC PENINSULA ARCHITECTURE
718 OAK GROVE AVENUE
MENLO PARK CA 94025
T 650.323.7900
F 650.323.0625
www.pacificpeninsula.com

NEW RESIDENCE FOR KEHOE PROPERTIES LLC

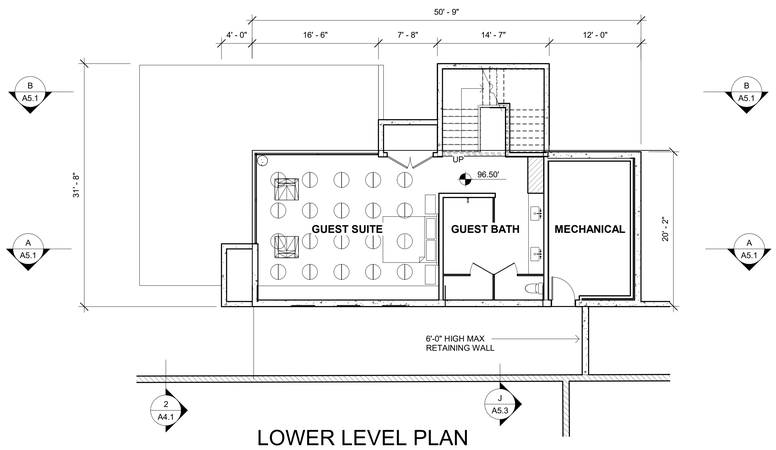
8322 CABRILLO HIGHWAY
MONTARA CA 94037

Date	7/8/22
Scale	1" = 10'-0"
Drawn by	SL
Job	2208

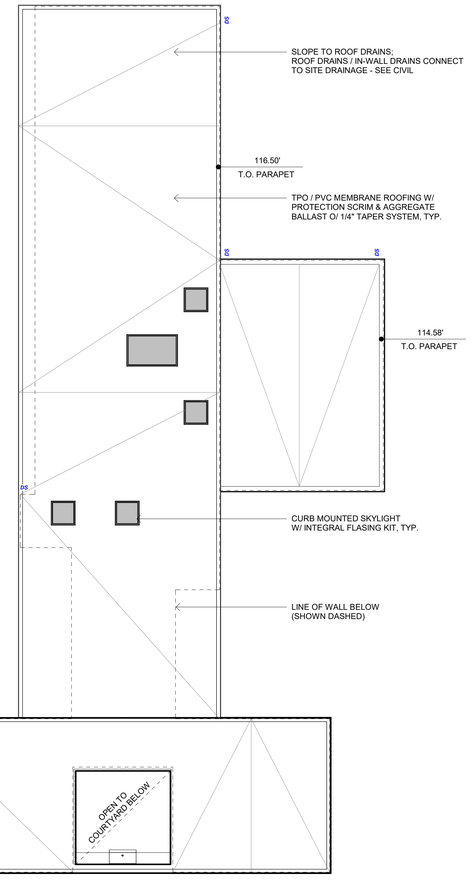
A1.0



FIRST FLOOR PLAN



LOWER LEVEL PLAN



ROOF PLAN

0' 4' 8' 16' 32'

SCALE: 1/8" = 1'-0"

N

AREA CALCULATION TABLES
**SEE T1.1 FOR MORE INFORMATION*

FLOOR AREA	
NAME	**AREA**
LOWER LEVEL OVERHANG	134 SF
LOWER LEVEL	1,072 SF
LIVING WING	2,399 SF
BEDROOM WING	1,705 SF
ATTACHED GARAGE	644 SF
ENTRY PORCH	95 SF
TERRACE OVERHANG	130 SF
	6,179 SF

< 6,200 SF MAX
(21 SF REMAINING)

No.	Issue	Date	By.

PACIFIC PENINSULA ARCHITECTURE

718 OAK GROVE AVENUE
MENLO PARK CA 94025

T 650.323.7900
F 650.323.0425

www.pacificpeninsula.com

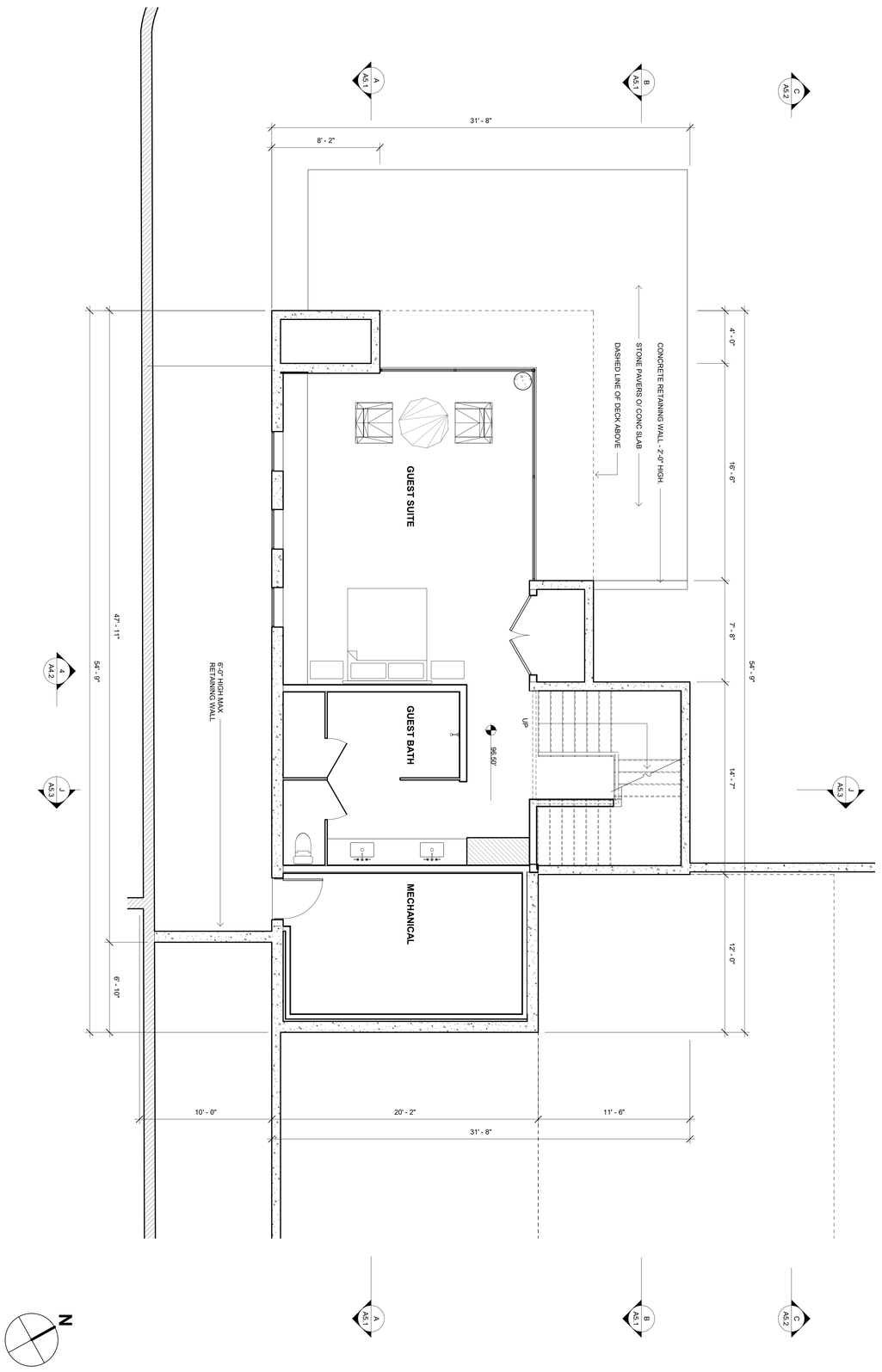
OVERALL PLANS - FLOOR PLANS & ROOF PLAN

NEW RESIDENCE FOR KEHOE PROPERTIES LLC

8322 CABRILLO HIGHWAY
MONTARA CA 94037

Date	7/8/22
Scale	1/8" = 1'-0"
Drawn by	SL
Job	2208

A1.1



LOWER LEVEL & FIRST FLOOR PLAN

NEW RESIDENCE FOR KEHOE PROPERTIES LLC

8322 CABRILLO HIGHWAY
MONTARA CA 94037

A2.0

Date	7/8/22
Scale	1/4" = 1'-0"
Drawn by	SL
Job	2208

PACIFIC PENINSULA ARCHITECTURE
718 OAK GROVE AVENUE
MENLO PARK CA 94025
T 650.323.7700
F 650.323.0025
www.pacificpeninsula.com

No.	Issue	Date	By

AREA CALCULATION TABLES
**SEE T1.1 FOR MORE INFORMATION*

FLOOR AREA	
NAME	**AREA**
LOWER LEVEL OVERHANG	134 SF
LOWER LEVEL	1,072 SF
LIVING WING	2,399 SF
BEDROOM WING	1,705 SF
ATTACHED GARAGE	644 SF
ENTRY PORCH	95 SF
TERRACE OVERHANG	130 SF
	6,179 SF

< 6,200 SF MAX
(21 SF REMAINING)

The maximum building floor area shall include the floor area of all stories of all buildings and accessory buildings on a building site. Maximum building floor area specifically includes:
1. the floor area of all stories excluding uninhabitable attics as measured from the outside face of all exterior perimeter walls
2. the area of all decks, porches, balconies or other areas covered by a waterproof roof which extends four or more feet from exterior walls
3. the area of all garages and carports.

24' - 2" | 14' - 2" | 33' - 8" | 21' - 6"

70' - 6"

112' - 10" | 11' - 0" | 11' - 4" | 20' - 0"

33' - 0" | 30' - 0" | 29' - 10" | 20' - 0"

J A5.3 | H A5.3 | 3 A4.2 | E A5.3 | 2 A4.1 | D A5.2 | C A5.2 | B A5.1 | A A5.1 | 1 A4.1

COURTYARD
(GRAVEL)

PRIMARY BATH | 26' - 0" | PRIMARY CLOSET

G A5.3 | F A5.2

PRIMARY BEDROOM

(E) PALM - SEE ARBORIST REPORT

6'-0" H. CONCRETE SITE WALL

DASHED LINE OF ROOF OVERHANG ABOVE

COURTYARD
(GRAVEL)

UTILITY / TRASH

BEDROOM #1

BATH #1

BATH #2

4' - 0"

BEDROOM #2

HALL

104.00' | 103.75'

ATTACHED GARAGE

105.00'

DN 2R

NATURAL SLOPING TOPOGRAPHY / LANDSCAPE DEVELOPMENT
SEE CIVIL & LANDSCAPE DRAWINGS FOR MORE INFO

LAUNDRY

OPAQUE GLASS WALLS

DN 3R | DN 3R | DN 3R

SKYLIGHT ABOVE STAIR

42" H. GLASS GUARDRAIL

DECK

STAIR

DN

TERRACE
STONE PAVERS O/ PEDESTAL SYSTEM

ENTRY HALL
106.50'

ENTRY PORCH

FAMILY ROOM

DINING

KITCHEN

PWDR

LIVING / STUDY

N

ds

24' - 8" | 13' - 3" | 41' - 0" | 13' - 3" | 20' - 4" | 7' - 0"

FIRST FLOOR PLAN

NEW RESIDENCE FOR KEHOE PROPERTIES LLC

8322 CABRILLO HIGHWAY
MONTARA CA 94037

No.	Issue	Date	By.

PACIFIC PENINSULA ARCHITECTURE

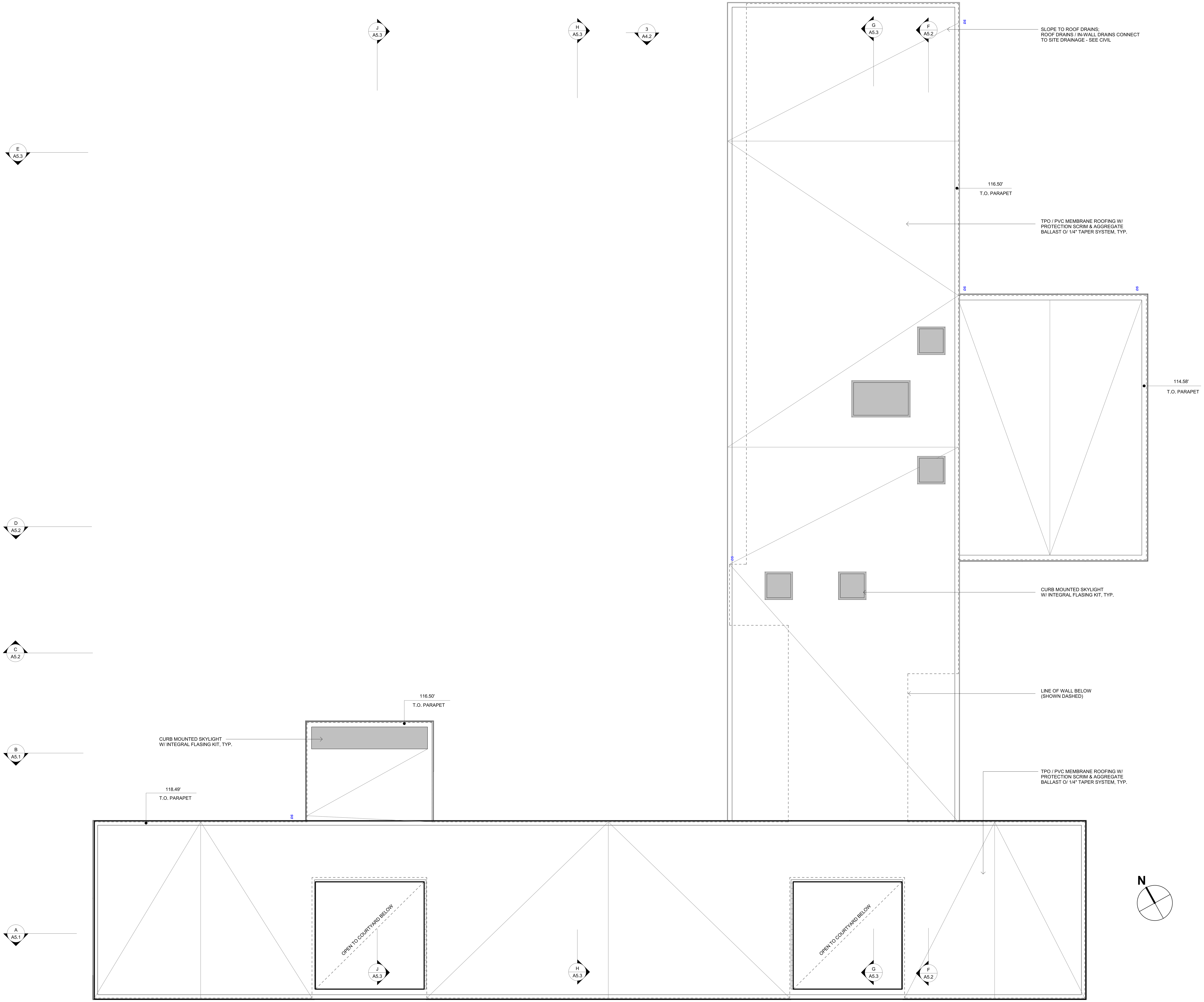
718 OAK GROVE AVENUE
MENLO PARK CA 94025

T 650.323.7900
F 650.323.0425

www.pacificpeninsula.com

Date	7/8/22
Scale	1/4" = 1'-0"
Drawn by	SL
Job	2208

A2.1



SLOPE TO ROOF DRAINS;
ROOF DRAINS / IN-WALL DRAINS CONNECT TO SITE DRAINAGE - SEE CIVIL
116.50'
T.O. PARAPET
TPO / PVC MEMBRANE ROOFING W/ PROTECTION SCRIM & AGGREGATE BALLAST O/ 1/4" TAPER SYSTEM, TYP.
114.58'
T.O. PARAPET
CURB MOUNTED SKYLIGHT W/ INTEGRAL FLASING KIT, TYP.
LINE OF WALL BELOW (SHOWN DASHED)
TPO / PVC MEMBRANE ROOFING W/ PROTECTION SCRIM & AGGREGATE BALLAST O/ 1/4" TAPER SYSTEM, TYP.
116.50'
T.O. PARAPET
CURB MOUNTED SKYLIGHT W/ INTEGRAL FLASING KIT, TYP.
118.49'
T.O. PARAPET
OPEN TO COURTYARD BELOW
OPEN TO COURTYARD BELOW
N

ROOF PLAN

No.	Issue	Date	By.

PACIFIC PENINSULA ARCHITECTURE

718 OAK GROVE AVENUE
MENLO PARK CA 94025

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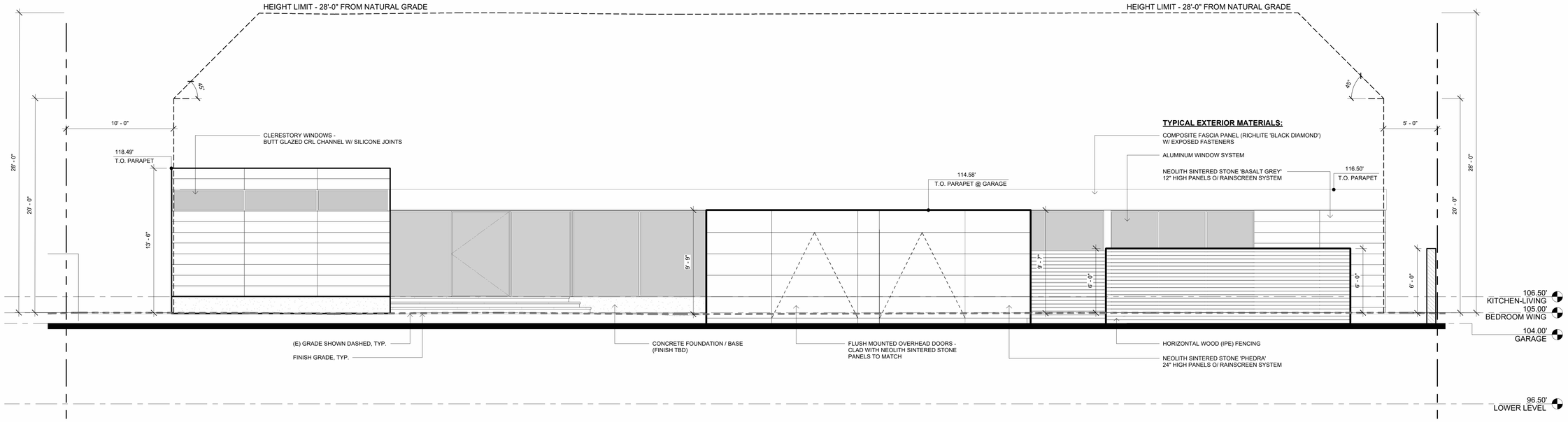
NEW RESIDENCE FOR KEHOE PROPERTIES LLC

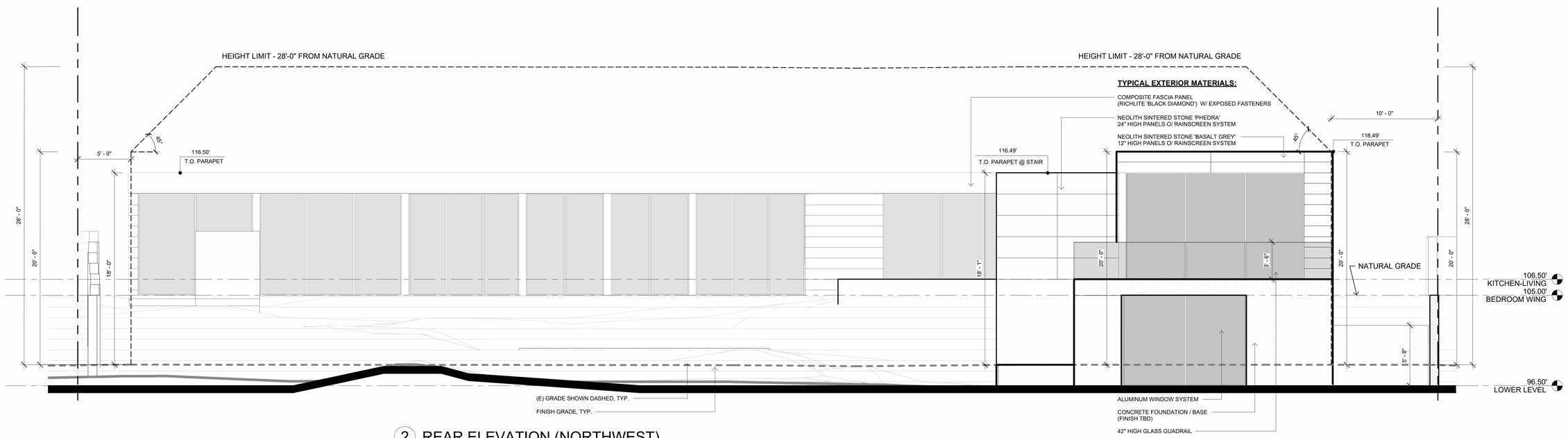
8322 CABRILLO HIGHWAY
MONTARA CA 94037

Date	7/8/22
Scale	1/4" = 1'-0"
Drawn by	SL
Job	2208

A3.1



1 FRONT ELEVATION (SOUTHEAST)



2 REAR ELEVATION (NORTHWEST)

0' 2' 4' 8' 16'

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

EXTERIOR ELEVATIONS

No.	Issue	Date	By.

PACIFIC PENINSULA ARCHITECTURE

718 OAK GROVE AVENUE
MENLO PARK CA 94025

T 650.323.7900
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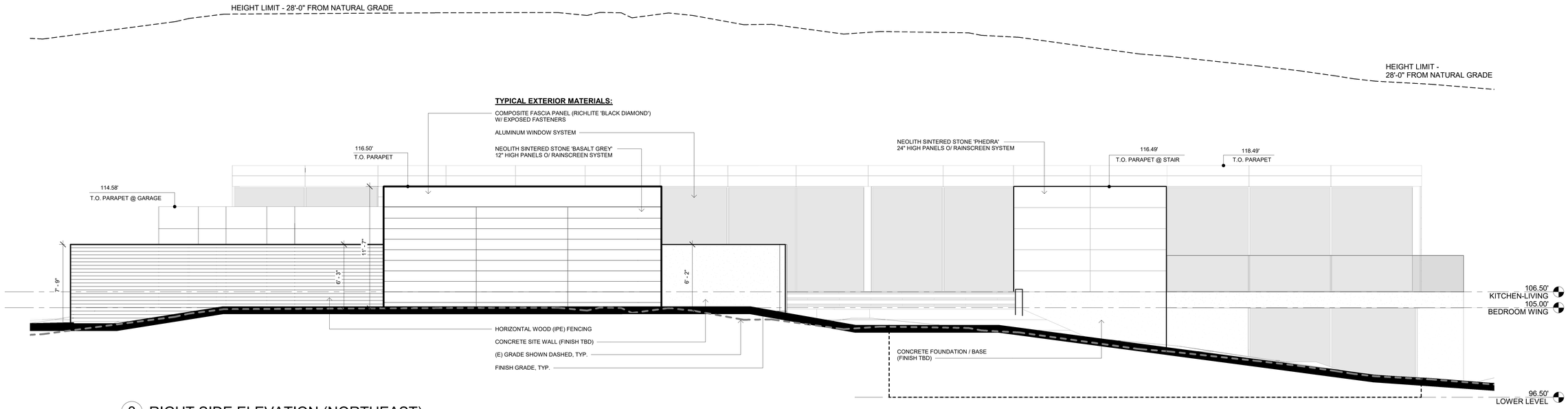
NEW RESIDENCE FOR KEHOE PROPERTIES LLC

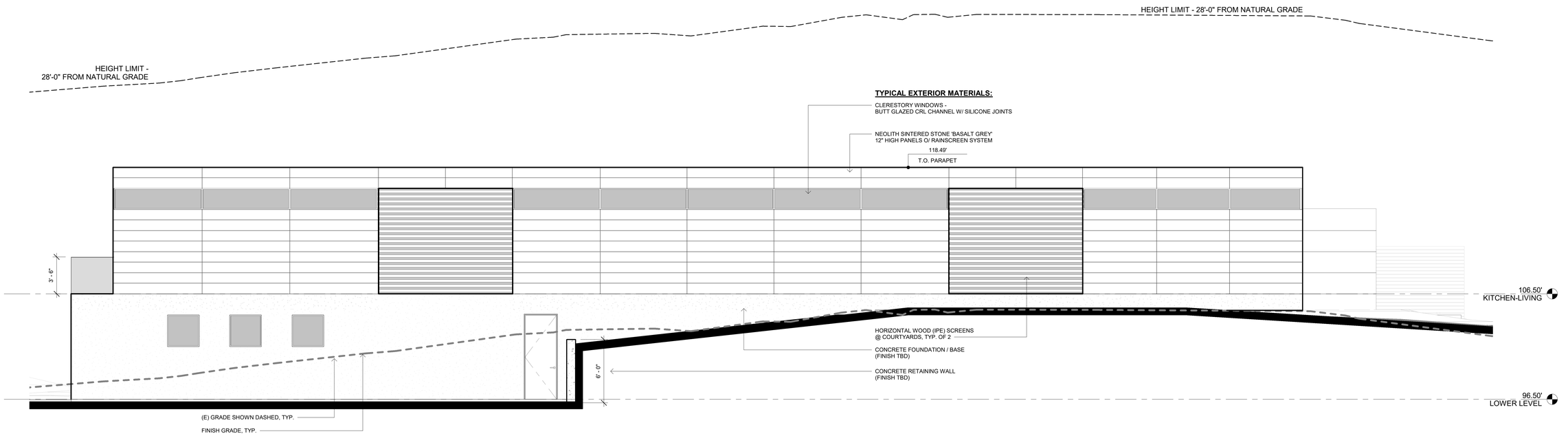
8322 CABRILLO HIGHWAY
MONTARA CA 94037

Date	7/8/22
Scale	1/4" = 1'-0"
Drawn by	SL
Job	2208

A4.1



3 RIGHT SIDE ELEVATION (NORTHEAST)



4 LEFT SIDE ELEVATION (SOUTHWEST)

0' 2' 4' 8' 16'

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

EXTERIOR ELEVATIONS

No.	Issue	Date	By.

PACIFIC PENINSULA ARCHITECTURE

718 OAK GROVE AVENUE
MENLO PARK CA 94025

T 650.323.7900
F 650.323.0425

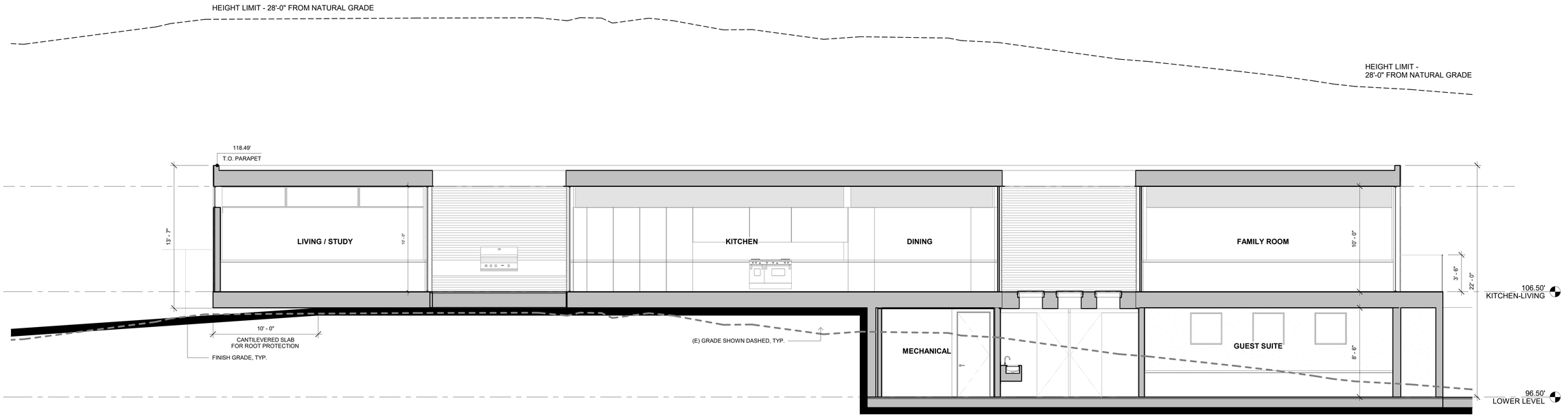
www.pacificpeninsula.com

NEW RESIDENCE FOR KEHOE PROPERTIES LLC

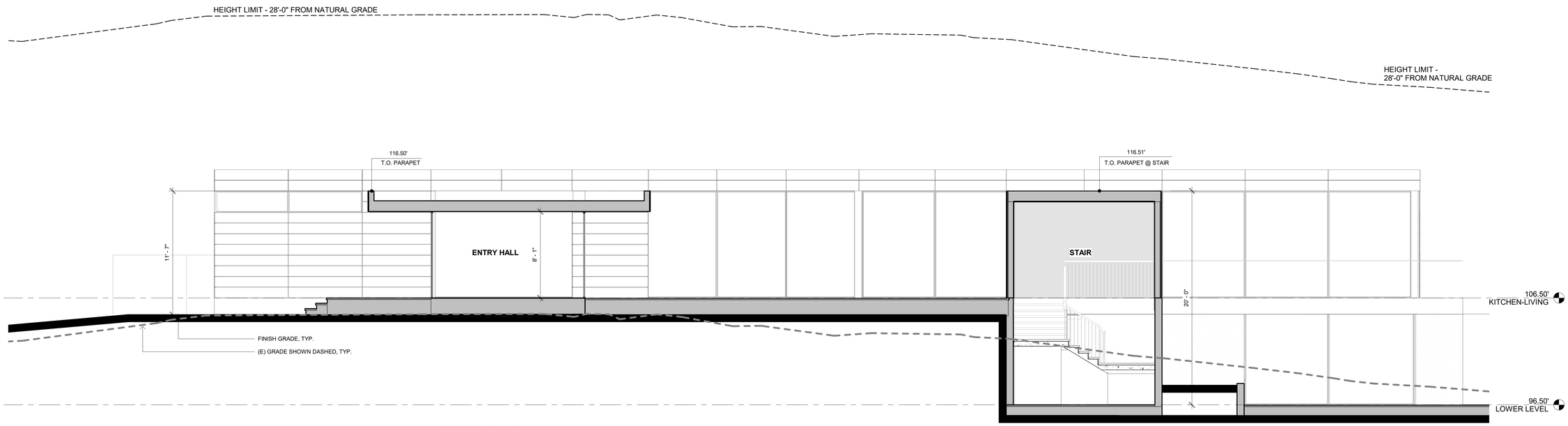
8322 CABRILLO HIGHWAY
MONTARA CA 94037

Date	7/8/22
Scale	1/4" = 1'-0"
Drawn by	SL
Job	2208

A4.2



SECTION A-A



SECTION B-B

0' 2' 4' 8' 16'

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

BUILDING SECTIONS

No.	Issue	Date	By.

PACIFIC
PENINSULA
ARCHITECTURE

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MENLO PARK, CA 94025

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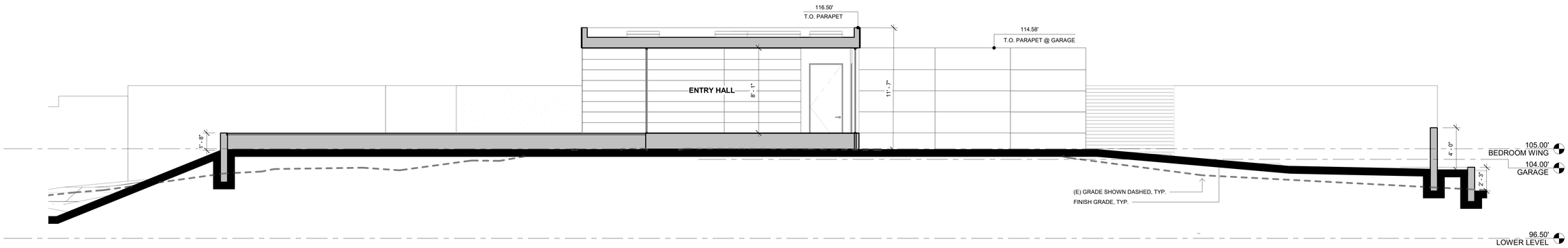
NEW RESIDENCE FOR KEHOE PROPERTIES LLC

8322 CABRILLO HIGHWAY
MONTARA CA 94037

Date	7/8/22
Scale	1/4" = 1'-0"
Drawn by	SL
Job	2208

A5.1



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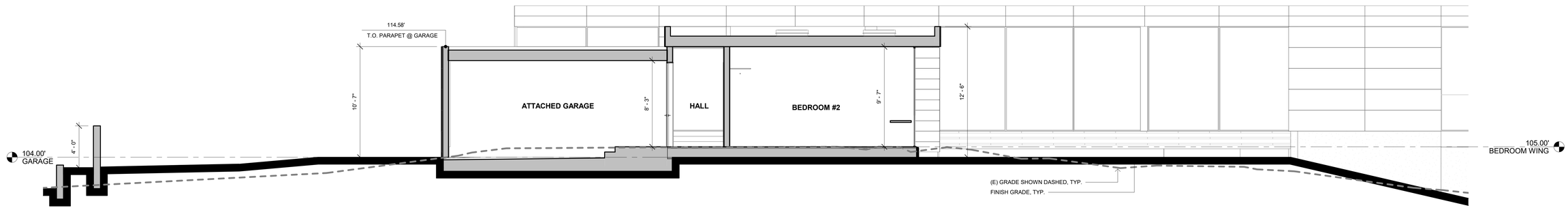

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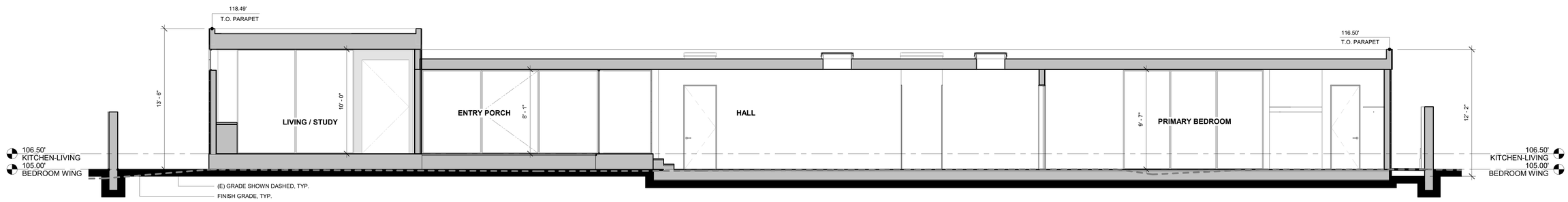

SECTION F-F

0' 2' 4' 8' 16'

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

BUILDING SECTIONS

No.	Issue	Date	By.

PACIFIC
PENINSULA
ARCHITECTURE

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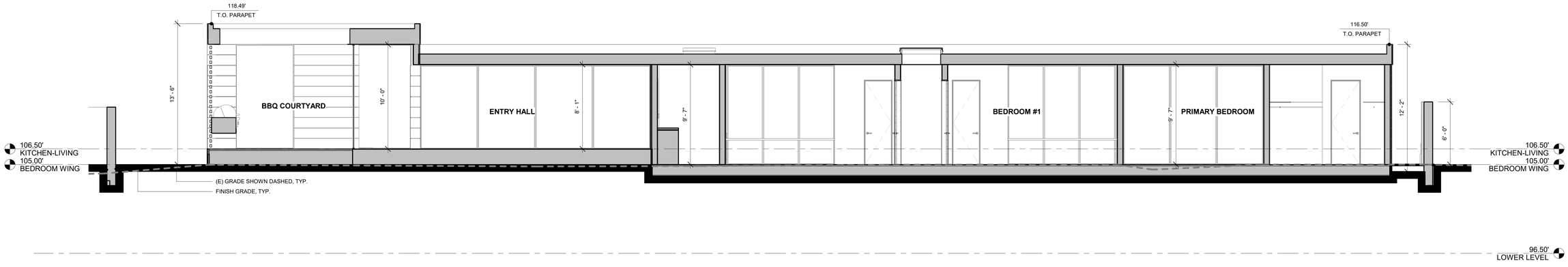
Job	2208

A5.2



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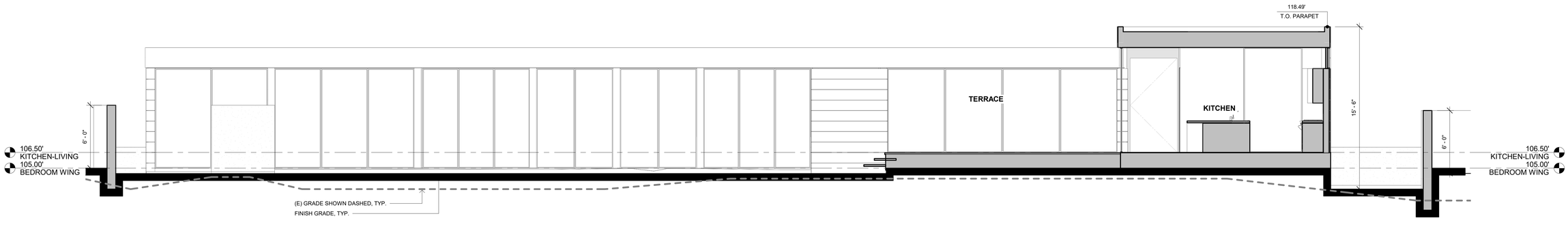

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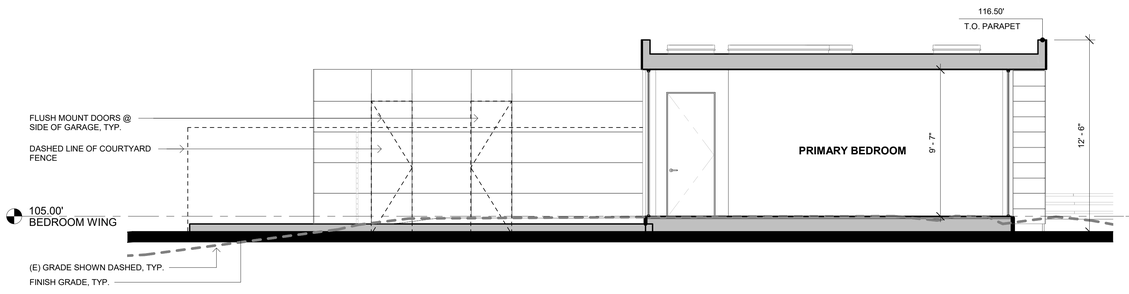

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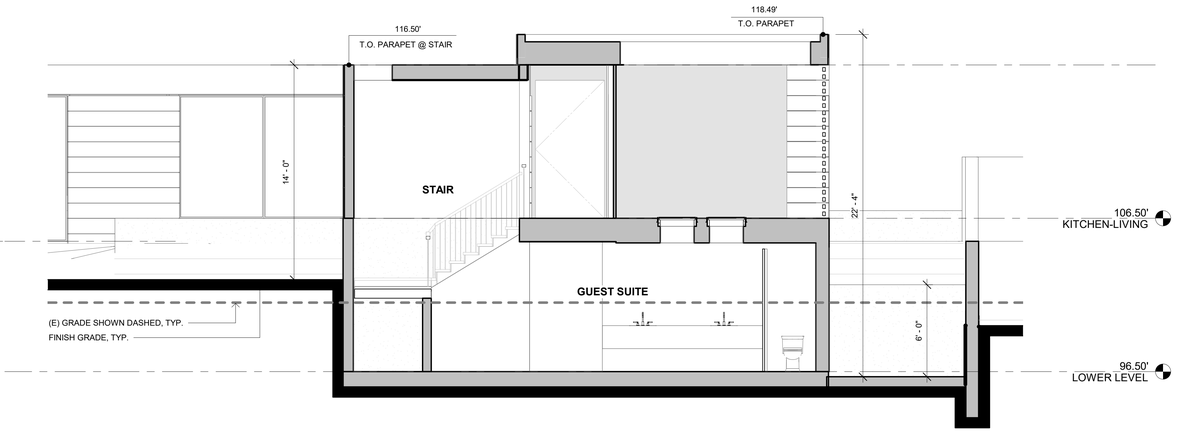

SECTION J-J

0' 2' 4' 8' 16'

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

BUILDING SECTIONS

No.	Issue	Date	By.

PACIFIC
PENINSULA
ARCHITECTURE

718 OAK GROVE AVENUE
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NEW RESIDENCE FOR KEHOE PROPERTIES LLC

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Drawn by	SL
Job	2208

A5.3

LANDSCAPE LIGHTING SPECIFCATION:

QUANTITY: 32

PATH LIGHTING

LIGHTCRAFT OUTDOOR

PROJECT	DATE
TYPE	CATALOG #

ARCHITECT PATH

ALUMINUM DIRECTIONAL PATH LIGHT

PS-501A

KEY FEATURES
- CONTEMPORARY DESIGN
- COMES WITH BOTH FLAT AND ANGLED SHROUDS
- IDEAL FOR PATH AND DRIVEWAY LIGHTING
- CAST ALUMINUM
- BRONZE OR BLACK FINISH OPTIONS
- TEMPERED, SHOCK AND HEAT RESISTENT LENS
- HIGH TEMPERATURE CERAMIC SOCKET
- FIELD REPLACEABLE LED LAMP
- DIMMABLE+

PRODUCT SPECIFICATIONS

MATERIAL	CAST ALUMINUM
FINISH	BRONZE OR BLACK
LENS	CLEAR FLAT TEMPERED
SOCKET	BI PIN
LAMP	MR16
VOLTAGE	12V
PROJECTION	UP TO 50 FT
LEAD WIRE	14"

STEP 1
FIXTURE CONFIGURATION
PS-501A [BK]
FINISH OPTION
BZ BRONZE
BK BLACK

STEP 2
LED LAMP CONFIGURATION
LED-MR16 [3.5W] [27K] [45D]
LED WATTAGE
3.5W 250 LM
4.5W 350 LM
5.5W 430 LM

KELVIN TEMPERATURE
27K 2700K
30K 3000K

BEAM ANGLE
15D 15° NARROW *
45D 45° STANDARD
60D 60° WIDE

STEP 3
ACCESSORY OPTIONS
AX-800P INCLUDED
STAKE OPTION
AX-802P HEAVY DUTY PERMA POST

* 15° Only available in 3.5w and 5.5w - 2700k or 3000k

+Fully tested with Lutron Diva (DVLV-600P) dimmer and Lightcraft dimmable transformers and LED lamps.

Coordinating Accent Light Series (FL-501A) also available

LIGHTCRAFT OUTDOOR | 9811 OWENSMOUTH AVE | UNIT 1 | CHATSWORTH, CA 91311
PHONE: 818.349.2663 | FAX: 818.349.2676 | E-MAIL: SALES@LIGHTCRAFTOUTDOOR.COM

ENTRY / TERRACE PORCH - DOWNLIGHTS

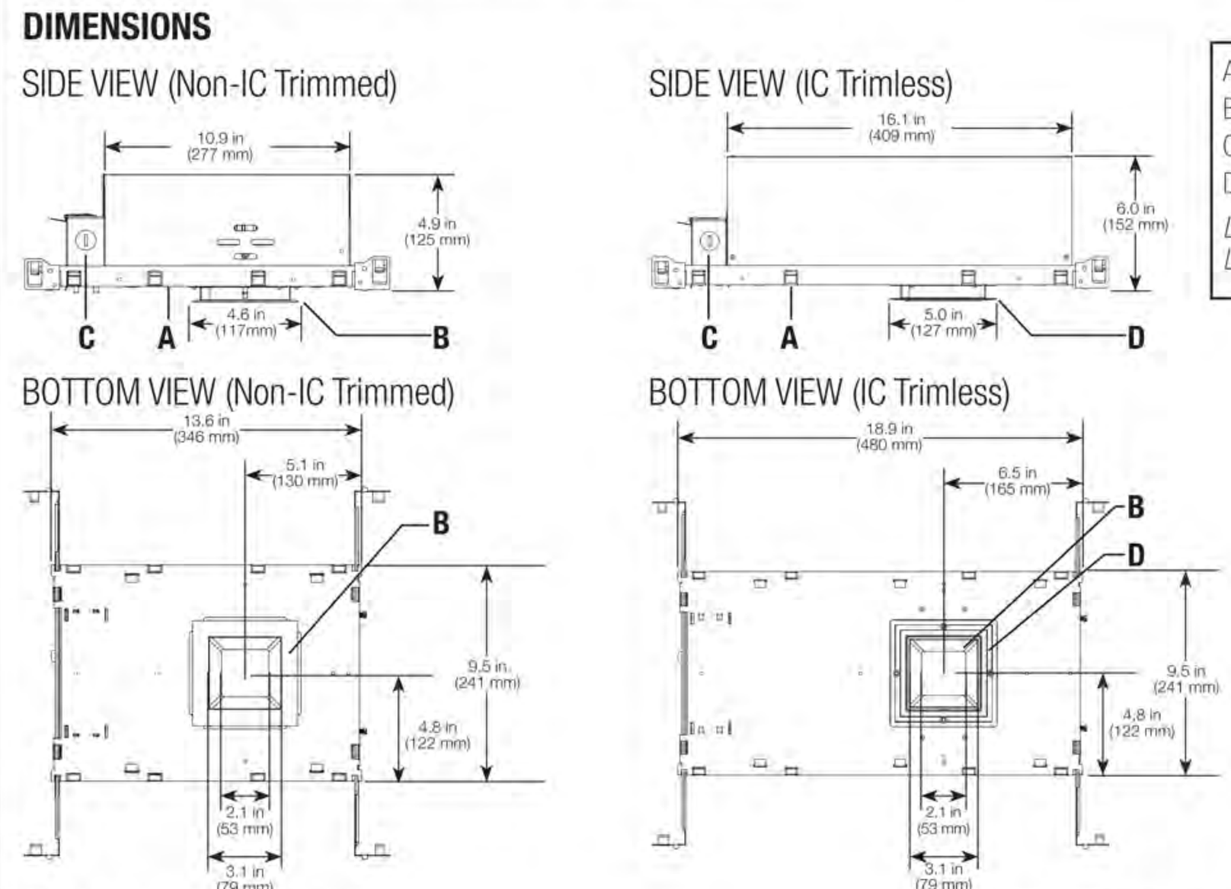
QUANTITY: 7

Finiré | 3" LED Recessed Lighting
17 W IC/Non-IC and 29 W Non-IC LED Square Downlight

LUTRON IVALO COLLECTION

367-2570h 1 01.16.19

DIMENSIONS



A Frame
B Trim
C Junction Box
D Mud Ring[1]
Lutron Hi-lume 1% LED Driver not shown

PRINCIPAL FEATURES
- Xicato® LEDs: 97 CRI, R9=95 (typical).
- Up to 1100 lm (delivered) for IC and 1750 lm (delivered) for Non-IC fixtures.
- IC fixtures are rated for spray foam applications.[2]
- Industry best fixture to fixture consistency, 1 x 2 step MacAdam Ellipses.
- Standard Lutron LED Driver delivers continuous, flicker-free dimming from 100% down to 1% of measured light output.
- Hi-lume 1% EcoSystem LED Driver features Soft-on, Fade-to-Black technology.[3]
- 50,000 hours rated LED system life (LED and driver).
- IC fixtures must be used for installations containing insulating materials. Non-IC fixtures cannot be used in this type of application.
- Housings finished with black powder coat.
- Frame constructed of 20 gauge steel.
- 15° narrow spot available. 28°, 40°, and 60° reflectors are field replaceable for standard and high-output fixtures.
- Variety of trim options including wood and stone trimless.[4]
- Chicago plenum option available.
- Wet location trim option available for wet location and covered ceiling applications (e.g., showers, enclosed/covered porches)[5].
- UL® and cUL® listed.
- Supplied with standard 14 in to 24 in (356 mm to 610 mm) adjustable bar hangers. Optional 9.5 in to 15 in (241 mm to 381 mm) bar hangers available.
- Field replaceable components (Driver, Trim, and LED).
- 2-Wire forward phase controls are generally for residential applications. EcoSystem controls are generally for commercial applications.
- IC fixtures meet airtight construction requirements for 2.0 CFM or less air leakage.
- 10-year fixture and dimming warranty. 5-year LED color shift warranty.

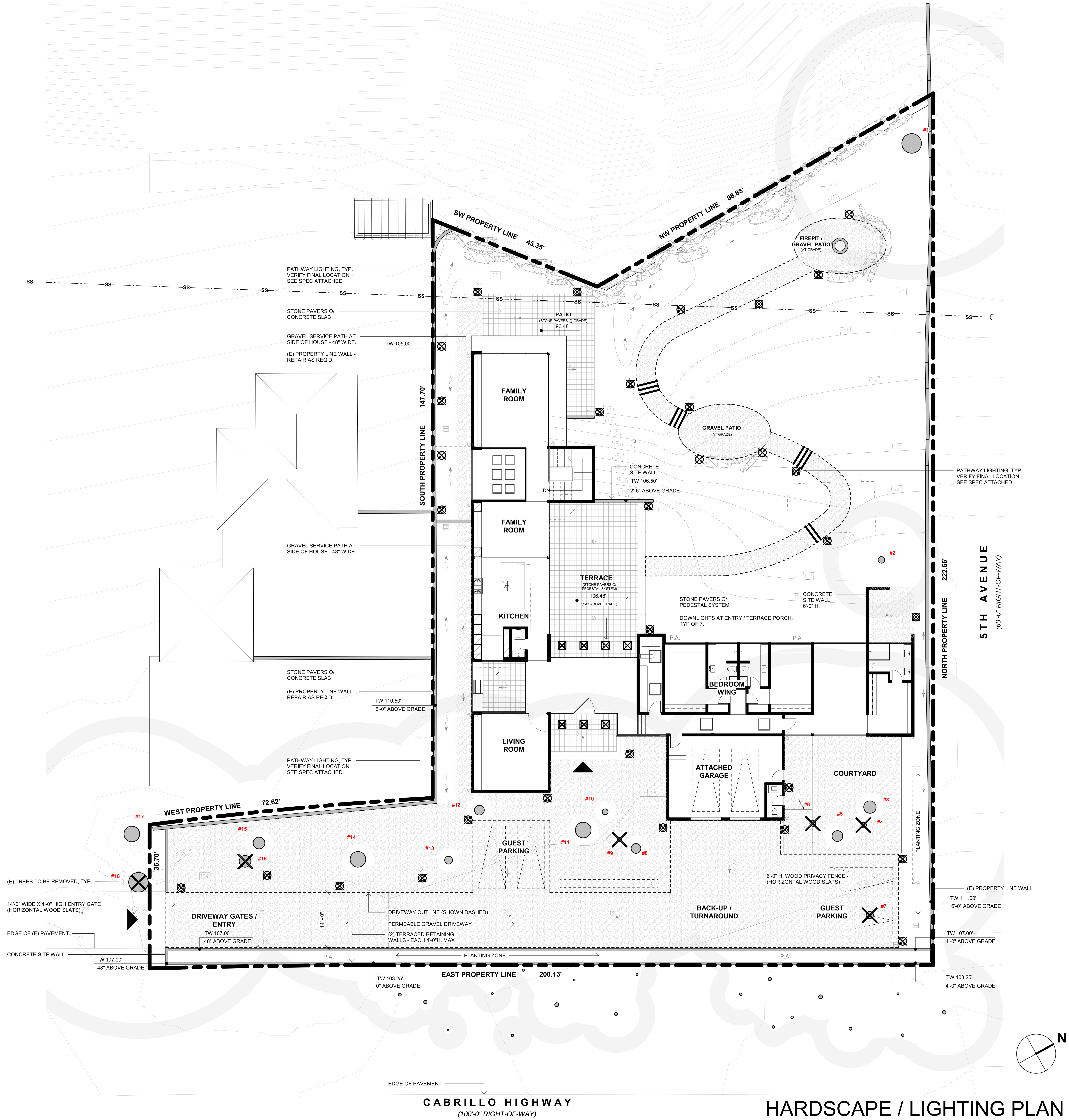
SPECIFICATIONS
Operating Temperature: 32 °F to 104 °F (0 °C to 40 °C)[2]
Decibel Rating: Quiet in a 25 dB room
Max Ceiling Thickness: 2.0 in (51 mm)
Mud Ring Thickness[1]: 0.093 in (2.4 mm)
Ceiling Cutout: 4.1 in x 4.1 in (104 mm x 104 mm)
Fixture Weight: 7.2 lb (3.3 kg) Non-IC, 8.9 lb (4.1 kg) IC.
Fixture Size:
- IC: 18.9 in x 9.5 in x 6.0 in (480 mm x 241 mm x 152 mm)
- Non-IC: 13.6 in x 9.5 in x 4.9 in (345 mm x 241 mm x 125 mm)

Junction Box Size: 5.6 in x 3.0 in x 1.6 in (143 mm x 76 mm x 41 mm). See NEC® chart 314.16A for box fill/wiring capacity.

COMPATIBLE CONTROLS
Visit www.lutron.com/finire

[1] Mud ring is for trimless fixtures only.
[2] Rated for direct application of spray foam with less than R-21 insulative value or 3 in (76.2 mm) of closed cell spray foam. 95 °F (35 °C) maximum operating temperature.
[3] PWM dimming below 5% for Hi-lume 1% EcoSystem H-Series drivers.
[4] For additional details please see Lutron Application Note #564 at www.lutron.com
[5] Refer to **SPECIFICATIONS** and fixture installation guide for allowable product operating conditions.

www.lutron.com/Ivalo IVALO | 1



HARDSCAPE / LIGHTING PLAN

No.	Issue	Date	By.

PACIFIC PENINSULA ARCHITECTURE
718 OAK GROVE AVENUE
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T 650.323.7900
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www.pacificpeninsula.com

NEW RESIDENCE FOR KEHOE PROPERTIES LLC
8322 CABRILLO HIGHWAY
MONTARA CA 94037

Date	7/8/22
Scale	1" = 10'-0"
Drawn by	SL
Job	2208

L1

PLANTING LEGEND:

	WUCOLS
PERIMETER LANDSCAPE SCREENING	
Garrya elliptica	Low
Pittosporum crassifolium	Moderate
Arctostaphylos "Big Sur"	Low
Olea "Little Ollie	Very Low
ENTRY / DRIVEWAY PLANTING MIX	
Agave Nova	Very Low
Crassula multicaeva	Low
Arctostaphylos "John Dourley"	Low
Facsicularia sp.	Low
OCEANSIDE PLANTING MIX	
Shrubs	
Leptospermum reevsii	Low
Salvia (coastal varieties)	Low
Salvia lanceolata	Low
Ceanothus (coastal varieties)	Low
Ground Covers	
Arctostaphylos "John Dourley"	Low
Arctostaphylos "Pacific Mist"	Low
Arctostaphylos x media 'Bokeya Pomo'	Low
Arctostaphylos x media 'Peter Erlich'	Low
Calocephalus brownii	Low
Succulents	
Aloe sp.	Low
Cotyledon sp.	Low
Dudleya hassei	Low
Sedum sp.	Low
Grasses	
Carex pansa	Moderate
Deschampsia caespitosa holciformis 'Sonoma Coast'	Low
Fescue 'Patricks Point'	Low
Rhodocoma arida	Low
Wildflowers	
Fragaria - Beach Strawberry	Moderate
Achillea "Sonoma Coast"	Low
Eschscholzia Maritima	Very Low
Lupine (coastal varieties)	Low
Iris douglasiana (coastal selections)	Low

IRRIGATION NOTE:

- NO AUTOMATED IRRIGATION - HAND WATER ONLY
- NO SUPPLEMENTAL WATERING AFTER FIRST SUMMER OF HAND WATERING


Garrya elliptica


Arctostaphylos "Big Sur"


Arctostaphylos "John Dourley"

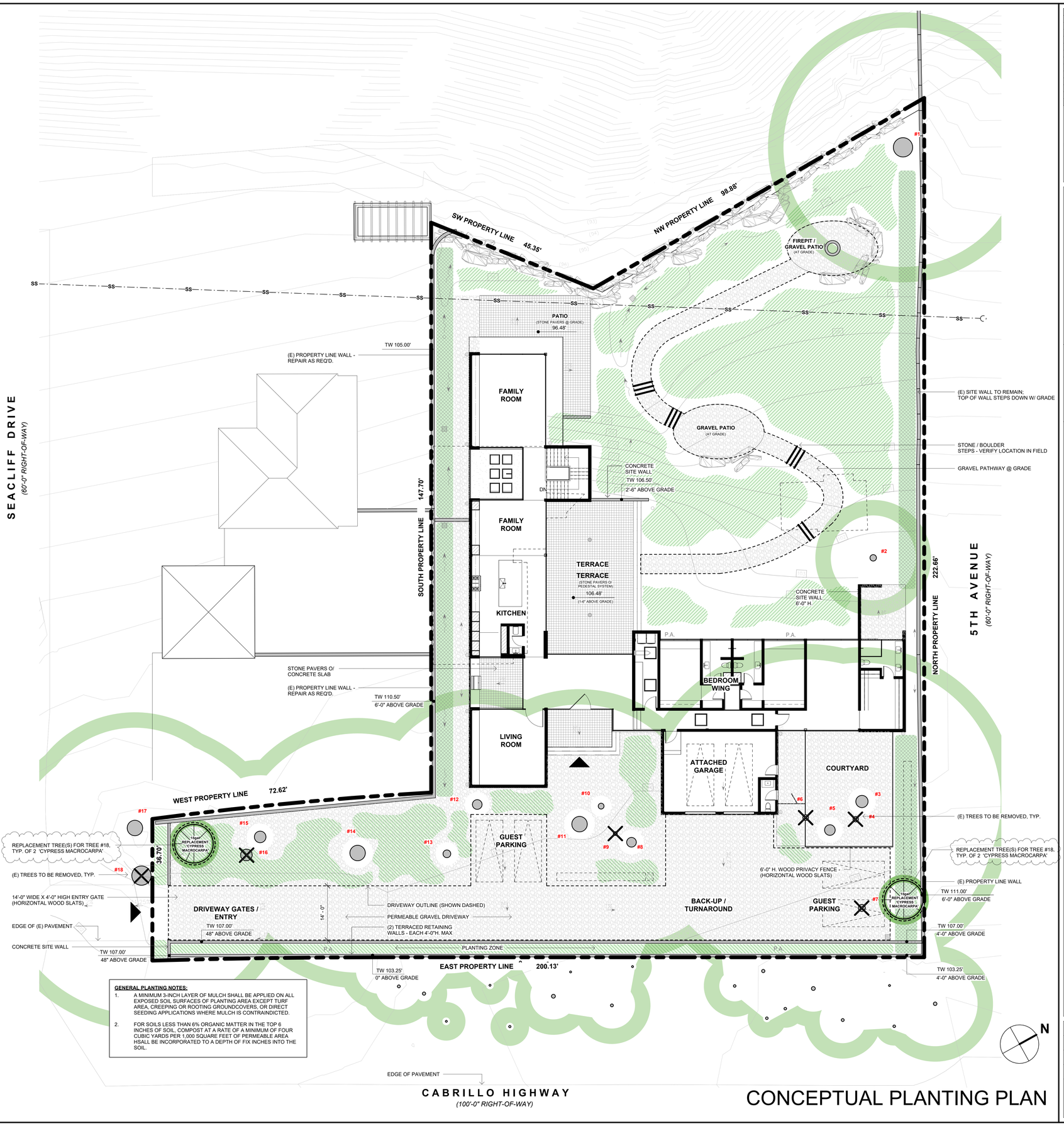

Salvia lanceolata


Agave Nova


Carex pansa


Achillea "Sonoma Coast"


Eschscholzia Maritima



GENERAL PLANTING NOTES:

1. A MINIMUM 3-INCH LAYER OF MULCH SHALL BE APPLIED ON ALL EXPOSED SOIL SURFACES OF PLANTING AREA EXCEPT TURF AREA, CREEPING OR ROOTING GROUNDCOVERS, OR DIRECT SEEDING APPLICATIONS WHERE MULCH IS CONTRAINDICTED.
2. FOR SOILS LESS THAN 6% ORGANIC MATTER IN THE TOP 6 INCHES OF SOIL, COMPOST AT A RATE OF A MINIMUM OF FOUR CUBIC YARDS PER 1,000 SQUARE FEET OF PERMEABLE AREA HSALL BE INCORPORATED TO A DEPTH OF FIX INCHES INTO THE SOIL.

CONCEPTUAL PLANTING PLAN

No.	Issue	Date	By.
1	PLAN CHK	12/20/22	SL

PACIFIC PENINSULA ARCHITECTURE
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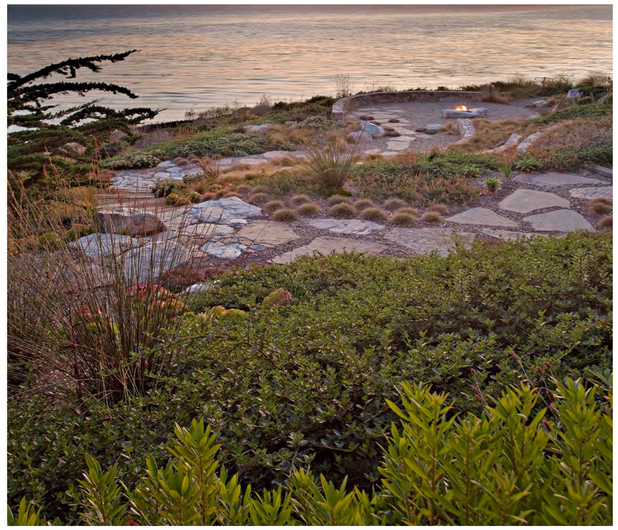
NEW RESIDENCE FOR KEHOE PROPERTIES LLC
8322 CABRILLO HIGHWAY
MONTARA CA 94037

Date	7/8/22
Scale	As indicated
Drawn by	SL
Job	2208

L2

REFERENCE IMAGE - CARMEL RIDGE (JIM JENNINGS & BERNARD TRAINOR / GROUND STUDIO)

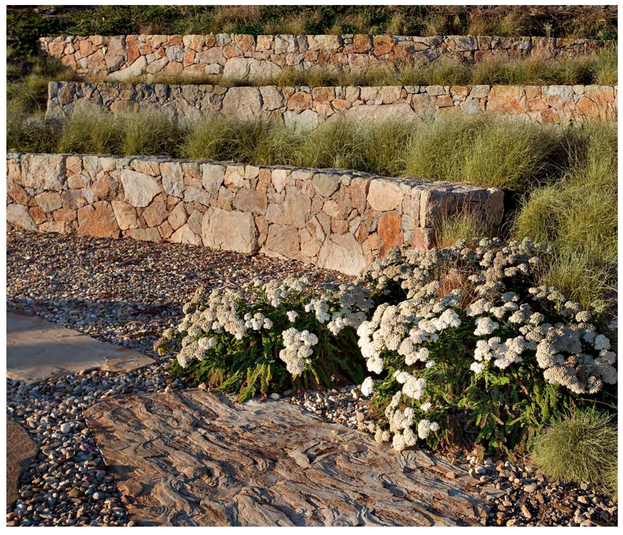


REFERENCE IMAGE - WIND & SEA (BERNARD TRAINOR / GROUND STUDIO)

REFERENCE IMAGE - CARMEL RIDGE (JIM JENNINGS & BERNARD TRAINOR / GROUND STUDIO)

REFERENCE IMAGE - WIND & SEA (BERNARD TRAINOR / GROUND STUDIO)

REFERENCE IMAGE - CARMEL RIDGE (JIM JENNINGS & BERNARD TRAINOR / GROUND STUDIO)



REFERENCE IMAGE - WIND & SEA (BERNARD TRAINOR / GROUND STUDIO)

LANDSCAPE CONCEPTS / INSPIRATION

No.	Issue	Date	By.

PACIFIC
PENINSULA
ARCHITECTURE

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MONTARA CA 94037

Date	7/8/22
Scale	
Drawn by	SL
Job	2208

L3

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT D

GEOLOGIC AND GEOTECHNICAL STUDY
PROPOSED RESIDENTIAL REDEVELOPMENT

KEHOE PROPERTIES LLC PROPERTY
8322 CABRILLO HIGHWAY
SAN MATEO COUNTY, CALIFORNIA

Prepared For:

Kehoe Properties LLC
c/o Mr. Kevin Kehoe
1263 Connecticut Street
San Francisco, California

22 September 2022
Document Id. 22070C-01R2

C2EARTH

22 September 2022
Document Id. 22070C-01R2
Serial No. 20488

Kehoe Properties LLC
c/o Mr. Kevin Kehoe
1263 Connecticut Street
San Francisco, CA 94107

SUBJECT: GEOLOGIC AND GEOTECHNICAL STUDY
PROPOSED RESIDENTIAL REDEVELOPMENT
KEHOE PROPERTIES LLC PROPERTY
8322 CABRILLO HIGHWAY
SAN MATEO COUNTY, CALIFORNIA

Dear Mr. Kehoe:

As you requested, we have performed a geologic and geotechnical study for the proposed residential redevelopment of the Kehoe Properties LLC property at 8322 Cabrillo Highway in the Montara area of unincorporated San Mateo County, California. The accompanying report presents the results of our study and testing, and our conclusions and recommendations concerning the engineering geologic and geotechnical engineering aspects of the project. The findings and recommendations presented in this report are contingent upon our review of the final grading, foundation, and drainage control plans; our observation of the grading; and the installation of the foundation and drainage control systems.

This report includes information that is vital to the success of your project. We strongly urge you to thoroughly read and understand its contents. Please refer to the text of the report for detailed findings and recommendations.

Sincerely,
C2Earth, Inc.

Kirby G. Kiefer
Project Geologist

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED

Craig N. Reid, Principal
Certified Engineering Geologist 2471
Registered Geotechnical Engineer 3060

REGISTERED PROFESSIONAL ENGINEER
CRAIG N. REID
No. 3060
GEOTECHNICAL
STATE OF CALIFORNIA

Christopher R. Hundemer, Principal
Certified Engineering Geologist 2314
Certified Hydrogeologist 882
Registered Civil Engineer 87149

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER R. HUNDEMER
87149
CIVIL
STATE OF CALIFORNIA

Distribution: Addressee (1 hard copy mailed and via e-mail to kehoeproperties@gmail.com)
Mr. Sean Lopes (via e-mail to slopes@pacificpeninsula.com)
Mr. Jim Jennings (via e-mail to jjennings@jimjenningsarchitecture.com)

TABLE OF CONTENTS

1. INTRODUCTION

This report presents the results of our geologic and geotechnical study for the proposed residential redevelopment of the Kehoe Properties LLC property at 8322 Cabrillo Highway in the Montara area of unincorporated San Mateo County, California (see Figure 1, Site Location Map).

We have previously conducted a geologic and geotechnical study for the residential redevelopment of the site on behalf of a prior owner and issued a report dated 30 April 2019 (Document Id. 18114C-01R1). Subsequently, the Kehoe Properties LLC has acquired the subject property and the redevelopment plans have been modified. Pertinent information from our prior Report has been integrated into this stand-alone report for the site redevelopment.

Based upon our review of the project plans, we understand that you are planning to raze the existing residence and other structures on the property and construct a new, single-family residence with a partial basement. The purpose of our study was to characterize the geologic and geotechnical conditions on the subject property in the area of the proposed residence and associated improvements, and to develop findings and recommendations for the earthwork and foundation engineering aspects of the project.

We issue this report with the understanding that it is the responsibility of the owner, or the owner's representative, to ensure that the information and recommendations contained in this report are brought to the attention of the project architect and engineer and are incorporated into the plans and specifications of the development. The owner or owner's representative must also ensure that the contractor and subcontractors follow the recommendations during construction.

2. SCOPE OF SERVICES

We have prepared this report in accordance with the scope and conditions presented in our proposal dated 26 May 2022 (Document Id. 22070C-01P1). The methodology of our evaluation is discussed in the body of this report. We make no other warranty, either expressed or implied. Our scope of services for this study included:

- Reviewing selected geologic literature, aerial photographs, and previous consultants' reports of the area, to evaluate the prevailing geologic and geotechnical conditions;
- reviewing historic aerial photographs;
- performing an engineering geologic reconnaissance and mapping of the site;
- preparing a partial site plan and slope profile;
- conducting subsurface exploration;
- performing field and laboratory testing;
- analyzing geologic and geotechnical engineering properties from collected data;
- assessing the coastal bluff retreat rate;
- evaluating quantitative slope stability of the coastal bluff; and
- preparing this report.

We have prepared this report as a product of our service for the property owner's exclusive use in designing and redeveloping the subject site. Other parties may not use this report, nor may the report be used for other purposes, without prior written authorization from C2Earth, Inc (C2).

Because of possible future changes in site conditions or the standards of practice for geotechnical engineering and engineering geology, the findings and recommendations of this report may not be considered valid beyond three years from the report date, without review by C2. In addition, in the event that any changes in the nature or location of the proposed improvements are planned, the conclusions and recommendations of this report may not be considered valid unless we review such changes, and modify or verify in writing the conclusions and recommendations presented in this report.

Our study excluded an evaluation of hazardous or toxic substances, corrosion potential, chemical properties, and other environmental assessments of the soil, subsurface water, surface water, and air on or around the subject property. The lack of comments in this report regarding the above does not indicate an absence of such substances and/or conditions.

3. GEOLOGY AND SEISMICITY

We reviewed selected geologic maps, aerial photographs, and other consultant's reports to evaluate the prevailing geologic conditions of the site and in the vicinity. The Regional Geologic Map is presented on Figure 2. The Regional Seismic Hazard Zones Map and Regional Liquefaction Potential Map are presented on Figures 3 and 4. The following is a discussion of the geology and geologic hazards that could affect the site.

3.1. Geology

The subject property occupies a flat terrace at the top of a northwest-facing bluff, which constitutes the lowest emergent marine terrace in the Montara area on the San Francisco Bay Peninsula. The terrace abuts the western foothills of the central Santa Cruz Mountains, a northwest-trending range within the California Coast Ranges geomorphic province (see Figure 1). That range is characterized by linear ridge lines and valleys that generally follow a northwest-southeast trend. The coast and western side of the Santa Cruz Mountains are underlain at depth by the Salinian Block, a geologic prism comprised of granite and metamorphosed basement bedrock.

Tectonic movement has resulted in the formation of the Santa Cruz Mountains and is responsible for compression, uplift, deformation, erosion, and redeposition of sedimentary rocks. Along the coast, the ongoing tectonic activity and the associated compressional zone has resulted in a series of uplifted marine terraces. This compressional zone has also resulted in the uplift of basement rocks of the Montara Mountain, La Honda, and Pigeon Point blocks.

Beneath the site, the lowest emergent marine terrace and underlying granitic basement rocks have been shaped by previous generations of wave action. According to the geologic map, Geology of the Onshore Part of San Mateo County, California (Brabb et al., 1998), Pleistocene (approximately 10,000 to 2.6 million years old) marine terrace deposits overlie Cretaceous (65 million to 144 million years old) granitic rocks of Montara Mountain (see Figure 2). The marine

terrace deposits are generally described as poorly consolidated and poorly indurated, well to poorly sorted sand and gravel. The granitic rocks are generally described very light gray to light brown, highly fractured and deeply weathered, medium to coarsely crystalline, foliated rocks. The geologic relationship between the terrace deposits and the granitic rock represents an erosional unconformity, where rocks or deposits that are younger than the granitic rocks but older than the terrace deposits have been eroded away leaving a discontinuous gap in the geologic time sequence.

Beach sand is mapped northeast of the coastal bluff, along Montara Beach. The beach sand is described as Holocene age (approximately 10,000 years or younger), predominantly loose, medium to coarse grained, well sorted sand. The thickness of the beach deposits are variable due to seasonal changes in wave energy and varying depositional environments.

3.2. Landsliding

The topography in the eastern and central portion of the property is generally flat and very gently sloping. The coastal bluff adjacent to the western property boundary is steep to very steep. During our site reconnaissance on 1 June 2022, we observed two areas where deposits on the bluff mobilized and flowed down to the bench and based upon our conversations with you, we understand that the failures occurred on 24 May 2022. The disturbed areas are characteristic of debris-flow type failures, with the largest debris flow scar measuring about 15 feet wide and about 4 feet deep at its widest and deepest points.

In the area where the debris flows occurred, the granitic rocks are overlain by slope debris and a prolonged water leak was identified adjacent to the northeast side of the subject property. Based on our observations, the water leak caused the slope debris to become saturated and mobilize downslope. A comparison of our prior site observations and aerial imagery obtained in 2019 shows that the subject bluff was well vegetated and appeared to be in a stable configuration prior to the water leak.

Given the recent damage, the loose deposits and soft fill overlying the granitic rocks along the bluff could be subject to slope instability. Additionally, according the State Seismic Hazard Zones Map of the Montara Mountain Quadrangle (CGS, 2019), the site is mapped within a hazard zone for earthquake-induced landsliding (see Figure 3). These zones were established to minimize the loss of life and property by identifying and mitigating seismic hazards related to landslide. Because of the proximity of the steep bluff and presence of loose deposits and soft fill, we have conducted a quantitative slope stability analysis, the results of which are presented in Section 5 of this report.

3.3. Dynamic Settlement, Liquefaction, and Lateral Spreading

Dynamic settlement is the process where earthquake-induced shaking can cause unsaturated coarse-grained deposits to rearrange into a denser, more compact configuration. This process can result in vertical settlement and surface deformation. Because of the presence of unsaturated coarse-grained terrace deposits, we have performed a quantitative assessment of the potential for dynamic settlement of the deposits based upon procedures proposed by Pradel (1998) and average standard penetration test values. The results of the assessment are present in the findings section of this report.

Liquefaction is the temporary transformation of soil from a solid to a liquefied state. During cyclic loading, especially earthquake-induced loading, excess pore water pressure builds up causing saturated soil to temporarily lose its shear strength. Soils susceptible to liquefaction include saturated loose to medium dense sand and gravel, low-plasticity silt, and some low-plasticity clay deposits.

Lateral spreading is a phenomenon in which surficial soil displaces along a slip surface that forms within an underlying liquefied layer. Upon reaching mobilization, the surficial blocks are transported downslope or in the direction of a free face by earthquake and gravitational forces.

According to the Liquefaction Susceptibility Map of San Mateo County, California (Youd and Perkins, 1987), the site is mapped within an area designated as having very low liquefaction potential (see Figure 4). Additionally, the site is not mapped within State Seismic Hazard zone for earthquake-induced liquefaction (see Figure 3).

3.4. Coastal Processes

Based upon our review of 1965 aerial imagery, the bluff adjacent to the subject property has not measurably retreated since before the images were taken. Additionally, according to the mapping and analyses performed by Griggs and Savoy (1985), the subject sea bluff is located within a low risk hazard zone and is considered to have a negligible erosion rate (zero reported inches per year).

We reviewed the publication Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present and Future, prepared by the Committee on Sea Level Rise in California, Oregon, and Washington that is part of the National Research Council of the National Academies (2012). The report documents extensive studies and analyses for the potential and amount of sea-level rise along the western coast of the United States. The studies indicate that the coast of Central California will experience a projected sea level rise of 93.1 cm (plus or minus one standard deviation of 24.9cm) between the years 2000 and 2100. This amounts to a maximum of about 4 feet of sea level rise.

Because the property is situated on a terrace approximately 100 feet above sea level and according to the San Mateo County Tsunami Map (CGS et. al., 2009), the subject property is not located within tsunami inundation zone.

3.5. Seismicity

Geologists and seismologists recognize the greater San Francisco Bay Area as one of the most active seismic regions in the United States. The seismicity in the region is related to activity within the San Andreas fault system, a major rift in the earth's crust that extends for at least 700 miles along the California Coast. Faults within this system are characterized predominantly by right-lateral, strike-slip movement. The four major faults that pass through the Bay Area in a northwest direction have produced approximately 12 earthquakes per century strong enough to cause structural damage. These major faults are the San Andreas, Hayward, Calaveras, and San Gregorio faults.

The site can be expected to experience periodic minor earthquakes or even a major earthquake (Moment magnitude 6.7 or greater) on one of the nearby active or potentially active faults during the design life of the proposed project. The Moment magnitude scale is directly related to the amount of energy released during an earthquake and provides a physically meaningful measure of the size of an earthquake event.

The U.S. Geological Survey (2016) estimates that by 2043, the probability of a Moment magnitude 6.0 earthquake occurring on one of the active faults in the San Francisco region is 98%. The probability of a Moment magnitude 6.7 or greater earthquake occurring on one of the active faults in the San Francisco region is 72%. The following table provides corresponding estimates for the probability of a major earthquake (Moment magnitude 6.7 or greater) for four major faults in the Bay Area.

Fault	Probability (%)
Hayward	33
Calaveras	26
San Andreas	22
San Gregorio	6

30-Year Probability of Magnitude 6.7 or Greater Earthquake

The portion of the California coast in the region of the subject site straddles the margin between the North American and Pacific tectonic plates. The bedrock in the site area is bounded to the northeast by the San Andreas fault system and to the southwest by the San Gregorio fault system. The San Andreas fault has a regional trend of approximately N34W, with cumulative strike-slip offsets, measuring hundreds of miles. The subject property is situated within the San Gregorio fault zone. Locally, the northern extent of the San Gregorio fault system includes the Seal Cove fault. The following table indicates the approximate distance and direction from the site to active and potentially active faults.

Fault	Approx. Distance To Fault	Direction From Site
Seal Cove (nearest trace)	350 feet	Northeast
Pilarcitos	3¼ miles	Northeast
San Andreas	6¼ miles	Northeast
Hayward	24¾ miles	Northeast
Calaveras	25½ miles	Northeast

Regional Fault Distances and Directions

According to the California State Special Studies Zones Map by the California Division of Mines and Geology (1996), the site is mapped outside of the current Alquist-Priolo Earthquake Fault Zone for areas prone to earthquake ground rupture.

Because of the site's proximity to the Seal Cove fault (northeastern segment of the San Gregorio fault) and the site's geology, maximum anticipated ground shaking intensities for the area are characterized as violent and equal to a Modified Mercalli (MM) intensity of IX (Association of

Bay Area Governments, 2021). An earthquake having a MM intensity of IX generally causes severe damage and partial collapse to well-built ordinary structures, and considerable damage to specially designed earthquake-resistant structures (Yanev, 1974) (see Table I, Modified Mercalli Scale of Earthquake Intensities).

The intensity of an earthquake differs from the Moment magnitude, in that intensity is a measure of the effects of an earthquake, rather than a measure of the energy released. These effects can vary considerably based on the earthquake magnitude, distance from the earthquake's epicenter, and site geology.

Since 1800, four major earthquakes have been recorded on the San Andreas fault. In 1836, an earthquake with an estimated maximum intensity of VII on the MM scale occurred east of the Monterey Bay on the San Andreas fault (Toppozada and Borchardt, 1998). The estimated Moment magnitude (M_w) for this earthquake is about 6.25. In 1838, an earthquake occurred with an estimated intensity of about VIII-IX (MM), corresponding to a M_w of about 7.5. The San Francisco Earthquake of 1906 caused the most significant damage in the history of the Bay Area in terms of lives lost and cost of property damage. This earthquake created a surface rupture along the San Andreas fault from Shelter Cove to San Juan Bautista, about 290 miles in length. It had a maximum intensity of XI (MM), a M_w of about 7.9, and was felt as far away as Oregon, Nevada, and Los Angeles. The most recent earthquake to affect the Bay Area was the Loma Prieta earthquake of 17 October 1989, occurring in the Santa Cruz Mountains, which had a M_w of about 6.9. Ground shaking equal to an MM intensity of VI was felt at the site during the Loma Prieta Earthquake (Stover, et al., 1990).

In 1868, an earthquake with an estimated maximum MM intensity of X and M_w of about 7.0 occurred on the southern segment of the Hayward fault, between San Leandro and Fremont. In 1861, an earthquake of unknown magnitude (likely having an M_w of about 6.5) was reported on the Calaveras fault. The most recent significant earthquake on this fault was the 1984 Morgan Hill Earthquake, that had an M_w of about 6.2.

4. SITE CHARACTERIZATION

4.1. Regional Setting

We reviewed the aerial photographs and topographic maps for the site and vicinity. The irregularly shaped, 0.6-acre lot is situated across the terrace, upslope of the northwest-facing bluff, at an approximate Elevation between 95 and 100 feet above mean sea level based upon WGS84 projection (or relative elevation between 91 and 105 based upon the site survey). Beyond the rear (northwestern) portion of the property, the bluff descends to a rocky beach. The subject property is bounded to the northeast and southwest by developed residential properties, and to the southeast by Cabrillo Highway.

4.2. Site Description

On 14 December 2018, our principal engineer/geologist performed an initial site reconnaissance. Our principal engineer/geologist returned to the site and our senior staff geologist visited the site on 6 February 2019 to conduct site mapping and perform a photogrammetric survey using an unmanned aerial vehicle. Our principal geologist/engineer also visited the site to perform additional reconnaissance on 21 February 2019. Recently, on 1 June 2022, our principal engineer/geologist returned to the site to perform an update reconnaissance and conduct a subsequent photogrammetric survey.

We developed a site plan based upon Preliminary Grading / Drainage and Utility Plan, Sheet C-2 dated 6 July 2022 by MacLeod and Associates; aerial photogrammetric survey obtained on 1 June 2022 using an unaccompanied aerial vehicle and processed using DroneDeploy, Inc. software; Google Earth imagery; and supplemented by tape and compass mapping techniques (see Figure 5, Partial Site Plan and Engineering Geologic Map).

We developed a slope profile based upon the grading plans by MacLeod and Associates and aerial photgrammetry processed using DroneDeploy software that was contoured then manually interpolated to remove vegetation artifacts and adjusted to correlate with the grading plan elevations The slope profile was used to develop Geologic Cross-Section A-A' as presented on Figure 6. The site plan and profile are only as accurate as implied by the mapping techniques used. The following is a summary of the surficial site characteristics.

The topography across the top of the terrace on the property is flat and gently sloping. The existing building area is crowned across the central portion of the site and the gentle flanks descend towards the southeast and northwest. Approximately 20 feet beyond the western property boundary is a steep coastal bluff. The bluff slope descends steeply to the west and northwest with slope gradients ranging from ¾:1 to 1:1 (horizontal to vertical). The vertical relief from the top of the bluff to the rocky beach at the base of the bluff face is approximately 70 feet.

On the subject property, an approximately 8-foot tall northeast-southwest trending concrete site wall separates the rear and front portions of the property. At the rear of the property, a two-story residence abuts the southwestern property boundary. The vicinity around the residence is complimented by wooden decks, small concrete retaining walls, and gravel walkways. An oval shaped lawn area is situated at the rear of the site, north of the residence and east of the bluff. A small, single story structure is located in the northern central portion of the site.

The front of the property, southeast of the concrete site wall, is occupied by various landscaping features such as an approximately 8-foot tall stucco wall, planter boxes, and gravel walkways. Several small sheds are located in the northeastern portion of the property. The property is accessed by an unpaved, gravel driveway that leads northwest from Cabrillo Highway to the central portion of the property, and a second unpaved driveway from the corner of Seacliff Court and Cabrillo Highway. Drainage across the site is generally characterized as uncontrolled sheet flow to the southeast onto Cabrillo Highway, and to the west-northwest, down the bluff face, into the Pacific ocean.

4.3. Subsurface

On 21 February 2019, our senior staff geologist visited the site to observe the subsurface conditions at discrete locations in the vicinity of the proposed improvements. Our geologist logged three test borings drilled to depths of between approximately 28 and 30 feet using a crawler-mounted, CME 55 drillrig, equipped with hollow-stem drilling and sampling equipment.

The locations of the test borings are shown on Figure 5. We determined the approximate boring locations by measuring distance and bearing from known points visible on the aerial imagery and shown on the supplied site plan; these locations are only as accurate as implied by the mapping technique used.

We logged the borings in general accordance with the Unified Soil Classification System and our Rock Classification System described on Figures 7 and 8, Key to Logs and Rock Classification System, respectively. A Summary of Field Sampling Procedures is presented on Figure 9. The boring logs are presented on Figures 10 through 15, Logs of Borings 1 through 3. The logs show our interpretation of the subsurface conditions at the locations and on the date indicated and we do not warrant that they are representative of the subsurface conditions at other locations and times.

In general, the borings encountered a similar sequence of subsurface materials, including terrace deposits underlain by granitic rocks of Montara Mountain. In some areas of the site, the terrace deposits are overlain by fill material (see Figure 5).

The fill material encountered at the rear of the property, in Borings 1 and 2, is about 3½ feet thick, and at the front of the property, in Boring 1, is less than 1 foot thick. The fill is comprised of soft to stiff, very dark brown sandy silt. Beneath the fill, Boring 1 encountered about 22½ feet of terrace deposits. Boring 2 encountered approximately 15 feet of terrace deposits and Boring 3 encountered two distinct layers of terrace deposits with a combined thickness of about 26 feet. The terrace deposits that were encountered in all three of the borings was comprised of medium dense, well to moderately well sorted, yellowish brown silyy sand. In Boring 3 and below a depth of 10 feet, the terrace deposits transitioned to medium dense to dense, pale brown sand with very little to no fines. Beneath the terrace deposits, the borings encountered granitic rocks. The granite was deeply to moderately weathered and varied from friable to very strong. The borings all met drilling and sampling refusal within the granite.

As discussed above, there is a discontinuity between the formation of the granite and the placement of the terrace deposits. After accounting for the elevation differences between the borings, the contact between the terrace deposits and granite appears to be relatively flat. Our interpretation of the subsurface conditions beneath the site is illustrated on Figure 6.

4.4. Groundwater

We did not encounter groundwater or saturated subsurface conditions in any of the borings. Fluctuations in the level of subsurface water could occur due to variations in rainfall, temperature, and other factors not evident at the time our observations were made.

4.5. Laboratory Testing

We developed our laboratory testing program to supplement our evaluation of the geotechnical engineering properties of the soil and bedrock at the site. We retained soil samples from the borings for laboratory classification and testing. The results of moisture content and dry density tests are presented on the logs.

We sent samples of the terrace deposits that we obtained from from Borings 1 and 2 from depths of between 7½ and 15 feet to Cooper Testing Laboratories for shear strength testing. They performed consolidated, undrained, direct shear testing on three remolded specimens derived from the samples. The results of the shear strength tests are presented on Figure 16, Shear Strength Test Results.

5. SLOPE STABILITY ANALYSES

5.1. Overview

The following paragraphs describe the methodology and results of a quantitative slope stability analyses that we performed to evaluate the relative risk of future landslide movement at the subject property. We performed the analyses using the computer program Slide2 Modeler Version 9.024 by Rocscience, Inc., utilizing the GLE/Morgenstern-Price methodology with non-circular Cuckoo slip surface search and surface altering optimization to calculate failure surfaces and the factor of safety against sliding. The analyses were performed in general accordance with the guidelines presented in the Special Publication 117A by the California Geological Survey (2008).

Please note that computer-aided slope stability analyses are mathematical models of the slopes and soil and they contain many assumptions. Slope stability analyses and the generated factors of safety only indicate general slope stability trends. In general, factors of safety below 1.00 indicate a potential failure. However, a slope with a factor of safety of less than 1.00 will not necessarily fail, but the probability of failure will be greater than that for a slope with a higher factor of safety. Conversely, a slope with a factor of safety greater than 1.00 may fail but the probability of stability is higher than that for a slope with a lower factor of safety.

5.2. Slope Geometry

We performed the slope stability analyses utilizing the surface profile depicted on Figure 6. We generated this surface profile by interpolating and adjusting the topographic data obtained using an unmanned aerial vehicle that was processed using DroneDeploy software. We interpreted the subsurface conditions based upon the results of our subsurface exploration program and engineering geologic mapping.

5.3. Soil Strength Parameters

We assigned soil strength parameters for the fill based upon the results of our laboratory testing and empirical correlations based upon standard penetration test results. We assigned soil strength parameters for the terrace deposits based upon site-specific consolidated, undrained, direct shear testing performed by Cooper Testing Labs.

The granitic bedrock is strong and met drilling and sampling refusal. Because of the material strength and resiliency, we assigned rock strength parameters based upon typical published uniaxial, compressive strength values for granite with a low-medium rock strength classification (Hunt, 2005).

In addition, we assigned wet unit weights based upon laboratory testing and our experience in the area. A table of the soil and rock properties used in our analyses is presented below.

Unit	Strength Parameters	Wet Unit Weight (pcf)
Fill	Phi Angle of 23 degrees and Cohesion of 100 psf	128
Terrace Deposits	Phi Angle of 22.4 degrees and Cohesion of 1050 psf	135
Granitic Rocks	Uniaxial Compressive Strength of 500 tsf	165

Soil and Rock Properties

5.4. Groundwater Conditions

Based on the results of our subsurface exploration program, the conditions beneath the site appear to be unsaturated. Consequently, we have conducted our analysis without the influence of groundwater.

5.5. Seismic Coefficient

A static (non-seismic) analysis was initially performed using no seismic coefficient. In accordance with California Geological Survey Note 48 (2019) and information included in the Seismic Hazard Zone Report for the Montara Mountain 7½-Minute Quadrangle (2019), Special Publication 117A (2008), we derived a seismic coefficient of 0.23 for the site and utilized it in our pseudo-static analyses. The coefficient is based on peak ground acceleration (PGA_m) of 0.77 computed using the ASCE 7 Hazard Tool based upon the ASCE/SEI 7-22 (2021) design standard and USGS Seismic Design Maps.

5.6. Slope Stability Analysis Results

Slope Stability Analysis No. 1 and 2 evaluated the potential for landsliding to occur anywhere beneath the terrace or bluff slope under static and seismic conditions, respectively. The most critical potential failure planes were confined to the fill material at the top of the bluff. Slope Stability Analysis No. 3 and 4 evaluated the potential for localized landsliding to occur under the proposed residence and beneath the fill wedge, under static and seismic conditions respectively. The program searched thousands of potential failure planes for each analysis.

The lowest factors of safety for each analysis is presented in the following table and graphical illustrations of potential failure surfaces are shown on Figures 17 through 20, Slope Stability Analysis No. 1 through 4).

Analysis No.	Conditions	Seismic	Factor of Safety
1	Anywhere on the slope	Static	1.37
2	Anywhere on the slope	0.23	1.09
3	Beneath the homesite	Static	2.74
4	Beneath the homesite	0.23	2.32

Slope Stability Analyses and Results

6. FINDINGS

Based upon the results of our study, it is our opinion that, from a geotechnical engineering perspective, the subject property may be redeveloped as planned, provided that the recommendations presented in this report are incorporated into the design and construction of the proposed improvements. In our opinion, the primary constraints to the proposed redevelopment include:

- The steep coastal bluff northwest of the site;
- the presence of undocumented fill near the top of the steep bluff and the potential for future fill creep or shallow landsliding;
- the potential for earthquake-induced landsliding along the bluff; and
- the site's seismic setting.

6.1. Proposed Building Site

Our subsurface study showed that the proposed building site is underlain by terrace deposits and granite bedrock, at depth. The supportive terrace deposits are blanketed by a thin layer of fill along the western portion of the property. The soft fill material and loose terrace deposits near the bluff face could be subject to instability. Additionally, the fill deposits could be subject to consolidation settlement. The underlying, supportive terrace deposits consist of medium dense silty sand. In our opinion, the terrace deposits should provide adequate support for the foundations of the proposed residence and associated improvements.

6.2. Slope Stability

Our study showed no evidence of recent landsliding along the bluff in the immediate vicinity of the proposed residence. As discussed above, recent debris flows occurred on the bluff because of a water leak. Similar or related ground deformation could occur and affect proposed landscaping improvements near the western margin of the subject property.

Based upon our observations of the subsurface conditions and geologic setting of the site vicinity, it is our opinion that the potential for deep-seated landsliding through the granite bedrock is negligible. The results of our slope stability analysis also indicates a low risk for landsliding through the terrace deposits. In our opinion, ground deformation does not present a risk to the proposed residence.

Based upon the results of our analysis, the fill material overlying the terrace deposits has a relatively low factor of safety (about 1.09) against earthquake-induced landsliding. The proposed improvements should be situated landward of the fill or have their foundations deepened to gain support within the terrace deposits beneath the fill. In our opinion, failures within the fill should not pose a significant hazard or have a direct impact on the integrity of the proposed improvements provided the foundations are designed and constructed in accordance with the recommendations presented in this report. Furthermore, the fill strength and its stability can be improved to be comparable to the terrace deposits by reprocessing the fill material as engineered fill with geogrid reinforcement.

The long-term stability of many hillside or bluff areas is difficult to predict. A hillside or bluff will remain stable only as long as the existing slope equilibrium is not disturbed by natural processes or by the acts of Man. Landslides can be activated by a number of natural processes, such as the loss of support at the bottom of a slope by stream erosion or the reduction of soil strength by an increase in groundwater level from excessive precipitation. Artificial processes caused by Man include improper grading activities, the introduction of excess water through excessive irrigation, and poorly controlled surface runoff.

Although our knowledge of the causes and mechanisms of landslides has greatly increased in recent years, it is not yet possible to predict with certainty exactly when and where all landslides will occur. At some time over the span of thousands of years, most hillsides and bluffs will experience landslide movement as mountains are reduced to plains. Therefore, a small but unknown level of risk is always present to structures located in steeply sloping terrain. Owners of property located in these areas must be aware of, and willing to accept, this unknown level of risk.

6.3. Dynamic Settlement, Liquefaction, and Lateral Spreading

Earthquake shaking can potentially cause dynamic settlement, bearing capacity failure, ground surface deformation, or lateral spreading.

Based upon procedures proposed by Pradel (1998) we calculated a cumulative dynamic settlement potential of about 4 inches. In our opinion, this amount of potential ground deformation could result in cosmetic damage but should not pose a significant hazard or have a direct impact on the integrity of the proposed improvements provided the foundations are designed and constructed in accordance with the recommendations presented in this report.

Because the terrace deposits are unsaturated, we judge there to be a low risk for liquefaction related bearing capacity failure, ground surface deformations, or lateral spreading.

6.4. Coastal Processes

As discussed above, the majority of the bluff is comprised of granite bedrock that persists below sea level. The granite bedrock is resilient and has not notably eroded or retreated within at least the last five decades. Based upon the presence of resilient bedrock, it is our opinion that the risk of wave erosion affecting the bluff is negligible. Even with the forecast rise in sea levels, it is our opinion that because of the elevation difference between the terrace and base of the bluff and the presence of resilient granite bedrock, the potential for wave erosion to compromise the bluff stability is negligible. In our opinion a 25-foot setback from the top of the bluff to habitable structures is adequate for the site conditions.

6.5. Seismicity

Our reconnaissance and review of published geologic maps and aerial photographs revealed that no known active or potentially active faults pass through the subject property. However, the property is within the San Gregorio fault zone and in close proximity to the Seal Cove fault. Given the proximity of fault sources, it is reasonable to assume that the site will be subjected to violent ground shaking from a major earthquake on at least one of the nearby active faults during the design life of future improvements (Association of Bay Area Governments, 2021). During such an earthquake, it is our opinion that the danger from fault offset through the site is low. It should be noted that following a large seismic event, cosmetic damage or sympathetic movement caused by ground shaking may occur and may have to be repaired.

7. RECOMMENDATIONS

Because the proposed project is still in a relatively early phase of redevelopment, it is conceivable that changes and additions will be made to the proposed redevelopment concept following submission of this report. If modifications are made, contact us to evaluate the geotechnical aspects of the changes or modifications.

As currently planned, the existing structures on the property will be razed. A new single family residence with a partial daylighting basement is planned in central portion of the property. A new driveway alignment is planned that will provide access the property and lead to a two car garage attached to the eastern side of the residence. We anticipate that site walls or other features will be constructed for landscaping purposes. We also anticipate new flatwork will be required to construct the new driveway, floors, patios, and walkways.

The following recommendations must be incorporated into all aspects of future development.

7.1. Location of Proposed Improvements

The proposed improvements must be confined to the approximate building area shown on Figure 5. Do not construct improvements outside of this generalized area without written approval from C2. If other structures are planned in the future, we must evaluate their location to provide appropriate geotechnical engineering design criteria.

7.2. Seismic Design Criteria

We recommend that the project structural design engineer provide appropriate seismic design criteria for proposed foundations and associated improvements. The following information is intended to aid the project structural design engineer to this end and is based on criteria set forth in the 2019 California Building Code (CBC). The mapped spectral accelerations and site coefficients have been computed using the ASCE/SEI 7-16 and 7-22 design standards, and the ASCE 7-16 and 7-22 Hazard Reports are presented in the Appendix of this report. The structural designer should select the applicable standard for use, and confirm the Seismic Risk Category, and make revisions as they deem appropriate.

Experience has shown that earthquake-related distress to structures can be substantially mitigated by quality construction. We recommend that a qualified and reputable contractor and skilled craftsmen build the associated improvements. We also recommend that the project structural design engineer and project architect monitor the construction to make sure that their designs and recommendations are properly interpreted and constructed.

7.3. Earthwork

At the time of this study, the full extent of any proposed earthwork had not been finalized. We anticipate that a moderate amount of grading will be required to construct the proposed improvements. We recommend that the existing undocumented fill beneath the proposed residential building area and associated site improvements either be removed or reprocessed and replaced as engineered fill with geogrid. Any proposed earthwork should be performed in accordance with the recommendations provided below.

7.3.1. Clearing and Site Preparation

- Clear all obstructions, including structures not designated to remain, and debris on any areas to be graded.
- Clear and backfill any holes or depressions resulting from the removal of underground obstructions below proposed finished subgrade levels with suitable material compacted to the requirements for engineered fill given below.
- After clearing, strip the site to a sufficient depth to remove all surface vegetation and organic-laden topsoil. This material must not be used as engineered fill; however, it may be used for landscaping purposes.
- Remove any existing fill beneath the proposed improvements and reprocess it as engineered fill in accordance with the following recommendations.

7.3.2. Fill Material

Based on our study, it is our opinion that the materials encountered in the borings should be suitable for use as fill. On-site or imported materials must meet the requirements specified below to be used as engineered fill:

- Materials used for engineered fill must meet the following requirements:
  1) Have an organic content less than 3% by volume;
  2) no rocks or lumps greater than 6 inches in maximum dimension;
  3) no more than 15% of the fill may be greater than 2½ inches in maximum dimension; and
  4) any import fill must have a plasticity index (PI) of 15 or less.

- If on-site materials do not meet the requirements given above, they may be off-hauled or used for landscaping purposes only.
- **Contact C2 with samples of proposed fill materials at least four days prior to fill placement for laboratory testing and evaluation.**

7.3.3. Benches

- Fill placed on the terrace must be benched into the underlying supportive material to provide a firm, stable surface for support of the fill.
- Benches generally must be a minimum of 5 feet wide and must be excavated entirely into the supportive material.
- Temporary back slopes may be vertically excavated provided they are constructed in the dry season and meet Cal OSHA requirements.
- Any required benches must be excavated near level in the direction parallel to the natural slope and must be provided with an approximately 2% gradient towards the uphill direction to provide resistance to lateral movement and to facilitate proper subdrainage.
- **Contact C2 to evaluate the actual location, size, and depth of the required benches at the time of construction**.

7.3.4. Subdrains

- C2 must determine the need for subdrains at the time of construction.
- In general, fill exceeding 5 feet deep should be provided with subdrains.
- Subdrains must consist of a 4-inch diameter, rigid, heavy-duty, perforated pipe (SDR 35, or equivalent), approved by C2, embedded in drainrock (crushed rock or gravel).
- Flexible corrugated pipe must not be used.
- The pipe must be placed with the perforations down on a 2- to 3-inch bed of drainrock. The drainrock must be separated from the fill and the native material by a geotextile filter fabric, approved by C2.
- Subdrain pipes must be provided with cleanout risers at their up-gradient ends and at all sharp changes in direction.
- Changes in pipe direction must be made with "sweep" elbows to facilitate future inspection and cleanout.
- Subdrain systems must be provided with a minimum 1% gradient and must discharge onto an energy dissipater at an appropriate downhill location approved by C2.

7.3.5. Compaction Procedures

- Prior to fill placement, scarify the surface to receive the fill to a depth of 6 inches.
- Moisture condition the imported fill to the materials' approximate optimum moisture content.
- Spread and compact the fill in lifts not exceeding 8 inches in loose thickness.
- Compact the fill to at least 90% relative compaction by the Modified Proctor Test method, in general accordance with the ASTM Test Designation D1557 (latest revision).
- **Contact C2 to observe the placement and test the compaction of engineered fill.** Provide at least two working days notice prior to placing fill.

7.3.6. Geogrid Fill Reinforcement

- Reinforce the engineered fill using geogrid such as MIRAGRID® 3XT or stronger, as approved by C2.
- Place geogrid with a vertical spacing of 8 inches or less and a horizontal length of 10 feet or more.
- The geogrid must be placed in accordance with the manufacturer's recommendations.
- **Contact C2 to observe the placement of the geogrid layers during construction.**

7.3.7. Permanent Slopes

- Construct the gradients of permanent cut or fill slopes no steeper than 2:1.
- Re-vegetate all graded surfaces or areas of disturbed ground prior to the onset of the rainy season following construction to control soil erosion.
- Install other erosion control provisions if vegetation is not established by the rainy season.
- Maintain ground cover vegetation once it is established to provide long-term erosion control.

7.3.8. Trench Backfill

- Backfill all utility trenches with compacted engineered fill.
- Place suitable on-site soil into the trenches in lifts not exceeding 8 inches in uncompacted thickness, and compact it to at least 90% relative compaction by mechanical means only.

- If imported sand is used, compact it to at least 90% relative compaction. Do not use water jetting to obtain the minimum degree of compaction in imported sand backfill. If the trench is greater than 50 feet long, located on sloping ground greater than 5:1 (horizontal to vertical), and is backfilled with sand, check dams should be installed to reduce the potential of the sand washing out.
- Compact the upper 6 inches of trench backfill to at least 95% relative compaction in all pavement areas.
- **Contact C2 to observe and test compaction of the fill.**

7.3.9. Basement Excavations

- Excavate for the proposed basement retaining wall along the uphill side of the building using an OSHA approved benching or sloping cut configuration selected by an OSHA "Competent Person". The Competent Person must be capable of identifying hazards during construction, such as slope instability, and take prompt corrective measures to mitigate any potential hazard.
- To aid the Competent Person in their selection of construction means and methods, consider the terrace deposits to be an OSHA Soil Type C. The Competent Person must evaluate the excavation during construction and confirm the suggested OSHA soil classification type.
- As an alternative to benching and sloping, shoring may be used to support the temporary cuts. Consult with a shoring specialist for the design and installation of temporary shoring.
- The contractor is solely responsible for means and methods of construction and should designate appropriate personnel to act as the Competent Person.
- **Contact C2 to observe the subsurface conditions** exposed within the excavations to assess whether they are consistent with expected subsurface conditions.

7.4. Foundations

Because of the presence of shallow supportive terrace deposits, we recommend that the proposed residence and planned basement be supported on a mat-slab foundation, gaining support in the underlying terrace deposits. In our opinion, a mat-slab foundation designed and constructed in accordance with the following recommendations will reduce the risk of differential movement affecting the residence as a result of earthquake-induced dynamic settlement. Alternatively, portions of the residence may be founded on conventional spread footing gaining support within the terrace deposits, provided that the owner or owner's representative accepts the increased risks associated with differential foundation movement.

We recommend that the project engineer design and contractor construct the proposed foundation elements in accordance with the following recommendations.

7.4.1. Mat-Slab

- Support the proposed residence and basement on a mat-slab embedded a minimum of 12 inches into the underlying terrace deposits, below the plane at which there is a minimum of 5 feet horizontal separation between the downhill face of the excavation and daylight.
- Design support for the mat-slab in the supportive material for an allowable bearing pressure of 2,000 psf for dead plus live loads, with a ⅓ increase for transient loads, including wind and seismic.
- Mat-slabs that cross over utility trenches or basement retaining wall backfill must be designed to span those areas. The designer must specify the allowable span distances.
- Lateral loads may be resisted by friction between the concrete mat bottom and the supporting subgrade using a friction coefficient of 0.35. A passive pressure equal to an equivalent fluid weight of 350 pcf may be used for the mat if it is poured neat in excavations into the supportive material, below the plane at which there is a minimum of 5 feet horizontal separation between the downhill face of the excavation and daylight. The passive pressure and friction may be used in combination without reduction.
- If the designer elects to utilize a design methodology based upon a modulus of subgrade reaction, the designer must recognize that this parameter cannot be determined without full scale load testing. Based upon the site soil conditions, an approximated modulus of subgrade reaction could vary between 100 and 300 pci. The designer should conduct a sensitivity analysis and must utilize a value they deem acceptable.
- Concrete reinforcing must be provided in accordance with the recommendations of the structural design engineer.
- Provide the mat-slab with the appropriate damp proofing. Damp proofing may affect the lateral load resistance (see above).
- **Contact C2 to observe the excavations prior to placing reinforcing steel** to evaluate depth into supportive material.

7.4.2. Spread Footings

- Alternatively, support portions of the residence and other structures on spread footings embedded a minimum of 12 inches into the underlying supportive material below the plane at which there is a minimum of 5 feet horizontal separation between the downhill face of the footing and daylight.
- Design the spread footings supported in the supportive material for an allowable bearing pressure of 2,000 psf for dead plus live loads, with a ⅓ increase for transient loads, including wind and seismic.

- All footings adjacent to utility trenches or basement excavations must have their bearing surface below an imaginary plane projected upward from the bottom edge of the trench or adjacent excavation at a 1:1 (horizontal to vertical) slope. Span the backfill area or deepen the footings where appropriate. The designer must specify allowable span distances.
- Lateral loads may be resisted by friction between the foundation bottoms and the supporting subgrade using a friction coefficient of 0.35. A passive pressure equal to an equivalent fluid weight of 350 pcf may also be used for footings poured neat in excavations into the terrace deposits below the plane at which there is a minimum of 5 feet horizontal separation between the downhill face of the footing and the surface of the terrace deposits. The passive pressure and friction may be used in combination without reduction.
- The structural design engineer must determine concrete reinforcing; but, as a minimum, all continuous footings must be provided with at least two No. 4 steel reinforcing bars, one placed at the top and one placed at the bottom of the footing, to provide structural continuity and to permit the spanning of any local irregularities.
- Clear the bottoms of the footing excavations of loose cuttings and soil fall-in prior to the placement of concrete.
- **Contact C2 to observe the footing excavations prior to placing reinforcing steel** to evaluate depth into supportive material.

7.4.3. Site and Building Retaining Walls

We anticipate that conventional retaining walls will be used for site walls and for portions of the basement. The following recommendations are for cantilever type walls. Contact us to provide appropriate recommendations if other types of walls are considered.

- Support residential retaining walls on foundations designed in accordance with the recommendations given above for the support of the proposed residence. Support residential and site retaining walls on mat-slab or spread footing foundations.
- Design retaining walls to resist both lateral earth pressures and any additional lateral loads caused by surcharge loads on the adjoining ground surface.
- Deflection of cantilever retaining walls will occur in response to lateral loading. Anticipate horizontal deflections at the top of the wall to be 2% of the wall height or less.
- Design unrestrained (active condition) walls to resist an equivalent fluid pressure of 40 pcf. Design walls that are restrained from movement at the top or sides (at-rest condition) to resist an equivalent fluid pressure of 63 pcf (see Figure 21, Conceptual Retaining Wall Pressure Diagram).

- Add an additional equivalent fluid pressure increment to the active and at-rest condition for backfill steeper than 4:1 (horizontal to vertical), in accordance with the following:

  + 8 pcf for slopes between 3:1 and 4:1

  + 12 pcf for slopes between 2:1 and 3:1

  + Contact us for slopes steeper than 2:1

- Design for seismic-loading as the structural engineer deems appropriate. In our opinion, the requirements for seismic design of retaining walls are not clearly defined. If the structural engineer considers seismic loading, based upon the procedures presented by Sitar, et. al. (2012), design unrestrained (active condition) residential retaining walls to resist an additional earthquake equivalent fluid pressure (seismic increment) of 39 pcf (see Figure 21).
- If seismic loading is considered, design basement retaining walls to resist the appropriate loading condition: either the at-rest condition if the walls are restrained, or the active condition plus the seismic increment if the walls are unrestrained.
- Site walls less than 6 feet tall are not subject to additional earthquake loading requirements.
- The area between the back of the retaining wall and a 1:1 plane projected upward from the base of the retaining wall must be considered as non-supportive. Foundations for adjacent improvement must be designed and constructed to span this area or gain support below the 1:1 plane.
- Wherever the walls will be subjected to surcharge loads, they must be designed for an additional uniform lateral pressure equal to 1/2 or 1/3 the anticipated surcharge load for restrained or unrestrained walls, respectively.
- The preceding pressures require that sufficient drainage be provided behind the walls to prevent the buildup of hydrostatic pressures from surface or subsurface water infiltration.
- Provide a backdrain system consisting of an approximately 1 foot thick curtain of drainrock (crushed rock or gravel) behind the wall.
- Separate the drainrock from the backfill by a geotextile filter fabric, such as Mirafi 140 or an alternative, approved by C2. A 4-inch diameter heavy-duty rigid perforated subdrain pipe (Schedule 40, SDR 21 or equivalent), approved by C2, must be placed with the perforations down on a 2- to 3-inch layer of drainrock at the base of the drain. **Do not use flexible corrugated pipe.**
- As an alternative, back drainage may consist of an approved drainage mat placed directly against the wall. The bottom of the drainage mat must be in contact with the rigid 4-inch perforated drainpipe embedded in gravel. The gravel must be fully encased in filter fabric.

- The backdrains should extend up the height of the back of the retaining walls to within 1 foot of the height of the retained soil, and then be covered with a compacted clay soil cap (see Figure 22, Conceptual Retaining Wall Backdrain Diagram).
- Perforated retaining wall subdrain pipes must be dedicated pipes and must not connect to the surface drain system. Install the subdrain pipes with a positive gradient of at least 1% and provide them with cleanout risers at their up-gradient ends and at all sharp changes in direction. Changes in pipe direction must be made with "sweep" elbows to facilitate future inspection and cleanout. The perforated pipes must be connected to buried solid pipes to convey collected runoff to discharge onto an energy dissipater at an appropriate downhill location, approved by C2.
- Compact the backfill placed behind the walls to at least 90% relative compaction, using light compaction equipment, in accordance with the compaction procedures given above. If heavy compaction equipment is used, the walls should be appropriately temporarily braced, as the situation requires. If backfill consists entirely of drainrock, it should be placed in approximately 2-foot lifts and must be compacted with several passes of a vibratory plate compactor.
- Perform annual maintenance of retaining wall backdrain systems, which must include inspection and flushing to make sure that subdrain pipes are free of debris and are in good working order. This maintenance must also include inspection of subdrain outfall locations to verify that introduced water flows freely through the discharge pipes and that no excessive erosion has occurred.
- If erosion is detected, C2 must be contacted to evaluate its extent and to provide mitigation recommendations, if needed.
- Damp proof retaining walls that are adjacent to living spaces and/or site walls with decorative facing. We are not qualified to recommend specific damp proofing materials or their applications. Any damp proofing product must be applied in **strict** compliance with the manufacturer's and/or architect's specifications.

7.4.4. Flatwork

We anticipate that concrete slabs-on-grade, permeable pavement, or pavers may be used for the driveway, floors, patios, and walkways.

For permeable pavement or pavers we recommend the following minimum requirements:

- Support permeable pavement or pavers on a minimum of 6 inches of non-expansive fill compacted to the requirements for compacted fill given above and in accordance with the manufacturer's recommendations.
- Proof-roll the surface of the non-expansive fill to provide a smooth, firm surface for the pavement. Additionally, place pavers on a leveling course per manufacturer's recommendations.

For concrete slabs-on-grade we recommend the following minimum requirements:

- Support concrete slabs-on-grade on a minimum of 6 inches of non-expansive fill compacted to the requirements for compacted fill given above.
- Proof-roll the surface of the non-expansive fill to provide a smooth, firm surface for slab support prior to placement of reinforcing steel.
- Design slab reinforcement in accordance with anticipated use and loading, but at a minimum, reinforce slabs with No. 3 rebar on 18-inch centers each way, placed mid-height in the slab.
- Support the reinforcing steel from below on concrete blocks (or similar) during concrete pouring to make sure that it remains mid-height in the slab.
- Place grooves in the concrete slabs at 10-foot intervals or in accordance with the structural design engineer's recommendations to help control cracking.

Where floor wetness is undesirable:

- The building designer or qualified waterproofing consultant must provide moisture barrier requirements.
- The following recommendations are typical moisture barrier standards. We do not guarantee that these measures will prevent all future moisture intrusion. If necessary, consult a qualified waterproofing consultant to provide waterproofing design.
- Traditionally, designers have specified the following: place 4 inches of free-draining gravel beneath the floor slab to serve as a capillary barrier between the subgrade soil and the slab. Following gravel placement, place a heavy-duty membrane over the gravel in order to minimize vapor transmission and then place 2 inches of sand over the membrane to protect it during construction. Just prior to placing concrete, lightly moisten the sand.
- More recent standards suggest using a puncture resistant, heavy-duty membrane (such as a minimum of 15 mil Stego Wrap, or equivalent) in direct contact with the floor slab and underlain by 6 inches of free-draining gravel.
- The structural designer must evaluate moisture conditions related to concrete slab curing and performance. The builder must provide appropriate drying time as determined by the designer.
- Use the gravel, heavy-duty membrane, and/or sand (if specified) in lieu of the upper 6 inches of recommended non-expansive fill.

7.5. Drainage

Control of surface drainage is critical to the successful performance of the proposed improvements. The results of improperly controlled runoff may include foundation settlement, erosion, gullying, ponding, and potential slope instability. To mitigate the risks associated with improperly controlled runoff, we recommend implementing the following:

- Prevent surface water from flowing over the coastal bluff slope. Also prevent surface water from ponding in areas adjacent to the foundation of the proposed residence and associated improvements by grading adjacent areas to create proper drainage by sloping them away from the structures and bluff slope.
- As an alternative, install area drains to collect surface runoff.
- Provide roof gutters with downspouts on the structures. Provide downspouts with slip-joint connectors or clean-outs, where they are connected to buried pipes, to facilitate maintenance (see Figure 23, Conceptual Downspout Cleanout Diagram).
- Do not allow water collected in the gutters to discharge freely onto the ground surface adjacent to the foundation.
- Convey water from downspouts and/or area drains away from the residence via buried, closed conduits or lined surfaces. Use buried conduits consisting of rigid, smooth-walled pipes (PVC). **Do not use flex-pipes.**
- Discharge collected water into one or more seepage pits in the eastern portion of the property and/or via bubblers at the ground surface in the eastern portion of the property at appropriate locations approved by C2. Seepage pits must be drilled shafts at least 24 inches in diameter that extend onto or into the underlying granite bedrock. Anticipate drill depths of up to 30 feet below the ground surface. Construct overflows to drain towards the east.
- Perform annual maintenance of the surface drainage systems, including:

  1) Inspecting and testing roof gutters and downspouts to make sure that they are in good working order and do not leak;
  2) inspecting and flushing area drains to make sure that they are free of debris and are in good working order; and
  3) inspecting surface drainage outfall locations to verify that introduced water flows freely through the discharge pipes and that no excessive erosion has occurred.

- Contact C2 if erosion is detected so that we may evaluate its extent and provide mitigation recommendations, if needed.

8. PLAN REVIEW AND CONSTRUCTION OBSERVATION

We must be retained to review the final grading, foundation, and drainage control plans in order to assess whether our recommendations have been properly incorporated into the proposed project. **WE MUST BE GIVEN AT LEAST TWO WEEKS TO REVIEW THE PLANS AND PREPARE A PLAN REVIEW LETTER.**

We must also be retained to observe the grading and the installation of foundations and drainage systems in order to:

- assess whether the actual soil conditions are similar to those encountered in our study;
- provide us with the opportunity to modify the foundation design, if variations in conditions are encountered; and
- observe whether the recommendations of our report are followed during construction.

Sufficient notification prior to the start of construction is essential, in order to allow for the scheduling of personnel to ensure proper monitoring.

WE MUST BE NOTIFIED AT LEAST TWO WEEKS PRIOR TO THE ANTICIPATED START-UP DATE. IN ADDITION, WE MUST BE GIVEN AT LEAST TWO WORKING DAYS NOTICE PRIOR TO THE START OF ANY ASPECTS OF CONSTRUCTION THAT WE MUST OBSERVE.

The phases of construction that we must observe include, but are not necessarily limited to, the following.

1. **EARTHWORK:** During construction to observe bench excavations, evaluate the need for subdrainage, observe geogrid placement, and test compaction of engineered fill
2. **MAT-SLAB EXCAVATION:** Immediately following excavation and prior to covering or disrupting the excavations to evaluate the condition of the supportive material and excavation depths
3. **FOOTING EXCAVATION:** Prior to placement of reinforcing steel to evaluate depth to supportive material
4. **RETAINING WALL BACKDRAIN:** During installation
5. **RETAINING WALL BACKFILL:** During backfill to observe and test compaction
6. **FLATWORK:** Prior to and during placement of non-expansive fill to observe the subgrade preparation and to test compaction of non-expansive fill
7. **SURFACE DRAINAGE SYSTEMS:** During seepage pit drilling to evaluate drill depths and near completion drainage system to evaluate installation and discharge conditions

* * * * * * * * *

A Bibliography, a List of Aerial Photographs, the following Figures and Table, and Appendix are attached and complete this report.

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LIST OF AERIAL PHOTOGRAPHS

"BAY AREA TRANSPORTATION STUDY", black and white, dated May 14, 1965, at a scale of 1" = 1,000', Aerial Survey Contract No. 67615, Serial Nos. SM 12-89 and SM 12-90, State of California Highway Transportation Agency, Division of Highways.

FIGURES AND TABLE

FIGURE NO.

TABLE NO.

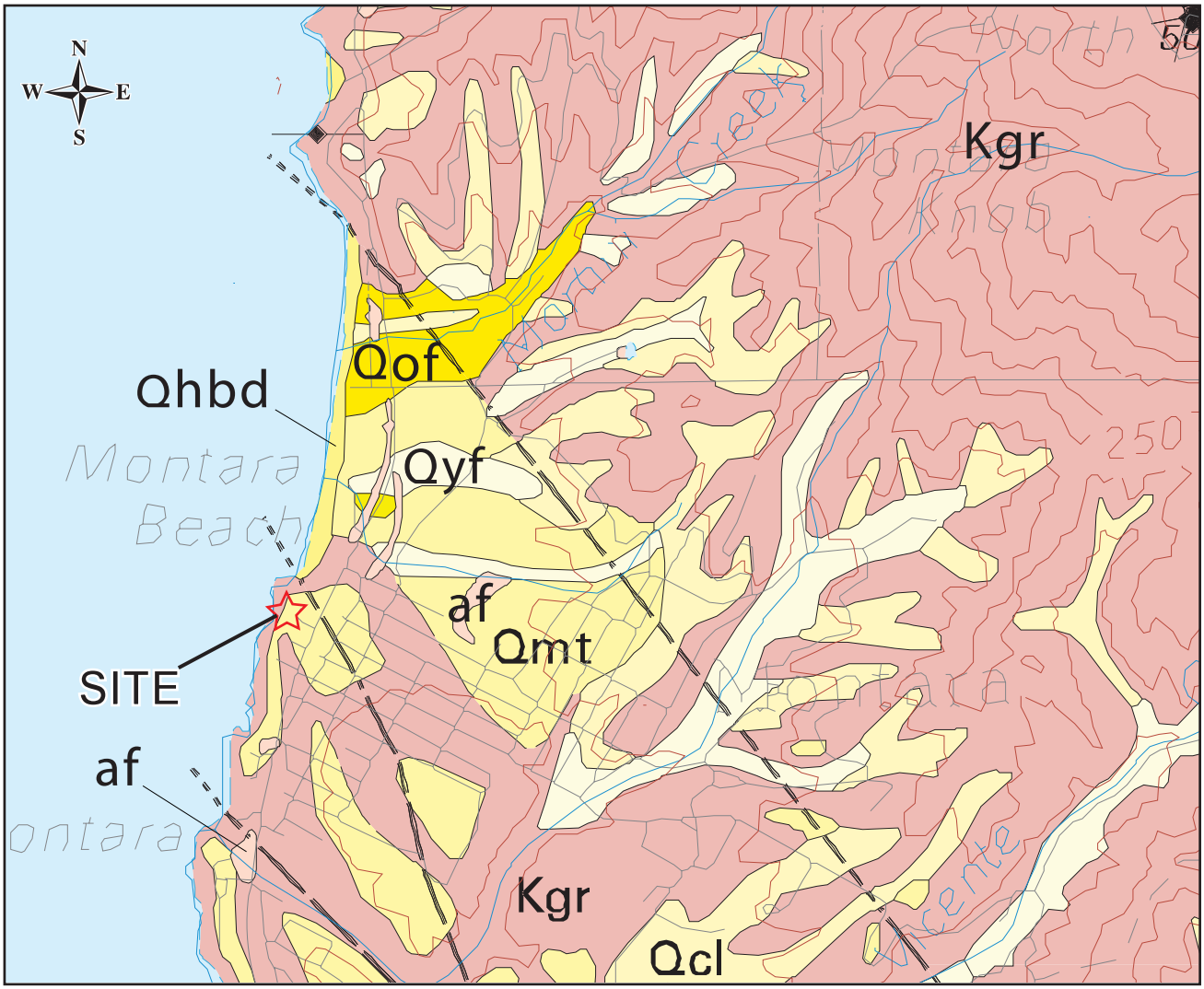
BASE: The National Map US Topo; UNITED STATES GEOLOGICAL SURVEY; 2012

SITE LOCATION MAP

C2EARTH

KEHOE PROPERTIES LLC PROPERTY
8322 Cabrillo Highway
San Mateo County, California

DRAFTED/REVIEWED	SCALE	DOCUMENT ID.	DATE	
KS/CR	1" = 2,000'	22070C-01R2	September 2022	Figure 1



EXPLANATION

af	- Artificial Fill
Qyf	- Younger (inner) alluvial fan deposits
Qof	- Coarse-grained older alluvial fan and stream terrace deposits
Qhbd	- Beach Deposits
Qmt	- Marine Terrace Deposits
Kgr	- Granitic Rocks of Montara Mountain

Inferred Fault
dashed where approximate
and dotted where concealed

Antiformal Axis
dashed where approximate
and dotted where concealed

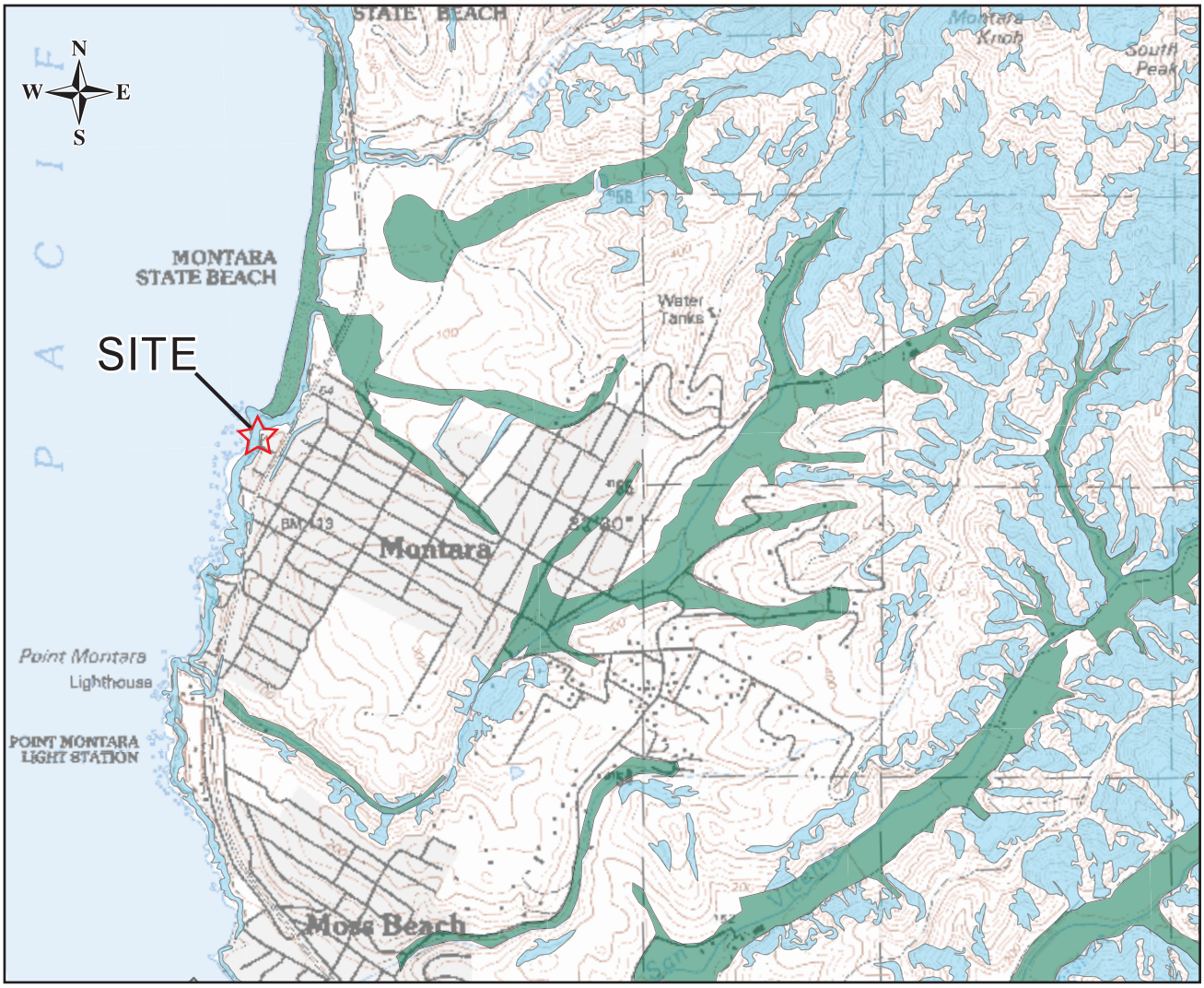
BASE: Geology of the Onshore Part of San Mateo County, California: Derived from the Digital Database Open-File 98-137; BRABB AND JONES, 1998

REGIONAL GEOLOGIC MAP

C2EARTH

KEHOE PROPERTIES LLC PROPERTY
8322 Cabrillo Highway
San Mateo County, California

DRAFTED/REVIEWED	SCALE	DOCUMENT ID.	DATE	
KS/CR	1" = 2,000'	22070C-01R2	September 2022	Figure 2



EXPLANATION

- **Earthquake-Induced Landslide Hazard Zones;** Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical, and subsurface water conditions indicate a potential for permanent ground displacements.

- **Earthquake-Induced Liquefaction Hazard Zones;** Areas where historic occurrence of liquefaction, or local topographic, geological, geotechnical, and subsurface water conditions indicate a potential for permanent ground displacements.

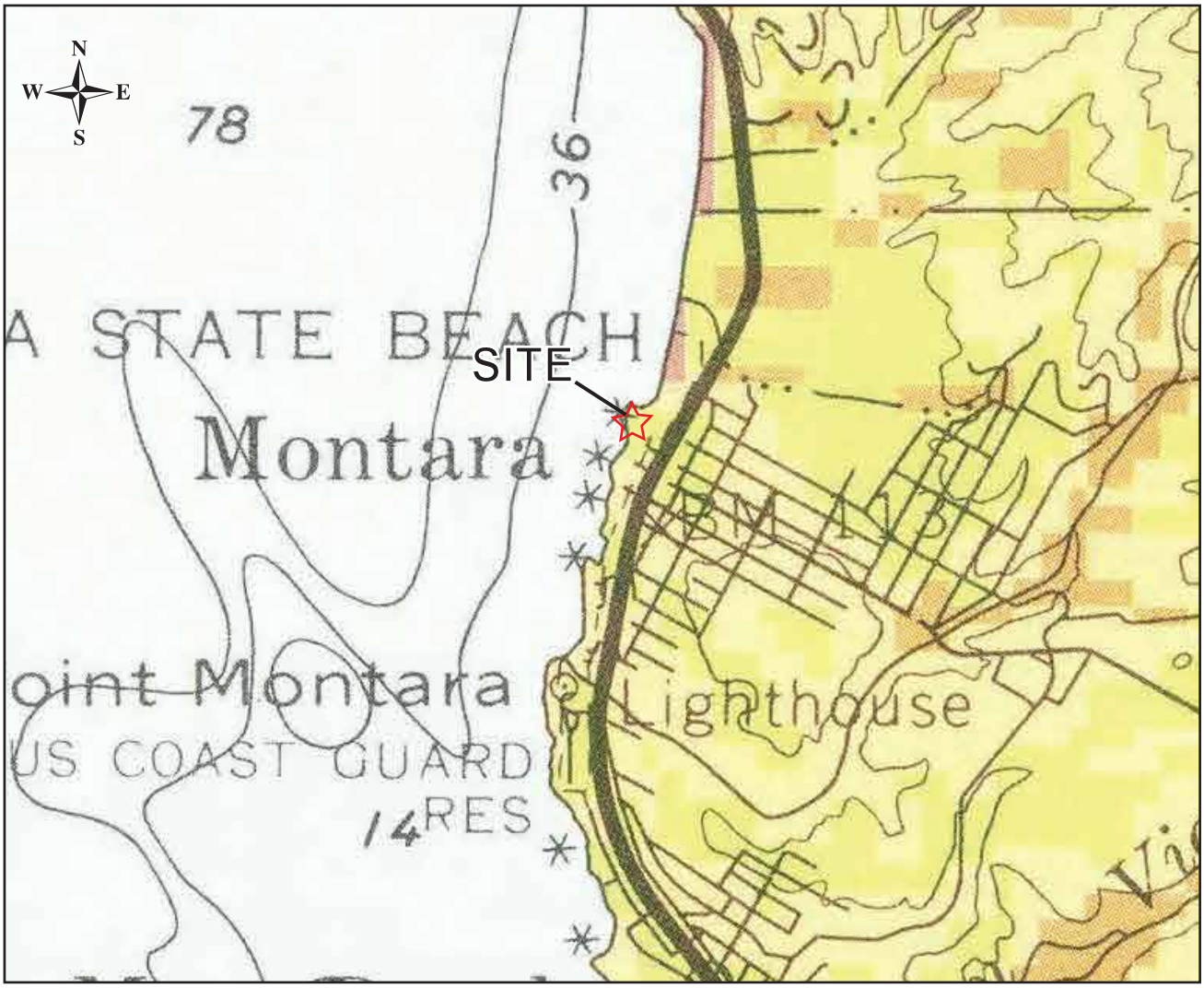
BASE: Earthquake Zones of Required Investigation, Montara Mountain Quadrangle; California Geological Survey; 1 Janaury 1982 and 4 April 2019

REGIONAL SEISMIC HAZARD ZONES MAP

C2EARTH

KEHOE PROPERTIES LLC PROPERTY
8322 Cabrillo Highway
San Mateo County, California

DRAFTED/REVIEWED	SCALE	DOCUMENT ID.	DATE	
KS/CR	1" = 2,000'	22070C-01R2	September 2022	Figure 3



EXPLANATION

Liquefaction Potential

- **Moderate to Low**
- **Very Low**
- **Bedrock**

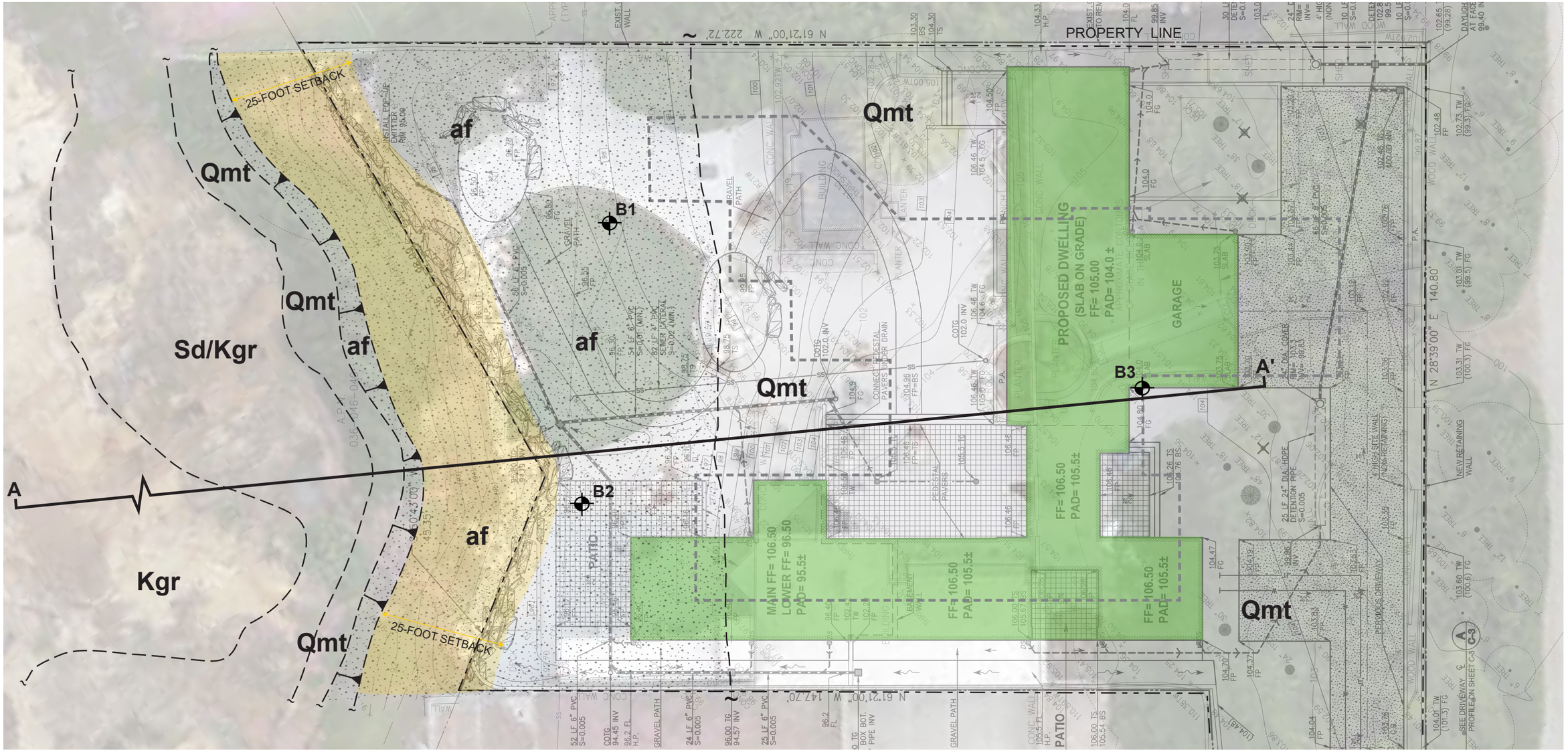
BASE: Map Showing Liquefaction Susceptibility of San Mateo County, California By T. Leslie Youd & Jeanne B. Perkins; 1987

REGIONAL LIQUEFACTION POTENTIAL MAP

C2EARTH

KEHOE PROPERTIES LLC PROPERTY
8322 Cabrillo Highway
San Mateo County, California

DRAFTED/REVIEWED	SCALE	DOCUMENT ID.	DATE	
KS/CR	1" = 2,000'	22070C-01R2	September 2022	Figure 4



EXPLANATION

af	- Artificial Fill
Qmt	- Marine Terrace Deposits
Sd/Kgr	- Slope Debris over Granitic Rock
Kgr	- Granitic Rock of Montara Mountain
╱⌒╲	- Geologic Contact Dashed where approximate
TOP / TOE	- Fill Slope
B1⊕	- Test Boring Location and Number
A A'	- Cross-Section Location

NOTE: This plan is a conceptual illustration of observed geotechnical and geologic features and should not be used for any other purpose.

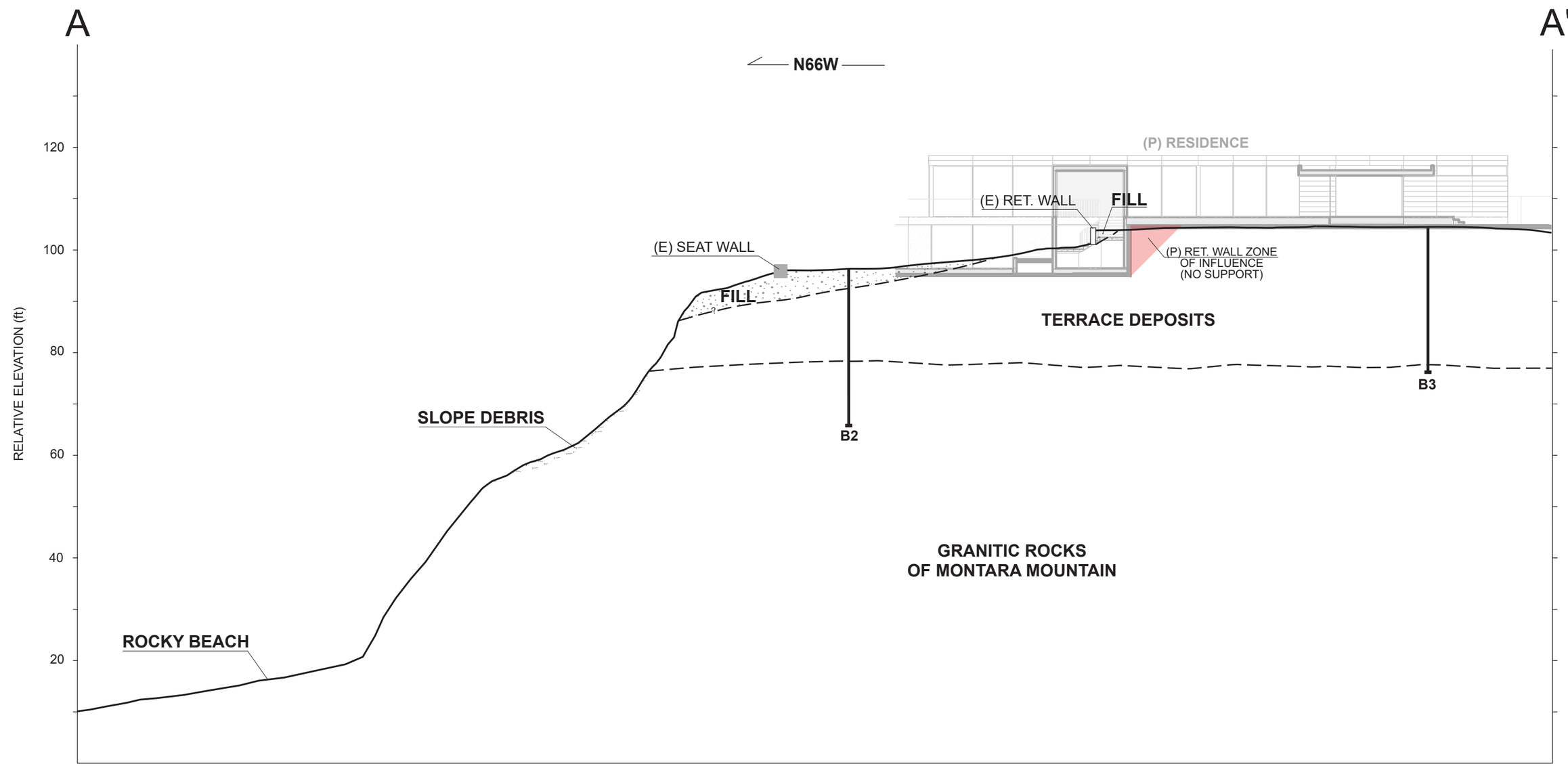
BASE: Preliminary Grading / Drainage and Utility Plan, Sheet C-2; MACLEOD AND ASSOCIATES; 6 July 2022 and Aerial photogrammtery taken with an unmanned aerial vehicle and processed using DroneDeploy software; C2EARTH, INC.; 1 June 2022.

PARTIAL SITE PLAN AND ENGINEERING GEOLOGIC MAP

C2EARTH

KEHOE PROPERTIES LLC PROPERTY
8322 Cabrillo Highway
San Mateo County, California

DRAFTED/REVIEWED	SCALE	DOCUMENT ID.	DATE	
KK/CR	As Shown	22070C-01R2	September 2022	Figure 5



NOTE: This cross-section is a conceptual illustration of general geologic relationships and should not be used for any other purpose.

BASE 1: Preliminary Grading / Drainage and Utility Plan, Sheet C-2; MACLEOD AND ASSOCIATES; 6 July 2022

BASE 2: Aerial photogrammtery taken with an unmanned aerial vehicle and processed using DroneDeploy software. The topography was manually interpolated and adjusted to match the topographic survey elevations; C2EARTH, INC.; 6 February 2019

GEOLOGIC CROSS-SECTION A-A'

C2EARTH

KEHOE PROPERTIES LLC PROPERTY
8322 Cabrillo Highway
San Mateo County, California

DRAFTED/REVIEWED	SCALE	DOCUMENT ID.	DATE	
KS/CR	1" = 20'	22070C-01R2	September 2022	Figure 6

UNIFIED SOIL CLASSIFICATION SYSTEM

PRIMARY DIVISIONS			GROUP SYMBOL	SECONDARY DIVISIONS
COARSE GRAINED SOILS (MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE)	GRAVELS (MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE)	CLEAN GRAVELS (LESS THAN 5% FINES)	GW	Well graded gravels; gravel-sand mixtures, little or no fines.
			GP	Poorly graded gravels or gravel-sand mixtures, little or no fines.
		GRAVEL WITH FINES	GM	Silty gravels, gravel-sand-silt mixtures, non-plastic fines.
			GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines.
	SANDS (MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE)	CLEAN SANDS (LESS THAN 5% FINES)	SW	Well graded sands, gravelly sands, little or no fines.
			SP	Poorly graded sands or gravelly sands, little or no fines.
		SANDS WITH FINES	SM	Silty sands, sand-silt mixtures, non-plastic fines.
			SC	Clayey sands, sand-clay mixtures, plastic fines.
FINE GRAINED SOILS (MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE)	SILTS AND CLAYS (LIQUID LIMIT IS LESS THAN 50%)		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity.
	SILTS AND CLAYS (LIQUID LIMIT IS GREATER THAN 50%)		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS			Pt	Peat and other highly organic soils.

GRAIN SIZES

U.S. STANDARD SERIES SIEVE	200	40	10	4	¾"	3"	12"	SIEVE OPENINGS
SILTS AND CLAYS	SAND			GRAVEL		COBBLES	BOULDERS	
	FINE	MEDIUM	COARSE	FINE	COARSE			

CONSISTENCY AND RELATIVE DENSITY

CONSISTENCY

SILTS AND CLAYS	STRENGTH[2]	BLOWS/FOOT[1]
VERY SOFT	0 - ¼	0 - 2
SOFT	¼ - ½	2 - 4
FIRM	½ - 1	4 - 8
STIFF	1 - 2	8 - 16
VERY STIFF	2 - 4	16 - 32
HARD	OVER 4	OVER 32

RELATIVE DENSITY

SANDS AND GRAVELS	BLOWS/FOOT[1]
VERY LOOSE	0 - 4
LOOSE	4 - 10
MEDIUM DENSE	10 - 30
DENSE	30 - 50
VERY DENSE	OVER 50

[1] Number of blows of 140-pound hammer falling 30 inches to drive a 2-inch O.D (1 3/8-inch I.D) split spoon

[2] Unconfined compressive strength in tons/sq. ft. as determined by laboratory testing or approximated in general conformance with the standard penetration test (ASTM D-1586), pocket penetrometer, torvane, or visual observation

KEY TO LOGS

C2EARTH

KEHOE PROPERTIES LLC PROPERTY
8322 Cabrillo Highway
San Mateo County, California

DOCUMENT ID.	DATE	
22070C-01R2	September 2022	Figure 7

FRACTURING

INTENSITY	SIZE OF PIECES (FEET)
VERY LITTLE FRACTURED	Greater than 4.0
OCCASIONALLY FRACTURED	1 - 4
MODERATELY FRACTURED	0.5 - 1
CLOSELY FRACTURED	0.1 - 0.5
INTENSELY FRACTURED	0.05 - 0.1
CRUSHED	Less than 0.05

HARDNESS

SOFT	Reserved for plastic material alone
LOW	Can be gouged deeply or carved easily with a knife blade
MODERATELY	Can be readily scratched by a knife blade; scratch leaves a heavy trace of dust and is readily visible after the powder has been blown away.
HARD	Can be scratched with difficulty; scratch produced a little powder and is often faintly visible.
VERY HARD	Cannot be scratched with knife blade; leaves a metallic streak.

STRENGTH

LOW	Plastic or very low strength.
FRIABLE	Crumbles easily by rubbing with fingers.
WEAK	An unfractured specimen of such material will crumble under light hammer blows.
MODERATELY	Specimen will withstand a few heavy hammer blows before breaking.
STRONG	Specimen will withstand a few heavy ringing hammer blows and will yield with difficulty only dust and small flying fragments.
VERY STRONG	Specimen will resist heavy ringing hammer blows and will yield with difficulty only dust and small flying fragments.

WEATHERING[1]

DEEP	Moderate to complete mineral decomposition; extensive disintegration; deep and thorough discoloration; many fractures, all extensively coated or filled with oxides, carbonates and/or clay or silt.
MODERATE	Slight change or partial decomposition of minerals; little disintegration; cementation little to unaffected. Moderate to occasionally intense discoloration. Moderately coated fractures.
SLIGHT	No megascopic decomposition of minerals; little of no effect on normal cementation. Slight and intermittent, or localized discoloration. Few stains on fracture Surface.
FRESH	Unaffected by weathering agents. No disintegration of discoloration. Fractures usually less numerous than joints.

[1] The physical and chemical disintegration and decomposition of rocks and minerals by natural processes such as oxidation, reduction, hydration, solution, carbonation, and freezing and thawing.

BEDDING OF SEDIMENTARY ROCKS

SPLITTING PROPERTY	THICKNESS (FEET)
MASSIVE	Greater than 4.0
BLOCKY	2.0 - 4.0
SLABBY	0.2 - 2.0
FLAGGY	0.05 - 0.2
SHALY OR PLATY	0.01 - 0.05
PAPERY	Less than 0.01

STRATIFICATION	THICKNESS (FEET)
VERY THICK-BEDDED	Greater than 4.0
THICK-BEDDED	2.0 - 4.0
THIN-BEDDED	0.2 - 2.0
VERY THIN-BEDDED	0.05 - 0.2
LAMINATED	0.01 - 0.05
THINLY LAMINATED	Less than 0.01

ROCK CLASSIFICATION SYSTEM

C2EARTH

KEHOE PROPERTIES LLC PROPERTY
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San Mateo County, California

DOCUMENT ID.	DATE	
22070C-01R2	September 2022	Figure 8

The standard penetration resistance (SPT) blow counts are obtained in general accordance with ASTM Test Designation D1586. The drive weight assembly consists of a 140-pound hammer dropped through a 30-inch free fall. A blow count is defined as the number of hammer blows per six inches of penetration, or 50 blows for 6 inches or less of penetration. The driving of samplers was discontinued if the observed blow count was 50 for 6 inches or less of penetration.

SPT samples are collected in a standard, 2-inch outer diameter, split-barrel sampler without liners (see Figure A below). Samplers holding 2-inch diameter liners (see Figure B below) and 2½-inch diameter liners (see Figure C below) are used to obtain "undisturbed" samples. Occasionally a portable power driven sampler holding 1-inch diameter liners is used for field sampling (see Figure D below). Resistance is measured in seconds per foot and does not correlate with the ASTM SPT. Undisturbed samples may also be collected using a Pitcher Barrel sampler (see Figure E below). Material recovered over the length of the sampler is shaded. A measure of resistance is not collected with this technique.

Blow counts are converted to SPT counts which are shown on the boring logs by the following relation:

$$B = \frac{N W H}{(140)(30)} \left(\frac{D_{o\ SPT}^2 - D_{i\ SPT}^2}{D_o^2 - D_i^2} \right)$$

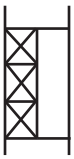
B = Equivalent number of blows per foot with a SPT
N = Number of blows per foot actually recorded
W = Weight of hammer (lb)
H = Height of hammer drop (in)
D_o = Outside Diameter (in)
D_i = Inside Diameter (in)

The blow counts used for these conversions were taken over the last two sample intervals if the sampler was driven 12 inches or more. If the sampler is driven less than 12 inches, the blow counts of the last sample were converted to SPT counts of 50 blows over an equivalent SPT run length.

SPT
Figure A

2" Liner
Figure B

2.5" Liner
Figure C



1" Liner
Figure D

Pitcher Barrel
Figure E

■ = Undisturbed Sample ☒ = Disturbed Sample

Where obtained, the shear strength of the soil samples is shown on the boring logs in far right-hand column.

SUMMARY OF FIELD SAMPLING PROCEDURES

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San Mateo County, California

DOCUMENT ID.	DATE	
22070C-01R2	September 2022	Figure 9

EQUIPMENT	Crawler-Mounted CME-55	RELATIVE ELEVATION	97 feet	LOGGED BY	K. Kiefer
DEPTH TO GROUNDWATER	Not Encountered	DEPTH TO BEDROCK	28 feet	DATE DRILLED	02-21-19

DESCRIPTION AND CLASSIFICATION			DEPTH (FEET)	SAMPLE	PENETRATION RESISTANCE (BLOWS / FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
DESCRIPTION AND REMARKS	CONSIST.	SOIL TYPE						
SANDY SILT; very dark brown (10YR 2/2); homogeneous; scattered, subrounded fine-grained sand; low plasticity; scattered roots and rootlets; moist (Fill)	Stiff	ML	1		9	14	113	
			3		10			
SILTY SAND; yellowish brown (10YR 5/6); predominantly homogeneous; subrounded fine-grained sand; subrounded- to subangular medium-grained sand; well to moderately sorted; low plasticity; zones of minor oxidation and reduction staining; moist; trace organics (Terrace Deposits)	Medium Dense	SM	4		11			
			7		20	18	115	
			12		30	15	119	
			17		21	21	108	
			20					

LOG OF BORING 1

C2EARTH

KEHOE PROPERTIES LLC PROPERTY
8322 Cabrillo Highway
San Mateo County, California

DOCUMENT ID.	DATE	
22070C-01R2	September 2022	Figure 10

EQUIPMENT	Crawler-Mounted CME-55	RELATIVE ELEVATION	97 feet	LOGGED BY	K. Kiefer
DEPTH TO GROUNDWATER	Not Encountered	DEPTH TO BEDROCK	26 feet	DATE DRILLED	02-21-19

DESCRIPTION AND CLASSIFICATION DESCRIPTION AND REMARKS	CONSIST.	SOIL TYPE	DEPTH (FEET)	SAMPLE	PENETRATION RESISTANCE (BLOWS / FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
SILTY SAND (continued from above)			- 21 - 22 - 23 - 24 - 25 - 26 - 27 - 28 -		16			
GRANITE; pale orange yellow (10YR 9/2) to light gray (5Y 7/2); closely fractured to crushed; low hardness to hard; friable to strong; moderate weathering; slight to moderate oxidation and reduction staining (Granitic Rocks of Montara Mountain)		(Rock)			61	7	121	
Bottom of Boring = 28 feet			- 29 - 30 - 31 - 32 - 33 - 34 - 35 - 36 - 37 - 38 - 39 - 40 -					

LOG OF BORING 1 (CONTINUED)

C2EARTH

KEHOE PROPERTIES LLC PROPERTY
8322 Cabrillo Highway
San Mateo County, California

DOCUMENT ID.	DATE	
22070C-01R2	September 2022	Figure 11

EQUIPMENT	Crawler-Mounted CME-55	RELATIVE ELEVATION	96½ feet	LOGGED BY	K. Kiefer
DEPTH TO GROUNDWATER	Not Encountered	DEPTH TO BEDROCK	18 feet	DATE DRILLED	02-21-19

DESCRIPTION AND CLASSIFICATION			DEPTH (FEET)	SAMPLE	PENETRATION RESISTANCE (BLOWS / FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
DESCRIPTION AND REMARKS	CONSIST.	SOIL TYPE						
SANDY SILT; very dark brown (10YR 2/2); homogeneous; scattered, subrounded fine-grained sand; low plasticity; scattered roots and rootlets; moist (Fill)	Soft to Firm	ML	1		3	14	111	
			3		6			
SILTY SAND; yellowish brown (10YR 5/6); predominantly homogeneous; subrounded, fine- to medium-grained sand; well to moderately sorted; low plasticity; oxidation and reduction staining increases below 15 feet; moist; trace organics (Terrace Deposits)	Medium Dense	SM	4		12			
			10		24	15	122	
			15		16	18	115	
GRANITE; reddish yellow (7.5YR 8/6) to pale orange yellow (10YR 9/2) to light gray (5Y 7/1); closely fractured to crushed; low hardness to moderately hard; friable to moderately strong; upper several feet are deeply weathered, moderate weathering below; moderate to heavy oxidation and reduction staining (Granitic Rocks of Montara Mountain)		(Rock)	20		37	18	106	

LOG OF BORING 2

C2EARTH

KEHOE PROPERTIES LLC PROPERTY
8322 Cabrillo Highway
San Mateo County, California

DOCUMENT ID.	DATE	
22070C-01R2	September 2022	Figure 12

EQUIPMENT	Crawler-Mounted CME-55	RELATIVE ELEVATION	96½ feet	LOGGED BY	K. Kiefer
DEPTH TO GROUNDWATER	Not Encountered	DEPTH TO BEDROCK	18 feet	DATE DRILLED	02-21-19

DESCRIPTION AND CLASSIFICATION			DEPTH (FEET)	SAMPLE	PENETRATION RESISTANCE (BLOWS / FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
DESCRIPTION AND REMARKS	CONSIST.	SOIL TYPE						
GRANITE (continued from above)			- 21 - 22 - 23 - 24 - 25 - 26 - 27 - 28 - 29 - 30		47 85			
Bottom of Boring = 30 feet			- 31 - 32 - 33 - 34 - 35 - 36 - 37 - 38 - 39 - 40 -					

LOG OF BORING 2 (CONTINUED)

C2EARTH

KEHOE PROPERTIES LLC PROPERTY
8322 Cabrillo Highway
San Mateo County, California

DOCUMENT ID.	DATE	
22070C-01R2	September 2022	Figure 13

EQUIPMENT	Crawler-Mounted CME-55	RELATIVE ELEVATION	104½ feet	LOGGED BY	K. Kiefer
DEPTH TO GROUNDWATER	Not Encountered	DEPTH TO BEDROCK	27 feet	DATE DRILLED	02-21-19

DESCRIPTION AND CLASSIFICATION			DEPTH (FEET)	SAMPLE	PENETRATION RESISTANCE (BLOWS / FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
DESCRIPTION AND REMARKS	CONSIST.	SOIL TYPE						
SANDY SILT; very dark brown (10YR 2/2); homogeneous; scattered, subrounded fine-grained sand; low plasticity; moist (Fill)		ML	0					
			1		12			
SILTY SAND; yellowish brown (10YR 5/6) to reddish yellow (7.5YR 7/8); predominantly homogeneous; subrounded to subangular, fine- to medium-grained sand; well to moderately sorted; low plasticity; moist; trace organics (Terrace Deposits)	Medium Dense	SM	2					
			3		14	18	112	
			4		14			
			5					
			6					
			7					
			8		25	20	106	
			9					
			10					
SAND; pale brown (2.5YR 8/2); predominantly homogeneous; subrounded to subangular, fine- to medium-grained sand; trace to scattered, subrounded gravel between 10 and 13½ feet; well to moderately sorted; moist (Terrace Deposits)	Medium Dense to Dense	SW	11					
			12					
			13		27	15	107	
			14					
			15					
			16					
			17					
			18		34	15	107	
			19					
			20					

LOG OF BORING 3

C2EARTH

KEHOE PROPERTIES LLC PROPERTY
8322 Cabrillo Highway
San Mateo County, California

DOCUMENT ID.	DATE	
22070C-01R2	September 2022	Figure 14

EQUIPMENT	Crawler-Mounted CME-55	RELATIVE ELEVATION	104½ feet	LOGGED BY	K. Kiefer
DEPTH TO GROUNDWATER	Not Encountered	DEPTH TO BEDROCK	27 feet	DATE DRILLED	02-21-19

DESCRIPTION AND CLASSIFICATION DESCRIPTION AND REMARKS	CONSIST.	SOIL TYPE	DEPTH (FEET)	SAMPLE	PENETRATION RESISTANCE (BLOWS / FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
SAND (continued from above)			- 21 - 22 - 23 - 24 - 25 - 26 - 27 -		34	21	99	
GRANITE; white (2.5Y 8.5/1) to light gray (5Y 7/1); closely fractured to crushed; hard to very hard; moderately strong to very strong; moderate to slight weathering (Granitic Rocks of Montara Mountain)		(Rock)			114			
Bottom of Boring = ~28 feet			- 28 - 29 - 30 - 31 - 32 - 33 - 34 - 35 - 36 - 37 - 38 - 39 - 40 -					

LOG OF BORING 3 (CONTINUED)

C2EARTH

KEHOE PROPERTIES LLC PROPERTY
8322 Cabrillo Highway
San Mateo County, California

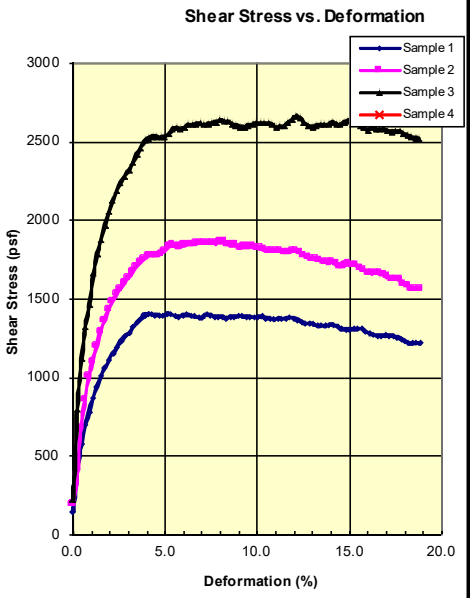
DOCUMENT ID.	DATE	
22070C-01R2	September 2022	Figure 15

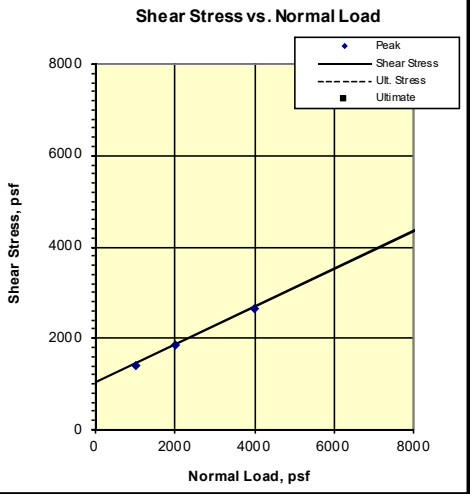
Consolidated Undrained Direct Shear (ASTM D3080M)

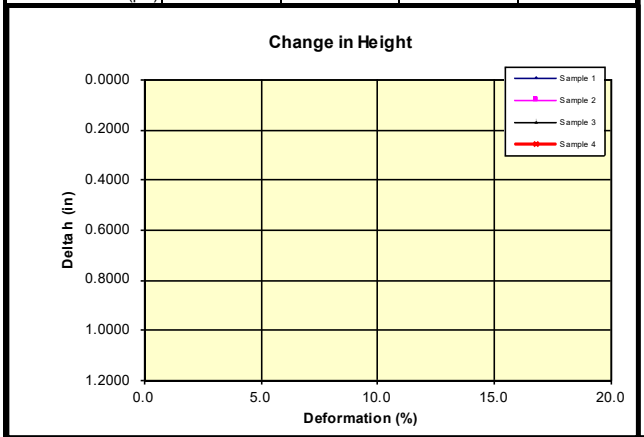
CTL Job #:	128-364	Project #:	18114C	By:	MD
Client:	C2Earth, Inc.	Date:	4/22/2019	Checked:	PJ
Project Name:	Whitney	Remolding Info:	116.4 pcf @ 16%.		

Specimen Data				
	1	2	3	4
Boring:	B1 & B2	B1 & B2	B1 & B2	
Sample:	Composite	Composite	Composite	
Depth (ft):	7.5-15.0	7.5-15.0	7.5-15.0	
Visual Description:	Reddish Yellow Clayey SAND	Reddish Yellow Clayey SAND	Reddish Yellow Clayey SAND	
Normal Load (psf)	1000	2000	4000	
Dry Mass of Specimen (g)	135.5	135.3	135.5	
Initial Height (in)	1.00	1.00	1.00	
Initial Diameter (in)	2.38	2.38	2.38	
Initial Void Ratio	0.474	0.475	0.473	
Initial Moisture (%)	16.0	16.1	16.1	
Initial Wet Density (pcf)	135.1	135.1	135.3	
Initial Dry Density (pcf)	116.5	116.4	116.5	
Initial Saturation (%)	92.6	93.1	93.5	
ΔHeight Consol (in)	0.0172	0.0269	0.0353	
At Test Void Ratio	0.448	0.436	0.421	
At Test Moisture (%)	15.7	15.8	15.1	
At Test Wet Density (pcf)	137.2	138.5	139.1	
At Test Dry Density (pcf)	118.5	119.6	120.8	
At Test Saturation (%)	96.5	99.8	98.8	
Strain Rate (%/min)	1.1	1.1	1.2	
Strengths Picked at	Peak	Peak	Peak	
Shear Stress (psf)	1407	1863	2665	
ΔHeight (in) at Peak				
Ultimate Stress (psf)				

Phi (deg)	22.4	Ult. Phi (deg)	
Cohesion (psf)	1050	Ult. Cohesion (psf)	







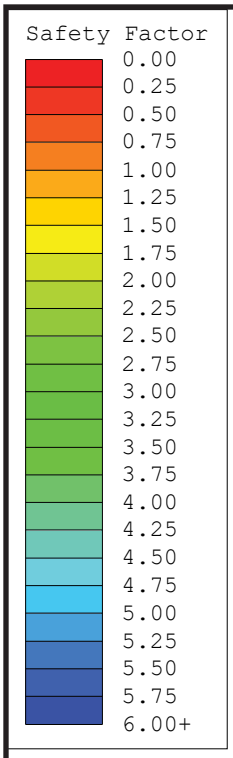
Remarks: *DS-CU* A fully undrained condition may not be attained in this test. ΔH is not measured during undrained direct shear tests.

SHEAR STRENGTH TEST RESULTS

C2EARTH

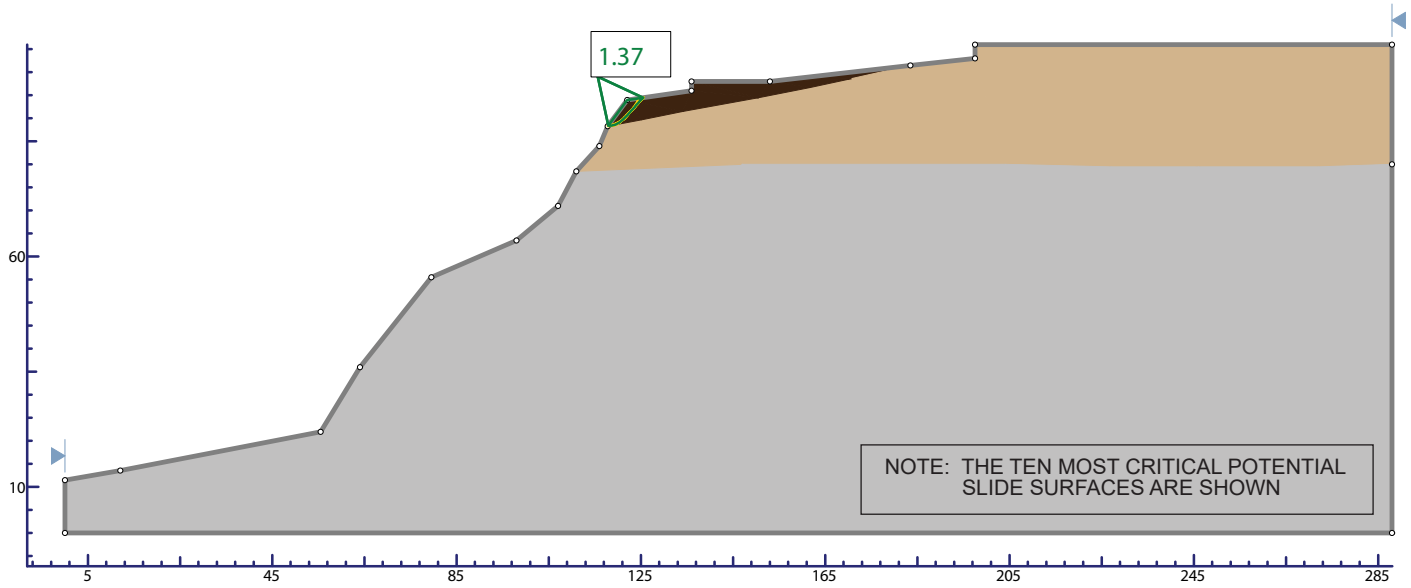
KEHOE PROPERTIES LLC PROPERTY
8322 Cabrillo Highway
San Mateo County, California

DRAFTED/REVIEWED	SCALE	DOCUMENT ID.	DATE	
KK/CR	Not Applicable	22070C-01R2	September 2022	Figure 16



CROSS-SECTION A-A'
STATIC
EVALUATION OF LANDSLIDING INITIATING ANYWHERE ON THE SUBJECT SLOPE

Material Name	Color	Unit Weight (lbs/ ft3)	Strength Type	Cohesion (psf)	Phi (deg)
Fill		128	Mohr-Coulomb	100	23
Terrace Deposits		135	Mohr-Coulomb	1050	22.4
Granitic Rocks		165	Undrained	500000	N/A



BASE: Slide2 Modeler; ROCSCIENCE, INC.; Version 9.024

SLOPE STABILITY ANALYSIS NO. 1

C2EARTH

KEHOE PROPERTIES LLC PROPERTY
8322 Cabrillo Highway
San Mateo County, California

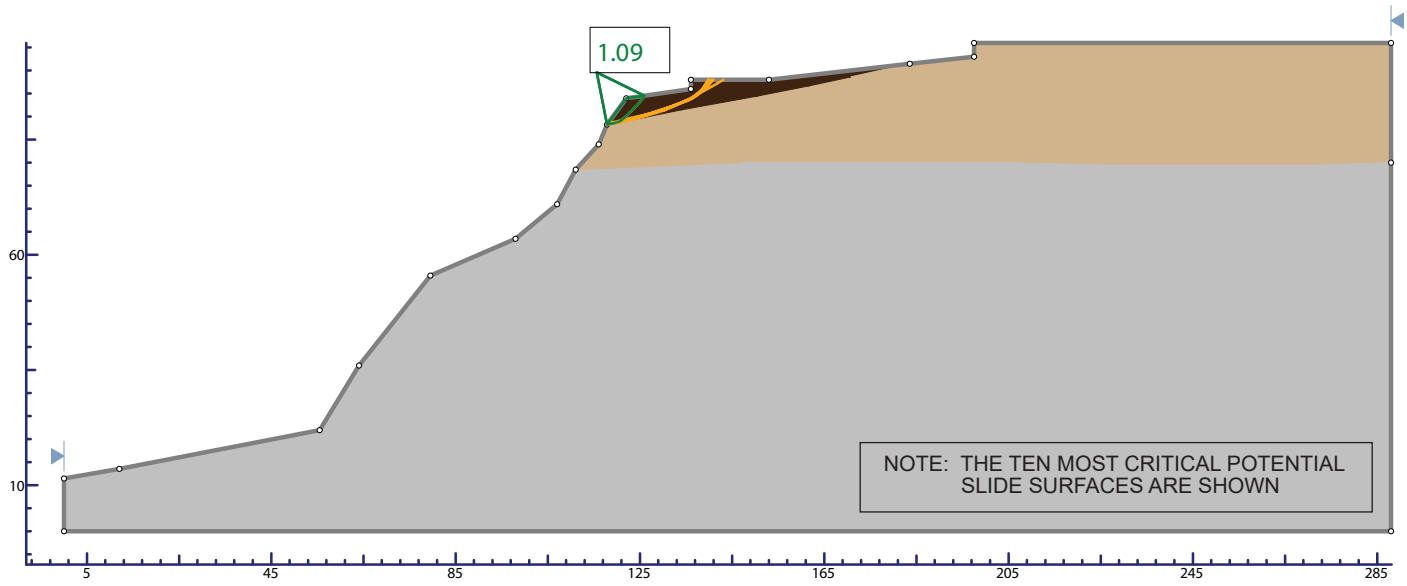
DRAFTED/REVIEWED	SCALE	DOCUMENT ID.	DATE	
KK/CR	AS SHOWN	22070C-01R2	September 2022	Figure 17

Safety Factor
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
2.25
2.50
2.75
3.00
3.25
3.50
3.75
4.00
4.25
4.50
4.75
5.00
5.25
5.50
5.75
6.00+

CROSS-SECTION A-A'
PSEUDO-STATIC
EVALUATION OF LANDSLIDING INITIATING
ANYWHERE ON THE SUBJECT SLOPE

◀ 0.23

Material Name	Color	Unit Weight (lbs/ ft3)	Strength Type	Cohesion (psf)	Phi (deg)
Fill		128	Mohr-Coulomb	100	23
Terrace Deposits		135	Mohr-Coulomb	1050	22.4
Granitic Rocks		165	Undrained	500000	N/A



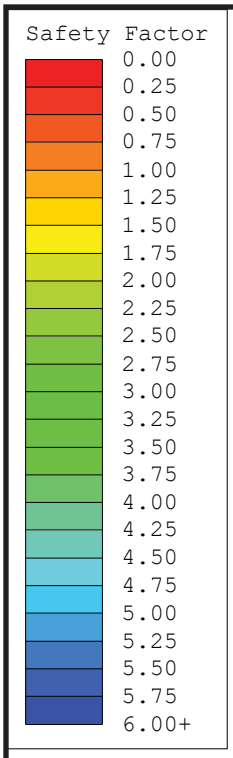
BASE: Slide2 Modeler; ROCSCIENCE, INC.; Version 9.024

SLOPE STABILITY ANALYSIS NO. 2

C2EARTH

KEHOE PROPERTIES LLC PROPERTY
8322 Cabrillo Highway
San Mateo County, California

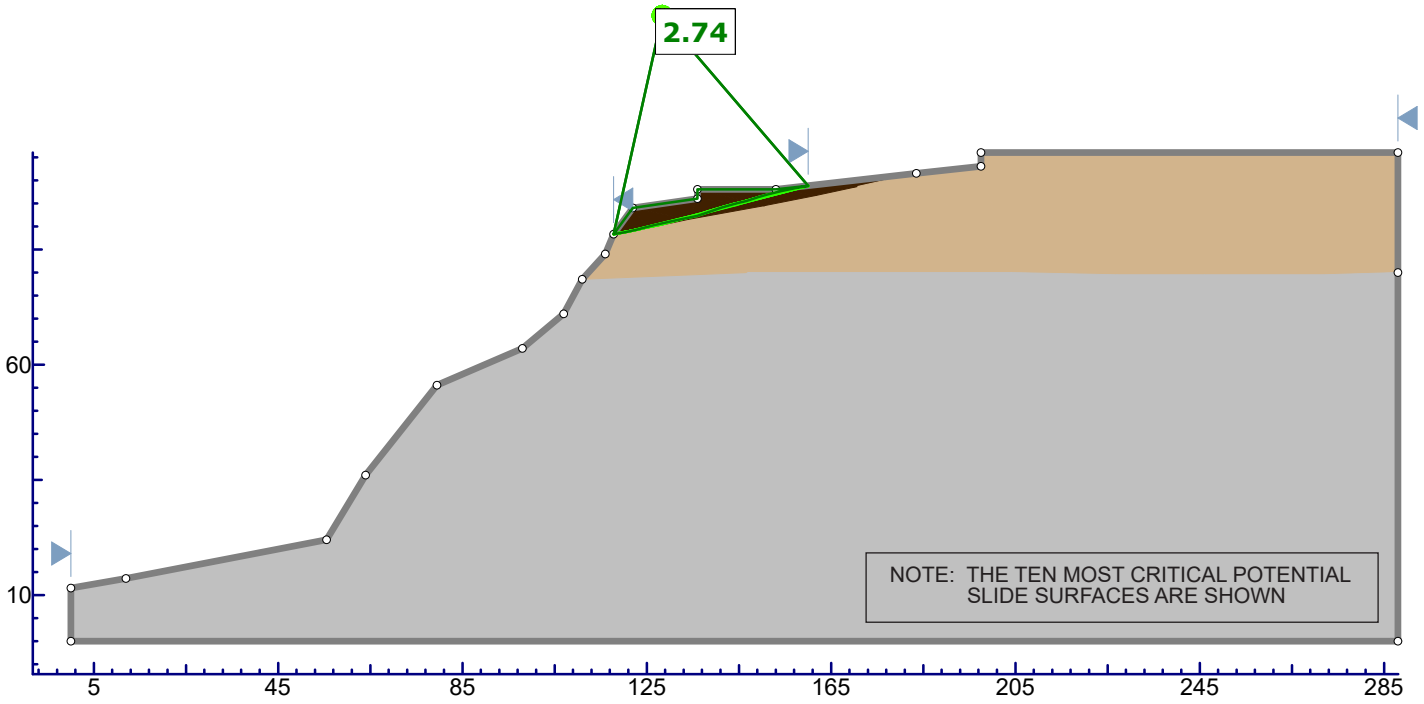
DRAFTED/REVIEWED	SCALE	DOCUMENT ID.	DATE	
KK/CR	AS SHOWN	22070C-01R2	September 2022	Figure 18



CROSS-SECTION A-A'
STATIC

EVALUATION OF LANDSLIDING INITIATING ANYWHERE BENEATH THE PROPOSED RESIDENCE AND TOEING OUT ANYWHERE BENEATH THE FILL

Material Name	Color	Unit Weight (lbs/ ft3)	Strength Type	Cohesion (psf)	Phi (deg)
Fill		128	Mohr-Coulomb	100	23
Terrace Deposits		135	Mohr-Coulomb	1050	22.4
Granitic Rocks		165	Undrained	500000	N/A



BASE: Slide2 Modeler; ROCSCIENCE, INC.; Version 9.024

SLOPE STABILITY ANALYSIS NO. 3

C2EARTH

KEHOE PROPERTIES LLC PROPERTY
8322 Cabrillo Highway
San Mateo County, California

DRAFTED/REVIEWED	SCALE	DOCUMENT ID.	DATE	
KK/CR	AS SHOWN	22070C-01R2	September 2022	Figure 19

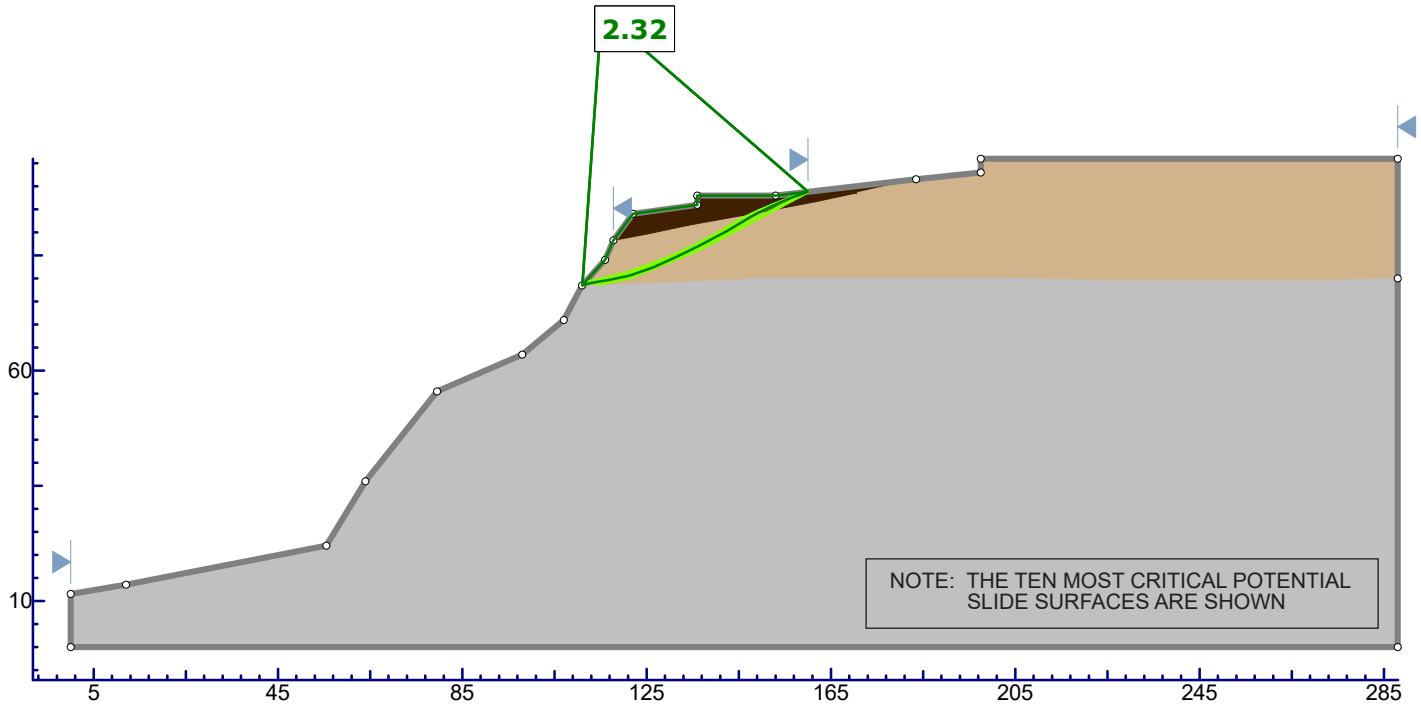
Safety Factor
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
2.25
2.50
2.75
3.00
3.25
3.50
3.75
4.00
4.25
4.50
4.75
5.00
5.25
5.50
5.75
6.00+

◀ 0.23

CROSS-SECTION A-A'
PSEUDO-STATIC

EVALUATION OF LANDSLIDING INITIATING ANYWHERE BENEATH THE PROPOSED RESIDENCE AND TOEING OUT ANYWHERE BENEATH THE FILL

Material Name	Color	Unit Weight (lbs/ ft3)	Strength Type	Cohesion (psf)	Phi (deg)
Fill		128	Mohr-Coulomb	100	23
Terrace Deposits		135	Mohr-Coulomb	1050	22.4
Granitic Rocks		165	Undrained	500000	N/A



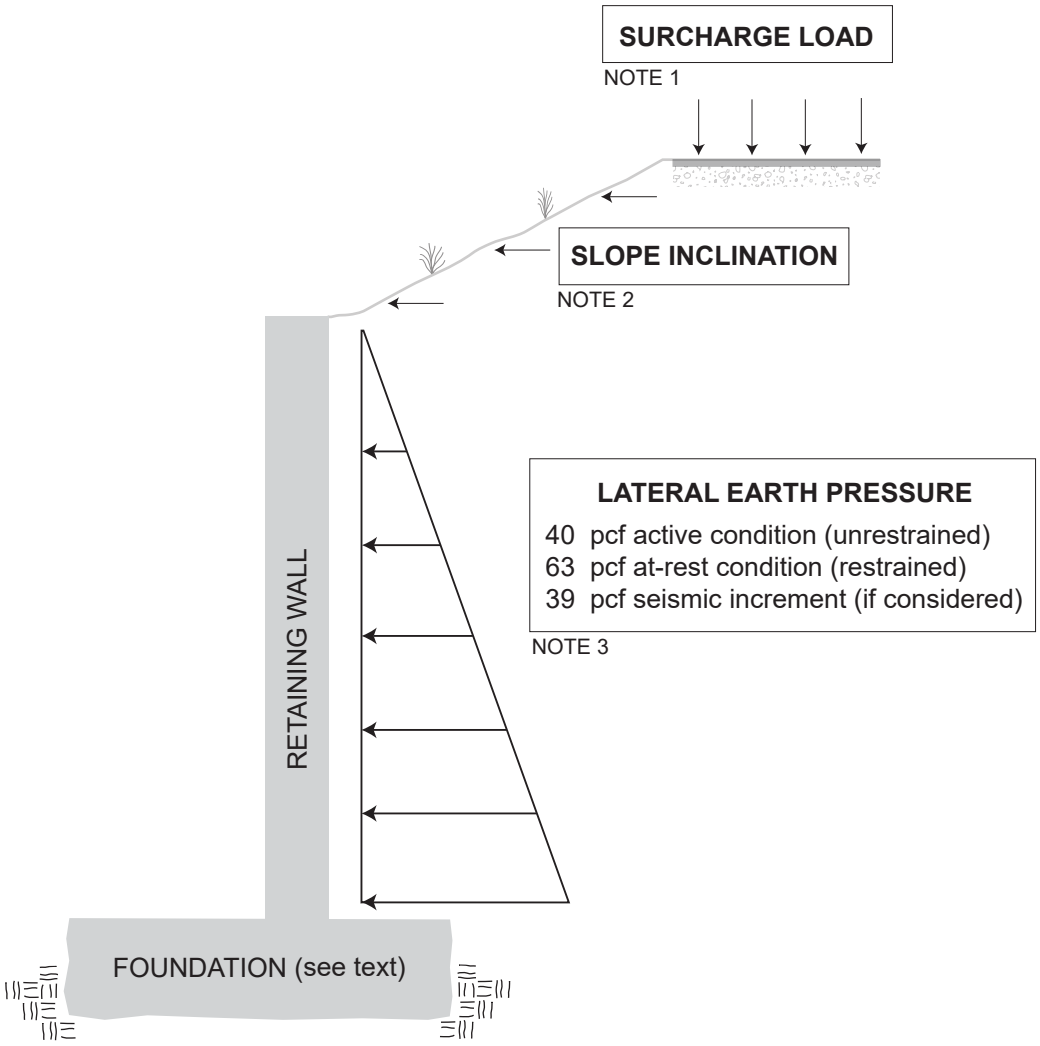
BASE: Slide2 Modeler; ROCSCIENCE, INC.; Version 9.024

SLOPE STABILITY ANALYSIS NO. 4

C2EARTH

KEHOE PROPERTIES LLC PROPERTY
8322 Cabrillo Highway
San Mateo County, California

DRAFTED/REVIEWED	SCALE	DOCUMENT ID.	DATE	
KK/CR	AS SHOWN	22070C-01R2	September 2022	Figure 20



NOTE 1: Additional lateral load equal to 1/3 (unrestrained) or 1/2 (restrained) the anticipated surcharge load.

NOTE 2: Add an additional equivalent fluid pressure increment to the active and at-rest condition for sloping backfill above the wall where inclinations are greater than 4:1 (horizontal to vertical), as follows:

+8 pcf for slope inclinations between 3:1 and 4:1
+12 pcf for slope inclinations between 2:1 and 3:1

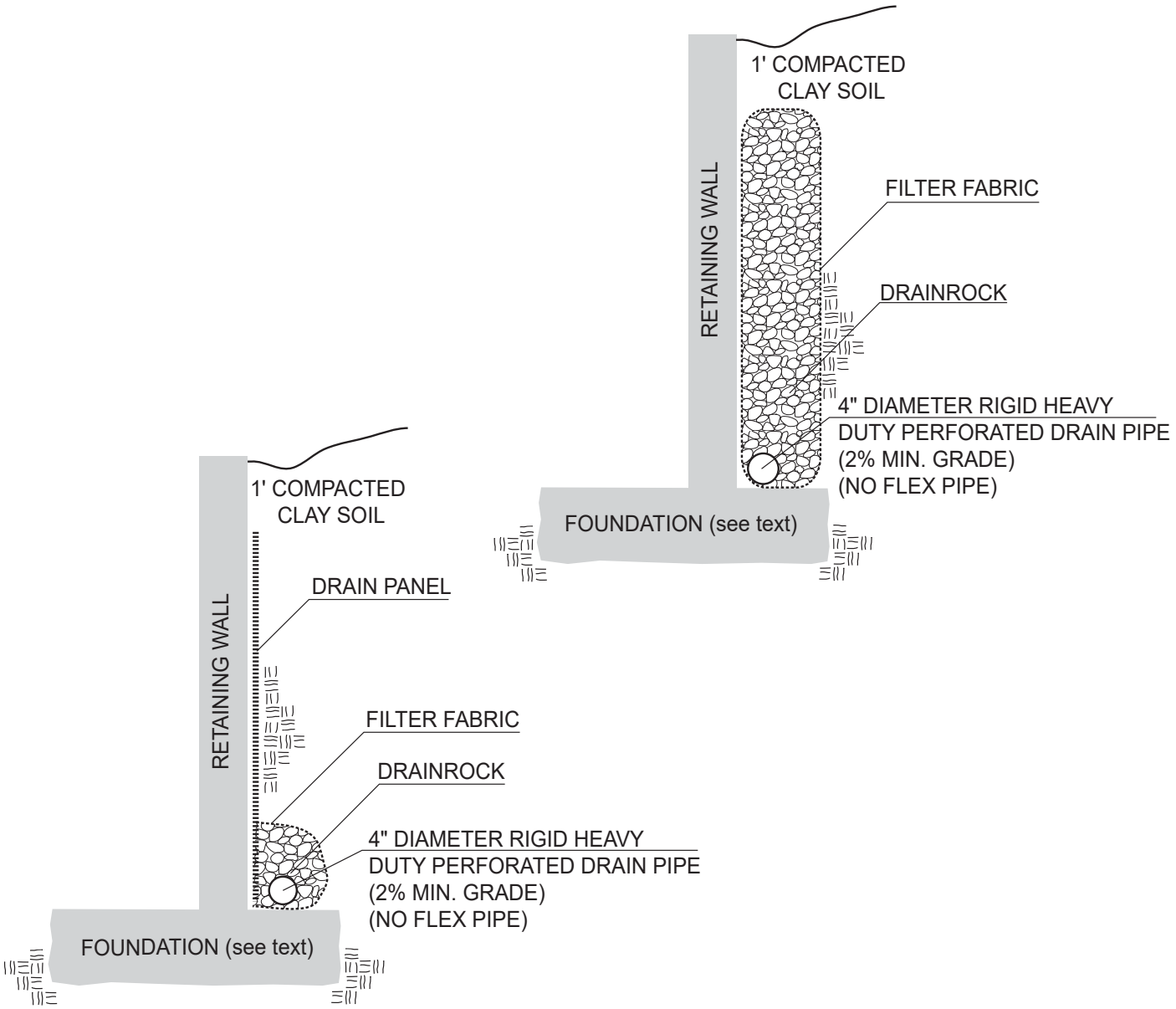
NOTE 3: Lateral earth pressures are shown for drained retaining walls. Contact us to provide additional recommendations if undrained walls are planned.

CONCEPTUAL RETAINING WALL PRESSURE DIAGRAM

C2EARTH

KEHOE PROPERTIES LLC PROPERTY
8322 Cabrillo Highway
San Mateo County, California

DRAFTED/REVIEWED	SCALE	DOCUMENT ID.	DATE	
KS/CR	Not Applicable	22070C-01R2	September 2022	Figure 21

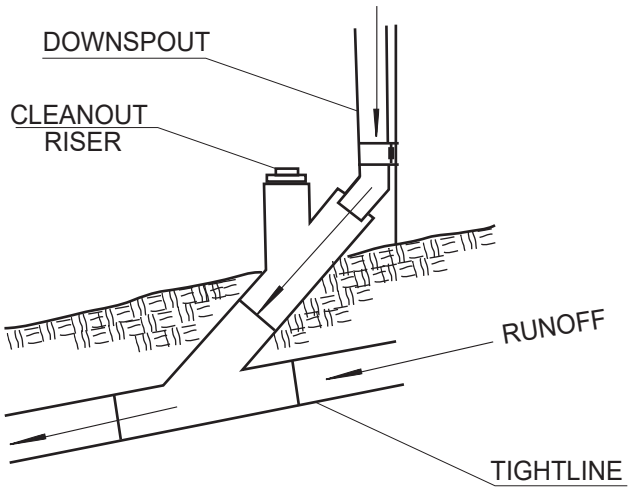


CONCEPTUAL RETAINING WALL BACKDRAIN DIAGRAM

C2EARTH

KEHOE PROPERTIES LLC PROPERTY
8322 Cabrillo Highway
San Mateo County, California

DRAFTED/REVIEWED	SCALE	DOCUMENT ID.	DATE	
KS/CR	Not Applicable	22070C-01R2	September 2022	Figure 22



CONCEPTUAL DOWNSPOUT CLEANOUT DIAGRAM

C2EARTH

KEHOE PROPERTIES LLC PROPERTY
8322 Cabrillo Highway
San Mateo County, California

DRAFTED/REVIEWED	SCALE	DOCUMENT ID.	DATE	
KS/CR	Not Applicable	22070C-01R2	September 2022	Figure 23

TABLE I

MODIFIED MERCALLI SCALE OF EARTHQUAKE INTENSITIES

I. Not felt by people, except under especially favorable circumstances.

II. Felt only by persons at rest on the upper floors of buildings. Some suspended objects may swing.

III. Felt by some people who are indoors, but it may not be recognized as an earthquake. The vibration is similar to that caused by the passing of light trucks. Hanging objects swing.

IV. Felt by many people who are indoors, by a few outdoors. At night some people are awakenad. Dishes, windows and doors are disturbad: walls make creaking sounds; stationary cars rock noticeably. The sensation is like a heavy object striking a building; the vibration is similar to that caused by the passing of heavy trucks.

V. Felt indoors by practically everyone, outdoors by most people. The direction and duration of the shock can be estimated by people outdoors. At night, sleepers are awakened and some run out of buildings. Liquids are disturbed and sometimes spilled. Small, unstable objects and some furnishings are shifted or upset. Doors close or open.

VI. Felt by everyone, and many people are frightened and run outdoors. Walking is difficult. Small church and school bells ring. Windows, dishes, and glassware are broken; liquids spill; books and other standing objects fall; pictures are knocked from walls; furniture is moved or overturned. Poorly built buildings may be damaged, and weak plaster will crack.

VII. Causes general alarm. Standing upright is very difficult. Persons driving cars also notice the shaking. Damage is negligible in buildings of very good design and construction, slight to moderate in well-built ordinary structures, considerable in poorly built or designed structures. Some chimneys are broken; interiors and furnishings experience considerable damage; architectural ornaments fall. Small slides occur along sand or gravel banks of water channels; concrete irrigation ditches are damaged. Waves form in the water and it becomes muddied.

VIII. General fright and near panic. The steering of cars is difficult. Damage is slight in specially designed earthquake-resistant structures, considerable in well-built ordinary buildings. Poorly built or designed buildings experience partial collapses. Numerous chimneys fall; the walls of frame buildings are damaged; interiors experience heavy damage. Frame houses that are not properly bolted down may move on their foundations. Decayed pilings are broken off. Tress are damaged. Cracks appear in wet ground and on steep slopes. Changes in the flow or temperature of springs and wells are noted.

IX. Panic is general. Interior damage is considerable in specially designed earthquake-resistant structures. Well-built ordinary buildings suffer severe damage, with partial collapses; frame structures thrown out of plumb or shifted off of their foundations. Unreinforced masonry buildings collapse. The ground cracks conspicuously and some underground pipes are broken. Reservoirs are damaged seriously.

X. Most masonry and many frame structures are destroyed. Specially designed earthquake-resistant structures may suffer serious damage. Some well-built bridges are destroyed, and dams, dikes and embankments are seriously damaged. Large landslides are triggered by the shock. Water is thrown onto the banks of canals, rivers and lakes. Sand and mud are shifted horizontally on beaches and flat land. Rails are bent slightly. Many buried pipes and conduits are broken.

XI. Few, if any, masonry structures remain standing. Other structures are severely damaged. Broad fissures, slumps and slides develop in soft or wet soils. Underground pipe lines and conduits are put completely out of service. Rails are severely bent.

XII. Damage is total, with practically all works of construction severely damaged or destroyed. Waves are observed on ground surfaces, and all soft or wet soils are greatly disturbed. Heavy objects are thrown into the air, and large rock masses are displaced.

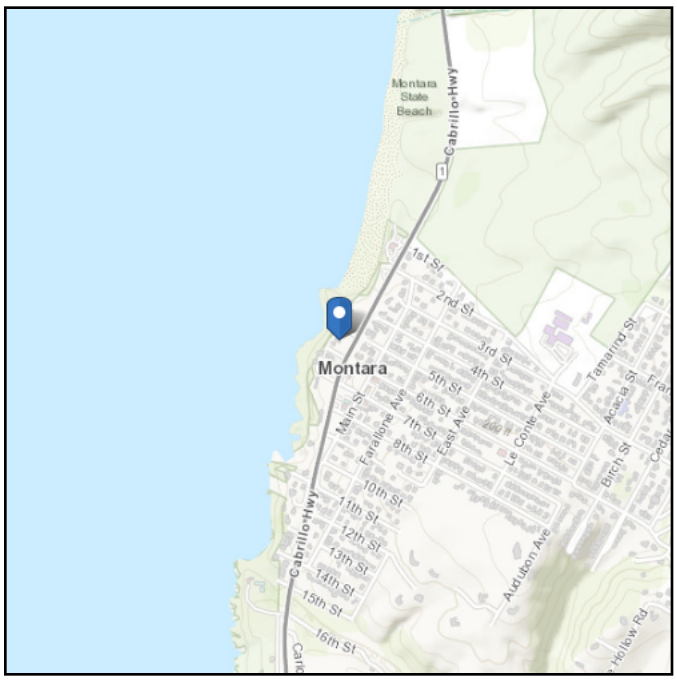
YANEV,P.,1974, Peace of Mind in Earthquake Country, Chronicle Books, San Francisco, California.

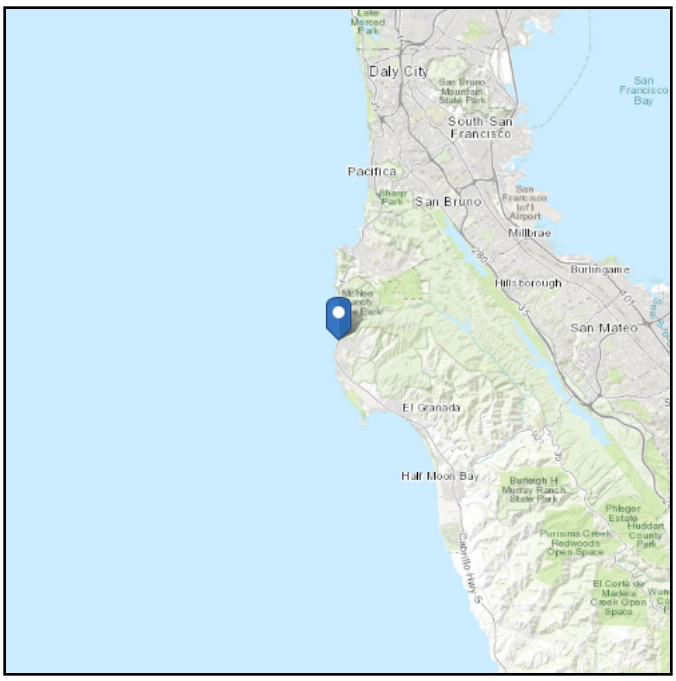
APPENDIX: ASCE 7 HAZARD REPORTS

ASCE 7 Hazards Report

Address:
8322 Cabrillo Hwy
Montara, California
94037

Standard:	ASCE/SEI 7-16	**Elevation:**	104.71 ft (NAVD 88)
Risk Category:	II	**Latitude:**	37.543517
Soil Class:	B - Rock	**Longitude:**	-122.515994





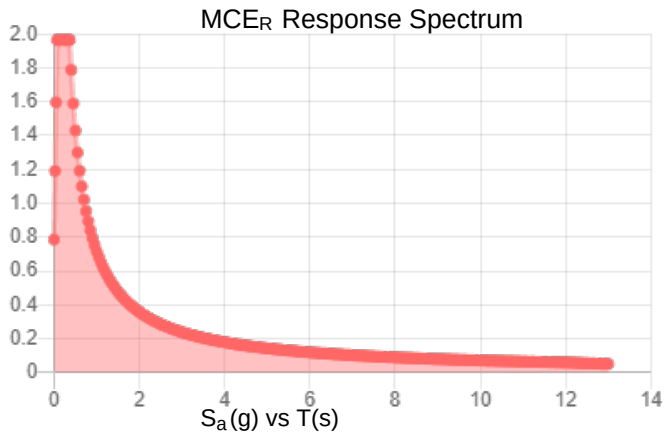
Seismic

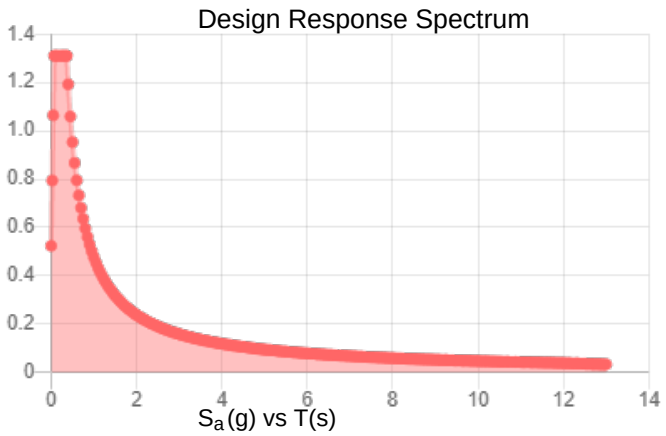
Site Soil Class: B - Rock

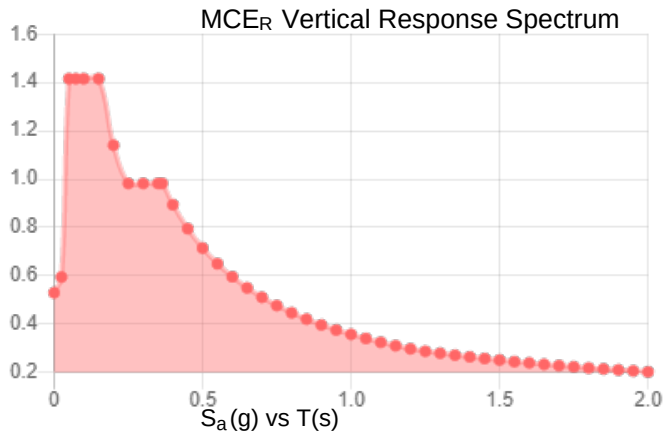
Results:

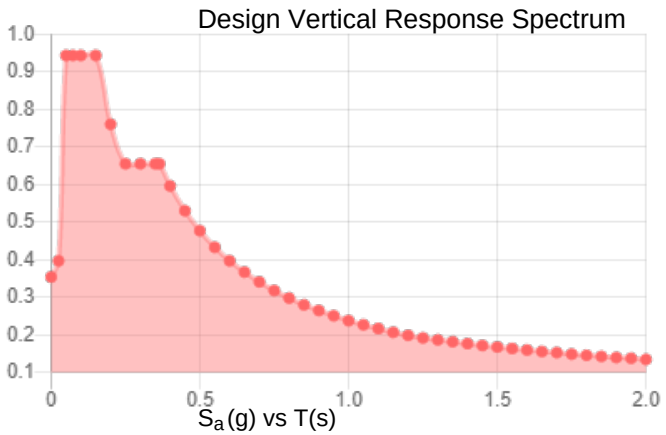
S_S :	2.183	S_{D1} :	0.477
S_1 :	0.894	T_L :	12
F_a :	0.9	PGA :	0.977
F_v :	0.8	PGA_M :	0.879
S_{MS} :	1.965	F_{PGA} :	0.9
S_{M1} :	0.715	I_e :	1
S_{DS} :	1.31	C_v :	0.9

Seismic Design Category E









Data Accessed: Wed Sep 21 2022

Date Source:

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

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

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ASCE 7 Hazards Report

Address:
8322 Cabrillo Hwy
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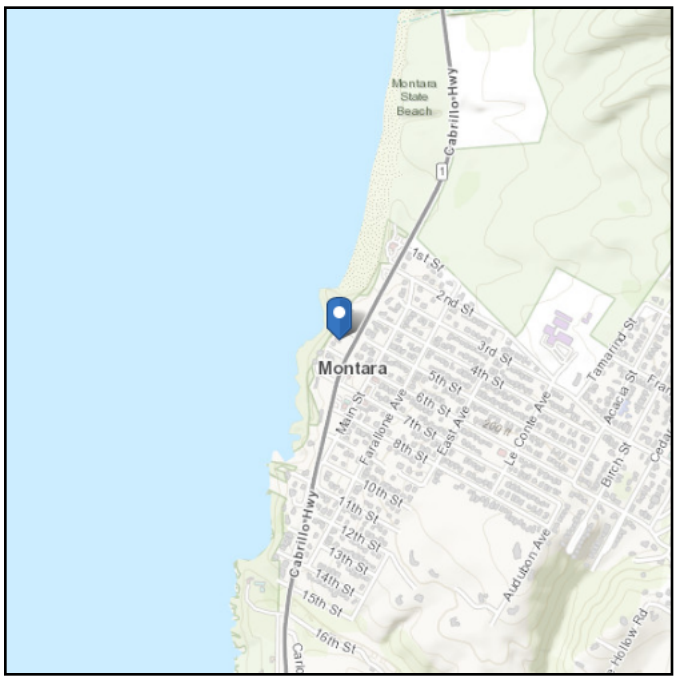
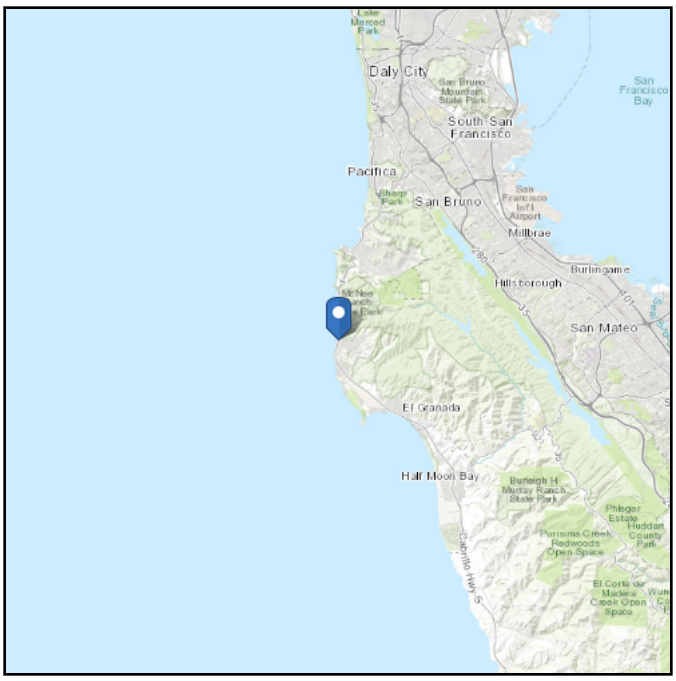
Soil Class:	B - Rock	**Longitude:**	-122.515994





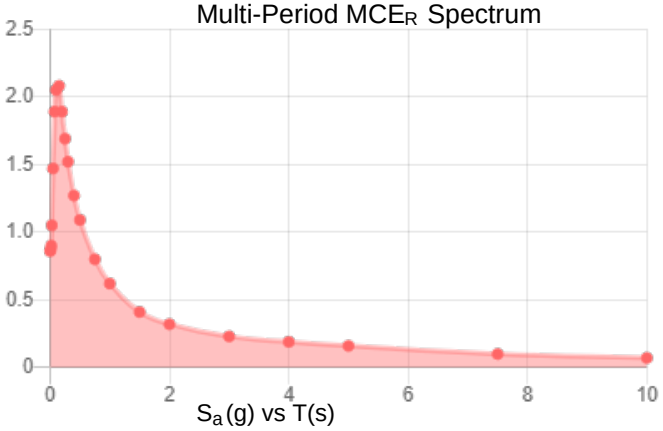
Seismic

Site Soil Class:

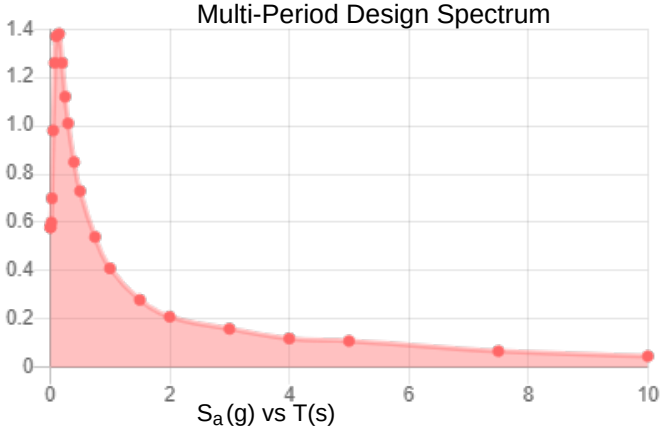
Results:

PGA_M :	0.77	T_L :	12
S_{MS} :	1.7	S_S :	2.38
S_{M1} :	0.62	S_1 :	0.89
S_{DS} :	1.14	S_{DC} :	
S_{D1} :	0.41	V_{S30} :	1080

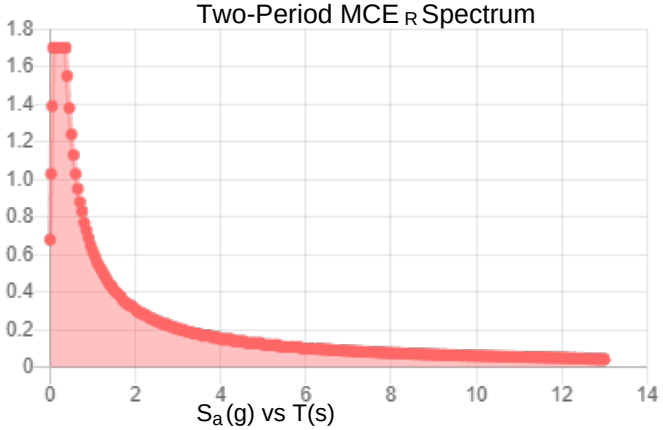
Multi-Period MCE_R Spectrum



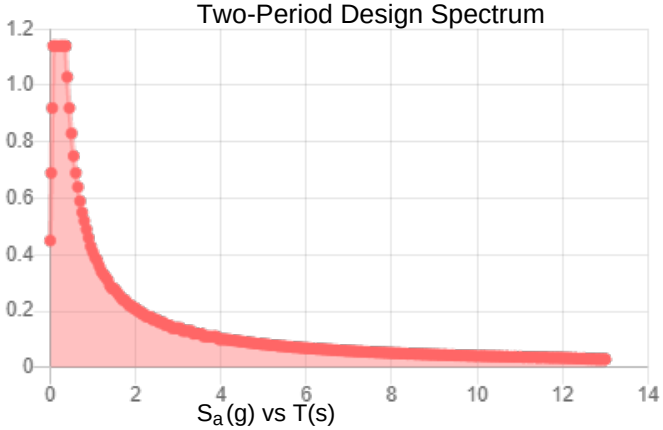
Multi-Period Design Spectrum



Two-Period MCE_R Spectrum



Two-Period Design Spectrum



MCE_R Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Design Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Data Accessed: Wed Sep 21 2022

Date Source:
USGS Seismic Design Maps based on ASCE/SEI 7-22 and ASCE/SEI 7-22 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-22 Ch. 21 are available from USGS.

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APPLICATION TO USE

NOTE: THIS APPLICATION FOR AUTHORIZATION TO USE THIS COPYRIGHTED DOCUMENT MUST BE COMPLETED FOR USE OR COPYING OF THE FOLLOWING DOCUMENT BY ANYONE OTHER THAN THE CLIENT.

GEOLOGIC AND GEOTECHNICAL STUDY
PROPOSED RESIDENTIAL REDEVELOPMENT

KEHOE PROPERTIES LLC PROPERTY
8322 CABRILLO HIGHWAY
SAN MATEO COUNTY, CALIFORNIA

Document Id. 22070C-01R2
Dated 22 September 2022

TO: C2Earth, Inc.
750 Camden Avenue, Suite A
Campbell, CA 95008

FROM: _____
_____
_____
_____

Please clearly identify name and address of person/entity applying to use or copy this document.

APPLICANT: _____ hereby applies for permission to use the above referenced document for the following purpose(s):

Applicant understands and agrees that the document listed above is a copyrighted document, that C2Earth, Inc. is the copyright owner and that unauthorized use or copying of the document is strictly prohibited without the express written permission of C2Earth, Inc. Applicant understands that C2Earth, Inc. may withhold such permission at its sole discretion, or grant such permission upon such terms and conditions as it deems acceptable, such as the execution of a Hold Harmless Agreement or the payment of a re-use fee.

Signature: _____ Date: _____

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT E

urbantreemanagement inc.

Tree Removal Request

Inspection date: June 2, 2022
Project arborist: Colin Blackie/Michael Young
Site: 8322 Cabrillo Highway, Montara, CA 94037

t 650+321+0202 | po box 971 los gatos ca 95031 | urbantreemanagement.com
contractors license # 755989 I certified arborist #WE-12996A I qualified tree risk assessor

Assignment

It was our assignment to physically inspect one Monterey Cypress (*Hesperocyparis macrocarpa*) of concern on the property and make recommendations based on health and structure.

Summary

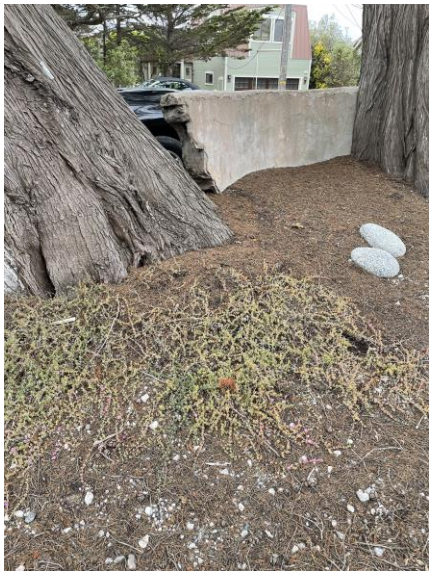
There is one (1) Monterey Cypress (*Hesperocyparis macrocarpa*) on site that was deemed to merit removal due to substantial issues with tree structure and stability. Please refer to the discussion section below for details.

Discussion

The tree was examined and then rated based on its individual health and structure according to the following table.

Rating	**Health**	**Structure**
Good	excellent/vigorous	flawless
Fair/good	no significant health concerns	very stable
Fair	showing initial or temporary disease, pests, or lack of vitality. measures should be taken to improve health and appearance.	routine maintenance needed such as pruning or end weight reduction as tree grows
Fair/poor	in decline, significant health issues	significant structural weakness(es), mitigation needed, mitigation may or may not preserve the tree
Poor	dead or near dead	hazard

The Monterey Cypress (*Hesperocyparis macrocarpa; tag #18*) of concern has a DBH of 59", approximate height of 75', and approximate canopy spread of 75'. This tree receives a "fair/poor" rating for health and "poor" rating for structure with active root heaving on the tension side of the tree. This tree is located in an area raised above the adjacent street. The cypress is leaning heavily towards the street and nearby utility lines creating serious hazard and liability concerns. The tree is growing over and actively breaking the existing retaining wall separating the raised planting area from the street below. The specimen contains cavities of varying depths throughout the trunk and large scaffolding limbs indicating likely decay. There are various past pruning wounds that have not been callused over as well, indicating decreased vitality. Due to the significant lean with proximity to utility lines and streets, active root heaving, and high likelihood of heartwood decay, this tree is recommended for removal.






Local Regulations Governing Trees

CHAPTER 2. DEFINITIONS

For the purposes of this part, the following words shall have the meaning ascribed to them in this chapter.

SECTION 12,010. "PERSON" shall mean an individual, public agency, including the County and its departments, firm, association and corporation, and their employees, agents, or representatives.

SECTION 12,011. "COUNTY" shall mean the County of San Mateo acting by and through its authorized representatives.

SECTION 12,012. "SIGNIFICANT TREE" shall mean any live woody plant rising above the ground with a single stem or trunk of a circumference of thirty-eight inches (38") or more measured at four and one half feet (4 1/2') vertically above the ground or immediately below the lowest branch, whichever is lower, and having the inherent capacity of naturally producing one main axis continuing to grow more vigorously than the lateral axes.

SECTION 12,012.1. In the RH/DR Zone Districts, the definition of significant tree shall include all trees in excess of nineteen inches (19") in circumference.

SECTION 12,013. "PRIVATE PROPERTY" shall mean all property not owned by the County of San Mateo or any other public agency.

SECTION 12.014. "PUBLIC PROPERTY" shall mean all property owned by the County of San Mateo, any other city, county, city and county, special district or other public agency in the unincorporated area of San Mateo County.

SECTION 12,015. "COMMUNITY DEVELOPMENT DIRECTOR" shall mean the Community Development Director of the County of San Mateo, including his authorized or appointed representatives. For the purpose of this ordinance, the Community Development Director shall authorize or appoint a representative qualified in the field of forestry, ornamental horticulture, or tree ecology to provide the necessary technical assistance in the administration hereof.

SECTION 12,016. "COMMUNITY OF TREES" shall mean a group of trees of any size which are ecologically or aesthetically related to each other such that loss of several of them would cause a significant ecological, aesthetic, or environmental impact in the immediate area.

SECTION 12,017. “INDIGENOUS TREE” shall mean a tree known to be a native San Mateo County tree. The term may be narrowed in its meaning to include only those trees known to occur naturally in a certain portion of the County. In the Emerald Lake Hills Community Plan area, indigenous trees shall include the following species of trees: Salix coulteri, Salix lasiolepis, Salix lasiandra (all native willows); Acer negundo californica (box elder); Aesculus californica (buckeye); Arbutus menziesii (madrone); Quercus agrifolia (coast live oak); Quercus lobata (valley oak); Quercus douglasii (blue oak); and Umbellularia californica (California bay laurel). This list may be amended to include indigenous trees not currently known to occur naturally upon confirmation by a reputable authority on native trees of San Mateo County.

SECTION 12,018. “EXOTIC TREE” shall mean any tree known not to be a native indigenous tree, hence any tree which has been planted or has escaped from cultivation.

SECTION 12,019. “TRIM" or “PRUNE” means the cutting or pruning of or removal of any roots, limbs or branches of trees which will not seriously impair the health of trees. For the purposes of this Part, the definition of trim shall not apply to any tree being grown as an orchard tree or other fruit or non-indigenous ornamental tree for which trimming and pruning are considered ordinary horticultural practices.

SECTION 12,019.1. “EFFECTIVELY REMOVE” includes, but is not limited to, any extreme pruning that is not consistent with standard arboriculture practices for a healthy tree and that result in the tree’s permanent disfigurement, destruction, or removal pursuant to this chapter.

+ + + + +

I certify that the information contained in this report is correct to the best of my knowledge and this report was prepared in good faith. Please call me if you have questions or if I can be of further assistance.

Respectfully,

Colin B. Blackie
ISA Certified Arborist #WE-12996A

urbantreemanagement inc.

ASSUMPTIONS AND LIMITING CONDITIONS

1. Any legal description provided to this arborist is assumed to be correct. No responsibility is assumed for matters legal in character nor is any opinion rendered as to the quality of any title.
2. This arborist can neither guarantee nor be responsible for accuracy of information provided by others.
3. This arborist shall not be required to give testimony or to attend court by reason of the information provided by this arborist unless subsequent written arrangements are made, including payment of an additional fee for services.
4. Loss or removal of any part of this report invalidates the entire report.
5. Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person(s) to whom it is addressed without written consent of this arborist.
6. This report and the values expressed herein represent the opinion of this arborist, and this arborist's fee is in no way contingent upon the reporting of a specified value nor upon any finding to be reported.
7. Sketches, diagrams, graphs, photos, etc., in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering reports or surveys.
8. This report has been made in conformity with acceptable appraisal/evaluation/diagnostic reporting techniques and procedures, as recommended by the International Society of Arboriculture.
9. When applying any pesticide, fungicide, or herbicide, always follow label instructions.
10. No tree described in this report was climbed, unless otherwise stated. This arborist cannot take responsibility for any defects which could only have been discovered by climbing. A full root collar inspection, consisting of excavating the soil around the tree to uncover the root collar and major buttress roots, was not performed, unless otherwise stated. This arborist cannot take responsibility for any root defects which could only have been discovered by such an inspection.

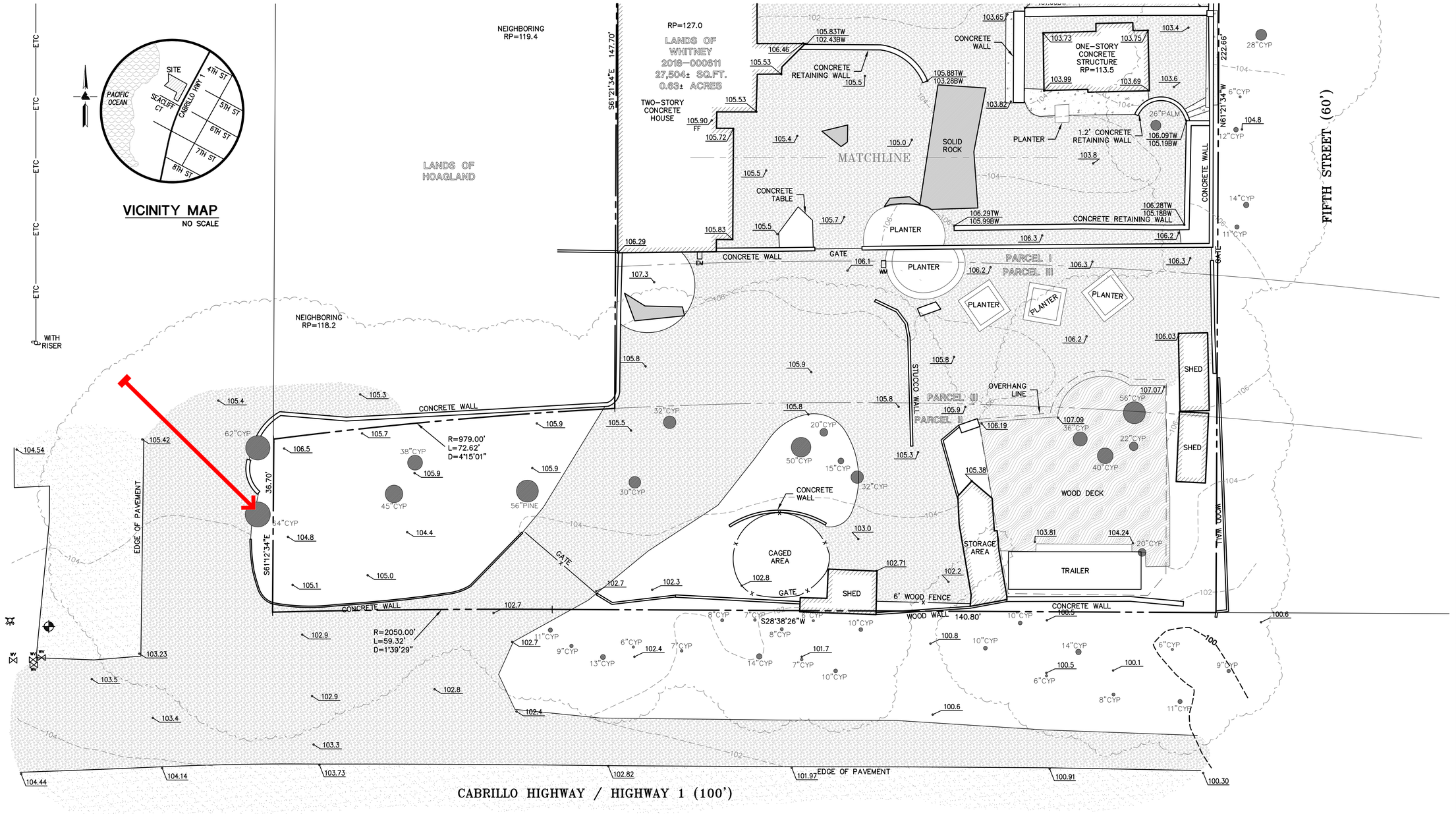
ARBORIST DISCLOSURE STATEMENT

Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees. Clients may choose to accept or disregard the recommendations of the arborist, or to seek additional advice.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like any medicine, cannot be guaranteed.

Treatment, pruning and removal of trees may involve considerations beyond the scope of the arborist's services such as property boundaries, property ownership, site lines, disputes between neighbors, and other issues. Arborists cannot take such considerations into account unless complete and accurate information is disclosed to the arborist. An arborist should then be expected to reasonably rely upon the completeness and accuracy of the information provided.

Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate all trees.



LEGEND AND NOTES

- BOUNDARY LINE
- BUILDING OVERHANG LINE
- ETC — ELECTRICAL/TELEPHONE/CABLE TV OVERHEAD LINE
- x — FENCE LINE
- SS — SANITARY SEWER LINE
- BENCHMARK
- BW — BOTTOM RETAINING WALL
- CYP — CYPRESS
- EM — ELECTRICAL METER
- FF — FINISH FLOOR
- FH — FIRE HYDRANT
- FL — FLOW LINE
- INV — INVERT
- JOINT POLE
- M— — MULTI-TRUNK TREE
- RP — ROOF PEAK
- SSMH — SANITARY SEWER MANHOLE
- SOLID ROCK, SIMILAR
- TW — TOP OF RETAINING WALL
- TOS — TOP OF SLAB
- VCP — VITRIFIED CLAY PIPE
- WM — WATER METER
- WV — WATER VALVE
- XXX.XX — SPOTGRADE
- ASPHALT
- CONCRETE
- GRAVEL
- WOOD

NOTES

ALL DISTANCES AND DIMENSIONS ARE IN FEET AND DECIMALS.

UNDERGROUND UTILITY LOCATION IS BASED ON SURFACE EVIDENCE.

BUILDING FOOTPRINTS ARE SHOWN TO FINISHED MATERIAL (STUCCO/SIDING) AT GROUND LEVEL.

FINISH FLOOR ELEVATIONS ARE TAKEN AT DOOR THRESHOLD (EXTERIOR).

EASEMENT NOTE

A CURRENT TITLE REPORT FOR THE SUBJECT PROPERTY HAS NOT BEEN EXAMINED BY LEA & BRAZE ENGINEERING, INC. EASEMENTS OF RECORD MAY EXIST THAT ARE NOT SHOWN ON THIS MAP.

SITE BENCHMARK

SURVEY CONTROL POINT
MAG AND SHINER SET IN ASPHALT
ELEVATION = 103.73'
(ASSUMED)

0 5 10 20

SCALE: 1" = 10'

LICENSED LAND SURVEYOR
GREGORY F. BRAZE
No. 7623
Exp. 12-31-18
STATE OF CALIFORNIA

LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS · LAND SURVEYORS
BAY AREA REGION
2495 INDUSTRIAL PKWY WEST
HAYWARD, CALIFORNIA 94545
(P) (510) 887-4086
(F) (510) 887-3019

SACRAMENTO REGION
3017 DOUGLAS BLVD., # 300
ROSEVILLE, CA 95661
(P) (916)966-1338
(F) (916)797-7363
WWW.LEABRAZE.COM

8322 CABRILLO HIGHWAY
MONTARA
CALIFORNIA

APN: 036-046-420

SAN MATEO COUNTY

TOPOGRAPHIC SURVEY

–	–
–	–
–	–
–	–
REVISIONS	BY
JOB NO:	2181025
DATE:	9-26-18
SCALE:	1" = 10'
FIELD BY:	KR
DRAWN BY:	DB
SHEET NO:	

SU1

1 OF 2 SHEETS

urbantreemanagement

Arborist Report

8322 Cabrillo Highway
Montara, CA 94037

Initial Inspection Date:
February 14, 2019
Reinspection Date:
June 2, 2022

Prepared by: Allie Strand
Revised by: Colin Blackie
Project Arborists: Michael Young/Colin Blackie
contractor's license # 755989
certified arborist WC ISA #623/#WE-12996A
ISA Qualified Tree Risk Assessor (TRAQ)

urbantreemanagement

TABLE OF CONTENTS

urbantreemanagement

Assignment

Urban Tree Management, Inc. (UTM) was engaged to physically inspect, map, tag, and compile data for each tree on site based on a site plan provided by the Architect. UTM was then to provide a tree inventory/survey report documenting our observations and provide tree protection measures for use during construction.

Summary

This survey provides a numbered map and complete and detailed information for each tree surveyed. There are eighteen (18) trees included in this report with all trees (18) protected under the County of San Mateo's tree protection ordinance. Six (6) of the surveyed trees are recommended for removal due to significant concerns with their health and structural stability.

Discussion

All trees surveyed were examined and then rated based on their individual health and structure according to the following table. For example, a tree may be rated "good" under the health column for excellent/vigorous appearance and growth, while the same tree may be rated "fair/poor" in the structure column if structural mitigation is needed. More complete descriptions of how health and structure are rated can be found under the "Methods" section of this report. The complete list of trees and all relevant information, including their health and structure ratings, their "protected/significant" status, a map and recommendations for their care can be found in the data sheet that accompanies this report.

Rating	**Health**	**Structure**
Good	excellent/vigorous	flawless
Fair/good	no significant health concerns	very stable
Fair	showing initial or temporary disease, pests, or lack of vitality. measures should be taken to improve health and appearance.	routine maintenance needed such as pruning or end weight reduction as tree grows
Fair/poor	in decline, significant health issues	significant structural weakness(es), mitigation needed, mitigation may or may not preserve the tree
Poor	dead or near dead	hazard

Survey Methods

The trunks of the trees are measured using an arborist's diameter tape at 54" above soil grade. The condition of each tree is assessed by visual observation only from a standing position without climbing or using aerial equipment. No invasive equipment is used. Consequently, it is possible that individual tree(s) may have internal (or underground) health problems or structural defects, which are not detectable by visual inspection. In cases where it is thought further investigation is warranted, a "full tree risk assessment" is recommended. This assessment may be inclusive of drilling or using sonar equipment to detect internal decay and include climbing or the use of aerial equipment to assess higher portions of the tree.

The health of an individual tree is rated based on leaf color and size, canopy density, new shoot growth and the absence or presence of pests or disease.

Individual tree structure is rated based on the growth pattern of the tree (including whether it is leaning); the presence or absence of poor limb attachments (such as co-dominant leaders); the length and weight of limbs; and the extent and location of apparent decay. For each tree, a structural rating of "fair" or above indicates that the structure can be maintained with routine pruning such as removing dead branches and reducing end weight as the tree grows. A "fair/poor" rating indicates that the tree has significant structural weaknesses and corrective action is warranted. The notes section for that tree will then recommend a strategy/technique to improve the structure or mitigate structural stresses. A "poor" structural rating indicates that the tree or portions of the tree are likely to fail and that there is little that can constructively be done about the problem other than removal of the tree or large portions of the tree. Very large trees that are rated "fair/poor" for structure AND that are near structures or in an area frequently traveled by cars or people, receive an additional **CONSIDER REMOVAL" notation under recommendations. This is included because structural mitigation techniques do not guarantee against structural failure, especially in very large trees. Property owners may or may not choose to remove this type of tree but should be aware that if a very large tree experiences a major structural failure, the danger to nearby people or property is significant.

Survey Area Observations

The property is located on the West side of Cabrillo Highway (Highway 1) in Montara, CA, overlooking the Pacific Ocean. The existing home/lot/trees were unmaintained at the time of initial inspection. Upon reinspection in June, 2022, the trees appeared to be in similar condition with the house having had some updates completed. The tree palette is comprised almost entirely of Monterey Cypress (*Hesperocyparis macrocarpa*) with one (1) Canary island date palm (*Phoenix canariensis*) present on the property as well.

Tree Health on This Property

The health of the trees in the survey area ranges from "fair/good" to "poor". Most trees were surrounded by a layer of organic matter due to the accumulation of fallen leaves/debris, increasing nutrient cycling and availability in the soil. This property would benefit from a regular

maintenance schedule to improve tree health via hygienic pruning and to enhance the natural form and beauty of trees on the property. All trees examined were due for pruning at the time of the site's reinspection. Individual issues and recommendations for each tree are listed under the "Notes" column on the accompanying data sheet.

Tree Structure on This Property

Tree structure on the property ranges from "fair" to "poor". The majority of trees surveyed received "fair/poor" structural ratings due to the presence of strong leans and codominant branching habits resulting from persistent wind movement along the coastline. The exceptions to this structural rating are five (5) Monterey cypresses (*Hesperocyparis macrocarpa*) receiving "poor" structural ratings, one (1) Monterey cypress receiving a "fair" structural rating, and one (1) Canary island date palm (*Phoenix canariensis*) receiving a "fair" structural rating.

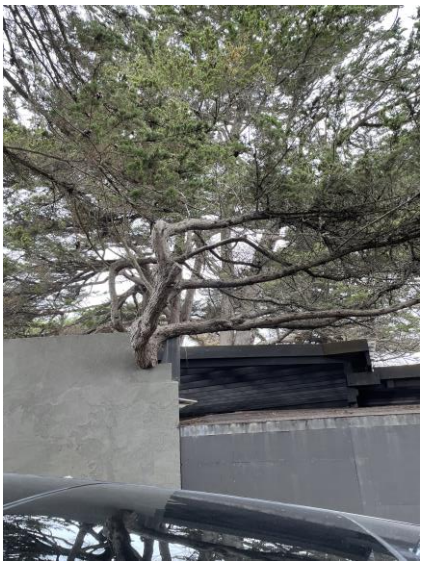
Ideally, trees are pruned for structure when young and are properly maintained to reduce end-weight and correct structural weaknesses as they grow. This practice prevents the growth of codominant leaders, epicormic sprouts, and excessively long, lateral branches that are prone to breakage. As mentioned above, the property would benefit from a regular maintenance program to correct the structure of the trees, reduce dead and diseased wood accumulation, and prevent future limb or codominant leader failures.

Recommended Removals Based on Health/ Structure/Species

Details of each individual tree are located on the attached Survey Data table.

Recommended Protected Removals (Permit required)
Tree #4 is a Monterey Cypress (*Hesperocyparis macrocarpa*).
Tree #6 is a Monterey Cypress (*Hesperocyparis macrocarpa*).
Tree #7 is a Monterey Cypress (*Hesperocyparis macrocarpa*).
Tree #9 is a Monterey Cypress (*Hesperocyparis macrocarpa*).
Tree #16 is a Monterey Cypress (*Hesperocyparis macrocarpa*).
Tree #18 is a Monterey Cypress (*Hesperocyparis macrocarpa*).

Site Images



Tree #6

Tree #7

Tree #9

Tree #16

Tree #18

Local Regulations Governing Trees

CHAPTER 2. DEFINITIONS

For the purposes of this part, the following words shall have the meaning ascribed to them in this chapter.

SECTION 12,010. "PERSON" shall mean an individual, public agency, including the County and its departments, firm, association and corporation, and their employees, agents, or representatives.

SECTION 12,011. "COUNTY" shall mean the County of San Mateo acting by and through its authorized representatives.

SECTION 12,012. "SIGNIFICANT TREE" shall mean any live woody plant rising above the ground with a single stem or trunk of a circumference of thirty-eight inches (38") or more measured at four and one half feet (4 1/2') vertically above the ground or immediately below the lowest branch, whichever is lower, and having the inherent capacity of naturally producing one main axis continuing to grow more vigorously than the lateral axes.

SECTION 12,012.1. In the RH/DR Zone Districts, the definition of significant tree shall include all trees in excess of nineteen inches (19") in circumference.

SECTION 12,013. "PRIVATE PROPERTY" shall mean all property not owned by the County of San Mateo or any other public agency.

SECTION 12.014. "PUBLIC PROPERTY" shall mean all property owned by the County of San Mateo, any other city, county, city and county, special district or other public agency in the unincorporated area of San Mateo County.

SECTION 12,015. "COMMUNITY DEVELOPMENT DIRECTOR" shall mean the Community Development Director of the County of San Mateo, including his authorized or appointed representatives. For the purpose of this ordinance, the Community Development Director shall authorize or appoint a representative qualified in the field of forestry, ornamental horticulture, or tree ecology to provide the necessary technical assistance in the administration hereof.

SECTION 12,016. "COMMUNITY OF TREES" shall mean a group of trees of any size which are ecologically or aesthetically related to each other such that loss of several of them would cause a significant ecological, aesthetic, or environmental impact in the immediate area.

SECTION 12,017. "INDIGENOUS TREE" shall mean a tree known to be a native San Mateo County tree. The term may be narrowed in its meaning to include only those trees known to occur naturally in a certain portion of the County. In the Emerald Lake Hills Community Plan area, indigenous trees shall include the following species of trees: Salix coulteri, Salix lasiolepis, Salix lasiandra (all native willows); Acer negundo californica (box elder); Aesculus californica (buckeye); Arbutus menziesii (madrone); Quercus agrifolia (coast live oak); Quercus lobata (valley oak); Quercus douglasii (blue oak); and Umbellularia californica (California bay laurel). This list may be amended to include indigenous trees not currently known to occur naturally upon confirmation by a reputable authority on native trees of San Mateo County.

SECTION 12,018. "EXOTIC TREE" shall mean any tree known not to be a native indigenous tree, hence any tree which has been planted or has escaped from cultivation.

SECTION 12,019. "TRIM" or "PRUNE" means the cutting or pruning of or removal of any roots, limbs or branches of trees which will not seriously impair the health of trees. For the purposes of this Part, the definition of trim shall not apply to any tree being grown as an orchard tree or

other fruit or non-indigenous ornamental tree for which trimming and pruning are considered ordinary horticultural practices.

SECTION 12,019.1. "EFFECTIVELY REMOVE" includes, but is not limited to, any extreme pruning that is not consistent with standard arboriculture practices for a healthy tree and that result in the tree's permanent disfigurement, destruction, or removal pursuant to this chapter.

Risks to Trees by Construction

Besides the above-mentioned health and structure-related issues, the trees at this site could be at risk of damage by construction or construction procedures that are common to most construction sites. These procedures may include the dumping or stockpiling of materials over root systems; trenching across root zones for utilities or for landscape irrigation; or the routing of construction traffic across root systems resulting in soil compaction and root dieback. It is therefore essential that Tree Protection Fencing be used as per the Architect's drawings and Project Arborist's recommendations. In constructing underground utilities, it is essential that the location of trenches be placed outside the drip lines of trees except where approved by the Project Arborist(s).

Tree Protection Plan

Note: If recommendations in this report disagree with County tree protection measures in any way, the more stringent requirement shall apply.

Protective fencing is required to be provided during the construction period to protect trees to be preserved. This fencing must protect a sufficient portion of the root zone to be effective. Fencing is recommended to be located eight to ten (8x to 10x) times the diameter at breast height (DBH) in all directions from the tree. DBH for each tree is shown in the attached data table. The minimum recommendation for tree protection fencing location is six (6x) times the DBH, where a larger distance is not possible. There are areas where we will amend this distance based upon tree condition and proposed construction. In my experience, the protective fencing must:

a. Consist of chain link fencing and have a minimum height of 6 feet.
b. Be mounted on steel posts driven approximately 2 feet into the soil.
c. Fencing posts must be located a maximum of 10 feet on center.
d. Protective fencing must be installed prior to the arrival of materials, vehicles, or equipment.
e. Protective fencing must not be moved, even temporarily, and must remain in place until all construction is completed, unless approved be a Certified Arborist.
f. Tree Protection Signage shall be mounted to all individual tree protection fences.

Based on the existing development and the condition and location of trees present on site, the following is recommended:

1. The Project Arborists are Michael Young (650) 321-0202 and Colin Blackie (650) 507-5666. The Project Arborist(s) should supervise any excavation activities within the tree protection zones of these trees.
2. Any roots exposed during construction activities that are larger than 2 inches in diameter should not be cut or damaged until the Project Arborist has an opportunity to assess the impact that removing these roots could have on the trees.
3. The area under the driplines of trees should be thoroughly irrigated to a soil depth of 18" every 3-4 weeks during the dry months.
4. Mulch should cover all bare soils within the tree protection fencing. This material must be 6-8 inches in depth after spreading, which must be done by hand. Coarse wood chips are preferred because they are organic and degrade naturally over time.
5. Loose soil and mulch must not be allowed to slide down slope to cover the root zones or the root collars of protected trees.
6. There must be no grading, trenching, or surface scraping inside the driplines of protected trees, unless specifically approved by a Certified Arborist. For trenching, this means:
    a. Trenches for any underground utilities (gas, electricity, water, phone, TV cable, etc.) must be located outside the driplines of protected trees, unless approved by a Certified Arborist. Alternative methods of installation may be suggested.
    b. Landscape irrigation trenches must be located a minimum distance of ten (10x) times the trunk diameter from the trunks of protected trees unless otherwise noted and approved by the Arborist.
7. Materials must not be stored, stockpiled, dumped, or buried inside the driplines of protected trees.
8. Excavated soil must not be piled or dumped, even temporarily, inside the driplines of protected trees.
9. Landscape materials (cobbles, decorative bark, stones, fencing, etc.) must not be installed directly in contact with the bark of trees because of the risk of serious disease infection.
10. Landscape irrigation systems must be designed to avoid water striking the trunks of trees, especially oak trees.
11. Any pruning must be done by a Company with an Arborist Certified by the ISA (International Society of Arboriculture) and according to ISA, Western Chapter Standards, 1998.
12. Any plants that are planted inside the driplines of oak trees must be of species that are compatible with the environmental and cultural requirements of oak trees. Plants compatible with California native oaks can be found in The California Oak Foundation's 1991 publication "Compatible Plants Under & Around Oaks." This publication details plants compatible with California native oaks and is currently available online at: http://californiaoaks.org/wpcontent/uploads/2016/04/CompatiblePlantsUnderAroundOaks.pdf

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I certify that the information contained in this report is correct to the best of my knowledge and that this report was prepared in good faith. Please call me if you have questions or if I can be of further assistance.

Respectfully,

Colin Blackie
ISA Certified Arborist #WE-12996A
ISA Tree Risk Assessment Qualified (TRAQ)

TREE INVENTORY urban **tree** management, inc.

Address: 8322 Cabrillo Hwy, Montara, CA 94307
Inspection date: 2/14/2019

Ratings for health and structure are given separately for each tree according to the table to right. IE, a tree may be rated "Good" under the health column for excellent/vigorous appearance and growth, while the same tree may be rated "Fair/Poor" in the structure column if structural mitigation is needed. Health is rated based on leaf color and size, canopy density, new shoot growth and presence of pests or disease.

KEY	Health	Structure
Good	excellent/vigorous	flawless
Fair/Good	no significant health concerns	very stable
Fair	declining; measures should be taken to improve health and appearance	routine maintenance needed
Fair/Poor	in decline; significant health issues	mitigation needed, it may or may not preserve this tree
Poor	dead or near dead	hazard

Tag no	Common Name	DBH	W/H	Health	Structure	PROTECTED (X)	REMOVAL (X)	PROTECTED REMOVAL (XX)	Notes/Recommendations
1	Monterey cypress	45.5	39/25	F	F/P	X			Leans east, recommend prop
2	Canary Island palm	21.5	30/20	F/G	F	X			Slight lean of crown at the top
3	Monterey cypress	37.7	60/50	F/G	F/P	X			Co-dominant leaders
4	Monterey cypress	18.5	32/24	F/P	F/P	X	X	XX	Significant lean to the east, recommend removal
5	Monterey cypress	34	60/70	F	F/P	X			Leans east, co-dominant leaders, all ends are heavy
6	Monterey cypress	18	35/18	F	P	X	X	XX	Leans and has fallen over, recommend removal
7	Monterey cypress	11, 18	20/18	P	P	X	X	XX	Dead, leans east, on the ground, recommend removal
8	Monterey cypress	31	40/40	F	F/P	X			Leans east, very heavy
9	Monterey cypress	14	20/20	F	P	X	X	XX	Severe eastern lean, dominanted by large Cypress, thin canc
10	Monterey cypress	19	25/50	F	F/P	X			
11	Monterey cypress	48	80/70	F/G	F/P	X			Co-dominant leaders, heavy canopy, leans east
12	Monterey cypress	31	50/60	F/G	F/P	X			Long, heavy limbs
13	Monterey cypress	26	55/65	F/G	F/P	X			Co-dominant leaders
14	Monterey cypress	48	70/75	F/G	F/P	X			Leans east, heavy limbs, heaving on tension side
15	Monterey cypress	31.5	60/80	F	F/P	X			Leans east, heaving co-dominant leaders
16	Monterey cypress	36		P	P	X	X	XX	Dead, recommend removal
17	Monterey cypress	52	80/80	F/P	F	X			Thinning canopy
18	Monterey cypress	59	75/75	F/P	P	X	X	XX	Thin canopy, whole tree leans strongly east, recommend rer

TOTAL TREES	18		
PROTECTED TOTAL	**18**		
REMOVAL TOTAL		**6**	
PROTECTED REMOVALS TOTAL			**6**

San Mateo County defines a significant tree as any live woody plant that is 12.1 inches DBH or just below lowest branch, whichever is lower.

Common Name	***Latin Name***
Canary Island palm	*Phoenix canariensis*
Monterey cypress	*Cupressus macrocarpa*

PLANTING LEGEND:

PERIMETER LANDSCAPE SCREENING

Garrya elliptica
Pittosporum crassifolium
Arctostaphylos "Big Sur"
Olea "Little Ollie

ENTRY / DRIVEWAY PLANTING MIX

Agave Nova
Crassula multicaeva
Archtostaphylos John Dourly
Facsicularia sp.

OCEANSIDE PLANTING MIX

Shrubs
- Leptospermum reevsii
- Salvia (coastal varieties)
- Salvia lanceolata
- Ceanothus (coastal varieties)

Ground Covers
- Arctostaphylos "John Dourley"
- Arctostaphylos "Pacific Mist"
- Arctostaphylos x media 'Bokeya Pomo'
- Arctostaphylos x media 'Peter Erlich'
- Calocephalus brownii

Succulents
- Aloe sp.
- Cotyledon sp.
- Dudleya hassei
- Sedum sp.

Grasses
- Carex pansa
- Deschampsia caespitosa holciformis 'Sonoma Coast'
- Fescue 'Patricks Point'
- Rhodocoma arida

Wildflowers
- Fragaria - Beach Strawberry
- Achillea "Sonoma Coast"
- Escholtzia maritima
- Lupine (coastal varieties)
- Iris douglassii (coastal selections)

0' 8' 16' 32' 64'

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

N

PACIFIC PENINSULA ARCHITECTURE, inc.
718 OAK GROVE AVENUE MENLO PARK, CA 94025
650.323.7900 FAX: 650.323.0625
WWW.PACIFICPENINSULA.COM

THE KEHOE RESIDENCE

8322 CABRILLO HIGHWAY
MONTARA CA 94037

10

CONCEPTUAL PLANTING PLAN

Date: 7/8/22
Job: 2208

L2

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT F

Midcoast Community Council

An elected Advisory Council to the San Mateo County Board of Supervisors
representing Montara, Moss Beach, El Granada, Princeton, and Miramar
P.O. Box 248, Moss Beach, CA 94038-0248 - www.MidcoastCommunityCouncil.org

Gregg Dieguez Chair | **Claire Toutant** Vice-Chair | **Dan Haggerty** Treasurer | **Scott Bollinger** Secretary | **Gus Matammal**

Date: March 22, 2023
To: Kanoa Kelley, Planner, San Mateo County
Cc: Erik Martinez, California Coastal Commission
Linda Hitchcock, California State Parks
Subject: MCC Comments on PLN2019-00299, 8322 Cabrillo, Montara

The Midcoast Community Council has received your recent referral for a new dwelling on the blufftop in Montara. The current plans replace ones filed in 2019, on which we commented, and are for a house to replace one currently on the property.

We are pleased to note that the amount of grading and non-permeable space have been reduced, perhaps partly due to the removal of plans for a pool. The size of the house is still quite large, but the lot is also proportionally large.

We continue to have concerns.

As stated before, a prohibition against armoring of the shoreline should be attached to the deed, along with a provision for the owner to be responsible for any erosion-related debris.

There are other major concerns related to erosion and drainage. We recently had the opportunity to review geotechnical and drainage studies and, although the site does have some granite underlay, there is clearly a risk of loss of land from surface and subterranean run-off as well as ultimate wave action. Much of this is evident on photographs over the years. In addition, there has been some land-sliding on the property, some of which might be prevented in the future by specific drainage improvements noted in the study.

We note in our review that “portions of the damaged cliff could enlarge and eventually damage the western portion of the property.” A mitigating suggestion is the use of “a below-grade tangent-pier retaining wall along the western portion of the property.” This appears to us to be in contradiction to the no-armoring provisions as they were interpreted in the project at Arbor Lane, Moss Beach.

The CCC recommends a 100-year time frame for residential development when evaluating coastal hazards including the effects of sea level rise. We don’t see any such plan and the western parts of the building are very close to the bluff-top property line. We are especially concerned about the effects of construction there. If drainage from construction and from the building itself are not well-managed, the western-sloping of the lot will impact the stability of the bluff-top and the unstable bluff-top will impact the building. The lot is large and there should be a way to build without coming so close to the edge of the bluff.

We have other issues as well.

First, this property is in a scenic corridor and views from the highway and from inland are blocked by high dense trees. They should be thinned and topped to allow some view.

Also, we ask that the portion of the existing concrete wall along the 5th Street ROW extending onto State Parks property be removed.

Finally, this property is identified online as an event venue and weddings and filming movies and music videos are highlighted uses. These uses are inconsistent with the residential zoning and require a use permit. This, along with regulations regarding short-term rentals, must be enforced and written into the deed so that present and future owners are aware of it.

Thank you for your attention to our concerns. We may have further comments as the project progresses.

s/ Gregg Dieguez, Chair