COUNTY OF SAN MATEO
PLANNING AND BUILDING DEPARTMENT

DATE: November 18, 2020

TO: Planning Commission

FROM: Planning Staff

SUBJECT: EXECUTIVE SUMMARY: Consideration of a Design Review and Coastal Development Permit to construct a new ~~2,763~~ 2,798 sq. ft. two-story single-family residence with attached ~~474~~ 464 sq. ft. garage on a 6,210 sq. ft. parcel and right-of-way improvements to allow for emergency vehicle access. The project involves 120 cubic yards of grading for site improvements and no trees have been proposed for removal.

County File Number: PLN 2019-00229 (Deac)

PROPOSAL

The applicant is requesting approval to construct a new ~~2,763~~ 3,262 sq. ft. two-story single-family residence, including garage, on an existing 6,210 sq. ft. undeveloped legal parcel. The proposed grading consisting of 117 cubic yards of excavation and 3 cubic yards of fill is required to accommodate the placement of the structure on the site and the necessary road access improvements for the ingress/egress of emergency vehicles. The two-story home includes a two-car garage, with bedrooms and guest bathrooms on the main floor, and the master suite, family room, living and dining rooms on the upper floor, with decks on the second floor looking to the southwest.

Pursuant to Section 6328.10 of the County Zoning Regulations, the Planning Commission is the decision-making authority for Coastal Development projects that are appealable to the California Coastal Commission (CCC) and is the approval authority for the accompanying design review permit. The additional improvements to the terminus of Orval Avenue and Beach Way, in the public right-of-way, also requires a Coastal Development Permit.

RECOMMENDATION

That the Planning Commission approve the Design Review and Coastal Development Permit, County File Number PLN 2019-00229, based on and subject to the required findings and conditions of approval listed in Attachment A.

SUMMARY

The project site is a vacant lot located on Orval Avenue in Seal Cove, an area of unincorporated Moss Beach, all surrounding lots have been developed. The subject site is relatively flat, with no significant vegetation. The project also includes improvements in the public right-of-way at the intersection of Orval Avenue and Beach Way to allow an emergency vehicle access gate with lock box, where currently there exists no vehicle turn-around along Orval Avenue, as requested by San Mateo County Fire.

The Coastside Design Review Committee (CDRC) considered the project at the June 11, 2020 CDRC meeting and determined that the project complies with applicable Design Review Standards to warrant a recommendation for project approval. Staff has also determined that the project complies with all applicable policies, regulations and standards based on the well-articulated design of the single-family residence; and the inclusion of the emergency access gate to the project will better allow fire and emergency response services to serve the properties along Orval Avenue and can provide residents another evacuation route.

The project conforms with Local Coastal Program policies and requires a Coastal Development permit for being in the CCC appeals jurisdiction. The project complies with the General Plan, including policies pertaining to residential development on the Urban Mid-Coast, as well as policies regulating development within Geological Hazard areas. The Department of Public Works and Coastside Fire has reviewed the project and has determined that the project complies with standards for improvements to the public right-of-way for emergency vehicle access.

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COUNTY OF SAN MATEO
PLANNING AND BUILDING DEPARTMENT

DATE: November 18, 2020

TO: Planning Commission

FROM: Planning Staff

SUBJECT: Consideration of Coastal Development Permit and Coastside Design Review Permit pursuant to Zoning Regulations Sections 6328.4 and 6565.3 to construct a new ~~2,763~~ 2,798 sq. ft. two-story single-family residence with attached ~~474~~ 464 sq. ft. garage on a 6,210 sq. ft. parcel and right-of-way improvements to allow for emergency vehicle access. No trees have been proposed for removal. The project is appealable to California Coastal Commission.

County File Number: PLN 2019-00229 (Deac)

PROPOSAL

The applicant is requesting approval to construct a new ~~2,763~~ 2,798 sq. ft. two-story single-family residence with attached ~~474~~ 464 sq. ft. garage on an existing 6,210 sq. ft. undeveloped legal parcel, including the placement of an emergency vehicle access gate at the unimproved and obstructed terminus of Orval Avenue at Beach Way, for fire service and as an additional evacuation route. No significant trees have been proposed for removal.

RECOMMENDATION

That the Planning Commission approve the Coastal Development and Design Review Permits, County File Number PLN 2019-00229, based on and subject to the required findings and conditions of approval listed in Attachment A.

BACKGROUND

Report Prepared By: Bryan Albini, Project Planner, Telephone 650/363-1807

Applicant: Anamaria Deac

Owner: Sergiu Deac

Location: 112 Orval Avenue, Moss Beach

APN: 037-224-020

Parcel Size: 6,210 sq. ft.

Parcel Legality: Certificate of Compliance (Type A) as recorded on September 11, 2009 (PLN 2009-00250).

Existing Zoning: R-1/S-17/DR/GH/CD (Single-Family Residential District/S-17 Combining District with 5,000 sq. ft. minimum parcel size/Design Review/Geologic Hazard Area/Coastal Development)

General Plan Designation: Medium Density Residential (6.1 – 8.0 dwelling units/acre)

Sphere-of-Influence: City of Half Moon Bay

Existing Land Use: Undeveloped Parcel

Water Service: Montara Water and Sanitary District

Sewer Service: Montara Water and Sanitary District

Flood Zone: Zone X, Areas of Minimal Flooding, Parcel No. 06081C0119F, effective date October 2, 2017

Environmental Evaluation: Categorically exempt pursuant to Section 15303, Class 3 of the California Environmental Quality Act (CEQA), related to new construction of small structures, including single-family residences in a residential zone.

Setting: The project site is a vacant lot located on Orval Avenue in Seal Cove, an area of unincorporated Moss Beach, all surrounding lots have been developed. The subject site is relatively flat, with no significant vegetation. The site is bounded by developed lots to the north, east, and south. The improvements to Orval Avenue to allow emergency access from Beach Way lie southwest of the parcel.

DISCUSSION

A. KEY ISSUES

1. Conformance with the County General Plan

Upon review of the applicable provisions of the General Plan, staff has determined that the project complies with all General Plan Policies, including the following:

Visual Quality Policy 4.15(a) (*Appearance of New Development*) requires development to promote and enhance good design, site relationships, and other aesthetic considerations. The architectural elements and exterior materials and colors proposed for the new structure complement both the surrounding landscape and adjacent buildings, by siting the house. The mass and bulk have also been voluntarily reduced to a single-story building, with a design element of a central clearstory loft for visual interest.

Urban Design Concept Policy 4.35 (*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 ensures that new development in urban areas is designed and constructed to contribute to the orderly and harmonious development of the locality. The proposed one-story residence utilizes a mid-century modern design with a combination of massing elements across the structure in order to follow the natural topography of the site, minimizing the visual impacts to surrounding two-story and split-level residences in the neighborhood. The proposed landscaping and outdoor spaces further soften the building edges to blend in with the natural coastal vegetation surrounding the site.

Urban Land Use Policy 8.38 (*Height, Bulk and Setbacks*) regulates the height, bulk and setback requirements in zoning districts in order to: (1) ensure that the size and scale of development are compatible with the parcel size, (2) provide sufficient light and air in and around the structures, (3) ensure that development of permitted densities is feasible, and (4) ensure public health and safety. The proposed structure meets the zoning district height standards, and includes a design, scale, and size complimentary with other residences located in direct vicinity of the project. As mentioned above, the potential mass and bulk of the new residence have been voluntarily reduced from the allowable maximum to better orient the building to available views, and as mentioned above, to not impede the views from surrounding two-story residences. The design of the new structure is complementary to the existing neighborhood context, as supported by the Coastside Design Review Committee's recommendation of approval.

Water Supply Policy 10.1 (*Coordinate Planning*) requires the coordination of water supply planning with land use and wastewater management planning to assure that the supply and quality of water is commensurate with the level of development planned in the area. The Montara Water and Sanitary District provides water services to the property and has confirmed that the development can be served by the District, with the extension of the water mainline and the abandonment of any wells on-site through Environmental Health.

Wastewater Policies 11.1 and 11.2 (*Adequate Wastewater Management* and *Coordinate Planning*) plan for the provision of adequate wastewater management facilities to serve development in order to protect public health and water quality. To assure that the capacity of sewerage facilities is commensurate with the level of development planned for an area, coordination of wastewater management planning with land use and water supply planning is required. The Montara Water and Sanitary District has indicated that there is sufficient sewer capacity to serve conforming parcels within the LCP buildout limits. The applicant is required to apply for sewer permit at the time of building permit submittal. An extension to the sewer mainline will be required; a grinder pump may be required upon evaluation.

Natural Hazards Policy 15.12(a.) *(Locating New Development in Areas Which Contain Natural Hazards)* As precisely as possible, determine the areas of the County where development should be avoided or where additional precautions should be undertaken during review of development proposals due to the presence of natural hazards. As indicated in Attachment C (Plans) and Attachment D (Geotechnical Report), the project is located within the mapped geological hazard area of Seal Cove, but the consulting engineer concluded that there are no active faults mapped on the site and that the site is suitable for development without site remediation.

2. Conformance with the Local Coastal Program

Staff has reviewed the project proposed and found it in compliance with all applicable Local Coastal Program (LCP) Policies, specifically:

a. Locating and Planning New Development

Growth Management Policy 1.18 *(Location of New Development*) directs new development to existing urban areas and rural service centers in order to: (1) discourage urban sprawl, (2) maximize the efficiency of public facilities, services, and utilities, (3) minimize energy consumption, (4) encourage the orderly formation and development of local governmental agencies, (5) protect and enhance the natural environment, and (6) revitalize existing developed areas. The proposed project is to occur on a legalized lot that is within an established urban area. The project will improve Orval Avenue to service the subject parcel and provide emergency access. The project is within the Urban Midcoast and does not contribute to urban sprawl.

b. Visual Resources Component/ Design Review

Visual Resources Policy 8.12(a) (*General Regulations*) applies the Design Review Zoning District to urbanized areas of the Coastal Zone, which includes Moss Beach. The project is, therefore, subject to Section 6565.20 of the Zoning Regulations. As discussed in Section 3.b of this report, the Coastside Design Review Committee (CDRC) considered this project at the regularly scheduled CDRC meeting on June 11, 2020, and determined it is in compliance with applicable Design Review Standards, and recommended approval. See further discussion in Section 3.b.

Visual Resources Policy 8.13 (*Special Design Guidelines for Coastal Communities*) establishes design guidelines for Montara, Moss Beach, El Granada, and Miramar. The proposed home complies with these guidelines as follows:

(1) The amount of the proposed on-site grading is not extensive and is limited to ensuring the new residence fits into the existing natural grade and the necessary road improvements at Orval Avenue and Beach Way to construct an emergency vehicle access gate to service the property and surrounding residents.

(2) The proposed home uses materials with a natural appearance such as stucco, stone veneer, and shingle roof with traditional gable roof design.

(3) The proposed home uses a traditional gable roof design for the project, using non-reflective shingle roof material.

(4) As previously stated, the size and bulk of the proposed residence was designed be as unobtrusive to the surrounding residences and is keeping with neighboring structures. The larger side yard setback to the south, creates more space with neighboring properties.

(5) Also, as previously stated above, public views to the ocean are not impeded in the neighborhood as a result of the proposed grading and well-articulated design of the new residence.

c. Hazards Component

Hazards Component Policy 9.10 (*Geological Investigation of Building Sites*) requires the County Geologist or consulting engineer to review all building or grading permits in designated hazardous areas for evaluation of potential geotechnical problems and to review and approve all required investigations for adequacy. As mentioned above, the project lies in the Seal Cove Geologic Hazard Area (Zone 2), and as required, a geological report prepared by Joel Baldwin, PG, CEG of Geosphere Consultant's, Inc. (Geosphere) was submitted by the applicant. In the report, the consulting engineer concluded that there are no active faults mapped on the site, with the nearest active subsidiary fault located 80 feet west of the site and the active Seal Cove Fault approximately 200 feet to the northeast. With no evidence of past rupture, the opinion of the consulting engineer concluded the risk was low for occurrence of ground rupture on the building site during a nearby major earthquake, but that very strong to severe ground shaking is expected to occur in the Seal Cove community during such an event. A final review and approval by the County's Geotechnical section will be required prior to building permit issuance.

d. Shoreline Access

Shoreline Access Policy 10.12 (*Residential Areas*) requires the County to locate shoreline access within existing or new residential

areas in the least disruptive manner by providing vertical access trails at the end of perpendicular streets. The existing access to Beach Way from Orval Avenue is obstructed with overgrown vegetation a guardrail, providing no direct pedestrian or vehicle access to residents. The proposed road way improvements to Orval Avenue associated with the construction of the new residence, including the emergency vehicle access gate, will provide two unobstructed pedestrian paths onto Beach Way, connecting to beach access trails to the northwest.

3. Conformance with the Zoning Regulations

a. Conformance with S-17 District Development Standards

The proposal complies with the property's R-1/S-17/DR/GH/CD zoning designation, as indicated in the following table:

	S-17 Development Standards	Proposed
Minimum Site Area	5,000 sq. ft.	6,210 sq. ft. (existing)
Maximum Floor Area	3,291 sq. ft. (maximum)	~~2,490 sq. ft. (50%)~~ 3,262 sq. ft. (52%)
Maximum Building Site Coverage	2,174 sq. ft. (35% maximum)	~~1,814 sq. ft. (21%)~~ 2,026 sq. ft. (32%)
Minimum Front Setback	20 ft.	20 ft.
Minimum Rear Setback	20 ft.	20 ft.
Minimum Side Setback	Combined total of 15 ft. with a min. of 5 ft. on any side.	5 ft. (left side) 20 ft. (right side)
Maximum Building Height	28 ft.	28 ft.
Minimum Parking Spaces	2	2
Daylight Plane/Facade Articulation	20 ft./45 degrees on setback lines of two opposite façades OR facade articulation	Complies with façade articulation

b. Conformance with Design Review District Standards

The Coastside Design Review Committee (CDRC) considered the project at a regularly scheduled CDRC meeting on June 11, 2020, and adopted the findings to recommend project approval, 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) The new residence conforms to the existing topography of the site by limiting the grading to the footprint of the structure and its immediate vicinity (Section 6565.20(C)1a).

(2) The simple contemporary design blends with surrounding development. The building's shape, scale and color are complimentary to the other homes in this neighborhood of coastal bluff lots (Section 6565.20(D)1b).

(3) The design of the building facades are well articulated and proportioned. Further articulation of the front elevation allows for more variability to the street facing facade, and is achieved by pushing the building plane back from the street, as conditioned (Section 6565.20(D)1d(2)).

The Coastside Design Review Committee (CDRC) also recommended the following conditions be met prior to issuance to a building permit: (1) The front gate be of black steel construction with galvanized hog wire fence panels, not to exceed 48 inches in height; (2) the front wall and driveway column to use stone veneer and are not to exceed 48 inches; (3) include three small scale evergreen trees on each side of the driveway; (4) and the grey metal roof shall have a reflectivity index in mid-20s.

c. Conformance with Coastal Development Permit Standards

The project site location is within the California Coastal Commission appeals jurisdiction and designated at the first public road, requiring a Coastal Development Permit prior to building permit issuance. See discussion of compliance with LCP policies in Section 2

d. Conformance with Geologic Hazard District Regulations

The project is located within a Geological Hazard area, which restricts the issuance of a building permit until the County Geologist has evaluated the project for development criteria. The parcel is located within Zone 2 of the Geotechnical Hazards Map for the Seal Cove Study Area (1980), which has been designated with questionable stability, where risk to development in this zone is considered to be moderate to high, and the feasibility of reducing the risks to acceptable levels in this zone is considered low, however risks may be reduced with properly designed foundations informed by the required geotechnical investigations and subsequent subsurface trenching As mentioned in Section 2c, the geotechnical report conducted by Geosphere (see Attachment D) indicated the site is approximately 80 feet from the middle part of an arcuate belt of active, deep-seated bedrock landsliding affecting the western side of Seal Cove but

concluded that the site is suitable for residential development under existing natural conditions, from an engineering standpoint.

B. ENVIRONMENTAL REVIEW

This project is exempt from environmental review pursuant to the California Environmental Quality Act (CEQA), Section 15303, Class 3, related to new construction of small structures, including single-family residences in a residential zone.

C. REVIEW BY THE MIDCOAST COMMUNITY COUNCIL

The Midcoast Community Council did not forward a response to staff's referral for this project.

D. REVIEW BY THE CALIFORNIA COASTAL COMMISSION

The California Coastal Commission did not forward a response to staff's referral for this project.

E. OTHER REVIEWING AGENCIES

Building Inspection Section
Department of Public Works
Coastside Fire Protection District
Montara Water and Sanitary District
Coastside Design Review Committee

ATTACHMENTS

A. Recommended Findings and Conditions of Approval
B. Vicinity Map
C. Project Plans
D. Emergency Access Gate
E. CDRC Decision Letter, dated June 11, 2020
F. Site Photos

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Attachment A

County of San Mateo
Planning and Building Department

RECOMMENDED FINDINGS AND CONDITIONS OF APPROVAL

Permit or Project File Number: PLN 2019-00229 Hearing Date: November 18, 2020

Prepared By: Bryan Albini
Project Planner

For Adoption By: Planning Commission

RECOMMENDED FINDINGS

Regarding the Environmental Review, Find:

1. That the proposed project is categorically exempt pursuant to Section 15303, Class 3, of the California Environmental Quality Act (CEQA), related to new construction of small structures, including single-family residences in a residential zone.

Regarding the Design Review, Find:

2. That, with the conditions of approval recommended by the Coastside Design Review Committee at its meeting of June 11, 2020, the project is in compliance with the Design Review Standards for the Coastside as previously elaborated in Section 3.b of this staff report.

Regarding the Coastal Development Permit, Find:

3. 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 by conforming to the standards and policies outlined in this staff report.

4. Where the project is located between the nearest public road and the sea, or the shoreline of Pescadero Marsh, that the project is in conformity 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). Specifically, vertical access to the shoreline from Beach Way with the right-of-way improvements to Orval Avenue, and lateral visual access from Beach Way .

5. That the project conforms to specific findings required by policies of the San Mateo County Local Coastal Program. Specifically, the policies of the Housing, Visual Resources, Hazards, and Shoreline Access Components.

6. 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 Policies 1.22 and 1.23 as stated in Section 6328.19. As of October 7, 2020, eleven building permits have been issued for the construction of single-family residences, and two building permits have been issued for the construction of Accessory Dwelling Units.

RECOMMENDED CONDITIONS OF APPROVAL

Current Planning Section

1. The project shall be constructed in compliance with the plans once approved by the Planning Commission and as reviewed by the Coastside Design Review Committee on June 11, 2020. Any changes or revisions to the approved plans shall be submitted to the Community Development Director for review and approval prior to implementation. Minor adjustments to the design of the project 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 Coastal Development Permit and the Coastside Design Review final approvals shall be valid for five (5) years from the date of approval, in which time a building permit shall be issued and a completed inspection (to the satisfaction of the building inspector) shall have occurred within one hundred-eighty (180) days of its issuance. This approval may be extended by one 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 include a copy of the final approval letter on the top pages of the building plans. This would provide the Planning approval date and required conditions of approval on the on-site plans.

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

    a. Per combined setback requirements, show correct setback dimensions on plans and project data.

    b. Eliminate retaining wall and steps on right side of house. Framed, freestanding landing and steps shall be located on the right side, rear descending to the back yard.

    c. Proposed earth berm on right side of house shall be deleted.

    d. Fence panels shall be shown as 6 feet high maximum, with wood framing and galvanized wire grid. Fence shall be planted with Star Jasmine per owner's proposal.

e. On the left side of the driveway, there shall be no parking space. This area shall be furnished with planting consistent with the plant palette proposed.

f. Modify roof over Master Suite to replace gable end with hip roof. Reduce height of chimney.

g. Lower roof pitch from 6:12 to 5:12 on all roofs to reduce maximum height below 28 feet.

h. North elevation:

(1) Windows at stairwell on second floor: reduce width of right window by approximately 12 inches from the right, and left window by approximately 12 inches from the left. Reduce sill height of all three (3) windows to align with windows in living room.

(2) Window at stairwell on First Floor: Reduce width of window to align with reduced width window, above.

(3) Windows in living room: Reduce width of both windows by approximately 12 inches on each side of both windows.

i. East Elevation:

(1) Extend vertical trim elements from second floor down to wall of garage.

(2) Add single hinged door at rear of garage to position door between vertical trim elements, close to center of wall.

(3) Add two (2) windows in garage. Align head with head height of added garage door. Position left window left-side jamb with left-side jamb of window, above. Position right window symmetrically in the space created by the corner vertical trim and added vertical trim extended from above.

j. Provide dark sky compliant exterior lights. Limited to one (1) light per exterior door, except at garage door on North elevation and living room door where two (2) lights will be permitted for both doors.

5. No grading shall be allowed during the winter season (October 1 to April 30) to avoid potential soil erosion, unless as authorized by the Community Development Director.

6. Prior to any land disturbance and throughout the grading operation, the property owner shall implement the Erosion Control Plan, as prepared and signed by the engineer of record and approved by the decision maker. Revisions to the approved erosion control plan shall be prepared and signed by the engineer and submitted to the Community Development Director for review and approval.

7. It shall be the responsibility of the engineer of record to regularly inspect the erosion control measures for the duration of all grading remediation 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.

8. During project construction, the applicant shall, pursuant to Chapter 4.100 of the San Mateo County Ordinance Code, minimize the transport and discharge of stormwater runoff from the construction site into storm drain systems and water bodies by:

    a. Using filtration materials on storm drain covers to remove sediment from dewatering effluent.

    b. Stabilizing all denuded areas and maintaining erosion control measures continuously between October 1 and April 30.

    c. Removing spoils promptly, and avoiding stockpiling of fill materials, when rain is forecast. If rain threatens, stockpiled soils and other materials shall be covered with a tarp or other waterproof material.

    d. Storing, handling, and disposing of construction materials and wastes so as to avoid their entry to the storm drain system or water body.

    e. Avoiding cleaning, fueling or maintaining vehicles on-site, except in an area designated to contain and treat runoff.

    f. Limiting and timing application of pesticides and fertilizers to avoid polluting runoff.

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

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

9. 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 Planning 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.

d. 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).

e. 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.

f. 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 are submitted to and subsequently approved by both the Building Official and the Community Development Director.

10. The applicant shall include an erosion and sediment control plan to comply with the County's Erosion Control Guidelines on the plans submitted for the building permit. This plan shall identify the type and location of erosion control measures to be installed upon the commencement of construction in order to maintain the stability of the site and prevent erosion and sedimentation off-site.

11. The applicant shall apply for a building permit and shall adhere to all requirements from the Building Inspection Section, the Department of Public Works and the Coastside Fire Protection District.

12. No site disturbance shall occur, including any grading or tree/vegetation removal, until a building permit has been issued.

13. 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.

14. To reduce the impact of construction activities on neighboring properties, comply with the following:

a. All debris shall be contained on-site; a dumpster or trash bin shall be provided on site during construction to prevent debris from blowing onto adjacent properties. The applicant shall monitor the site to ensure that trash is picked up and appropriately disposed of daily.

b. The applicant shall remove all construction equipment from the site upon completion of the use and/or need of each piece of equipment which shall include but not be limited to tractors, back hoes, cement mixers, etc.

c. The applicant shall ensure that no construction-related vehicles shall impede through traffic along the right-of-way on Orval Avenue. All construction vehicles shall be parked on-site outside the public right-of-way or in locations which do not impede safe access on Orval Avenue. There shall be no storage of construction vehicles in the public right-of-way

15. The exterior color samples submitted to the CDRC are approved. 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.

16. 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 Ordinance Code Section 4.88.360).

17. An Erosion Control Pre-Site Inspection shall be conducted prior to the issuance of a building permit to ensure that the approved tree protection measures are installed adequately prior to the start of vegetation removal, grading or construction activities.

18. At the building permit application stage, the project shall demonstrate compliance with the Water Efficient Landscape Ordinance (WELO) and provide the required forms. WELO applies to new landscape projects equal to or greater than 500 sq. ft. and rehabilitated landscape projects equal to or greater than 2,500 sq. ft. A prescriptive checklist is available as a compliance option for projects under 2,500 sq. ft. The Performance approach is applicable to new and/or rehabilitated landscape projects over 2,500 square feet.

Building Inspection Section

19. The proposed project requires a building permit.

20. The project shall be designed and constructed according to the currently adopted and locally amended California Building Standards Code.

Geotechnical Section

21. An in-depth peer review of the soils report will occur at the building permit application phase.

Drainage Inspection

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

    a. A Drainage Report prepared and stamped by a Registered Civil Engineer.

    b. A final Grading and Drainage Plan prepared and stamped by a Registered Civil Engineer including required retention measures onsite and all appropriate measures to prevent additional water from concentrating at retaining walls and flowing to neighboring parcels.

c. A completed C3 C6 Checklist.

Montara Water and Sanitary District

23. Applicant required to obtain Sewer Permits prior to issuance of building permit. Sewer mainline extension may be required. Sewer grinder pump and pressurized lateral may be required. Sewer Connection Fees must be paid prior to issuance of connection permit.

24. Applicant required to obtain a Domestic water Connection Permit prior to issuance of building permit. Connection fee for domestic water must be paid prior to issuance of connection permit. Water mainline extension may be required. Well abandonment may be required by San Mateo County Department of Public Health (SMC DPH).

25. Connection to the District's fire protection system is required. Certified Fire Protection Contractor must certify adequate fire flow calculations. Connection fee for fire protection system is required. Connection charge must be paid prior to issuance of Private Fire Protection permit.

26. Applicants must first apply directly to District for permits and not their contractor.

Department of Public Works

27. Prior to the issuance of the Building permit or Planning 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.

28. Prior to the issuance of the building permit or planning permit (if applicable), the applicant shall submit a driveway "Plan and Profile," to the Department of Public Works, showing the driveway access to the parcel (garage slab) complying with County Standards for driveway slopes (not to exceed 20 percent) and to County Standards for driveways (at the property line) being the same elevation as the center of the access roadway. When appropriate, as determined by the Department of Public Works, this plan and profile shall be prepared from elevations and alignment shown on the roadway improvement plans. The driveway plan shall also include and show specific provisions and details for both the existing and the proposed drainage patterns and drainage facilities.

29. No proposed construction work within the County right-of-way shall begin until County requirements for the issuance of an encroachment permit, including review of the plans, have been met and an encroachment permit issued. Applicant shall contact a

Department of Public Works Inspector 48 hours prior to commencing work in the right-of-way.

30. Prior to the issuance of the building permit, the applicant will be required to provide payment of "roadway mitigation fees" based on the square footage (assessable space) of the proposed building per Ordinance No.3277.

31. The applicant shall submit, for review by the Department of Public Works and the appropriate Fire District, a Plan and Profile of both the existing and the proposed access from the nearest "publicly" maintained roadway to the proposed building site. The applicant will enter into an agreement with the Department of Public Works to repair, replace, remove the proposed barrier gate. The gate shall have access for emergency service vehicles only.

Coastside Fire Protection District

32. Fire Department access shall be to within 150 feet of all exterior portions of the facility and all portions of the exterior walls of the first story of the buildings as measured by an approved access route around the exterior of the building or facility. Access shall be a minimum of 20 feet. wide, all weather capability, and able to support a fire apparatus weighing 75,000 pounds. Where a fire hydrant is located in the access, a minimum of 26 feet is required for a minimum of 20 feet on each side of the hydrant. This access shall be provided from a publicly maintained road to the property. Grades over 15 percent shall be paved and no grade shall be over 20 percent. When gravel roads are used, it shall be class 2 base or equivalent compacted to 95 percent. Gravel road access shall be certified by an engineer as to the material thickness, compaction, all weather capability, and weight it will support.

33. All buildings that have a street address shall have the number of that address on the building, mailbox, or other type of sign at the driveway entrance in such a manner that the number is easily and clearly visible from either direction of travel from the street. New residential buildings shall have internally illuminated address numbers contrasting with the background so as to be seen from the public way fronting the building. Residential address numbers shall be at least six feet above the finished surface of the driveway. An address sign shall be placed at each break of the road where deemed applicable by the San Mateo County Fire Department. Numerals shall be contrasting in color to their back-ground and shall be no less than 4 inches in height and have a minimum 1/2-inch stroke. Remote signage shall be a 6-inch by 18-inch green reflective metal sign.

34. Contact the Fire Marshal's Office to schedule a Final Inspection prior to occupancy and Final Inspection by a Building Inspector. Allow for a minimum of 72 hours' notice to the Fire Department at 650/ 573-3846.

35. A fire flow of ___500__ gpm for 2 hours with a 20-psi residual operating pressure must be available as specified by additional project conditions to the project site. The applicant shall provide documentation including hydrant location, main size, and fire flow report at the building permit application stage. Inspection required prior to Fire's final approval of the building permit or before combustibles are brought on site. It appears that there is NO hydrant within 500 feet of this project.

36. Smoke alarms and carbon monoxide detectors shall be installed in accordance with the California Building and Residential Codes. This includes the requirement for hardwired, interconnected detectors equipped with battery backup and placement in each sleeping room in addition to the corridors and on each level of the residence.

37. An approved Automatic Fire Sprinkler System meeting the requirements of NFPA-13D shall be required to be installed for your project. Plans shall be submitted to the San Mateo County Building Department for review and approval by the authority having jurisdiction.

38. A statement that the building will be equipped and protected by automatic fire sprinklers must appear on the title page of the building plans.

39. All dead-end roadways shall be terminated by a turnaround bulb of not less than 96 feet in diameter. Option 1 and 2 may be considered providing applicant be the requirements in Coastside Fire Protection District 2016 Ordinance No. 03 and Standard No. R-001. This also will require an Alternate Means and Methods Request.

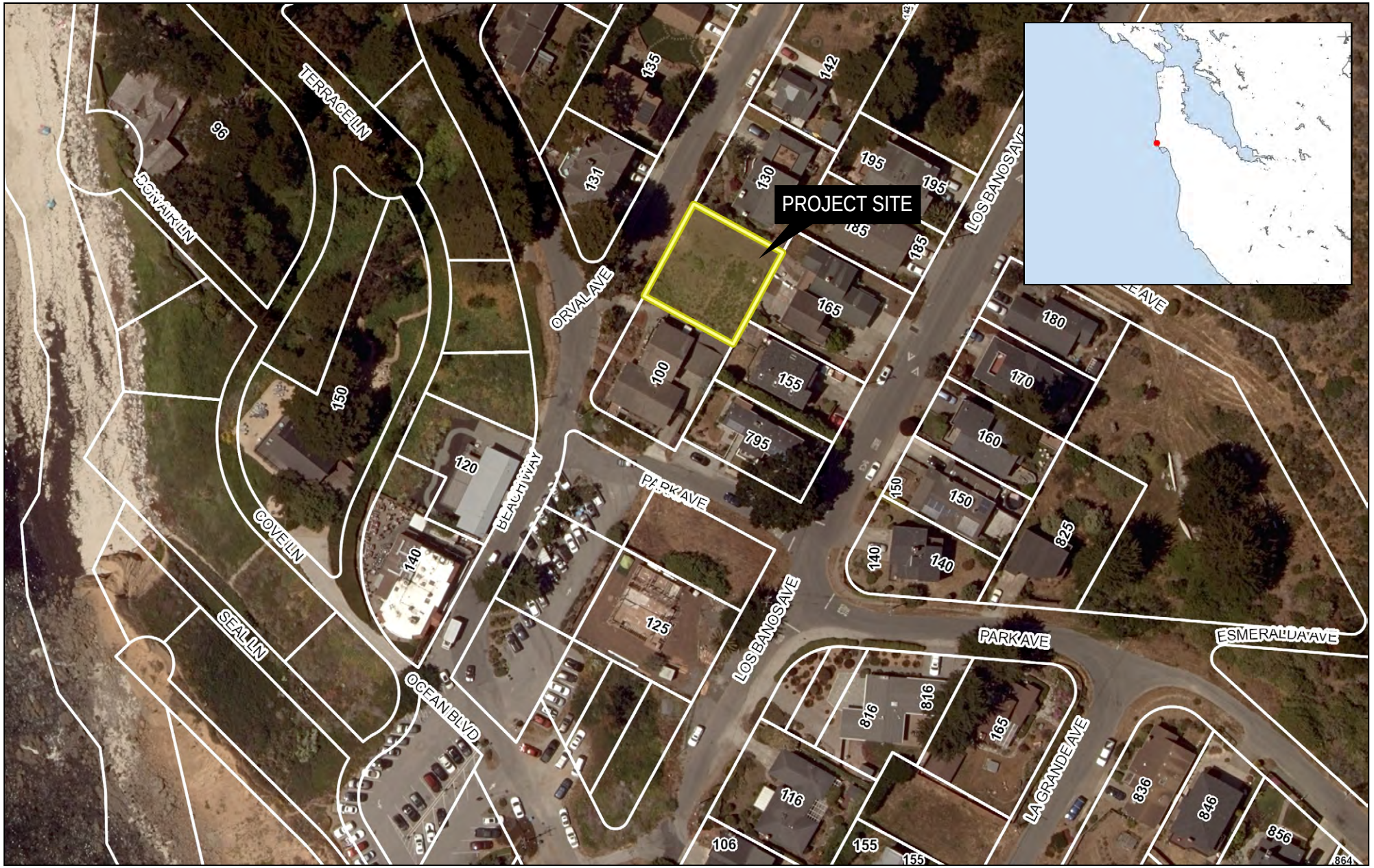
BRA:cmc – BRAEE0427_WCU.DOCX

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT **B**

San Mateo County

112 Orval Avenue (PLN2019-00229)



0.05 0 0.02 0.05 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere

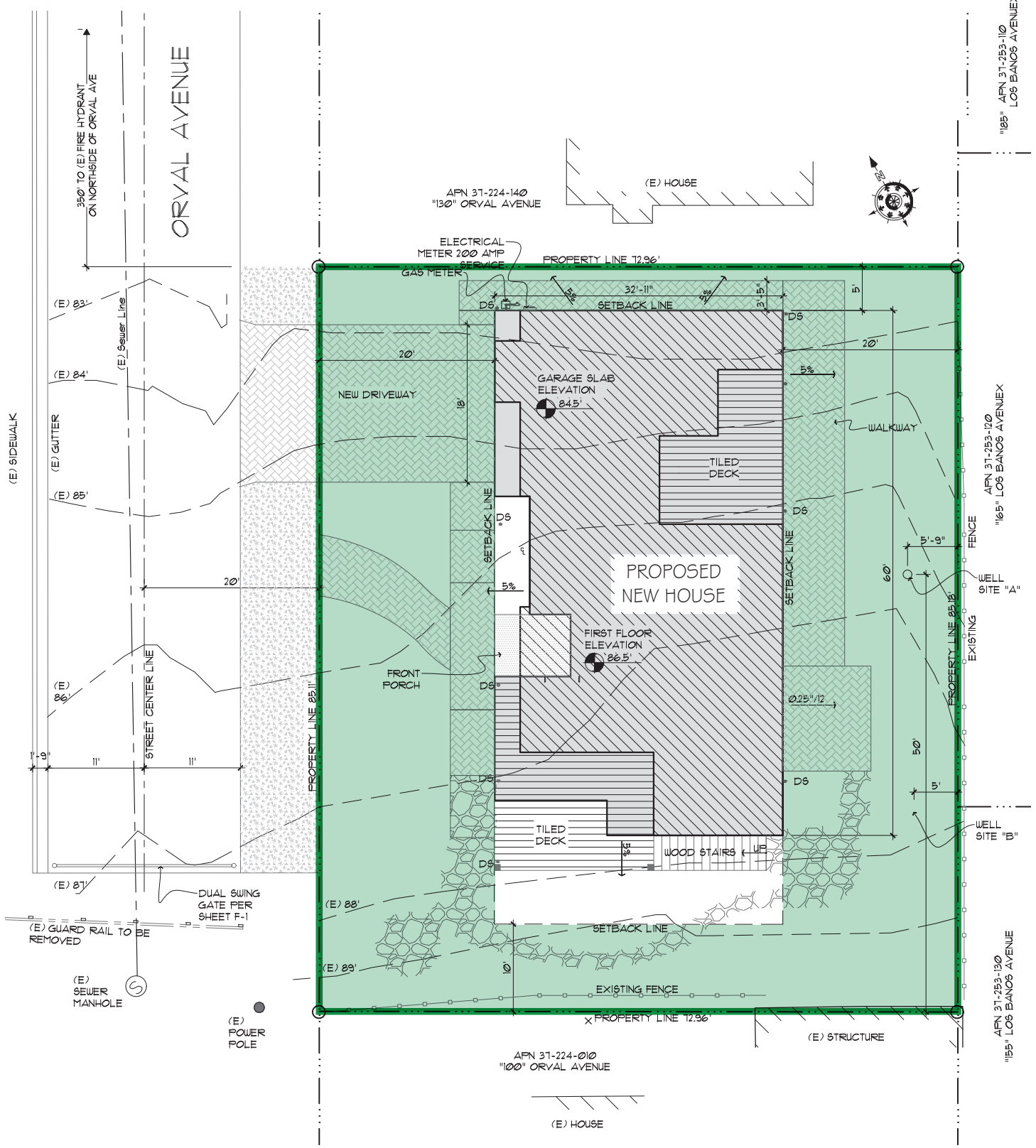
1: 1,471

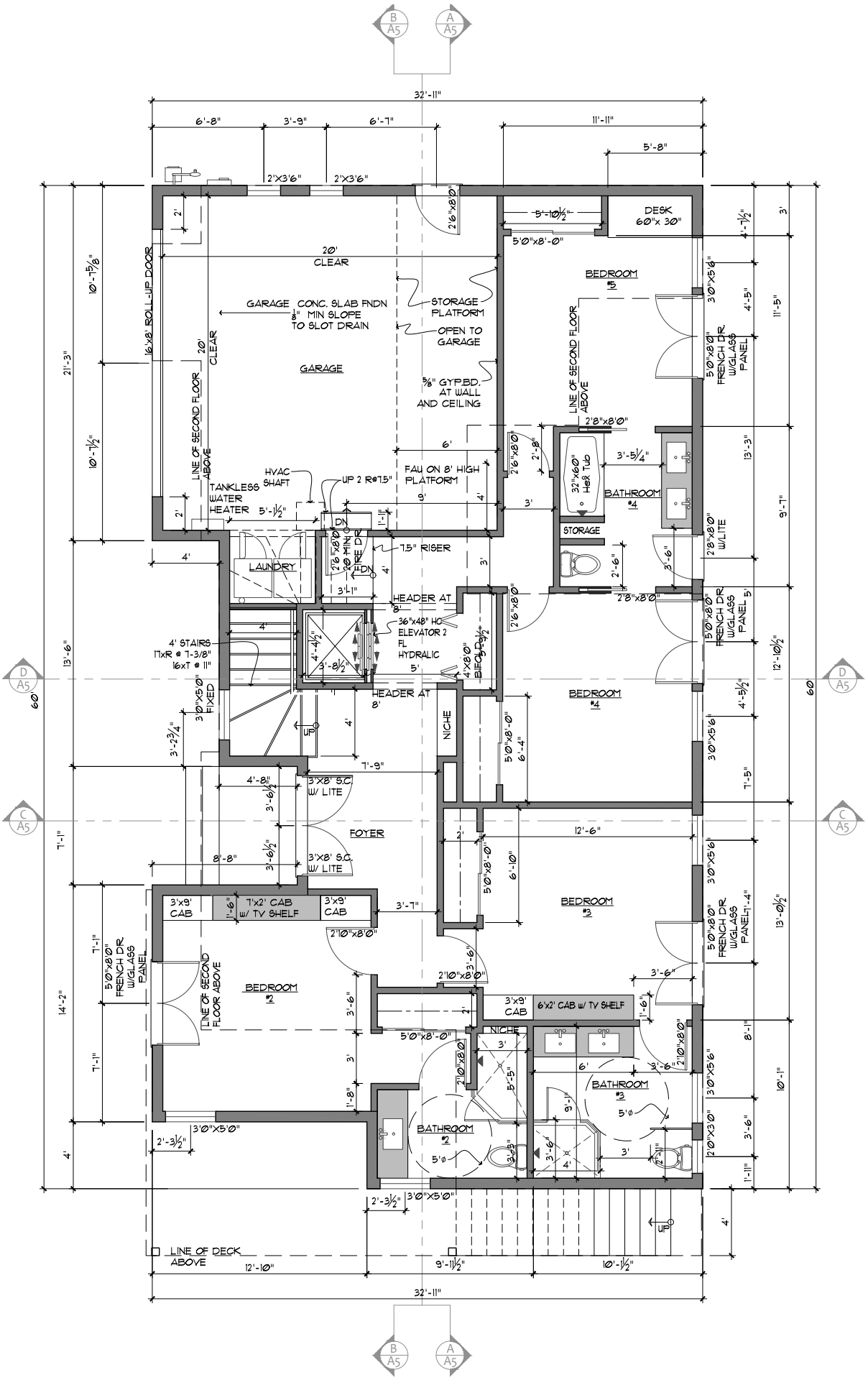
This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

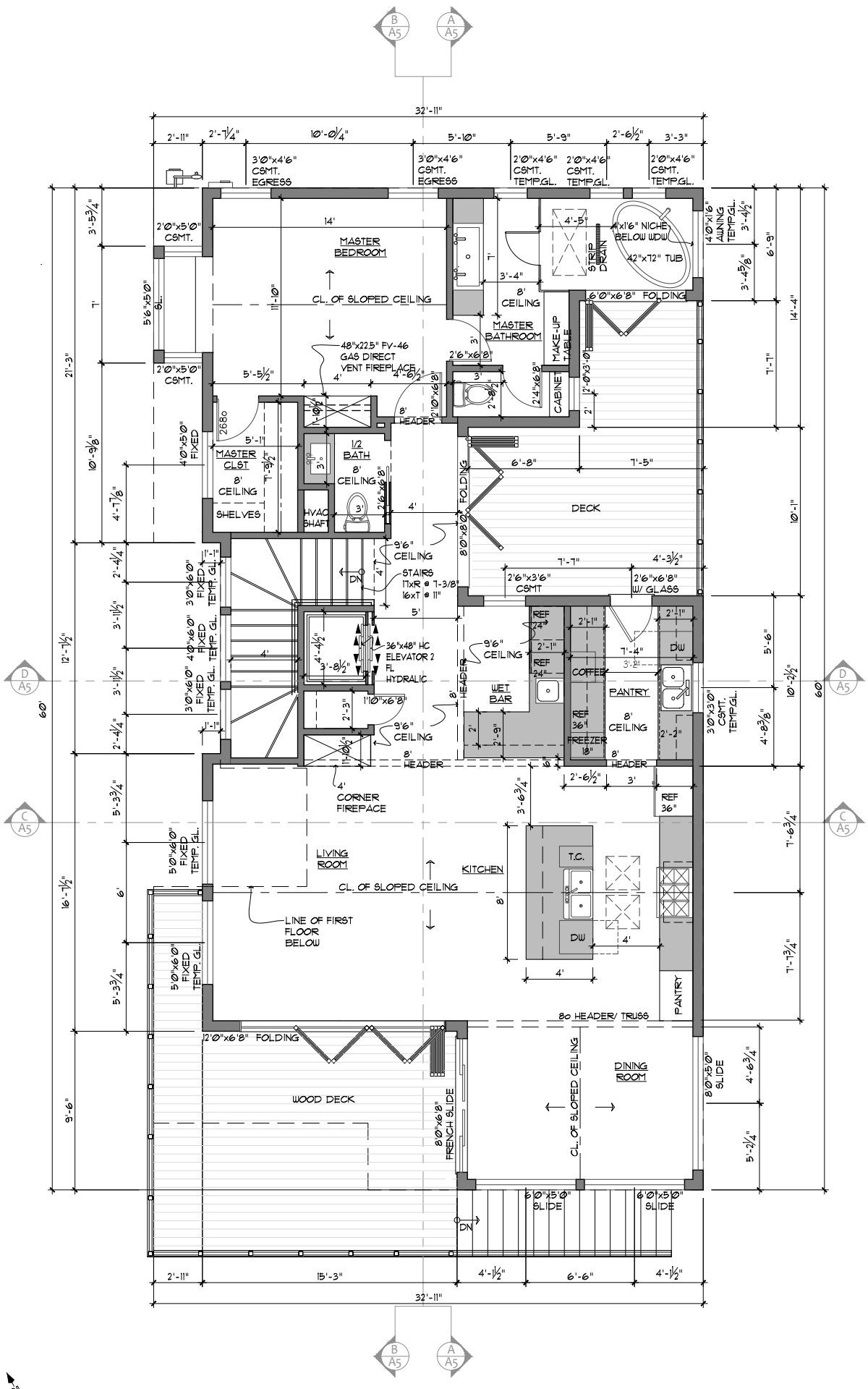
ATTACHMENT C


ORVAL AVENUE
350' TO (E) FIRE HYDRANT ON NORTHSIDE OF ORVAL AVE
APN 37-253-110
"185" LOS BANOS AVENUEX
APN 37-224-140
"130" ORVAL AVENUE
(E) HOUSE
ELECTRICAL METER 200 AMP SERVICE
GAS METER
PROPERTY LINE 72.96'
SETBACK LINE
32'-11"
31'-5"
5'
DS
20'
NEW DRIVEWAY
18'
GARAGE SLAB ELEVATION
84.5'
TILED DECK
WALKWAY
APN 37-253-120
"165" LOS BANOS AVENUEX
FENCE
5'-9"
WELL SITE "A"
PROPOSED NEW HOUSE
FIRST FLOOR ELEVATION
86.5'
FRONT PORCH
Ø.25"/12
60'
EXISTING PROPERTY LINE 85.18'
50'
WELL SITE "B"
TILED DECK
WOOD STAIRS
UP
(E) SIDEWALK
(E) GUTTER
(E) Sewer Line
(E) 83'
(E) 84'
(E) 85'
(E) 86'
(E) 87'
(E) 88'
(E) 89'
STREET CENTER LINE
1'-9"
11'
PROPERTY LINE 85.11'
DUAL SWING GATE PER SHEET F-1
(E) GUARD RAIL TO BE REMOVED
(E) SEWER MANHOLE
(E) POWER POLE
EXISTING FENCE
PROPERTY LINE 72.96'
(E) STRUCTURE
APN 37-224-010
"100" ORVAL AVENUE
APN 37-253-130
"155" LOS BANOS AVENUE
PERMEABLE PAVERS BELGARD "AQUALINE"
COMPACTED BASE ROCK CLASS II AB
PROPOSED FIRST FLOOR
PROPOSED SECOND FLOOR



1 FIRST FLOOR PLAN

SCALE 1/4"= 1'-0"



2 SECOND FLOOR PLAN

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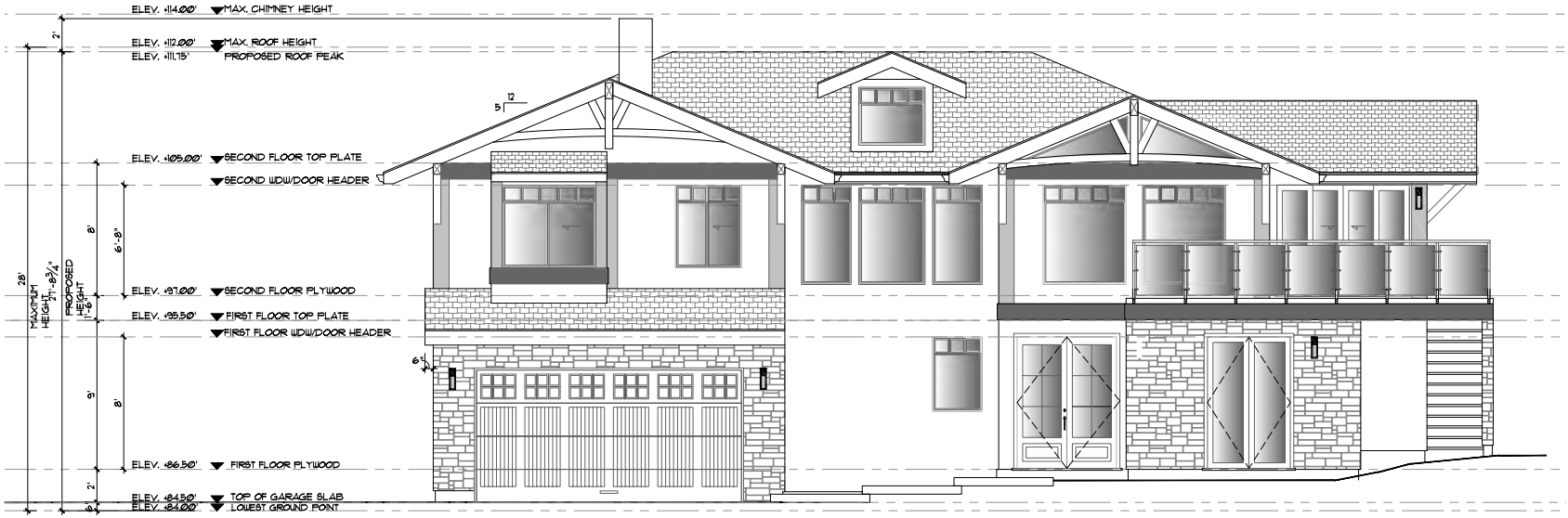

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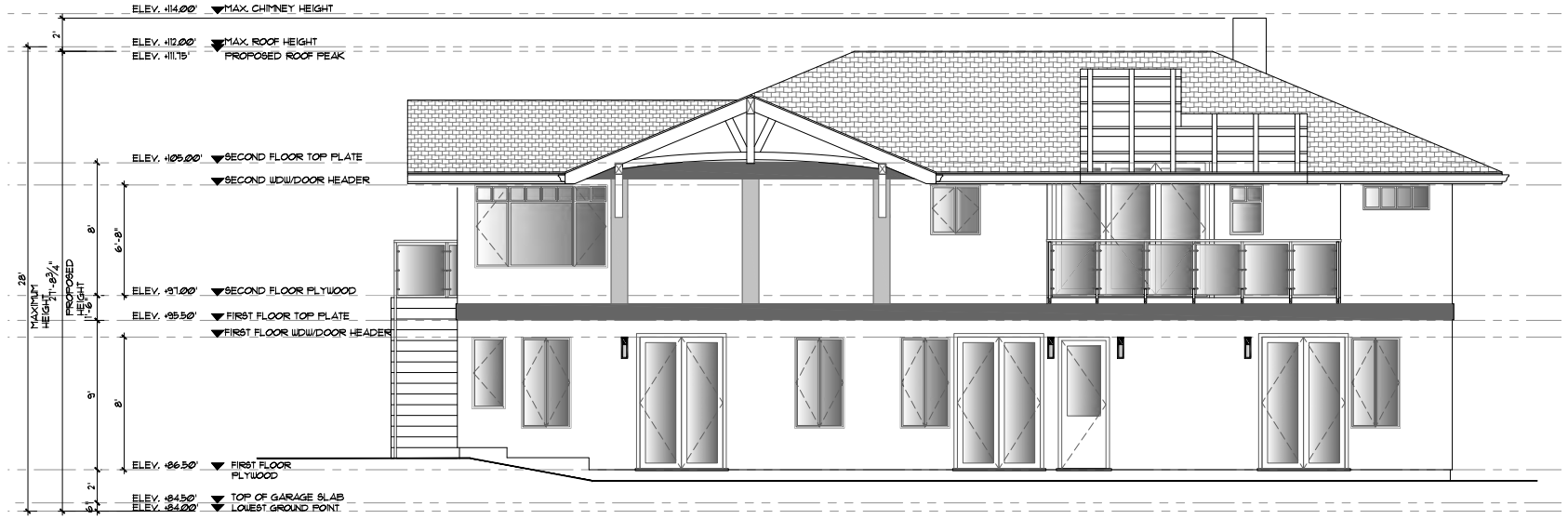

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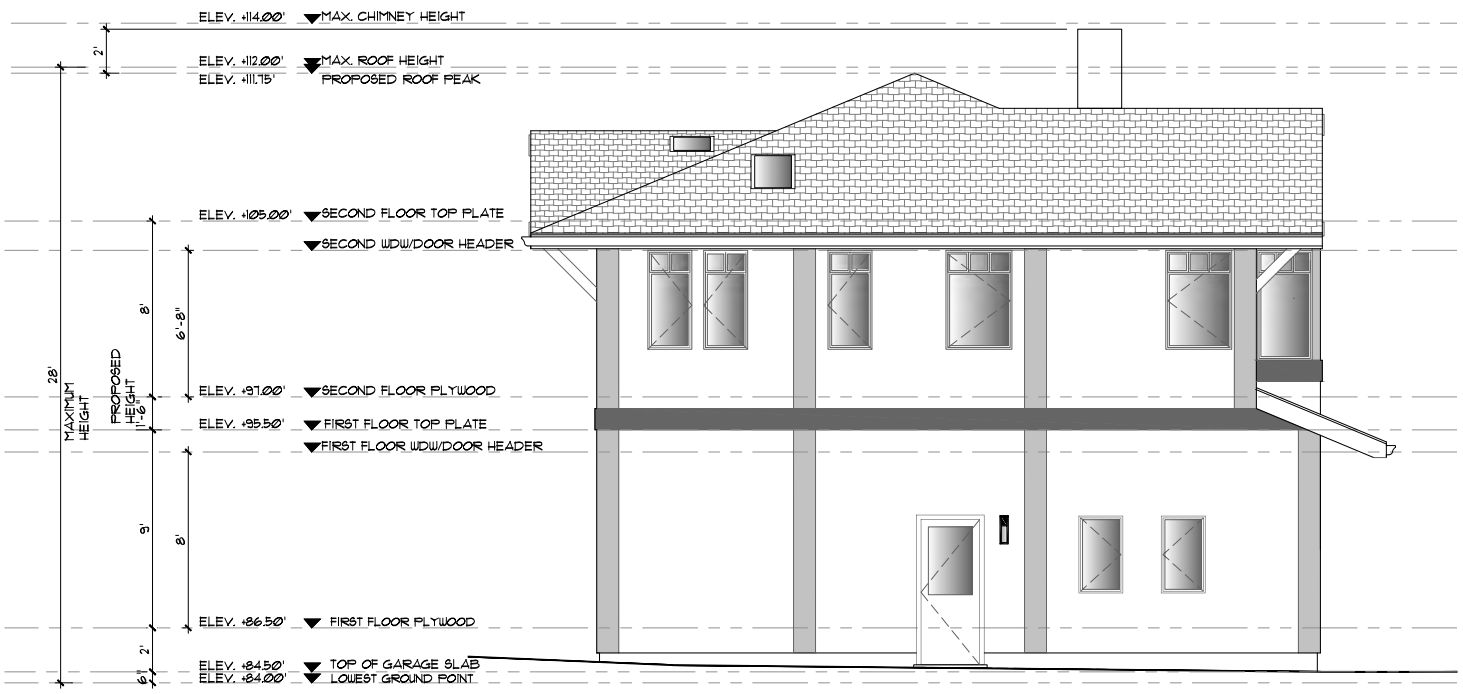

2 LEFT SIDE EAST ELEVATION
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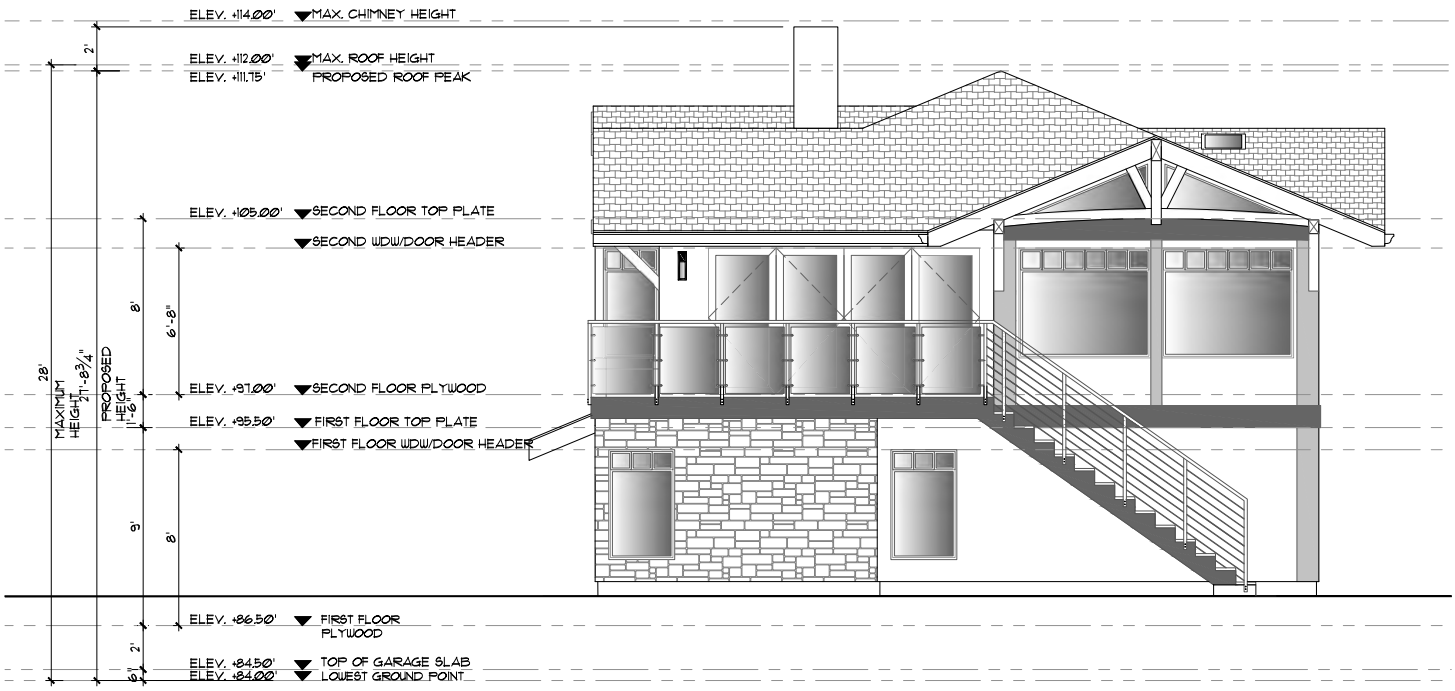
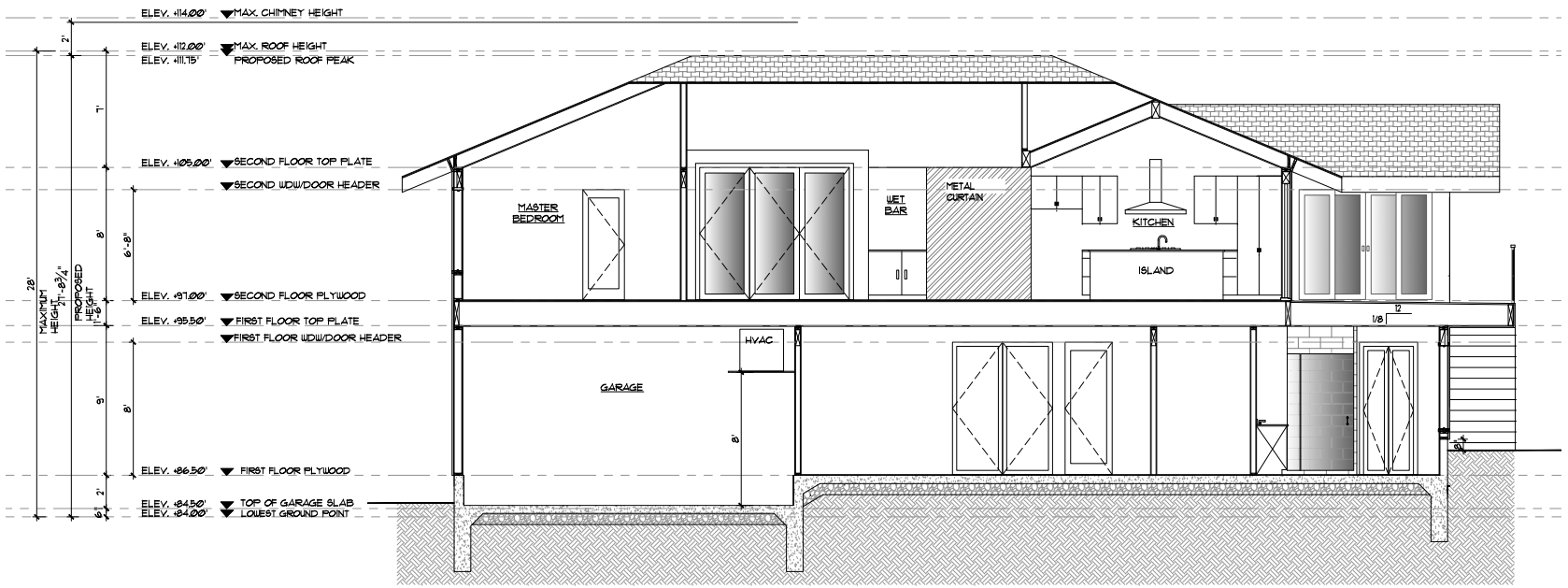


2 RIGHT SIDE WEST ELEVATION
SCALE 1/4" = 1'-0"



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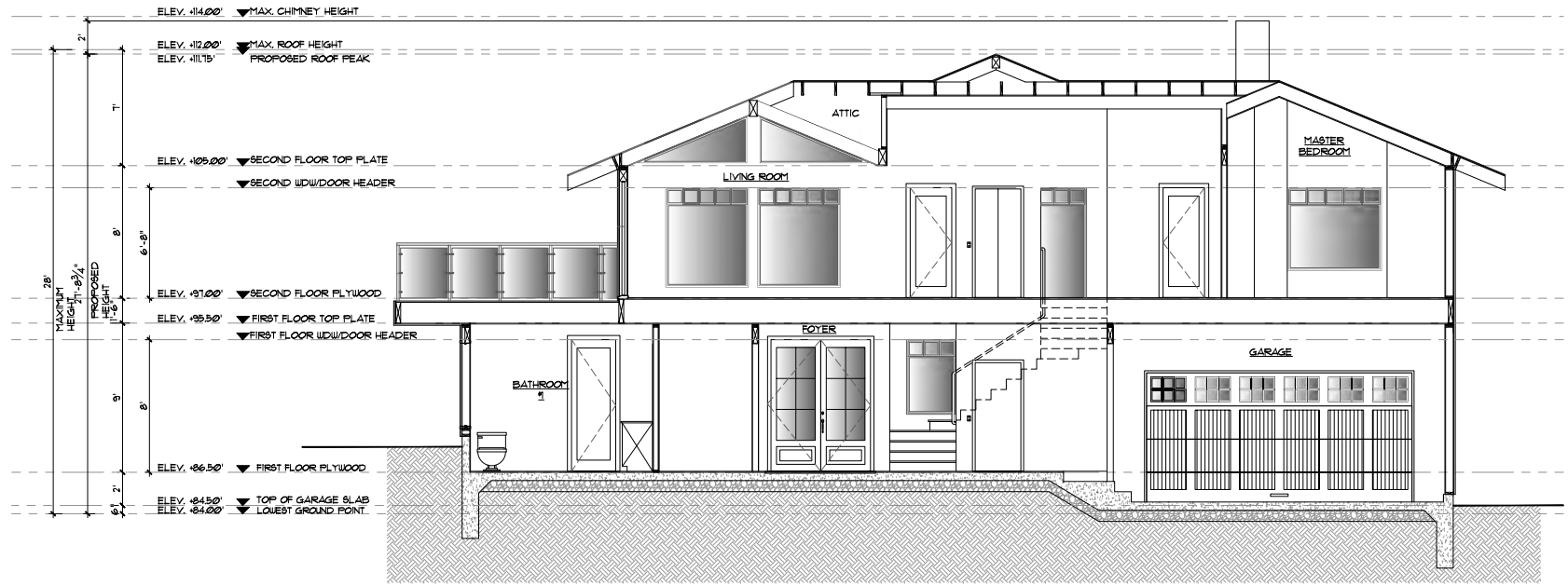
SCALE 1/4" = 1'-0"



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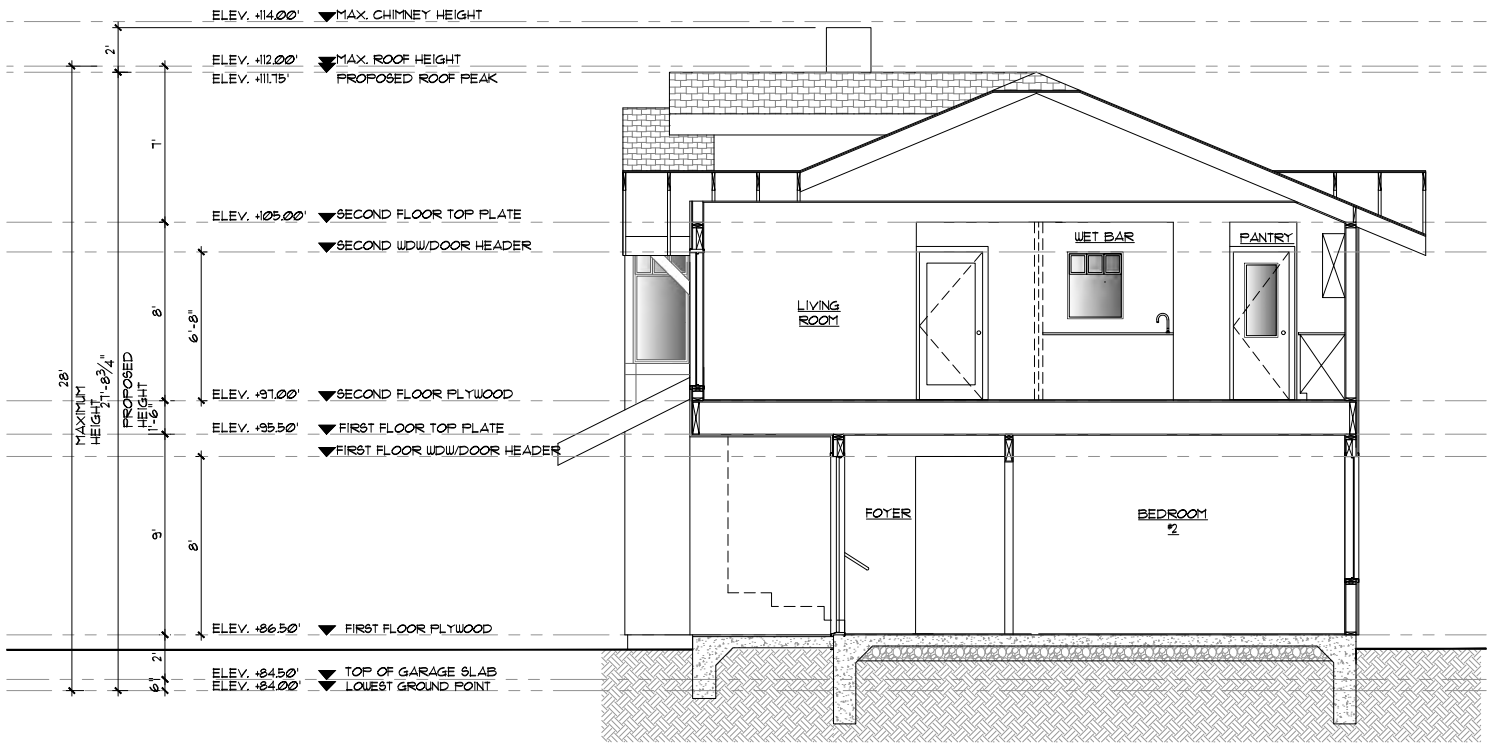

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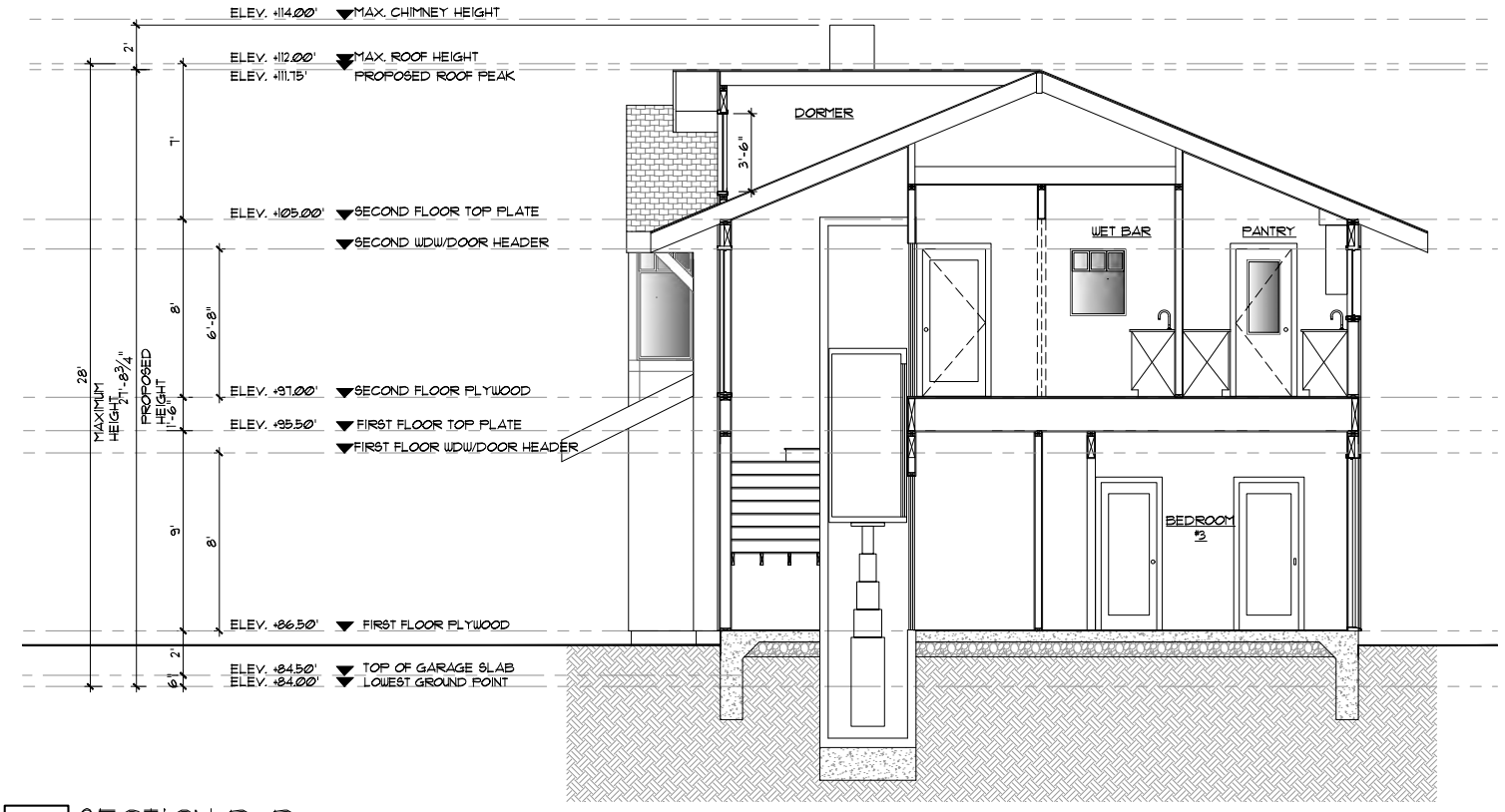

2 SECTION D-D
SCALE 1/4" = 1'-0"

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT D

Geosphere Consultants, Inc.
AN ETS COMPANY
Geotechnical Engineering • Engineering Geology
Environmental Management • Water Resources

ENGINEERING GEOLOGIC STUDY

Vacant Lot, 0 Orval Avenue
APN 037 224 020
Moss Beach, California

Prepared for:
Mr. David England
TTO Port of Spain
P.O. Box 4381
Houston, Texas 77210

March 8, 2018
GEO Project No. #91-04233-A
(2834.01.00)

2001 Crow Canyon Road, Suite 201 | San Ramon, CA 94583 | Tel. (925) 314-7180

Geosphere Consultants, Inc.
AN ETS COMPANY
Geotechnical Engineering • Engineering Geology
Environmental Management • Water Resources

March 8, 2018

Mr. David England
TTO Port of Spain
P.O. Box 4381
Houston, Texas 77210

RE: ENGINEERING GEOLOGIC STUDY
Vacant Lot, 0 Orval Avenue
APN 037 224 020
Moss Beach, California
Project #91-04233-A (2834.01.00)

Dear Mr. England:

INTRODUCTION

Location

Pursuant to your authorization, we have completed the referenced project, located at the southern terminus of Orval Avenue near the intersection with Beach Way in the unincorporated residential community of Seal Cove, California (Plate 1, Vicinity Map).

Purpose and Scope of Services

The study was undertaken to characterize the geologic setting and identify potential geologic hazards that could constrain future residential development feasibility. The findings and conclusions we present in this report are based on more than 30 years of practice in Seal Cove area, and the following:

- Review of readily available geological and geotechnical reports and maps on file in our office. Plate 3 (Areal Geologic Map), Plate 4 (Geologic Hazards Map and Photos 1 & 2, and Plate 5 (Fault Zone Map) illustrate regional and local geologic and geologic hazards. A compendium of pertinent geologic and geologic hazard data from previous Seal Cove studies is appended to this report in Appendices A-E following the illustrations.

- Photogeologic interpretation of historic aerial imagery for geomorphic evidence of ground surface deformation.
- Site and area geologic reconnaissance observations for evidence of surface deformation (Photos 1 and 2, Plate 4).
- Continuous sampling of the Site soil profile at two locations on January 21, 2018 using portable sampling equipment (Plate 2, Engineering Geologic Map, Log of Exploratory Trench and Photo 1). Relatively undisturbed samples to a depth of 9½ were retrieved by driving California, modified California and Standard Penetration (SPT) split-spoon samplers with a 140-pound hammer lifted to a height of 30 inches using a rope and cathead lift mechanism mounted to a tripod. The number of free-fall drops (blows) required to advance the respective samplers at 6-inch intervals for a total of 18 inches driven were recorded. The blows required to advance the final two 6-inch intervals, for a total of 12 inches, are representative of the soil strength, and were converted to Standard Penetration Test (SPT) values. Blow counts from driving the modified California and California sampler were converted to Standard Penetration Test values using a multiplier of 0.76 and 0.93, respectively. The Logs of Borings are presented on Plate F1 and the Key to Borings on Plate F2 (Appendix F).
- The testing program included pocket penetrometer unconfined compressive strength, and pocket torvane shear strength, moisture content, dry density, Atterberg limits, percent of soil particles of the plasticity test sample passing the #200 ASTM 200 sieve analysis. Results of the pocket penetrometer measurements, moisture, and dry density tests are tabulated on the Logs of Borings at the respective sample depths. The plasticity and sieve test results are contained Plate F3 Plasticity Chart (Appendix F).
- Geologic logging of an exploratory trench approximately on February 2, 2018, to evaluate for subsurface evidence of deformation from landslide or fault. The exploratory trench was 68 feet long by approximately 6 feet deep. The trench location and log is presented on Plate 2.
- Engineering geologic analysis of the data.
- Preparation of this report.

FINDINGS

Regional Geologic Setting

Seal Cove is on the southwestern flank of an approximately 7 mile wide, northwest-trending Santa Cruz Structural Block, bounded on the southwest by the active, right-lateral strike-slip San Gregorio-Seal Cove Fault (Seal Cove Fault), and on the northeast by the active right-lateral strike-slip San Francisco Peninsula segment of the San Andreas right-lateral strike-slip fault (Plate 3, Areal Geologic Map).

It occupies a northwestern portion of the 100,000-120,000 year old Half Moon Bay marine terrace, separated from the Cretaceous basement rock foothills flanking the northern Santa Cruz Mountains to the east by a mile-wide younger Pleistocene marine terrace concealed by Holocene alluvial fan deposits (Lajoie and others, 1979; Pampeyan, 1994; William Lettis & Associates, 2005).

Local Geologic Setting

In Seal Cove, the late Pleistocene marine terrace deposits rest unconformably on a wave-cut platform cut into complexly deformed, Mio-Pliocene Purisima Formation, and Cretaceous Montara Mountain granodiorite juxtaposed by the Seal Cover Fault (Appendices A and B). The terrace deposits are comprised of a variable thickness, ranging from 3 to more than 50 feet deep, of unconsolidated to semi-consolidated lenticular gravel, sand, silt, and clay commonly mixtures of the same mantled by a variable thickness of moderate to expansive colluvium in the sloping areas, and expansive topsoil elsewhere.

The Purisima formation is comprised of complexly folded, jointed and faulted, nearshore marine sandstone and siltstone (Powell and others, 2007). Terrace deposits in the southeastern part of Seal Cove span a fault separating the Purisima formation from deeply weathered, medium- to coarse-grained plutonic Montara Mountain granodiorite.

Geologic Hazards

Landslides

The western margin of the terrace in Seal Cove is defined by a sinuous near-vertical seacliff ranging from less than 20 feet in the northern end (Alton Avenue) to approximately 105 feet in the southern end (Bernal Avenue) that is subjected to wave attack and consequent episodic recession/oversteepening, elevated ground water, and uncontrolled surface runoff (Appendices A, B and C). Historic aerial photographs reveal these natural conditions have sustained movement of coalescent, deep-seated, structurally-controlled bedrock landslides within an

arcuate belt along the western margin of the Seal Cove between Madrone Avenue and Alton Avenue and extending up to 400 feet inland of the seacliff. The entire segment of seacliff is subjected to shallow landslides from the top of seacliff, and recession by erosion of the exposed cliff face (Plate 4). The most active movement over the past 30+ years seems to have occurred in the southern part of the belt, between Los Banos Avenue and San Lucas Avenue, where at least 3 homes have been removed. Much of northern Ocean Boulevard and western Los Banos Avenue have become impassible since the early 1990's. The mode of erosion south of San Lucas Avenue is shallow soil slumps and avalanches from the oversteepened terrace deposits underlying the top of the seacliff.

The middle part of the landslide belt, between Los Banos Avenue and Orval Avenue and involving the Distillery Restaurant and at least 3 adjacent homes, continues to move, but geotechnical survey monitoring between 1975 and 2016 (10 year. gap between 1986 and 1996) indicates movement in the headward northern flank of the middle landslide area has subsided over the past 10 years (Appendix D). While the height of a distinct headscarp marking the landward limit of the middle landslide area has increased, it does not appear to have receded inland more than up to several feet over the past 30 years (Plate 4, Photo 2).

The northern part of the landslide belt is characterized by a near-vertical headscarp, up to approximately 40 feet high, extending adjacent to Beach Way right-of-way. It is associated with a former active landslide stabilized in the early 1980's with deep stitch piers and subdrainage (Plate 4, Photo 2; Cross Section D-D' in Appendix A). We did not detect from recent reconnaissance observations notable recession of the densely vegetated scarp, and the early 1900's concrete sidewalk remnant at the top of the scarp indicates relatively static conditions have prevailed over the past several decades. Headscarp-parallel tension cracks, generally representative of scarp retreat of landslide retrogression, were not observed.

Seacliff Retreat

F. Beach Leighton & Associates reported an average ("long-term") seacliff retreat rate of 1 foot per year from 1942-1971, and a ("short-term") retreat rate of 3 to 4 feet per year from 1965-1971. Griggs and others (2005) report a retreat rate of 9 to 20 inches per year, and characterize the seacliff as having high hazard because landslide activity.

Faults and Seismicity

The Site occupies Zone 2 of the State of California Earthquake Fault Zone bounding the mapped trace of the active Seal Cove Fault which is mapped approximately 200 feet to the east (Plate 5, Fault Zone Map). The Site is located

approximately 150 feet from the west side of the Seal Cove Fault Zone illustrated on Plate 4. Other lineaments interpreted in F. Beach Leighton and Associates (1971) and William Cotton and Associates (1980; Plate 4) project across the terrace surface at varying acute angles to the main trace. Appendix E contains revised mapping of the main trace of the Seal Cove Fault apparently projecting closer to the Site based on Holocene faulting exposed in exploratory trenching to the north. The San Francisco Peninsula segment of the San Andreas Fault is approximately 7 miles to the northeast.

Both faults are among other active faults in the Bay Area having potential for generating a significant earthquake and strong to severe ground shaking in Seal Cove (Table 1; Petersen and others).

Table 1. Significant Bay Area Faults (from Santa Cruz County, 2015)

Ten Most Likely Damaging Earthquake Scenarios	30-year Probability	Magnitude
Rogers Creek	15.2%	7.0
Northern Calaveras	12.4%	6.8
Southern Hayward (possible repeat of 1868 earthquake)	11.3%	6.7
Northern + Southern Hayward	8.5%	6.9
Mt. Diablo	7.5%	6.7
Green Valley-Concord	6.0%	6.7
San Andreas: Entire N. CA segment (possible repeat of 1838 earthquake)	4.7%	7.9
San Andreas: Peninsula segment (possible repeat of 1838 earthquake)	4.4%	7.2
Northern San Gregorio segment	3.9%	7.2
San Andreas: Peninsula + Santa Cruz segment	3.5%	7.4

Site Conditions

The grass covered relatively uniform ground surface across the Site exhibits an approximate 5-degree northerly slope with the capacity to sheet runoff during rainfall. Evidence of ground water seepage, linear features indicative of possible subsurface deformation, or notable erosion was absent at the time of site exploration.

Subsurface Exploration

The borings and trench encountered a surface layer of topsoil mixed with wood, bone, and trash from agricultural activity. A remnant wedge of undisturbed topsoil was encountered beneath the tilled soil in the western end of the trench.

A thin, very plastic, cambic soil horizon was encountered between the topsoil and residual soil at the top of the terrace deposits extending to the bottom of the trench. Ground water was not encountered in the explorations. Relative soil moisture was generally damp.

DISCUSSION AND CONCLUSIONS

In our opinion, this study indicates the Site is suitable for residential development from an engineering standpoint under existing natural conditions. It should be understood from the following conclusions that there is overall a moderate risk of developing in the Seal Cove community given it has been characterized as, on the basis of extensive geologic and geotechnical data, *"A Critical Geotechnical Hazards Area"* by the County of San Mateo Planning Department (William Cotton and Associates, 1980):

- Appendix A contains previous engineering geologic cross-sectional analyses based on mapping and nearby subsurface explorations, that indicate the Site is underlain by more than 30 feet of gentle, northeast dipping, Pleistocene marine terrace deposits supported on the western side of a stable, flat wave-cut bench comprised of steep, northeast dipping Mio-Pliocene Purisima Formation on the southwest side of the active Seal Cove Fault, mapped approximately 200 feet to the northeast. An inferred active subsidiary fault, from photogeologic mapping, is located approximately 80 feet west of the Site. There are no active faults mapped on the Site.

- Appendices B and C indicate the Site is approximately 80 feet from the middle part of an arcuate belt of active, deep-seated bedrock landsliding affecting the western side of Seal Cove between Madrone and Los Banos Avenues for an inland distance of up to 400 feet (Plate 4). Over the past 30 years of periodic observation of relative rate and magnitude of scarp development, and distribution of landslide surface deformation, we infer the belt is represented by possibly 4 coalescent landslides with differing rates of movement.

  The southern part, between Madrone and Los Banos Avenues, appears to have sustained the greatest degree of activity to magnitude of movements, and distribution and relative rate of surface deformation.

  Observations of the middle part of the belt, between Los Banos and Orval Avenues, and involving the Distillery Restaurant, indicate relatively slower movement, and survey monitoring indicates movement has progressively

subsided over the past decade, and the potential for catastrophic failure is judge low (Appendix D).

The northern part of the belt is represented by a stabilized landslide. The headscarp has sustained relatively negligible recession over the past 30+ years. An imaginary plane projected from the toe of the scarp to the southwest corner of the Site is inclined approximately 2H:1V. Given the above discussion and the absence of photogeologic and subsurface evidence of incipient landsliding in the exploratory trench, it is our opinion potential is low to moderate for development of Site instability over the foreseeable future.

- The original designation for the location of the active trace of the Seal Cove Fault has been the near the base of the steep escarpment extending between Pilar Point and Fitzgerald Marine Reserve, and approximately 200 feet east of the Site (Plate 5). Appendix E, however, contains recent, albeit small-scale, mapping of a relatively strong arcuate bend in the active fault trace that would seem to move it closer to the Site. With the generally-accepted assumption that future fault rupture coincides with the trace(s) of pre-existing active fault rupture, coupled with the absence of geomorphic and stratigraphic evidence of fault rupture on the Site from this study, it our opinion the risk is low for occurrence of ground rupture on the Site during a nearby major earthquake

- Very strong to severe ground shaking is expected to occur in the Seal Cove community during a nearby major earthquake.

LIMITATIONS

This report has been prepared in accordance with generally accepted engineering geologic principles and practices, and is in accordance with the standards and practices set by the consultants in the area performing similar projects in the Seal Cove community. This acknowledgment is in lieu of any warranties, either expressed or implied. We offer no guarantees.

We trust this report provides you with the information you require at this time. If you have any questions, please call.

Very truly yours,

GEOSPHERE CONSULTANTS, INC.

Renewal Date 2/28/19

Joel E. Baldwin, II, PG, CEG
Principal Engineering Geologist
Distribution: Addressee (Efile).
Kirsten Hagen (Efile and 3 bound copies)

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Powell II, C.L., Barron, J.A., Sarna-Wojcicki A. M., Clark, L. C., Joseph Perry, F.A, Brabb, E.E., Fleck, R.J., 2007, Age, Stratigraphy, and Correlations of the Late Neogene Purisima Formation, Central California Coast Ranges: U.S. Geological Survey Professional Paper 1749, 32 pages.

William Cotton and Associates, 1980, Geologic analysis of the Seal Cove area, County of San Mateo: Geotechnical consultant's August 5 report to San Mateo County Planning Department.

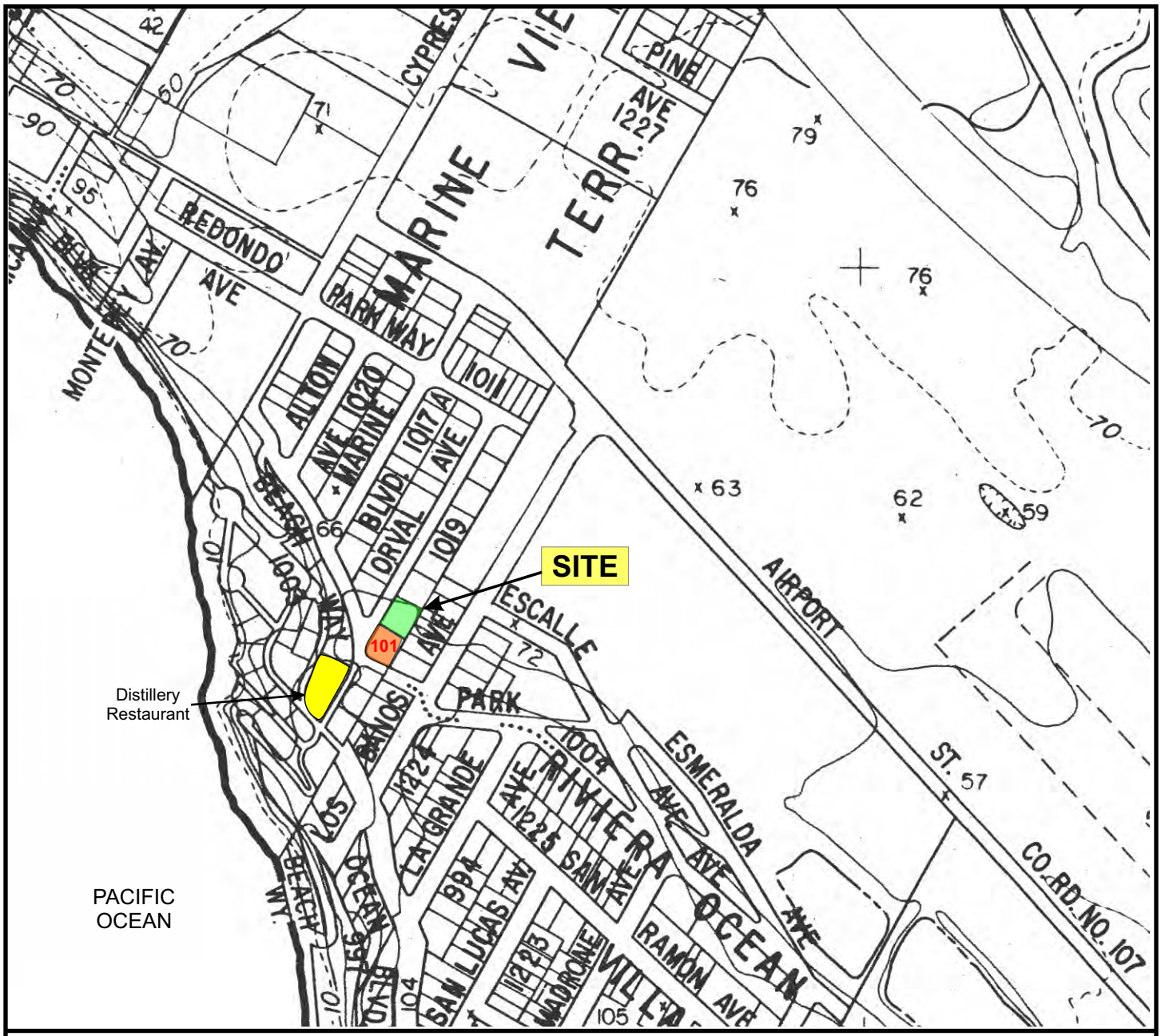
William Lettis & Associates, 2005, Paleoseismic investigation of the northern San Gregorio Fault, Half Moon Bay, California: U.S. Geological Survey National Earthquake Hazards Reduction Program, Award No. 04HQGR0045.

ILLUSTRATIONS

Plate 1 – Vicinity Map
Plate 2 – Engineering Geologic Map, Log of Exploratory Trench & Photo 1
Plate 3 – Areal Geologic Map
Plate 4 – Geologic Hazards Map and Photos 1 & 2
Plate 5 – Fault Zone Map

APPENDICES

Appendix A – F. Beach Leighton & Associates (1971)
Appendix B – William Cotton and Associates (1980)
Appendix C – Jean F. DeMouthe, CEG (2006)
Appendix D – Cotton, Shires and Associates, Inc. (2016)
Appendix E – William Lettis and Associates (2005)
Appendix F – Logs of Borings and Laboratory Test Results



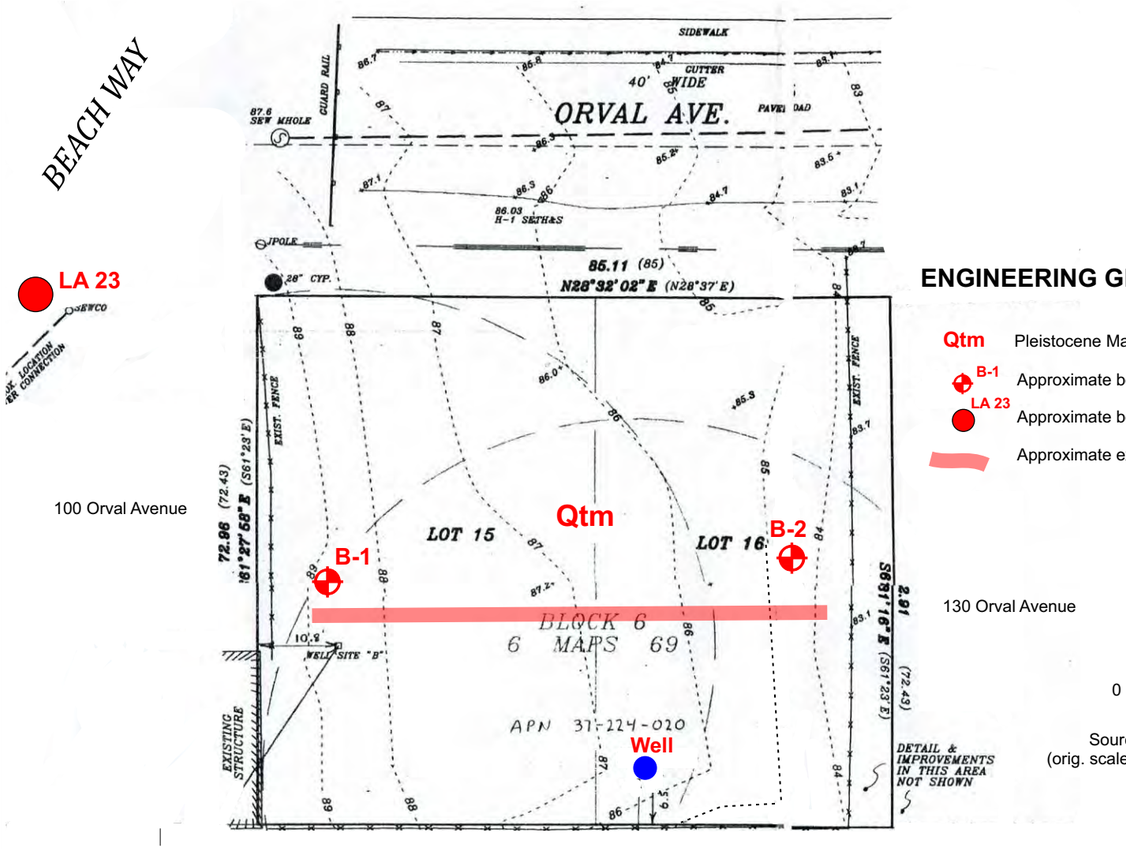
N

400 ft.
Scale

Contour interval = 20'

San Mateo County Topographic Map 9A (1/1/96)

Geosphere Consultants, Inc. AN ETS COMPANY Geotechnical Engineering • Engineering Geology Environmental Management • Water Resources	**Job No.:** 91-04233-A **Approved:** JEB **Date:** 02/07/18	**VICINITY MAP** APN 037 224 020; 0 Orval Avenue Moss Beach, California	**Plate** 1



ENGINEERING GEOLOGIC EXPLANATION

- Qtm — Pleistocene Marine Terrace Deposits
- B-1 — Approximate boring location
- LA 23 — Approximate boring location (Appendix A)
- Approximate exploratory trench location

0 — 20 ft.
Approx. Scale

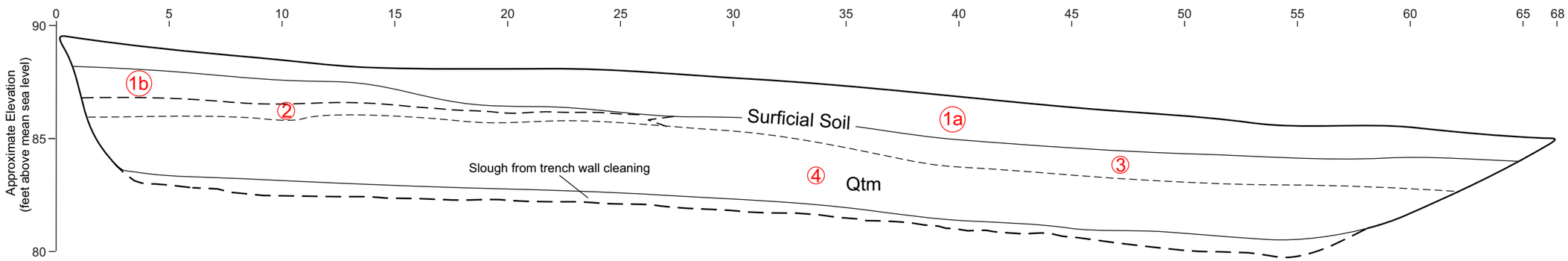
Source: Turnrose Land Surveying
(orig. scale 1'=10"; Job 08.36, dated 01.03.09)

Photo 1. Southeasterly view across site from Orval Avenue. Exploratory trench excavated 5' to 6' deep into tilled ground surface that ascends approximately 6 feet from north (left) to south (right). Homes in distance are on Los Banos Avenue.

Engineering Geologic Map

Exploratory Trench Log

Southeast Wall
N32ºE
Natural Scale



TRENCH LOG EXPLANATION

SOIL UNITS

1a. Silty, sandy clay with gravel; black, moist to damp, very porous, turbated, some fine roots, turbated; occasional trash (af)
1b. Same as 1a without trash (Topsoil)
2. Silty sandy clay; dark brown, wet, firm to stiff, very plastic, dessication cracks (cambic horizon)
3. Sandy clay with occasional angular lithic clasts to 1"; gray and strong brown mottled, damp, stiff, very plastic (Residual Soil)
4. Clayey fine-to medium-grained sand with coarse sand-size clasts of decomposed feldspar, damp, medium dense, common diffuse vertical gray and strong brown striations (Pleistocene Marine Terrace Deposits)

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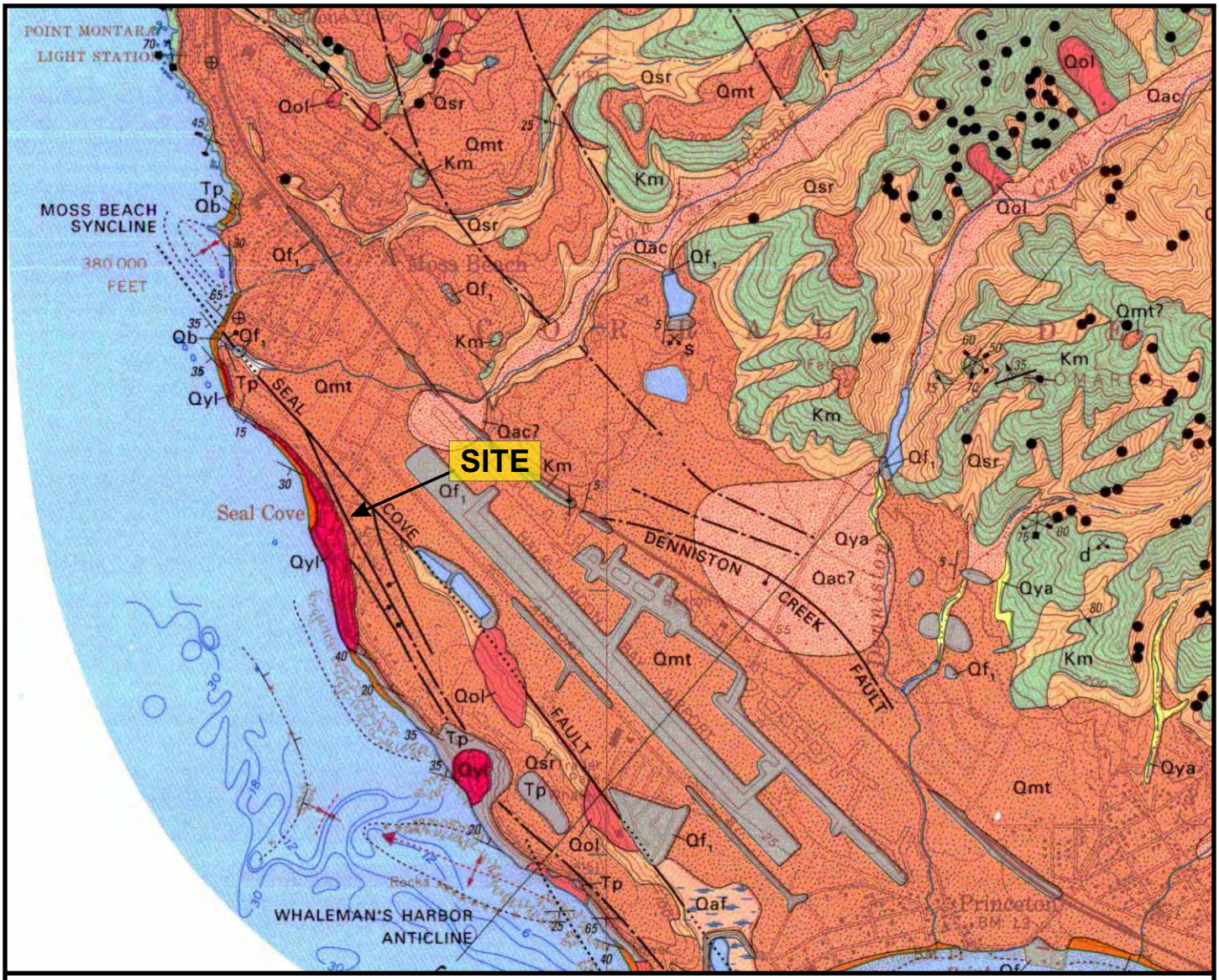
Environmental Management · Water Resources

Job No.:	91-04233-A
Approved:	JEB
Date:	02/28/18

ENGINEERING GEOLOGIC MAP, LOG OF EXPLORATORY TRENCH AND PHOTO 1
APN 37-224-020, 0 Orval Avenue
Moss Beach, California

Plate 2



EXPLANATION

Qb Beach Deposits (Holocene)
Qyl Younger Landslide Deposits (Holocene)
Qf_1 Poorly Consolidated Artificial Fill (Holocene)
Qmt Marine Terrace Deposits (upper Pleistocene)
Tp Purisma Formation (Pliocene)
Km Granitic Rock of Montara Mountain (Cretaceous)

——?—— Geologic contact - dotted where concealed queried where existence or position is uncertain.

Fault - dashed where inferred; dotted where concealed; queried where existence or extension is uncertain. Ball and bar on downthrown side.

Anticline — Photo-lineament

Syncline — 65 — Bedding attitude

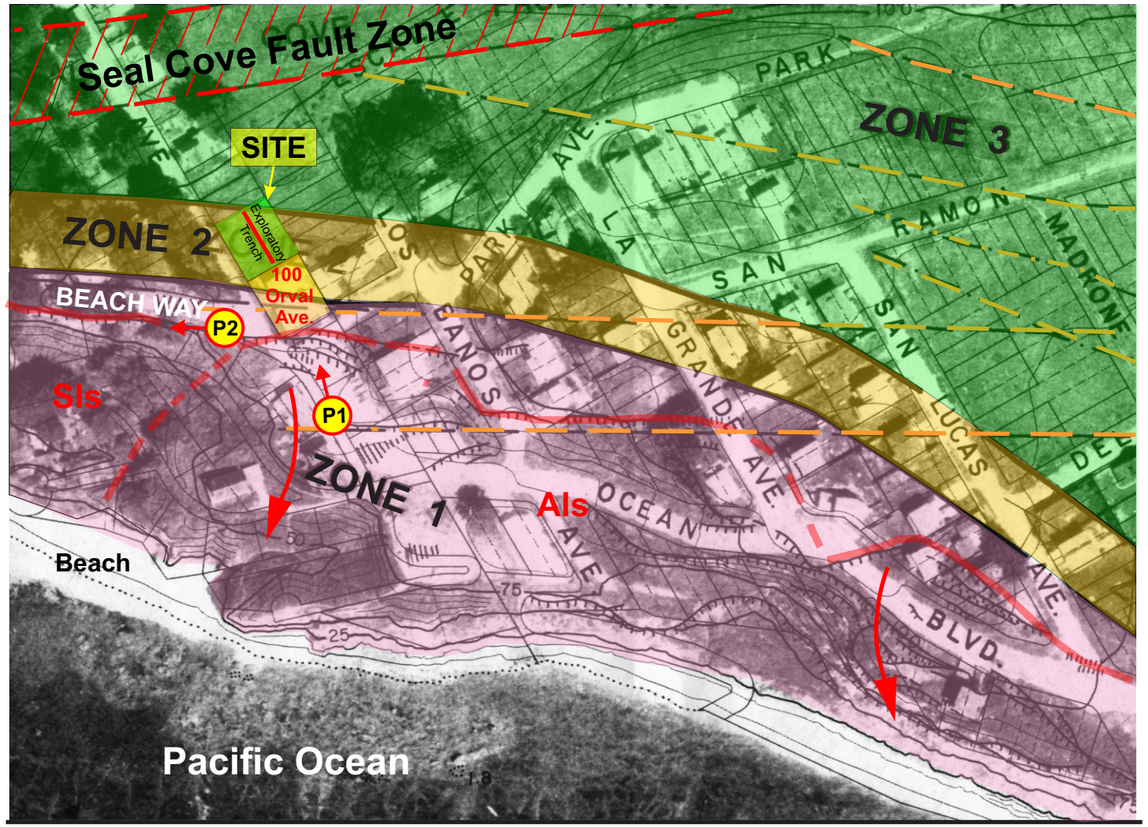
N

2000 ft.
Scale

Source: Pampeyan 1994

Geosphere Consultants, Inc. AN ETS COMPANY Geotechnical Engineering · Engineering Geology Environmental Management · Water Resources	**Job No.:** 91-04233-A **Approved:** JEB **Date:** 02/07/18	**AREAL GEOLOGIC MAP** APN 037 224 020; 0 Orval Avenue Moss Beach, California	**Plate** 3

GEOLOGIC HAZARDS MAP



EXPLANATION

Als Sls	Active Landslide Belt of coalescent deep scaled Landslide (stabilized in the early 1980's)
Als	Arcuate belt of Active Landsliding; solid where inferred from surface deformation dotted where uncertain
	Exploratory Trench (this study)
	Scarp
	Trench
	Depression
	Tension Crack
	Faults by Leighton and Associates (1971)
	Faults-related features compiled from aerial photographs
ZONE 2 ZONE 1	Geotechnical Hazard Zone Boundary: where **ZONE 1** indicates unstable; **ZONE 2** indicates questionable stability; **ZONE 3** indicates most stable
P1	Line of sight for Photo 1

0 ——— 200 ft.
Scale

After: Geotechnical Hazards Map, Seal Cove Study Area
William Cotton and Associates (8/5/1980)

PHOTOS 1 & 2

P1. North view from Distillery Restaurant across middle part of active landslide belt. Headscarp of Als defined by rise in roadway between red line and arrows has retreated several feet to the southern perimeter of 101 Orval Ave. without visibly affecting the structure. Site in distance is approximately 80 feet from the headscarp. The upper left arrow correlates with the projection of the southern part of the active landslide belt.

P2. Northwesterly view along crown of headscarp (yellow arrows) located approximate 80 feet from the site out of view to the left. Northward projection of active landslide scarp (red arrows) in P1 intersects the up to 40-foot high scarp of the stabilized landslide at the intersection of Orval Avenue and Beach Way, approximately 80 feet west of the site. The presence of the remnant of concrete sidewalk from early 1900 construction combined with mapping on the adjoining hazard mapping indicates the scarp recession has been relatively minor.

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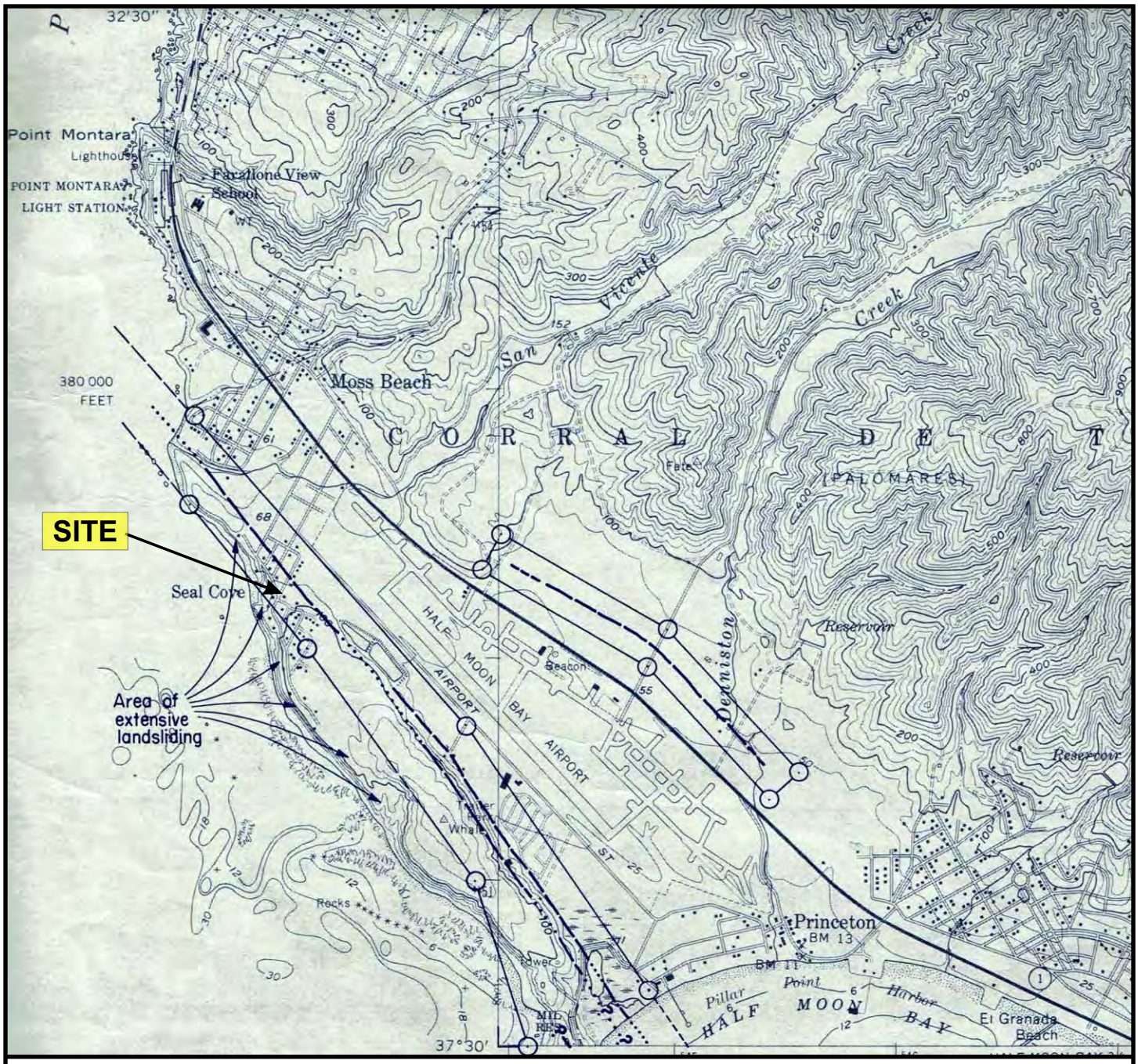
Job No.:	91-04233-A
Approved:	JEB
Date:	02/28/18

GEOLOGIC HAZARDS MAP AND PHOTOS 1 & 2
APN 37-224-020, 0 Orval Avenue
Moss Beach, California

Plate
4



EXPLANATION

Potentially Active Faults

Faults considered to have been active during Holocene time and to have a relatively high potential for surface rupture; solid line where accurately located, long dash where approx. located, short dash where inferred, dotted where concealed; query (?) indicates additional uncertainty. Evidence of historic offset indicated by year of earthquake-associated event or C for displacement caused by creep or possible creep.

Special Studies Zone Boundaries

These are delineated as straight-line segments that connect encircled turning points so as to define special studies zone segments.

Seaward projection of zone boundary

N

2000 ft.
Scale

Contour interval = 25'

State of California Montara Mountain (1982)

Geosphere Consultants, Inc. AN ETS COMPANY Geotechnical Engineering • Engineering Geology Environmental Management • Water Resources	**Job No.:** 91-04233-A **Approved:** JEB **Date:** 02/07/18	**FAULT ZONE MAP** APN 037 224 020; 0 Orval Avenue Moss Beach, California	**Plate** 5

APPENDIX A

F. Beach Leighton and Associates (1971)

F. BEACH LEIGHTON & ASSOCIATES
ENGINEERING GEOLOGISTS
300 SOUTH BEACH BOULEVARD
LA HABRA, CALIFORNIA 90631
(213) 694-1820

October 15, 1971

TO: County of San Mateo
Attention: Mr. S. H. Cantwell, Jr., County Engineer

FROM: F. Beach Leighton & Associates

SUBJECT: Final Engineering Geologic Report of the Seal Cove - Moss Beach Area, County of San Mateo

In accordance with the agreement with the County of San Mateo for engineering geology services (dated September 7, 1971), and in fulfillment of Resolution 29451 that authorized these services on the same date, the final geologic report is hereby submitted. We are transmitting to the County Engineer's office on this date, one reproducible original and 10 copies of the text and exhibits.

The final report succeeds the interim geologic report that was delivered October 1, 1971. The three principal divisions of the final report consists of (1) the non-technical text, (2) the technical text and supporting data in the Appendix, and (3) exhibits that support both the non-technical and technical sections.

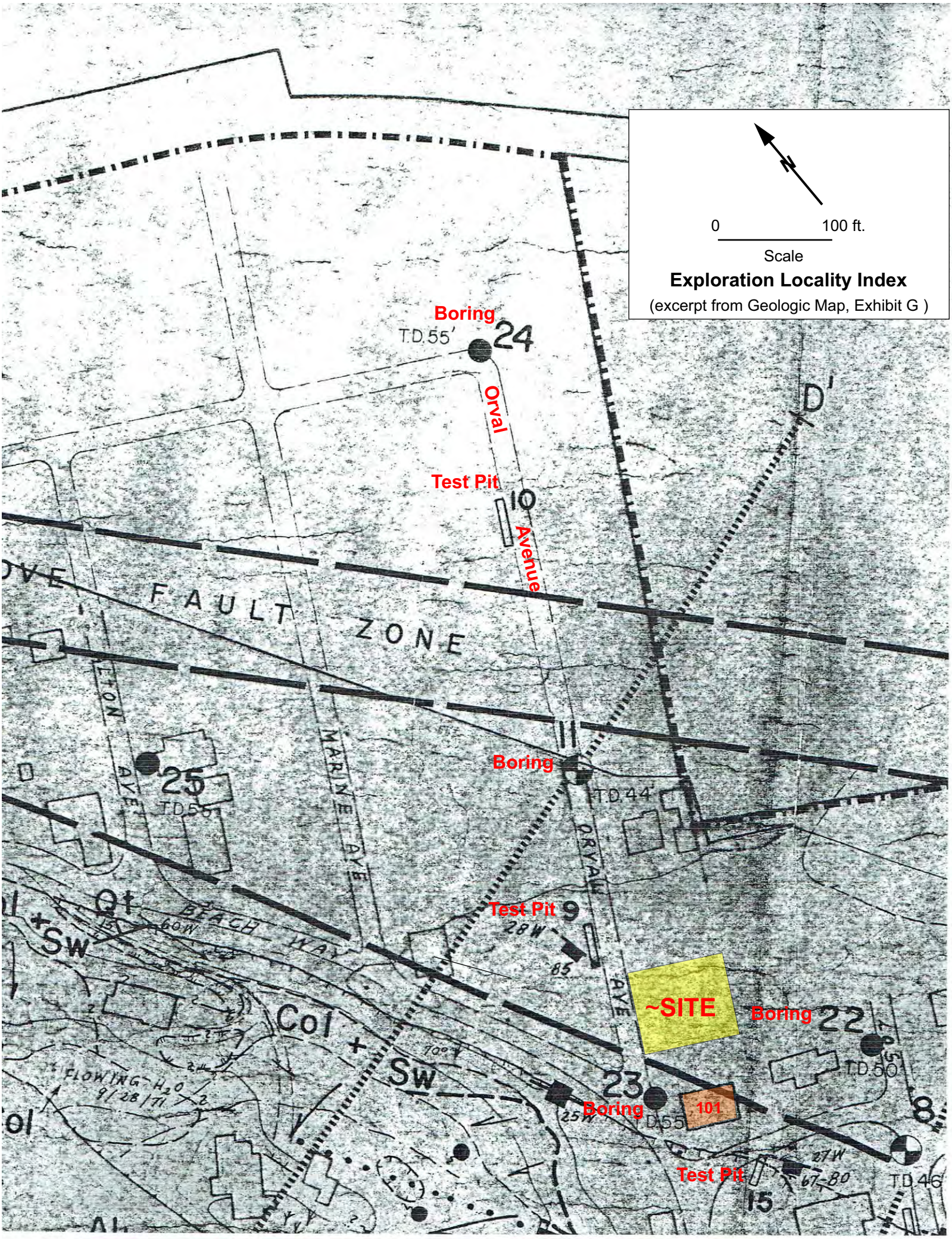
We will be willing at any time to explain any elements connected with the investigation and to present our findings by means of kodachrome slides. Should any questions arise, please do not hesitate to phone.

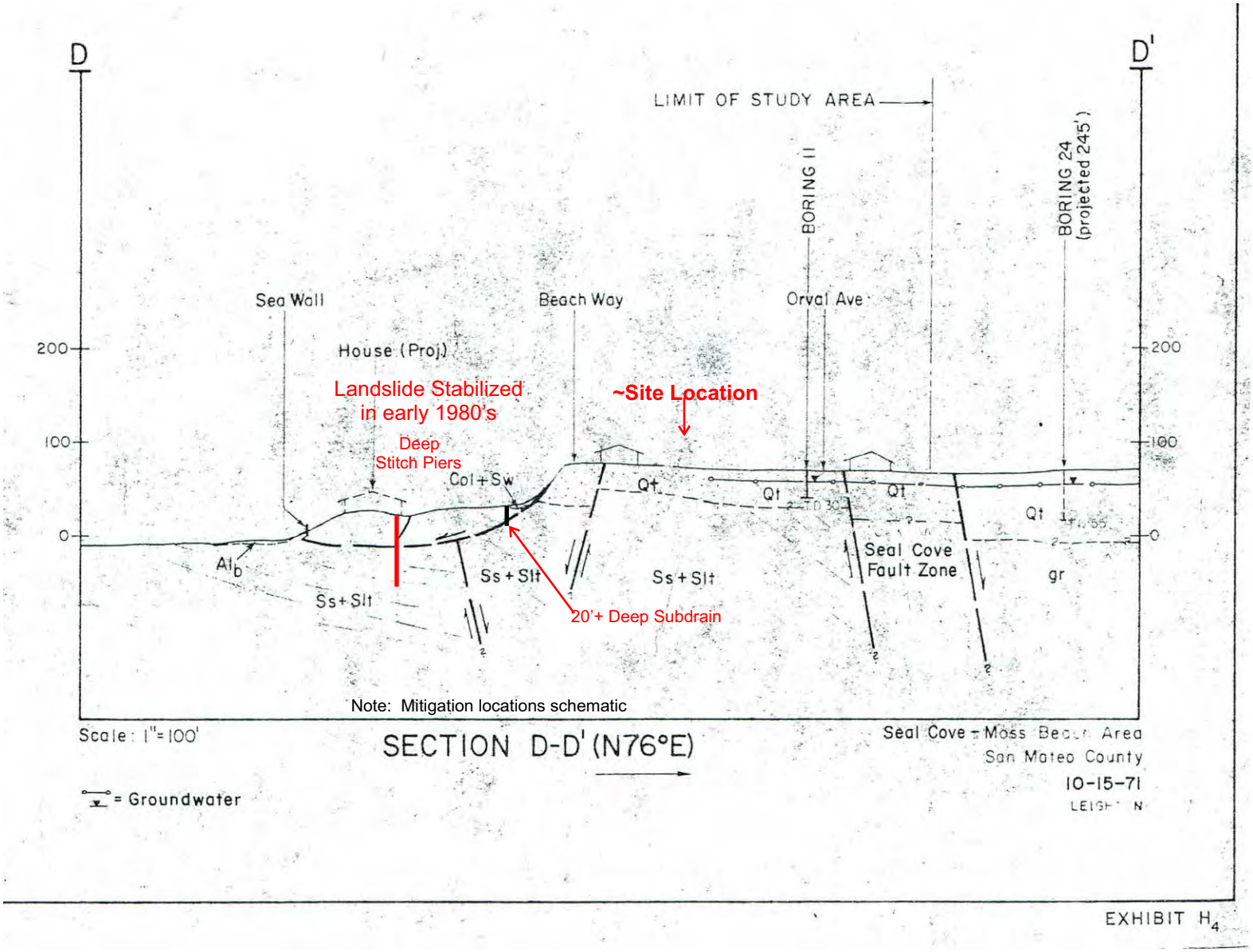
Respectfully submitted,

F. Beach Leighton

F. Beach Leighton
Consulting Engineering Geologist (EG 599)

/jm


0
100 ft.
Scale
Exploration Locality Index
(excerpt from Geologic Map, Exhibit G)
Boring
T.D. 55'
24
Orval
Avenue
Test Pit
10
D'
FAULT
ZONE
11
Boring
T.D. 44'
25
T.D. 55'
Test Pit
9
28 W
85
~SITE
Boring
22
T.D. 50'
Boring
T.D. 55'
23
101
25 W
Test Pit
27 W
67-80
T.D. 46'
15
Qt
BEACH
Sw
Col
Sw
FLOWING H2O
9/28/11
MARINE
DRYAD
DRYAD


D
D'
LIMIT OF STUDY AREA
BORING 11
BORING 24
(projected 245')
Sea Wall
Beach Way
Orval Ave.
House (Proj.)
200
100
0
Landslide Stabilized
in early 1980's
~Site Location
Deep
Stitch Piers
Col+Sw
Qt
Qt
Qt
Qt
Alb
Ss+Slt
Ss+Slt
Ss+Slt
Seal Cove
Fault Zone
gr
20'+ Deep Subdrain
Note: Mitigation locations schematic
Scale: 1"=100'
SECTION D-D' (N76°E)
Seal Cove - Moss Beach Area
San Mateo County
10-15-71
= Groundwater
EXHIBIT H4

166 ft.
Scale

Surficial Units

The major surficial unit is a marine terrace deposit composed of unconsolidated gravel, sand and minor amounts of silt. This unit (Qt) caps the ridge area and the relatively flat terrace level that buries the bedrock throughout most of the area. The thickness of this cap ranges from 3-4 feet to 40+ feet. This variability in thickness is probably a reflection of the erosional topography upon which the marine sediments were deposited, but may, in part, be due to faulting. The sandy portion of the terrace materials consists of light tan to deep red-brown arkosic debris that is locally cross-bedded. In places the basal portion of the unit is a fine to medium-grained, micaceous sand that rests on a basal pebble to cobble conglomerate.

Other surficial units consist of alluvium, colluvium, mixtures of colluvium, alluvium and slope wash, and slide debris.

Alluvium (Al) is divided on the geologic map into beach sand (Al_b) and stream channel deposits (Al_s). The beach sand is confined presently to discontinuous patches at the base of the sea cliff, and the stream channel deposits are restricted to the stream channel at the north end of the study area.

Colluvium (Col) is mapped where the soil zone is known to be thicker than 4± feet. These thick colluvial soil zones commonly develop on and at the base of slopes by a combination of deep weathering, rain wash, soil creep and small-scale mass movements. Together with slope wash (Sw), colluvium poses local foundation problems largely because of its combined looseness, humus and swelling clay content and thickness.

The residual soil zone covers most of the area and has been mapped only where it is thicker than 4 feet. On the principal terrace surface in the south, it has developed a dark brown to black, potentially expansive mantle that is 1 to 4 feet thick. In reentrants and low gullies, the normal soil zone resting on terrace deposits merges downslope into a mixture of colluvium and slope wash.

Slide debris is divided into 10 mapped surficial slope failures and major slide areas, some of which are composite. The mapped slide areas are confined to the surf zone, sea cliff area, and a coastal belt that extends inland about 300 feet from the toe of the sea cliff.

Some of the surficial slope failures are extremely fresh and have occurred within the past year. At the other end of the time scale some slides are prehistoric. However, most of the slides are developing and enlarging now, both by growth headward and toeward. For example, analysis of aerial photographs taken in 1941 in the vicinity of the sea cliff between the foot of San Lucas and La Grande Avenues shows the existence of three slide scarps. By the time aerial photographs were taken in 1956, the terrain below these fresh scarps had deteriorated into a jumbled state.

Bedrock Units

The Purisima Formation is exposed along the entire length of the steep sea cliff, and where buried by terrace deposits it has been intercepted by most of the borings. Two sequences have been distinguished on the basis of the following dominant lithology: (1) sandstone-siltstone (5-10% of the mapped Purisima area), and (2) siltstone-shale (90-95% of mapped Purisima area). The sandstone-siltstone sequence forms the relative resistant promontory sections of the sea cliff. It consists of tan to light gray, fine to medium-grained sandstones interbedded with thin beds of siltstone. The sandstone beds of this unit are massive to thick-bedded, locally cross-bedded and contain lenses of well-rounded, gray pebbles of granitic composition.

The siltstone-shale portion of the Purisima constitute the dominant unit influencing bedrock stability. It is composed of dark gray to yellow-brown, thin-bedded bedrock materials. Within the sequence, are yellow-brown concretionary beds and lenses and pods of limonitic, calcareous siltstone that form useful marker horizons; they can in places be traced for several hundred yards.

The Montara Formation is not exposed at the surface but has been penetrated in the subsurface in the southeast portion of the study area. Here it is in fault contact with the younger Purisima Formation. Surface exposures of the Montara Formation lie outside the study area in the rugged sea cliff to the north, along the roadcut east of the Half Moon Bay County Airport, and in the high mountain terrain toward Montara Mountain (see Geologic Index Map).

Geologic Structure

The principal structural elements within the study area are: (1) the Seal Cove Fault Zone and its secondary branches, and (2) zones of intensely sheared and fractured bedrock.

The main trace of the Seal Cove Fault Zone is exposed at the north end of the study area along the sea cliff at Moss Beach. The zone measures approximately 100 to 150 feet in width. A well developed fault surface within this zone strikes N18-35°W and dips 65° to 80°E. Here, siltstones and shales of the Purisima Formation have been faulted against younger marine terrace deposits to the northeast. The apparent vertical separation in the sea cliff area is approximately 40 to 50 feet, with the north side down. Secondary fault and shear surfaces are abundant within the zone.

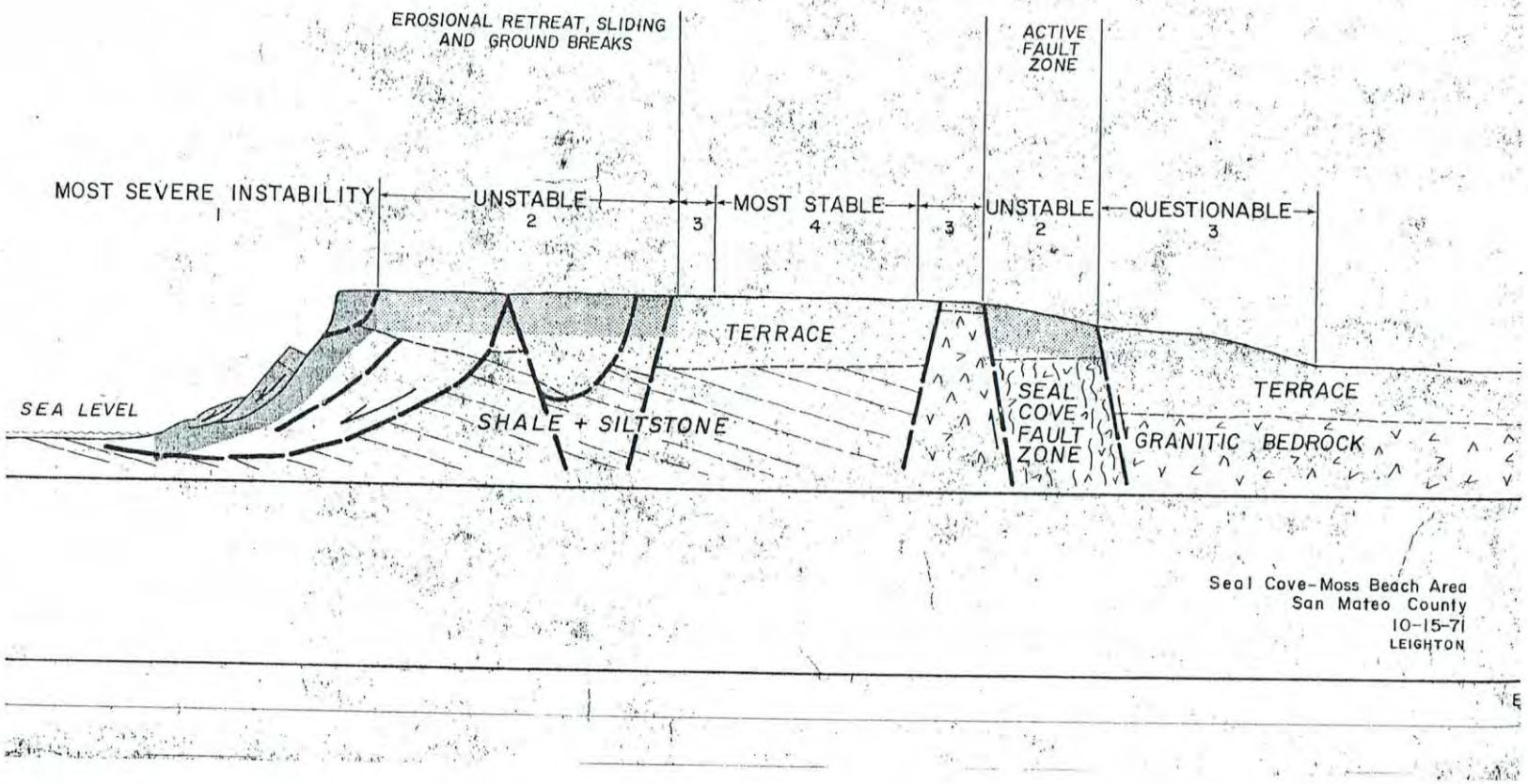
The main trace of the Seal Cove Fault Zone extends southward from the Moss Beach exposure and is marked by a prominent east-facing scarp. The scarp increases in height southward toward the Half Moon Bay area, suggesting greater vertical movement in this direction.

Three principal secondary faults have been mapped on the broad terrace surface west of the main Seal Cove Fault Zone. These faults have been delineated on the basis of subsurface geologic data and detailed mapping of subtle topographic features. They are subparallel faults that strike roughly N20-30°W.

In the subsurface they offset the terrace-bedrock contact, bringing granitic basement rock on the east side into contact with the Purisima Formation. The two westernmost secondary faults can be traced southward from the north end of Beach Boulevard, where they are detachment surfaces for ruptures associated with the heads of landslides. South of the study area the traces of the faults become more pronounced and can be identified on the surf-cut bench as a wide crushed zone. This zone can be traced to the southernmost exposure along the east side of Pillar Point where siltstone and shales are faulted against sandstones and siltstones of the Purisima Formation.

Three prominent fault and joint zones have been mapped within the Purisima bedrock exposed along the surf-cut bench and in the sea cliff. These zones have a general trend of north-south to northwest-southeast, and dip 41°E through vertical to 81°W. They range in width from a few tens of feet to nearly 300 feet. Within the zones are closely-spaced joint surfaces and myriads of small faults that in aggregate produce a highly-fractured condition in the bedrock. Clay-like gouge and brecciated seams occur along most of the faults, ranging in thickness from less than one inch to about a foot.

SCHEMATIC CROSS-SECTION ILLUSTRATING MAJOR GEOLOGIC PROBLEMS



Logged by [illegible]
Notes by [illegible]
Type of Rig 15" Backhoe
(See Abbreviation List Attached)

GEOLOGIC PIT LOG NO. 9
87' @ S31°W from R.P. #13
Pit Location

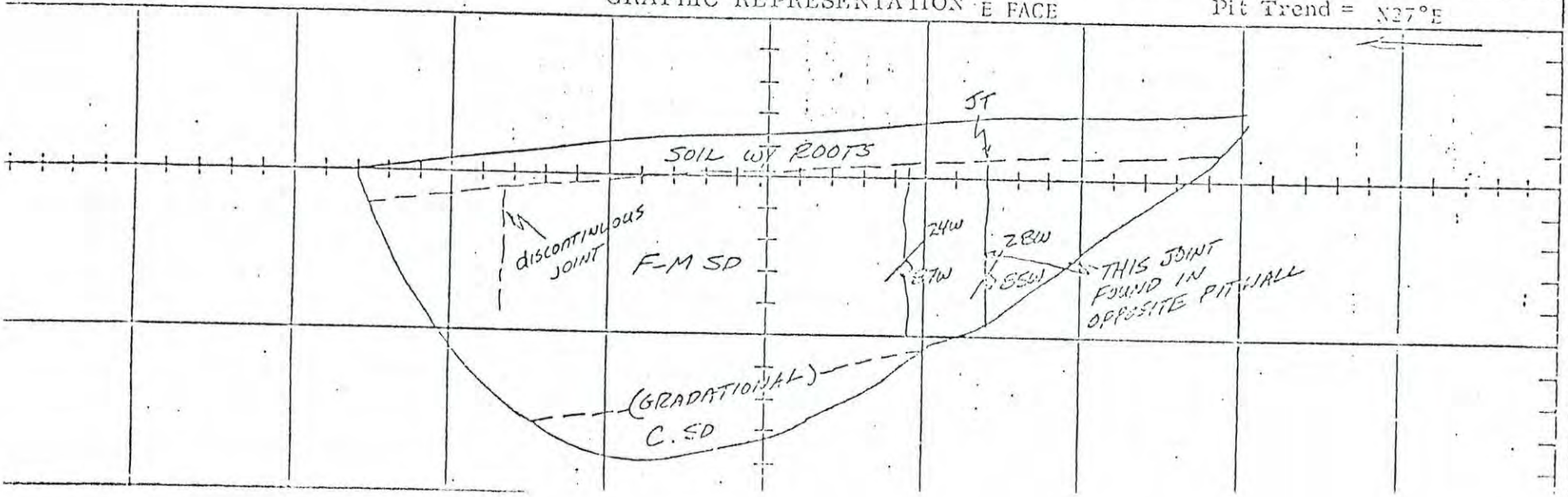
Project Mesa Ranch
Tract San Mateo County
Date 9/25/71

ATTITUDES		ENGINEERING GEOLOGY DESCRIPTION		PHYSICAL CONDITION	COMMENTS
N34W, 80°W	J	SOIL	GREY-BLACK SANDY SOIL, W/ROOTS	DRY, FIRM	WELL DEVELOPED FRACTURES, WITH ROOTS
[illegible]W, 85°W	J	F-M SD	RUST & BUFF FINE TO MED. GR. SILTY SAND. MASSIVE, W/ROOTS IN JOINTS	DAMP, HARD	
		CY SD	RUST & BUFF COARSE CLAYEY SAND, MASSIVE	DAMP, LOOSE	
					NATURAL SLOPE
					GRADED STREET

Scale - 1" = 5'

GRAPHIC REPRESENTATION E FACE

Pit Trend = N27°E



GEOLOGIC PIT LOG NO. [illegible]

Logged by Kay
Notes by Dickey
Type of Rig Ts' Backhoe
(See Abbreviation List Attached)

GEOLOGIC PIT LOG NO. 10
120' SW of Park on Okval
Pit Location

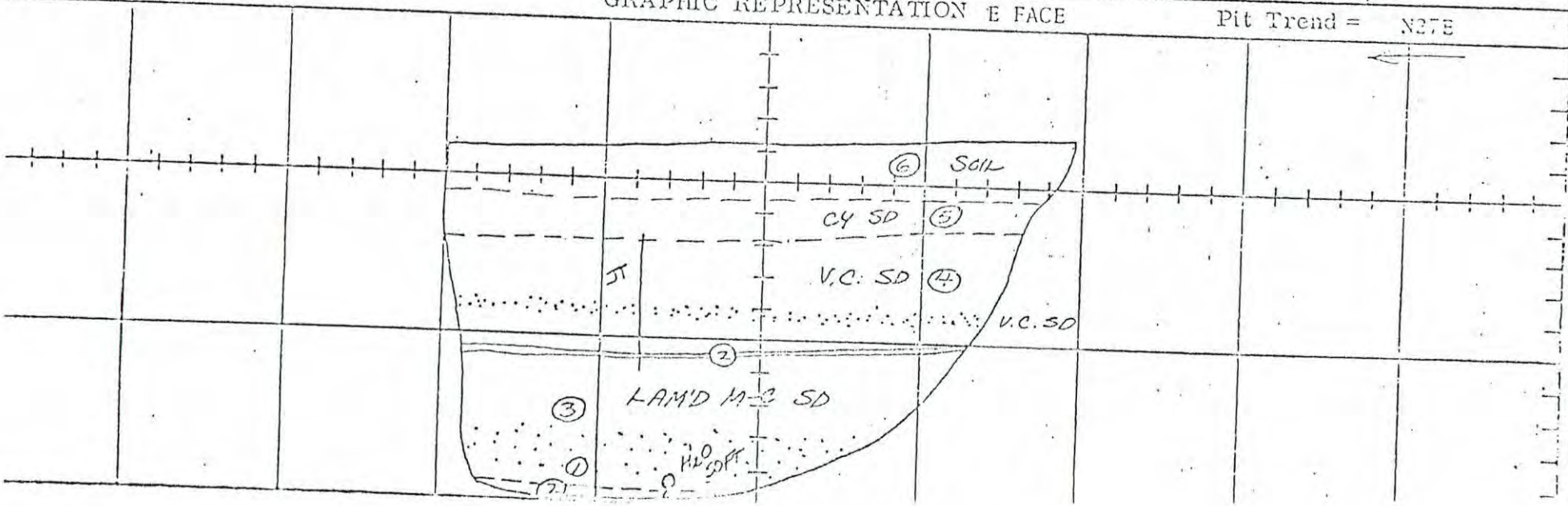
Project Mes[illegible]each
Tract San M[illegible] County
Date 9/-3/71

ATTITUDES	ENGINEERING GEOLOGY DESCRIPTION			PHYSICAL CONDITION	COMMENTS
	(1)	SAND	GRY-GRN: MED-V/CRSE	LOOSE, MOIST	
	(2)	SLT	GRN WELL-BEDDED SILT	FIRM, MOIST	
	(3)	LAM'D M-C SD	TAN LAMINATED FINE TO V/CRSE GR. SAND	LOOSE, DAMP	
	(4)	V.C. SD	TAN/GRN COARSE TO VERY COARSE SAND	FIRM, DAMP	
	(5)	CY SD	BUFF MASSIVE CLAYEY SAND	FIRM, DAMP	
	(6)	SOIL	BLACK CLAYEY SAND SOIL W/ROOTS	FIRM, DRY	NATURAL SLOPE

Scale - 1" = 5'

GRAPHIC REPRESENTATION E FACE

Pit Trend = N27E



GEOLOGIC PIT LOG NO. 10

Logged by [illegible]n
Notes by [illegible]ean
Type of Rig 15" Backhoe
(See Abbreviation List Attached)

GEOLOGIC P[illegible]LOG NO. 11
NE of Corner [illegible]cean & Cypress
Pit Location

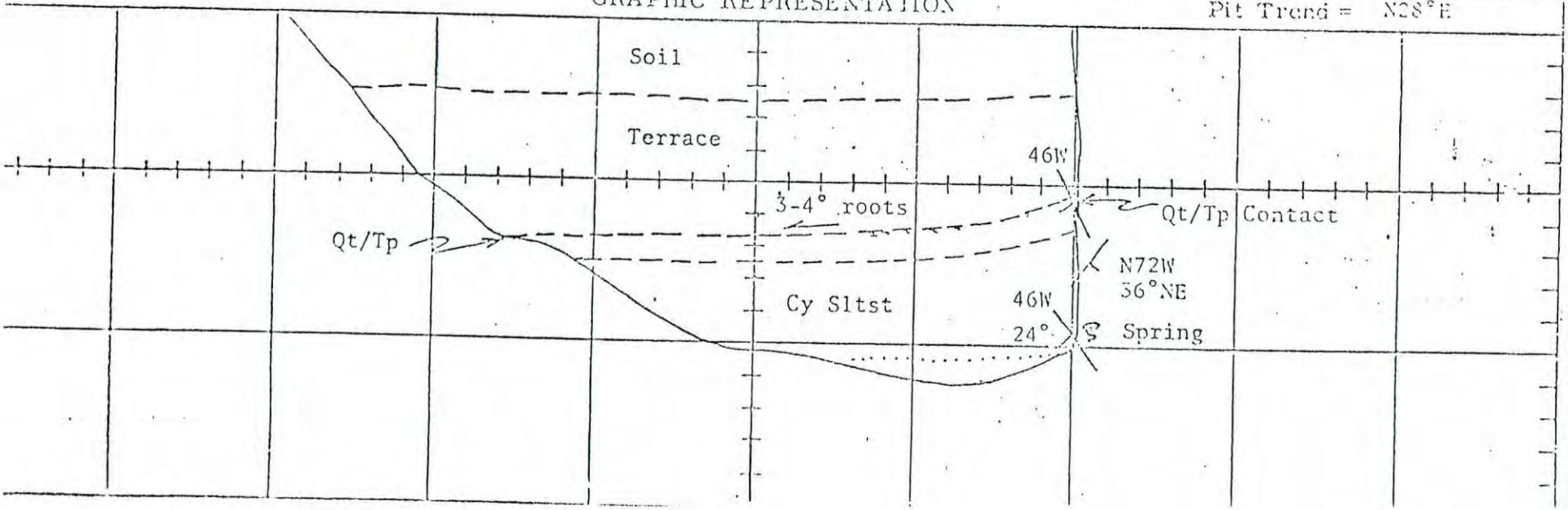
Project Moss Be[illegible]
Tract San Mateo [illegible]unty
Date 9/23/71

ATTITUDES		ENGINEERING GEOLOGY DESCRIPTION		PHYSICAL CONDITION	COMMENTS
46°W, 23°NE	C	Soil	Brown clayey adobe-type soil		
N72W, 36°NE	B	Terrace	Gray green clay-rich coarse sand w/root tubules coated w/black clay, scattered pebbles & feldspar crystals	Moist	
46W, 24NE	B?				
		Cy Sltst	Olive to gray-green clay-rich siltstone, glaze of dark brown on root fillings, massive		NATURAL SLOPE

Scale - 1" = 5'

GRAPHIC REPRESENTATION

Pit Trend = N28°E



GEOLOGIC PIT LOG NO. 11

ogged by _____
ates by _____
ype of Rig _____
ee Abbreviation List Attached)

GEOLOGIC PIT LOG NO. 15
Lot 3, Parcel 219
Pit Location

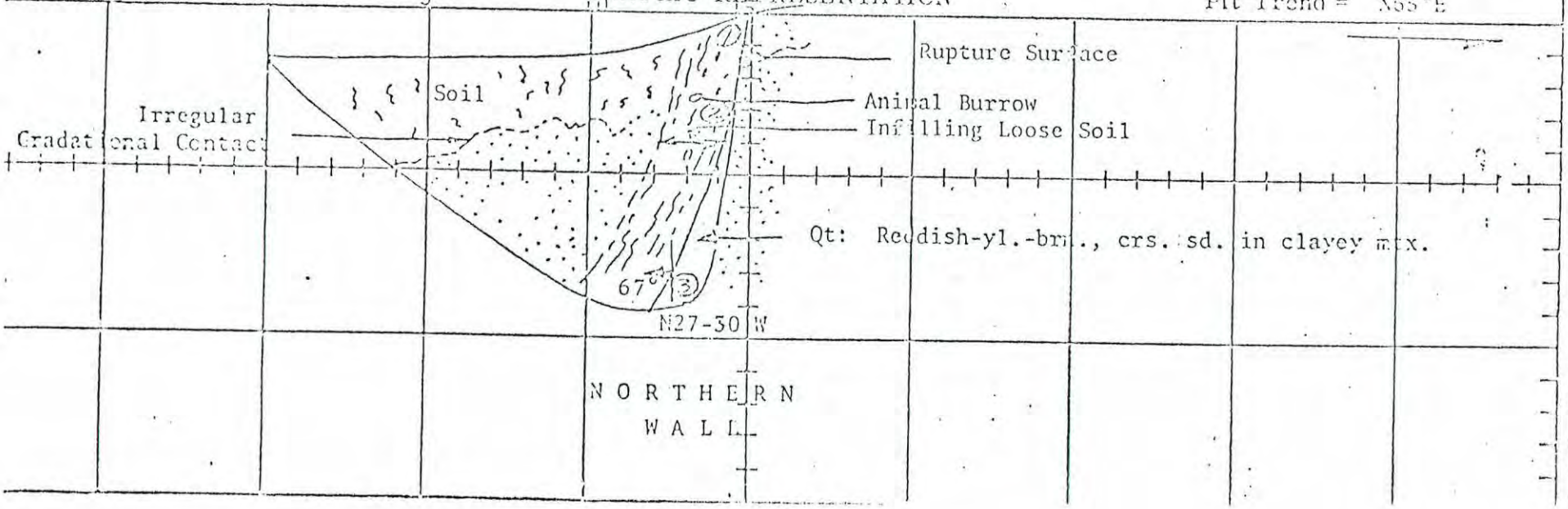
Project Moss Ranch
Tract _____
Date 3/28/71

ATTITUDES	ENGINEERING GEOLOGY DESCRIPTION	PHYSICAL CONDITION	COMMENTS
RS 7W,d75°W RS S,d85°W RS ? 9' 7-30W,d67°	Soil: Dk. brn., silty, w/scat. pebbles, root hairs Qt: Reddish brn.-yl-brn., crs. sd w/clayey mtx. Brown soil along fracture	Soft Dry in upper 12" Damp below 12" Firm, Damp	Rupture Surface in Qt. is well-developed and loose soil has fill in where a crack formerly existed. NATURAL SLOPE Lot pad slopes 2-4° Break in slope ? fract is 10-15°

ale - 1" = 5'

GRAPHIC REPRESENTATION

Pit Trend = N55°E



GEOLOGIC PIT LOG NO. 15

Boring 4

Hole Dia. 21"
Type of Rig Packer
(See Abbreviation List attached)

Orval, South of Park
Location of Hole
Sheet 1 of 1

Tract
Date 9/22/71
Logged by E. Dickey
Noted by Hay

STUDIES	Log: Orientation E / E	ENGINEERING GEOLOGY DESCRIPTION	PHYSICAL CONDITION
	S S	Soil — blk, sandy.	
	Qt.	GRAVEL: rusty-brn, sandy gravel.	Damp & Hard
	5'4"	Rusty bd.	
B 5'8"		SD & GVL: gradational zone; grn. ss to rusty gravel to crs. pebbly sd.	Firm to loose & moist
		SILT: gy, grades into ss below.	Firm to Hard & v/Moist
10		SD: pebbly	
		Water Line	
15		Driller reported H_2O at 15'.	
20			
25		Driller reported grn. sand at 26'.	
30		TD: 30'	

Top Hole Elev. 92'
Hole Dia. 6"
Type of Rig E/Auger
(See Abbreviation List attached)

GEOLOGIC DRILLING LOG NO. 22
Los Banos 100'NE of Ocean
Location of Hole
Sheet 1 of 2

Project Bass Beach
Tract San Mateo Co.
Date 10/6/71
Logged by Dickey
Notes by Dickey

ATTITUDES	Log Orientation	ENGINEERING GEOLOGY DESCRIPTION	PHYSICAL CONDITION
		SOIL: Black, silty sand soil	
	3' QT.	SD: Yl-brn, clayey crs. gr.	Damp, Firm
5			
10			
	13'	SD: Tan silty w/pebbles	Moist, Firm-Soft
15	16'	SD: Tan w/silt	Firm, Damp
20		SD: Tan, med. gr. (beach)	Soft, Damp
		SD: Tan pebbly, w/ slt. pebbles	Damp, Firm
25			
	28'5"	SD: Tan med.to v/crs. gr. w/scat. pebbles	Damp, Firm
30			
		SD: Tan Mica. w/scat. pebbles	Damp, Firm
35			
40			

Top Hole Elev. _____
Hole Dia. _____
Type of Rig: _____
(See Abbreviation List attached)

GEOLOGIC DRILLING LOG NO. 22

Location of Hole
Sheet 2 of 2

Project _____
Tract _____
Date _____
Logged by _____
Noted by _____

TUDES	Log Orientation	ENGINEERING GEOLOGY DESCRIPTION	PHYSICAL CONDITION
40		Continued	Damp, Firm
		SD: (a.a.)	
45	Qt.	GVL: Gy., w/pbls. of dk.brn. Slt.	Hard, Wet
Elev. 45'	Slt	SLT: Gy. & brn. siltstone & sandstone	Hard, Damp
		TD: 50'	

Boring 23

Hole Dia. 6"
Type of Rig: E/Auger
(See Abbreviation List attached)

Intersection of Orval & Beach
Location of Hole
Sheet 1 of 2

Tract San Marino
Date 10/6/71
Logged by Dickey
Notes by Dickey

Log Orientation	ENGINEERING GEOLOGY DESCRIPTION	PHYSICAL CONDITION
0		
Soil	SOIL: Black organic sdy., silty.	Soft, Damp
3'		
Qt.	SD: Brn., clayey	
5		
10		
	SD: Brn., silty	Firm, Damp
15		
16'		
	SILT: Brn.	
17'5"		Firm, Damp
	SD: Grn. & tan mica.	
19'5"		
20	SD: Brn., silty	
22'		
	SD: Brn., med. gr.	
25		
27'		
	SD: Brn., mica., well-scat.	Wet, Firm
30		
	GVL: Lt.brn., sahle pebbles in gravelly sd. mtx.	Hard
35		
	SD: Brn., silty	Damp, Firm
40		
	SD: Brn., silty finely lam.	Wet

Hole Dia. _____
Type of Rig _____
(See Abbreviation List attached)

Location of Hole
Sheet 2 of 2

Tract _____
Date _____
Logged by _____
Noted by _____

STUDIES | Log Orientation | ENGINEERING GEOLOGY DESCRIPTION | PHYSICAL CONDITION

40 — Continued

12' — Silty Sd/Sdy. Silt: Brn., finely lam. silt & sd.

14' — Damp-Wet Firm

45

SD: Gy., mica.

50

El. 36.5' Hard

50'5" QT: — Hard-v/hard

SILT: Gy., w/fn.gr. ss.

55

TD: 55'

Top Hole Elev. ___ est.___ GEOLOGIC DRILLING LOG NO. 24 Project Ocean Beach
Hole Dia. ___ 6"___ Tract San Mateo Co.
Type of Rig: E/Auger 5' SE of Intersection of Oval/Park Date 10/7/71
(See Abbreviation List attached) Location of Hole Logged by Dickey
Sheet 1 of 2 Notes by Dickey

ATTITUDES	Log Orientation	ENGINEERING GEOLOGY DESCRIPTION	PHYSICAL CONDITION
	2'	SOIL: Black, sdy. clay soil	
		SD: Dk. brn., v/clayey sd/soil.	?
	3'5" Qt.		
		SD: Brn., clayey	
		SD: Blue-gy., mica.	Soft, damp
		SD: Brn., clayey	Firm, Damp
		Silty Sd:	Firm, Damp
		SILT: Yl.-brn., sdy.	Firm, Damp
		SD: Blue-grn., silty.	Firm, Damp
	H_2O		
		SD: Tan & blue-grn., mica., silty	Wet - Firm
		SD: Tan, silty, mica.	Soft - Firm

5 10 15 20 25 30 35 40

Hole Dia. _____
Type of Rig _____
(See Abbreviation List attached)

Location of Hole
- Sheet 2 of 2

Tract Sun Ridge Co.
Date _____
Logged by _____
Noted by _____

STUDES	Log Orientation	ENGINEERING GEOLOGY DESCRIPTION	PHYSICAL CONDITION
	40		
		Rt.	
		SD: Blue-grn. silty, mica.	Soft-Firm Wet ?
	45		
	50		
Hard		52'5"	
El 13'		SILT: Black, fn. gr., sandy	Hard-Stiff Moist
	55	TD: 55'	

GEOLOGIC ABBREVIATIONS FOR SEAL COVE - MOSS BEACH

a.a. -- as above

a.b. -- as below

abdt. -- abundant

accum. -- accumulation

ag. -- aggregate

altd. -- altered

alter. -- alternating

ang. -- angular

approx. -- approximate

argil -- argillaceous

ark. -- arkosic

assoc. -- associated

att. -- attitude

avg. -- average

B -- bedding attitude

band. -- banded

bd., bdd. -- bed, bedded

bdg. -- bedding

bent. -- bentonite

bl. -- black

blks. -- blocks

blky. -- blocky

blue -- blue

breccia. -- brecciated

brit. -- brittle

brn. -- brown

brn.-gr., etc. -- brownish-gray

c -- common

calc. -- calcareous

carb. -- carbonaceous

cbl. -- cobble

cg. -- conglomerate

cgatic. -- conglomeratic

clay -- clay

clst. -- claystone

cmt. -- cement

col. -- colluvium

comp. -- composition

conc. -- concretion

conch. -- conchoidal

consol. -- consolidated (soils term)

cont. -- continuous

contort. -- contorted

crm. -- cream

crmy. -- creamy

crs. -- coarse

cts. -- coatings

decr. -- decrease

Dia. -- diatomaceous

dia. -- diameter

diff. -- different, difference

diffus. -- diffused

discont. -- discontinuous

displ. -- displacement or displace

dist. or distrib. -- distributed

dk. -- dark

dkr. -- darker

dolo. -- dolomite

elev. -- elevation

evid. -- evidence

F -- fault attitude

F.C. -- fault contact

FeO -- iron oxide

ferr. -- ferruginous

fib. -- fibrous

fm. -- formation

fn. -- fine, finely

fn.gr. -- fine-grained

Forams. -- Foraminifera

fos. -- fossil

fossilif. -- fossiliferous

fract. -- fracture

fractd. -- fractured

frag. -- fragment

fragmtd. -- fragmented

friab. -- friable

fss. -- fissile

fstd. -- frosted

gen. -- generally

gr. -- granitic

grad. -- grading

Geologic Abbreviations - continued

gran. -- granular

grn. -- green

gvl. -- gravel

gvly. -- gravelly

gy. -- gray

gyp. -- gypsum

gypsif. -- gypsiferous

H_2O -- water

hd. -- hard

hi. -- high

horiz. -- horizontal

ig. -- igneous

incl. -- inclusion

incompt. -- incompetent

incr. -- increase

indis. -- indistinct

indur. -- indurated

intbd. -- interbedded

interst. -- interstices, interstitial

intmxd. -- intermixed

irreg. -- irregular

J -- joint

jtd. -- jointed

l. -- loose

lam. - laminated

len. -- lenses & lenticular

lig. -- lignite

limon. -- limonite

lin. -- lineation

lit. -- little

loc. -- local, locally

long --long

ls. -- limestone

lt. -- light

mag. -- magnitite

mass. -- massive

mat. -- material

mdst. -- mudstone

med. -- medium

met. -- metamorphic

mica. -- micaceous

ml. -- marl

Mn. -- manganese

MnO -- manganese oxide

mod. -- moderately

mot. -- mottled

mtx. -- matrix

mvmt. -- movement

nod. -- nodules

o. -- orange

occ. -- occasional

op. -- opaque

oppos. -- opposite

otc. -- outcrop

ox. -- oxidized

// -- parallel

p. -- poorly

pbl. -- pebble

pbly. -- pebbly

perm. -- permeable

pink -- pink

plag. -- plagioclase

plast. -- plastic

p/lith. -- poorly lithified

pocks. -- pockets

por. -- porous

pos. -- possible (or possibly)

predom. -- predominant

pt. -- part

purp. -- purple

pyr. -- pyrite

Qal. -- alluvium

qtz. -- quartz

qtzse. -- quartzose

qtzte. -- quartzite

R -- rupture

rand. -- random

rdd. - rounded

reg. -- regular

res. -- residue

resis. -- resistant

rk. -- rock

rnd. -- round

R.S. -- rupture surface

rt/f -- root fibers

rt/h -- root hairs

rt/t -- root tubules

S -- scarce

s/ -- some

sat. -- saturated

S.C. -- sample collected

scat. -- scattered

sd. -- sand

sdy. -- sandy

sec. -- secondary

sh. -- shale

shy. -- shaly

sil. -- siliceous

silt. -- silt

sl. -- slate

sl/ -- slightly

Sl.D. -- slide debris (spell out & capitalize where critical)

slicks. -- slickensides

st. -- siltstone

sort. -- sorted

sp. -- specimen

ss. -- sandstone

stk. or strk. -- streak

stn. -- stain

stng. -- staining

struct. -- structure

subang. -- subangular

sulf. -- sulphur

t/ -- the

Th-bd. -- thin-bedded

T.D. -- Total Depth

tex. -- texture

tk. -- thick

tub. -- tubular

tuff. -- tuffaceous

unconf. -- unconformable

undul. -- undulating

v/ -- very

var. -- variable

varicol. -- varicolored

vert. -- vertical

vug. -- vuggy

w. -- well

w/ -- with

W.lith. -- well lithified

w/o -- without

wea. -- weathering

wht. -- white

xl. -- crystal

xln. -- crystalline

yl. -- yellow

Notes: GEOLOGIC LOGS

1. ATTITUDES.

e.g., BN84W, d15S
d = dip

Type of attitude indicat by preceding letter

B = Bedding attitude
J = Joint attitude
F = Fault attitude
C = Contact attitude
R.S.= Rupture Surface

Representative attitudes are circled.

Generalized attitudes ar underlined.

2. PLASTIC CLAYS & SLIDE DEBRIS are shown in green.

3. RUPTURE SURFACES are shown in red.

4. DRILL HOLES are geologically logged by descent to total de unless otherwise noted on log.

APPENDIX B

William Cotton and Associates (1980)

William Cotton
and Associates

GEOTECHNICAL CONSULTANTS
314 Tait Avenue, Los Gatos, California 95030
(408) 354-5542

David C. Hale, Director
Planning Department
County of San Mateo
590 Hamilton Street
Redwood City, California 94063

August 5, 1980
G112-80

Dear Mr. Hale:

In accordance with our agreement with the County of San Mateo (#5500-80-426) dated July 14, 1980, the final geologic report is hereby submitted.

As a result of our work, the original Geologic Map of the Seal Cove area has been updated and a number of recommendations are presented herein in order to help strengthen the present land use policies that control development.

Our report is presented in two basic parts consisting of a Conclusions and Recommendations section followed by a Technical Report section. The technical report describes the geologic data and analysis that we used to support the final conclusions and recommendations.

It has been our pleasure to be of service to the County on this interesting project. If we can be of help in clarifying any aspect of this report, please do not hesitate to contact our office.

Sincerely yours,

WILLIAM COTTON AND ASSOCIATES

William R. Cotton
Engineering Geologist, CEG 882

bp

Attached report

CONCLUSIONS
AND
RECOMMENDATIONS

GEOLOGIC
ANALYSIS
OF THE
SEAL COVE AREA

COUNTY OF SAN MATEO

CALIFORNIA

August 1980

William Cotton and Associates

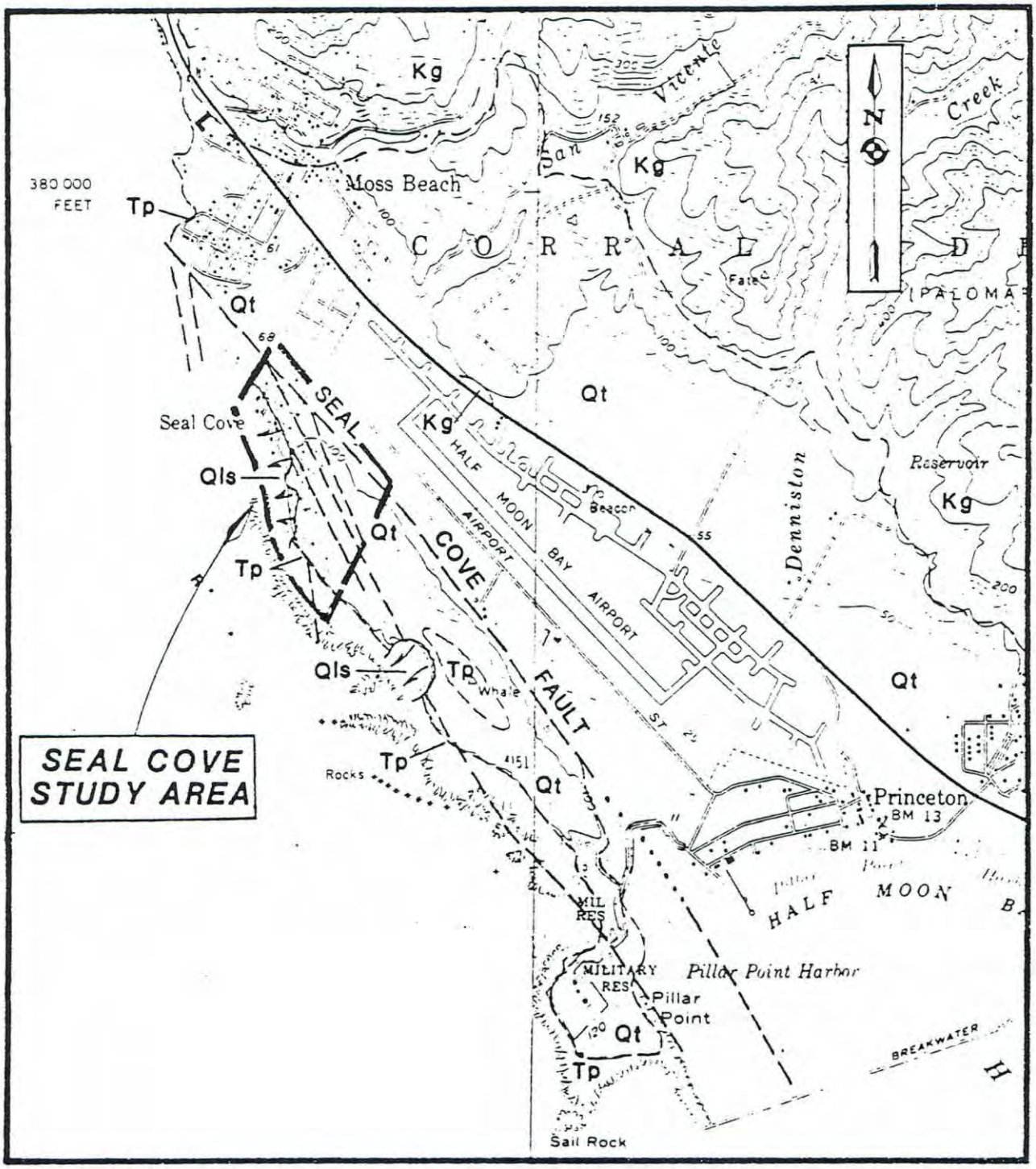


FIGURE 2. TOPOGRAPHIC AND GEOLOGIC INDEX MAP

SEAL COVE STUDY AREA
COUNTY OF SAN MATEO, CALIFORNIA
Scale 1 inch = 2,000 feet

Topographic base map, Montara Mountain and Half Moon Bay Quadrangles, 7.5 minute. U.S. Geological Survey

EXPLANATION

Earth Materials

SURFICIAL UNITS

Qls - Landslides

Rock slumps of surficial and bedrock material

Qt - Marine Terrace

Unconsolidated gravel, sand and silt

BEDROCK UNITS

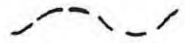
Tp - Purisima formation

Highly fractured siltstone, shale and sandstone

Kg - Montara Quartz Diorite

Coarse-grained quartz diorite

Map Symbols


Geologic Contact


Faults


Landslides

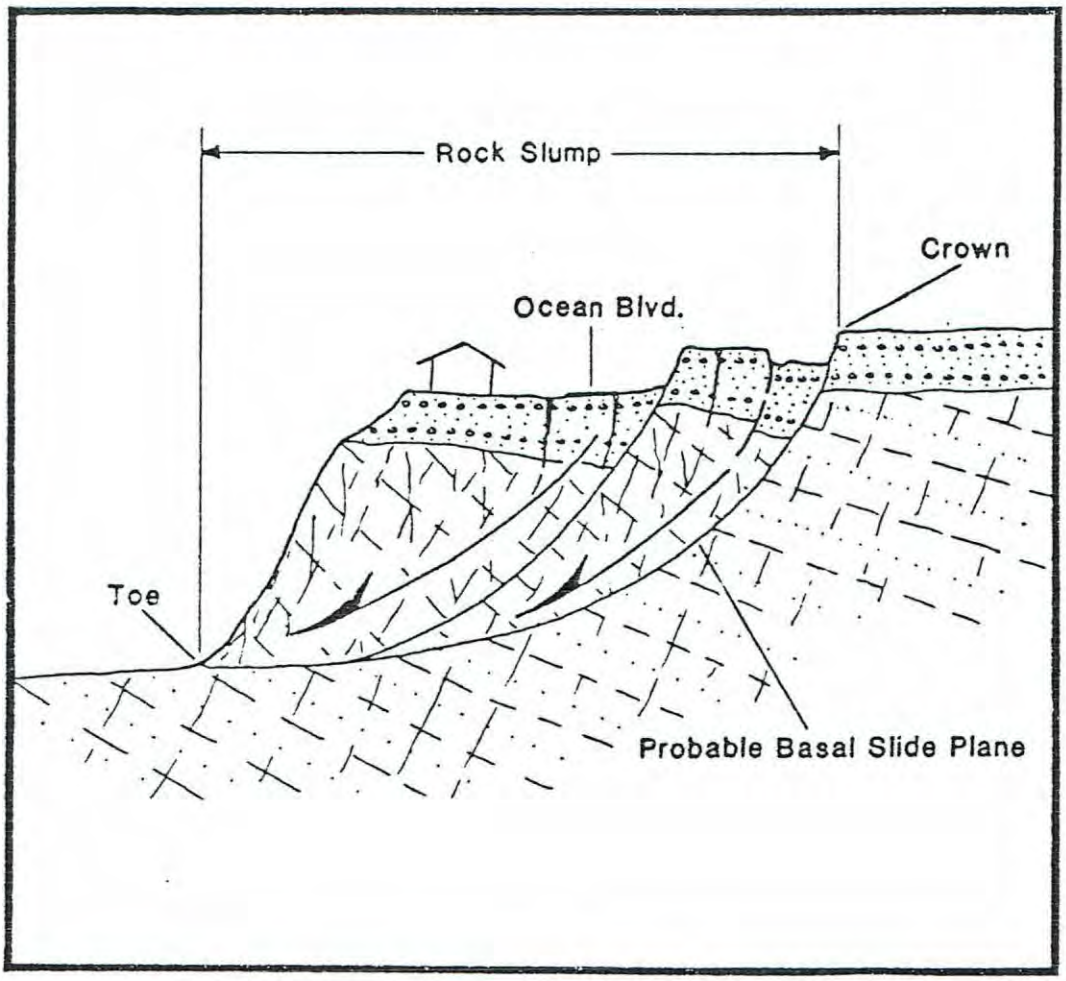


FIGURE 4 MODE OF ROCK SUMP FAILURE
SCHEMATIC CROSS SECTION

SEAL COVE STUDY AREA
COUNTY OF SAN MATEO, CALIFORNIA

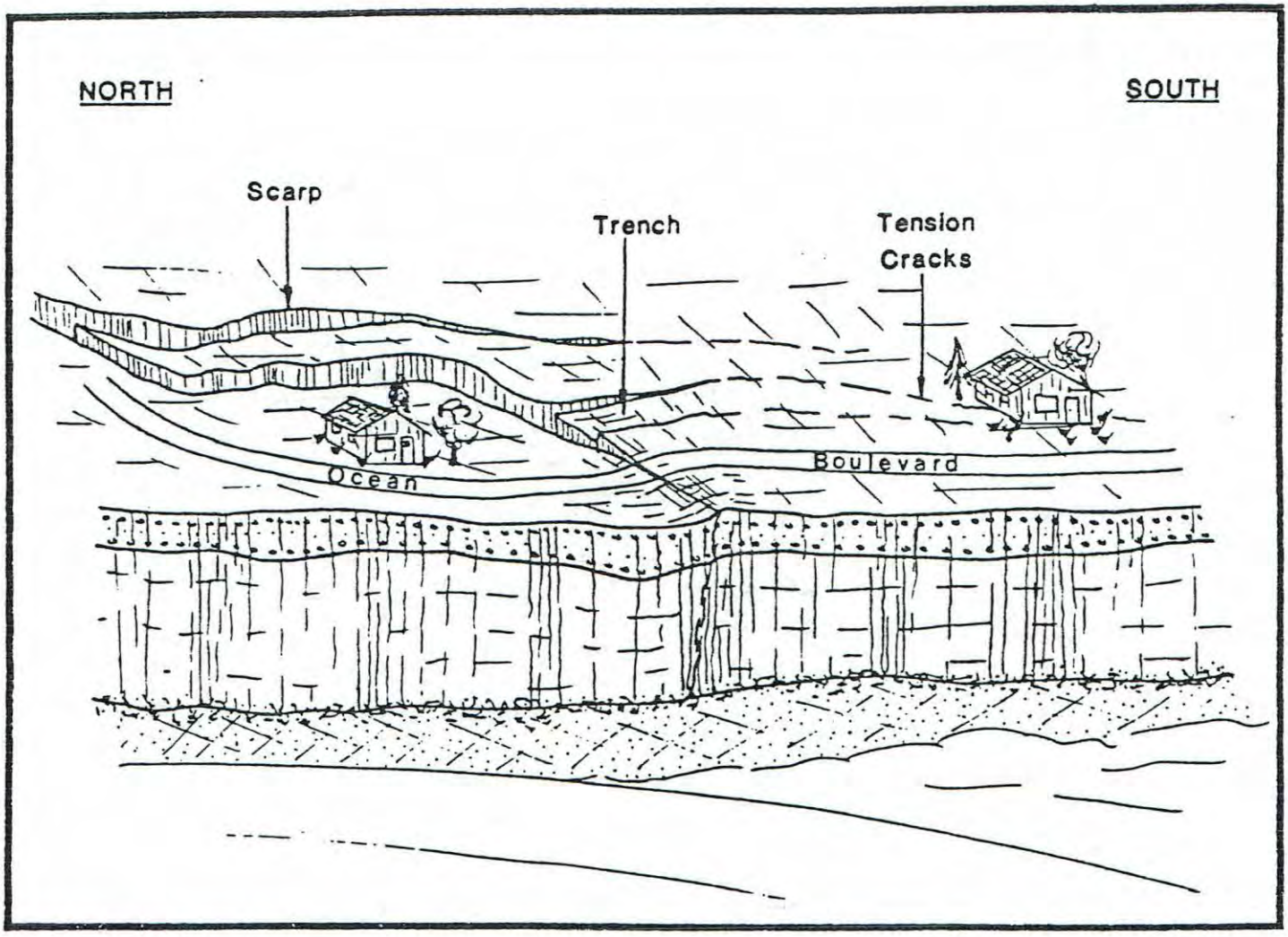


FIGURE 5 PROGRESSIVE NORTH TO SOUTH
FAILURE OF SEACLIFF REGION

SEAL COVE STUDY AREA
COUNTY OF SAN MATEO, CALIFORNIA

CONCLUSIONS

The Seal Cove study area is exposed to a variety of geologic hazards that severely affect future land use decisions. These conditions and the level of associated risk were well documented nearly a decade ago by a County-authorized geologic study conducted by Leighton and Associates (October 1971). The present study was designed to update the geologic information presented in the Leighton report and to reevaluate the residential development regulations.

The following geologic hazards are the principal geologic concerns of the Seal Cove area:

Landsliding - Deep-seated landslides presently are destroying extensive sections of the seacliff region which define the western edge of the study area. Approximately 17 homes have suffered some form of structural damage due to landslide activity. The inland extent of the active landsliding from the coastline ranges between 100 to 400 feet; however, the average distance is nearly 250 feet. The average rate of landslide movement is very slow, probably ranging between 1 and 3 inches per year. However, the probability of accelerated movements is considered high in many local areas within the presently failing landslide complex. This is especially true of the high seacliff area located west of Ocean Boulevard where rapid catastrophic failure is a clear possibility.

Faulting - The active Seal Cove fault and a number of branching fault traces pass through the study area. The main trace is confined to a 100-foot-wide zone located along the eastern margin of the study area. Although most of this zone lies outside of the study area, the branching fault traces pass through the main portion of the residential area. All of these faults are considered to be active, and thus, capable of generating earthquakes with associated ground shaking, surface faulting and ground failure.

Seacliff Erosion - The entire coastline area presently is experiencing severe erosion by wave activity. This erosion process causes the seacliff to become undercut at its base and locally unstable. The oversteepened face of the seacliff responds by shallow, piecemeal sloughing; however, natural stability is never achieved due to the constant erosional activity within the surf zone. The result is a systematic retreat of the seacliff by local episodic sloughing. The average rate of cliff retreat is approximately 3 to 4 feet per year in the Seal Cove area.

A number of additional geologic problems have been identified in the Seal Cove area; however, these are

relatively minor hazards when compared to those outlined above and can be significantly mitigated by design. These problems include potentially expansive soils, poor surface drainage and problems associated with shallow ground water.

RISK ANALYSIS

The development of sound public policy to deal with the geologic hazards of the Seal Cove area requires an answer to the question, "How safe is safe enough?" The information and anlysis presented in this report is an attempt to provide the necessary framework on which the appropriate County decisionmakers can judge acceptable levels of risk.

To properly assess the appropriate level of risk to the community, a number of important steps are essential. First, and probably most importantly, the presence of geologic hazards must be recognized. In the Seal Cove area, although the original subdivision was initiated in the early 1900's, the hazardous landslide and fault conditions were not recognized until nearly ten years ago. Consequently, many homes and streets were built on active landslides or astride active traces of the Seal Cove fault, and thus, have sustained considerable damage.

The second step in this process takes place after the geologic hazards have been recognized. This step requires detailed studies to determine the physical characteristics of the hazards. For the Seal Cove area, this was accomplished through the initial geologic study conducted by Leighton and Associates in 1971. They identified a large area of active landslides, and a number of fault traces associated with the Seal Cove fault. As an important part of their investigation, they provided a detailed description of the dimensions and level of activity of the landslides and faults.

Once the geologic hazards are recognized and carefully characterized, then the degree or level of risk associated with each hazard can be evaluated. In the Seal Cove area the present land use tends to limit the exposure of risk mainly to utilities, streets and houses; however, the potential for personal injury or loss of life is possible in local areas. The decision as to whether the various levels of risk are tolerable or intolerable to the public requires the input of the County decisionmakers. An important part of any risk analysis is the consideration of possible mitigating measures that could reduce the risk associated with each type of hazard. This kind of action is usually the product of the democratic process and depends as much on social, economic and environmental values as on geologic knowledge. There are a number of mitigating measures that may reduce risk to tolerable levels. For example, land use may be regulated to the degree that residential development is simply restricted from

hazardous areas, thus the hazard is avoided and the risk is essentially eliminated. This has been done in the Seal Cove area by prohibiting construction in active landslide areas, astride active fault traces and close to the edge of the seacliff.

Another method of reducing the risk is by attempting to reduce the impact of the hazard. This might include requirements for special foundations for residential structures, improved drainage facilities, flexible utilities and stronger construction techniques. No significant attempts have been made in the Seal Cove area to reduce the impact of landslide or fault hazards by design, and indeed, to attempt to do so does not seem reasonable. Likewise, attempts to reduce the risk associated with the landslides and faults by controlling these hazardous processes is impractical, if not impossible.

In summary, it is our opinion that the only practical means of reducing the risk associated with landslide and fault hazards is by prudent land use regulations. Any land use policy should balance the risk against the social, economic and environmental cost in order to determine the level of risk acceptable to the community.

RECOMMENDATIONS

The following recommendations are presented for consideration by the County in order to establish prudent land use policies within the Seal Cove area. We believe that the recommendations are consistent with the goals and objectives of the Seismic Safety Element of the General Plan, the original recommendations presented in the Leighton report, and the minimum standards for geotechnical reports which were adopted by the County in 1977. However, after careful review by the County these recommendations may be altered to reflect the final expression of the County perception of acceptable risk.

1) Critical Hazards Area - Due to the complexity of the hazardous geologic conditions in the Seal Cove area we recommend that the entire study area be designated as a "Critical Geotechnical Hazards Area." Such a designation would "red flag" the region as an area of high geologic hazards for which special or more detailed geologic and soil investigations (i.e. geotechnical) will be required prior to development. Additionally, such a designation would alert present and future landowners to the hazardous conditions and the potential higher than normal cost of development.

To protect the interest of the County, individual landowners, and local developers geologic and/or soil investigations of appropriate level should be required fo all lands within the study area. These investigations will normally exceed the minimum standards adopted by the County and will specifically address the primary geology and hazard of the site in question.

The feasibility of reducing the risks to acceptable levels in this zone is considered high. This can be accomplished by careful siting of homes away from active faults, using careful structural and foundation design and adequate surface drainage plans. However, it is possible that some residential parcels will be judged unbuildable due to high seismic hazards.

Development should be allowed in this zone on parcels found to be free of hazardous conditions by the required geotechnical investigations.

Required Geotechnical Investigation - Engineering geologic investigation by a certified engineering geologist and a soil and foundation engineering investigation by a registered civil engineer, or a combined equivalent of the above.

- Scope of engineering geologic investigation should address the seismic hazards related to the master and branching traces of the Seal Cove fault. Particular emphasis of the engineering geologic investigations should be placed on the evaluation of possible surface faulting. Investigative techniques within this area will require the use of subsurface trenching and possibly geophysical traverses unless clear evidence is established to show that no active fault crosses the parcel in questions.

- The soil and foundation engineering investigation should address, but not necessarily be confined to, the following item: site preparation and grading, surface drainage, and design parameters for residential foundations.

All of the geotechnical investigations should reference this report and the geologic data presented in the Leighton and Associates report of 1971 and the Seismic and Safety Elements of the General Plan of 1976. The geotechnical reports describing the results of these investigations should be reviewed by the County Geologist following the procedure that is currently in practice. The recommendations expressed in the soil and foundation engineering reports and/or the engineering geologic reports should become conditions of any development application.

2) Geotechnical Hazards Map - To facilitate the required geologic and/or soil investigations we have prepared a new hazard zonation map for the Seal Cove area. This map is a modification of the original map prepared by Leighton and Associates in 1971 and is based upon new landslide and fault information generated during the present study. The changes from the original zonation map include (1) combining hazard zone 3 and 4, and (2) moving the boundary of hazard zone 1 and 2 to the east. The geotechnical hazard zones have been compiled on the new 200-scale County base map which we believe is a more useful map because it superimposes property boundaries on an orthophotographic base.

The Geotechnical Hazards Map divides the Seal Cove area into three zones on the basis of similar geotechnical hazards or problems. Consequently, the terrain within each zone is considered to have similar potentials and constraints for development. In essence each zone reflects different levels of risk to man and structures.

The physical conditions and the associated risk of the three zones are described on the Geotechnical Hazards Map along with the various levels of geotechnical investigations required to evaluate the particular hazards in each zone. The following section describes the criteria for each hazard zone, defines the associated risk for development in each zone and defines the scope of reguired geotechnical investigations. It is recommended that the Geotechnical Hazards Map be officially adopted by the County as part of the final land use policy to guide future development in the Seal Cove study area.

ZONE 1 - Includes all lands located along the western seacliff that are affected by active landslide processes and accelerated seacliff erosion. The position of the erosion boundary of this zone is established by the easternmost extent of active landsliding plus a setback of 50 feet. The setback zone includes lands which lie outside or east of the active landslides but are expected to experience problems in the future (i.e. 50± years).

Risk Assessment - Risk to development in this zone is considered to be extremely high. It is reasonable to conclude that slow progressive landsliding and seacliff retreat will continue, resulting in structural and property damage. This is especially true for structures or utilities located astride active surface breaks. Rapid catastrophic slope failure of the high, steep portion of the seacliff located west of Ocean Boulevard is a clear probability. Such as event could involve the loss of life as well as significant property damage.

The feasibility of reducing the risk to acceptable levels is extremely low.

No additional development should be allowed in this zone.

ZONE 2 - Includes all lands within a 100-foot wide zone located immediately adjacent to the zone of active landsliding and accelerated seacliff erosion (i.e. Zone 1). The position of the eastern boundary of this zone is established by a 2:1 (i.e. 26± degrees) projection measured from the base of the high seacliff located west of Ocean Boulevard.

Risk Assessment - Risk to development in this zone is considered to be moderate to high. Eastward progression of active landsliding is difficult to predict with reliable accuracy.

The likelihood of eliminating the risk is very low, however it may be possible to significantly reduce the impact of the hazard by properly designed foundations.

No development should be allowed in this zone until stability is clearly demonstrated by the required geotechnical investigations.

Required Geotechnical Investigation - Engineering geologic investigation by a certified engineering geologist and a soil and foundation engineering investigation by a registered civil engineer, or a combined equivalent of the above.

- Scope of both investigations should be directed toward a detailed evaluation of the potential landslide hazards in this zone. In most cases, landslide studies will require extensive subsurface work in order to provide the necessary technical data to conduct a detailed slope stability analysis. The geotechnical analysis should provide acceptable factors of safety to clearly demonstrate stability before construction is allowed in this zone.

ZONE 3 - Includes all lands located outside of the areas affected by active or potential landslides.

Risk Assessment - Risk to development in this zone is considered to be low to moderate. The major geologic hazard in this zone is the threat of surface faulting along the master fault trace and several branching fault traces of the Seal Cove fault. These faults are active and capable of producing damaging surface faulting, strong ground shaking and ground failure.

The relative risk associated with poor surface drainage and potentially expansive soils is generally regarded as moderate to locally high.

APPENDIX C

Jean F. DeMouthe, CEG (2006)

GEOLOGIC SUMMARY OF CONDITIONS ALONG OCEAN BOULEVARD, MOSS BEACH

The County roads in the Seal Cove area have been affected in various ways over the years by the movement of the active coastal landslides in that area. The most recent movement has caused Ocean Boulevard, between Los Banos Avenue and Madrone Avenue, to become uneven and to tilt steeply toward the sea.

The movement under Ocean Boulevard appears to be a reactivation of a relatively small, older failure that is part of a much larger series of coalesced landslides that extend to the north and east of it.

The first of the two maps (map 1) that accompanies this report shows the most recent scarps and other landslide-related features in red. Older features, most of which still exist, are shown in black. The second map (map 2) shows the general outline of the landslides in relation to the existing roads.

The southern end of the recent activity appears to be near the intersection of Ocean Blvd and San Lucas Avenue. This view is from that intersection, looking northward.

The graben extends into the field to the right, where there are several discontinuous parallel linear depressions in the head scarp area.

The depression shown here is the graben along the top of the rotating slide mass. The picture was taken facing southward, and the white barrier is at the intersection of Ocean and San Lucas.

The small red abandoned house is in the grove of trees on the right.

The landslide mass is apparently rotating outward as it moves downward. This has caused a graben, or closed depression, to form along the head scarp.

The backscarp formed along the western edge of the graben persists for some distance along Ocean Blvd, gradually leveling out and reversing itself into a normal west-facing scarp.

Downhill of the verge, the scarp is difficult to follow due to the dense vegetation. There is no well-defined landslide toe anywhere in this area.

The road steepens abruptly as it approaches its intersection with La Grande Avenue. The house in the upper right of the previous photo is at that intersection.

There is a fresh west-facing scarp that runs through this over-steepened portion of the road, and through the vacant lot, just below the light blue house. This scarp shows fresh soil, but its precise extent is impossible to determine due to dense vegetation.

There is water flowing through this vacant lot, close to this scarp. The source of this flow was not determined.

At the top of the hill, the intersection of Ocean and Le Grande appears to be underlain by resistant material. The boundaries of both landslides, to the north and south of it, curve away to the west (toward the sea) in this area.

This picture shows Ocean Blvd. from La Grande looking south to San Lucas (see barrier in distance). The road is offset along the cracks by as much as 6" vertically. The angle of dip on the road is from 2 to 20 degrees west.

To the north of the Ocean/La Grande intersection, the road drops off sharply again along a steep scarp that crosses the road just downhill of the junction.

The scarp is visible as a dark wedge on the left of the photo, below the light blue house. The utility pole is one of about six that run along the west side of Ocean Blvd in this area. This is the pole that has been most affected by the movement of the slide. It is in the northern slide, near the scarp.

When this area is viewed from below, fresh scarps can be seen in several places, mostly directly below the road. This photo shows the swale immediately downhill of the worst of the recent movement. The leaning pole can be seen faintly in the upper left.

There is no evidence of fresh toe material anywhere in this vicinity on the beach. It appears that the active movement along Ocean Blvd. bottoms out on the natural bench that exists about half way down the slope.

Aerial photographs show that this area has moved many times in the past, mostly as small, local failures within the larger landslide mass that makes up much of the bluff area.

This is another photo showing the swale below the road, but looking slightly more northward than the previous one. The cement "steps" are in the middle at the base of the slope here, for reference. The benched form of the slope is evident, as is the lack of recent movement at the beach level.

There is a stream coming out at the base of the slope below the distressed portion of Ocean Blvd. On the east side of the road above, there is evidence of uncontrolled drainage coming through the vacant lot. This water may be a contributing factor in the recent movement.

There are several generations of riprap and cement cover in the two coves that lie below the area between Madrone Avenue and Cypress St to the north. There are the remains of cement "blankets" on the slope below both of the two remaining houses on the west side of Ocean Blvd. These are the little red house between San Lucas and Madrone (#3 on map 1), and the only occupied home, which is adjacent to the Distillery parking lot (#2 on map 1). The riprap is sparse in places and does not appear to provide much protection for the toe of the slope, particularly below the Distillery. The approximate extent of riprap is shown on map 1.

The left photo shows the small cove below the Distillery, which can be seen on the top of the bluff to the left. The picture on the right shows riprap on the beach near one of the houses that sits almost right on the beach. The exposed cliff on the right of the Distillery picture is visible in the distance on the right photo.

The picture on the left shows part of an old cement "blanket" that sits below the occupied house near the Distillery. It is broken, and the ocean has eroded the rock from behind it. The photo on the right shows the edge (just below the dark green bluff) of another partial blanket of cement that exists downhill of the Ocean Blvd. area that is failing.

There are other signs of continued and, in some places, accelerated landslide movement in the Seal Cove area. The slide that includes the Distillery restaurant, its parking lots, and several nearby homes, is very active and movement continues to cause cracking and deformation in pavement and structures. The head scarp for this slide crosses Beach Way at its intersection with Park Avenue, crosses diagonally through a house, a vacant lot, and across Los Banos Ave. It forms a steep scarp through the vacant lot and immediately downhill of the house on the northeast corner of La Grande and Ocean. This is the same scarp shown in a previous photo (with the leaning utility pole).

CONCLUSIONS

Ocean Boulevard and an adjacent portion of Los Banos Avenue are currently impassable. These roads could be repaired by regrading and repaving. However, movement of the underlying landslides will probably continue, and will eventually destroy the roads again.

The current distress along the bluff road, from the Distillery south to Madrone Avenue, is caused by local movement within two separate landslides. The northern one is moving roughly northwest, with its head scarp curving out toward the sea at the intersection of Ocean Blvd. and La Grande Avenue. There appears to be a resistant mass of material beneath that intersection, which has deflected both of these slides. The southern failure, which is moving almost due west, extends from that intersection southward, with most of its movement concentrated in the area closest to its northern boundary, between La Grande and San Lucas Avenue. The southern limit of this landslide is not well-defined, although there are cracks and small bulges visible in the roads and other structures at least as far south as Madrone Avenue.

The most significant contributing factor to the current landslide movement is probably water, from surface drainage and rain during the very wet winter of 2005-2006. The uncontrolled drainage that exists through some properties along Ocean Boulevard, and landscape watering in this area will continue to be a problem, even if future rainy seasons are not as severe.

Landslide repair would probably involve the placement of buttress materials on the bench below the road and/or at the base of the coastal bluff slope. Even if this were accomplished below the two landslides identified here, further movement may occur in the surrounding, older landslide deposits. Because of the complex nature of the landslides in the Seal Cove area, any mitigation of small landslides in this area may later be affected by future movement within adjacent or inclusive failures. This is evidenced by the continued movement of the Distillery and its neighborhood, even though the base of the adjacent slope is protected by riprap.

RECOMMENDATIONS

The following recommendations are based on field reconnaissance, aerial photograph interpretation, and review of the pertinent published and unpublished literature.

1. Abandon those sections of Ocean Boulevard and Los Banos Avenue that are currently impassable. Make the barriers permanent, and discourage any traffic through this area, including by bicycle or foot.

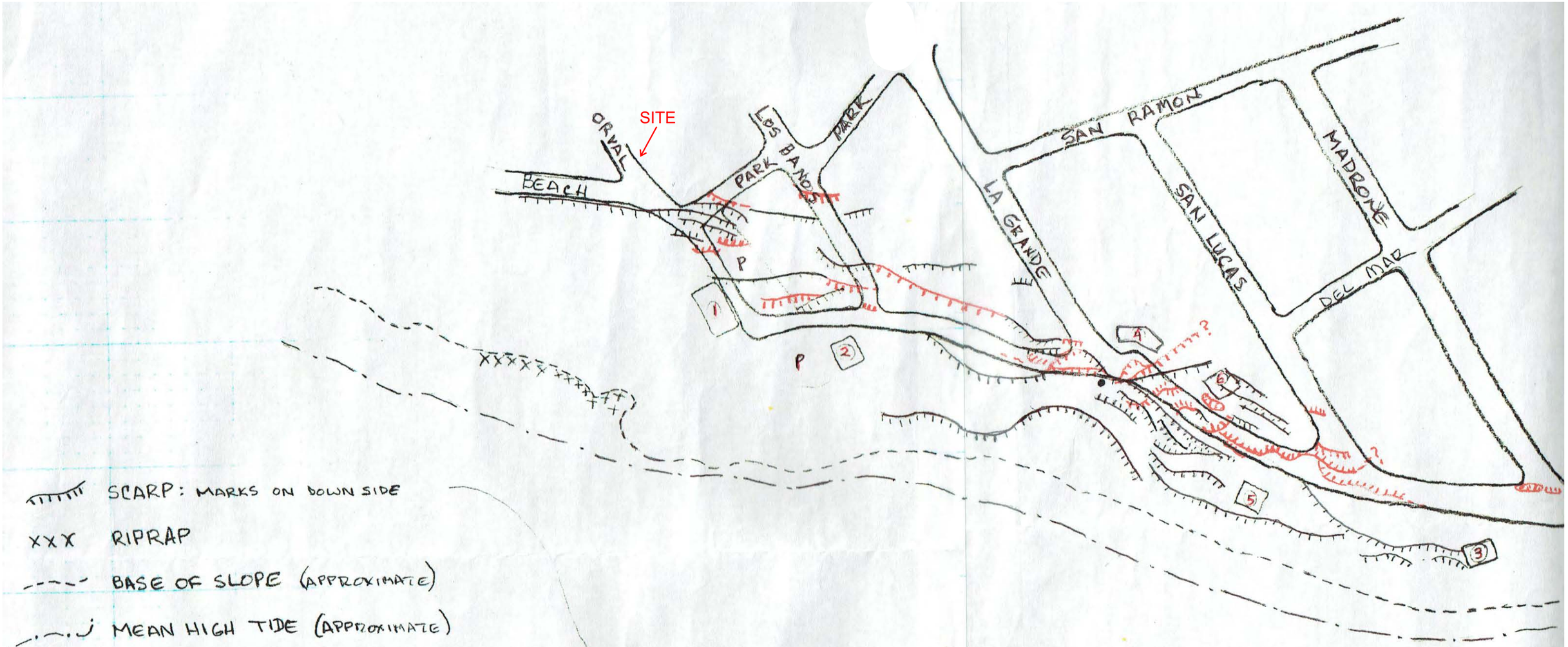
2. Remove paving and other structures, and regrade the slope into a natural form, with a positive grade toward the sea.

3. Revegetate the area with plants that are native to the area and that can survive with no care or additional water.

4. Require the utility companies responsible for the line of poles that are currently along the west side of Ocean Boulevard to relocate them to the east, outside the active landslide zone.

5. Provide control of drainage from the paved and developed portions of the Seal Cove area away from the two landslides. Failure to do this will probably result in continued movement in these areas, and possible headward migration of the scarps.

Respectfully submitted,
21 August 2006
Jean F. DeMouthe
Acting County Geologist



SCARP: MARKS ON DOWN SIDE

XXX RIPRAP

---- BASE OF SLOPE (APPROXIMATE)

.-.~.; MEAN HIGH TIDE (APPROXIMATE)

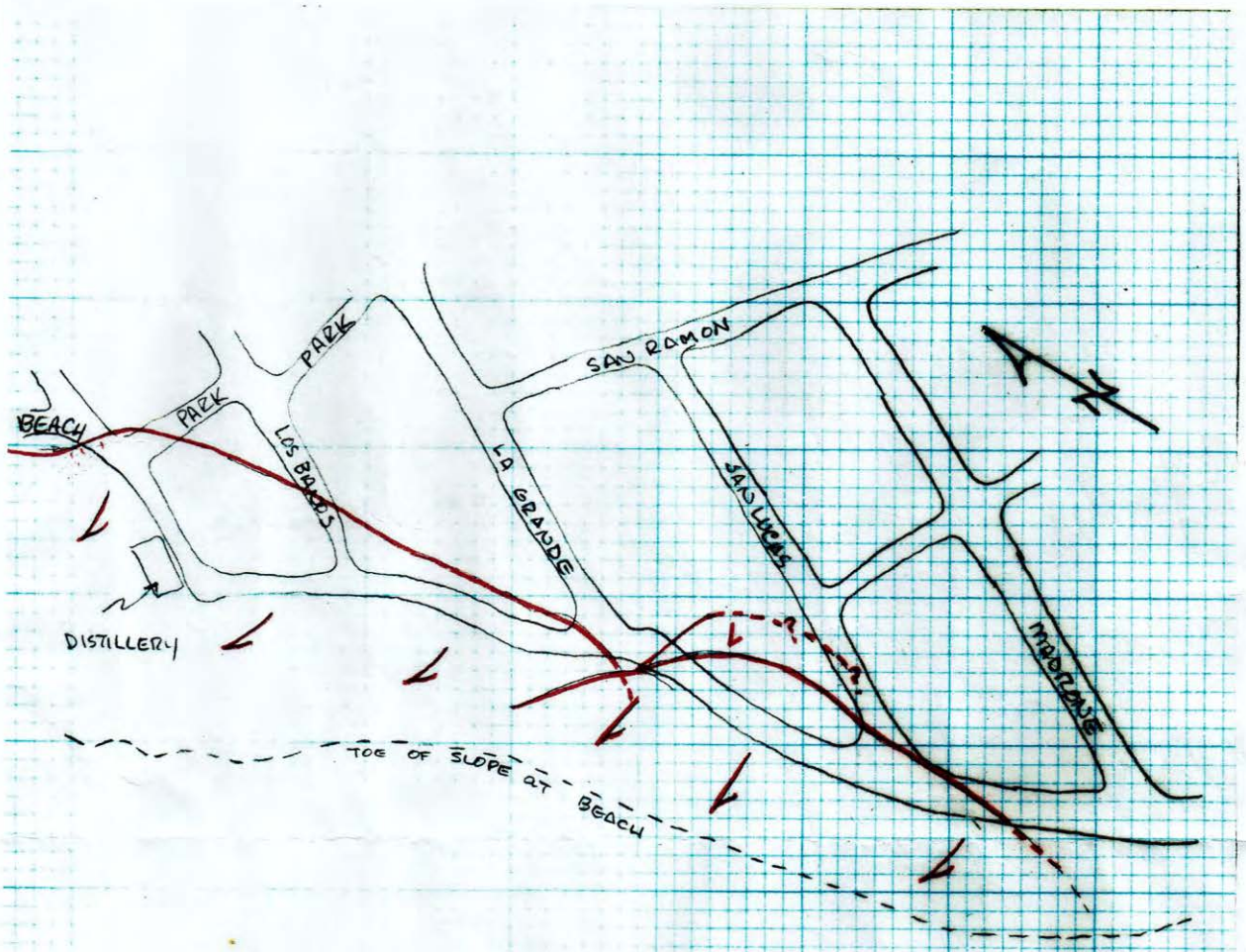
□ STRUCTURE OF INTEREST

1 DISTILLERY
2 OCCUPIED HOUSE WEST OF OCEAN
3 ABANDONED " " " "
4 LIGHT BLUE HOUSE
5 HOUSE REMOVED WEST OF OCEAN
6 HOUSE REMOVED (VOGEL)
P DISTILLERY PARKING LOT
• LEANING POLE

BLACK: FROM PREVIOUS MAPPING
RED: NEW (SINCE FALL 2005)

MAP 1
Landslide Features
Seal Cove, Moss Beach
by: Dr. Jean DeMouthe, PG, CEG

0 80 ft.
approx. Scale



MAP 2

GENERAL LOCATION
OF
ACTIVE LANDSLIDES

From Sean DeMartino
Rec'd 3/31/10

APPENDIX D

Cotton, Shires and Associates, Inc. (2016)

COTTON, SHIRES AND ASSOCIATES, INC.
CONSULTING ENGINEERS AND GEOLOGISTS

November 28, 2016
G3335D

Ms. Beverly Anolin
140 Beach Way
Moss Beach, California 94038

SUBJECT: **Landslide Monitoring Program - 2016 Report**
RE: Moss Beach Distillery
San Mateo County, California

Dear Ms. Anolin:

In accordance with our proposal dated September 7, 2016, Cotton, Shires and Associates, Inc. (CSA) is providing you with this report and accompanying illustrations that represent the 2016 Annual Landslide Monitoring Report. The monitoring is a condition of the Moss Beach Distillery Use Permit required by the County of San Mateo. In this report, we describe the long term monitoring system that is installed and monitored at the site and summarize the results of our October 13, 2016 monitoring of survey monuments with respect to previous monitoring of survey monuments.

Monitoring System

The locations of the Moss Beach Distillery survey monuments are shown on Figure 1, Survey Monument and Displacement Map (attached). The survey procedure utilized for monitoring involved setting up a total station theodolite over the setup station SS-1, and back-sighting to County monument BS-1 located north of Figure 1 in the center of Los Banos Lane. This line of sight from SS-1 to BS-1 was assumed to have an azimuth of 0.0 degrees (i.e., was assumed to be oriented due north). The positions of three control points located off of the landslide were then surveyed to estimate the procedure precision for the system. These included CP-2 (located near the intersection of La Grand Avenue and Park Avenue), CP-3 and Array-1 (located above the landslide headscarp on Park Avenue). A previous control point, CP-1, is no longer visible as it is

now obscured by overgrown vegetation. Two points on the landslide, Array-2 (a nail embedded in Park Avenue) and Bldg-2 (a bolt located on the northeast wall of the Moss Beach Distillery building,), were then surveyed to measure the movement of the landslide. Two monuments that had previously been used to monitor displacement of the landslide could not be surveyed. These included Slide 3, which had been removed and replaced with a new roadway sign and Bldg-1, which is no longer visible due to overgrown vegetation. In order to provide a rough measurement of the landslide movement, and to provide a check-survey, the distances between Array-1 and Array-2 were then measured using a fiberglass measuring tape.

After all of the survey monuments were surveyed, the theodolite was reset over SS-1, and the process was repeated two more times, for a total of three survey measurements of each monument.

Survey Results

The averages of the three readings for the positions of each monument were compared to previous average readings, and the results are tabulated in Table 1, attached. The total horizontal displacements and directions of displacement of these monuments from the initial positions are shown as vectors on Figure 1. The monuments located off of the landslide (CP-2, CP-3 and Array-1) indicate that the survey precision is approximately ±0.5 inch (see Figure 1 and Table 1).

As expected, the monument located on the building (Bldg-2) continued to move toward the ocean (see Figure 1), although at a much slower rate than has been observed in the past. The other monument located on the landslide (Array-2) also continues to move toward the ocean, although at a slower rate than Bldg-2. The tape measurement confirmed this movement during the past year, showing displacements towards the ocean of 1.2 inches (Array-1 to Array-2) during the last monitoring period. The survey and tape measurements indicate that the total landslide displacement was approximately 3.3 inches since our previous monitoring visit, in the area of the building, and 1.2 inches in the upper portion of the landslide where the Array-2 monument is located. Since we began surveying the building in 1997, the total horizontal displacement of the building has been approximately 43.1 inches. To compare this year's movement to previous years, the movement measured at survey point Bldg-2 and rainfall have been plotted versus time on Figure 2 (attached). The average horizontal and vertical building movement rates from 2014 to 2016 are 1.4 and -0.9 inch per year, respectively (see Table 1). These annual movement rates are lower than the estimated average long term horizontal and vertical building movement rates of 2.7 and 1.6 inches per year, respectively, as shown on Figure 2. These lower movements are likely the result of relatively lower rainfall amounts over the past year.

Conclusions

The active landslide under the Moss Beach Distillery continued to move slowly over the past two years, and displaced on average approximately 1.4 inches per year in the horizontal direction, and 0.9 inch per year in the vertical direction (downward). These short term rates are below the average historical movement rates based on previous surveys and the overall displacement is below the historical trend. On the basis of this new survey and the record of historical landslide behavior, we continue to consider the potential for sudden failure of the landslide to be low. We recommend that monitoring of the landslide continue on an annual basis.

Limitations

Our services consist of professional opinions and recommendations made in accordance with generally accepted engineering geology and geotechnical engineering principles and practices. No warranty, expressed or implied, or merchantability of fitness, is made or intended in connection with our work, by the proposal for consulting or other services, or by the furnishing of oral or written reports or findings.

We appreciate the opportunity to have been of service to you. If you have any questions regarding this letter, please call.

Very truly yours,

COTTON, SHIRES AND ASSOCIATES, INC.

Dale R. Marcum
Principal Geologic Engineer
RCE 65837

M. Joseph Durdella
Supervising Engineering Geologist
CEG 2531

DRM:MJD:st

Attachments: Table 1, Figures 1 and 2

cc: Ms. Jean Demouthe, San Mateo County Geologist

TABLE 1

Survey Results

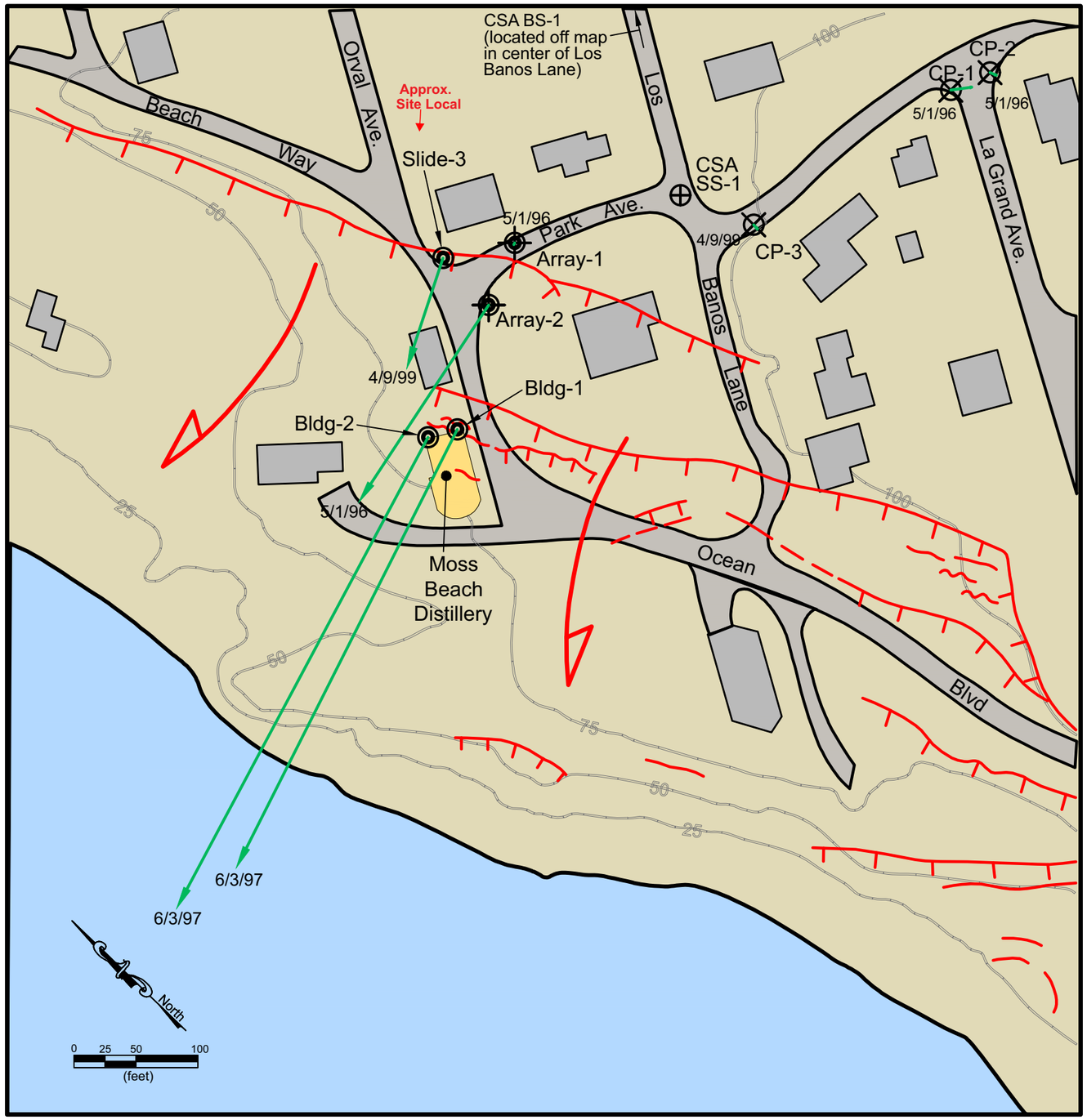
Monument	2014-2016 Displacement			2014-2016 Rate			Baseline Reading to 2016 Vectors			Baseline Reading to 2016 Rate		
	Horiz. Disp. (inches)	Vert. Disp. (inches)	Total Disp. (inches)	Horiz. Rate (in./year)	Vert. Rate (in./year)	Total Rate (in./year)	Horiz. Disp. (inches)	Total Disp. (inches)	Azimuth From SS-1 to BS-1	Horz. Rate (in./Year)	Vert. Rate (in./Year)	Total Rate (in./year)
Off Landslide												
CP-1	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**
CP-2	0.1	0.0	0.1	0.0	0.0	0.0	0.5	0.5	132	0.0	0.0	0.0
CP-3	0.1	-0.1	0.2	0.1	0.0	0.1	0.5	0.6	166	0.0	0.0	0.0
Array-1	0.3	-0.1	0.3	0.1	-0.1	0.1	0.1	1.2	203	0.0	-0.1	0.1
On Landslide												
Array-2	1.2	-1.5	1.9	0.5	-0.7	0.8	19.1	26.4	232	0.9	-0.9	1.3
Slide-3	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**
Bldg-1	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**
Bldg-2	**3.3**	**-2.1**	**3.9**	**1.4**	**-0.9**	**1.7**	**43.1**	**50.5**	**227**	**2.2**	**-1.4**	**2.6**

Tape Measurements

Monuments	2014-2016 Displacement Total Disp. (inches)	2014-2016 Rate Total Rate (in./year)	2000-2016 Rate Total Rate (in./year)
Array-1 to Array-2	1.2	0.5	1.0
Array-1 to Slide-3	**n/a**	**n/a**	**n/a**

Baseline Reading Dates	Monuments
1996	CP-1,CP-2, Array-2
1997	BLDG-1, BLDG-2
1999	CP-3, Slide-3

COTTON, SHIRES AND ASSOCIATES, INC.
CONSULTING ENGINEERS AND GEOLOGISTS



EXPLANATION

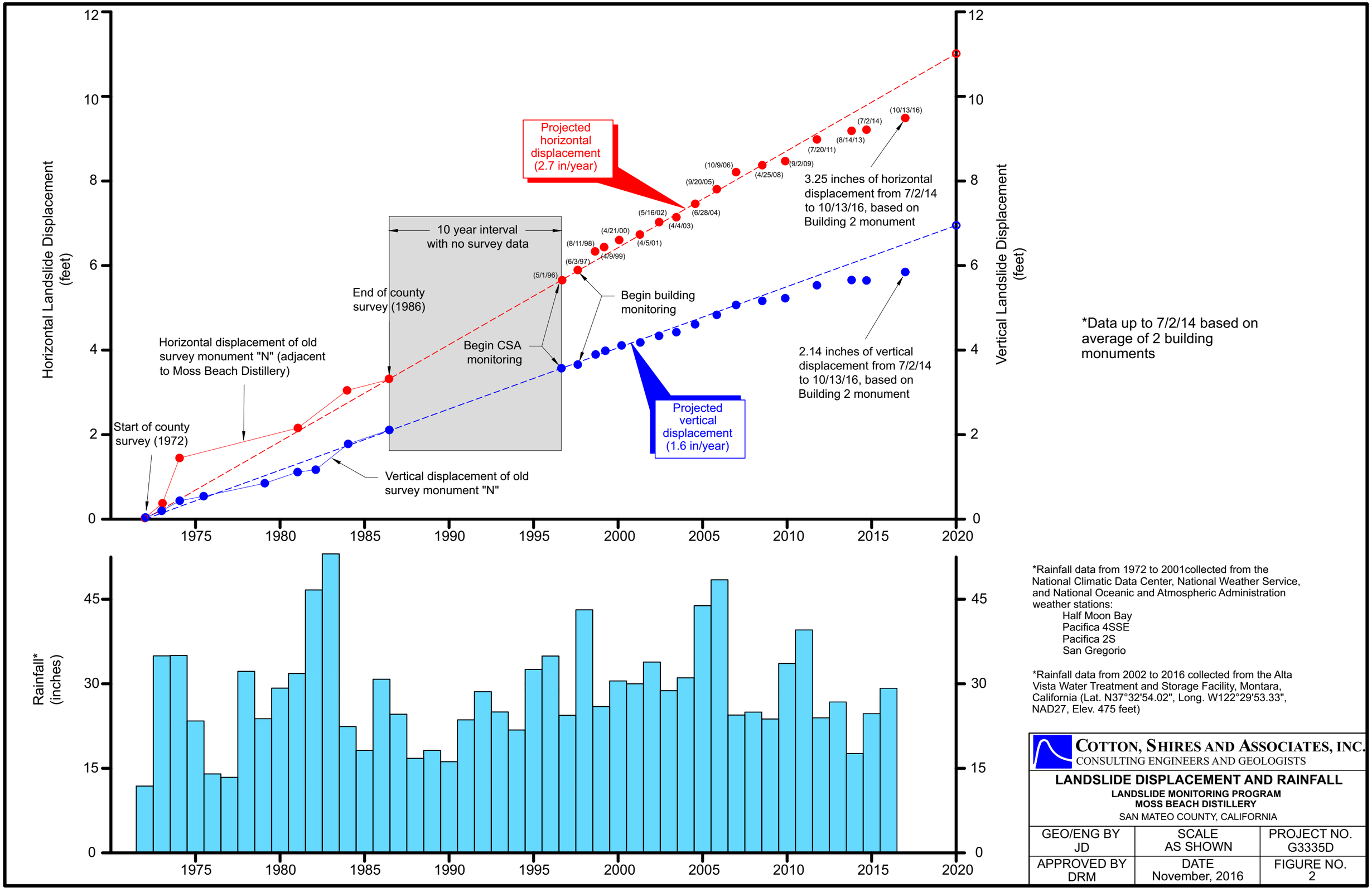
	Active landslide ground cracks (Leighton & Associates, 1971)
CSA SS-1	1996 set up station
Bldg-2	Landslide survey monuments installed on building in 1997 (threaded bolt)
Slide-3	Landslide survey monument installed on street sign in 1999
Array-2	Landslide nail array monuments installed in 1996
CP-3	Control point monuments CP-1 and CP-2 installed in 1996, CP-3 installed in 1999
4/9/99	Horizontal Displacement Vector from initial date (shown at vector head, 1 inch = 10 inches of horizontal displacement)
	Active landslide movement direction

Annotated to add approx. site location for this project.

COTTON, SHIRES AND ASSOCIATES, INC.
CONSULTING ENGINEERS AND GEOLOGISTS

SURVEY MONUMENT AND DISPLACEMENT MAP
LANDSLIDE MONITORING PROGRAM
MOSS BEACH DISTILLERY
SAN MATEO COUNTY, CALIFORNIA

GEO/ENG BY JD	SCALE 1"=100'	PROJECT NO. G3335D
APPROVED BY DRM	DATE November, 2016	FIGURE NO. 1



*Rainfall data from 1972 to 2001collected from the National Climatic Data Center, National Weather Service, and National Oceanic and Atmospheric Administration weather stations:

- Half Moon Bay
- Pacifica 4SSE
- Pacifica 2S
- San Gregorio

*Rainfall data from 2002 to 2016 collected from the Alta Vista Water Treatment and Storage Facility, Montara, California (Lat. N37°32'54.02", Long. W122°29'53.33", NAD27, Elev. 475 feet)

COTTON, SHIRES AND ASSOCIATES, INC.
CONSULTING ENGINEERS AND GEOLOGISTS

LANDSLIDE DISPLACEMENT AND RAINFALL

LANDSLIDE MONITORING PROGRAM
MOSS BEACH DISTILLERY
SAN MATEO COUNTY, CALIFORNIA

GEO/ENG BY JD	SCALE AS SHOWN	PROJECT NO. G3335D
APPROVED BY DRM	DATE November, 2016	FIGURE NO. 2

APPENDIX E

William Lettis and Associates (2005)

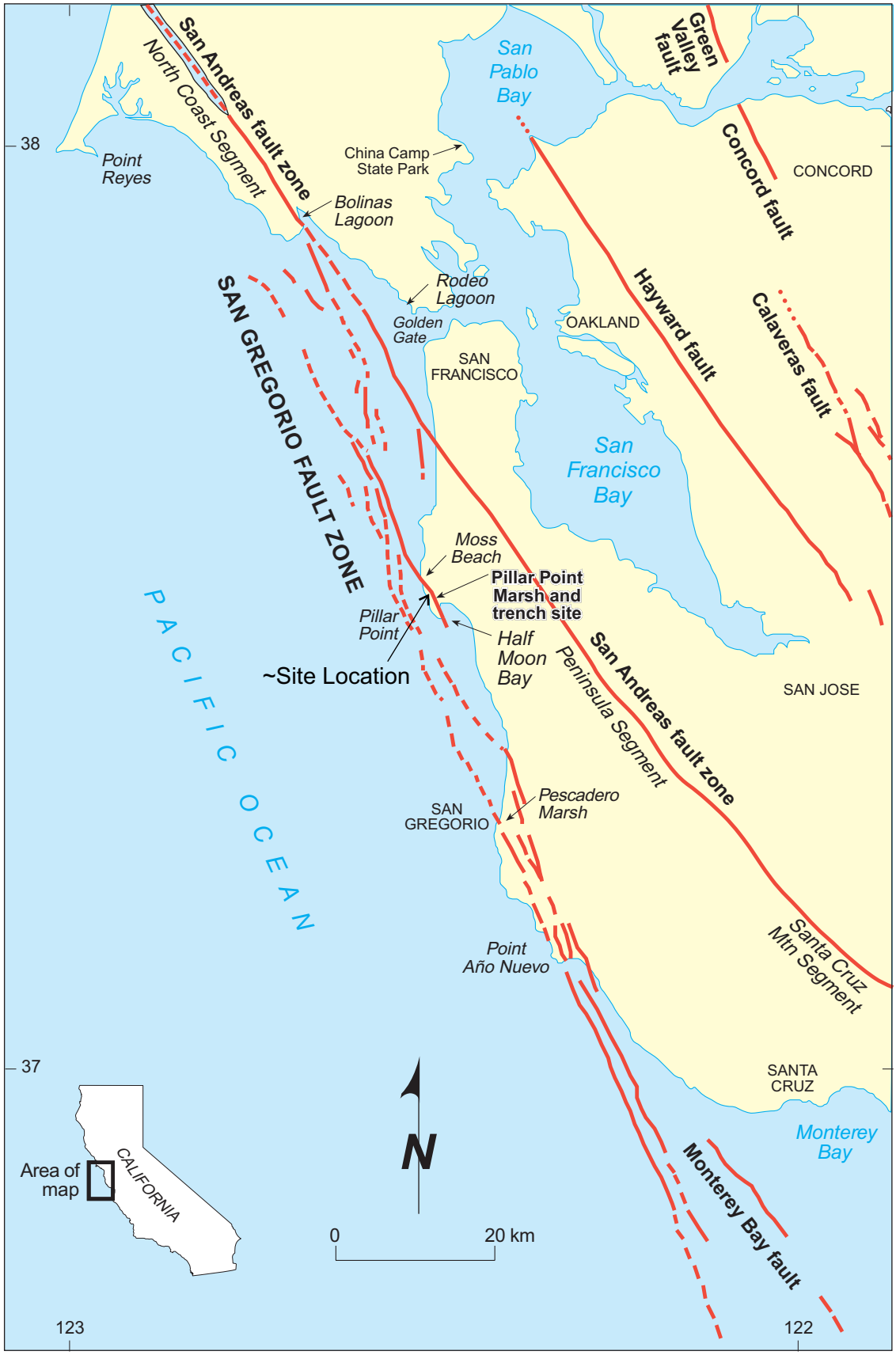
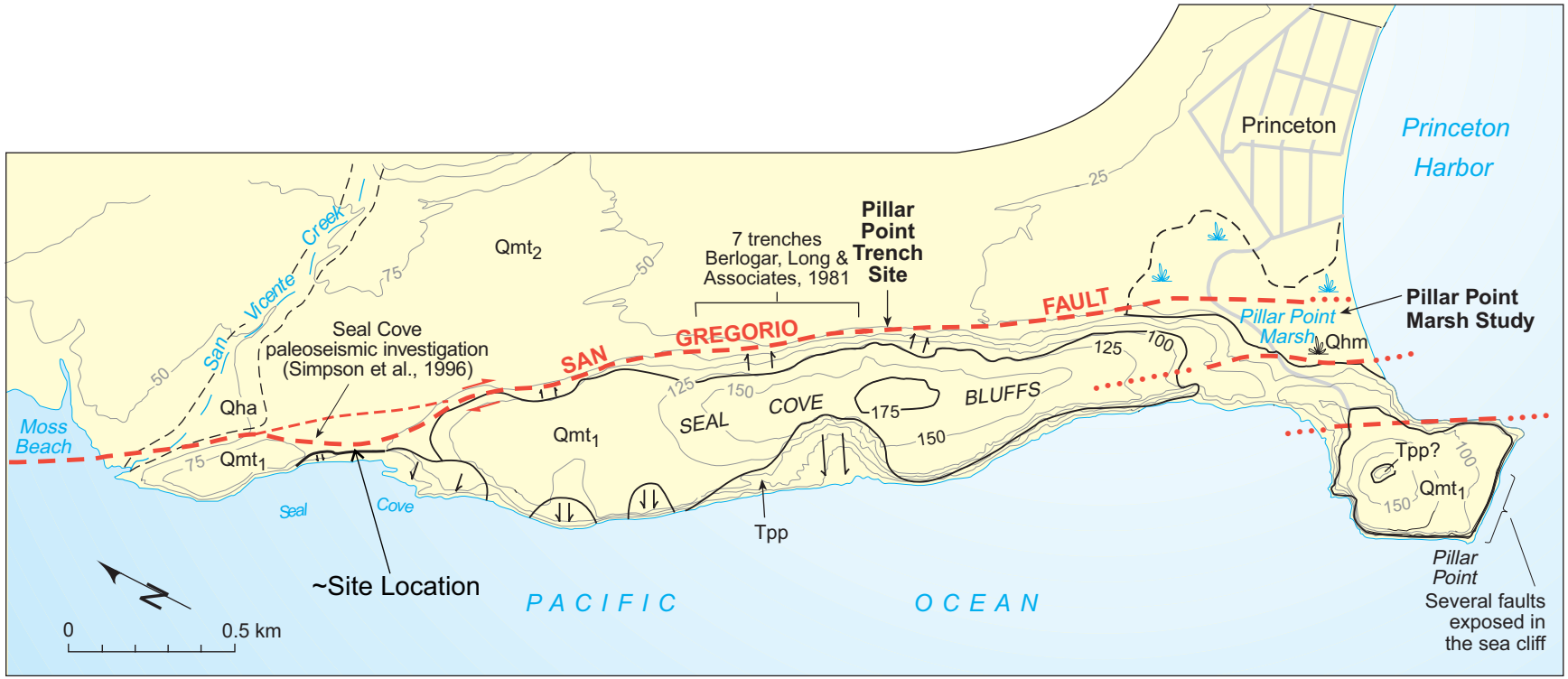


Figure 1. Map showing the San Gregorio fault zone and other principal Holocene faults in the San Francisco Bay area. Fault locations modified from Jennings (1994).



Explanation

Symbols

	Northern San Gregorio Fault (Seal Cove Fault)
	Previously mapped trace of San Gregorio Fault
	Geologic contact; dashed where approximate
	Landslide

Geologic Units

Qha	Holocene Alluvium
Qmt_2	Marine Terrace, 83,000 years old (Half Moon Bay Terrace)
Qmt_1	Marine Terrace, 100,000 to 125,000 years old (Seal Cove Bluffs Terrace)
Tpp	Purisima Formation

Figure 2. Site location map showing Pillar Point Marsh, Seal Cove Bluffs, and the Seal Cove reach of the northern San Gregorio.

APPENDIX F

Logs of Borings and Laboratory Test Results

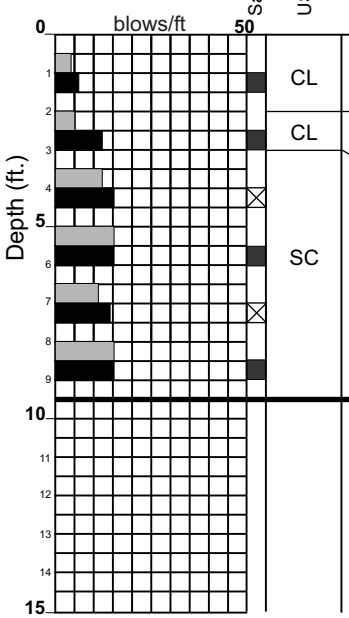
Plate A1 – Logs of Borings 1 & 2
Plate A2 – Key to Borings
Plate A3 – Plasticity Chart

BORING 1

Equipment Portable Equipment

Elevation ~89 ft. **Date** 01/23/18

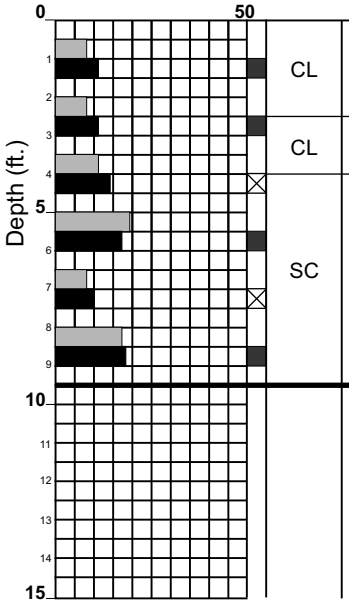
-200 Sieve (%)	Dry Density (pcf)	Moisture Content %	Blows/Foot (SPT)	Pocket Pen (tsf)	Torvane Pen (tsf)	USCS	Description
	91.2	22.6	10	1.50	0.35	CL	Black Sandy CLAY, damp, stiff (loose in upper 1' from tilling) (Fill/Topsoil)
	101.6	19.4	17	3.00	0.65	CL	Gray & strong brown mottled Sandy CLAY, damp, very stiff, very plastic (Residual Soil)
			27			SC	Gray & strong brown variegated Clayey fine- to medium-grained SAND with coarse sand-size decomposed feldspar clasts, medium dense to dense (Terrace Deposits)
	111.2	18.4	30				
			25				
	117.0	18.5	30				
							Terminated @ 9½'



BORING 2

Elevation ~85 ft. **Date** 01/23/18

-200 Sieve (%)	Dry Density (pcf)	Moisture Content %	Blows/Foot (SPT)	Pocket Pen (tsf)	Torvane Pen (tsf)	USCS	Description
	101.0	20.2	19	1.25	0.50	CL	Dark brown Sandy CLAY, damp, very stiff (loose in upper 1' from tilling) (Fill/Topsoil)
70	98.0	23.2	18	2.00	0.70	CL	Gray & strong brown mottled Sandy CLAY, damp, very stiff, very plastic (Residual Soil)
			25			SC	Gray & strong brown variegated Clayey fine- to medium-grained SAND with coarse sand-size decomposed feldspar clasts, medium dense to dense (Terrace Deposits)
	111.5	18.6	35				
			18				
	113.5	14.6	25				
							Terminated @ 9½'



Geosphere Consultants, Inc.
AN ETS COMPANY
Geotechnical Engineering • Engineering Geology
Environmental Management • Water Resources

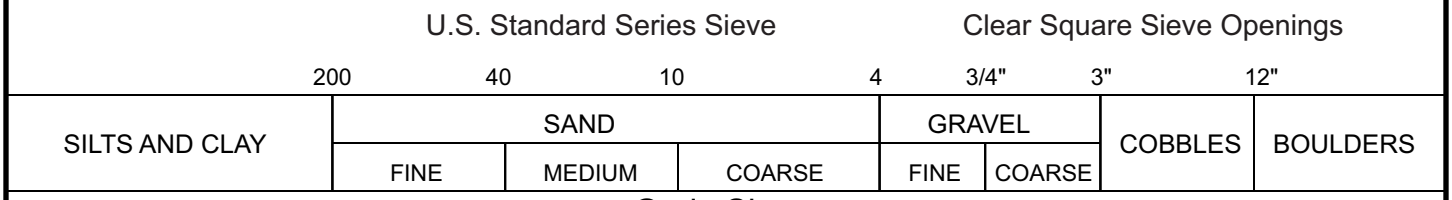
Job No.: 91-04233-A
Approved: JEB
Date: 02/07/18

LOGS OF BORINGS 1 & 2

APN 037 224 020; 0 Orval Avenue
Moss Beach, California

Plate
F1

			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	Orangic 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.
			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

SAND AND GRAVELS	BLOWS/FOOT*
VERY LOOSE	0 -4
LOOSE	4 -10
MEDIUM DENSE	10 - 30
DENSE	30 - 50
VERY DENSE	OVER 50

Relative Density

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

Consistency

* Number of blows of 140 pound hammer falling 30 inches to drive a split spoon, SPT sampler (ASTM D-1586)

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

Sample location

Grab sample

59 Total number of SPT blow counts for sampling interval. Bar graph represents individual 6-inch intervals for bottom 12 inches of 18-inch drive sample.

Unified Soil Classification System (ASTM D-2487)

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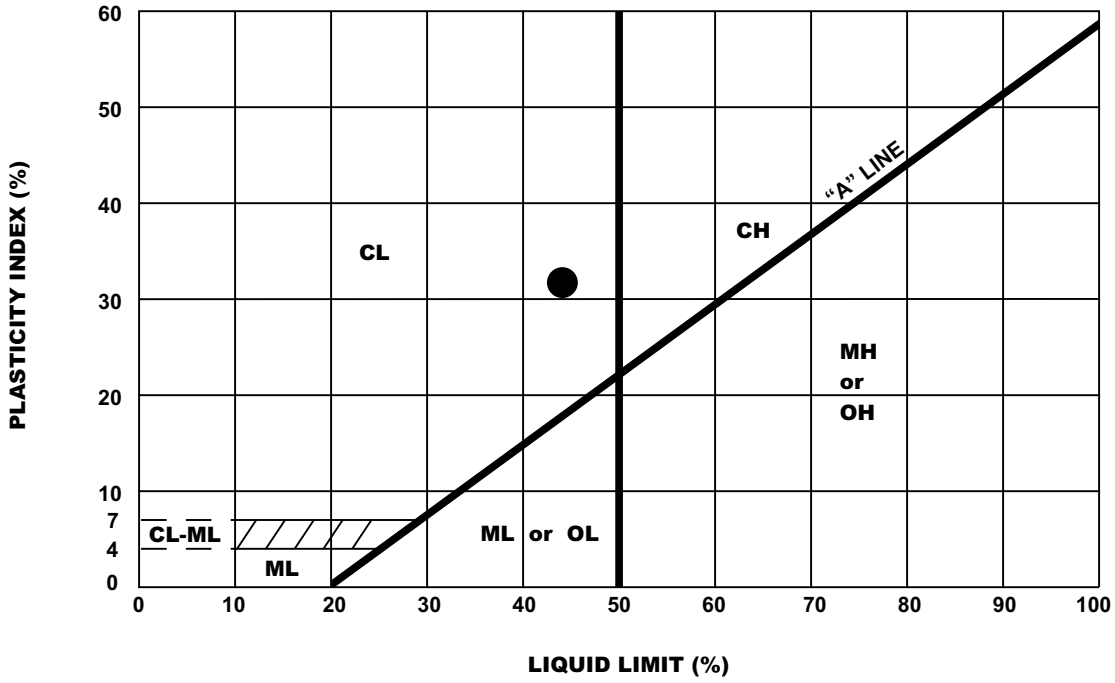
Approved: JEB
Date: 02/07/18

KEY TO BORINGS

APN 037 224 020; 0 Orval Avenue
Moss Beach, California

Plate
F2



KEY SYMBOL	BORING NO.	SAMPLE DEPTH (feet)	NATURAL WATER CONTENT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	PASSING NO. 200 SIEVE (%)	LIQUIDITY INDEX	USCS
●	B-2	3'	23	44	32	70	0.31	CL

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Environmental Management • Water Resources

Job No.: 91-04233-A
Approved: JEB
Date: 02/07/18

PLASTICITY CHART

APN 037 224 020; 0 Orval Avenue
Moss Beach, California

Plate
F3

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT E

June 15, 2020

CDRC HEARING FINDINGS

File No.: PLN2019-00229 Hearing Date: June 11, 2020
Location: 112 Orval Avenue, Moss Beach
Assessor's Parcel No.: 037-224-020
Owner/ Applicant: Anamaria Deac

STATUS: Recommended for approval (Chan, Kostiuk: vote 2-0) with conditions. The applicant was in attendance and presented the project. There were 3 public comments.

Description:

Consideration of a Design Review (DR) recommendation to allow the construction of a new 2,763 sq. ft. two-story single-family residence with an attached 474 sq. ft. garage on a legal (PLN2009-00250) 6,210 sq. ft. parcel, associated with a hearing-level Coastal Development Permit (CDP). The project does not involve tree removal and only minor grading. The CDRC will make a recommendation regarding the project's compliance with design review standards. A decision on the CDP and DR permit will take place at a public hearing after June 11, 2020. The CDP is appealable to the CA Coastal Commission. Application Deemed Complete on: May 6, 2020. Project Planner: Bryan Albini

Findings:

The project complies with the following:

Section 6565.20 (C) SITE PLANNING AND STRUCTURE PLACEMENT; Standard (2) Limit grading to the footprint of the structure and its immediate vicinity, unless otherwise required for technical or engineering reasons by a registered civil engineer, licensed architect or geotechnical consultant. The proposed 120 cu. yds. of earthwork associated with the project is limited to building site preparation and roadway improvements at the end of Orval Avenue.

Section 6565.20 (D) ELEMENTS OF DESIGN; 1. Building Mass, Shape and Scale; b. Neighborhood Scale. Standard (1) New and enlarged homes should respect the scale of the neighborhood through building dimensions, shape and form, façade articulation, or architectural details that appear proportional and complementary to other homes in the neighborhood. The traditional design of the proposed two-story residence is complimentary in color choice, material composition, along with scale and articulation to the surrounding homes on Orval Avenue and other adjacent homes.

Section 6565.20 (D) ELEMENTS OF DESIGN; 1. Building Mass, Shape and Scale.
a. Compatibility (1) Use non-reflective exterior materials and colors that complement and improve the neighborhood and are compatible with the architecture of the house. The proposed design of the house incorporates natural materials of dark stained wood shaker roofing, stack stone veneer, and natural stucco compliments the surrounding homes and natural setting.

Conditions:

1. Per combined setback requirements, show correct setback dimensions on plans and project data.

2. Eliminate retaining wall & steps on right side of house. Framed, freestanding landing and steps shall be located on the right side, rear descending to the back yard.

3. Proposed earth berm on right side of house shall be deleted.

4. Fence panels shall be shown as 6' high maximum, with wood framing and galvanized wire grid. Fence shall be planted with Star Jasmine per owner's proposal.

5. On the left side of the driveway, there shall no parking space. This area shall be furnished with planting consistent with the plant palette proposed.

6. Modify roof over Master Suite to replace gable end with hip roof. Reduce height of chimney.

7. Lower roof pitch from 6:12 to 5:12 on all roofs to reduce maximum height below 28 feet.

8. North elevation:
    a. Windows at stairwell on second floor: reduce width of right window by approximately 12" from the right, and left window by approximately 12" from the left. Reduce sill height of all (3) windows to align with windows in Living Room.
    b. Window at stairwell on First Floor: Reduce width of window to align with reduced width window, above.
    c. Windows in Living Room: Reduce width of both windows by approximately 12" on each side of both windows.

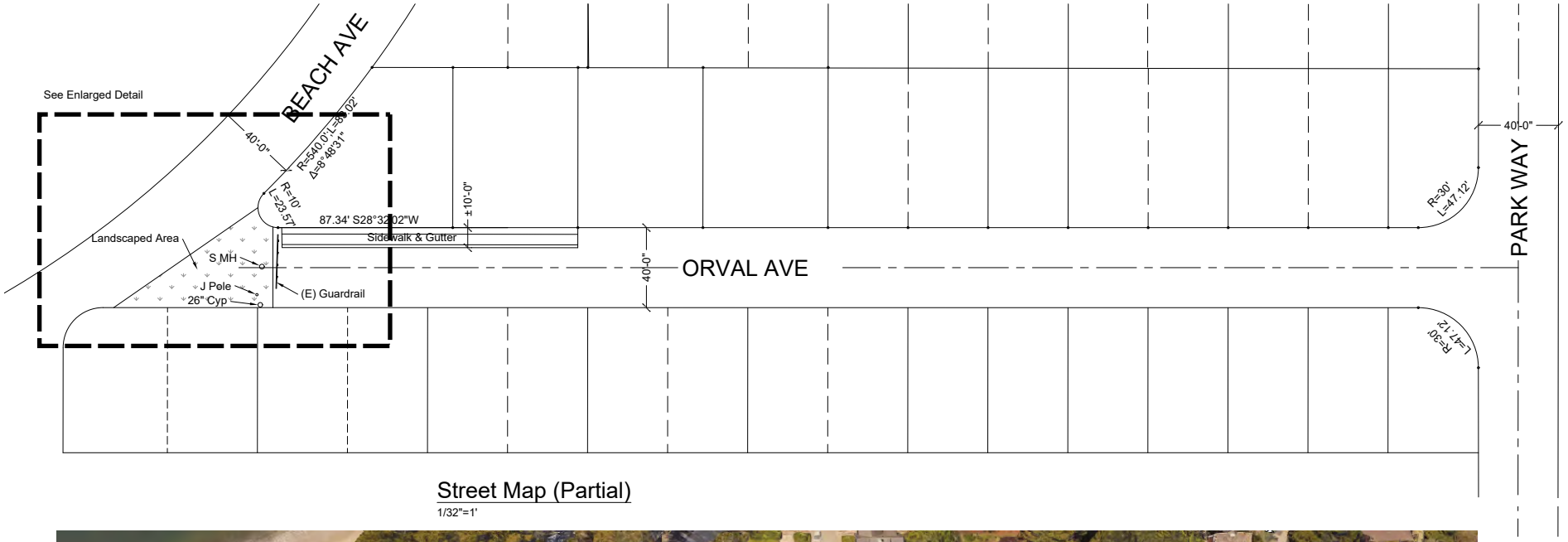
9. East Elevation:
    a. Extend vertical trim elements from second floor down to wall of garage.
    b. Add single hinged door at rear of garage to position door between vertical trim elements, close to center of wall.
    c. Add (2) windows in garage. Align head with head height of added garage door. Position left window left-side jamb with left-side jamb of window, above. Position right window symmetrically in the space created by the corner vertical trim and added vertical trim extended from above.

10. Provide dark sky compliant exterior lights. Limited to (1) light per exterior door, except at garage door on North elevation and Living Room door where (2) lights will be permitted for both doors.

END

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT F

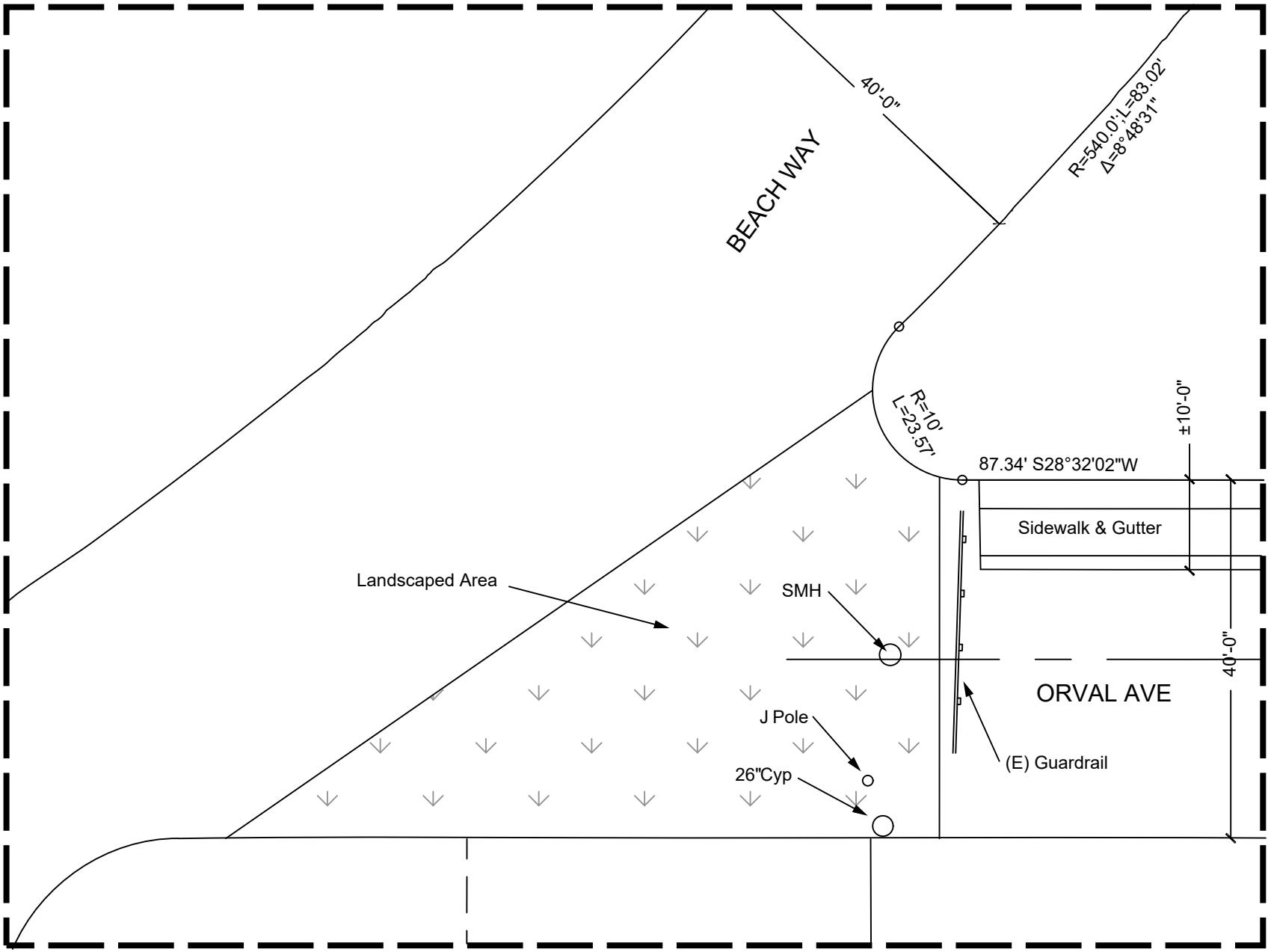


Street Map (Partial)

1/32"=1'

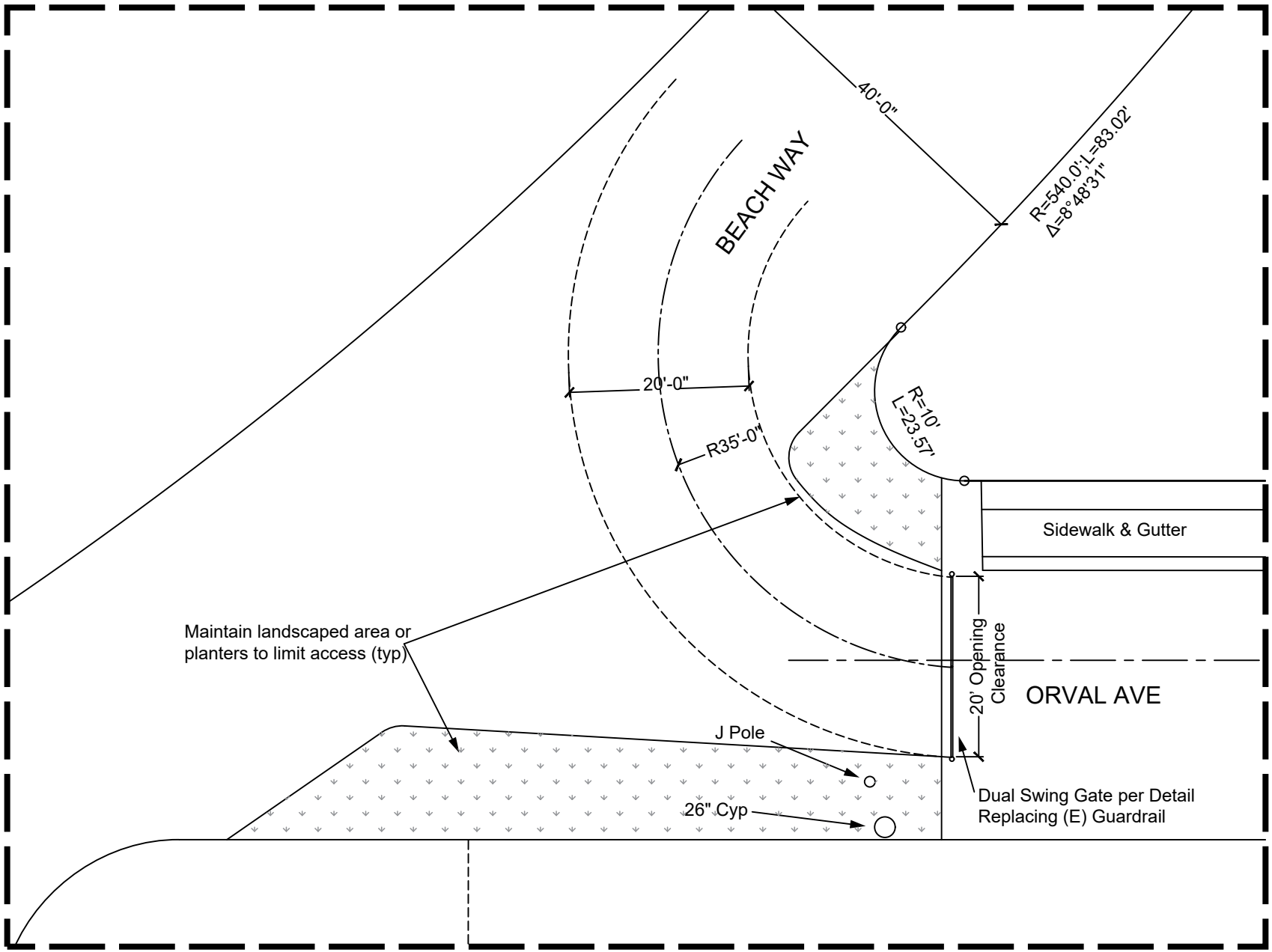
References:
Maps are based on
- Topographic Map, Turnose Land Surveying, 3/12/2009
- County of San Mateo Survey Record Vol 13 Pg 37 - McLeod an Associates, Dec 1990
- Map Book 6 Pg 69

The maps shown are a simplified representation of the above sources, and shall not be used for any other purpose.



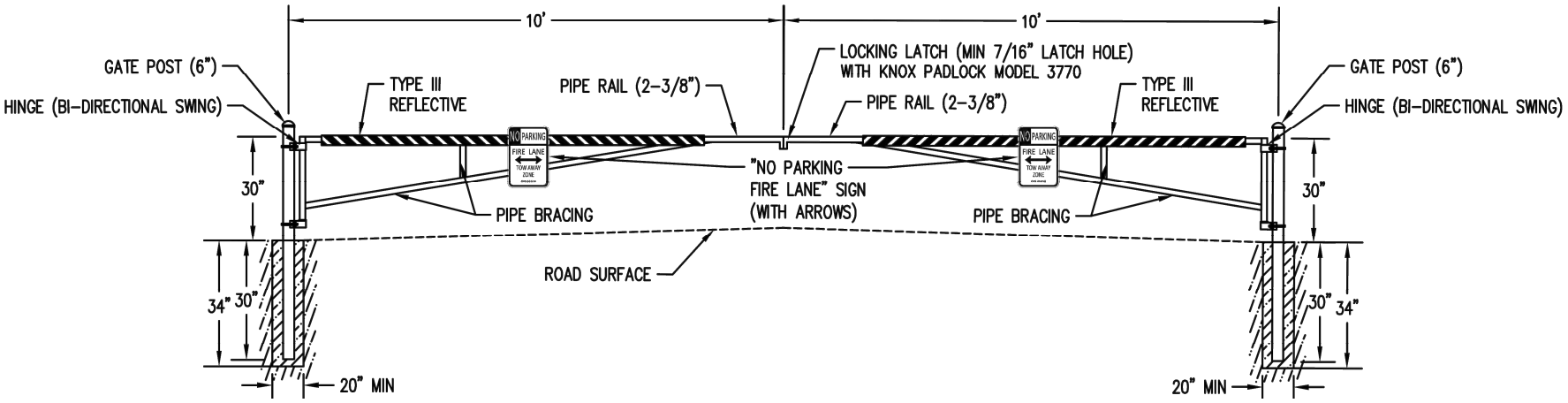
Existing Intersection Conditions

1/16"=1'



Proposed Gate Area & Turn Radius

1/16"=1'



Dual Swing Gate Detail

N.T.S.

Gate Notes:

- All materials shall be Sch 40 galvanized steel pipe
- Protective finish shall be Hot-Dipped Galvanized
- Concrete shall be 2500 psi
- Coordinate installation of KNOX padlock with San Mateo County Fire Department
- Install signs as shown or per County Fire Department request

General Notes:

- Remove existing guardrail and landscaping to provide a path as shown
- Install new pavement in cleared areas per San Mateo County Public Work standards.