COUNTY OF SAN MATEO
PLANNING AND BUILDING DEPARTMENT

DATE: August 5, 2021

TO: Zoning Hearing Officer

FROM: Planning Staff

SUBJECT: Consideration of a Grading Permit, pursuant to Section 9283 of the San Mateo County Grading Ordinance, to allow 1,370 cubic yards of grading associated with the construction of a new single-family residence, attached accessory dwelling unit, attached two-car garage, new landscaping, and the removal of nine trees. The project is located at 1330 Enchanted Way in the unincorporated San Mateo Highlands area of San Mateo County.

County File Number: PLN 2019-00423 (Panko/Qiu)

PROPOSAL

The applicant is seeking a grading permit to demolish an existing single-story, single-family residence with attached two-car garage to construct a new two-story, 3,144 sq. ft. single-family residence, attached 552 sq. ft. two-car garage, attached 542 sq. ft. accessory dwelling unit, 1,217 sq. ft. of decking, two 57 sq. ft. second-story balconies, a 4,030 sq. ft. unfinished basement, 956 sq. ft. rear yard terrace space, and 954 sq. ft. of new irrigated landscaping on a 21,474 sq. ft. legal parcel.

The project will require a total of 1,370 cubic yards (c.y.) of grading (1,240 c.y. of cut and 140 c.y. of fill) and the removal of six significant trees and three non-significant trees.

RECOMMENDATION

That the Zoning Hearing Officer approve the Grading Permit, County File Number PLN 2019-00423, by making the required findings and adopting the conditions of approval listed in Attachment A of this staff report.

BACKGROUND

Report Prepared By: Summer Burlison, Project Planner; 650/363-1815

Applicant: Stanley Panko, Panko Architects

Owner: Holly Qiu and Jerry Shen

Location: 1330 Enchanted Way, San Mateo Highlands

APN: 038-141-140

Size: 21,474 sq. ft.

Existing Zoning: R-1/S-8 (Single-Family/S-8 Combining District with a 7,500 sq. ft. minimum parcel size)

General Plan Designation: Medium-Low Density Residential

Sphere-of-Influence: City of San Mateo

Existing Land Use: Single-family residential development

Water Supply: California Water Service Company- San Mateo

Sewage Disposal: Crystal Springs County Sanitation District

Flood Zone: Zone X (Area of Minimal Flood Hazard); Community Panel No. 06081C0165E; effective date October 16, 2012.

Environmental Evaluation: Categorically exempt pursuant to Class 3, Section 15303, of the California Environmental Quality Act (CEQA) related to the construction of a single-family residence in an urban residentially zoned area.

Setting: The site is located on the west side of Enchanted Way and developed with an existing 2,474 sq. ft. single-story, single-family residence with attached two-car garage. The 21,474 sq. ft. property has a 25 percent average slope, and slopes east to west away from Enchanted Way toward Crystal Springs Road.

Chronology:

Date		Action
October 17, 2019	-	Application submitted.
December 5, 2019	-	Project deemed complete.
August 5, 2021	-	Zoning Hearing Office hearing.

DISCUSSION

A. KEY ISSUES

1. Conformance with the General Plan

a. Vegetative, Water, Fish, and Wildlife Resources

Policy 1.23 (*Regulate Development to Protect Vegetative, Water, Fish, and Wildlife Resources*), Policy 1.24 (*Regulate Location, Density, and Design of Development to Protect Water, Fish, and Wildlife Resources*) and Policy 1.25 (*Protect Vegetative Resources*) seek to regulate land use, density, design, and development activities to protect and mitigate to the maximum extent possible adverse impacts to vegetative, water, fish and wildlife resources, and minimize the removal of vegetative resources which enhance microclimates and stabilize slope.

The 21,474 sq. ft. project parcel is located in an urban residential area and is developed with an existing 2,474 sq. ft. single-story, single-family residence and attached two-car garage. Located within the unincorporated San Mateo Highlands area of San Mateo County, the property has a 25 percent average slope, and slopes east to west with the flattest portion of the parcel adjacent to Enchanted Way. Vegetation onsite is comprised of a mixture of non-native grasses and native and non-native tree species. No watercourses are present on or near the project parcel and a search of the California Natural Diversity Database (CNDDB) identified no State or Federal special-status plant or animal species within or adjacent to the project parcel.

Of the nineteen trees on site, nine trees are proposed for removal. Six are significant[1] trees and three are non-significant trees as outlined in the table below:

[1] A significant tree is defined as any woody plant with a single-stem or trunk with a circumference of 38 inches (12 inch diameter) or more as measured at 4.5 feet vertically above the ground (i.e. measured at diameter at breast height).

Table 1- Trees			
Tree No.	**Size (DBH)****	**Species**	**Tree Condition**
1*	24.1 ‘’	Bailey Acacia	Poor condition and health. Decay at base. Outside of grading work.
3	6 x 4’’	Bailey Acacia	Poor condition and health. Previously topped. Near proposed development.
5	9.2’’/4.9’’	Black Acacia	Poor condition and health. Previously topped. Not near proposed development.
6*	17.2’’	Willow	Poor condition and health. Previously topped. Near proposed development. Within footprint of grading.
7	10’’/8’’/8’’	Blue Gum	Poor condition and health. Previously topped. Outside of grading work.
13*	20’’	Monterey Pine	Very poor health and condition. Almost dead. Tree located on neighboring property and will require property owner authorization to remove.
17*	12.5’’	Pear	Fair health and condition. Near proposed development.
18*	18’’	Modesto Ash	Street tree. Poor condition and health. Proximity to overhead powerlines.
19*	14.3’’`	Sweet Gum	Street tree. Fair health and condition. Proximity to overhead powerlines.

* *Denotes significant sized tree.*

** *DBH (Diameter at Breast Height) refers to the trunk’s diameter measured at 4.5 feet above ground.*

A tree protection plan and arborist report prepared by certified arborist Robert Weatherill (WE#1936A) of Advanced Tree Care (Attachment D) was submitted with this application. The arborist report assessed the health of the trees and identified appropriate tree protection measures to ensure that construction activities will not adversely impact the surrounding trees onsite. Per the arborist report, the six significant trees proposed for removal are either of poor health or condition, within close proximity to the proposed development or overhead powerlines, or within the footprint of proposed grading activities. Similarly, the three non-significant trees proposed for removal are in poor health and condition and have been previously topped, which can lead to structural defects and decay. Though six significant and three non-significant trees are proposed for removal, the applicant has designed the project to minimize the removal of significant trees by placing the proposed residence in the footprint of the existing residence and scaling back the amount of proposed irrigated landscaping and hardscape. Tree protection recommendations from the arborist report, including the establishment of Tree Protection Zones (TPZs), hand demolition and hand digging within the driplines of significant trees, and the protection of roots 1-inch or larger, have been included as conditions of approval to ensure the health of the trees being retained on site.

Installation of the tree protection measures per the recommendations contained in the arborist report, the requirement for a tree protection pre-site inspection prior to construction to ensure that the proper tree protection measures have been installed correctly, the included condition requiring replacement plantings at a 1:1 ratio, and due to the fact that no special-status plant or animal species were identified on the project parcel, staff has determined that the proposed project will not result in a significant adverse impact to surrounding vegetative, water, fish or wildlife resources.

b. Soil Resources

Policy 2.17 (*Regulate Development to Minimize Soil Erosion and Sedimentation*) and Policy 2.23 (*Regulate Excavation, Grading, Filling, and Land Clearing Activities Against Soil Erosion*) seek to regulate excavation, grading, filling, and land clearing activities to protect against accelerated soil erosion and sedimentation.

The proposed construction of a new single-family residence, attached accessory dwelling unit (ADU), attached two-car garage, unfinished basement, rear deck, and patio space will require 1,370 c.y. of grading (1,240 c.y. of cut and 140 c.y. of fill). The majority of the proposed grading work is associated with the basement and construction of the

new residence while the reminder of grading activities on site are associated with the proposed landscaping and hardscape.

The applicant has provided an erosion and sediment control plan, prepared by BKF Engineers, that includes measures such as fiber rolls on slopes, a temporary stabilized construction entrance, inlet protection, and construction Best Management Practices (BMPs) to minimize the transport of sediment runoff from the immediate project area. Additionally, the applicant will also be required to implement dust control measures, such as covering haul trucks transporting soil or other lose material, watering exposed surfaces daily, and ensuring roadways are kept clean from mud and dirt tracks for the duration of the project to further reduce sedimentation. In addition, the project shall also be conditioned to prohibit[2] grading during the wet season (October 1 through April 30) to avoid the increased potential for soil erosion during rain events. Implementation of the proposed erosion control plan, adherence to construction BMPs and dust control measures, and a moratorium on grading during the wet season will ensure that the project will not result in accelerated soil erosion and/or sedimentation.

c. Visual Qualities

Policy 4.3 (*Protection of Vegetation*), 4.15 (*Appearance of New Development*), and Policy 4.36 (*Urban Area Design Concept*) seek to minimize the removal of visually significant trees and vegetation to accommodate structural development, regulate the appearance of new development by promoting good design, site relationships, and other aesthetic considerations, and ensure that new development is designed and constructed to contribute to the orderly and harmonious development of the locality.

The proposed project includes the removal of an existing single-family residence and attached two-car garage and the construction of a new single-family residence, attached ADU, and attached two-car garage. The new residence will be located on the flattest portion of the property and within the footprint of the exiting residence. As stated previously, a majority of proposed grading activities are associated with the construction of an unfinished basement, while relatively minor grading for site work is proposed. A majority of the unfinished basement will be subgrade with the rear wall and a portion of one side wall exposed to support a terraced rear deck and lower patio area.

[2] Grading activities may occur during the wet season if a formal Exception to the Winter Grading Moratorium is granted by the Community Development Director.

d. Water Supply and Wastewater

Policy 10.10 (*Water Suppliers in Urban Areas*) and Policy 11.5 (*Wastewater Management in Urban Areas*) consider water and sewage systems as the preferred methods of water supply and wastewater management in urban areas.

The proposed single-family residence and attached ADU will be served by California Water Service Company (Cal-Water) and the Crystal Springs County Sanitation District. Cal-Water and the Crystal Springs County Sanitation District have reviewed the proposal, determined that they are able to service the property, and have conditionally approved the project.

e. Geotechnical Hazards

Policy 15.20 (*Review Criteria for Locating Development in Geotechnical Hazards Areas*) and Policy 15.21 (*Requirements for Detailed Geotechnical Investigations*) seek to avoid locating structures in areas where they are jeopardized by geotechnical hazards, on steeply sloped areas unless structural design measures to ensure safety and reduce hazards are incorporated, and to require a geotechnical investigation for development located in a geotechnical hazard area.

The project parcel is located 1.2 miles from the San Andreas fault, within a landslide zone as identified and mapped by the County of San Mateo GIS and the California Department of Conservation. Due to its location, a geotechnical report prepared by Michelucci & Associates Inc. Geotechnical Consultants, dated August 21, 2020, was submitted with this application. The report noted that the project parcel is located in an area where mass grading and fill was preformed prior to the construction of the original subdivision. As verified by soil borings (three borings up to 32 feet deep), the existing residence is located in an area of manmade fill that is 28 feet to 31 feet deep with portions of the site ranging from well compacted to poorly compacted. This fill is susceptible to movement and differential settling and has resulted in foundational issues, movement, and cracking of the foundation for the existing residence.

To prevent the foundation issues present in the existing residence, the geotechnical report recommends that a pier foundation be utilized for the proposed new residence. This foundation would utilize 24-inch drilled piers 23 feet to 36 feet deep to ‘anchor’ the residence to the underlying bedrock. In addition, the report also notes that the construction of a basement or underfloor area could be utilized as a

method to minimize the lateral loads that the foundation piers would experience as the construction of the basement/underfloor area would remove several feet of the soil on site that is most prone to creep/movement. Provided that the recommendations contained within the geotechnical report are followed (i.e., utilizing a drilled pier foundation), the geotechnical report concludes that the project site is suitable for construction and can accommodate the proposed project. The plans and geotechnical report have also been reviewed and conditionally approved by the County Geotechnical Section.. In addition, any construction would be required to comply with all seismic design criteria of the current California Building Code. As the project incorporates a basement into its design and proposes to utilize the recommended pier foundation, appropriate structural design measures have been incorporated into the proposed project to ensure the safety of the future residence, and to reduce the hazardous conditions on site.

f. Fire Hazards

Policy 15.27 (*Appropriate Land Uses and Densities in Fire Hazard Areas*) and Policy 15.28 (*Review Criteria for Locating Development in Fire Hazard Areas*) seek to consider higher density land uses in urban areas if the development can be served by a Fire Department, and when located in a hazardous fire area require the review of the County Fire Warden to ensure that building materials, access, vegetative clearances, fire flows, and water supplies are in conformance with the General Plan and are adequate for fire protection purposes.

The project parcel is located in a Very High Fire Hazard Severity Zone, State Responsibility Area (SRA), and falls under the jurisdiction of the San Mateo County Fire Department. The replacement of an existing single-family residence with a new single-family residence would not increase the fire danger of the underlying area. The parcel is located in a designated urban area serviced by paved road infrastructure, is located 260 feet from the nearest fire hydrant, and will be required to have fire sprinklers installed (to comply with the Building Code). The property is served by an existing water district (Cal-Water) that can meet the flow and pressure standards needed in the event of a fire. San Mateo County Fire Department has reviewed the proposed project for compliance with the applicable fire code and has conditionally approved the project subject to the conditions of approval included in Attachment A of this staff report.

2. Conformance with the Zoning Regulations

The project parcel is located in the R-1/S-8 (Single-Family/S-8 Combining District) Zoning District. The proposed project complies with the development standards of the R-1/S-8 District as set forth by the County Zoning Regulations outlined in the table below:

Table 2- Development Standards		
	Required	**Proposed**
Minimum Lot Size	7,500 sq. ft.	21,474 sq. ft.
Minimum Lot Width	50 ft.	130 ft. (average)
Minimum Front and Yard Setbacks	20 ft.	20 ft.
Minimum Rear Yard Setback	20 ft.	109 ft.
Minimum Left Yard Setbacks	5 ft.	5 ft. 6 in.
Minimum Right Yard Setback	5 ft.	5 ft.
Maximum Building Height*	36 ft.	29 ft. 1 in.
Maximum Lot Coverage	40%	30.59%
Minimum Required Parking	2 parking spaces	2 parking spaces
* *Height in the S-8 District is measured as average height.*		

As height in the S-8 Zoning District is measured from average finished grade to average roofline, the proposed project will result in an average height of 29 feet, 1-inch where 36 feet is the maximum allowed. Situated in the flattest area of the parcel to reduce grading, the proposed residence adheres to the District minimum front, rear, and side yard setbacks, and in conjunction with the other proposed development (i.e., garage, ADU, and patio/terrace area) proposes an overall lot coverage of 30.59 percent (6,569 sq. ft.) where 40 percent (8,589 sq. ft.) is the maximum allowed lot coverage.

Parking

As required by Section 6117 (*Required Automobile Parking Spaces*) of the Zoning Regulations, the project must provide at least two covered parking spaces for the main residence. The proposed 552 sq. ft. garage will provide the required covered parking for the main residence and meets the minimum size requirements for a two-car garage. No covered or uncovered parking is required for the proposed 542 sq. ft. interior ADU per Section 6429.1 (*Development Standards for All Accessory Dwelling Units*) of the Zoning Regulations which states that ADUs that are a part of the primary residence shall not be required to provide any parking in addition to that already provided for the primary residence.

3. Conformance with the Grading Regulations

The following findings must be made in order to issue a Grading Permit. Staff's review of the proposed project is discussed below:

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

The grading plan for the proposed project has been prepared by a licensed civil engineer (BKF Engineers) and has been reviewed and preliminarily approved by the Department of Public Works, Building Inspection Section, and Drainage Section. The project site has also undergone a geotechnical study prepared by Michelucci & Associates Inc. Geotechnical Consultants, which has been reviewed and preliminarily approved by the County's Geotechnical Section for soil stability. The site-specific recommendations contained within the Michelucci & Associates geotechnical report along with the recommendations from the other reviewing agencies have been included as conditions of approval for the subject grading permit. Implementation of these conditions will prevent significant adverse impacts on the environment.

Furthermore, the project is consistent with the provisions of the Significant Tree Ordinance, the provisions of which must be applied as part of the grading permit approval process (Significant Tree Ordinance Section 12.020(e)). The proposed project design minimizes the removal of significant trees by placing the proposed residence in roughly the same location as the existing residence which is least impactful to the surrounding significant trees. To comply with the noticing requirements of the Significant Tree Ordinance, noticing of the proposed tree removal activities in the form of a site poster was posted on the subject property from July 26, 2021 to August 4, 2021. Noticing of the proposed grading permit in the form of a letter mailed to properties within a 300-foot radius of the project parcel also occurred ten days prior to the subject Zoning Hearing Officer hearing.

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

The project, as proposed and conditioned, conforms to the standards of the Grading Ordinance referenced in Section 9296, including those related to erosion and sediment control, grading, dust control plan, fire safety, timing restrictions of grading activity, and geotechnical reports. Erosion and sediment control measures will be inspected prior to construction commencing and must remain in place during grading,

demolition and construction activities. A dust control plan must be submitted for approval and implemented for the duration of construction. The proposed grading plan was prepared by a licensed civil engineer and reviewed for adequacy by the County's Drainage Section. As mentioned above, a geotechnical report was also prepared for this site and reviewed by the County's Geotechnical Section. Due to the County's Winter Grading Moratorium, grading is only permitted between May 1 and September 30. If the applicant wishes to perform grading activities during the wet season, they must apply for an exception from the Winter Grading Moratorium and will be subject to more stringent erosion control measures, monitoring, and inspections.

c. *That the project is consistent with the General Plan.*

The General Plan Designation for this site is Medium Low Density Residential. The demolition of an existing single-family residence and two-car garage and construction of a new single-family residence, two-car garage, ADU, and landscaping is consistent with the land use allowed by this General Plan designation. As discussed in the General Plan Compliance Section of this report (Section A.1), this project as conditioned complies will all applicable General Plan goals and policies.

B. ENVIRONMENTAL REVIEW

The project is categorically exempt from environmental review pursuant to the California Environmental Quality Act (CEQA) Guidelines Section 15303, Class 3(a) related to the construction of a single-family residence in an urban residentially zoned area.

C. REVIEWING AGENCIES

Building Inspection Section
Geotechnical Section
Drainage Section
Department of Public Works
California Water Service Company
Crystal Springs County Sanitation District
San Mateo County Fire Department

ATTACHMENTS

A. Recommended Findings and Conditions of Approval
B. Vicinity Map
C. Project Plans
D. Advanced Tree Care Arborist Report, dated October 14, 2020
E. Geotechnical Report, by Michelucci & Associates Inc. Geotechnical Consultants, dated August 21, 2020
F. Supplemental Memos to the Geotechnical Report, prepared by Michelucci & Associates Inc. Geotechnical Consultants

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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 2019-000423 Hearing Date: August 5, 2021

Prepared By: Summer Burlison,
Project Planner For Adoption By: Zoning Hearing Officer

RECOMMENDED FINDINGS

Regarding the Environmental Review, Find:

1. That this project is categorically exempt from environmental review pursuant to Section 15303, Class 3 of the California Environmental Quality Act (CEQA), related to the construction of a single-family residence in a residentially zoned area.

Regarding the Grading Permit, Find:

2. That the granting of the subject grading permit will not have a significant adverse effect on the environment. As discussed in this staff report, the project has received preliminary approval from the Department of Public Works, Building Inspection Section, and the County's Drainage Section. The project site has also undergone a geotechnical study by Michelucci & Associates Inc. Geotechnical Consultants, which has been reviewed and preliminarily approved by the County's Geotechnical Section. Site specific recommendations contained within the Michelucci & Associates report along with the recommendations from other reviewing agencies have been included as conditions of approval. Implementation of these conditions will prevent significant adverse impacts to the environment.

3. That the project conforms to the San Mateo County Grading Ordinance, including the standards referenced in Section 9296. Planning Staff, the Geotechnical Section, Drainage Section, and the Department of Public Works have reviewed the project and have determined it conforms to the criteria of Chapter 5 of the San Mateo Grading Ordinance, including the standards referenced in Section 9296 and the San Mateo County General Plan, including the timing of grading activities, implementation of dust control and erosion and sediment control measures, and geotechnical reports.

4. That the project is consistent with the General Plan. The subject site has a General Plan land use designation of Medium Low Density Residential. The proposed single-family residential development, landscaping and associated grading remains consistent with the allowed density and use of the underlying General Plan land use designation. As discussed in Section A.1 of this report, the project as proposed and conditioned, complies with all applicable General Plan goals and policies.

5. The project is consistent with the provisions of the Significant Tree Ordinance, the provisions of which must be considered and applied as part of the grading permit approval process (Significant Tree Ordinance Section 12.020.1(e)). The proposed project has taken steps to minimize the removal of significant trees by locating the project in a previously developed area of the parcel that is least impactful to the surrounding significant trees. Furthermore, noticing in the form of a site poster was posted on the subject property from July 26, 2021 to August 4, 2021 in conformance with the requirements of the Significant Tree Ordinance.

RECOMMENDED CONDITIONS OF APPROVAL

Current Planning Section

1. This approval applies only to the proposal as described in the plans, supporting materials, and reports submitted for review and approval by the Zoning Hearing Officer on August 5, 2021. Minor revisions or modifications to the project shall be subject to review and approval of the Community Development Director, if they are consistent with the intent of, and in substantial conformance with, this approval.

2. This permit shall be valid for one (1) year from the date of approval in which time a valid building permit shall be issued and a completed inspection (to the satisfaction of the Building Inspection Section) shall have occurred within 365 days of permit issuance. Any extension of this permit shall require the submittal of a written request for permit extension and payment of applicable extension fees sixty (60) days prior to the expiration date.

3. No grading shall be allowed during the winter season (October 1 to April 30) or during any rain event to avoid potential soil erosion unless a prior written request by the applicant is submitted to the Community Development Director in the form of a completed Application for an Exception to the Winter Grading Moratorium at least two (2) weeks prior to the projected commencement of grading activities stating the date when grading will begin for consideration, and approval is granted by the Community Development Director.

4. The site is considered a Construction Stormwater Regulated site. Any grading activities conducted during the wet weather season (October 1 to April 30) pursuant to prior authorization from the Community Development Director will

also require monthly erosion and sediment control inspections by the Building Inspection Section.

5. Prior to the beginning of any construction, the applicant shall implement the approved erosion and sediment control plan and tree protection plan, which shall be maintained throughout the duration of the project. The goal of the Tree Protection Plan is to prevent significant trees, as defined by San Mateo County's Significant Tree Ordinance, Section 12,000, from injury or damage related to construction activities. The goal of the Erosion and Sediment Control Plan is also to prevent sediment and other pollutants from leaving the project site and to protect all exposed earth surfaces from erosive forces. Said plan shall adhere to the San Mateo County Wide Stormwater Pollution Prevention Program "General Construction and Site Supervision Guidelines". 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 by:

   a. Stabilizing all denuded areas and maintaining erosion control measures continuously between October 1 and April 30. Stabilizing shall include both proactive measures, such as the placement of coir netting, and passive measures, such as revegetating disturbed areas with plants propagated from seed collected in the immediate area.

   b. Storing, handling, and disposing of construction materials and wastes properly, so as to prevent their contact with stormwater.

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

   d. Using sediment controls or filtration to remove sediment when dewatering the site and obtaining all necessary permits.

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

   f. Delineating with field markers clearing limits, easements, setbacks, sensitive or critical areas, buffer zones, trees, and drainage courses.

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

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

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

j. Limiting construction access routes and stabilizing designated access points.

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

l. The contractor shall train and provide instruction to all employees and subcontractors regarding the construction best management practices.

m. The approved erosion and sediment control plan shall be implemented prior to the beginning of construction.

6. Prior to the issuance of the grading permit "hard card," the applicant shall submit a dust control plan for review and approval by the Planning and Building Department. The plan, at a minimum shall include the following measures:

   a. Water all construction and grading areas at least twice daily.

   b. Cover all trucks hauling soil, sand, and other loose material or require all trucks to maintain at least 2 feet of freeboard.

   c. Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.).

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

8. Per Section 9296 of San Mateo County's Grading and Land Clearing Ordinance, all equipment used in grading operations shall meet spark arrester and firefighting tool requirements, as specified in the California Public Resources Code.

9. All grading and erosion and sediment control measures shall be in accordance to the plans prepared by BKF Engineers, dated August 2020, and approved by the Drainage Section and the Current Planning Section. Revisions to the approved grading plan shall be prepared and signed by the engineer and shall be submitted to the Planning Department prior to commencing any work pursuant to the proposed revision.

10. The engineer who prepared the approved grading plan shall be responsible for the inspection and certification of the grading as required by Section 9297 of the Grading Ordinance. The engineer's responsibilities shall include those relating to non-compliance detailed in Section 9280 of the Grading Ordinance. Deficiencies shall be corrected immediately.

11. For final approval of the Grading Permit, the applicant shall ensure the performance of the following activities within thirty (30) days of the completion of grading:

    a. The engineer shall submit written certification to the Department of Public Works and the Geotechnical Section that all grading has been completed in conformance with the approved plans, conditions of approval, and the Grading Ordinance.

    b. All applicable work during construction shall be subject to observation and approval by the geotechnical consultant. Section II of the Geotechnical Consultant Approval form must be submitted to the County's Geotechnical Engineer and Current Planning Section.

12. Erosion control and tree protection inspections are required prior to the issuance of a building permit for grading, construction, and demolition purposes, as the project requires the protection of significant trees. A $144.00 inspection fee will be added to the building permit for the inspection. If this initial pre-site inspection is not approved, an additional inspection fee will be assessed for each required re-inspection until the erosion control and tree protection measures are deemed adequate by the Building Inspection Section.

13. Prior to the required Pre-Site Inspection, the project arborist shall number the trees onsite and clearly mark the significant and non-significant trees proposed for removal. Numbering of the trees shall match the building plans and any submitted arborist report.

14. 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).

15. 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 Enchanted Way. All construction vehicles shall be parked on-site outside the public right-of-way or in locations which do not impede safe access on Enchanted Way. There shall be no storage of construction vehicles in the public right-of-way.

16. All trees depicted on the architectural and civil sheet sets shall be numbered according to the arborist report and tree schedule.

17. Removal of Tree #1, #3, #5, #6, #7, #17, #18, #19 as identified in the arborist report conducted by Advanced Tree Care, dated October 14, 2020 shall not occur until the associated building permit plans for the proposed project are issued. Removal of these trees before the building plans are issued shall be prohibited. If these trees are removed prior to the issuance of the building permit, the applicant shall be subject to the fees and fines contained within the County's Significant Tree Ordinance.

18. Tree #13 as identified by the arborist report conducted by Advanced Tree Care, dated October 14, 2020, is not located on the project parcel but on a neighboring property. Removal of Tree #13 shall only be permitted in conjunction with the proposed project if authorization in the form of a letter of concurrence from the property owner(s) along with proof of ownership (tax bill or deed) is provided to the Planning Department prior to building permit issuance.

19. The applicant shall plant on-site a total of six (6) drought tolerant trees using at least 15-gallon size stock for the regulated trees removed. Tree replanting shall be required and verified prior to the final building inspection approval. A final inspection by the Planning Department will be added to the building permit.

20. At the building permit application stage, if a landscape plan is proposed, 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 square feet. A prescriptive checklist is available as a compliance option for projects under 2,500 square feet. The Performance approach is applicable to new and/or rehabilitated landscape projects over 2,500 square feet. The proposal shall indicate the total size of landscaping (measured in square feet) to determine Performance or Prescription WELO review, WUCOL numbers, species and quantity and indicate whether irrigation is proposed.
21. An encroachment permit issued by the Department of Public Works shall be required for any tree removal activities or construction activities located in the public right-of-way.

22. The Tree Protection Zones (TPZs) as illustrated in the October 2020 Advanced Tree Care Arborist report shall be defined with protective fencing. The TPZ fencing shall be cyclone or chain link fencing on 1.5'' or 2'' posts driven at least 2 feet into the ground and standing at least 6 feet tall.

23. The TPZs for Trees #10, #11, #14, and #15 shall be 15 feet from the trunk in accordance with Type I Tree Protection as outlined and illustrated in image 2.15 and 5 of the Advanced Tree Care Arborist Report.

24. The location of the TPZ for Tree #14 may be reduced to the edge of the building for the demolition of the existing residence. Demolition of the main residence within the TPZ of Tree #14 shall be done by hand or with equipment reaching into the Tree Protection Zone.

25. TPZs for Tree #14, and #15 may be reduced to accommodate construction of the proposed single-family residence as outlined in the Advanced Tree Care arborist report.

26. Excavation for the foundation of the new residence, garage and ADU within the TPZs of Tree #14 and #15 shall be done by hand. No roots greater than 2 inches in diameter shall be cut without the consent and overview of a certified arborist.

27. TPZ for Tree #12 and #17 shall be 10 feet from the trunk of the tree in accordance with Type I Tree Protection as outlined and illustrated in image 2.15 and 2 of the Advanced Tree Care arborist report.

28. The TPZ for Tree #17 may be reduced to accommodate construction of the proposed new residence.

29. Compaction of soil within the designated TPZs outlined in the Advanced Tree Care arborist report shall be kept to a minimum. If access is required to go through a designated TPZ, the area within the TPZ shall be protected from compaction either with steel plates or with a 4-inch deep layer of woodchips overlaid with plywood.

30. Where roots are exposed, they shall be kept covered with native soil or four layers of wetted, untreated burlap to prevent drying out. Roots will dry out and die if left exposed to the air too long.

31. Prior to the issuance of a building permit, the applicant shall pay all applicable Affordable Housing Impact Fees, pursuant to San Mateo County Ordinance No. 4758, including but not limited to $5.00 per sq. ft. over 2,500 sq. ft. of residential floor area.

Building Inspection Section

32. This project shall require a building permit.

33 The project property is located within a Very High Fire Hazard Severity Zone and shall be designed and constructed accordingly.

Geotechnical Section

34. A geotechnical report shall be required at building permit stage. The report shall be updated to the current adopted code. Significant grading profiles, grading proposals, foundation design recommendations, retaining wall design recommendations, and basement design recommendations, if any, shall be provided in the geotechnical report at the building permit stage. For a vacant site, the Geotechnical Report shall provide sufficient soil investigation data to evaluate the potential hazards, for example, expansive soils, soil corrosivity, weak soil strength, and liquefaction. If any hazards are found, mitigation shall be provided in the foundation design and grading proposal.

35. Prior to the issuance of the building permit the applicant shall have prepared, by a registered civil engineer, a drainage analysis of the proposed project and submit it to the Planning and Building Department 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 Planning and Building Department for review and approval.

Drainage Section

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

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

    b. Final Grading and Drainage Plan stamped and signed by a registered Civil Engineer.

    c. Updated C.3 and C.6 Checklist (if changes to the impervious areas have been made during the design phase).

Department of Public Works

37. Prior to the issuance of the Building Permit, 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.

38. 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.

39. Concrete, stone, brick or other pavers may not be used in the public right of way. Please keep all landscaping on private property to facilitate maintenance of right of way.

40. The applicant shall apply for an encroachment permit to haul cut and fill off and onto this site to ensure adequate coordination to minimize conflict with other projects nearby.

41. 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 #3277.

California Water Service Company (Cal-Water)

42. If the applicant requests a service larger than 1-inch, they shall complete the 1318 request form to get approval by Cal-Water's engineering department.

43. If fire sprinklers are required, a backflow device shall also be required, installed by the applicant, and inspected by Cal-Water.

Crystal Springs County Sanitation District

44. The sewer district shall review plans at the building permit application phase.

San Mateo County Fire Department

45. The residence will require an NFPA 13D automatic fire sprinkler system. Add this note to the plans.

46. Show location of fire hydrant on a site plan. A fire hydrant is required within 500 feet of the building and flow a minimum of 1,000 gpm at 20 psi. This information is to be verified by the water purveyor in a letter initiated by the applicant and sent to San Mateo County Fire/CAL Fire. If there is not a hydrant within 500 feet with the required flow, one will have to be installed at the applicant's expense.

47. Provide fire apparatus access to your structure on plans. Fire apparatus 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 20 feet wide, all weather surface, and able to support a fire apparatus weighing 75,000 lbs. Where a fire hydrant is located in the access, a minimum of 26 ft. is required for a minimum of 20 ft. 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 limited to 150 feet in length. 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 compaction and weight it will support. Include an engineered section detail with thickness of and type of base and compaction.

48. 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. Where buildings are located remotely to the public roadway, additional signage at the driveway/roadway entrance leading to the building and/or on each individual building shall be required by the San Mateo County Fire Department. This remote signage shall consist of a 6-inch by 18-inch green reflective metal sign with 3-inch reflective Numbers/ Letters similar to Hy-Ko 911 or equivalent.

49. 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. Smoke alarms shall sound an alarm audible in all sleeping areas. This will be tested at the fire department final inspection.

50. This project is located in a wildland urban interface area. Roofing, attic ventilation, exterior walls, windows, exterior doors, decking, floors, and underfloor protection shall meet CRC R327 or CBC Chapter 7A requirements.

51. The building is in a Very High Fire Hazard Severity Zone. All roof assemblies in Very high Fire Hazard Severity Zones shall have a minimum CLASS-A fire resistive rating and be installed in accordance with the manufacturer's specifications and current California Building and Residential Codes. Add this to the plans.

52. This project is located in a State Responsibility Area for wildfire protection. Roofing, attic ventilation, exterior walls, windows, exterior doors, decking, floors and underfloor protection shall meet CRC R337 requirements. Add this note to plans.

53. 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.

54. Any chimney or woodstove outlet shall have installed onto the opening thereof an approved (galvanized) spark arrestor of a mesh with an opening no larger than 1/2-inch in size or an approved spark arresting device. Maintain around and adjacent to such buildings or structures a fuelbreak/firebreak made by removing and cleaning away flammable vegetation for a distance of not less than 30 feet and up to 100 feet around the perimeter of all structures or to the property line, if the property line is less than 30 feet from any structure. This is not a requirement nor an authorization for the removal of live trees. Remove that flammable portion of any tree which extends within 10 feet of the outlet of any chimney or stovepipe, or within 5 feet of any portion of any building or structures. Remove that dead or dying portion of any tree which extends over the roof line of any structure.

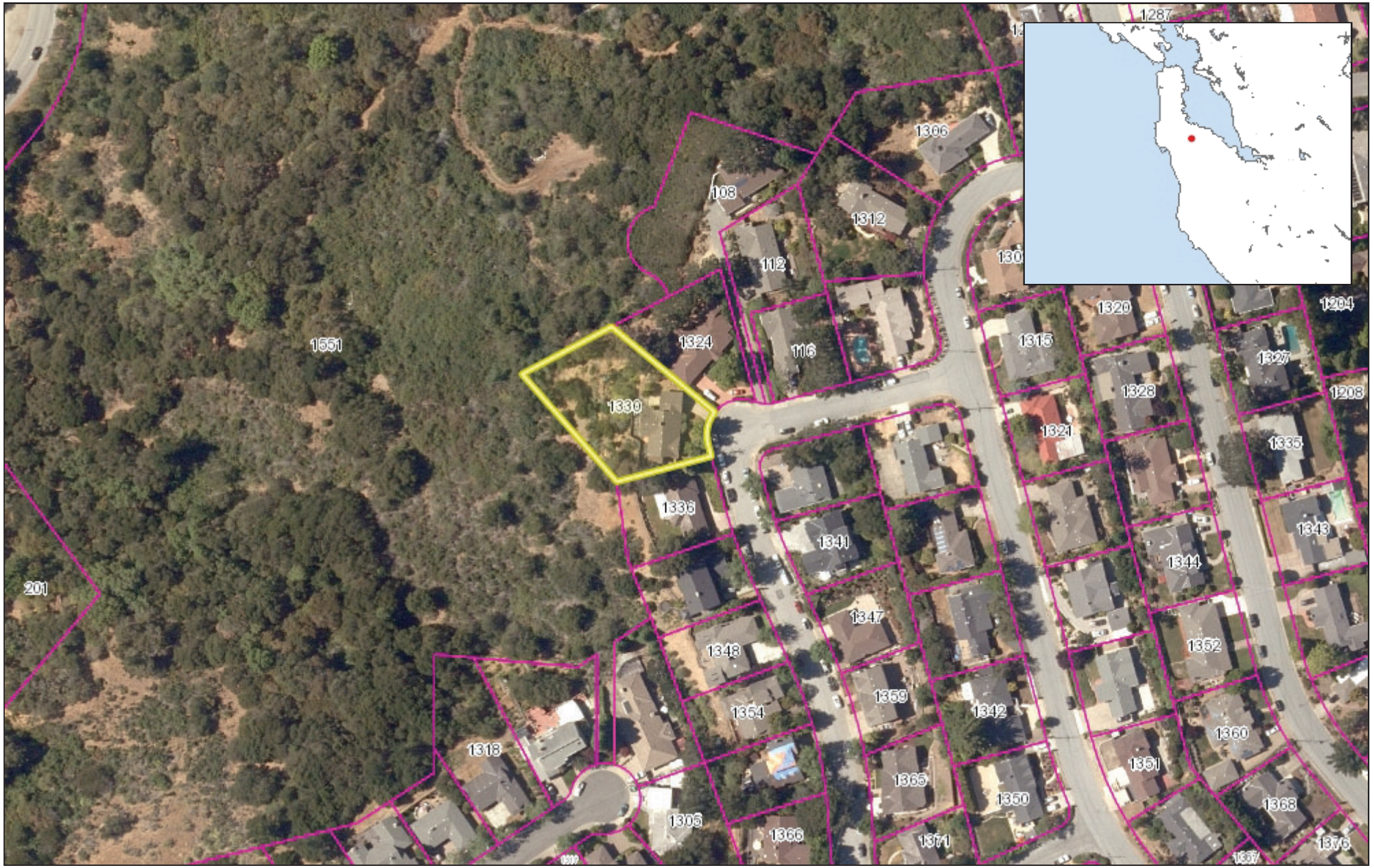
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COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT B

San Mateo County

PLN2019-00423



0.07 0 0.04 0.07 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere

© Latitude Geographics Group Ltd.

1: 2,257

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.

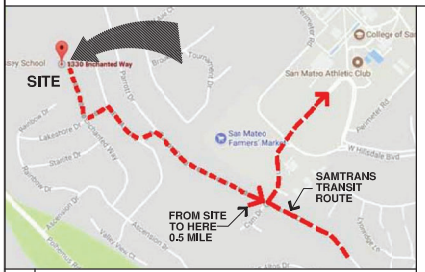
THIS MAP IS NOT TO BE USED FOR NAVIGATION

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT C

NEW RESIDENCE FOR:
HOLLY QIU & JERRY SHEN
1330 ENCHANTED WAY
SAN MATEO, CA 94402

NFPA 13D FIRE SPRINKLERS REQUIRED DEFERRED SUBMITTAL. PROVIDE FIRE FLOW REPORT. ⚠



5 VICINITY MAP

1. DEMOLISH AND REMOVE EXISTING HOUSE, FOUNDATION AND DECK. SEE C1.1 AND TOPO-1
   EXISTING HOUSE & GARAGE: 2,474 S.F.
   EXISTING DECK: 955 S.F.
2. CONSTRUCT NEW 2 STORY HOME WITH 2 AUTO GARAGE AND ACCESSORY DWELLING UNIT OF 542 S.F. SEE "PLANNING DATA", ON THIS SHEET FOR FLOOR AND PORCH AREAS. TOTAL FLOOR AREA INC. GARAGE=4,106 S.F.
3. CONSTRUCT NEW LANDSCAPING, TERRACE AND DRY STACK RETAINING WALLS WHERE SHOWN SEE LANDSCAPE & CIVIL ENGINEERING DRAWINGS.

4 SCOPE OF WORK

6 DRAWING INDEX

ARCHITECTURAL
A1.0 COVER SHEET, SITE PLAN
A1.1 GENERAL NOTES
A1.2 SITE PLAN
A1.3A BASEMENT FLOOR PLAN
A1.3B BASEMENT DECK FLOOR PLAN
A2.0A MAIN FLOOR PLAN
A2.0B MAIN DECK FLOOR PLAN
A2.1 SECOND FLOOR PLAN
A2.2 ROOF PLAN
A2.3 BASEMENT ELECTRICAL PLAN
A2.4 FIRST FLOOR ELECTRICAL PLAN
A2.5 SECOND FLOOR ELECTRICAL PLAN
A3.0 EXTERIOR ELEVATIONS
A3.1A EXTERIOR ELEVATIONS
A3.1B DECK ELEVATIONS
A3.2 INTERIOR ELEVATIONS
A3.3 INTERIOR ELEVATIONS
A4.0 BUILDING SECTIONS
A5.0 DETAILS
A5.1 DETAILS
A5.2 DETAILS
A6.0 SITE COVERAGE CALCULATION ⚠

T-24
T24-1 TITLE 24
T24-2 TITLE 24
T24-3 TITLE 24
T24-4 TITLE 24 ⚠

PLUMBING ⚠
P-1.0 MAIN FLOOR PLUMBING PLAN
P-2.0 SECOND FLOOR PLUMBING PLAN
P-3.0 PLUMBING NOTES, SCHEDULES, AND DETAILS

LANDSCAPE
L-1.0 LANDSCAPE SITE PLAN
L-2.0 PLANTING PLAN
L-3.0 IRRIGATION PLAN & WATER CALCULATIONS
L-4.0 LANDSCAPE DETAILS
L-5.0 ARBORIST REPORTS & REQUIREMENTS ⚠

STRUCTURAL
S-1 FOUNDATION PLAN
S-2 FIRST FLOOR FRAMING PLAN
S-3 SECOND FLOOR/ LOW ROOF FRAMING PLAN
S-4 ROOF FRAMING PLAN
CEILING FRAMING PLAN
S-5 STRUCTURAL PLANS
S-6 STRUCTURAL PLANS
S-7 STRUCTURAL PLANS
S-8 STRUCTURAL DETAILS
S-9 STRUCTURAL DETAILS
S-10 STRUCTURAL MATERIALS SPECIFICATIONS

CIVIL
C0.0 TITLE SHEET
C0.1 NOTES
C1.1 EXISTING CONDITION
C2.1 GRADING PLAN
C3.1 UTILITY PLAN
C4.1 EROSION CONTROL PLAN
C4.2 BEST MANAGEMENT PRACTICES
C5.1 DETAIL SHEET
C5.2 DETAIL SHEET

SURVEY
SU-1 TOPOGRAPHIC MAP AND BOUNDARY SURVEY
BMP-1 CONSTRUCTION BEST MANAGEMENT PRACTICES (BMPs)

7 PLANNING DATA ⚠

APPLICABLE CODES AND REGULATIONS
CALIFORNIA BUILDING CODE 2016 EDITION
CALIFORNIA FIRE CODE 2016 EDITION
CALIFORNIA PLUMBING CODE 2016 EDITION
CALIFORNIA ELECTRICAL CODE 2016 EDITION
CALIFORNIA MECHANICAL CODE 2016 EDITION
CALIFORNIA ENERGY CODE 2016
CALIFORNIA RESIDENTIAL CODE 2016
CALIFORNIA GREEN BUILDING STANDARDS CODE 2016
ALONG WITH ANY OTHER LOCAL AND STATE LAWS AND REGULATIONS

CONSTRUCTION TYPE: V-B FIRE SPRINKLERED
OCCUPANCY GROUP: R-3/U
PROJECT LOCATION: WILDLAND URBAN INTERFACE FIRE AREA PER CRC R337

8 BUILDING CODE DATA

ZONING: R1S8
MIN. SETBACKS: SEE SITE PLAN
LOT AREA: 21,474± S.F.
AVERAGE LOT SLOPE: 25% ±

FLOOR AREA:
FIRST FLOOR AREA: 2,284 S.F.
SECOND FLOOR AREA: 1,402 S.F.
TOTAL LIVING AREA: 3,686 S.F.
GARAGE FLOOR AREA: 552 S.F.
TOTAL FLOOR AREA: 4,238 S.F.
LIVING DECK AREA: 972 S.F.
ADU DECK AREA: 245 S.F.
ENTRY PORCH AREA: 65 S.F.
SECOND FLOOR BALCONY AREA: 115 S.F.
TOTAL DECK/BALCONY/ PORCH AREA: 1,397 S.F.

MAXIMUM HEIGHT= 36 FT.
PROPOSED HEIGHT= 29'-1"

ACCESSORY DWELLING UNIT
LIVING FLR. AREA: 542 S.F.

HOUSE FLR. LIVING AREA:
FIRST FLOOR AREA: 1,742 S.F.
SECOND FLOOR AREA: 1,402 S.F.
TOTAL FLR. LIVING AREA: 3,144 S.F.

ALLOWABLE ACCESSORY DWELLING UNIT FLOOR AREA:
3,012 S.F.x50%=MAX 1,200 S.F.

% SITE COVERAGE=30.59%

9 PROJECT TEAM

OWNER:
HOLLY QIU & JERRY SHEN
1330 ENCHANTED WAY
SAN MATEO, CA 94402
Phone : (650) 401-6963

STRUCTURAL CONSULTANT
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CIVIL CONSULTANT
BKF
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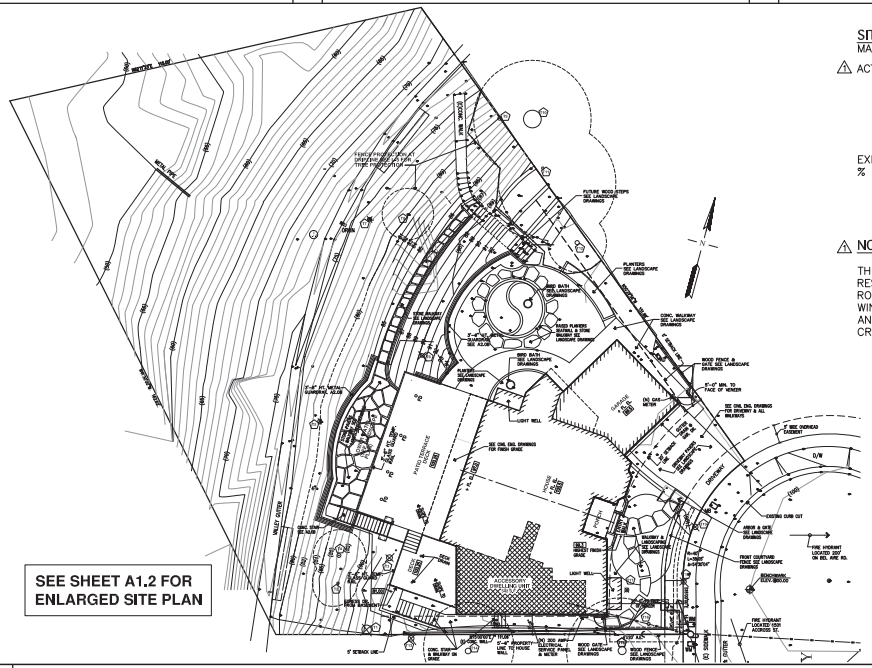
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CIVIL ENGINEERS LAND SURVEYORS
505 ALTAMONT DRIVE
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Fax: (408) 824-5556
Email: rwengineering@gmail.com

3 LEGEND

& AND	DBL. DOUBLE	GA. GAUGE	NOM. NOMINAL	STD. STANDARD
∠ ANGLE	DET. DETAIL	GL. GLASS	O.D. OUTSIDE DIAMETER	STL. STEEL
@ AT	DIA. DIAMETER	GYP. H.C. GYPSUM HOLLOW CORE	OPNG. OPENING	STOR. STORAGE
℄ CENTERLINE	DIM. DIMENSION	H.M. HOLLOW METAL	OPP. OPPOSITE	SUSP. SUSPENDED
ø DIAMETER	DN. DOWN	H.M. HANDICAPPED	P.LAM. PLASTIC LAMINATE	T.O. TOP OF
# POUND OR NUMBER	DR. DOOR	HDWD. HARDWOOD	PL. PLATE	TEL. TELEPHONE
ACOUS. ACOUSTICAL	DS. DOWNSPOUT	HORIZ. HORIZONTAL	PLAS. PLASTER	THK. THICK
ADJ. ADJUSTABLE	DWG. DRAWING	HGT. HEIGHT	PLYWD. PLYWOOD	TK TIGHT KNOT
A.F.F. ABOVE FINISH FLOOR	E.P. ELECTRICAL PANELBOARD	HR. HOUR	PR. PAIR	TYP. TYPICAL
AL. ALUMINUM	EA. EACH	HVAC HEATING, VENTILATING & AIR CONDITIONING	PT. POINT	U.O.N. UNLESS OTHERWISE NOTED
ARCH. ARCHITECTURAL	EL. ELEVATION	I.D. INSIDE DIAMETER (DIM.)	R. RISER	UNF. UNFINISHED
BD. BOARD	ELEC. ELECTRICAL	INSUL. INSULATION	RAD. RADIUS	VERT. VERTICAL
BLDG. BUILDING	EMER. EMERGENCY	JT. JOINT	RGTR. REGISTER	W. WEST
BLK. BLOCK	EQ. EQUAL	LAM. LAMINATE	REQ'D REQUIRED	W/ WITH
BLKG. BLOCKING	(E) EXISTING	LT. LIGHT	RESIL. RESILIENT	W/C WATER CLOSET
BM. BEAM	F.E. FIRE EXTINGUISHER	M. MIRROR	RM. ROOM	W/O WITHOUT
BOT. BOTTOM	F.O.C. FACE OF COLUMN	MAX. MAXIMUM	RWD. REDWOOD	W/R WATER RESISTANT
CAB. CABINET	F.O.F. FACE OF FINISH	MECH. MECHANICAL	S. SOUTH	WD. WOOD
CEM. CEMENT	F.O.S. FACE OF STUDS	MFR. MANUFACTURER	S.C. SOLID CORE	WSCT. WAINSCOT
CER. CERAMIC	F.W. FEATURE WALL	MIN. MINIMUM	SSD SEE STRUCT. DRWGS	WT. WEIGHT
CLG. CEILING	F.R. FIRE RETARDANT	MISC. MISCELLANEOUS	S.STL. STAINLESS STEEL	
CLKG. CAULKING	F.S. FULL SIZE	MTL. METAL	SCHED. SCHEDULE	
CLR. CLEAR	FIN. FINISH	N. NORTH	SHT. SHEET	
COL. COLUMN	FL. FLOOR	N.I.C. NOT IN CONTRACT	SIM. SIMILAR	
CONC. CONCRETE	FLUOR. FLUORESCENT	N.T.S. NOT TO SCALE	SPEC. SPECIFICATION	
CONT. CONTINUOUS	FT. FOOT OR FEET	(N) NEW	SQ. SQUARE	
D.F. DRINKING FOUNTAIN	G.B. GRAB BAR	NO. NUMBER		

2 ABBREVIATIONS



1 SITE PLAN

SITE COVERAGE CALCULATION
MAX. COVERAGE: 40%

⚠ ACTUAL COVERAGE:
FIRST & SECOND FLOOR AREA: 4,303 S.F.
SECOND FLOOR OVERHANG AREA: 217 S.F.
DECK AREA: 1,093 S.F.
RETAINING WALL/TERRACE AREA: 956 S.F.
TOTAL: 6,569 S.F.

EXISTING LOT AREA= 21,474 S.F.
% COVERAGE= 6,569÷21,474 S.F=30.59%

⚠ NOTE: WILDFIRE PROTECTION

THIS PROJECT IS LOCATED WITHIN THE STATE RESPONSIBILITY FOR WILDFIRE PROTECTION. ROOFING, ATTIC VENTILATION, EXTERIOR WALLS, WINDOWS, EXTERIOR DOORS, DECKING, FLOORS AND UNDERFLOOR PROTECTION SHALL MEET CRC R337 REQUIREMENTS.

A.P.N. 038-141-140

PANKO ARCHITECTS
311 Seventh Avenue, Suite 1
San Mateo, California 94401
Phone: (650) 558-0100
Fax: (650) 558-0113

⚠ RESPONSE TO COMMENTS: 10-15-20

NEW RESIDENCE FOR:
HOLLY QIU & JERRY SHEN
1330 ENCHANTED WAY
SAN MATEO, CA 94402

REGISTERED ARCHITECT STANLEY E. PANKO No. C-18928 RENEWAL 08/31/2021 STATE OF CALIFORNIA

TITLE
COVER SHEET
SITE PLAN

CHECKED:	SEP
DATE:	10-14-19
SCALE:	AS SHOWN
DRAWN:	PR
JOB NO.	160114
DWG. NO.	A-1.0
SHEET	- OF -

GENERAL

1. CHANGES TO OR MODIFICATIONS OF THE CONTRACT DOCUMENTS APPLIED TO THE ACTUAL CONSTRUCTION OF THE PROJECT IS STRICTLY PROHIBITED WITHOUT THE APPROVAL OF THE ARCHITECT.
2. ALL TRIM AND DETAILS ARE TO MATCH (E) WITH SAME OR SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
3. THE OWNER IS TO APPROVE ALL SELECTED FINISH MATERIALS.
4. CONTRACTOR SHALL NOTIFY THE OWNER 24 HOURS IN ADVANCE OF TURNING OFF ANY UTILITIES. UTILITIES TO BE SHUT OF A MINIMAL AMOUNT OF TIME.

NOTE TO CONTRACTOR

THE FOLLOWING NOTES INDICATE THE RESPONSIBILITY OF EACH INDIVIDUAL CONTRACTOR FOR THE PORTION OF WORK BEING PERFORMED BY HIM/HER.

GENERAL

ALL ELEMENTS SHOWN ON THE DRAWING ARE EXISTING TO REMAIN UNLESS OTHERWISE NOTED.

BUILDING CODES

ALL CONSTRUCTION SHALL COMPLY WITH ALL STATE OF CALIFORNIA BUILDING, MECHANICAL, PLUMBING, ELECTRICAL, ENERGY, ACCESSIBILITY REQUIREMENTS AND ALL MUNICIPAL BUILDING CODES NECESSARY FOR MAINTAINING CONDITIONS FOR PUBLIC HEALTH AND/ OR SAFETY THAT ARE IN EFFECT AT THE TIME OF APPLICATION FOR BUILDING PERMITS RESULTING IN ACTUAL CONSTRUCTION.

DIMENSIONS

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS ON SITE PRIOR TO PROCEEDING. IF A DIMENSIONAL ERROR OCCURS OR CONDITION NOT COVERED IN CONSTRUCTION DOCUMENTS IS ENCOUNTERED,CONTRACTOR SHALL NOTIFY ARCHITECT BEFORE COMMENCING THAT PORTION OF THE WORK. **ALL DIMENSIONS ARE TO FACE OF FINISH.**

BIDS

PRIOR TO SUBMITTING HIS BID, THE CONTRACTOR SHALL VISIT THE SITE AND SATISFY HIM/HER SELF AS TO THE NATURE AND LOCATION OF THE PROJECT. THE GENERAL AND LOCAL CONDITIONS, AND ALL OTHER MATTERS THAT IN ANY WAY AFFECT THE WORK. FAILURE OF THE CONTRACTOR TO ACQUAINT HIM/HER SELF WITH ALL AVAILABLE INFORMATION CONCERNING THE SITE CONDITIONS WILL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ESTIMATING THE DIFFICULTY OR COST OF THE WORK.

PERMITS

CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL NECESSARY LICENSEES, PERMITS, CONNECTIONS AND INSPECTIONS. CONTRACTOR SHALL PAY ALL REQUIRED FEES TO PUBLIC AGENCIES AND UTILITY COMPANIES.

⚠ VEGETATION MANAGEMENT REQUIREMENTS

THIS PROJECT IS LOCATED WITHIN A WILDLAND–URBAN INTERFACE FIRE AREA. PRIOR TO BUILDING PERMIT FINAL APPROVAL, THE PROPERTY SHALL BE IN A COMPLIANCE WITH THE VEGETATION MANAGEMENT REQUIREMENTS PRESCRIBED IN CALIFORNIA FIRE CODE SECTION 4906, INCLUDING CALIFORNIA PUBLIC RESOURCES CODE 4291 OR CALIFORNIA GOVERNMENT CODE SECTION 51182 PER CRC R337.1.5.

CONSTRUCTION STAGING AND STORAGE

NEITHER EQUIPMENT NOR MATERIAL SHALL BE STORED WITHIN THE PUBLIC RIGHT–OF–WAY (STREET, SIDEWALK, CURB AND GUTTER AREA).

HAZARDOUS MATERIALS

IT IS SUSPECTED THAT HAZARDOUS MATERIALS MAY EXIST ON THE SITE. CONTRACTOR SHALL INSPECT THE CONSTRUCTION AREA CEILINGS AND HEATING SYSTEM FOR THE POSSIBILITY OFASBESTOS OR OTHER HAZARDOUS MATERIALS AND EMPLOY APPROPRIATE SPECIALIZED SUBCONTRACTORS TO INVESTIGATE AND REMOVE THESE MATERIALS PER APPLICABLE CODES.

CONSTRUCTION WASTE DIVERSION

A MINIMUM OF 65% OF THE NON–HAZARDOUS CONSTRUCTION AND DEMOLITION WASTE GENERATED AT THE SITE SHALL BE DIVERTED TO AN OFFSITE RECYCLE, DIVERSION, OR SALVAGE FACILITY PER CGC 4.408. PROVIDE DOCUMENTATION BEFORE FINAL INSPECTION SEE WWW.HCD.CA.GOV/CALGREEN.HTML

SPECIAL INSPECTION

FOR RETROFIT HOLDOWN BOLTS TO BE PERFORMED BY THE STRUCTURAL ENGINEER OF RECORD. ENGINEER SHALL PROVIDE LETTER VERIFYING SUCH INSPECTION TO CONTRACTOR & LETTER SHALL BE AVAILABLE ON SITE FOR CITY FIELD INSPECTOR @ TIME OF SHEAR WALL INSPECTION.

CONFORMANCE WITH APPROVED PLANS

CONFORMANCE WITH APPROVED PLANS–CONSTRUCTION SHALL SUBSTANTIALLY CONFORM WITH THE APPROVED PLANNING–APPLICATION DRAWINGS, ALL BUILDING PERMIT DRAWINGS, INCLUDING COLOR AND MATERIAL BOARD. ANY MODIFICATIONS MUST BE REVIEWED BY THE CHIEF OF PLANNING/ZONING ADMINISTRATOR WHO SHALL SHALL DETERMINE WHETHER THE MODIFICATION REQUIRES ADDITIONAL APPROVAL BY THE PLANNING COMMISSION OR CITY COUNCIL.

GENERAL ACTIVITIES

GENERAL ACTIVITIES–ALL PUBLIC IMPROVEMENTS SHALL BE MADE IN ACCORDANCE WITH THE LATEST ADOPTED CITY STANDARD DRAWINGS AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, ALL WORK SHALL CONFORM TO THE APPLICABLE CITY ORDINANCES. GOOD HOUSEKEEPING PRACTICES SHALL BE OBSERVED AT ALL TIMES DURING THE COURSE OF CONSTRUCTION. PUBLIC RIGHT–OF–WAY ADJACENT TO THE PROJECT SITE SHALL BE KEPT CLEAR AT THE END OF EACH DAY OF ALL JOB RELATED DIRT AND DEBRIS. PEDESTRIAN ACCESS SHALL BE MAINTAINED AT ALL TIMES UNLESS OTHERWISE APPROVED. DIRT AND DEBRIS SHALL NOT BE WASHED INTO STORM SEWERS. THE STORING OF GOODS AND MATERIALS ON THE SIDEWALK AND/OR STREET WILL NOT BE ALLOWED UNLESS A SPECIAL PERMIT IS ISSUED THEREFOR. THE OWNER'S REPRESENTATIVE IN CHARGE SHALL BE AT THE JOB SITE DURING ALL WORKING HOURS. FAILURE TO MAINTAIN THE PUBLIC RIGHT–OF–WAY IN ACCORDANCE WITH THIS PARAGRAPH MAY RESULT IN REVOCATION OF PERMIT OR THE CITY PERFORMING THE REQUIRED MAINTENANCE AT THE APPLICANT'S EXPENSE.

PROTECTION

CONTRACTOR SHALL PROTECT ALL EXISTING SITE IMPROVEMENTS FROM DAMAGE CAUSED BY CONTRACTORS OPERATIONS. ANY DAMAGE CAUSED BY CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.

RESTORATION OF PUBLIC IMPROVEMENTS

RESTORATION OF PUBLIC IMPROVEMENTS – THE CONTRACTOR SHALL REPAIR OR REPLACE ALL EXISTING IMPROVEMENTS NOT DESIGNATED FOR REMOVAL WHICH ARE DAMAGED OR REMOVED AS A RESULT OF HIS OPERATIONS. IMPROVEMENTS SUCH AS, BUT NOT LIMITED TO, CURBS, GUTTERS, SIDEWALKS, DRIVEWAYS, SIGNS, PAVEMENTS, RAISED PAVEMENT MARKERS, THERMOPLASTIC PAVEMENT MARKINGS, OR SIGNS SHALL BE REPAIRED AND REPLACED TO A CONDITION EQUAL TO OR BETTER THAN THE ORIGINAL CONDITION. EXISTING IMPROVEMENTS TO BE REPAIRED OR REPLACED SHALL BE AT THE DIRECTION OF THE PUBLIC WORKS INSPECTOR. CONTRACTOR SHALL REQUEST A WALK– THROUGH WITH THE PUBLIC WORKS INSPECTOR PRIOR TO THE START OF CONSTRUCTION TO VERIFY EXISTING CONDITIONS.

CONSTRUCTION ACTIVITIES

CONSTRUCTION ACTIVITIES – THE FOLLOWING PROVISION TO CONTROL TRAFFIC CONGESTION, NOISE, AND DUST SHALL BE FOLLOWED DURING SITE EXCAVATION, GRADING AND CONSTRUCTION:

BUILDING CONSTRUCTION ACTIVITIES

CONSTRUCTION ACTIVITIES RELATED TO THE INSURANCE OF ANY PUBLIC WORKS/BUILDING PERMIT SHALL BE RESTRICTED TO THE WEEKDAY BETWEEN 7:00 A.M. AND 7:00 P.M. NO WORK BEING DONE UNDER THE ISSUANCE OF A PUBLIC WORKS ENCROACHMENT PERMIT MAY BE PERFORMED ON THE WEEKEND. BUILDING CONSTRUCTION ACTIVITIES (i.e., ON–SITE ACTIVITIES RELATED TO THE ISSUANCE OF A BUILDING PERMIT) MAY BE CONDUCTED ON SATURDAY FROM 9:00 A.M. – 5:00 P.M. AND ON SUNDAY FROM 12:00 NOON – 4:00 P.M. THE BUILDING HOURS OF CONSTRUCTION DO NOT APPLY TO CONSTRUCTION WORK THAT TAKES PLACE INSIDE A COMPLETELY ENCLOSED BUILDING THAT DOES NOT EXCEED THE EXTERIOR AMBIENT NOISE LEVEL AS MEASURED TEN FEET FROM THE EXTERIOR PROPERTY LINE.

BEST MANAGEMENT PRACTICES (BMP)

IN ACCORDANCE WITH THE COUNTY STORM WATER MANAGEMENT AND DISCHARGE CONTROL RULES AND REGULATIONS, AND THE SAN MATEO COUNTYWIDE STORM WATER MANAGEMENT PLAN (SWMP) BY REFERENCE, THE CONTRACTOR SHALL: EMPLOY BEST MANAGEMENT PRACTICES (BMPs) SELECTED AS APPROPRIATE FROM THE CALIFORNIA CONSTRUCTION BEST MANAGEMENT PRACTICES HANDBOOK (MARCH, 1993) TO CONTROL AND PREVENT DISCHARGE OF SEDIMENT, DEBRIS, AND OTHER CONSTRUCTION RELATED WASTES TO THE STORM DRAINAGE SYSTEM FROM ALL CONSTRUCTION RELATED ACTIVITIES, INCLUDING, BUT NOT LIMITED TO, GENERAL CONSTRUCTION AND SITE SUPERVISION, CONCRETE AND MORTAR APPLICATION, AND HEAVY EQUIPMENT OPERATION.

DOORS

(N) DOORS WITH WOOD TRIM SHALL BE AS SELECTED BY OWNER.
⚠ EXTERIOR DOORS SHALL HAVE A FIRE RATING OF NOT LESS THAN 20 MINUTES PER NFPA 252, OR THE EXTERIOR SURFACE OR CLADDING SHALL BE NON COMBUSTIBLE

WINDOWS

SAFETY GLASS SHALL BE INSTALLED IN LOCATIONS SUBJECTED TO HUMAN IMPACT PER CRC R308.4 ALL GLAZING AT CONDITIONED SPACES SHALL BE TEMPERED ⚠ DUAL–PANE. (N) WINDOW AND SKYLIGHT SIZES NOTED ON PLANS ARE GENERIC UNLESS NOTED ON THE PLAN. VERIFY ROUGH OPENING DIMENSIONS WITH MANUFACTURER. WINDOWS SHALL BE DOUBLE GLAZING WITH "U" FACTOR OR 0.40 OR LESS AND SHGC (SOLAR HEAT GAIN COEFFICIENT) OF 0.35. WINDOWS SHALL BE OF THE TRUE DIVIDED–LIGHT TYPE.

EGRESS REQUIREMENTS

ALL ESCAPE OR RESCUE WINDOWS SHALL HAVE A MINIMUM NET CLEAR OPENABLE AREA OF 5.7 S.F. THE MINIMUM NET CLEAR OPENABLE HEIGHT DIMENSION SHALL BE 24 INCHES. THE MINIMUM NET CLEAR OPENABLE WIDTH DIMENSION SHALL BE 20 INCHES. WHEN WINDOWS ARE PROVIDED AS A MEANS OF ESCAPE OF RESCUE, THEY SHALL HAVE A MAXIMUM HEIGHT FROM FINISHED FLOOR TO BOTTOM OF WINDOW OPENING OF 44 INCHES. (CRC R310)

FIRE RESISTIVE CONSTRUCTION

1–HOUR FINISH WALL SHALL BE PROVIDED ON GARAGE SIDE OF COMMON WALLS AND COMMON CEILINGS WITH THE DWELLING. WALLS ,BEAMS AND POSTS THAT SUPPORT SUCH CEILINGS SHALL ALSO BE FINISHED WITH 1–HOUR APPROVED MATERIALS. CBC 406.3.4. FIRE RESISTIVE WALLS, SUCH AS BUT NOT LIMITED TO, GARAGE SEPARATIONS, MAY HAVE OPENINGS FOR STEEL ELECTRICAL BOXES NOT EXCEEDING 16 SQUARE INCHES IN AREA, PROVIDED THE AGGREGATE OF SUCH AREA OPENINGS IS NOT MORE THAN 100 SQUARE INCHES, FOR ANY 100 SQ. FEET OF WALL OR PARTITION AREA. OUTLET BOXES ON OPPOSITE SIDE WALLS AND PARTITIONS SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF AT LEAST 24 INCHES. 2016 CBC SECTION 717.

PLUMBING

DWV AND WATER SUPPLY PIPING MATERIALS AND INSTALLATION SHALL CONFORM WITH THE CALIFORNIA PLUMBING CODE AND CALGREEN 4.303.1. TUB AND SHOWER VALVES TO BE SINGLE CONTROL PRESSURE BALANCING ANTI–SCALD TYPE. CPC 2016 POTABLE WATER OUTLETS WITH HOSE ATTACHMENTS SHALL BE PROVIDED WITH A LISTED SELF–DRAINING FROST PROOF HOSE BIBS AN INTEGRAL BACK FLOW PREVENTER. 2016 CPC CODES. VENT EACH PLUMBING FIXTURE PER 2016 CPC. ALL WATER CLOSET FLUSH VOLUME TO BE MAXIMUM 1.28 GAL./FLUSH, ANTI–SCALD VALVES, AND DISHWASHER AIR GAP. SHOWER HEAD FLOW RATE TO BE 1.8 GAL/MIN AND FAUCETS FLOW RATE TO BE 1.8 GAL./MIN. FOR KITCHEN, 1.2 GAL./MIN. FOR LAVATORY PER CALGREEN 4.303.1, CGC 403.1.1, CGC 4.303.1.3 AND CGC 4.303.1.4.

HOT WATER PIPE INSULATION:
INSULATION REQUIRED FOR PIPE 3/4" OR LARGER PER CEC 150.0

MECHANICAL

ATTIC, UNDER FLOOR AND ROOF MOUNTED FURNACE SHALL BE INSTALLED, ACCESSED, AND PROVIDED WITH COMBUSTION AIR AS REQUIRED BY THE CALIFORNIA MECHANICAL CODE. DRYER VENT SHALL BE INSTALLED AS REQUIRED BY THE CMC 2016 EDITION. DOMESTIC FLEXIBLE DRYER VENTS SHALL NOT EXCEED 6 FEET IN LENGTH. CMC 2016 EDITION. UNLESS OTHERWISE PERMITTED, DRYER MOISTURE EXHAUST DUCTS SHALL NOT EXCEED A TOTAL VERTICAL AND HORIZONTAL LENGTH OF 14 FT. A DEDUCTION OF 2 FT. SHALL BE ALLOWED FOR EACH 90–DEGREE ELBOW IN EXCESS OF 2 2000 CMC 2016 EDITION. SUBCONTRACTOR SHALL PROVIDE BTU RATING FOR ALL GAS FIRED EQUIPMENT. TYPE "B" OR "BW" GAS VENTS WITH VENTS CAPS 12 INCHES IN SIZE OR SMALLER SHALL COMPLY WITH TABLE–B–A AND CMC 2016 EDITION. WATER HEATERS SHALL BE ANCHORED OR STRAPPED TO RESIST HORIZONTAL DISPLACEMENT DUE TO EARTHQUAKE MOTION, 2016 UPC.

HVAC

HVAC SYSTEM INSTALLERS SHALL BE TRAINED AND CERTIFIED IN THE PROPER INSTALLATION OF HVAC SYSTEMS AND EQUIPMENT BY A RECOGNIZE TRAINING OR CERTIFICATION.

DUCT INSULATION: R–6 REQUIRED PER CEC 150.

DUCT LEAKAGE TEST: (IF WITH AIR HANDLER) 15 PERCENT OR LESS, INSTALLATION METHOD, DESIGN AND POWER, AIR FLOW TESTING AND GRILL SIZE REQUIREMENTS SHALL BE PER CEC 150.

ENVIRONMENTAL COMFORT

HEATING AND AIR–CONDITIONING SYSTEM SHALL BE SIZED, DESIGNED AND HAVE THEIR EQUIPMENT SELECTED USING THE FOLLOWING METHODS:

1. HEAT LOSS/HEAT GAIN VALUES IN ACCORDANCE WITH ANSI/ACCA 2 MANUAL J–2004 OR EQUIVALENT;
2. DUCT SYSTEMS ARE SIZED ACCORDING TO ANSI/ACCA 1, MANUAL D–2009 OR EQUIVALENT;
3. SELECT HEATING AND COOLING EQUIPMENT IN ACCORDANCE WITH ANSI/ACCA 3, MANUAL S–2004 OR EQUIVALENT.

POLLUTANT CONTROL (CGC 4.504)

DUCT AND MECHANICAL SYSTEMS PROTECTION. AT THE TIME OF ROUGH INSTALLATION, DURING STORAGE ON THE CONSTRUCTION SITE AND UNTIL FINAL STARTUP OF THE HEATING, COOLING AND VENTILATING EQUIPMENT, ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENTS OPENINGS SHALL BE COVERED THE TAPE, PLASTIC, SHEET METALS, OR OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY TO REDUCE THE AMOUNT OF WATER, DUST OR DEBRIS, WHICH MAY ENTER THE SYSTEM PER CGC 4.504.1.

PAINTS AND COATINGS. PAINTS AND COATINGS SHALL COMPLY WITH VOC LIMITS PER CGC 4.504.2.2.

AEROSOL PAINTS AND COATINGS. AEROSOL PAINTS AND COATINGS SHALL MEET THE PRODUCT–WEIGHTED MIR LIMITS FOR ROC AND OTHER REQUIREMENTS PER CGC 4.504.2.3.

VERIFICATION. DOCUMENTATION WILL BE PROVIDED, AT THE REQUEST OF THE BUILDING DIVISION, TO VERIFY COMPLIANCE WITH VOC FINISH MATERIALS PER CGC 4.504.2.4.

CARPETS. CARPET SYSTEM INSTALLED IN THE BUILDING INTERIOR SHALL MEET THE TESTING AND PRODUCT REQUIREMENTS PER CGC 4.504.3.

RESILIENT FLOORING. WHERE RESILIENT FLOORING IS INSTALLED, AT LEAST 80% OF THE FLOOR AREA RECEIVING RESILIENT FLOORING WILL COMPLY WITH THE REQUIREMENTS PER CGC4.504.4.

COMPOSITE WOOD PRODUCTS. HARDWOOD PLYWOOD, PARTICLEBOARD AND MEDIUM DENSITY FIBERBOARD COMPOSITE WOOD PRODUCTS USED ON THE INTERIOR AND EXTERIOR OF THE BUILDING SHALL COMPY WITH THE LOW FORMALDEHYDE EMISSION STANDARDS PER CGC 4.504.5.

INTERIOR MOISTURE CONTROL (CGC 4.505)

CONCRETE SLAB FOUNDATIONS. A CAPILLARY BREAK SHALL BE INSTALLED IF A SLAB ON GRADE FOUNDATION SYSTEM IS USED. THE USE OF A 4" MIN. (SEE SECTIONS) THICK BASE OF 1/2" OR LARGER CLEAN AGGREGATE UNDER A 6 MIL. VAPOR RETARDER WITH JOINT LAPPED NOT LESS THAN 6" WILL BE PROVIDED PER CGC 4.505.2 AND CRC R506.2.3.

MOISTURE CONTENT OF BUILDING MATERIALS. BUILDING MATERIALS WITH VISIBLE SIGNS OF WATER DAMAGE SHALL NOT BE INSTALLED. WALL AND FLOOR FRAMING SHALL NOT BE ENCLOSED WHEN THE FRAMING MEMBERS EXCEED 19% MOISTURE CONTENT. MOISTURE CONTENT SHALL BE CHECKED PRIOR TO FINISH MATERIAL BEING APPLIED PER CGC 4.505.3.

INDOOR AIR QUALITY AND EXHAUST (CGC 4.506.1)

BATHROOM EXHAUST FANS. EXHAUST FANS, WHICH ARE ENERGY STAR COMPLIANT AND BE DUCTED TO TERMINATE OUTSIDE THE BUILDING, SHALL HAVE HUMIDITY CONTROL AND BE PROVIDED IN EVERY BATHROOM PER CGC 4.506.1.

RODENT PROOFING

ANNULAR SPACES AROUND PIPES, ELECTRIC CABLES, CONDUITS OR OTHER OPENINGS IN SOLE/BOTTOM PLATES AT EXTERIOR WALLS SHALL BE RODENT PROOFED BY CLOSING SUCH OPENINGS WITH CEMENT MORTAR, CONCRETE MASONRY, OR SIMILAR METHOD ACCEPTABLE TO THE ENFORCING AGENCY PER CGC 4.406.1.

FRAMING

CONVENTIONAL CONSTRUCTION SHALL CONFORM WITH THE PROVISION IN CBC CH. 23. SEE STRUCTURAL DRAWINGS. UNDER FLOOR CLEARANCES, 18" CLEARANCE TO BOTTOM OF FLOOR JOIST.

FIRE BLOCKING AND DRAFT STOPPING SHALL BE INSTALLED TO CUT OFF ALL CONCEALED DRAFT OPENINGS (BOTH VERTICAL AND HORIZONTAL) AND SHALL FORM AN EFFECTIVE BARRIER. CBC, SECTION 717.

PRESSURE TREATED LUMBER

NOT ACCEPTABLE: CHROMATED COPPER ARSENATE (CCA) (TYPICAL GREEN COLORED PRESSURE LUMBER) SHALL NOT BE USED.

ACCEPTABLE PRODUCTS: BORATE PRESSURE TREATED WOOD OR ALKALINE COPPER QUAT (ACQ TYPES BAND D) AND COPPER AZOLE (CBA–A, CA–B). IF ACQ, CBA–A OR CA–B IS USED ALL METAL CONNECTORS SHALL BE G–185 HOT DIPPED GALVANIZED, STAINLESS STEEL, SILICONE BRONZE OR COPPER. G–60 AND G–90 GALVANIZED, STEEL IS NOT ACCEPTABLE AND SHALL NOT BE USED. THIS INCLUDES ALL PLATES, ANCHOR BOLTS, NAILS, ETC.

ACCESS DOORS

UNDER FLOOR ACCESS, CBC 2306.3: MIN. 18"X24" (30" X 22", IF THERE IS MECHANICAL UNIT UNDER FLOOR–UMC 307.4). ATTIC ACCESS: 20"X30" MIN. CLEAR OPENING WITH 30" HEADROOM AT OR ABOVE THE ATTIC OPENING CBC 1209.2 PROVIDE FIRE RATED DOORS AT FIRE RESISTIVE PARTITIONS OR CEILING.

LANDINGS

LANDINGS SHALL BE REQUIRED AT ALL DOORS. LANDING SHALL HAVE A WIDTH NOT LESS THAN THE WIDTH OF THE STAIRWAY OR THE WIDTH OF THE DOOR, WHICHEVER IS GREATER. DOORS IN THE FULLY OPEN POSITION SHALL NOT REDUCE A REQUIRED DIMENSION BY MORE THAN 7 INCHES. THE MINIMUM LANDING DIMENSION SHALL BE NOT LESS THAN 36 INCHES IN ANY DIMENSION. CRC R311.3.

ENERGY REQUIREMENT

IN ADDITION TO THE INSULATION REQUIREMENTS AND CURRENT TITLE 24 ENERGY REQUIREMENTS, ADDITIONAL REQUIREMENTS INCLUDES:

- RADIANT BARRIER: INSTALL RADIANT BARRIER WITH EMITTANCE .05 OR LESS IN THE ATTIC.
- DUCT SEALING: ALL NEW HEATING AND COOLING DUCTS ARE REQUIRED TO BE SEALED WITH CLOTH DUCT TAPE (TAPE MUST BE LABELED–UL 181B), MASTIC AND DRAWBANDS.
- EFFICIENT WINDOWS: ALL NEW WINDOWS AND DOORS WITH GLAZING SHALL HAVE "U" FACTOR OF .40 OR LESS (MOST OF THE METAL FRAMED WINDOWS WILL NOT QUALIFY) AND SHGC (SOLAR HEAT GAIN COEFFICIENT) OF .35.
- NEW BATHROOMS SHALL BE EQUIPPED WITH FLUORESCENT LIGHTS ON THE FIRST SWITCH SEE ELECTRICAL DRAWINGS FOR ADDITIONAL REQUIREMENTS.

INSULATION REQUIREMENTS (SEE TITLE 24 SCHEDULES)

WALLS: MINIMUM R–21 INSULATION IN ALL EXTERIOR WALLS.
CEILINGS: MINIMUM R–30 BATT INSULATION IN UPPER & LOWER ROOF AREAS.
FLOORS: MINIMUM R–19 BATT INSULATION IN FIRST FLOOR OVER CRAWL SPACES AND 2ND FLOOR CANTILEVERS.

PAINTING

ALL SURFACES TO BE PAINTED SHALL BE PREPARED AND PAINTED ACCORDING TO DUNN–EDWARDS SPECIFICATIONS AND/OR RECOMMENDATIONS.

SMOKE DETECTORS

CALIFORNIA RESIDENTIAL CODE R314.3
A SMOKE DETECTOR SHALL BE INSTALLED IN EACH SLEEPING ROOM AND AT A POINT CENTRALLY LOCATED IN THE CORRIDOR OR AREA GIVING ACCESS TO EACH SEPARATE SLEEPING AREA. SMOKE DETECTORS SHALL BE INSTALLED ON EACH STORY OR LEVEL. REQUIRED POWER SOURCE, IN NEW CONSTRUCTION, SMOKE DETECTORS SHALL BE HARD WIRED WITH A BATTERY BACK–UP. IN EXISTING CONSTRUCTION SMOKE DETECTORS MAY BE BATTERY OPERATED.

FIRE SPRINKLERS

INSTALL A COMPLETE NFPA 13D FIRE SPRINKLER SYSTEM THROUGHOUT SEPARATE APPLICATION AND PERMITS ARE REQUIRED TO BE OBTAINED BY A CONTRACTOR LICENSED TO PERFORM SUCH WORK.

CARBON MONOXIDE ALARMS

CALIFORNIA RESIDENTIAL CODE R315
A CARBON MONOXIDE ALARM IN ALL AREAS LEADING INTO THE BEDROOM AND ON EVERY FLOOR.

BUILDING MAINTENANCE AND OPERATION

AN OPERATION AND MAINTENACE MANUAL WILL BE PROVIDED TO THE BUILDING OCCUPANT OR OWNER PER CGC SECTION 4.410.1.

VERIFICATION

UPON REQUEST, VERIFICATION OF COMPLIANCE WITH THIS CODE MAY INCLUDE CONSTRUCTION DOCUMENTS, PLANS,SPECIFICATIONS, BUILDER OR INSTALLER CERTIFICATION, INSPECTION REPORTS, OR OTHER METHODS ACCEPTABLE TO THE BUILDING DIVISION THAT WILL SHOW SUBSTANTIAL CONFORMANCE WITH THE 2016 CODE REQUIREMENTS 2016 CGC 703.1

PHONE (650) 552–0100
Fax (650) 552–0115
811 Seventh Avenue, Suite I
San Mateo, California 94401

⚠ RESPONSE TO COMMENTS: 10–15–20

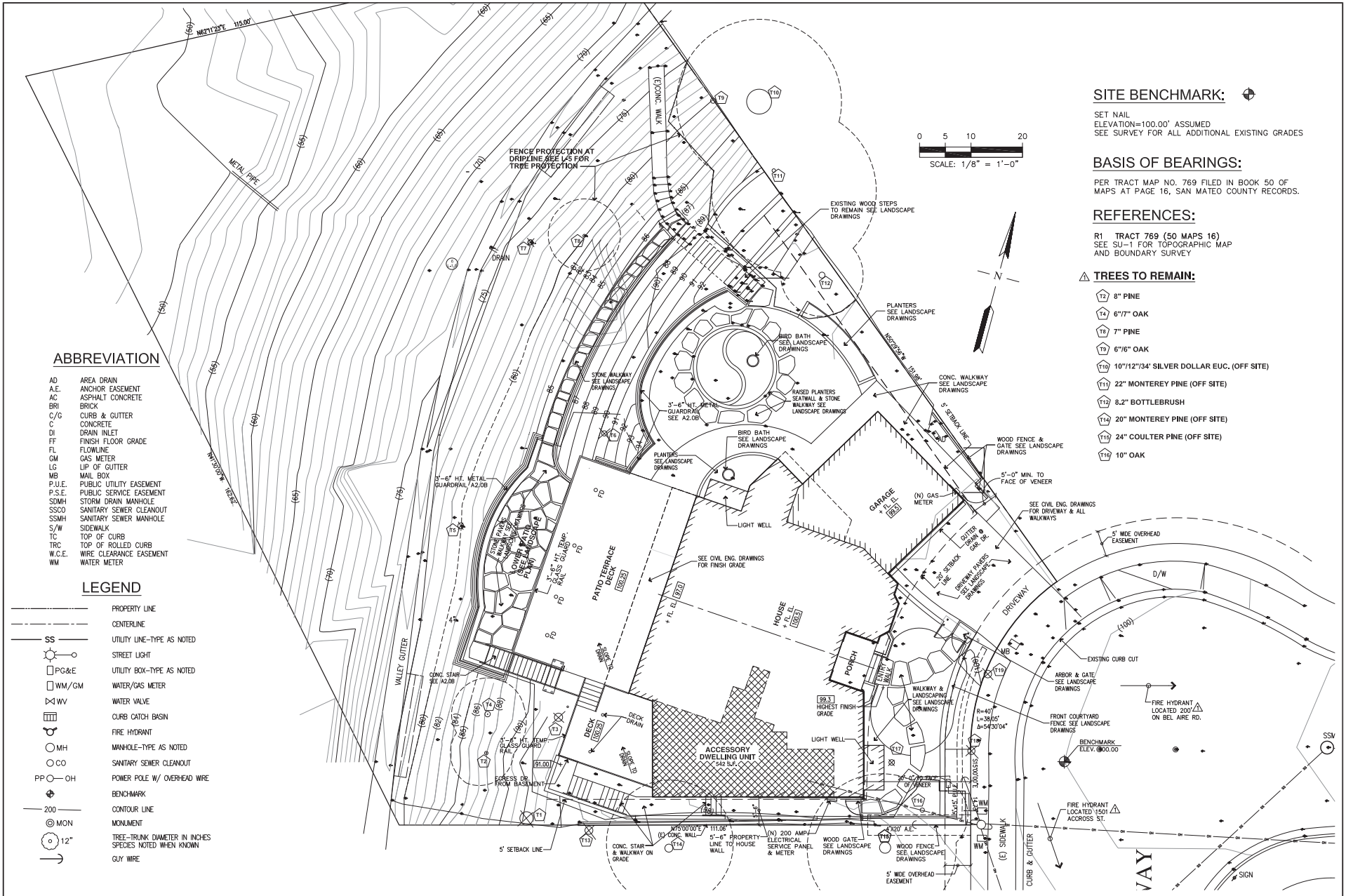
NEW RESIDENCE FOR:
HOLLY QIU & JERRY SHEN
1330 ENCHANTED WAY
SAN MATEO, CA 94402

LICENSED ARCHITECT
RENEWAL 08/31/2019
STATE OF CALIFORNIA

TITLE
GENERAL NOTES

CHECKED: SEP
DATE: 10-14-19
SCALE:
DRAWN: PR
JOB NO. 160114
DWG. NO.
A-1.1
SHEET – OF –

1 GENERAL NOTES



311 Seventh Avenue, Suite 1
San Mateo, California 94401
Phone: (650)558-0100
Fax: (650)558-0113

RESPONSE TO COMMENTS: 10-15-20

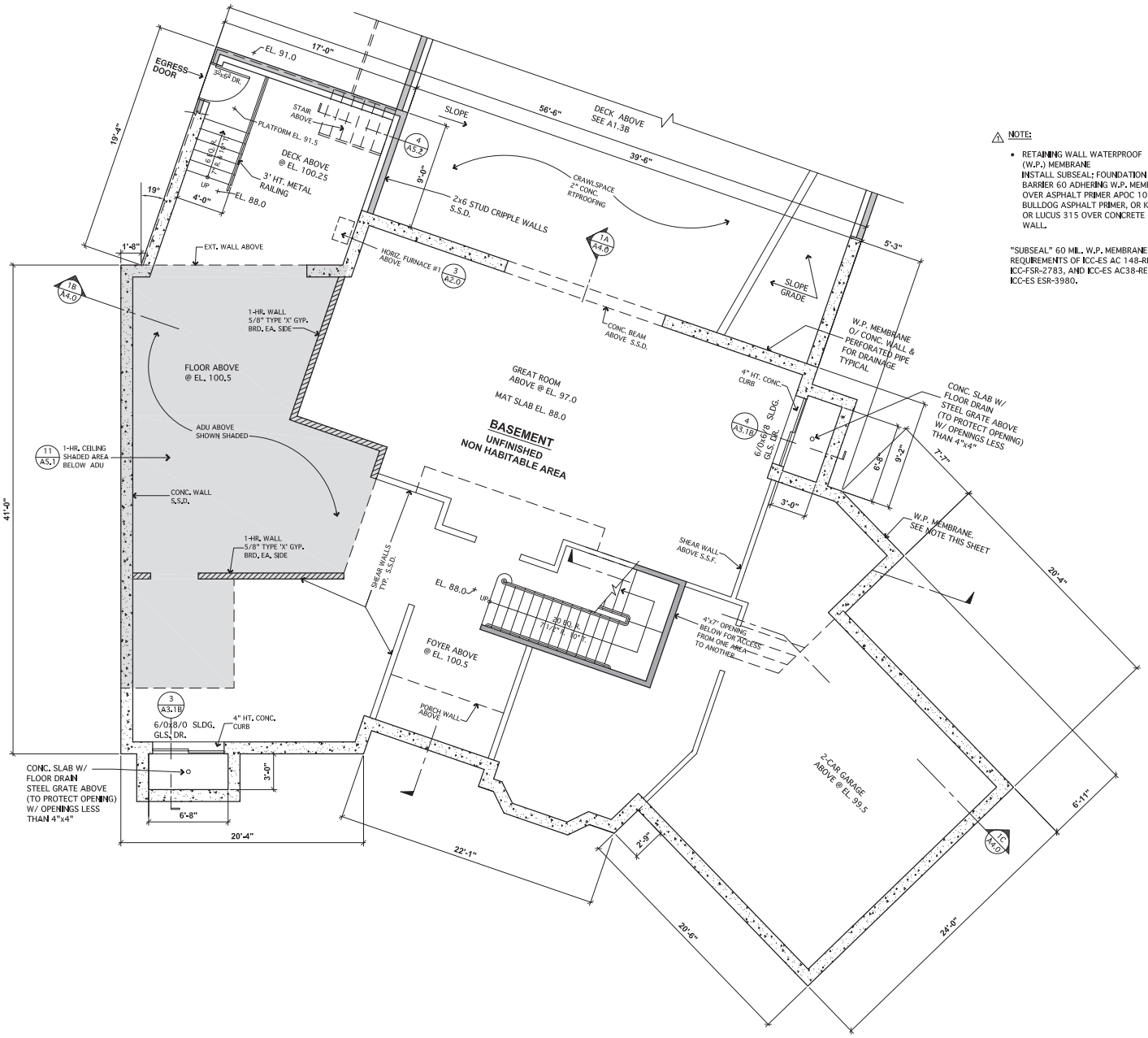
NEW RESIDENCE FOR: HOLLY QIU & JERRY SHEN

1330 ENCHANTED WAY
SAN MATEO, CA 94402

TITLE: SITE PLAN

CHECKED: SEP
DATE: 10-14-19
SCALE: AS SHOWN
DRAWN: -
JOB NO. 160114
DWG. NO. A-1.2
SHEET - OF -

1 SITE PLAN ⚠ SCALE: 1/8" = 1'- 0"



⚠ NOTE:

- RETAINING WALL WATERPROOF (W.P.) MEMBRANE INSTALL SUBSEAL: FOUNDATION WATER BARRIER 60 ADHERING W.P. MEMBRANE OVER ASPHALT PRIMER APOC 103 OR BULLDOG ASPHALT PRIMER, OR KRNAK 108 OR LUCUS 315 OVER CONCRETE RETAINING WALL.

"SUBSEAL" 60 MIL. W.P. MEMBRANE MEETS REQUIREMENTS OF ICC-ES AC 148-REpORT ICC-FSR-2783, AND ICC-ES AC38-REPORT ICC-ES ESR-3980.

1 BASEMENT FLOOR PLAN ⚠ SCALE: 1/4" = 1'-0"

PANKOW ARCHITECTS
PHONE (650) 558-0100
Fax (650) 558-0115
811 Seventh Avenue, Suite I
San Mateo, California 94401

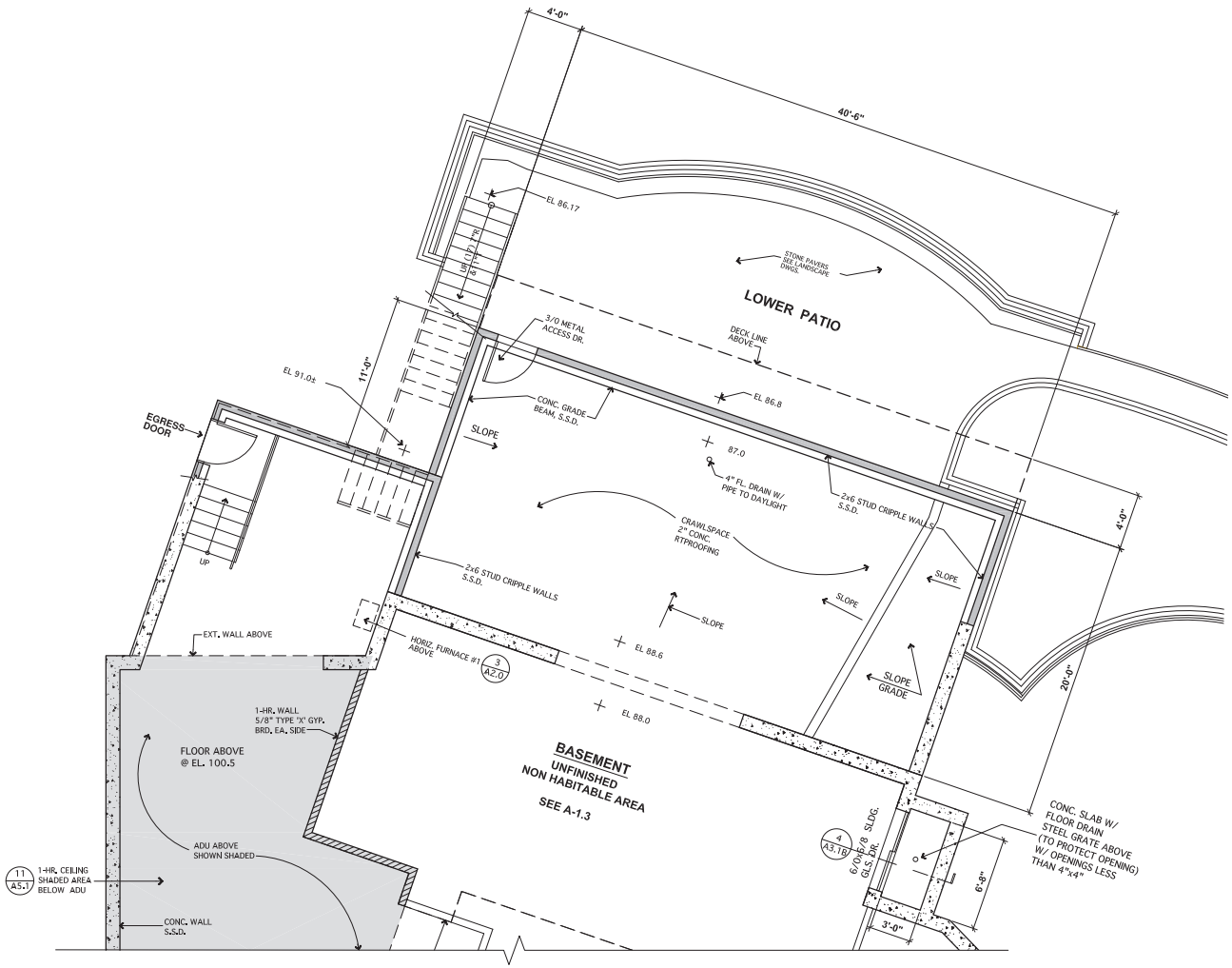
⚠ RESPONSE TO COMMENTS: 10-15-20

NEW RESIDENCE FOR:
HOLLY QIU & JERRY SHEN
1330 ENCHANTED WAY
SAN MATEO, CA 94402

LICENSED ARCHITECT RENEWAL 08/31/2021 STATE OF CALIFORNIA

TITLE: BASEMENT FLOOR PLAN

CHECKED:	SEP
DATE:	10-14-19
SCALE:	AS SHOWN
DRAWN:	PR
JOB NO.	160114
DWG. NO.	A-1.3A
SHEET	– OF –



1 **BASEMENT DECK FLOOR PLAN** ⚠

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

PANKOW ARCHITECTS
PHONE (650) 550-0100
FAX (650) 550-0115
811 Seventh Avenue, Suite I
San Mateo, California 94401

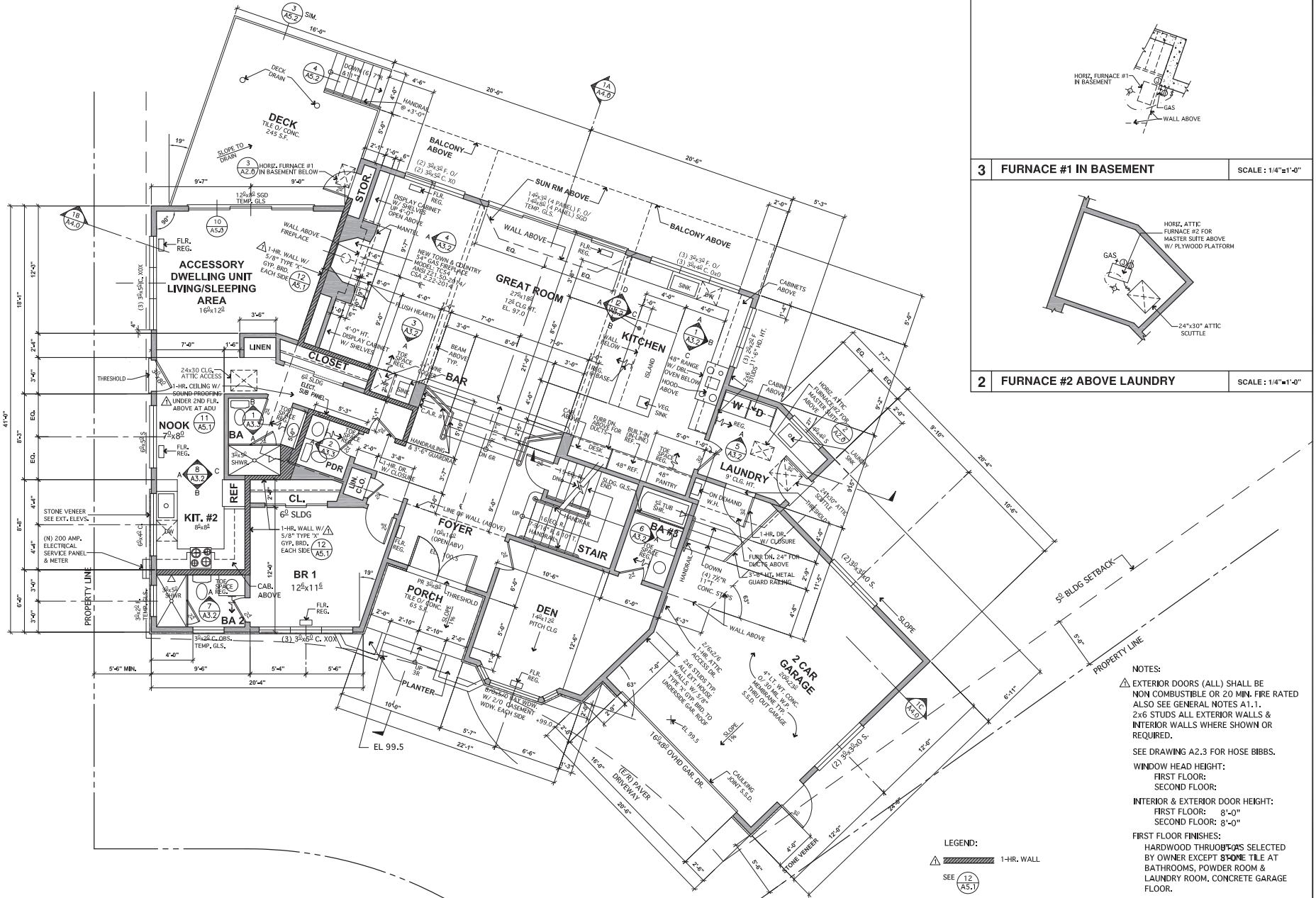
⚠ RESPONSE TO COMMENTS: 10-15-20

NEW RESIDENCE FOR:
HOLLY QIU & JERRY SHEN
1330 ENCHANTED WAY
SAN MATEO, CA 94402

LICENSED ARCHITECT — PANKOW, PETER — RENEWAL 08/31/2021 — STATE OF CALIFORNIA

TITLE
BASEMENT FLOOR PLAN

CHECKED:	SEP
DATE:	10-14-19
SCALE:	AS SHOWN
DRAWN:	PR
JOB NO.	160114
DWG. NO.	**A-1.3B**
SHEET –	OF –



1 **MAIN FLOOR** ⚠ SCALE: 1/4" = 1'-0"

3 **FURNACE #1 IN BASEMENT** SCALE : 1/4"=1'-0"

2 **FURNACE #2 ABOVE LAUNDRY** SCALE : 1/4"=1'-0"

NOTES:

⚠ EXTERIOR DOORS (ALL) SHALL BE NON COMBUSTIBLE OR 20 MIN. FIRE RATED ALSO SEE GENERAL NOTES A1.1.

2x6 STUDS ALL EXTERIOR WALLS & INTERIOR WALLS WHERE SHOWN OR REQUIRED.

SEE DRAWING A2.3 FOR HOSE BIBBS.

WINDOW HEAD HEIGHT:
FIRST FLOOR:
SECOND FLOOR:

INTERIOR & EXTERIOR DOOR HEIGHT:
FIRST FLOOR: 8'-0"
SECOND FLOOR: 8'-0"

FIRST FLOOR FINISHES:
HARDWOOD THRUOUT AS SELECTED BY OWNER EXCEPT STONE TILE AT BATHROOMS, POWDER ROOM & LAUNDRY ROOM. CONCRETE GARAGE FLOOR.

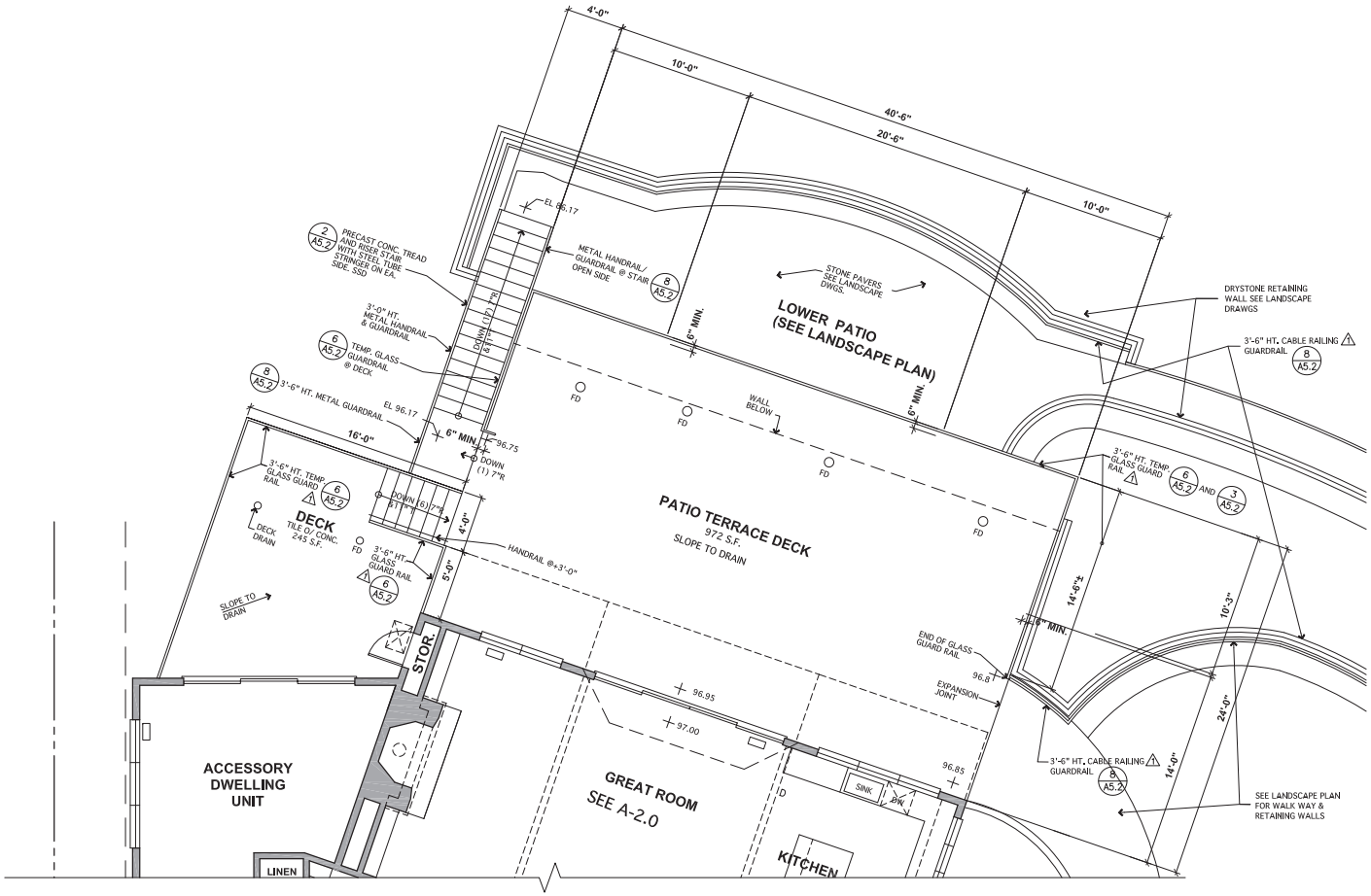
PHONE (650) 558-0100
Fax (650) 558-0115
811 Seventh Avenue, Suite I
San Mateo, California 94401

⚠ RESPONSE TO COMMENTS: 10-15-20

NEW RESIDENCE FOR:
HOLLY QIU & JERRY SHEN
1330 ENCHANTED WAY
SAN MATEO, CA 94402

TITLE: MAIN FLOOR

CHECKED:	SEP
DATE:	10-14-19
SCALE:	AS SHOWN
DRAWN:	AK/PR
JOB NO.	160114
DWG. NO.	A-2.0A
SHEET –	OF –



1 MAIN DECK FLOOR PLAN

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

PANKOW ARCHITECTS
PHONE (650) 550-0100
FAX (650) 550-0115
811 Seventh Avenue, Suite I
San Mateo, California 94401

⚠1 RESPONSE TO COMMENTS: 10-15-20

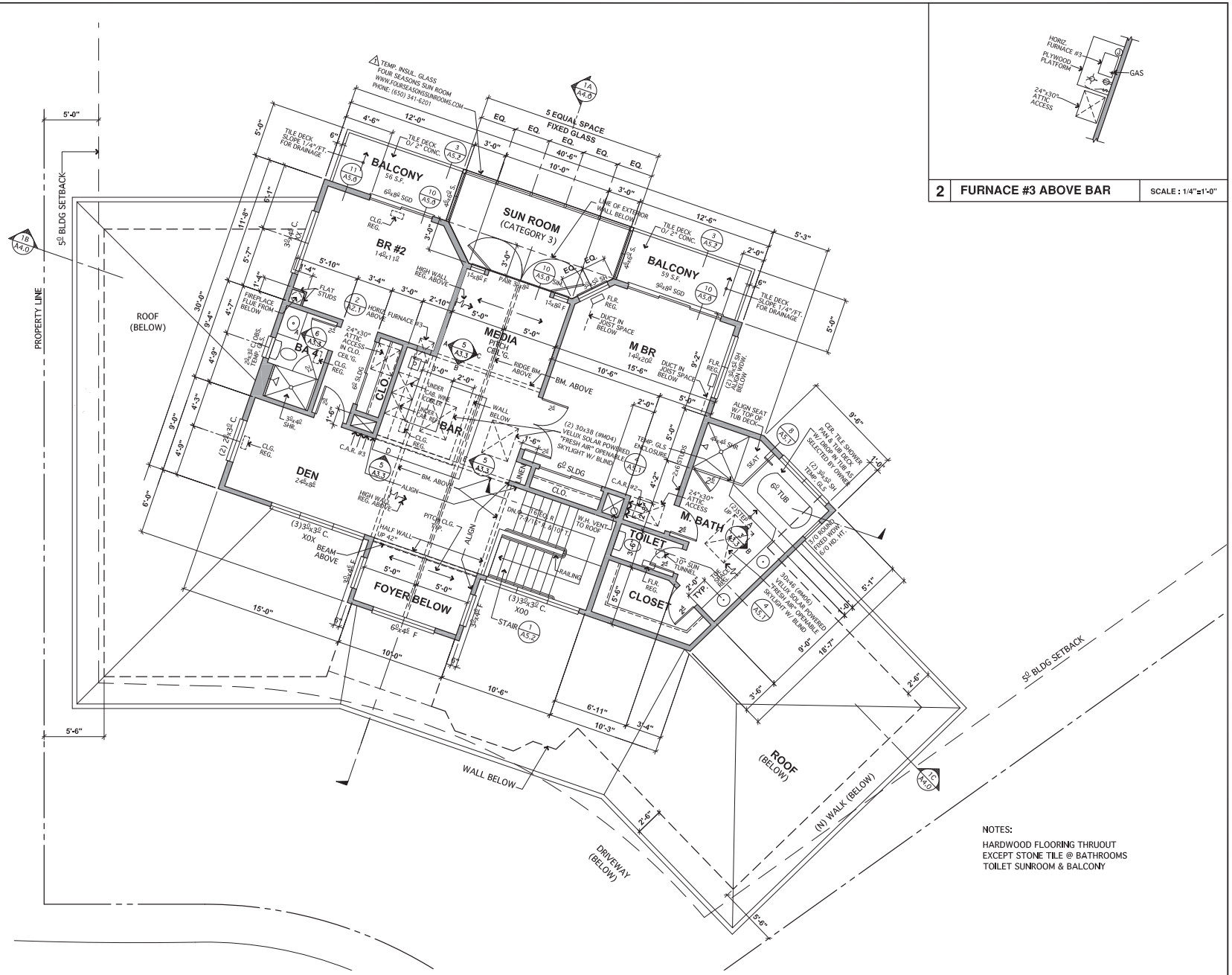
NEW RESIDENCE FOR: HOLLY QIU & JERRY SHEN

1330 ENCHANTED WAY
SAN MATEO, CA 94402

SCOTT E. PANKOW
LICENSED ARCHITECT
REG. NO. 24994
EXP. 08-31-21
STATE OF CALIFORNIA

TITLE
MAIN DECK FLOOR PLAN

CHECKED:	SEP
DATE:	10-14-19
SCALE:	AS SHOWN
DRAWN:	AK/PR
JOB NO.	160114
DWG. NO.	A-2.0B
SHEET	– OF –



1 SECOND FLOOR ⚠ SCALE: 1/4" = 1'-0"

2 FURNACE #3 ABOVE BAR SCALE : 1/4"=1'-0"

PANKOW ARCHITECTS
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811 Seventh Avenue, Suite I
San Mateo, California 94401

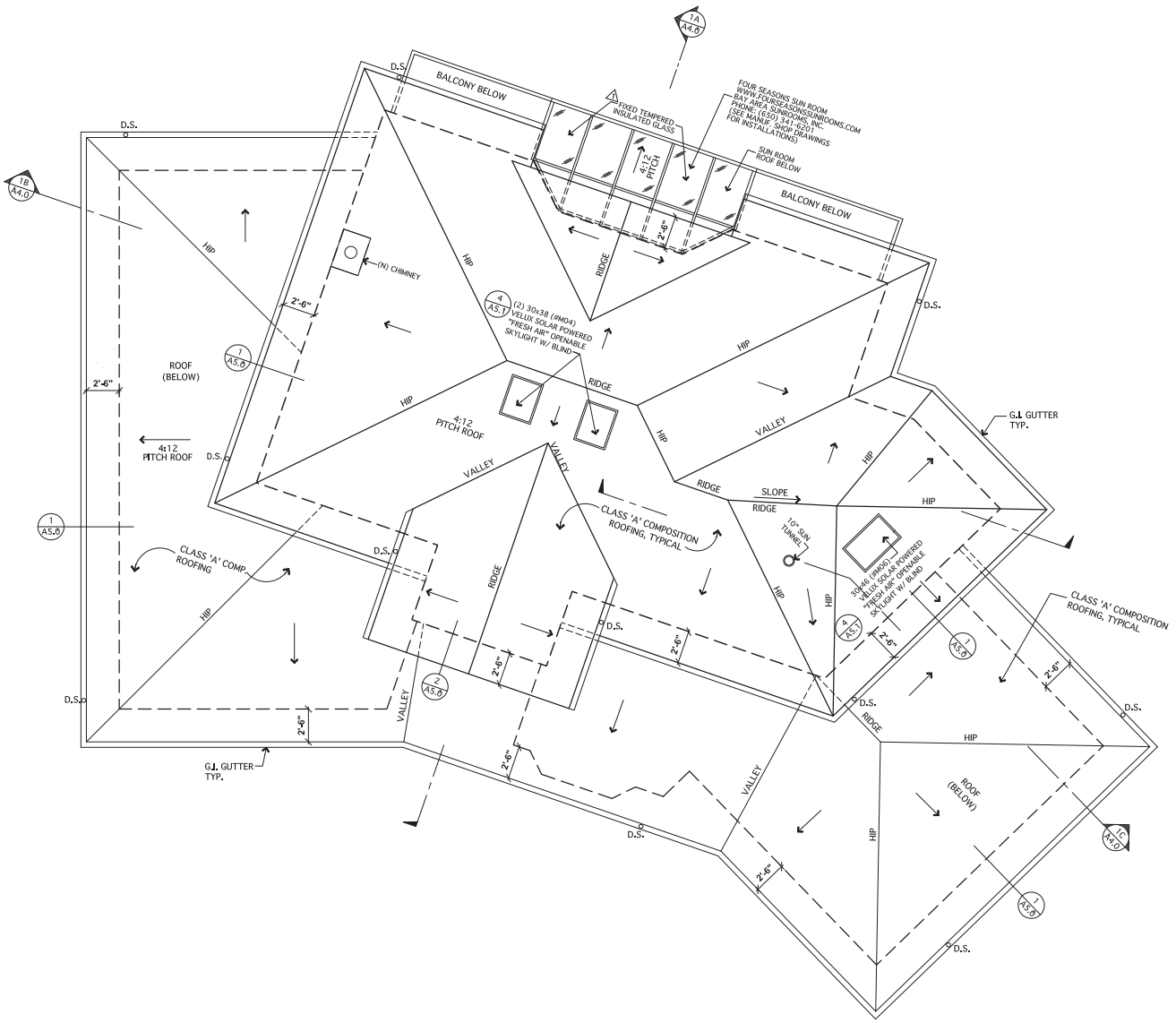
⚠ RESPONSE TO COMMENTS: 10-15-20

NEW RESIDENCE FOR:
HOLLY QIU & JERRY SHEN
1330 ENCHANTED WAY
SAN MATEO, CA 94402

LICENSED ARCHITECT SEAN E. PANKOW No. C-29,021 STATE OF CALIFORNIA

TITLE: SECOND FLOOR

CHECKED:	SEP
DATE:	10-14-19
SCALE:	AS SHOWN
DRAWN:	AK/PR
JOB NO.	160114
DWG. NO.	A-2.1
SHEET	– OF –



ATTIC VENTILATION:

SECOND FLOOR ROOF

ATTIC AREA: 1,438 S.F.
VENTILATION REQUIRED: 1,438 ÷ 150= 9.58 S.F.
VENTILATION PROVIDED: 10.28 S.F.

EAVE VENT: (2) 2"ø VENT @ 12" O.C.
2"ø HOLES= πr^2 = 3.1416x1x1= 3.1416 S.I.
3.1416 ÷ 144 S.I. = 0.021816 S.F.
2 HOLES/BLK = 0.04363 S.F./BLK/12" O.C.
=0.04363 S.F. X 144 LIN. FT.= 6.28 S.F.

ROOF VENTS: O'HAGINS 32"X23"X2" VENT
0.5 S.F. FREE AREA
(8) VENTS @ 0.5 S.F.=4.0 S.F.

TOTAL VENTILATION = 6.28+4.00= 10.28 S.F.

FIRST FLOOR LEFT SIDE ROOF

ATTIC AREA: 706 S.F.
VENTILATION REQUIRED: 706 ÷ 150= 4.70 S.F.
VENTILATION PROVIDED: 5.49 S.F.

EAVE VENT: (2) 2"ø VENT @ 6" O.C.
2"ø HOLES= πr^2 = 3.1416x1x1= 3.1416 S.I.
3.1416 ÷ 144 S.I. = 0.021816 S.F.
2 HOLES/BLK = 0.04363 S.F./BLK/12" O.C.
=0.04363 S.F. X 80 LIN. FT.= 3.49 S.F.

ROOF VENTS: O'HAGINS 32"X23"X2" VENT
0.5 S.F. FREE AREA
(4) VENTS @ 0.5 S.F.=2.0 S.F.

TOTAL VENTILATION = 3.49+2.00= 5.49 S.F.

FIRST FLOOR RIGHT SIDE ROOF

ATTIC AREA: 655 S.F.
VENTILATION REQUIRED: 655 ÷ 150= 4.36 S.F.
VENTILATION PROVIDED: 5.27 S.F.

EAVE VENT: (3) 2"ø VENT @ 12" O.C.
2"ø HOLES= πr^2 = 3.1416x1x1= 3.1416 S.I.
3.1416 ÷ 144 S.I. = 0.021816 S.F.
2 HOLES/BLK = 0.04363 S.F./BLK/12" O.C.
=0.04363 S.F. X 75 LIN. FT.= 3.27 S.F.

ROOF VENTS: O'HAGINS 32"X23"X2" VENT
0.5 S.F. FREE AREA
(4) VENTS @ 0.5 S.F.=2.0 S.F.

TOTAL VENTILATION = 3.27+2.00= 5.27 S.F.

⚠
- ALL ROOF VENTS SHALL BE PROTECTED WITH INCOMBUSTIBLE WIRE MESH HAVING MIN. 1/16" TO 1/8" MAX. OPENINGS.
- ALL ROOF GUTTERS SHALL HAVE INCOMBUSTIBLE LEAF GUARDS INSTALLED.
- VALLEY FLASHING SHALL BE MINIMUM 26 GA. G.I. INSTALLED OVER 72–LB MINERAL–SURFACED NON–PERFORATED CAP SHEET. 36" MIN. WIDE RUNNING THE FULL LENGTH OF THE VALLEY PER CRC R337.5.3.
- ROOF SHEATHING AT ALL EAVES SHALL BE 1/2" NONCOMBUSTIBLE DENSE DECK TESTED PER ASTM E–136.

1 **ROOF PLAN** ⚠ — SCALE: 1/4" = 1'-0"

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Fax (650) 558-0115
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PANKO ARCHITECTS

⚠ RESPONSE TO COMMENTS: 10–15–20

NEW RESIDENCE FOR:
HOLLY QIU & JERRY SHEN
1330 ENCHANTED WAY
SAN MATEO CA

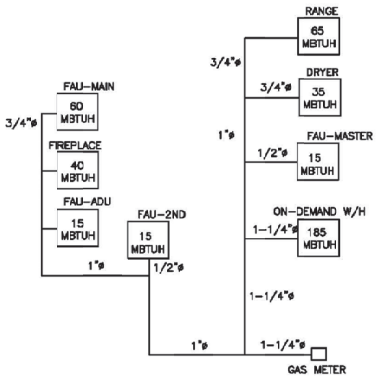
LICENSED ARCHITECT — RENEWAL 08/31/21 — STATE OF CALIFORNIA

TITLE	ROOF PLAN
CHECKED:	SEP
DATE:	10-14-19
SCALE:	AS SHOWN
DRAWN:	PR
JOB NO.	160114
DWG. NO.	A-2.2
SHEET	– OF –

3

GAS BRANCH SCHEDULE		
EQUIPMENT	MBTUH/ CFH	SIZE
ON-DEMAND W/H	185	1-1/4"
KITCHEN RANGE	65	3/4"
FIREPLACE	40	3/4"
FAU - MAIN FLOOR	80	3/4"
FAU - 2ND FLOOR	15	1/2"
FAU - MASTER BR	15	1/2"
FAU - ADU	15	1/2"
TOTAL	430	1-1/2"

DISTANCE FROM GAS METER TO FURTHEST FIXTURE = 91'.
USE 150' COLUMN, CPC TABLE 1216.2.



CTC ASSOCIATES
12 Tern Ct.
San Rafael, CA 94901
Tel: 415-455-0191
Fax: 415-455-0180

2 GAS SCHEMATIC DIAGRAM ⚠



FOR ELECTRICAL LEGEND & NOTES
SEE SHEET A2.4

1 BASEMENT ELECTRICAL FLOOR PLAN ⚠ SCALE: 1/4" = 1'-0"

PAUL KOMOROWSKI ARCHITECTS
PHONE (650) 558-0100
Fax (650) 558-0115
811 Seventh Avenue, Suite I
San Mateo, California 94401

⚠ RESPONSE TO COMMENTS: 10-15-20

NEW RESIDENCE FOR:
HOLLY QIU & JERRY SHEN
1330 ENCHANTED WAY
SAN MATEO, CA 94402

TITLE
BASEMENT ELECTRICAL PLAN
GAS SCHEMATIC DIAGRAM

CHECKED:	SEP
DATE:	10-14-19
SCALE:	AS SHOWN
DRAWN:	PR
JOB NO.	160114
DWG. NO.	A-2.3
SHEET	– OF –

ELECTRICAL LEGEND:

	LIGHT SWITCH		CEILING LIGHT
D	LIGHT SWITCH W/ DIMMER	LED	WALL MOUNTED LED LIGHT
3	LIGHT SWITCH TWO-WAY	LED	RECESSED LED CEILING LIGHT
	DUPLEX ELECT. WALL OUTLETS		WALL WASHER LIGHT
GFCI	GROUND FAULT INTERRUPTER WALL OUTLET		TELEPHONE OUTLET — US TEC MULTIFUNCTIONAL OUTLET (TWO REG CABLES AND TWO CATEGORY 5 TWISTED PAIR CABLES)
WP GFCI	WEATHER PROOF GROUND FAULT INTERRUPTER WALL OUTLET	TV	TV /CABLE OUTLET
220	220V DUPLEX ELECT. WALL OUTLETS	J	JUNCTION BOX
110	110V DUPLEX ELECT. WALL OUTLETS	D	DISPOSAL
	HALF HOT WALL OUTLET	T	THERMOSTAT
	RECESS CEILING LIGHT	F	EXHAUST FAN — CEILING MOUNTED PANASONIC "WHISPER CEILING" SIZE AS REQUIRED ENERGY STAR W/ HUMIDITY CONTROL PROVIDE SEPARATE SWITCHES FOR FAN & LIGHT COMBINATION
	SUSPENDED CEILING LIGHT	SD	SMOKE DETECTOR PHOTO ELECTRIC TYPE
LED	RECESSED LIGHT w/ LED OR LED LIGHT BULB		GAS VALVE
REG	HEAT REGISTER	TV	TV
(E)	EXISTING	J	ROPE LIGHT
(N)	NEW	HB	HOSE BIBB
LED	LIGHT-EMITTING DIODE LIGHTING FIXTURES	S	SECURITY PANEL
		CM	CARBON MONOXIDE ALARM

NOTES:

1. SMOKE DETECTORS WHICH SOUND AN AUDIBLE ALARM IN ALL SLEEPING AREAS OF THE DWELLING UNIT IN WHICH THEY ARE LOCATED ARE REQUIRED TO BE INSTALLED AS SHOWN ON THE PLAN AND IN THE FOLLOWING EXISTING LOCATIONS:
   - ON THE CEILING OR WALL AT A POINT CENTRALLY LOCATED IN THE HALL OR AREA GIVING ACCESS TO ROOMS USED FOR SLEEPING PURPOSES.
   - PROVIDE DETECTOR IN ROOM IF ROOM HEIGHT IS 24" OR HIGHER THAN THAT OF HALL
   - IN THE BASEMENT
   - IN EACH SLEEPING ROOM

   SMOKE DETECTORS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING (110V) AND BE EQUIPPED W/ A BATTERY BACKUP.
2. ALL BRANCH CIRCUITS THAT SUPPLY 120-VOLT, SINGLE PHASE, 15- AND 20- AMPERE OUTLETS INSTALLED IN DWELLING UNIT FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, KITCHENS, LAUNDRY AREAS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, OR SIMILAR ROOMS OR AREAS SHALL BE COMBINATION TYPE ARC-FAULT CIRCUIT INTERRUPTER (AFCI) AND BE READILY ACCESSIBLE PROTECTED PER CEC 210.12(B).
3. ALL 125-VOLT, 15- AND 20- AMPERE RECEPTACLE OUTLETS SHALL BE LISTED TAMPER-RESISTANT RECEPTACLES PER CEC 406.12.
4. PROVIDE DEDICATED CIRCUITS FOR THE DISHWASHER, GARBAGE DISPOSAL AND MICROWAVE PER 2016 CEC 210.23A (1), (2)
5. ALL 15A AND 20A 125V RECEPTACLES INSTALLED IN LAUNDRY AREAS MUST BE GFCI PROTECTED PER 2016 CEC 210.8 (10)
6. ALL 15A AND 20A 125V RECEPTACLES SUPPLYING DISHWASHERS AND GARBAGE DISPOSALS MUST BE READILY ACCESSIBLE AND GFI PROTECTED PER 2016 CEC 210.8 (D)
7. ALL NEW LIGHT FIXTURES OR REPLACED LIGHT FIXTURES SHALL COMPLY WITH SECTION 150 (K) OF THE 2016 CALIFORNIA ENERGY CODE.

   A) ALL BATHROOMS, KITCHEN, GARAGE, UTILITY AND LAUNDRY ROOMS SHALL HAVE HIGH EFFICACY LUMINAIRES. AT LEAST ONE OF THE FIXTURES IN THE ROOM/SPACE SHALL BE CONTROLLED BY VACANCY SENSOR. CEC SECTION 150.0(K)(2) (J).

   B) ALL EXTERIOR LIGHTS SHALL BE HIGH-EFFICACY AND CONTROLLED BY MOTION SENSORS AND PHOTOCONTROL OR OTHER APPROVED METHODS PER CALIFORNIA ENERGY CODE 150(K)(3). ALL OUTDOOR LIGHTING SHALL BE CONTROLLED BY A MANUAL ON AND OFF SWITCH THAT DOES NOT OVERRIDE TO ON THE AUTOMATIC ACTIONS OF THE FEATURES MENTIONED ABOVE. CEC SECTION 150.0(K)(3)(A).

   C) ALL OTHER ROOMS SHALL HAVE LIGHT FIXTURES WITH VACANCY SENSORS OR DIMMERS SHALL BE PROVIDED FOR ALL LUMINAIRES REQUIRED TO HAVE LIGHT SOURCES COMPLIANT WITH REFERENCE JOINT APPENDIX JA8 SUCH AS GU-24 SOCKETS CONTAINING LED LIGHT SOURCES. EXCEPT FOR HALLWAYS AND CLOSETS LESS THAN 70 SF. CEC SECTION 150.0(K)(2)(K).
8. THE LIGHTING IS TO BE HIGH EFFICIENCY TYPE FIXTURES, RATINGS PER THE FOLLOWING:

LAMP RATING	LAMP EFFICIENCY
15 WATTS OR LESS	40 LUMENS/WATT
OVER 15 & UP TO 40	50 LUMENS/WATT
OVER 40 WATTS	60 LUMENS/WATT

9. LUMINARIES RECESSED INTO INSULATED CEILINGS SHALL BE APPROVED FOR ZERO CLEARANCE INSULATION COVER (IC) BY UNDERWRITERS LABORATORIES OR OTHER TESTING/RATING LABORATORIES RECOGNIZED BY THE INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS, AND SHALL INCLUDE A LABEL CERTIFYING AIR TIGHT (AT) OR SIMILAR DESIGNATION TO SHOW AIR LEAKAGE LESS THAN 2.0 CFM AT 75 PASCALS (OR 1.57 LBS/FT2) WHEN TESTED IN ACCORDANCE WITH ASTM E283, AND SHALL BE SEALED WITH A GASKET OR CAULK BETWEEN THE HOUSING AND CEILING.
10. A 20 AMP DEDICATED CIRCUIT SHALL BE PROVIDED FOR THE BATHROOM RECEPTACLE OUTLETS PER CEC 210.11 (C) (3).
11. ALL NEW LIGHTING THRUOUT SHALL BE HIGH EFFICACY.

MECHANICAL VENTILATION:

1. FOR INTERMITTENT LOCAL EXHAUST, THE MINIMUM BATHROOM INTERMITTENT VENTILATION AIRFLOW SHALL BE 50 CFM AND FOR KITCHEN HOOD EXHAUST SHALL BE 100 CFM (OR AS AN ALTERNATE, PROVIDE CEILINGOR WALL MOUNTED EXHAUST FAN OR DUCTED VENTILATION SYSTEM THAT PROVIDES AT LEAST 5 AIR CHANGESOF THE KITCHEN VOLUME PER HOUR). ASHRAE 62.2-2010 SECTION 4.6.5.
2. FOR CONTINUOUS OPERATING BATHROOM FAN (LOCAL EXHAUST), IT MUST OPERATE AT A MINIMUM OF 20CFM AND CONTINUOUSLY OPERATING KITCHEN FANS MUST OPERATE AT 5 AIR CHANGES PER HOUR. ASHRAE 62.2-2010 SECTION 4.6.5.
4. FOR SOUND RATING OF VENTILATION FANS, THEY SHALL BE RATED AT LESS THAN 1 SONE FOR CONTINUOUS FANS OR A MAXIMUM OF SONE FOR INTERMITTENT FANS; UNLESS THEIR MAXIMUM RATED AIRFLOW EXCEEDS 400 CFM.



1 **MAIN FLOOR ELECTRICAL PLAN** ⚠ — SCALE: 1/4" = 1'-0"

PANKOW ARCHITECTS
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San Mateo, California 94401

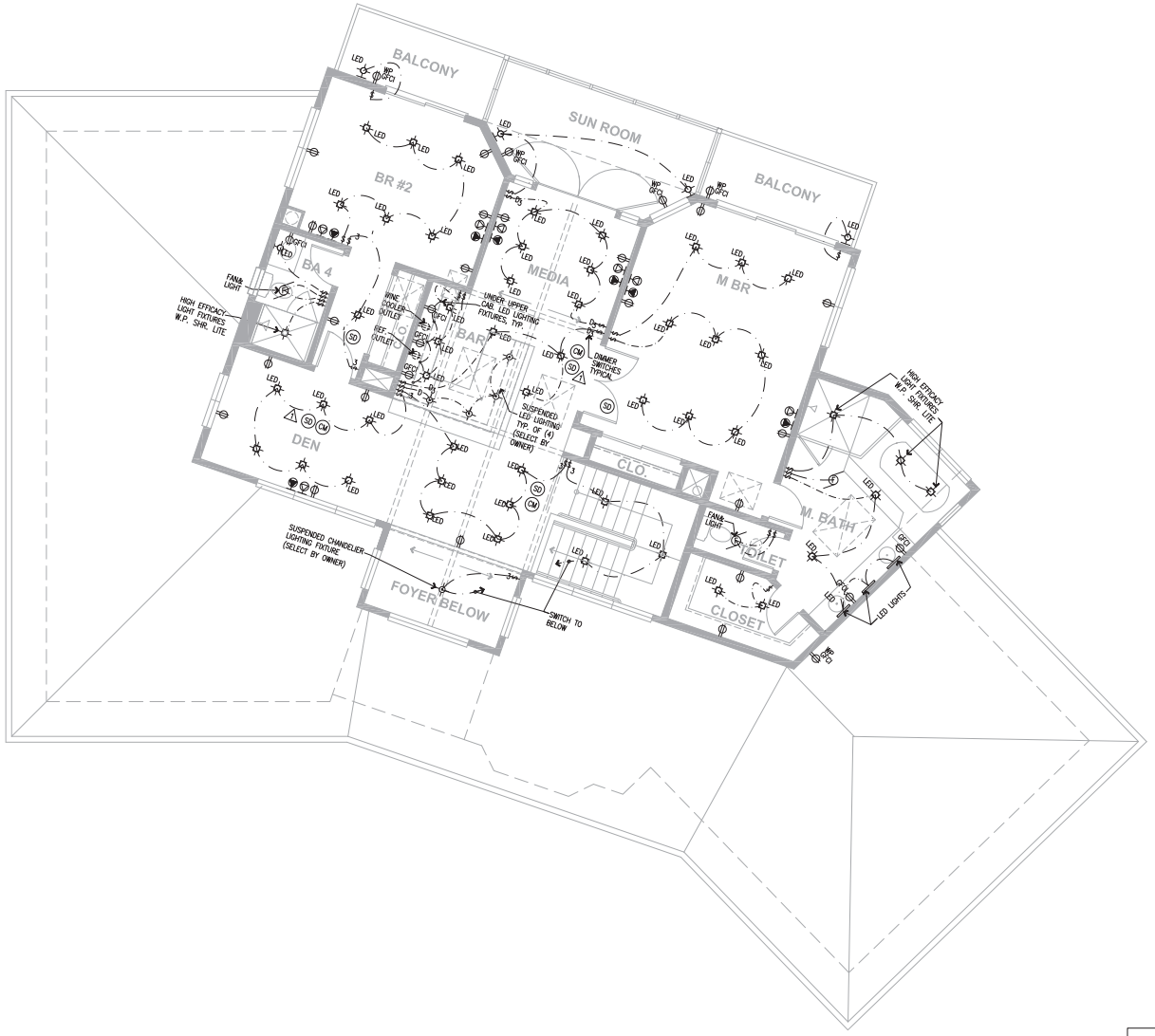
⚠ RESPONSE TO COMMENTS: 10-15-20

NEW RESIDENCE FOR:
HOLLY QIU & JERRY SHEN
1330 ENCHANTED WAY
SAN MATEO, CA 94402

LICENSED ARCHITECT — STATE OF CALIFORNIA

TITLE
MAIN FLOOR ELECTRICAL PLAN

CHECKED:	SEP
DATE:	10-14-19
SCALE:	AS SHOWN
DRAWN:	PR
JOB NO.	160114
DWG. NO.	A-2.4
SHEET	– OF –



FOR ELECTRICAL LEGEND & NOTES
SEE SHEET A2.4

1 SECOND FLOOR ELECTRICAL PLAN

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

PANKOW ARCHITECTS
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Phone (650) 558-0100
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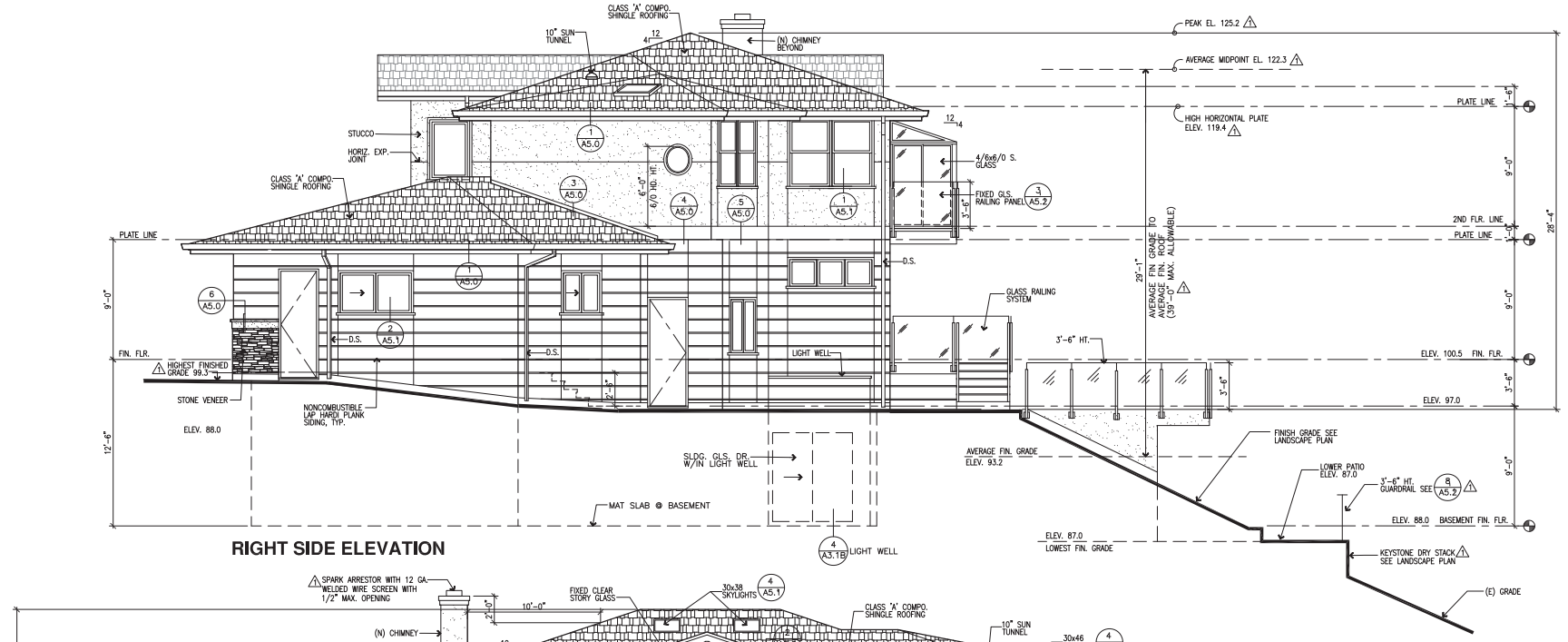
RESPONSE TO COMMENTS: 10-15-20

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1330 ENCHANTED WAY
SAN MATEO, CA 94402

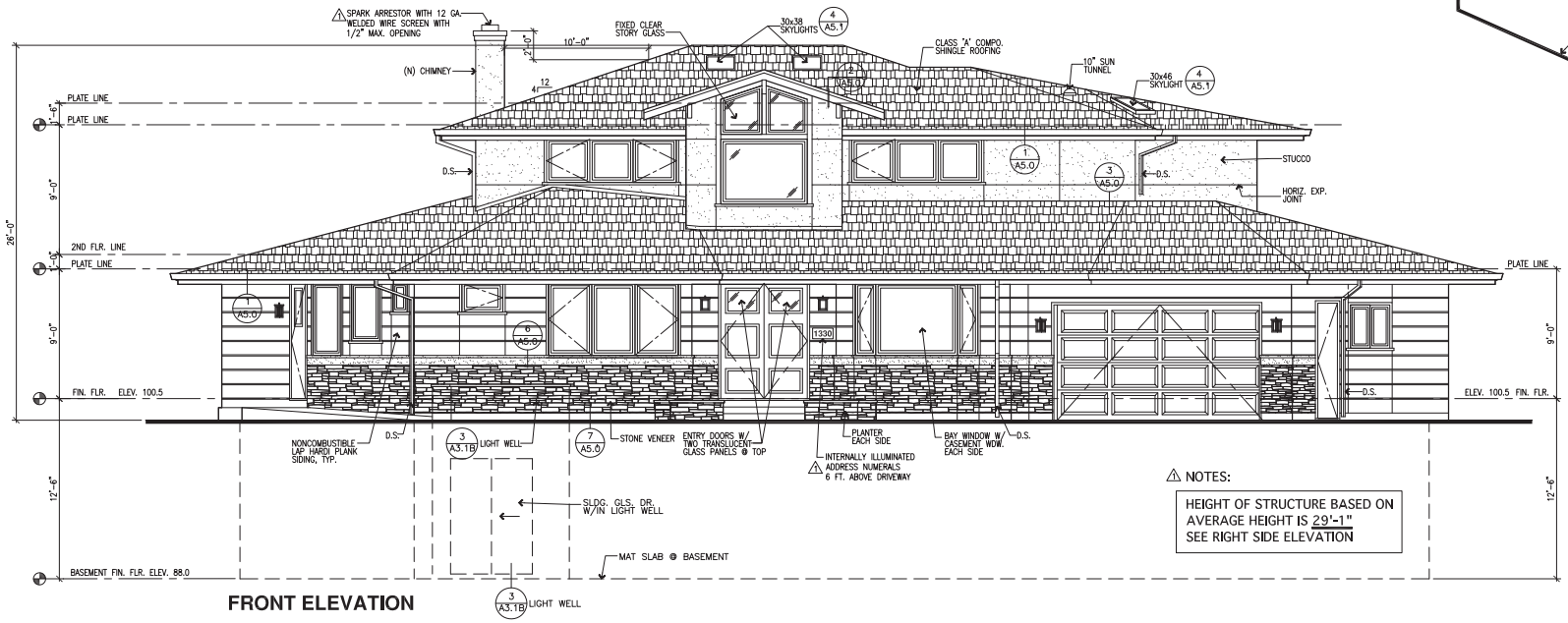
LICENSED ARCHITECT
STEVEN E. PANKOW
STATE OF CALIFORNIA

TITLE
SECOND FLOOR ELECTRICAL PLAN

CHECKED:	SEP
DATE:	10-14-19
SCALE:	AS SHOWN
DRAWN:	PR
JOB NO.	160114
DWG. NO.	A-2.5
SHEET –	OF –



RIGHT SIDE ELEVATION



FRONT ELEVATION

⚠ NOTES:

HEIGHT OF STRUCTURE BASED ON AVERAGE HEIGHT IS 29'-1"
SEE RIGHT SIDE ELEVATION

1 | EXTERIOR ELEVATIONS ⚠ | SCALE: 1/4" = 1'-0"

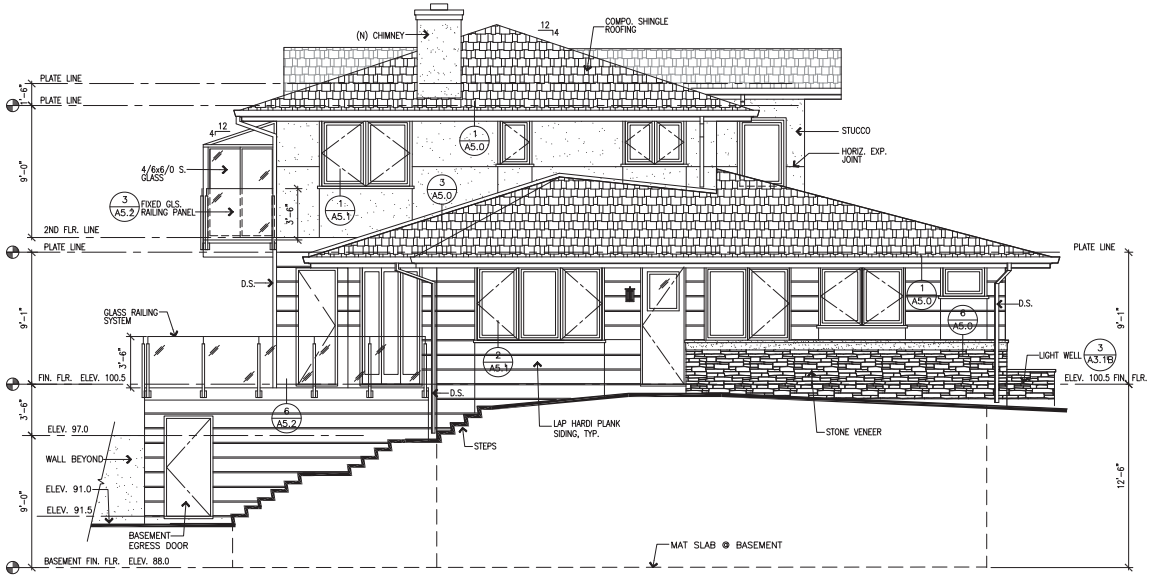
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⚠ RESPONSE TO COMMENTS: 10-15-20

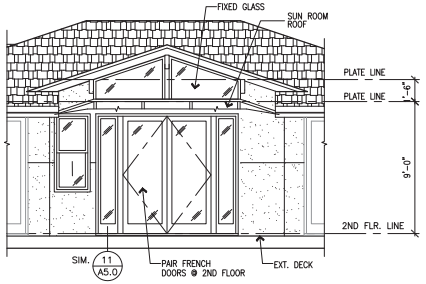
NEW RESIDENCE FOR:
HOLLY QIU & JERRY SHEN
1330 ENCHANTED WAY
SAN MATEO, CA 94402

TITLE
EXTERIOR ELEVATIONS

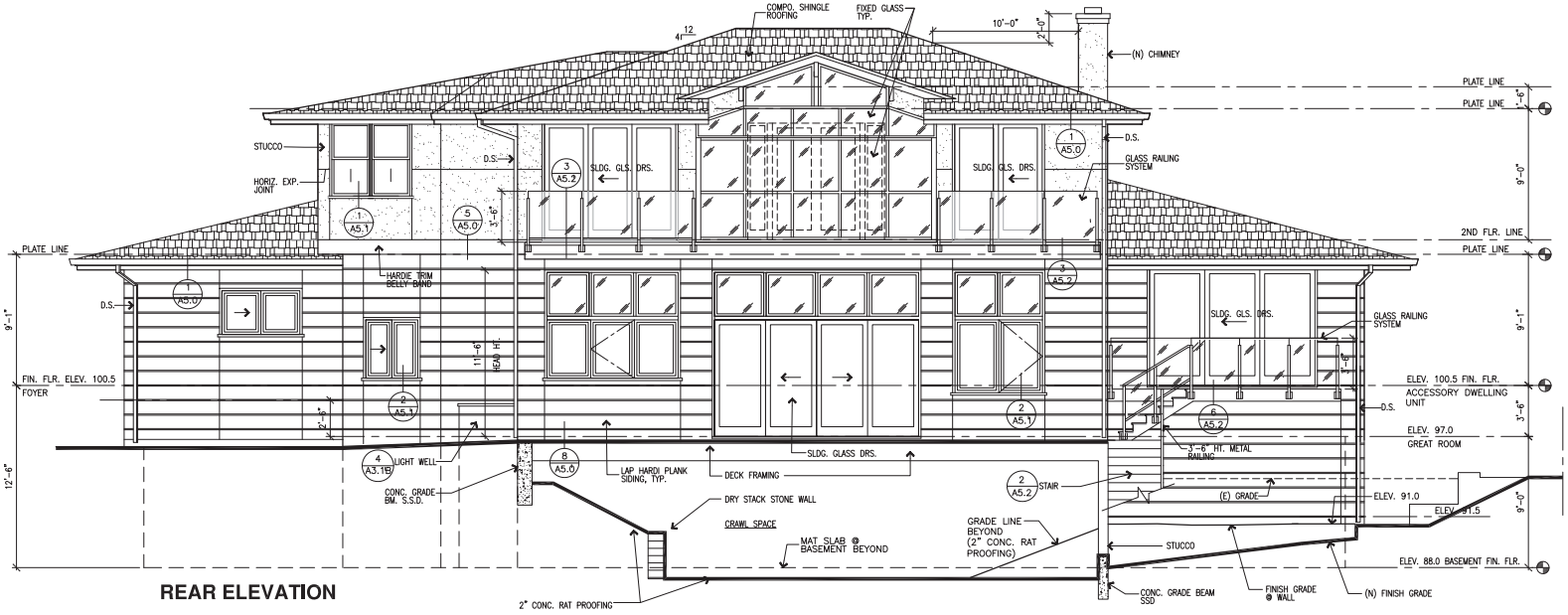
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DATE:	10-14-19
SCALE:	AS SHOWN
DRAWN:	PR
JOB NO.	160114
DWG. NO.	A-3.0
SHEET	– OF –



LEFT SIDE ELEVATION



EXTERIOR ELEVATION @ 2ND FLOOR WITHIN SUN ROOM



REAR ELEVATION

1 EXTERIOR ELEVATIONS

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

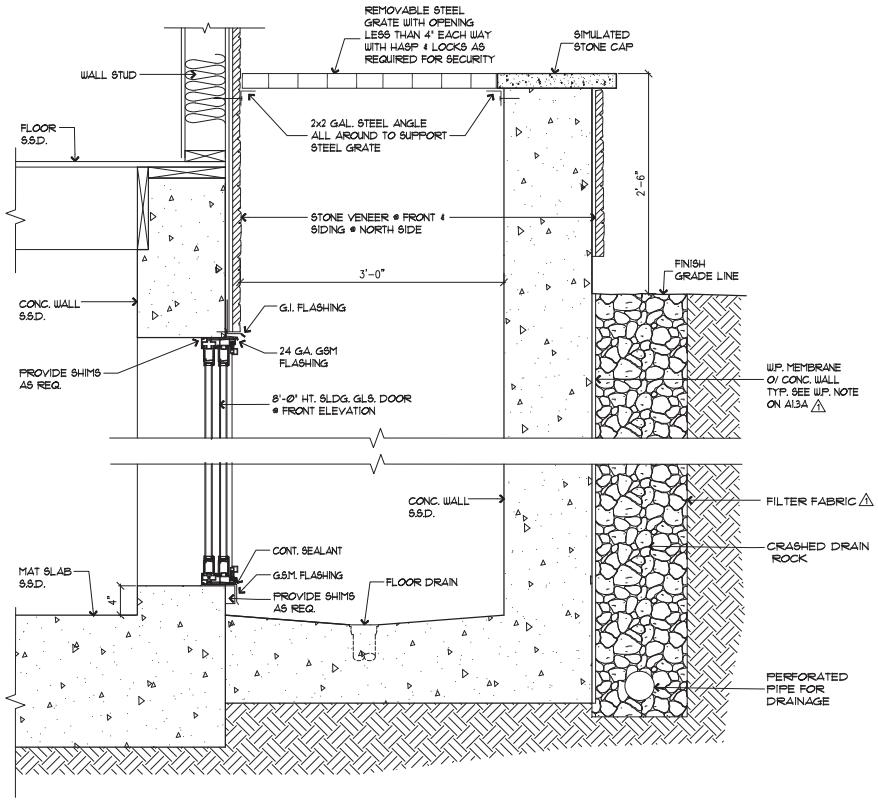
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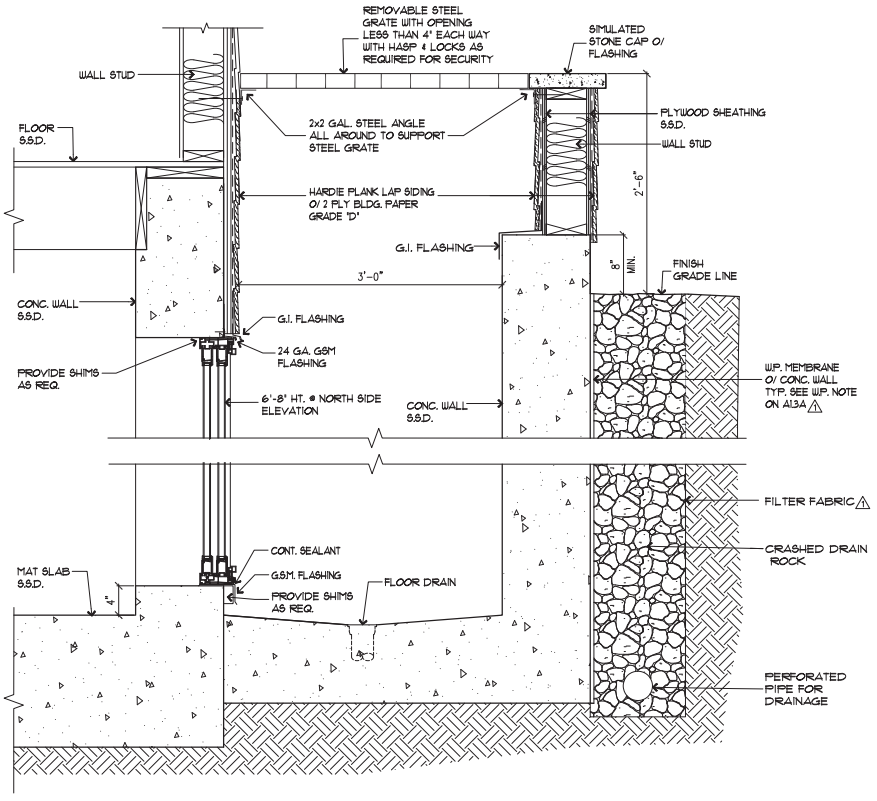
REGISTERED ARCHITECT
STEVEN E. PANKOW
STATE OF CALIFORNIA

TITLE
EXTERIOR ELEVATIONS

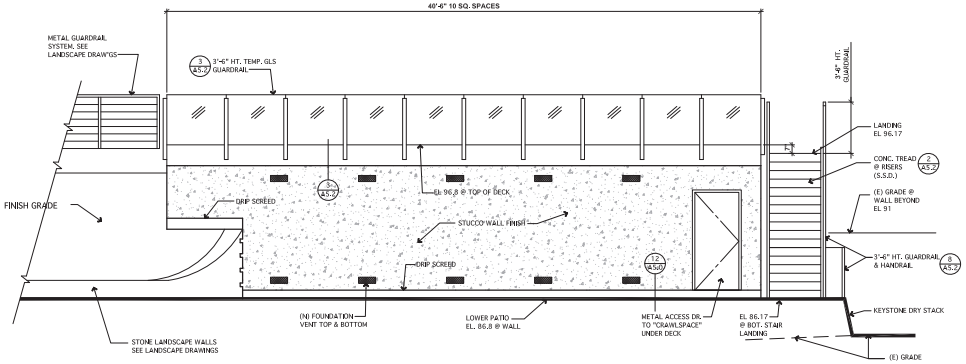
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DRAWN:	PR
JOB NO.	160114
DWG. NO.	A-3.1A
SHEET	– OF –



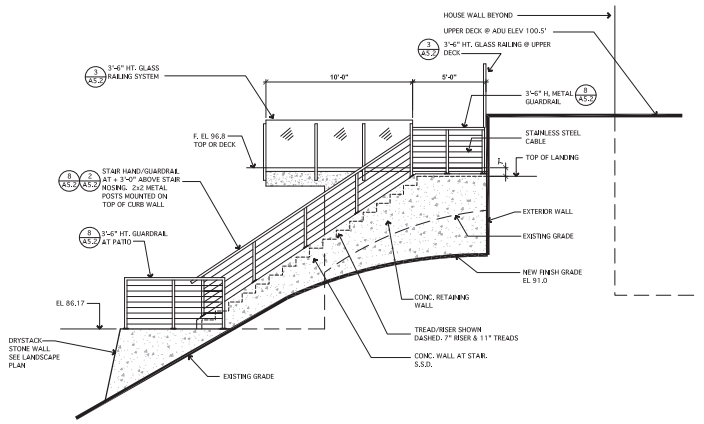
3 LIGHT WELL WALL SECTION @ FRONT ELEVATION SCALE : 1 1/2"=1'-0"



4 LIGHT WELL WALL SECTION @ NORTH SIDE ELEVATION SCALE : 1 1/2"=1'-0"



1 DECK-REAR ELEVATION SCALE: 1/4" = 1'-0"



2 DECK-LEFT SIDE ELEVATION SCALE: 1/4" = 1'-0"

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⚠ RESPONSE TO COMMENTS: 10-15-20

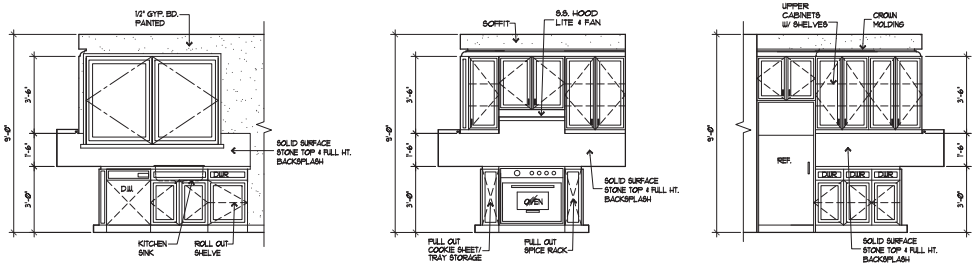
NEW RESIDENCE FOR: HOLLY QIU & JERRY SHEN

1330 ENCHANTED WAY
SAN MATEO, CA 94402

LICENSED ARCHITECT — STATE OF CALIFORNIA

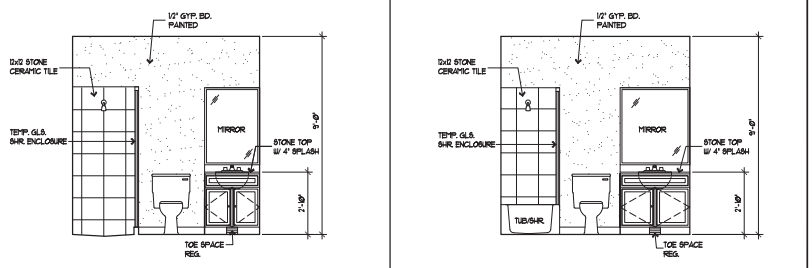
TITLE
DECK-LEFT & REAR ELEVATIONS
LIGHT WELL SECTIONS

CHECKED:	SEP
DATE:	10-14-19
SCALE:	AS SHOWN
DRAWN:	AK/PR
JOB NO.	160114
DWG. NO.	A-3.1B
SHEET	– OF –



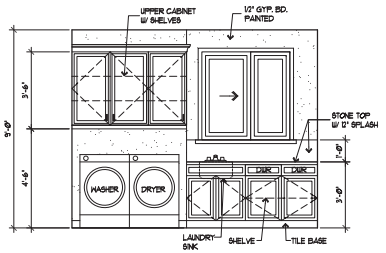
ELEVATION—A ELEVATION—B ELEVATION—C

8 **KITCHEN #2 (SECONDARY UNIT)** SCALE: 3/8" = 1'-0"



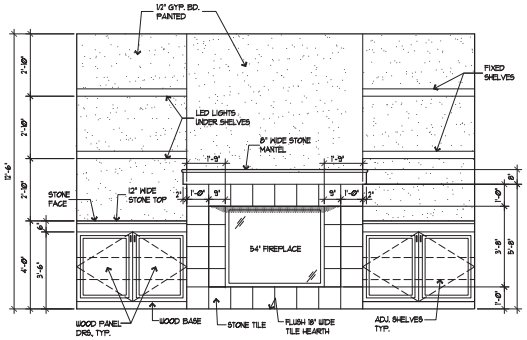
ELEVATION—A ELEVATION—A

7 **BA #2** SCALE: 3/8" = 1'-0" 6 **BA #3** SCALE: 3/8" = 1'-0"



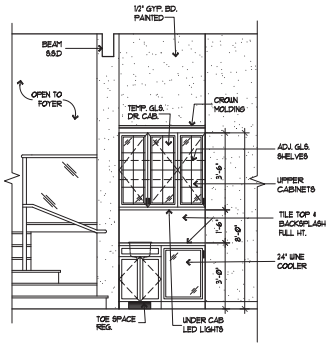
ELEVATION—A

5 **LAUNDRY** SCALE: 3/8" = 1'-0"



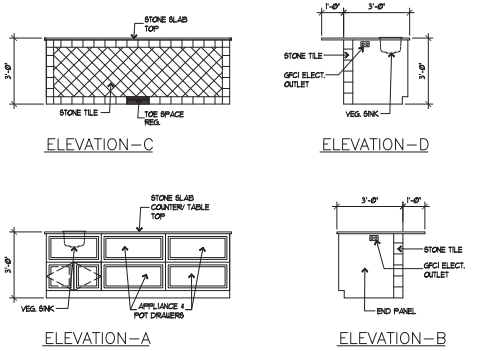
ELEVATION—A

4 **GREAT ROOM** SCALE: 3/8" = 1'-0"

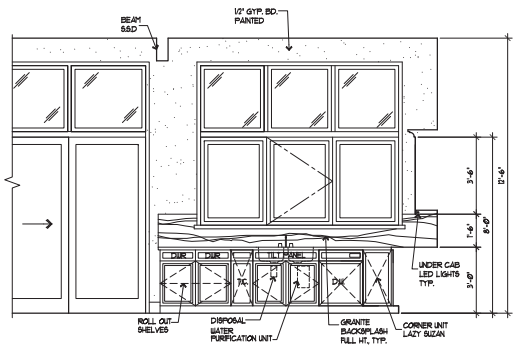


ELEVATION—A

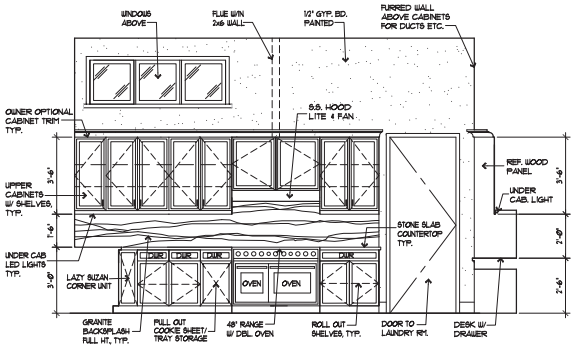
3 **BAR** SCALE: 3/8" = 1'-0"



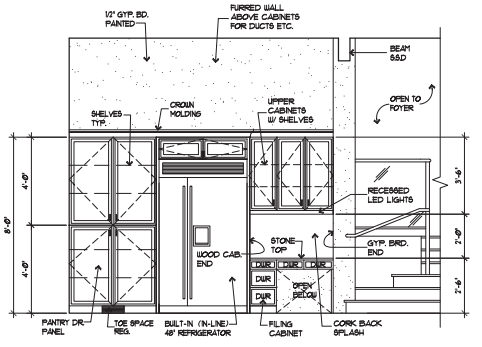
2 **KITCHEN ISLAND** SCALE: 3/8" = 1'-0"



ELEVATION—A



ELEVATION—B



ELEVATION—C

1 **KITCHEN INTERIOR ELEVATIONS** SCALE: 3/8" = 1'-0"

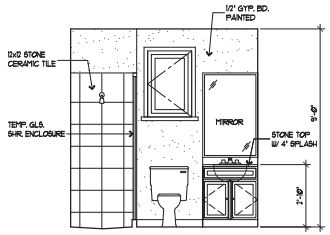
PANKO ARCHITECTS
PHONE (650) 550-0100
Fax (650) 550-0115
811 Seventh Avenue, Suite I
San Mateo, California 94401

NEW RESIDENCE FOR:
HOLLY QIU & JERRY SHEN
1330 ENCHANTED WAY
SAN MATEO, CA 94402

REGISTERED ARCHITECT
STATE OF CALIFORNIA

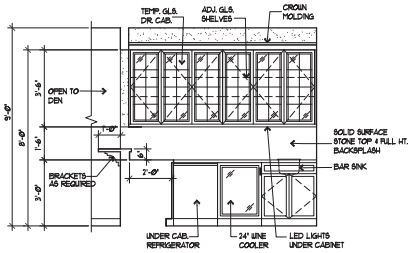
TITLE
INTERIOR ELEVATIONS

CHECKED:	SEP
DATE:	10-14-19
SCALE:	AS SHOWN
DRAWN:	PR
JOB NO.	160114
DWG. NO.	A-3.2
SHEET	– OF –

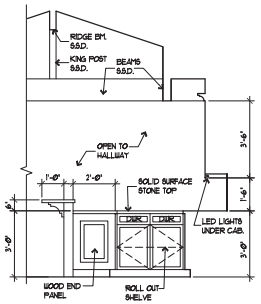


ELEVATION—A

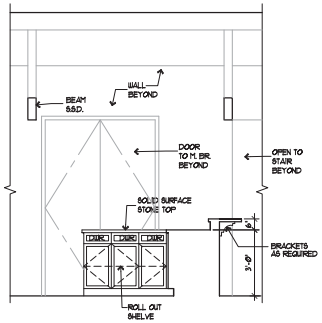
7 | - | | 6 | BA #4 | SCALE: 3/8" = 1'-0"



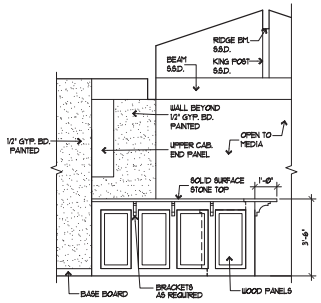
ELEVATION—A



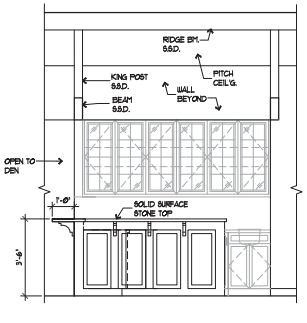
ELEVATION—B



ELEVATION—C

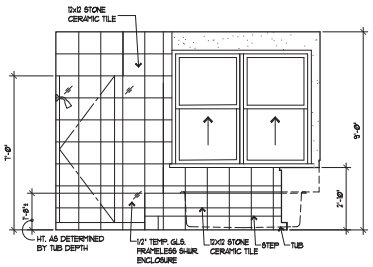


ELEVATION—D

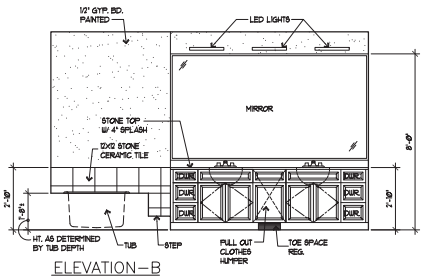


ELEVATION—E

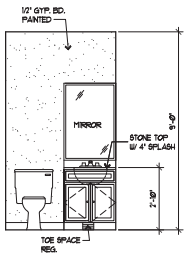
5 | BAR | SCALE: 3/8" = 1'-0"



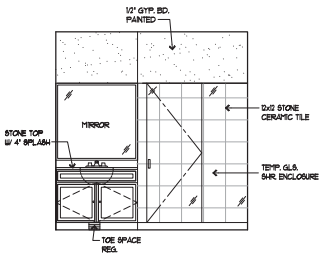
ELEVATION—A



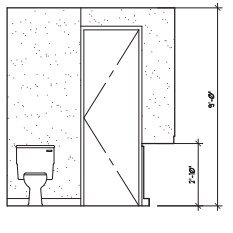
ELEVATION—B



ELEVATION—A



ELEVATION—A



ELEVATION—B

3 | M. BATH | INTERIOR ELEVATIONS | 2 | PDR | SCALE: 3/8" = 1'-0" | 1 | BA | SCALE: 3/8" = 1'-0"

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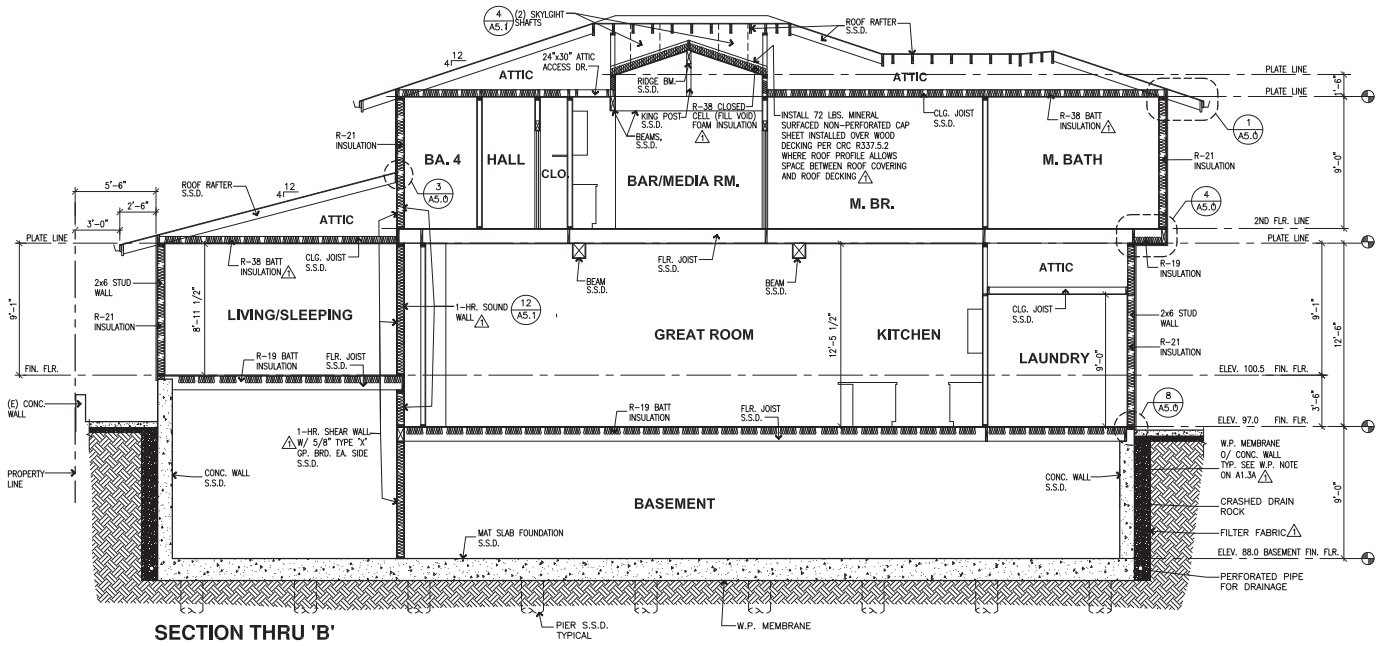
PANKO ARCHITECTS

NEW RESIDENCE FOR:
HOLLY QIU & JERRY SHEN
1330 ENCHANTED WAY
SAN MATEO, CA 94402

REGISTERED ARCHITECT
STATE OF CALIFORNIA

TITLE
INTERIOR ELEVATIONS

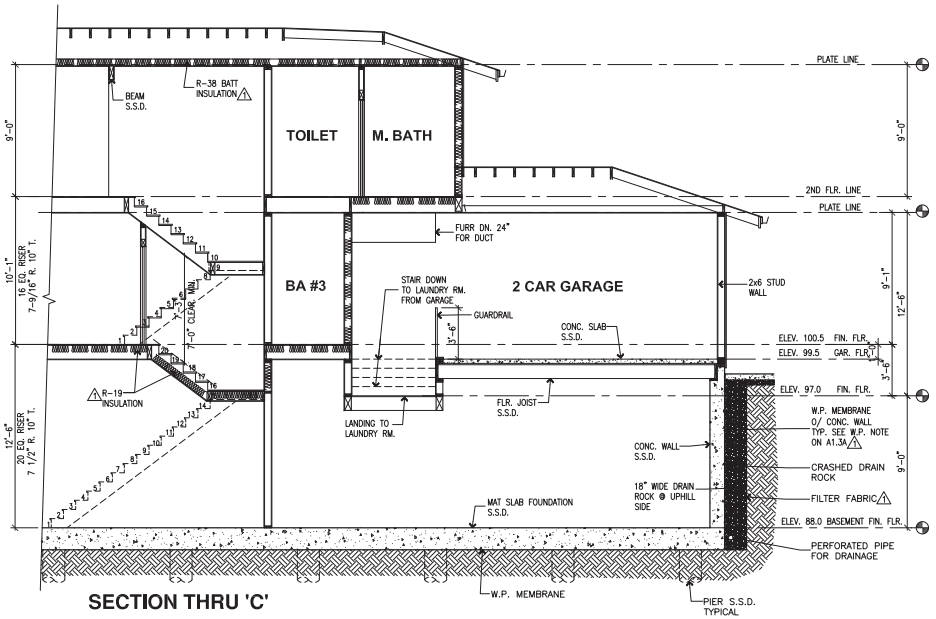
CHECKED:	SEP
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SCALE:	AS SHOWN
DRAWN:	PR
JOB NO.	160114
DWG. NO.	A-3.3
SHEET —	OF —



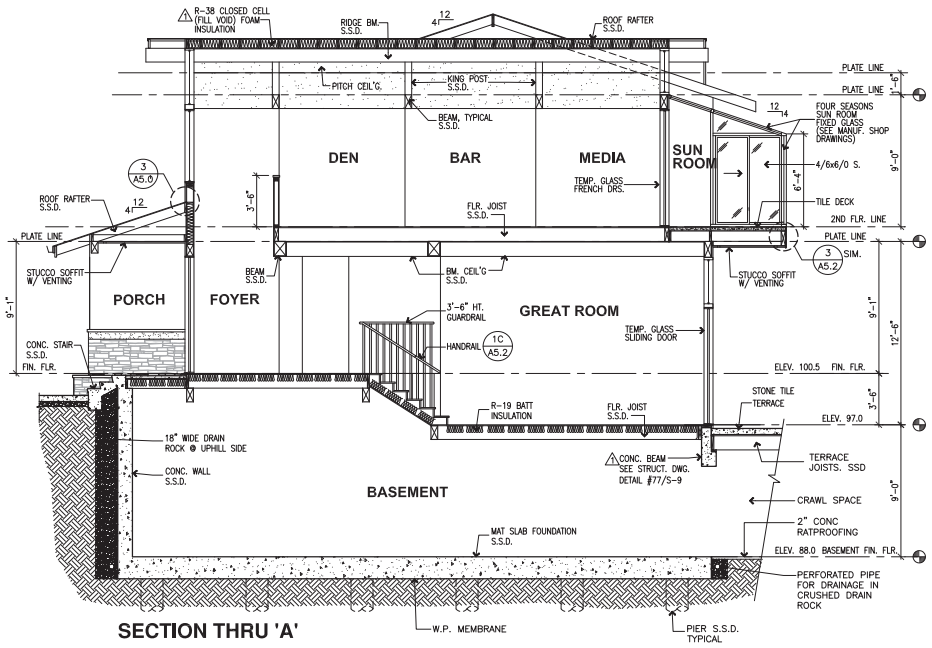
SECTION THRU 'B'

NOTE:

CLOSED CELL INSULATION JOHNS MANVILLE CORBOND ■ SPRAY POLYURETHANE AT R-7/INCH THICKNESS FILL VOID COMPLETELY FULL.



SECTION THRU 'C'



SECTION THRU 'A'

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

PANKOW ARCHITECTS
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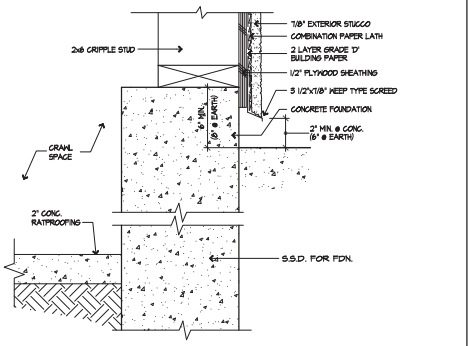
⚠ RESPONSE TO COMMENTS: 10-15-20

NEW RESIDENCE FOR:
HOLLY QIU & JERRY SHEN
1330 ENCHANTED WAY
SAN MATEO, CA 94402

LICENSED ARCHITECT
ROBERT PANKOW
No. C-26004
STATE OF CALIFORNIA

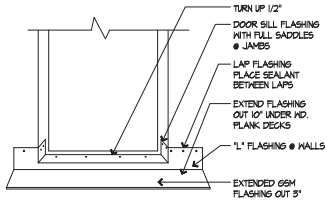
TITLE
BUILDING SECTIONS

CHECKED:	SEP
DATE:	10-14-19
SCALE:	AS SHOWN
DRAWN:	PR
JOB NO.	160114
DWG. NO.	A-4.0
SHEET	– OF –



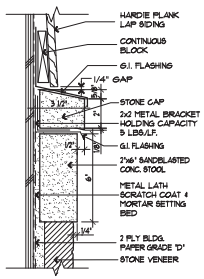
12 WALL SCREED

SCALE : 1 1/2"=1'-0"



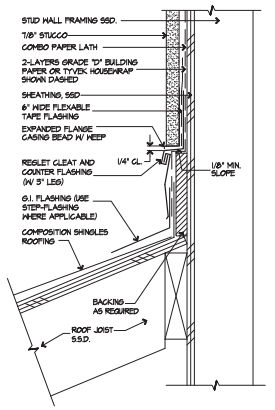
9 EXT. DOOR SILL FLASHING

N.T.S.



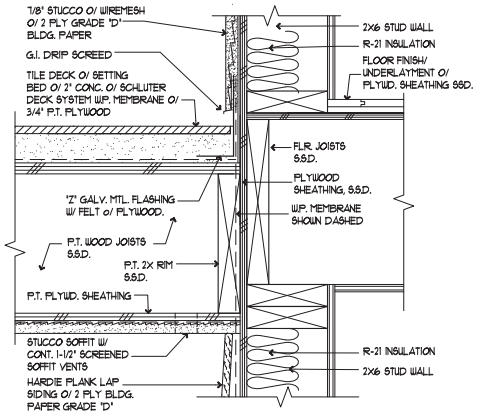
6 EXT. FINISH DETAIL

SCALE : 3"=1'-0"



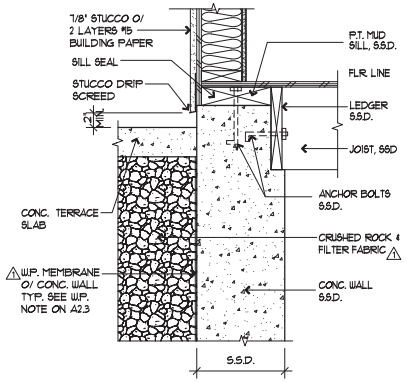
3 REGLET DETAIL

SCALE : 3"=1'-0"



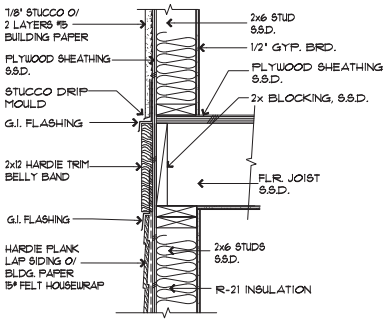
11 WALL @ BALCONY

SCALE : 3"=1'-0"



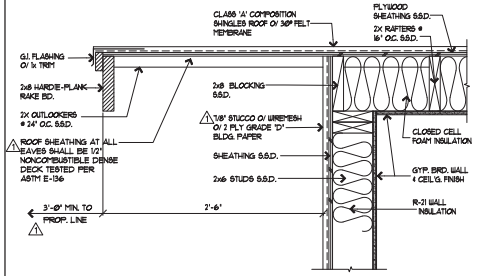
8 FOUNDATION DETAIL

SCALE : 1 1/2"=1'-0"



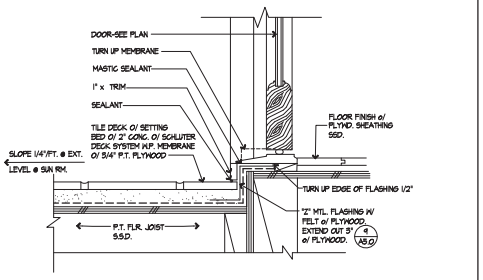
5 WALL DETAIL

SCALE : 1 1/2"=1'-0"



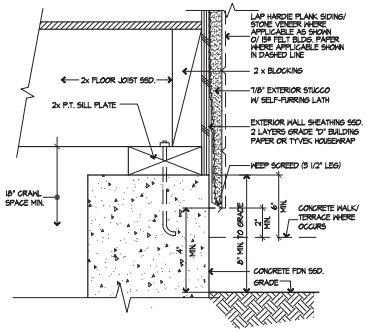
2 RAKE DETAIL

SCALE : 1 1/2"=1'-0"



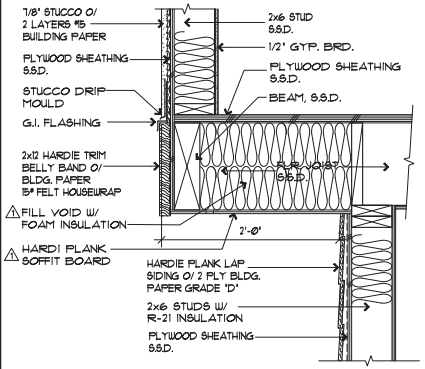
10 DOOR SILL DETAIL

SCALE : 3"=1'-0"



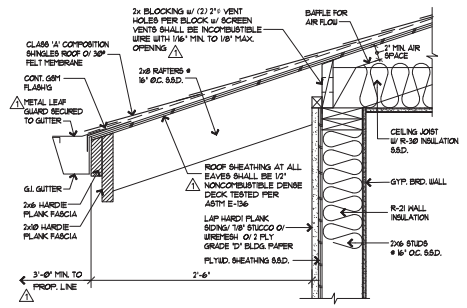
7 DRIP MOLD DETAIL

SCALE : 3"=1'-0"



4 WALL DETAIL

SCALE : 1 1/2"=1'-0"



1 ROOF EAVE DETAIL

SCALE : 1 1/2"=1'-0"

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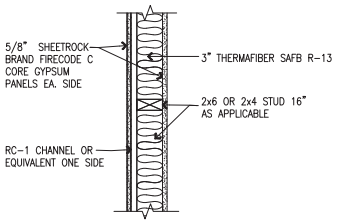
RESPONSE TO COMMENTS: 10-15-20

NEW RESIDENCE FOR: HOLLY QIU & JERRY SHEN

1330 ENCHANTED WAY
SAN MATEO CA

TITLE
DETAILS

CHECKED: SEP
DATE: 10-14-19
SCALE: AS SHOWN
DRAWN: PR
JOB NO. 160114
DWG. NO.
A5.0
SHEET - OF -

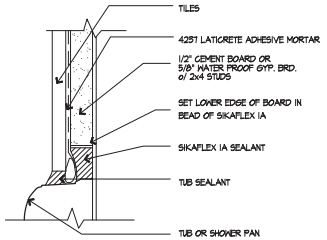


DEMISING WALL

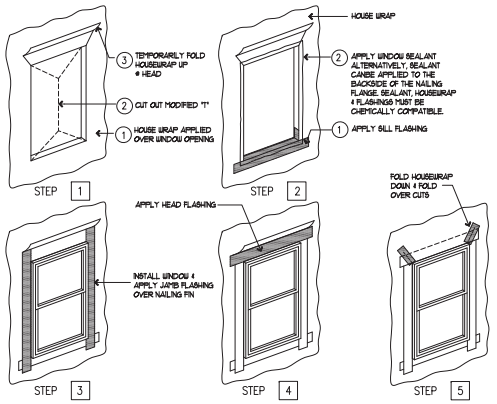
USG DEMISING WALL ASSEMBLY

TEST NUMBER: BBN-760903
FIRE RATING: 1-HR.
SOUND RATING: 50 STC

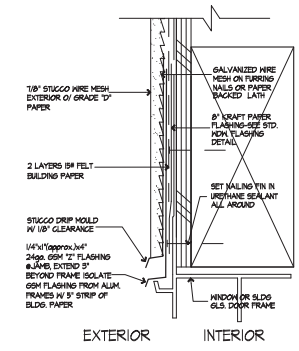
12 DEMISING WALL DETAIL ⚠ — SCALE : 1 1/2"=1'-0"



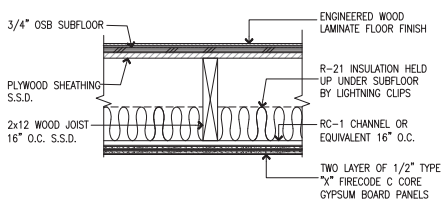
9 BATHTUB/WALL DETAIL — FULL SIZE



6 TYP. FLASHING WINDOW DETAIL — N.T.S.



3 WDW. HEAD FLASHING — HALF SIZE

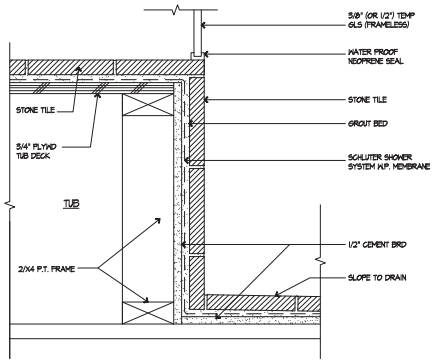


USG 1-HR. FLOOR ASSEMBLIES

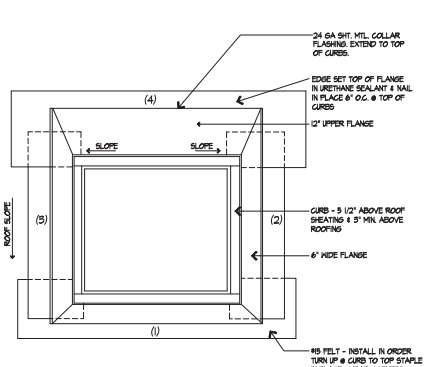
TEST NUMBER: TLF-95-107a
SOUND RATING: 55 STC

PLYWOOD INSTALLATION AND NAILING:
10d @ 6" O.C. EDGES & 10" O.C. FIELD GLUE FIRST WITH MINIMUM PLYWOOD SHEET DIMENSION OF 24". INSTALL W/ LONG DIM. PERPENDICULAR TO JOIST W/ STAGGERED END JOINTS & 1/8" SPACE IN BETWEEN PANELS

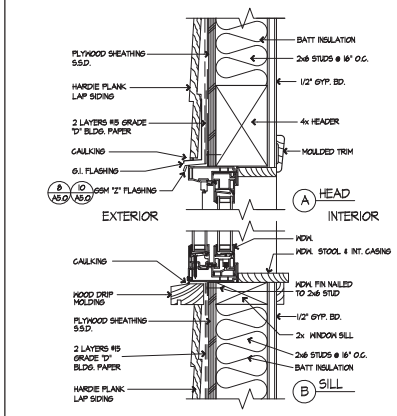
11 1-HR. FLOOR ASSEMBLY ⚠ — SCALE : 1 1/2"=1'-0"



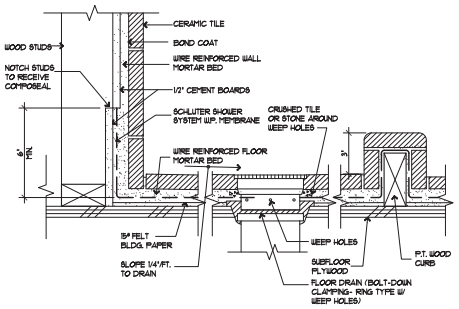
8 TUB/SHOWER DETAIL — SCALE : 3"=1'-0"



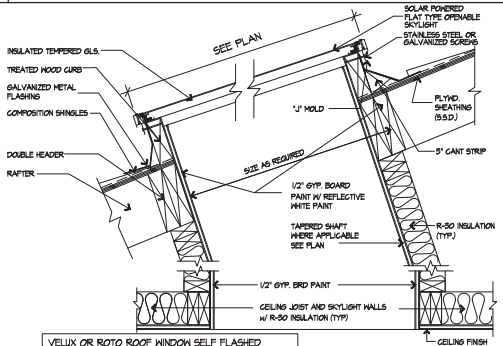
5 SKYLIGHT FLASHING



2 WINDOW DETAIL — SCALE : 3"=1'-0"

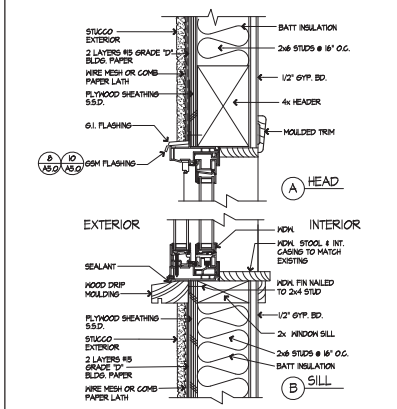


7 SHOWER DETAIL — SCALE : 3"=1'-0"



VELUX OR ROTO ROOF WINDOW SELF FLASHED
SOLAR POWERED "FRESH AIR" OPENABLE
SKYLIGHT W/ BLIND (SEE PLAN) INSULATED GLASS
W/ LOW E 140 COATING CABO NATIONAL EVALUATION
REPORT # NER 216 & ICBO-ES REPORT ER-6075
PHONE: 1-800-888-3589

4 SKYLIGHT DETAIL — SCALE : 3"=1'-0"



1 WINDOW DETAIL — SCALE : 3"=1'-0"

10 - — -

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Fax (650) 558-0115
811 Seventh Avenue, Suite I
San Mateo, California 94401

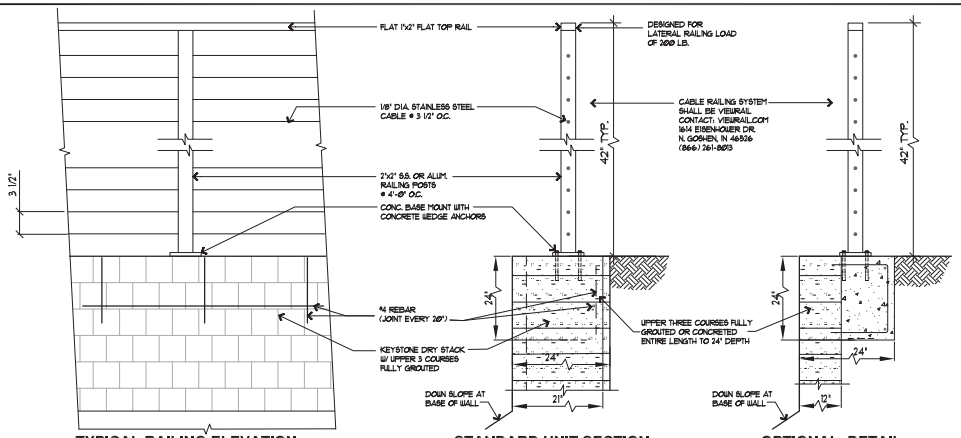
⚠ RESPONSE TO COMMENTS: 10-15-20

NEW RESIDENCE FOR:
HOLLY QIU & JERRY SHEN
1330 ENCHANTED WAY
SAN MATEO CA

REGISTERED ARCHITECT — STATE OF CALIFORNIA

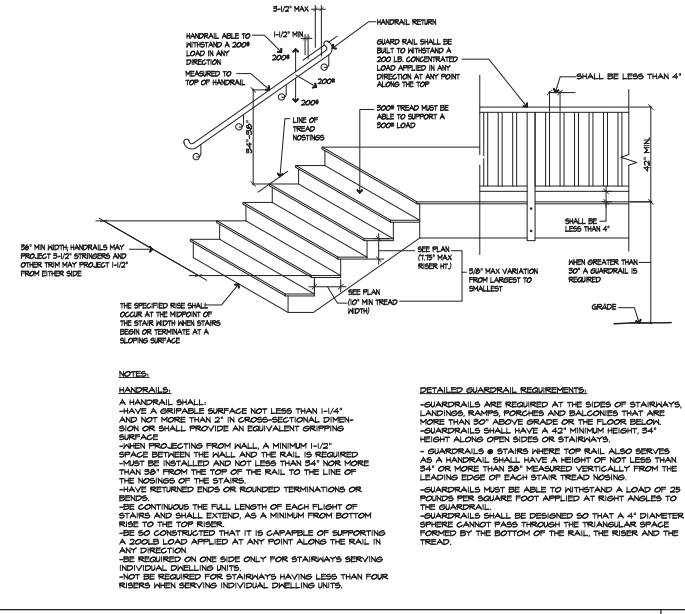
TITLE
DETAILS

CHECKED:	SEP
DATE:	10-14-19
SCALE:	AS SHOWN
DRAWN:	PR
JOB NO.	160114
DWG. NO.	A5.1
SHEET	- OF -



8 RAILING DETAIL ⚠

N.T.S.



NOTES:

HANDRAILS:

A HANDRAIL SHALL:
-HAVE A GRIPPABLE SURFACE NOT LESS THAN 1-1/4" AND NOT MORE THAN 2" IN CROSS-SECTIONAL DIMENSION OR SHALL PROVIDE AN EQUIVALENT GRIPPING SURFACE
-WHEN PROJECTING FROM WALL, A MINIMUM 1-1/2" SPACE BETWEEN THE WALL AND THE RAIL IS REQUIRED
-MUST BE INSTALLED AND NOT LESS THAN 34" NOR MORE THAN 38" FROM THE TOP OF THE RAIL TO THE LINE OF THE NOSINGS OF THE STAIRS.
-HAVE RETURNED ENDS OR ROUNDED TERMINATIONS OR BENDS.
-BE CONTINUOUS THE FULL LENGTH OF EACH FLIGHT OF STAIRS AND SHALL EXTEND, AS A MINIMUM FROM BOTTOM RISE TO THE TOP RISER.
-BE SO CONSTRUCTED THAT IT IS CAPABLE OF SUPPORTING A 200LB LOAD APPLIED AT ANY POINT ALONG THE RAIL IN ANY DIRECTION.
-BE REQUIRED ON ONE SIDE ONLY FOR STAIRWAYS SERVING INDIVIDUAL DWELLING UNITS.
-NOT BE REQUIRED FOR STAIRWAYS HAVING LESS THAN FOUR RISERS WHEN SERVING INDIVIDUAL DWELLING UNITS.

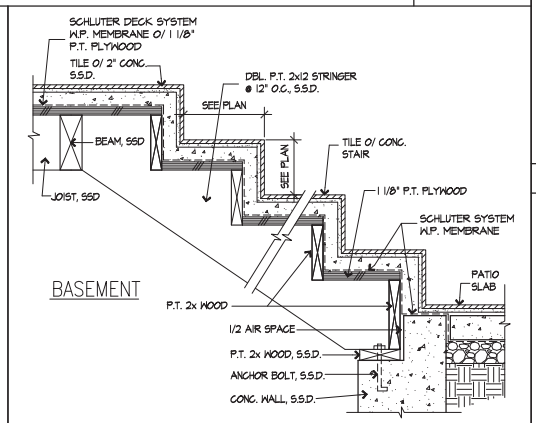
DETAILED GUARDRAIL REQUIREMENTS:

-GUARDRAILS ARE REQUIRED AT THE SIDES OF STAIRWAYS, LANDINGS, RAMPS, PORCHES AND BALCONIES THAT ARE MORE THAN 30" ABOVE GRADE OR THE FLOOR BELOW.
-GUARDRAILS SHALL HAVE A 42" MINIMUM HEIGHT, 34" HEIGHT ALONG OPEN SIDES OR STAIRWAYS.
- GUARDRAILS @ STAIRS WHERE TOP RAIL ALSO SERVES AS A HANDRAIL SHALL HAVE A HEIGHT OF NOT LESS THAN 34" OR MORE THAN 38" MEASURED VERTICALLY FROM THE LEADING EDGE OF EACH STAIR TREAD NOSING.
-GUARDRAILS MUST BE ABLE TO WITHSTAND A LOAD OF 25 POUNDS PER SQUARE FOOT APPLIED AT RIGHT ANGLES TO THE GUARDRAIL.
-GUARDRAILS SHALL BE DESIGNED SO THAT A 4" DIAMETER SPHERE CANNOT PASS THROUGH THE TRIANGULAR SPACE FORMED BY THE BOTTOM OF THE RAIL, THE RISER AND THE TREAD.

2 STAIR DETAIL

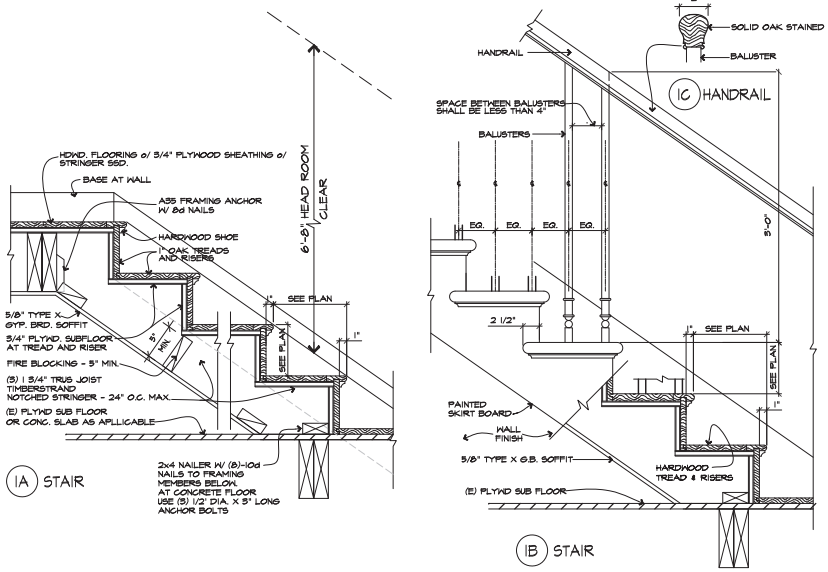
N.T.S.

7



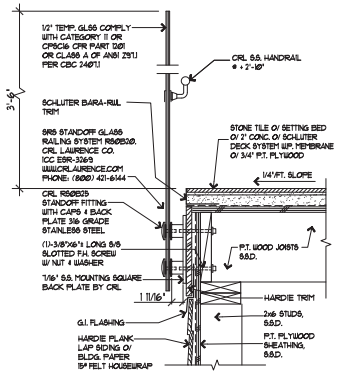
4 DECK STAIR DETAIL

SCALE : 1 1/2"=1'-0"



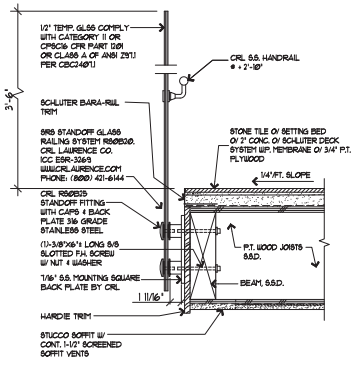
1 STAIR DETAIL

SCALE : 1 1/2"=1'-0"



6 RAILING DETAIL @ SECONDARY UNIT ⚠

SCALE : 1 1/2"=1'-0"



3 BALCONY RAILING DETAIL ⚠

SCALE : 1 1/2"=1'-0"

DANKO ARCHITECTS
PHONE: (650) 558-0100
Fax (650) 558-0115
311 Seventh Avenue, Suite 1
San Mateo, California 94401

⚠ RESPONSE TO COMMENTS: 10-15-20

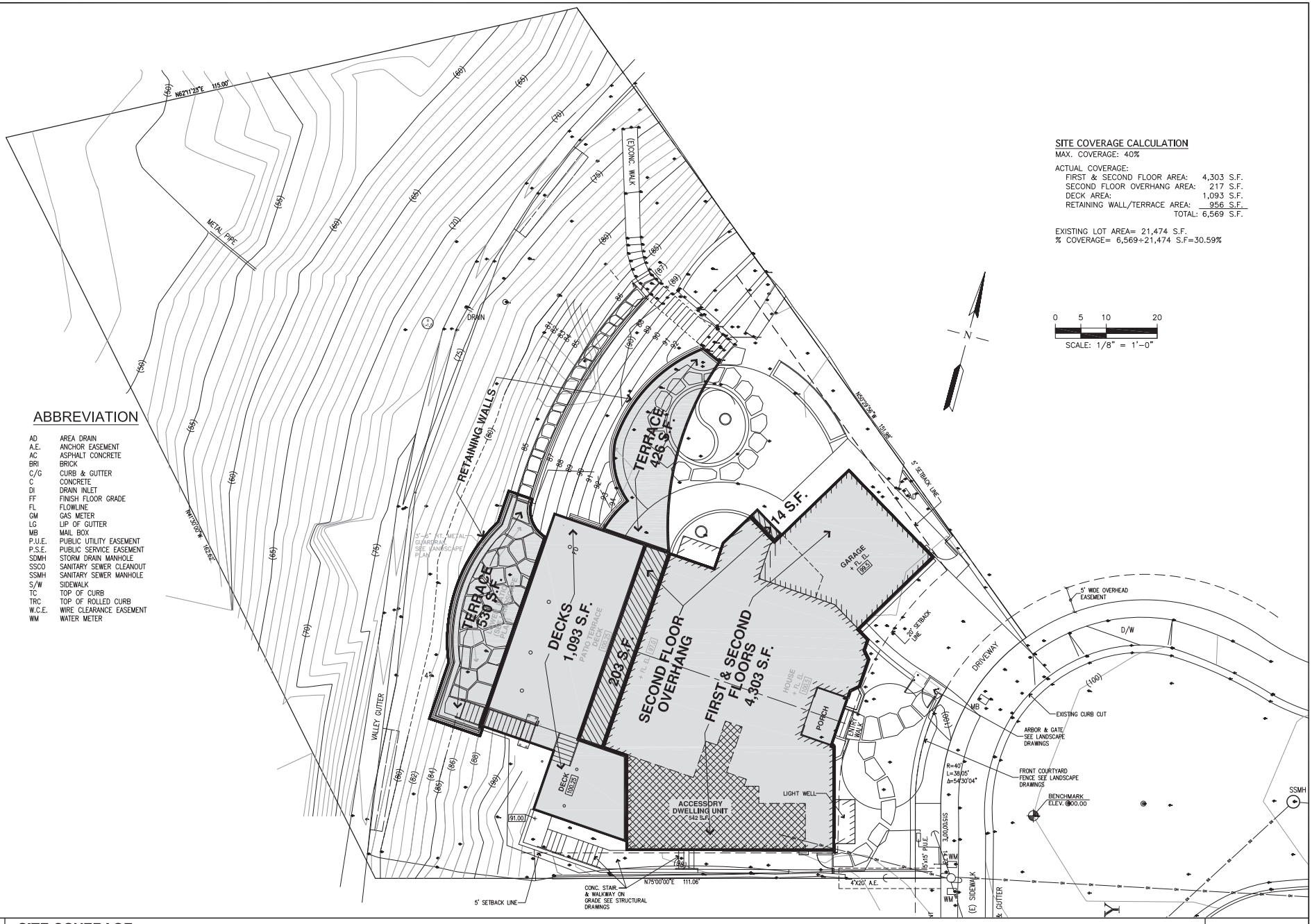
NEW RESIDENCE FOR: HOLLY QIU & JERRY SHEN

1330 ENCHANTED WAY
SAN MATEO CA

LICENSED ARCHITECT RENEWAL 08/31/2021 STATE OF CALIFORNIA

TITLE
DETAILS

CHECKED: SEP
DATE: 10-14-19
SCALE: AS SHOWN
DRAWN: PR
JOB NO. 160114
DWG. NO.
A5.2
SHEET - OF -



ABBREVIATION

AD	AREA DRAIN
A.E.	ANCHOR EASEMENT
AC	ASPHALT CONCRETE
BRI	BRICK
C/G	CURB & GUTTER
C	CONCRETE
DI	DRAIN INLET
FF	FINISH FLOOR GRADE
FL	FLOWLINE
GM	GAS METER
LG	LIP OF GUTTER
MB	MAIL BOX
P.U.E.	PUBLIC UTILITY EASEMENT
P.S.E.	PUBLIC SERVICE EASEMENT
SDMH	STORM DRAIN MANHOLE
SSCO	SANITARY SEWER CLEANOUT
SSMH	SANITARY SEWER MANHOLE
S/W	SIDEWALK
TC	TOP OF CURB
TRC	TOP OF ROLLED CURB
W.C.E.	WIRE CLEARANCE EASEMENT
WM	WATER METER

SITE COVERAGE CALCULATION

MAX. COVERAGE: 40%

ACTUAL COVERAGE:

FIRST & SECOND FLOOR AREA:	4,303 S.F.
SECOND FLOOR OVERHANG AREA:	217 S.F.
DECK AREA:	1,093 S.F.
RETAINING WALL/TERRACE AREA:	956 S.F.
TOTAL:	6,569 S.F.

EXISTING LOT AREA= 21,474 S.F.
% COVERAGE= 6,569÷21,474 S.F=30.59%

1 **SITE COVERAGE** ⚠ — **SCALE: 1/8" = 1'- 0"**

311 Seventh Avenue, Suite 1
San Mateo, California 94401
Phone: (650)558-0100
Fax: (650)558-0113

PANKO ARCHITECTS

⚠ RESPONSE TO COMMENTS: 10-15-20

NEW RESIDENCE FOR:
HOLLY QIU & JERRY SHEN
1330 ENCHANTED WAY
SAN MATEO, CA 94402

REGISTERED ARCHITECT — STATE OF CALIFORNIA

TITLE: SITE COVERAGE

CHECKED: SEP
DATE: 10-14-19
SCALE: AS SHOWN
DRAWN: -
JOB NO. 160114
DWG. NO. **A-6.0** ⚠
SHEET - OF -

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01

Project Name: Qiu_Shen Residence **Calculation Date/Time:** 11:19, Tue, Nov 10, 2020 **Page 1 of 13**

Calculation Description: Title 24 Analysis **Input File Name:** 17421-Panko-Qiu_Shen-2020.ribd16x

GENERAL INFORMATION					
01	Project Name	Qiu_Shen Residence			
02	Calculation Description	Title 24 Analysis			
03	Project Location	1330 Enchanted Way			
04	City	San Mateo	35	Standards Version	Compliance 2017
06	Zip Code	94402	37	Compliance Manager Version	IEMCmpMgr 2016.3.1 (1141)
08	Climate Zone	C23	39	Software Version	EnergyPro 7.2
10	Building Type	Single Family	11	Front Orientation (deg/Cardinal)	90
12	Project Scope	Newly Constructed	13	Number of Dwelling Units	1
14	TotalCond. Floor Area (ft²)	3554	15	Number of Zones	4
16	Slab Area (ft²)	0	17	Number of Stories	2
18	Addition Cond. Floor Area(ft²)	n/a	19	Natural Gas Available	Yes
20	Addition Slab Area (ft²)	n/a	21	Glazing Percentage (%)	28.1%

COMPLIANCE RESULTS	
01	Building Complies with Computer Performance
02	This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider.
03	This building incorporates one or more Special Features shown below

ENERGY USE SUMMARY

04	05	06	07	08
Energy Use (kTDV/ft²-yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	13.33	12.32	1.01	7.6%
Space Cooling	1.24	2.91	-1.67	-134.7%
IAQ Ventilation	0.99	0.99	0.00	0.0%
Water Heating	6.06	5.18	0.88	14.5%
Photovoltaic Offset	----	0.09	0.00	----
Compliance Energy Total	21.42	21.40	0.22	1.0%

Registration Number: 217-P103786928-000-000-R000000-0000 Registration Date/Time: 2020-11-10 11:38:58 HERS Provider: CalCERTS Inc.

CA Building Energy Efficiency Standards - 2016 Residential Compliance Report Version - CF1R-01162019-1149 Report Generated at: 2020-11-10 11:20:54

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01

Project Name: Qiu_Shen Residence **Calculation Date/Time:** 11:19, Tue, Nov 10, 2020 **Page 2 of 13**

Calculation Description: Title 24 Analysis **Input File Name:** 17421-Panko-Qiu_Shen-2020.ribd16x

ENERGY DESIGN RATING

Energy Design Rating (EDR) is an alternate way to express the energy performance of a building using a scoring system where 100 represents the energy performance of the Residential Energy Services (RESNET) reference home characterization of the 2006 International Energy Conservation Code (ECC) with California modeling assumptions. A score of zero represents the energy performance of a building that combines high levels of energy efficiency with renewable generation to "zero out" its TDV energy. Because EDR includes consideration of components not regulated by Title 24, Part 6 (such as domestic appliances and consumer electronics), it is not used to show compliance with Part 6 but may instead be used by local jurisdictions pursuing local ordinances under Title 24, Part 11 (CALGreen).

Asa Standard Design building under the 2016 Building Energy Efficiency Standards is significantly more efficient than the baseline EDR building, the EDR of the Standard Design building is provided for information. Similarly, the EDR score of the Proposed Design is provided separately from the EDR value of installed PV so that the effects of efficiency and renewable energy can both be seen.

EDR of Standard Efficiency	EDR of Proposed Efficiency	EDR Value of Proposed PV + Battery	Final Proposed EDR
44.9	44.7	0.0	44.7

☐ Design meets Tier 1 requirement of 10% or greater code compliance margin (CALGreen A4.203.1.2.1) and QII verification prerequisite.

☐ Design meets Tier 2 requirement of 30% or greater code compliance margin (CALGreen A4.203.1.2.2) and QII verification prerequisite.

☐ Design meets Zero Net Energy (ZNE) Design Designation requirement for Single Family in climate zone CZ3 (CALGreen A4.203.1.2.3) including on-site photovoltaic (PV) renewable energy generation sufficient to achieve a Final Energy Design Rating (EDR) of zero or less. The PV System and QII must be verified.

Notes:
- Excess PV Generation EDR Credit: Bypassing PV size limit may violate Net Energy Metering (NEM) rules

REQUIRED SPECIAL FEATURES

The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.

- Ducts with high level of insulation
- Ceiling has high level of insulation
- Floor has high level of insulation
- Ducts in crawl space

HERS FEATURE SUMMARY

The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building components tables below.

Building-level Verifications:
- IAQ mechanical ventilation

Cooling System Verifications:
- -- None --

HVAC Distribution System Verifications:
- Duct Sealing

Domestic Hot Water System Verifications:
- -- None --

BUILDING -FEATURES INFORMATION

01	02	03	04	05	06	07
Project Name	Conditioned Floor Area (ft²)	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
Qiu_Shen Residence	3554	1	4	4	0	1

Registration Number: 217-P103786928-000-000-R000000-0000 Registration Date/Time: 2020-11-10 11:38:58 HERS Provider: CalCERTS Inc.

CA Building Energy Efficiency Standards - 2016 Residential Compliance Report Version - CF1R-01162019-1149 Report Generated at: 2020-11-10 11:20:54

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01

Project Name: Qiu_Shen Residence **Calculation Date/Time:** 11:19, Tue, Nov 10, 2020 **Page 1 of 13**

Calculation Description Title 24 Analysis **Input File Name:** 17421-Panko-Qiu_Shen-2020.ribd16x

ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft²)	Avg. Ceiling Height	Water Heating System 1	Water Heating System 2
(N) 1st Floor	Conditioned	(N) 1st Floor Furnace1	1732	9	DHW Sys 1	n/a
(N) 1st Floor ADU	Conditioned	(N) 1st Floor ADU Furnace2	542	9	DHW Sys 1	n/a
(N) 2nc Floor - Den/BR#2	Conditioned	(N) 2nd Floor Furnace - D3	710	9	DHW Sys 1	n/a
(N) 2nd Floor - Master Su	Conditioned	(N) 2nd Floor Furnace - M4	570	9	DHW Sys 1	n/a

Registration Number: 217-P103786928-000-000-R000000-0000 Registration Date/Time: 2020-11-10 11:38:58 HERS Provider: CalCERTS Inc.

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01

Project Name: Qiu_Shen Residence **Calculation Date/Time:** 11:19, Tue, Nov 10, 2020 **Page 4 of 13**

Calculation Description: Title 24 Analysis **Input File Name:** 17421-Panko-Qiu_Shen-2020.ribd16x

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft²)	Window & Door Area (ft²)	Tilt (deg)
Exterior Wall	(N) 1st Floor	R-21 Wall	270	Back	600	250	90
Exterior Wall 2	(N) 1st Floor	R-21 Wall	180	Left	68	0	90
Exterior Wall 3	(N) 1st Floor	R-21 Wall	71	- specify -	203	51	90
Exterior Wall 4	(N) 1st Floor	R-21 Wall	0	Right	223	0	90
Exterior Wall 5	(N) 1st Floor	R-21 Wall	90	Front	310	1312	90
Exterior Wall 6	(N) 1st Floor	R-21 Wall	45	- specify -	20	10	90
Exterior Wall 7	(N) 1st Floor	R-21 Wall	135	- specify -	20	10	90
Exterior Wall 8	(N) 1st Floor	R-21 Wall	27	- specify -	167	24	90
Exterior Wall 9	(N) 1st Floor	R-21 Wall	0	Right	124	12	90
Exterior Wall 10	(N) 1st Floor	R-21 Wall	297	- specify -	76	16	90
(N) Roof 3	(N) 1st Floor	R-38 HP Attic Option B	n/a	n/a	301	n/a	n/a
Raised Floor	(N) 1st Floor	R-22 Floor Crawlspace	n/a	n/a	1732	n/a	n/a
Exterior Wall 11	(N) 1st Floor ADU	R-21 Wall	251	- specify -	185	96	90
Exterior Wall 12	(N) 1st Floor ADU	R-21 Wall	161	- specify -	410	121	90
(N) Roof 4	(N) 1st Floor ADU	R-38 HP Attic Option B	n/a	n/a	474	n/a	n/a
Interior Surface 2	(N) 1st Floor ADU >> (N) 1st Floor ADU	R-0 Ceiling	n/a	n/a	542	n/a	n/a
Raised Floor 2	(N) 1st Floor ADU	R-19 Floor Crawlspace	n/a	n/a	271	n/a	n/a
Raised Floor 3	(N) 1st Floor ADU	R-22 Floor Crawlspace	n/a	n/a	271	n/a	n/a
Exterior Wall 13	(N) 2nd Floor - Den/BR#2/	R-21 Wall	270	Back	220	93.1	90
Exterior Wall 14	(N) 2nd Floor - Den/BR#2/	R-21 Wall	180	Left	300	31.1	90
Exterior Wall 15	(N) 2nd Floor - Den/BR#2/	R-21 Wall	90	Front	150	27	90
Exterior Wall 16	(N) 2nd Floor - Den/BR#2/	R-21 Wall	315	- specify -	43	0	90
(N) Roof 5	(N) 2nd Floor - Den/BR#2/	R-38 HP Attic Option B	n/a	n/a	309	n/a	n/a
Interior Surface 3	(N) 2nd Floor - Den/BR#2/ >> (N) 1st Floor	R-0 Floor No crawlspce	n/a	n/a	642	n/a	n/a
Exterior Wall 17	(N) 2nd Floor - Master Su	R-21 Wall	270	Back	125	72	90
Exterior Wall 18	(N) 2nd Floor - Master Su	R-21 Wall	90	Front	208	27	90
Exterior Wall 19	(N) 2nd Floor - Master Su	R-21 Wall	27	- specify -	186	7.1	90
Exterior Wall 20	(N) 2nd Floor - Master Su	R-21 Wall	297	- specify -	95	30	90

Registration Number: 217-P103786928-000-000-R000000-0000 Registration Date/Time: 2020-11-10 11:38:58 HERS Provider: CalCERTS Inc.

CA Building Energy Efficiency Standards - 2016 Residential Compliance Report Version - CF1R-01162019-1149 Report Generated at: 2020-11-10 11:20:54

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01

Project Name: Qiu_Shen Residence **Calculation Date/Time:** 11:19, Tue, Nov 10, 2020 **Page 5 of 13**

Caculation Description: Title 24 Analysis **Input File Name:** 17421-Panko-Qiu_Shen-2020.ribd16x

Exterior Wall 21	(N) 2nd Floor - Master Su	R-21 Wall	270	Back	53	0	90
Exterior Wall 22	(N) 2nd Floor - Master Su	R-21 Wall	225	- specify -	43	15	90
Exterior Wall 23	(N) 2nd Floor - Master Su	R-21 Wall	0	Right	90	30	90
Interior Surface	(N) 2nd Floor - Master Su >> (N) 2nd Floor - Den/BR#2/	R-0 Wall	n/a	n/a	100	0	n/a
(N) Roof 9	(N) 2nd Floor - Master Su	R-38 HP Attic Option B	n/a	n/a	560.4	n/a	n/a
Raised Floor 4	(N) 2nd Floor - Master Su	R-22 Floor Crawlspace	n/a	n/a	80	n/a	n/a
Interior Surface 4	(N) 2nd Floor - Master Su >> (N) 2nd Floor - Master Su	R-0 Floor No crawlspace	n/a	n/a	570	n/a	n/a

OPAQUE SURFACES -- Cathedral Ceilings

01	02	03	04	05	06	07	08	09	10
Name	Zone	Type	Orientation	Area (ft²)	Skylight Area (ft2)	Roof Rise (x in 12)	Roof Reflectance	Roof Emittance	Cool Roof
(N) Roof	(N) 2nc Floor - Den/BR#2	R-30 Roof	Right	101	15.8	4	0.1	0.85	No
(N) Roof 2	(N) 2nd Floor - Master Su	R-38 HP Attic Option B1	Right	9.7	9.6	3	0.1	0.85	No

ATTIC

01	02	03	04	05	06	07	08
Name	Construction	Type	Roof Rise	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof
Attic (N) 1st Floor	Attic Roof(N) 1st Floor	Ventilated	4	0.1	0.85	No	No
Attic (N) 1st Floor ADU	Attic Roof(N) 1st Floor ADU	Ventilated	4	0.1	0.85	No	No
Attic (N) 2nd Floor - Den/BR#2/	Attic Roof(N) 2nd Floor - Den/BR#2/	Ventilated	4	0.1	0.85	No	No
Attic (N) 2nd Floor - Master Su	Attic Roof(N) 2nd Floor - Master Su	Ventilated	3	0.1	0.85	No	No

Registration Number: 217-P103786928-000-000-R000000-0000 Registration Date/Time: 2020-11-10 11:38:58 HERS Provider: CalCERTS Inc.

CA Building Energy Efficiency Standards - 2016 Residential Compliance Report Version - CF1R-01162019-1149 Report Generated at: 2020-11-10 11:20:54

CTC ASSOCIATES
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PANKO ARCHITECTS
PHONE (650) 558-0100
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311 Seventh Avenue, Suite 1
San Mateo, California 94401

NEW RESIDENCE FOR:
HOLLY QIU & JERRY SHEN
1330 ENCHANTED WAY
SAN MATEO, CA 94402

REGISTERED PROFESSIONAL ENGINEER JOEL LIM PANKO NO.: MT81165 Exp. 09/30/21 MECHANICAL STATE OF CALIFORNIA

TITLE
TITLE 24

CHECKED: JL
DATE: 11-17-20
SCALE: N.T.S.
DRAWN: -
JOB NO. 160114
DWG. NO.
T24.1
SHEET 1 OF 4

1 **TITLE 24** **SCALE: N.T.S.**

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01

Project Name: Qiu_Shen Residence **Calculation Date/Time:** 11:19,Tue, Nov 10, 2020 **Page 6 of 13**

Calculation Description: Title 24 Analysis **Input File Name:** 17421-Panko-Qiu_Shen-2022.ribd16x

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10
Name	Type	Surface (Orientation-Azimuth)	Width (ft)	Height (ft)	Multiplier	Area (ft^2)	U-factor	SHGC	Exterior Shading
Window	Window	Exterior Wall (Back-270)	----	----	1	9.0	0.24	0.33	Insect Screen (default)
Window2	Window	Exterior Wall (Back-270)	----	----	1	9.0	0.24	0.33	Insect Screen (default)
Window3	Window	Exterior Wall (Back-270)	----	----	1	9.0	0.24	0.33	Insect Screen (default)
Window4	Window	Exterior Wall (Back-270)	----	----	1	9.0	0.24	0.33	Insect Screen (default)
Window5	Window	Exterior Wall (Back-270)	----	----	1	9.0	0.24	0.33	Insect Screen (default)
Window6	Window	Exterior Wall (Back-270)	----	----	1	15.0	0.24	0.33	Insect Screen (default)
Window7	Window	Exterior Wall (Back-270)	----	----	1	15.0	0.24	0.33	Insect Screen (default)
Window8	Window	Exterior Wall (Back-270)	----	----	1	12.0	0.24	0.33	Insect Screen (default)
Window9	Window	Exterior Wall (Back-270)	----	----	1	12.0	0.24	0.33	Insect Screen (default)
Window10	Window	Exterior Wall (Back-270)	----	----	1	42.0	0.24	0.33	Insect Screen (default)
Window11	Window	Exterior Wall (Back-270)	----	----	1	112.0	0.24	0.33	Insect Screen (default)
Window12	Window	Exterior Wall3 (- specify --71)	----	----	1	6.0	0.24	0.33	Insect Screen (default)
Window13	Window	Exterior Wall3 (- specify --71)	----	----	1	15.0	0.24	0.33	Insect Screen (default)
Window14	Window	Exterior Wall3 (- specify --71)	----	----	1	15.0	0.24	0.33	Insect Screen (default)
Window15	Window	Exterior Wall3 (- specify --71)	----	----	1	15.0	0.24	0.33	Insect Screen (default)
Window16	Window	Exterior Wall 5 (Front-90)	----	----	1	8.1	0.24	0.33	Insect Screen (default)
Window17	Window	Exterior Wall 5 (Front-90)	----	----	1	8.1	0.24	0.33	Insect Screen (default)
Window18	Window	Exterior Wall 5 (Front-90)	----	----	1	40.0	0.24	0.33	Insect Screen (default)
Window19	Window	Exterior Wall 5 (Front-90)	----	----	1	27.0	0.24	0.33	Insect Screen (default)
Window10	Window	Exterior Wall6 (- specify --45)	----	----	1	10.0	0.24	0.33	Insect Screen (default)
Window21	Window	Exterior Wall * (- specify --135)	----	----	1	10.0	0.24	0.33	Insect Screen (default)
Window12	Window	Exterior Wall 9 (Right-0)	----	----	1	4.0	0.24	0.33	Insect Screen (default)
Window23	Window	Exterior Wall 9 (Right-0)	----	----	1	4.0	0.24	0.33	Insect Screen (default)
Window24	Window	Exterior Wall 9 (Right-0)	----	----	1	4.0	0.24	0.33	Insect Screen (default)
Window25	Window	Exterior Wall 10 (- specify --297)	----	----	1	15.0	0.24	0.33	Insect Screen (default)
Window26	Window	Exterior Wall 11 (- specify --251)	----	----	1	96.0	0.24	0.33	Insect Screen (default)
Window27	Window	Exterior Wall 12 (- specify --161)	----	----	1	15.0	0.24	0.33	Insect Screen (default)
Window28	Window	Exterior Wall 12 (- specify --161)	----	----	1	15.0	0.24	0.33	Insect Screen (default)
Window29	Window	Exterior Wall 12 (- specify --161)	----	----	1	15.0	0.24	0.33	Insect Screen (default)

Registration Number: 217-P010378692B-000-000-0000000-0000 Registration Date/Time: 2020-11-10 11:38:38 HERS Provider: CalCERTS Inc.

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01

Project Name: Qiu_Shen Residence **Calculation Date/Time:** 11:19, Tue, Nov 10, 2020 **Page 7 of 13**

Calculation Description: Title 24 Analysis **Input File Name:** 17421-Panko-Qiu_Shen-2022.ribd16x

Window 30	Window	Exterior Wall 12 (- specify --161)	----	----	1	30.0	0.24	0.33	Insect Screen (default)
Window 31	Window	Exterior Wall 12 (- specify --161)	----	----	1	24.0	0.24	0.33	Insect Screen (default)
Window 32	Window	Exterior Wall 12 (- specify --161)	----	----	1	6.0	0.24	0.33	Insect Screen (default)
Window 33	Window	Exterior Wall 12 (- specify --161)	----	----	1	5.8	0.24	0.33	Insect Screen (default)
Window 34	Window	Exterior Wall 13 (Back-270)	----	----	1	24.0	0.24	0.33	Insect Screen (default)
Window 35	Window	Exterior Wall 13 (Back-270)	----	----	1	24.0	0.24	0.33	Insect Screen (default)
Window 36	Window	Exterior Wall 13 (Back-270)	----	----	1	24.0	0.24	0.33	Insect Screen (default)
Window 37	Window	Exterior Wall 13 (Back-270)	----	----	1	10.6	0.24	0.33	Insect Screen (default)
Window 38	Window	Exterior Wall 13 (Back-270)	----	----	1	10.6	0.24	0.33	Insect Screen (default)
Window 39	Window	Exterior Wall 14 (Left-180)	----	----	1	13.5	0.24	0.33	Insect Screen (default)
Window 40	Window	Exterior Wall 14 (Left-180)	----	----	1	6.0	0.24	0.33	Insect Screen (default)
Window 41	Window	Exterior Wall 14 (Left-180)	----	----	1	6.0	0.24	0.33	Insect Screen (default)
Window 42	Window	Exterior Wall 14 (Left-180)	----	----	1	6.0	0.24	0.33	Insect Screen (default)
Window 43	Window	Exterior Wall 15 (Front-90)	----	----	1	9.0	0.24	0.33	Insect Screen (default)
Window 44	Window	Exterior Wall 15 (Front-90)	----	----	1	9.0	0.24	0.33	Insect Screen (default)
Window 45	Window	Exterior Wall 15 (Front-90)	----	----	1	9.0	0.24	0.33	Insect Screen (default)
Skylight	Skylight	(N) Roof (Right-0)	----	----	1	7.9	0.37	0.29	
Skylight 2	Skylight	(N) Roof (Right-0)	----	----	1	7.9	0.37	0.29	
Window 46	Window	Exterior Wall 17 (Back-270)	----	----	1	72.0	0.24	0.33	Insect Screen (default)
Window 47	Window	Exterior Wall 18 (Front-90)	----	----	1	9.0	0.24	0.33	Insect Screen (default)
Window 48	Window	Exterior Wall 18 (Front-90)	----	----	1	9.0	0.24	0.33	Insect Screen (default)
Window 49	Window	Exterior Wall 18 (Front-90)	----	----	1	9.0	0.24	0.33	Insect Screen (default)
Window 50	Window	Exterior Wall 19 (- specify --27)	----	----	1	7.1	0.24	0.33	Insect Screen (default)
Window 51	Window	Exterior Wall 20 (- specify --297)	----	----	1	15.0	0.24	0.33	Insect Screen (default)
Window 52	Window	Exterior Wall 20 (- specify --297)	----	----	1	15.0	0.24	0.33	Insect Screen (default)
Window 53	Window	Exterior Wall 22 (- specify --225)	----	----	1	15.0	0.24	0.33	Insect Screen (default)
Window 54	Window	Exterior Wall 23 (Right-0)	----	----	1	15.0	0.24	0.33	Insect Screen (default)
Window 55	Window	Exterior Wall 23 (Right-0)	----	----	1	15.0	0.24	0.33	Insect Screen (default)
Skylight 3	Skylight	(N) Roof 2 (Right-0)			1	9.6	0.37	0.29	

Registration Number: 217-P010378692B-000-000-0000000-0000 Registration Date/Time: 2020-11-10 11:38:58 HERS Provider: CalCERTS Inc.

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01

Project Name: Qiu_Shen Residence **Calculation Date/Time:** 11:19, Tue, Nov 10, 2020 **Page 8 of 13**

Calculation Description: Title 24 Analysis **Input File Name:** 17421-Panko-Qiu_Shen-2020.ribd16x

OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft^2)	U-factor
Door	Exterior Wall 5	24.0	0.50
Door 2	Exterior Wall 5	24.0	0.50
Door 3	Exterior Wall 8	24.0	0.50
Door 4	Exterior Wall 12	18.2	0.50

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01

Project Name: Qiu_Shen Residence **Calculation Date/Time:** 11:19,Tue, Nov 10, 2020 **Page 9 of 13**

Calculation Description: Title 24 Analysis **Input File Name:** 17421-Panko-Qiu_Shen-2020.ribd16x

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Winter Design U-factor	Assembly Layers
Attic Roof(N) 1st Floor	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	R 13	0.078	• Around Roof Joists: R-0.0 insul. • Cavity / Frame: R-13.0 / 2x4 Top Chrd • Roof Deck: Wood Siding/sheathing/decking • Roofing: Light Roof (Asphalt Shingle)
R-38 HP Attic Option B	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O.C.	R 38	0.025	• Inside Finish: Gypsum Board • Cavity / Frame: R-9.1 / 2x4 • Over Ceiling Joists: R-28.9 insul.
R-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R 21	0.099	• Inside Finish: Gypsum Board • Cavity / Frame: R-21 / 2x6 • Exterior Finish: 3 Coat Stucco
R-22 Floor Crawlspace	Floors Over Crawlspace	Wood Framed Floor	2x6 @ 16 in. O.C.	R 22	0.043	• Floor Surface: Carpeted • Floor Deck: Wood Siding/sheathing/decking • Cavity / Frame: R-22 / 2x6
Attic Roof(N) 1st Floor ADU	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	R 13	0.078	• Around Roof Joists: R-0.0 insul. • Cavity / Frame: R-13.0 / 2x4 Top Chrd • Roof Deck: Wood Siding/sheathing/decking • Roofing: Light Roof (Asphalt Shingle)
R-19 Floor Crawlspace	Floors Over Crawlspace	Wood Framed Floor	R 19 in 5-1/2 in cavity (R-18)	0.050		• Floor Surface: Carpeted • Floor Deck: Wood Siding/sheathing/decking • Cavity / Frame: R-19 in 5-1/2 in. (R-18) / 2x6
R-0 Ceiling	Interior Ceilings	Wood Framed Ceiling	2x4 @ 16 in. O.C.	none	0.202	• Ceiling Below Finish: Gypsum Board • Cavity / Frame: no insul. / 2x4 • Floor Deck: Wood Siding/sheathing/decking • Floor Surface: Carpeted
Attic Roof(N) 2nd Floor - Den/BR#2	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	R 13	0.078	• Around Roof Joists: R-0.0 insul. • Cavity / Frame: R-13.0 / 2x4 Top Chrd • Roof Deck: Wood Siding/sheathing/decking • Roofing: Light Roof (Asphalt Shingle)
R-30 Roof	Cathedral Ceilings	Wood Framed Ceiling	2x10 @ 16 in. O.C.	R 30	0.037	• Inside Finish: Gypsum Board • Cavity / Frame: R-30 / 2x10 • Roof Deck: Wood Siding/sheathing/decking • Roofing: Light Roof (Asphalt Shingle)
R-0 Floor No crawlspace	Interior Floors	Wood Framed Floor	2x12 @ 16 in. O.C.	none	0.196	• Floor Surface: Carpeted • Floor Deck: Wood Siding/sheathing/decking • Cavity / Frame: no insul. / 2x12 • Ceiling Below Finish: Gypsum Board

Registration Number: 217-P010378692B-000-000-0000000-0000 Registration Date/Time: 2020-11-10 11:38:08 HERS Provider: CalCERTS Inc.

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CERTIFICATE OF COMPLIANCE -RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01

Project Name: Qiu_Shen Residence **Calculation Date/Time:** 11:19,Tue, Nov 10, 2020 **Page 10 of 13**

Calculation Description: Title 24 Analysis **Input File Name:** 17421-Panko-Qiu_Shen-2020.ribd16x

Attic Roof(N) 2nd Floor - Master Su	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	R 13	0.078	• Around Roof Joists: R-0.0 insul. • Cavity / Frame: R-13.0 / 2x4 Top Chrd • Roof Deck: Wood Siding/sheathing/decking • Roofing: Light Roof (Asphalt Shingle)
R-38 HP Attic Option B1	Cathedral Ceilings	Wood Framed Ceiling	2x4 @ 24 in. O.C.	R 38	0.021	• Inside Finish: Gypsum Board • Sheathing / Insulation: R13 Sheathing • Cavity / Frame: R-38 / 2x4 • Roof Deck: Wood Siding/sheathing/decking • Roofing: Light Roof (Asphalt Shingle)
R-0 Wall	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	none	0.277	• Inside Finish: Gypsum Board • Cavity / Frame: no insul. / 2x4 • Other Side Finish: Gypsum Board

BUILDING ENVELOPE - HERS VERIFICATION

01	02	03	04
Quality Insulation Installation (QII)	Quality Installation of Spray Foam Insulation	Building Envelope Air Leakage	CFM50
Not Required	Not Required	Not Required	n/a

WATER HEATING SYSTEMS

01	02	03	04	05	06
Name	System Type	Distribution Type	Water Heater	Number of Heaters	Solar Faction (%)
DHW Sys 1	DHW	Standard	DHW Heater 1 (1)	1	3%

WATER HEATERS

01	02	03	04	05	06	07	08	09	10	11	12
Name	Heater Element Type	Tank Type	Number of Units	Tank Volume (gal)	Uniform Energy Factor / Efficiency	Input Rating / Pilot / Thermal Efficiency	Tank Insulation R-value (Int/Ext)	Standby Loss / Recovery Eff	First Hour Rating / Row Rate	NEEA Heat Pump Brand / Model / Other	Tank Location or Ambient Condition
DHW Heater 1	Gas	Small Instantaneous	1	0.100000	0.96 EF	<= 200 kBtu/hr	R-0/R-0	0	n/a	n/a	n/a

Registration Number: 217-P010378692B-000-000-0000000-0000 Registration Date/Time: 2020-11-10 11:38:38 HERS Provider: CalCERTS Inc.

CA Building Energy Efficiency Standards - 2016 Residential Compliance Report Version - CF1R-01162019-1149 Report Generated at: 2020-11-0 11:20:54

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PANKO PLANNING ARCHITECTURE

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311 Seventh Avenue, Suite 1
San Mateo, California 94401

NEW RESIDENCE FOR:
HOLLY QIU & JERRY SHEN
1330 ENCHANTED WAY
SAN MATEO, CA 94402

REGISTERED PROFESSIONAL ENGINEER
JOEL LUI
NO. M18765
Exp. 09/30/21
MECHANICAL
STATE OF CALIFORNIA

TITLE
TITLE 24

CHECKED: JL
DATE: 11-17-20
SCALE: N.T.S.
DRAWN: -
JOB NO. 160114
DWG. NO.
T24.2
SHEET 2 OF 3

1 **TITLE 24** **SCALE: N.T.S.**

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01
Project Name: Qiu_Shen Residence **Calculation Date/Time:** 11:19, Tue, Nov 10, 2020 **Page 11 of 13**
Calculation Description: Title 24 Analysis **Input File Name:** 17421-Panko-Qiu_Shen-2020.ribd16x

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06
SC Sys Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name
(N) 1s Floor Furnace1	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
(N) 1st Floor ADU Furnace2	Other Heating and Cooling System	Heating Component 2	Cooling Component 2	HVAC Fan 2	Air Distribution System 2
(N) 2nd Floor Furnace - Di	Other Heating and Cooling System	Heating Component 3	Cooling Component 3	HVAC Fan 3	Air Distribution System 3
(N) 2nd Floor Furnace - Mi	Other Heating and Cooling System	Heating Component 4	Cooling Component 4	HVAC Fan 4	Air Distribution System 4

HVAC - HEATING UNIT TYPES

01	02	03	04
Name	System Type	Number of Units	Efficiency
Heating Component 1	Cntrl Furnace	1	97.4 AFUE
Heating Component 2	Cntrl Furnace	1	95.6 AFUE
Heating Component 3	Cntrl Furnace	1	95.6 AFUE
Heating Component 4	Cntrl Furnace	1	95.6 AFUE

HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07
Name	Type	Duct Leakage	Insulation R-value	Duct Location	Bypass Duct	HERS Verification
Air Distribution System 1	DctsCrawl	Sealed and tested	8	Crawl space	None	Air Distribution System 1-ters-dist
Air Distribution System 2	DctsCrawl	Sealed and tested	8	Crawl space	None	Air Distribution System 2-ters-dist
Air Distribution System 3	DuctsAttic	Sealed and tested	8	Attic	None	Air Distribution System 3-ters-dist
Air Distribution System 4	DuctsAttic	Sealed and tested	8	Attic	None	Air Distribution System 4-ters-dist

Registration Number: 217-P010376928B-000-0000000000-0000 Registration Date/Time: 2020-11-10 11:38:58 HERS Provider: CalCERTS inc.
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CERTIFICATE OF COMPLIANCE -RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01
Project Name: Qiu_Shen Residence **Calculation Date/Time:** 11:19, Tue, Nov 10, 2020 **Page 12 of 13**
Calculation Description: Title 24 Analysis **Input File Name:** 17421-Panko-Qiu_Shen-2020rlbd16x

HVAC DISTRIBUTION - HERS VERIFICATION

01	02	03	04	05	06	07	08
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler
Air Distribution System 1-hers-dist	Required	5.0	Not Required	Not Required	Not Require	Not Required	n/a
Air Distribution System 2-hers-dist	Required	5.0	Not Required	Not Required	Not Require	Not Required	n/a
Air Distribution System 3-hers-dist	Required	5.0	Not Required	Not Required	Not Require	Not Required	n/a
Air Distribution System 4-hers-dist	Required	5.0	Not Required	Not Required	Not Require	Not Required	n/a

HVAC - FAN SYSTEMS

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	HERS Verification
HVAC Fan 1	Single Speed PSC Furnace Fan	0.58	n/a
HVAC Fan 2	Single Speed PSC Furnace Fan	0.58	n/a
HVAC Fan 3	Single Speed PSC Furnace Fan	0.58	n/a
HVAC Fan 4	Single Speed PSC Furnace Fan	0.58	n/a

IAQ (Indoor Air Quality) FANS

01	02	03	04	05	06
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness(%)	HERS Verification
SFam IAQVerifRpt	73	025	Default	0	Required

Registration Number: 217-P010376928B-000-0000000000-0000 Registration Date/Time: 2020-11-10 11:38:58 HERS Provider: CalCERTS inc.
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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01
Project Name: Qiu_Shen Residence **Calculation Date/Time:** 11:19, Tue, Nov 10, 2020 **Page 13 of 13**
Calculation Description: Title 24 Analysis **Input File Name:** 17421-Panko-Qiu_Shen-2020.ribd16x

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I, I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Documentation Author Signature:
Joel Lurie	Joel Lurie
Company:	Signature Date:
CTC Associates	2020-11-10 11:28:22
Address:	CEA/HERS Certification Identification (If applicable):
12 Tern Ct.	
City/State/Zip:	Phone:
San Rafael, CA 94901	415-455-0191

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:
1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.
2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Responsible Designer Name:	Responsible Designer Signature:
Stanley Panko	Stanley Panko
Company:	Date Signed:
Panko Architects	2020-11-10 11:39:58
Address:	License:
311 Seventh Ave, Ste 1	N/A
City/State/Zip:	Phone:
San Mateo, CA 94401	650-558-0100

Digitally signed by CalCERTS. This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.

Easy to Verify at CalCERTS.com

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RESIDENTIAL MEASURES SUMMARY RMS-1

Project Name	Building Type	Addition Alone	Date
QIU_SHEN RESIDENCE	☑ Single Family ☐ Multi Family	☐ Existing+ Addition/Alteration	11/9/2020
Project Address	**California Energy Climate Zone**	**Total Cond. Floor Area**	**Addition**	**# of Units**
1330 Enchanted Way San Mateo	CA Climate Zone 03	3,554	n/a	1

INSULATION

Construction	Type	Cavity	Area (ft²)	Special Features	Status
Roof	Wood Framed Attic	R-38	1,544	Add+R-13.0	New
Wall	Wood Framed	R-21	2,854		New
Floor	Wood Framed w/Crawl Space	R-22	2,983		New
Door	Opaque Door	- no insulation	80		New
Floor	Wood Framed w/Crawl Space	R-19	271		New
Demising	Wood Framed Rafter	- no insulation	542		New
Roof	Wood Framed Rafter	R-30	385		New
Demising	Wood Framed w/o Crawl Space	- no insulation	1,212		New

FENESTRATION Total Area: 1,000 Glazing Percentage: 28.1% New/Altered Average U-Factor: 0.24

Orientation	Area(ft²)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status
Rear (W)	418.2	0.240	0.33	none	none	Bug Screen	New
Front (E)	51.0	0.240	0.33	none	none	Bug Screen	New
Front (E)	137.2	0.240	0.33	none	none	Bug Screen	New
Right (NE)	10.0	0.240	0.33	none	none	Bug Screen	New
Front (SE)	10.0	0.240	0.33	none	none	Bug Screen	New
Right (N)	42.0	0.240	0.33	none	none	Bug Screen	New
Rear (NW)	46.0	0.240	0.33	none	none	Bug Screen	New
Rear (W)	96.0	0.240	0.33	none	none	Bug Screen	New
Left (S)	110.8	0.240	0.33	none	none	Bug Screen	New
Skylight	7.9	0.370	0.29	none	none	None	New
Skylight	7.9	0.370	0.29	none	none	None	New
Left (S)	31.5	0.240	0.33	none	none	Bug Screen	New
Skylight	9.6	0.370	0.29	none	none	None	New
Right (NE)	7.1	0.240	0.33	none	none	Bug Screen	New

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status
1	Central Furnace	97% AFUE	No Cooling	14.0 SEER	Setback	New
1	Central Furnace	96% AFUE	No Cooling	14.0 SEER	Setback	New
1	Central Furnace	96% AFUE	No Cooling	14.0 SEER	Setback	New

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status
(N) 1st Floor Furnace	Ducted	Ducted	Crawlspace	8.0	New
(N) 1st Floor ADU Furnace	Ducted	Ducted	Crawlspace	8.0	New
(N) 2nd Floor Furnace - De	Ducted	Ducted	Attic	8.0	New

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status
1	Small Instantaneous Gas	0	0.96	Standard	New

RESIDENTIAL MEASURES SUMMARY RMS-1

Project Name	Building Type	Addition Alone	Date
QIU_SHEN RESIDENCE	☑ Single Family ☐ Multi Family	☐ Existing+ Addition/Alteration	11/9/2020
Project Address	**California Energy Climate Zone**	**Total Cond. Floor Area**	**Addition**	**# of Units**
1330 Enchanted Way San Mateo	CA Climate Zone 03	3,554	n/a	1

INSULATION

Construction	Type	Cavity	Area (ft²)	Special Features	Status
Demising	Wood Framed	- no insulation	130		New

FENESTRATION Total Area: 1,000 Glazing Percentage: 28.1% New/Altered Average U-Factor: 0.24

Orientation	Area(ft²)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status
Left (SW)	15.0	0.240	0.33	none	none	Bug Screen	New

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status
1	Central Furnace	96% AFUE	No Cooling	14.0 SEER	Setback	New

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status
(N) 2nd Floor Furnace- Ma	Ducted	Ducted	Attic	8.0	New

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status

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PANKO ARCHITECTS

NEW RESIDENCE FOR:
HOLLY QIU & JERRY SHEN
1330 ENCHANTED WAY
SAN MATEO, CA 94402

REGISTERED PROFESSIONAL ENGINEER
JOEL LURIE
No. M18185
Exp. 09/30/21
MECHANICAL
STATE OF CALIFORNIA

TITLE
TITLE 24

CHECKED: JL
DATE: 11-17-20
SCALE: N.T.S.
DRAWN: -
JOB NO. 160114
DWG. NO.
T24-3
SHEET 3 OF 4

2016 Low-Rise Residential Mandatory Measures Summary

NOTE: Low-rise residential buildings subject to the Energy Standards must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information. "Exceptions may apply.
(Original 06/2016)

Building Envelope Measures:	
§ 110.6(a)1:	**Air Leakage**. Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 cfm/ft² or less when tested per NFRC400 or ASTM E283 or AAMA/WDMA/CSA 101/I.S.2/A440-2011."
§ 110.6(a)4:	**Labeling**. Fenestration products must have a label meeting the requirements of § 10-111(a).
§ 110.6(b):	Field fabricated **exterior doors and fenestration** products must use U-factors and solar heat gain coefficient (SHGC) values from TABLES 110.6-A and 110.6-B for compliance and must be caulked and/or weatherstripped."
§ 110.7:	**Air Leakage**. All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	**Insulation Certification by Manufacturers.** Insulation specified or installed must meet Standards for Insulating Material.
§ 110.8(g):	**Insulation Requirements for Heated Slab Floors**. Heated slab floors must be insulated per the requirements of § 110.8(g)
§ 110.8(i):	**Roofing Products Solar Reflectance and Thermal Emittance**. The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	**Radiant Barrier.** A radiant barrier must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.2(a):	**Ceiling and Rafter Roof Insulation.** Minimum R-22 equation in wood-frame ceiling; or the weighted average U-factor must not exceed 0.043. Minimum R-19 or weighted average U-factor of 0.054 or less in a rafter roof attention. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a continuous roof or ceiling which is sealed to limit infiltration and exfiltration as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling."
§ 150.2(b):	**Loose-fill Insulation**. Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.2(c):	**Wall Insulation.** Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less (R-19 in 2x6 or U-factor of 0.074 or less). Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102, equivalent to an installed value of R-13 in a wood framed assembly)."
§ 150.2(d):	**Raised floor Insulation.** Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor."
§ 150.0(l):	**Slab Edge Insulation**. Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facing, no greater than 0.3%; have a water vapor permeance no greater than 2.0 perm/inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1	**VaporRetarder.** In Climate Zones 1-16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to conditioned ventilation crawl space for buildings complying with the exception to § 150.0(d).
§ 150.0(g)2	**VaporRetarder.** In Climate Zones 14 and 16, a Class I or Class II vapor retarder must be installed or the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(i):	**Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.58, or the weighted average U-factor of all fenestration must not exceed 0.58."
Fireplaces, Decorative Gas Appliances, and Gas Log Measures:	
§ 150.0(e)1A:	**Closable Doors**. Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)1D:	**Combustion Intake**. Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion air control device."
§ 150.0(e)1C:	**Flue Damper**. Masonry or factory-built fireplaces must have a flue damper with a readily accessible control."
§ 150.0(e)2	**Pilot Light**. Continuous burning pilot lights and the use of indoor air for cooling a firebox jacket, when that indoor air is vented to the outside of the building, are prohibited.
Space Conditioning, Water Heating, and Plumbing System Measures:	
§ 110.0-§ 110.3:	**Certification.** Heating ventilation and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the Energy Commission."
§ 110.2(a):	**HVAC Efficiency**. Equipment must meet the applicable efficiency requirements in TABLE 110.2-A through TABLE 110.2-K."
§ 110.2(b)	Controls for **Heat Pumps with Supplementary Heat**. Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone, and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating."
§ 110.2(c):	**Thermostats**. All unitary heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat."
§ 110.3(c)5	**WaterHeating Recirculation Loops Serving Multiple Dwelling Units**. Water heating recirculation loops serving multiple dwelling units must meet be air release valve, backflow prevention, pump priming, pump isolation valves, and recirculation loop connection requirements of § 110.3(c)5.
§ 110.3(c)7	**Isolation Valves.** Instantaneous water heaters with an input rating greater than 6.8 kBTU/hr (2 kW) must have isolation valves with hose bibbs or other fittings on both cold water and hot water lines of water heating systems to allow for water tank flushing when the valves are closed.
§ 110.5:	**Pilot Lights**. Continuously burning pilot lights are prohibited for natural gas: flue-type central furnaces; household cooking appliances (appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu/hr are exempt); and pool and spa heaters."
§ 150.0(h)1:	**Building Cooling and Heating Loads**. Heating and/or cooling loads are calculated in accordance with ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; SMACNA Residential Comfort System Installation Standards Manual; or ACCA Manual J using design conditions specified in § 150.0(h)2.

2016 Low-Rise Residential Mandatory Measures Summary

§ 150.0(m)3:	**Duct System Sizing and Air Filter Grille Sizing**. Space conditioning systems that use forced air ducts to supply cooling to an occupiable space must have a hole for the placement of a static pressure probe (HSPP), or a permanently installed static pressure probe (PSPP) in the supply plenum. The space conditioning system must also demonstrate airflow ≥ 350 CFM per ton of nominal cooling capacity through the return grilles, and an air-handling unit fan efficacy ≤ 0.58 W/CFM as confirmed by field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.3. This applies to both single zone central forced air systems and every zone for zonally controlled central forced air systems."
§150.0(o):	**Ventilation for Indoor Air Quality**. All dwelling units must meet the requirements of ASHRAE Standard 62.2. Neither window operation nor continuous operation of central forced air system air handlers used in central fan integrated ventilation systems are permissible methods of providing whole-building ventilation.
§ 150.0(o)1A:	**Field Verification and Diagnostic Testing**. Whole-building ventilation airflow must be confirmed through field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.7.
Pool and Spa Systems and Equipment Measures:	
§ 110.4(a):	**Certification by Manufacturers.** Any pool or spa heating system or equipment must be certified to have all of the following: a thermal efficiency that complies with theAppliance Efficiency Regulations; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating."
§ 110.4(b):	**Piping.** Any pool or spa heating equipment must be installed with at least 36 inches of pipe between he filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b):	**Covers**. Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(c):	**Directional inlets and flow**. Pools must have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.5:	**Pilot Light**. Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p)	**Pool Systems and Equipment Installation**. Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves."
Lighting Measures:	
§ 110.9:	**Lighting Controls and Components**. All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9."
§ 110.9(e):	**JA8 High Efficacy Light Sources**. To qualify as a JA8 high efficacy light source for compliance with § 150.0(k), a residential light source must be certified to the Energy Commission according to Reference Joint Appendix JA8.
§ 150.0(k)1A:	**Luminaire Efficacy**. All recessed luminaires must be high efficacy in accordance with TABLE 150.0-A
§ 150.0(k)1C:	**Blank Electrical Boxes**. The number of electrical boxes that are more than 5 feet above the finished floor and do not contain a luminaire or other device must be no greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy censcorcontrol, or fan speed control.
§ 150.0(k)1D:	**Recessed Downlight Luminaires in Ceilings**. Luminaires recessed into ceilings must meet all of the requirements for: insulation contact (IC) labeling; air leakage; sealing maintenance; and socket and light source as described in § 150.0(k)1D.A. JA8-2016-E light source rated for elevated temperature must be installed by final inspection in all recessed downlight luminaires in ceilings.
§ 150.0(k)1E:	**Electronic Ballasts**. Ballasts for fluorescent lamps rated 13 watts or greater must be electronic and must have an output frequency no less than 20 kHz.
§ 150.0(k)1F:	**Night Lights**. Permanently installed night lights and night lights integral to installed luminaires or exhaust fans must be rated to consume no more than 5 watts of power per luminaire or exhaust fan as determined in accordance with § 130.0(c) Night lights do not need to be controlled by vacancy sensors.
§ 150.0(k)1F:	**Lighting Integral to Exhaust Fans**. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k)."
§ 150.0(k)1C:	**Screw based luminaires**. Screw based luminaires must not be recessed downlight luminaires in ceilings and must contain lamps that comply with Reference Joint Appendix JA8. Installed lamps must be marked with "JA8-2016" or "JA8-2016-E" as specified in Reference Join Appendix JA8."
§ 150.0(k)1H:	**Enclosed Luminaires**. Light sources installed in enclosed luminaires must be JA8 compliant and must be marked with "JA8-2016-E"
§ 150.0(k)3A:	**Interior Switches and Controls**. All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)3:	**Interior Switches and Controls**. Exhaust fans must be switched separately from lighting systems."
§ 150.0(k)2C:	**Interior Switches and Controls**. Luminaires must be switched with readily accessible controls that permit the luminaires to be manually switched ON and OFF.
§ 150.0(k)2D:	**Interior Switches and Controls**. Controls and equipment must be installed in accordance with manufacturer's instructions.
§ 150.0(k)2E:	**Interior Switches and Controls**. No control must bypass a dimmer or vacancy sensor function if the control is installed to comply with § 150.0(k).
§ 150.0(k)2F:	**Interior Switches and Controls**. Lighting controls must comply with the applicable requirements of § 110.9.
§ 150.0(k)2D:	**Interior Switches and Controls**. An energy management control system (EMCS) may be used to comply with dimmer requirements if it: functions as a dimmer according to § 110.9; meets the Installation Certificate requirements of § 130.4 meets the EMCS requirements of § 130.5(f); and meets all other requirements in § 150.0(k)2.
§ 150.0(k)2H:	**Interior Switches and Controls**. An EMCS may be used to comply with vacancy sensor requirements in § 150.0(k)1H if it meets all of the following: it functions as a vacancy sensor according to § 110.9; the Installation Certificate requirements of § 130.4; the EMCS requirements of § 130.5(f); and all other requirements in § 150.0(k)2.
§ 150.0(k)2I:	**Interior Switches and Controls**. A multizone programmable controller may be used to comply with dimmer requirements in § 150.0(k) if it provides the functionality of a dimmer according to § 110.9, and complies with all other applicable requirements in § 150.0(k)2.

2016 Low-Rise Residential Mandatory Measures Summary

§ 150.0(h)3A:	**Clearances**. Installed air conditioner and heat pump outdoor condensing units must have a clearance of at least 5 feet from the outlet of any dryer vent.
§ 150.0(h)3B:	**Liquid Line Drier**. Installed air conditioner and heat pump systems must be equipped with liquid line filter driers if required, as specified by manufacturer's instructions.
§ 150.0(j)1:	**Storage Tank Insulation**. Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, must have R-12 external insulation or R- 6 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.
§ 150.0(j)2A:	**Water piping and cooling system line insulation**. For domestic hot water system piping, whether buried or unburied, all of the following must be insulated according to the requirements of TABLE 120.3-A: be first 5 feet of hot and cold water pipes from the storage tank; all piping with a nominal diameter of 3/4 inch or larger; all piping associated with a domestic hot water recirculation system regardless of the pipe diameter; piping from the heating source to storage tank or between tanks; piping buried below grade; and all hot water pipes from the heating source to kitchen fixtures."
§ 150.0(j)2B:	**Water piping and cooling system line insulation**. All domestic hot water pipes that are buried below grade must be installed in a water proof and non-crushable casing or sleeve."
§ 150.0(j)2C:	**Water piping and cooling system line insulation**. Pipe for cooling system lines must be insulated as specified in § 150.0(j)2A. Distribution piping for steam and hydronic heating systems or hot water systems must meet be requirements in TABLE 120.3-A."
§ 150.0(j)3:	**Insulation Protection**. Insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance and wind.
§ 150.0(j)5A:	**Insulation Protection**. Insulation exposed to weather must be installed with a cover suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. The cover must be water retardant and provide shedding from solar radiation that can cause degradation of the material.
§ 150.0(j)5B:	**Insulation Protection**. Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must have a Class I or Class II vapor retarder.
§ 150.0(n)1:	**Gas or Propane Systems**. Systems using gas or propane water heaters to serve individual dwelling units must include all of the following: a 120V electrical receptacle within 3 feet of the water heater; a Category III or IV vent, or a Type B vent with straight pipe between the outside termination and the space where the water heater is installed; acondensate drain that is no more than 2 inches higher than the base of the water heater, and allows natural draining without pump assistance; and a gas supply line with a capacity of at least 200,000 Btu/hr.
§ 150.0(n)2:	**Recirculating Loops**. Recirculating loops serving multiple dwelling units must meet the requirements of § 110.3(c)5.
§ 150.0(n)3:	**Solar Water-heating Systems**. Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC) or by a listing agency that is approved by the Executive Director.
Ducts and Fans Measures:	
§ 110.8(d)3:	**Ducts**. Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	**CMC Compliance**. All air-distribution system ducts and plenums must be installed, sealed, and insulated to meet the requirements if CMC §§ 601.0, 602.0, 603.0, 604.0, 605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to a minimum installed level of R-8.0 (or higher if required by CMC § 605.0) or a minimum installed level of R-4.2 when entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8). Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable requirements of UL 181, UL 181A, or UL 181B or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than ¼ inch, he combination of mastic and either mesh or tape must be used. Building cavities, support platforms for air handlers, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used for conveying conditioned air. Building cavities and support platforms may contain ducts. Ducts installed in cavities and support platforms must notbe compressed to cause reductions in the cross-sectional area of its ducts."
§ 150.0(m)2:	**Factory-Fabricated Duct Systems**. Factory-fabricated duct systems must comply with applicablerequirements for duct constructio, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and ana bands.
§ 150.0(m)3:	**Field-Fabricated Duct Systems**. Field-fabricated duct systems must comply with applicable requirements for pressure-sensitive tases, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	**Backdraft Dampers**. All fan systems that exchange air between the conditioned space and the outside of the building must have backdraft or automatic dampers.
§ 150.0(m)8:	**Gravity Ventilation Dampers**. Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9:	**Protection of Insulation**. Insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellular foam insulation must be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation.
§ 150.0(m)10:	**Porous Inner Core Flex Duct**. Porous inner core flex duct must have a non-porous layer between the inner core and outer vapor barrier.
§ 150.0(m)11:	**Duct System Sealing and Leakage Test**. When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with § 150.0(m)1and Reference Residential Appendix RA3."
§ 150.0(m)12:	**Air Filtration**. Mechanical systems that supply air to an occupiable space through ductwork exceeding 10 feet in length and through a thermal conditioning component, except evaporative coolers, must be provided with air filter devices that meet the design, installation, efficiency, pressure drop, and labeling requirements of § 150.0(m)12.

2016 Low-Rise Residential Mandatory Measures Summary

§ 150.0(k)2J:	**Interior Switches and Controls**. In bathrooms, garages, laundry rooms, and utility rooms, at least one luminaire in each of these spaces must be controlled by a vacancy sensor.
§ 150.0(k)2K:	**Interior Switches and Controls**. Dimmers o vacancy sensors must control all luminaires required to have light sources compliant with ReferenceJoint Appendix JA8, except luminaires in closets less than 70 square feet and luminaires in hallways."
§ 150.0(k)2L:	**Interior Switches and Controls**. Undercabinet lighting must be switched separately from other lighting systems.
§ 150.0(k)3A:	**Residential Outdoor Lighting**. For single-family residential buildings, outdoor lighting permanently mounted to a residentia building, or to other buildings on the same lot, must meet the requirement in item § 150.0(k)3Ai (ON and OFF switch) and the requirements in either item § 150.0(k)3Aii (photocell and motion sensor) or item § 150.0(k)3Aiii (photo control and automatic time switch control, astronomical time clock,or EMCS).
§ 150.0(k)3B:	**Residential Outdoor Lighting**. For low-rise multifamily residential buildings, outdoor lighting for private patios, entrances, balconies and porches; and outdoor lighting for residential parking lots and residential carports with less than eight vehicles per site must comply with either § 150.0(k)3A or with the applicable requirements in §§ 110.9, 130.0, 130.1, 130.4, 140.7, and 141.0
§ 150.0(k)3C:	**Residential Outdoor Lighting**. For low-rise residential buildings with four or more dwelling units, outdoor lighting not regulated by § 150.0(k)B or § 150.0(k)3D must comply with the applicable requirements in §§ 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)3D:	**Residential Outdoor Lighting**. Outdoor lighting for residential parking lots and residential carports with a total of eight or more vehicles per site must comply with the applicable requirements in §§ 110.9, 130.0, 130.2, 130.4, 140.7, and 141.0.
§ 150.0(k)4:	**Internally Illuminated address signs**. Internally illuminated address signs must comply with § 140.8; or must consume no more than 5 watts of power as determined according to § 130.0(c).
§ 150.0(k)5:	**Residential Garages for Eight or More Vehicles**. Lighting for residential parking garages for eight or more vehicles must comply with the applicablerequirements for nonresidential garages in §§ 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.
§ 150.0(k)6A:	**Interior Common Areas of Low-rise Multi-family Residential Buildings**. In alow-rise multifamily residential building where the total interior common area in a single building equals 20 percent or less of the floor area, permanently installed lightingfor the interior common areas in that building must be high efficacy luminaires andcontrolled by an occupant sensor.
§ 150.0(k)6B:	**Interior Common Areas of Low-rise Multi-family Residential Buildings**. In alow-rise multifamily residential building where the total interior common area in a single building equals more than 20 percent of the floor area, permanently installed lighting in that building must: i. Comply with the applicable requirements in §§ 110.9, 130.0, 130.1, 140.6 and 141.0; and ii. Lightingintestable corridors and stairwellsmust be controlled by occupant sensors that reduce the lighting power in each space by at least 50 percent. The occupant sensors must be capable of turning the light fully on and off from all designed paths of ingress and egress.
Solar Ready Buildings:	
§ 111.10(a)1:	**Single Family Residences**. Single family residences located in subdivisions with ten or more single family residences and where the application for a tentative subdivision map forthe residences has been deemed complete by the enforcement agency must comply with the requirements of § 110.10(b)through § 110.10(e).
§ 111.10(a)2:	**Low-rise Multi-family Buildings**. Low-rise multi-family buildings must comply with the requirements of § 110.10(b) through § 110.10(d).
§ 111.10(b)1:	**Minimum Area**. The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation and spacing requirements as specified in Title 24, Part 9 or other Pans of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and one so less than 80 square fee each for buildings with roof areas less than orequal to 10,000 square feet or no sso than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single family residences the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet. For low-rise multi-family building the solar zone must be located or the roof or overhang of its building, or on the roof or overhang of another structure located within 250 feet ofthe building, or on covered parking installed with the building project, and have a total area no less than 15 percent of the total roof area of the building excluding any skylight area."
§ 111.10(b)2:	**Orientation**. All sections of the solar zone located on sloep-sloped roofs must be oriented between 110 degrees and 270 degrees of true north.
§ 111.10(b)3A:	**Shading**. The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment."
§ 111.10(b)3B:	**Shading**. any obstruction located on the roofor any other part of the building that projects above a solar zone must be located at least twice he distance, measured in the horizontal plane, of the height difference between the highest point of the obstruction and the horizontal projection if the nearest point of the solar zone, measuredin the vertical plane."
§ 111.10(b)4:	**Structural Design Loads on Construction Documents**. For areas of the roof designated as solar zone, he structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 111.10(c):	**Interconnection Pathways**. The construction documents must indicate a location for inverters and metering equipment and a pathway for routing of conduit from the solar zone to the point of interconnection with the electrical service (for single family residences the point of interconnection will be the main service panel) and a pathway for routing of plumbing from the solar zone o the water-heating system.
§ 111.10(d):	**Documentation**. A copy of he construction documents or a comparable document indicating the information from § 110.10(b) through § 110.10(c) must be provided to the occupant.
§ 111.10(e)1:	**Main Electrical Service Panel**. The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 111.10(e)2:	**Main Electrical Service Panel**. The main electrical service panel must have a reserved space to allow forthe installation of a double pole circuit breaker for a future solar electric installation. The reserved space must be positioned at the opposite (load) end from the input feeder location or main circuit location, and permanently marks as "For Future Solar Electric".

CTC ASSOCIATES
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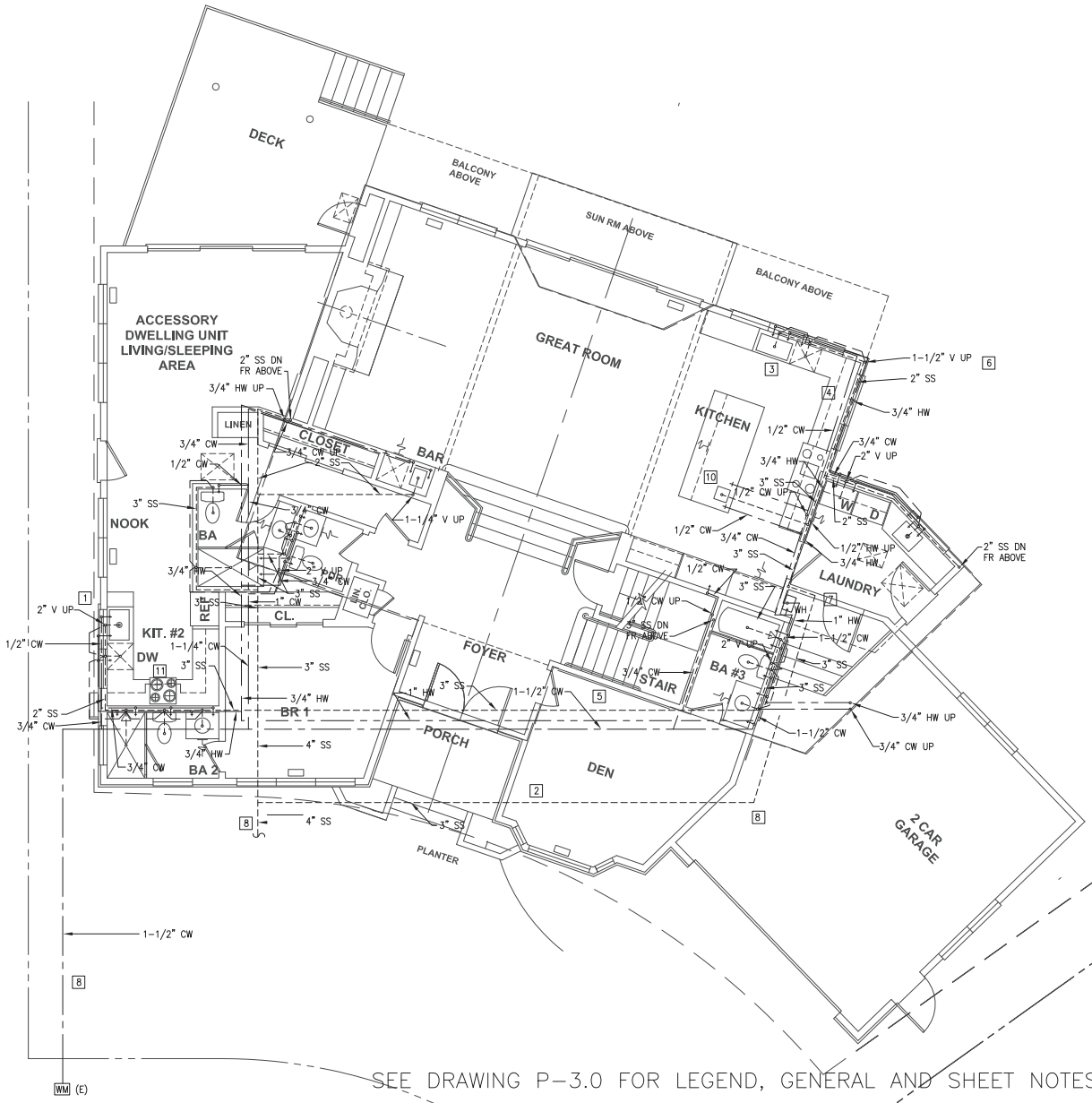
PHONE (650) 588-0100
FAX (650) 588-0113
31st Seventh Avenue, Suite 1
San Mateo, California 94401

NEW RESIDENCE FOR:
HOLLY QIU & JERRY SHEN
1330 ENCHANTED WAY
SAN MATEO, CA 94402

REGISTERED PROFESSIONAL ENGINEER
JOEL LAIRE
No. M18165
Exp. 09/30/21
MECHANICAL
STATE OF CALIFORNIA

TITLE
TITLE 24

CHECKED: JL
DATE: 11-17-20
SCALE: N.T.S.
DRAWN: -
JOB NO. 160114
DWG. NO.
T24-4
SHEET 4 OF 4



SEE DRAWING P-3.0 FOR LEGEND, GENERAL AND SHEET NOTES

CTC ASSOCIATES
12 Tern Ct.
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1 MAIN FLOOR PLUMBING PLAN — SCALE: 1/4" = 1'-0"

PHONE (650) 568-0100
Fax (650) 568-0113
311 Seventh Avenue, Suite 1
San Mateo, California 94401

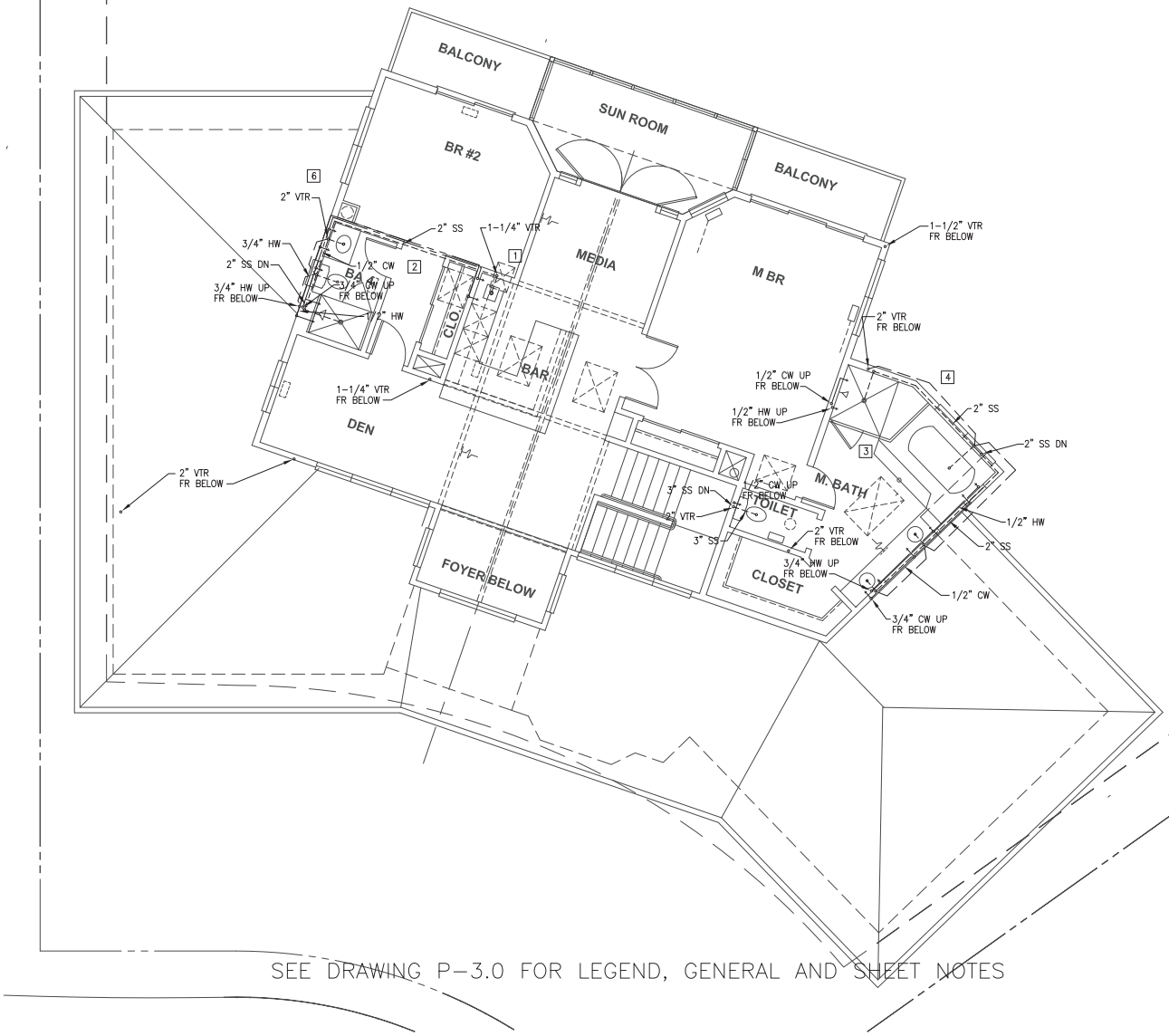
PANKOW ARCHITECTS

NEW RESIDENCE FOR:
HOLLY QIU & JERRY SHEN
1330 ENCHANTED WAY
SAN MATEO, CA 94402

REGISTERED PROFESSIONAL ENGINEER — JOEL LOR — NO. M18165 Exp. 09/30/21 — MECHANICAL — STATE OF CALIFORNIA

TITLE
MAIN FLOOR PLUMBING PLAN

CHECKED:	JL
DATE:	11-17-20
SCALE:	AS SHOWN
DRAWN:	JL
JOB NO.	160114
DWG. NO.	P-1.0
SHEET 1 OF 3	



SEE DRAWING P-3.0 FOR LEGEND, GENERAL AND SHEET NOTES

CTC ASSOCIATES
12 Tern Ct.
San Rafael, CA 94901
Tel: 415-455-0191
Fax: 415-455-0160

1 SECOND FLOOR PLUMBING PLAN

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

PHONE (650) 558-0100
Fax (650) 358-0113
511 Seventh Avenue, Suite 1
San Mateo, California 94401

DANKO ARCHITECTS

NEW RESIDENCE FOR:
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SAN MATEO, CA 94402

REGISTERED PROFESSIONAL ENGINEER
JOEL LIM
No. M18185
Exp. 09/30/21
MECHANICAL
STATE OF CALIFORNIA

TITLE
SECOND FLOOR PLUMBING PLAN

CHECKED: JL
DATE: 11-17-20
SCALE: AS SHOWN
DRAWN: JL
JOB NO. 160114
DWG. NO.
P-2.0
SHEET 2 OF 3

GENERAL NOTES

1. COORDINATE ALL WORK WITH ARCHITECTURAL, ELECTRICAL, MECHANICAL, AND OTHER TRADES. SEE ARCHITECTURAL DRAWINGS FOR EXACT BUILDING LAYOUT.

2. NOTIFY THE ENGINEER OF ANY DISCREPANCIES.

3. ALL WORK TO BE IN CONFORMANCE WITH ALL CODES AND LOCAL REQUIREMENTS, INCLUDING BUT NOT LIMITED TO CBC, CPC, CMC, AND CEC. THE DRAWINGS ARE INTENDED TO SHOW THE GENERAL EXTENT AND ARRANGEMENT OF THE WORK, AND ARE NOT INTENDED TO BE COMPLETE IN EVERY DETAIL. CONTRACTOR SHALL PROVIDE AND INSTALL MATERIALS, EQUIPMENT, DEVICES, LABOR, PLANT AND OTHER FACILITIES AS NECESSARY TO PROVIDE A COMPLETE AND WORKING SYSTEM, INCLUDING MATERIALS, EQUIPMENT, DEVICES, LABOR, PLANT, AND OTHER FACILITIES NEEDED, BUT NOT SHOWN ON THE DRAWINGS, AT NO ADDITIONAL COST TO THE OWNER.

4. CONTRACTOR TO ENSURE THAT ALL EQUIPMENT IS INSTALLED PER MANUFACTURER'S INSTRUCTIONS.

5. FIRE SPRINKLER AND ROOF DRAINAGE ARE NOT PART OF THIS SCOPE.

6. PLUMBING AND FLUE VENTS AND DISCHARGE OUTLETS OF EXHAUST FANS SHALL BE AT LEAST 3' ABOVE, OR 10' AWAY FROM, ALL OUTSIDE AIR-INTAKE OPENINGS INTO THE BUILDING.

7. PROVIDE WATER HAMMER ARRESTORS IN SUPPLY LINES CONNECTED TO FIXTURES AND APPLIANCES.

8. CONTRACTOR SHALL COORDINATE EXACT LAYOUT OF ALL PLUMBING PIPING WITH ARCHITECT AND HVAC DUCTWORK CONTRACTOR PRIOR TO INSTALLATION.

SHEET NOTES

1. PROVIDE ALL CLEANOUTS PER CODE, TYP. NO UNDER-FLOOR CLEANOUT SHALL BE LOCATED EXCEEDING 5 FEET FROM AN ACCESS DOOR, TRAP DOOR, OR CRAWL HOLE.

2. PROVIDE 1/4"/FT. SLOPE ON SS LINES, TYP.

3. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL FIXTURES AND EQUIPMENT.

4. LINES SHOWN OUTSIDE WALLS FOR CLARITY REASONS ONLY, TYP.

5. CW,HW, AND SS LINES TO RUN IN BASEMENT AS CLOSE TO CEILING AS POSSIBLE.

6. CONTRACTOR TO PROVIDE VENTING FOR ALL FIXTURES PER CPC SECTION 9, TYP. ANY VENT LINE WITH MORE THAN $\frac{1}{3}$ OF ITS TOTAL PERMITTED LENGTH IN A HORIZONTAL POSITION SHALL HAVE ITS SIZE INCREASED ONE PIPE SIZE FOR ITS ENTIRE LENGTH.

7. (N) ON-DEMAND WATER HEATER. EXACT LOCATION SHOWN ON ARCHITECTURAL DRAWING. CONTRACTOR TO PROVIDE PROTECTION POST(S) PER CMC 305.1.1.

8. CONNECT TO EXISTING SEWER LATERAL. SEE CIVIL DRAWING C3.1 FOR (E) LATERAL LOCATION.

9. CONNECT TO WATER METER AT STREET. SEE FIXTURE UNIT SCHEDULE THIS SHEET. NOTE: MINIMUM 1" WATER METER REQUIRED. CONTRACTOR TO REPLACE IF NECESSARY.

10. CONTRACTOR TO PROVIDE ISLAND SINK VENT.

11. CONTRACTOR TO ROUTE COOKTOP VENT TO EXTERIOR, TYP.

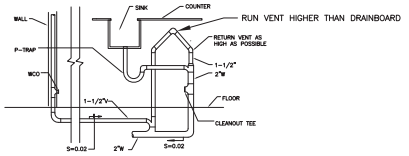
LEGEND

COLD WATER		WCO	WALL CLEANOUT
HOT WATER/ HOT WATER RETURN		COTG	CLEANOUT TO GRADE
		CO	CLEANOUT
GAS		FCO	FLOOR CLEANOUT
INDIRECT DRAIN			FLOOR SINK (SEE KIT. CONSULT. DWG.)
CONDENSATE DRAIN			FLOOR SINK (SEE KIT. CONSULT. DWG.)
SANITARY SEWER			FLOOR DRAIN
VENT			FLOOR DRAIN

FIXTURE UNIT SCHEDULE

FIXTURE	QUANTITY	SUPPLY FU	TOTAL SUPPLY	DISCHARGE FU	TOTAL DRAIN
TANK WATER CLOSET	6	2.5	15	3	18
LAV	7	1	7	1	7
SHOWER	4	2	8	2	8
SHOWER/TUB	1	4	4	2	2
BATHTUB	1	2	2	2	2
KITCHEN SINK	2	1.5	3	2	4
CLOTHES WASHER	1	4	4	3	3
REFRIGERATOR	2	1	2	–	–
DISHWASHER	2	1.5	3	2	4
LAUNDRY SINK	1	1.5	1.5	2	2
BAR SINK	2	1	2	1	2
VEG. SINK	1	1.5	1.5	2	2
	TOTAL		53		54

DISTANCE FROM WATER METER TO FURTHEST FIXTURE = APPROX. 100'.
USE 150' COLUMN TABLE 610.4 CPC.
PER CALIFORNIA WATER, PRESSURE = APPROX. 72#.
AVAILABLE PRESSURE REDUCED TO APPROX. 57# DUE TO WATER METER, BACKFLOW PREVENTER, AND ELEVATION. PER TABLE 610.4, CPC, 1" METER AND 1-1/2" LINE CAPABLE OF 85 FU.



ISLAND SINK VENT DETAIL (1)
SCALE: NONE

WATER HEATER SCHEDULE

DESIGNATOR	TYPE	MANUFACTURER	MODEL NO.	CAPACITY (GAL)	GAS BTUH	ELECTRICAL KW	ELECTRICAL VOLT/PH	DIMENSIONS	REMARKS
WH-1	ON-DEMAND	TAKAGI	TK-510C-NI	--	199,000	——	——	13.75"Wx20.5"Hx10.5"D	

UNITS TO BE TAKAGI OR EQUAL, SUITABLE FOR INDOOR OPERATION WITH NATURAL GAS.

CTC ASSOCIATES
12 Tern Ct.
San Rafael, CA 94901
Tel: 415-455-0191
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311 Seventh Avenue, Suite 1
San Mateo, California 94401

BANK ARCHITECTS

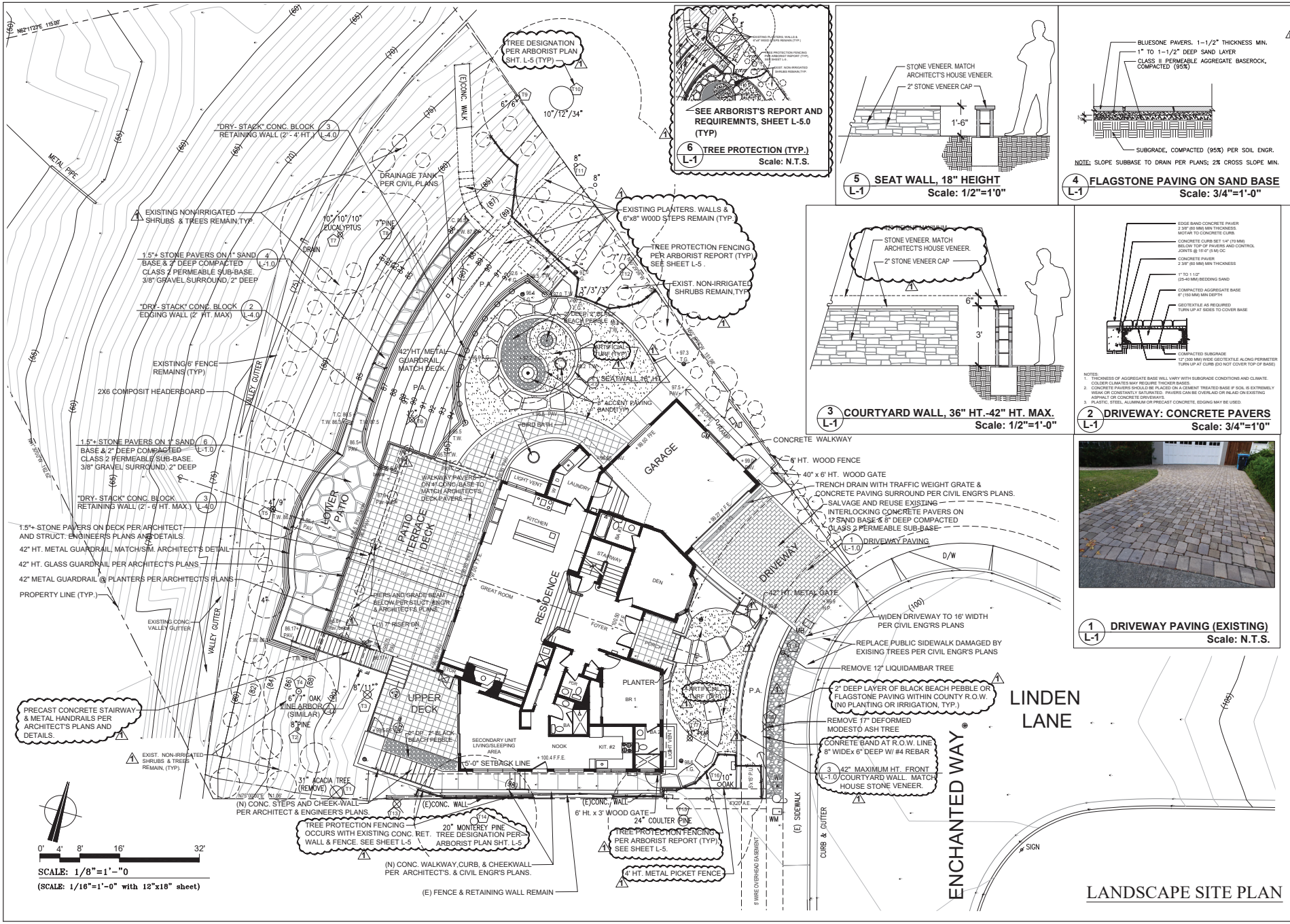
NEW RESIDENCE FOR:
HOLLY QIU & JERRY SHEN
1330 ENCHANTED WAY
SAN MATEO, CA 94402

REGISTERED PROFESSIONAL ENGINEER JOEL LURIE NO. M18765 Exp. 09/30/21 MECHANICAL STATE OF CALIFORNIA

TITLE
PLUMBING NOTES, SCHEDULES, AND DETAILS

CHECKED: JL
DATE: 11-17-20
SCALE: AS SHOWN
DRAWN: JL
JOB NO. 160114
DWG. NO. **P-3.0**
SHEET 3 OF 3

1 **PLUMBING NOTES, SCHEDULES, AND DETAILS** SCALE: 1/4" = 1'-0"



REVISIONS:	BY:
3.5.19 PERMIT PLAN SUBMITTAL	S.H.
11.01.20 PLAN CHECK COMMENT RESPONSES & ARBORIST REPORT REQUIREMENTS	S.H.

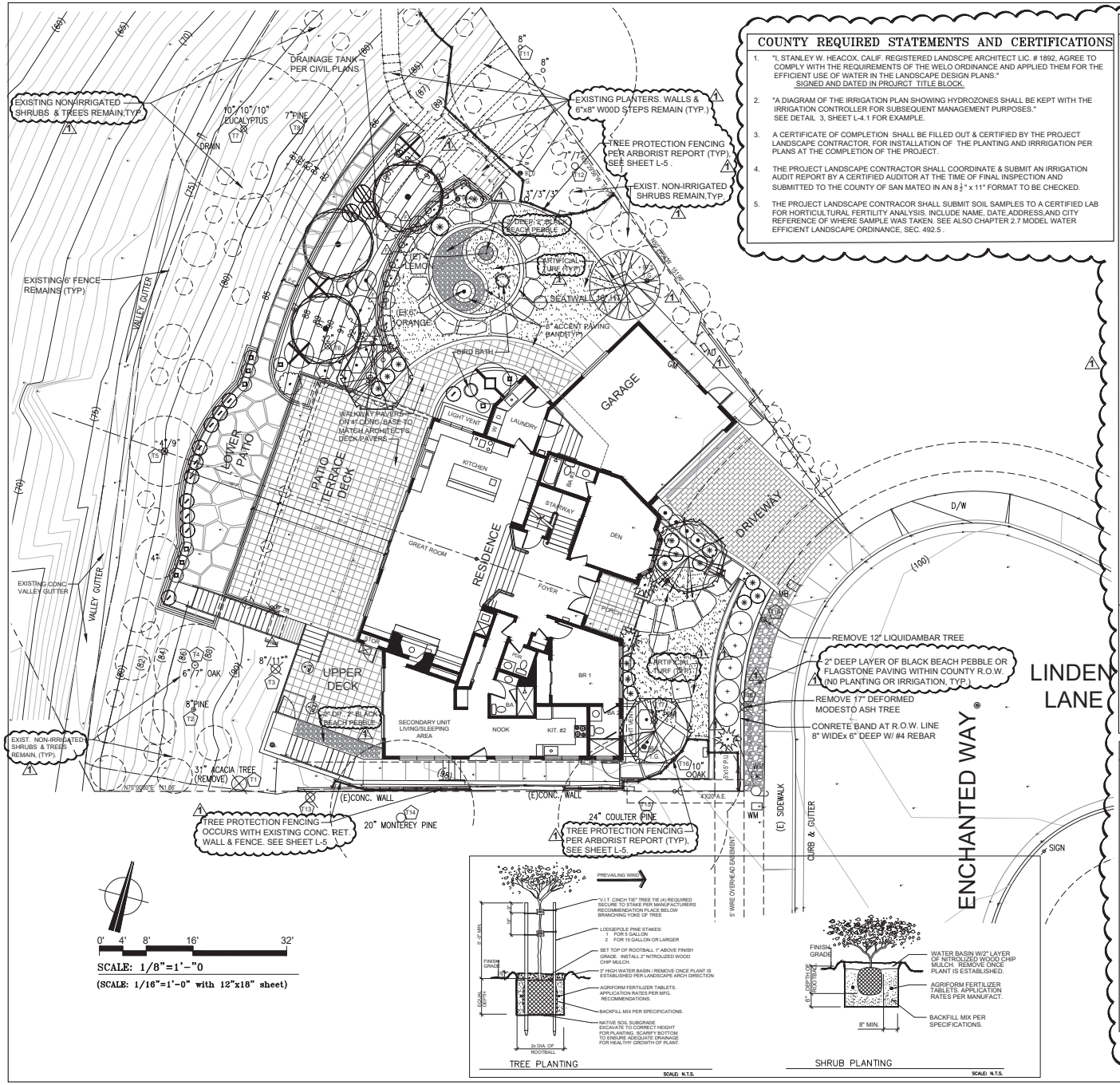
QIU / SHEN RESIDENCE
1330 ENCHANTED WAY
SAN MATEO, CA 94401
SAN MATEO CO. APN #038-141-140

Heacox Associates
Landscape Architects
25 HAZEL AVENUE
MILL VALLEY, CA 94941
PHONE NO. (415) 717-7283 stanheacox@mac.com

DATE:	3/15/19
DRAWN:	S.W.H.
SCALE:	AS SHOWN
JOB NO:	201710

LANDSCAPE SITE PLAN

SHEET NUMBER
L-1.0
OF 5 SHEETS



COUNTY REQUIRED STATEMENTS AND CERTIFICATIONS

1. "I, STANLEY W. HEACOX, CALIF. REGISTERED LANDSCPE ARCHITECT LIC. # 1892, AGREE TO COMPLY WITH THE REQUIREMENTS OF THE WELO ORDINANCE AND APPLIED THEM FOR THE EFFICIENT USE OF WATER IN THE LANDSCAPE DESIGN PLANS." SIGNED AND DATED IN PROJRCT TITLE BLOCK.
2. "A DIAGRAM OF THE IRRIGATION PLAN SHOWING HYDROZONES SHALL BE KEPT WITH THE IRRIGATION CONTROLLER FOR SUBSEQUENT MANAGEMENT PURPOSES." SEE DETAIL 3, SHEET L-4.1 FOR EXAMPLE.
3. A CERTIFICATE OF COMPLETION SHALL BE FILLED OUT & CERTIFIED BY THE PROJECT LANDSCAPE CONTRACTOR, FOR INSTALLATION OF THE PLANTING AND IRRRIGATION PER PLANS AT THE COMPLETION OF THE PROJECT.
4. THE PROJECT LANDSCAPE CONTRACTOR SHALL COORDINATE & SUBMIT AN IRRIGATION AUDIT REPORT BY A CERTIFIED AUDITOR AT THE TIME OF FINAL INSPECTION AND SUBMITTED TO THE COUNTY OF SAN MATEO IN AN 8½" x 11" FORMAT TO BE CHECKED.
5. THE PROJECT LANDSCAPE CONTRACOR SHALL SUBMIT SOIL SAMPLES TO A CERTIFIED LAB FOR HORTICULTURAL FERTILITY ANALYSIS. INCLUDE NAME, DATE,ADDRESS,AND CITY REFERENCE OF WHERE SAMPLE WAS TAKEN. SEE ALSO CHAPTER 2.7 MODEL WATER EFFICIENT LANDSCAPE ORDINANCE, SEC. 492.5 .

PLANTING LEGEND:

SYMBOL	KEY	QUAN.	BOTANICAL NAME/ COMMON NAME	SIZE	NOTES WATER USE:
TREES:					
	T1	1	ACER PALMATUM 'SANGO KAKU' / CORAL BARK JAPAN. MAPLE (USE .5 GPM BUBBLER TO KEEP ON SAME VALVE)	24" BOX	MULTI TRUNK MOD.
	T2	1	PRUNUS SERULATA 'KWANZAN' / FLOWERING CHERRY (USE .5 GPM BUBBLER TO KEEP ON SAME VALVE)	36" BOX	STANDARD MOD.
	T3	2	LAGERSTROEMIA x HYBRID 'MUSKOGEE' /CRAPE MYRTLE	24" BOX	STANDARD LOW
	T4	2	CHITALPA TASHKENTENSIS 'PINK DAWN	24" BOX	STANDARD LOW
		OR	CERCIS CANADENSIS VAR. TEXENSIS / TEXAS REDBUD	24" BOX	MULTI-TRUNK LOW
SHRUBS:					
	S1	-	CISTUS 'SUNSET' ('BRILLIANCY')/ DARK PINK ROCKROSE	5 GAL.	LOW
	S2	-	BUDDLEJA DAVIDII 'LOCHINCH' / DWARF BUTTERFLY BUSH	5 GAL.	LOW
	S3	-	BERBERIS THUNBERGII ' ATROPURPUREA' / JAPANESE BARBERRY	3 GAL.	LOW
	S4	-	CEANOTHUS GLORIOSUS ' EMILY BROWN' / WILD LILAC	1 GAL.	LOW
	S5	-	CEANOTHUS GRIS. HORIZ. "ANCHOR BAY'	1 GAL.	LOW
	S6	-	CRASSULA OVATA/ JADE PLANT	5 GAL.	LOW
	S7		STELITZIA REGINEA /BIRD OF PARADISE	5 GAL.	LOW
	S8	-	PINUS MUGO MUGO / DWARF MUGHO PINE	5 GAL.	LOW
	S9		LANTANA MONTEVIDENSIS '/ LANTANA	1 GAL.	LOW
	S10	-	LOROPETALUM CHINESE 'RAZZELBERRI'/ FRINGE FLOWER	5 GAL.	LOW
	S11	-	PITTOSPORUM TOB. VARIEGATA / VARIEGATED MOCK ORANGE	5 GAL.	LOW
	S12	-	RHAMNUS CALIFORNICA 'EVE CASE' / CALIF. COFEEBERRY	5 GAL.	LOW
	S13	-	SALVIA GUARANTICA 'AMISTAD' / HUMMINGBIRD SALVIA	5 GAL.	LOW
	S14	-	SALVIA LEUCANTHA / MEXICAN SAGE	5 GAL.	LOW
GROUNDCOVERS:					
	G-1	-	ARTIFICIAL TURF (COLOR, TEXTURE & HEIGHT SELECTED BY OWNER)		NO WATER
	G-2	-	2" DEEP, 2' BLACK BEACH PEBBLE ON 1" AGG. BASE WITH WEED FABRIC LAYER BELOW.		NO WATER
VINES:					
A	V-1	-	ROSA 'CECILE BRUNNER' / PINK CLIMBING ROSE	5 GAL.	COLUMN LOW
A	V-2	-	FICUS PUMILA / CREEPING FIG	1 GAL.	COLUMN LOW

TOTAL IRRIGATED LANDSCAPE AREA (17% OF *TOTAL SITE LANDSCAPE AREA*) = 954 S.F.
SEE SHEETS L-3.0 & L-4.0 FOR WELO CALCULATIONS, REQUIREMENTS AND HYDROZONES

TOTAL LAWN AREA (0% OF TOTAL IRRRIGATED LANDSCAPE) = 0 S.F.

***TOTAL EXISTING NON-IRRIGATED LANDSCAPE AREA (WITHIN FENCED AREA)**
(BARE GROUND OR ESTABLISHED, non-irrigated, DROUGHT RESISTENT LANDSCAPE) = ± 4,860 S.F.

TOTAL NON-IRRIGATED SITE LANDSCAPE AREA = ± 13,000 S.F.
***INCLUDING NATURAL OPEN SPACE HILLSIDE BELOW)**

DESIGN CONCEPT& WATER CONSERVATION NOTES:

LANDSCAPE DESIGN CONCEPT:

THE LANSCAPE DESIGN CONCEPT IS TO PRESERVE AND ENHANCE THE EXISTING LANDSCAPE & COMPLIMENT THE ARCHITECTURAL STYLE. THE PLANTS SELECTED WILL BE 90%+ DROUGHT RESISTANT, SUSTAINABLE AND HAVE ATTRACTIVE YEAR ROUND COLOR AND INTEREST. THE IRRIGATION CONTROLLER WILL BE UPGRADED TO A WEATHER BASED MODEL.

IRRIGATION & WATER CONSERVATION:

1. REPLACE ALL (E) LAWN WITH ARTIFICIAL LAWN = NO WATER.
2. INSTALL 3" DEEP MULCH @ ALL NEW SHRUB & NON-ROOTING GROUNDCOVER AREAS.
3. INCORPORATE 4 C.Y. AMENDMENT PER 1000 S.F. OF NEW PLANTING AREAS AMMEND PLANT PITS ONLY @ 2:1 SLOPE AREA, NO ROTO-TILLING.
4. USE LOW GAL SPRAY HEADS, BUBBLERS & EMITTERS.
5. INSTALL AUTOMATIC "WEATHER BASED" CONTROLLER FOR EXISTING& NEW VALVE CIRCUITS. INSTALL RAIN SHUT-OFF GAUGE.
6. USE DROUGHT TOLERANT PLANT SPECIES - 80 % MIN.
7. PRUNE OUT ALL DEAD/DAMAGED SHRUB & TREE BRANCHES.
8. REMOVE ALL WEEDS & DEBRIS.

PLANTING PLAN

REVISIONS:	BY:
5.3.19 PERMIT PLAN SUBMITTAL	S.H.
1 7.01.20 PLAN CHECK COMMENT RESPONSES & ARBORIST REPORT REQUIREMENTS	S.H.

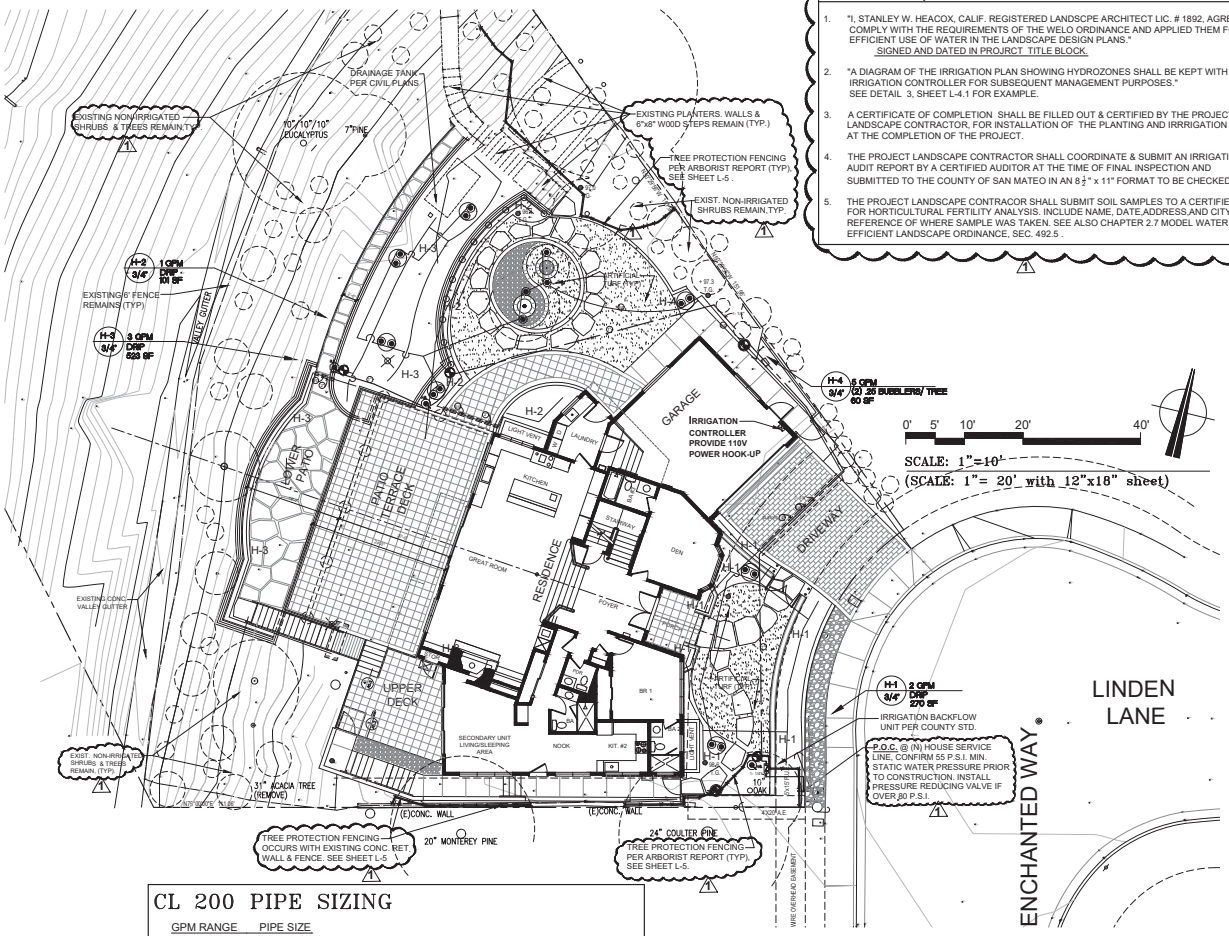
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Heacox Associates
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25 HAZEL AVENUE
MILL VALLEY, CA 94941
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DATE: 3/15/19
DRAWN: S.W.H.
SCALE: AS SHOWN
JOB NO: 201710

PRELIMINARY PLANTING PLAN

SHEET NUMBER
L-2.0
OF 5 SHEETS



COUNTY REQUIRED STATEMENTS AND CERTIFICATIONS

1. "I, STANLEY W. HEACOX, CALIF. REGISTERED LANDSCPE ARCHITECT LIC. # 1892, AGREE TO COMPLY WITH THE REQUIREMENTS OF THE WELO ORDINANCE AND APPLIED THEM FOR THE EFFICIENT USE OF WATER IN THE LANDSCAPE DESIGN PLANS."
   SIGNED AND DATED IN PROJRCT TITLE BLOCK.
2. "A DIAGRAM OF THE IRRIGATION PLAN SHOWING HYDROZONES SHALL BE KEPT WITH THE IRRIGATION CONTROLLER FOR SUBSEQUENT MANAGEMENT PURPOSES."
   SEE DETAIL 3, SHEET L-4.1 FOR EXAMPLE.
3. A CERTIFICATE OF COMPLETION SHALL BE FILLED OUT & CERTIFIED BY THE PROJECT LANDSCAPE CONTRACTOR, FOR INSTALLATION OF THE PLANTING AND IRRRIGATION PLANS AT THE COMPLETION OF THE PROJECT.
4. THE PROJECT LANDSCAPE CONTRACTOR SHALL COORDINATE & SUBMIT AN IRRIGATION AUDIT REPORT BY A CERTIFIED AUDITOR AT THE TIME OF FINAL INSPECTION AND SUBMITTED TO THE COUNTY OF SAN MATEO IN AN 8½" x 11" FORMAT TO BE CHECKED.
5. THE PROJECT LANDSCAPE CONTRACOR SHALL SUBMIT SOIL SAMPLES TO A CERTIFIED LAB FOR HORTICULTURAL FERTILITY ANALYSIS. INCLUDE NAME, DATE,ADDRESS,AND CITY REFERENCE OF WHERE SAMPLE WAS TAKEN. SEE ALSO CHAPTER 2.7 MODEL WATER EFFICIENT LANDSCAPE ORDINANCE, SEC. 492.5 .

IRRIGATION NOTES & SPECIFICATIONS

1. THE IRRIGATION SYSTEM SHALL BE INSTALLED IN CONFORMANCE WITH LOCAL CODES AND THE CITY WATER EFFICIENT LANDSCAPE ORDINANCE DESIGN GUIDELINES BY A LICENSED CONTRACTOR WHO SHALL OBTAIN ALLL NECESSARY PERMITS AND PAY ALL REQUIRED FEES.
2. THIS DESIGN IS DIAGRAMATIC. ALL PIPING, VALVES, ETC., SHOWN WITHIN PAVED AREAS ARE FOR DESIGN CLARIFICATION ONLY AND SHALL BE INSTALLED IN PLANTING AREAS WHERE POSSIBLE. AVOID ANY CONFLICTS WITH PLANT MATERIAL. INSTALL THE IRRIGATION SYSTEM AS INTENDED TO PROVIDE COMPLETE UNIFORMCOVERAGE UNDER FULLY AUTOMATIC OPERATION.
3. CONFIRM DESIGN HYDROSTATIC PRESSURE OF 55 PSI AND MAXIMUM DEMAND OF 10 GPM AT EXISTING POINT OF CONNECTION PRIIOR TO INITIATING ANY WORK. SUBMIT WRITTEN CONFIRMATION OF DESIGN PRESSURE. PROVIDE PRESSURE REDUCING EQUIPMENT TO PROVIDE UNIFORM COVERAGE WITHOUT MISTING OR OVERTHOW AS REQUIRED.
4. DO NOT WILLFULLY INSTALL THE SPRINKLER SYSTEM, AS SHOWN ON THE DRAWINGS, WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTION, GRADE OR AREA DIMENSION DIFFERENCES EXIST THAT MIGHT NOT HAVE BEEN CONSIDERED IN THE DESIGN. NOTIFY OWNER AND LANDSCAPE ARCHITECT OF ANY SUCH DIFFERENCES.
5. IN ADDITION TO THE SLEEVES AND CONDUIT SHOWN ON DRAWINGS, THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF SLEEVES AND CONDUITS, OF SUFFICIENT SIZE, UNDER ALL PAVED AREAS.
6. IRRIGATION CONTROL WIRES SHALL BE COPPER WITH UL APPROVAL FOR DIRECT BURIAL INGROUND. COMMON GROUND WIRE SHALL BE #12-1 AWG WITH WHITE INSULATION. CONTROL WIRE SHALL BE #14-1 AWG WITH RED INSULATION. INSTALL 5 SPARE CONTROL WIRES, OF A DIFFERENT COLOR, ALONG MAIN LINE TO END VALVES AS SHOWN.
7. SPLICING OF LOW VOLTAGE WIRES SHALL ONLY OCCUR IN VALVE BOXES. LEAVE A 24" COIL OF EXCESS WIRE AT EACH SPLICE AND 100 FEET ON CENTER ALONG WIRE RUN. TAPE WIRES TOGETHER EVERY 10 FEET. DO NOT TAPE WIRES IN SLEEVES. SPLICES SHALL BE MADE WITH 3M # 3570 SCOTCHLOK SEAL PACKS.
8. INSTALL REMOTE CONTROL VALVE BOXES, ONE VALVE PER BOX, 12" FROM WALKS, CURB, OR BUILDING. ALIGN MULTIPLE VALVE BOX GROUPS EQUAL DISTANCE AND PARALLEL TO WALK, CURB, ETC.
9. PRESSURE TEST ALL MAIN LINES AND CLEAN OUT (BLOW OUT) ALL MAIN AND LATERAL LINES PRIOR TO ADDING NEW HEADS AND EMITTERS.
10. FLUSH AND ADJUST ALL SPRINKLER HEADS FOR OPTIMUM PERFORMANCE AND TO PREVENT OVERSPRAY ONTO WALKS, ROADWAYS, AND BUILDINGS. THIS SHALL INCLUDE THE BEST DEGREE OR ARC AND THROW RADIUS TO FIT THE SITE CONDITIONS.
11. INSTALL TORO 570 CHECK VALVE IN ALL HEADS AND/OR KING BROTHERS/VALCON IN LINE CHECK VALVE TO PREVENT LOW HEAD DRAINAGE AND EROSION WHEREVER OCCURING.
12. PROVIDE OWNER WITH AN ACCURATELY SCALED "AS BUILT" DRAWING AND EQUIPMENT INSTRUCTIONS. REFERENCE ALL MAINLINE, CONTROL VALVES, AND EQUIPMENT LOCATIO DIMENSIONS TO NEAREST BUILDING OR PAVING.
13. THE EQUIPMENT MANUFACTURER'S SPECIFICATIONS AND REQUIREMENTS FOR THE USE OF THEIR PRODUCTS SHALL TAKE PRECEDENCE OVER THE LANDSCAPE ARCHITECTS CONSTRUCTION DOCUMENTS.
14. REMOVE & DISPOSE EXISTING OR EXCESS IRRIGATION EQUIPMENT, HEADS, AND PIPE UNLESS NOTED OTHERWISE.
15. THE CONTRACTOR SHALL MAINTANE THE IRRIGATION SYSTEM DURING THE 90 DAY MAINTENANC PERIOD BEGINNING AT FINAL ACCEPTANCE AND COMPLETION OF WORK.
16. GUARANTEE IRRIGATION SYSTEM FOR DEFECTS IN MATERIAL OR WORKMANSHIP FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE.

SPECIAL NOTES:

A. INSTALL PVC LATERAL LINES INTO ALL PLANTING AREAS PRIOR TO INSTALLING DRIPLINES AT 18" O.C., MULTIPLE OUTLET EMITTERS, OR AS NEEDED FOR COMPLETE UNIFORM COVERAGE.
B. ALL DRIPLINE LATERALS UNDER PAVING SHALL BE PVC OR WITHIN PVC SLEEVES.
C. PROVIDE CERTIFICATE OF COMPLETION DOCUMENTS PER WATER ORDINANCE REQUIREMENTS.

CERTIFICATE OF COMPLETION REQUIREMENTS:

UPON COMPLETION OF LANDSCAPE INSTALLATION THE LANDSCAPE CONTRACTOR SHALL SUBMIT THE FOLLOWING AS REQUIRED BY THE WATER EFFICIENT LANSCAPE ORDINANCE.

1. PROJECT INFORMATION SHEET IF REQUIRED.
2. CERTIFICATION FROM LANDSCAPE ARCHITECT FOR INSTALLATION ACCORDING TO THE LANDSCAPE DOCUMENTATION PACKAGE.
3. IRRIGATION SCHEDULING (ESTABLISHMENT AND POST ESTABLISHMENT PERIOD)
4. SCHEDULE OF LANDSCAPE AND IRRIGATION MAINTENANCE IF REQUIRED.
5. LANDSCAPE IRRIGATION AUDIT REPORT: UMIFORM COVERAGE, NO RUN-OFF
6. SOIL MANAGEMENT REPORT IF REQUIRED.

IRRIGATION LEGEND:

SYMBOL	QUAN.	DESCRIPTION	MANUFACTURER'S NUMBERS & NOTES
	2	HOSE BIB	3/4" HOSE BIB ON GALV. PIPE RISER
POC	1	POINT OF CONNECTION–VERIFY LOCATION IN FIELD INSTALL GATE VALVE & CONCRETE VAULT WITH LID	POINT OF CONNECTION @ EXISTING HOUSE WATER SERVICE LINE
	1	BACKFLOW PREVENTER, (1", INSTALL PER CONTY	CODE)
A	1	AUTOMATIC CONTROLLER, PED MOUNT(8 STATION,) TORO or RAINBIRD SATELLITE CONTROLLED RAIN & WEATHER GAUGE "SMART" CONTROLLER	TORO/IRRITROL/RAINBIRD OR HUNTER PED, MOUNT IN HOUSED LOCKING ENCLOSURE. (COORDINATE 120V POWER HOOK-UP & TRANSFORMER
	4	GATE VALVE	NIBCO 4–616–RW, SIZE TO MATCH MAINLINE
	–	DRIP OR FLOOD BUBBLER @ 4"x3' PERF. PVC DEEP WATERING TUBE (1 PER TREE) & SUFACE BUBBLER (1 PER TREE)..25 GPM	RAINBIRD 36" RWS TREE BUBBLER OR HUNTER 1" RWC
	3	REMOTE CONTROL VALVE W/ GATE VALVE ALT. HUNTER OR TORO R.C.V.	RAINBIRD XCV–100 COM.,1", DRIP VALVE ASSEMBLY. INSTALL ONE PER RECTANGULAR BOX
	1	REMOTE CONTROL VALVE @ TREE BUBBLER CIRCUIT	RAINBIRD R.C.V.,1", WITH PRESSURE REGULATOR & AMIAD FILTER WITH 155 MESH SCREEN INSTALL ONE PER RECTANGULAR VALVE BOX
	–	MAINLINE, PVC SCHEDULE 40, (1" MIN.)	18" DEEP MINIMUM
	–	LATERAL LINE, PVC CLASS 200 (3/4" MIN.) LATERAL LINE, DRIP TUBING LATERAL 5/8" MIN.)	12" DEEP MINIMUM 6" DEEP MINIMUM
	–	IRRIGATION LINE IN PVC SCHEDULE 40 CHASE (NOT SHOWN. INSTALL AS NEEDED)	CHASE TO BE TWICE THE SIZE OF LINE(S) MINIMUM.
NOT SHOWN		MULTIPLE EMITTER OUTLET	INSTALL MUTIPLE EMITTER OUTLET AT PVC LATERAL PIPE AS REQUIRED. BURY TUBING WITH 2" COVER
NOT SHOWN		INSTALL DRIP EMITTER DISTRIBUTION TEE ASSEMBLIES AS REQUIRED TO PROVIDE TO EACH PLANT AS IN THE QUANTITIES SHOWN BELOW. PLANT SIZE: EMITTERS PER PLANT - RAINBIRD XBT & SXB XERI-BUG OR EQ.,2 GPH. 1-2 GALLON PLANTS: (1). 5 GALLON PLANTS: (2). 15 GALLON PLANTS: (2). 24" BOX PLANTS: (4)	
		ALTERNATE SUBSURFACE IRRIGATION DRIPLINE (NOT SHOWN)	TORO DL200 RGP–418 DRIPLINE (18" EMITTER SPACING; 1 GPH,.73 PRECIPITATION RATE) USE ONLY DL200 FITTINGS. DRIPLINES , 2" COVER

CL 200 PIPE SIZING

GPM RANGE	PIPE SIZE
0 - 5 GPM	1/2"
6 - 10 GPM	3/4"
10 - 15 GPM	1"
16 - 25 GPM	1-1/4"

VALVE NUMBER, VALVE SIZE, GALLONS/MINUTE, EMITTER TYPE (H-3 3/4" DRIP)

DESIGN CONCEPT & WATER CONSERVATION NOTES:

LANDSCAPE DESIGN CONCEPT:
THE LANSCAPE CONCEPT IS TO PRESERVE AND ENHANCE THE EXISTING LANDSCAPE & COMPLIMENT THE ARCHITECTURAL STYLE. WATER CONSERVATION AND SUSTAINABILTY ARE ESSENTIAL.THE IRRIGATION CONTROLLER WILL BE UPGRADED TO A WEATHER BASED MODEL.

IRRIGATION & WATER CONSERVATION:

1. REPLACE ALL (E) LAWN WITH ARTIFICIAL LAWN. NO WATER.
2. INSTALL 3" DEEP MULCH @ ALL NEW SHRUB, GROUNDCOVER, AND BARE SOIL AREAS.
3. INCORPORATE 6 C.Y. AMENDMENT PER 1000 S.F. AT ANY LAWN PLANTING AREAS.
4. USE LOW GALLONAGE BUBBLERS & DRIP EMITTERS.
5. INSTALL AUTOMATIC "WEATHER BASED" CONTROLLER FOR EXISTING VALVE CIRCUITS.
6. INSTALL RAIN SHUT-OFF GAUGE.
7. USE DROUGHT TOLERANT PLANT SPECIES - 85 % MIN.
8. PRUNE OUT ALL DEAD/DAMAGED SHRUB & TREE BRANCHES. RECYCLE AND DISPOSE AS REQUIRED BY COUNTY CODE.
9. REMOVE ALL WEEDS & DEBRIS.

MAWA & ETWU CALCULATIONS:

ETWA (ESTIMATED TO\TAL WATER USE) SHALL NOT EXCEED MAWA (MAXIMUM APPLIED WATER ALLOWANCE). IT IS NOT POSSIBLE CONSIDERING NO IRRIGATED LAWN, 90% LOW & VERY LOW WATER USE PLANTS., AND SIZE OF NON IRRIGATED OPEN LANDSCAPE SPACE AREA. SEE SHEET L-4.0 FOR PRECISE CALCULATIONS OF MAWA & ETWU. TOTAL IRRIGATED LANDSAPE AREA = 954 S.F.

PROPOSED IRRIGATION SCHEDULE: (APRIL - SEPTEMBER)

VALVE CIRCUIT:	SQ. FT.	TYPE :	TIME: CYCLE:
H-1	270	DRIP	30 MIN./2 TIMES A WEEK
H-2	101	DRIP	30 MIN./2 TIMES A WEEK
H-3	523	DRIP	30 MIN./2 TIMES A WEEK
H-4	60	BUBBLER TREES	7 MIN./2 TIMES A WEEK

INCREASE OR DECREASE SCHEDULE DURING ESTABLISHMENT PERIOD AS NEEDED TO PROVIDE HEALTHY GROWING CONDITION.

SET UP SATELITE CONTROL AT COMPLETION OF 90 DAY INSTALLATION MAINTENANCE PERIOD;

IRRIGATION PLAN

REVISIONS:	BY:
5.5.19 PERMIT PLAN SUBMITTAL	S.H.
1 7.01.20 PLAN CHECK COMMENT RESPONSES & ARBORIST REPORT REQUIREMENTS	S.H.

QIU / SHEN RESIDENCE
1330 ENCHANTED WAY
SAN MATEO, CA 94401
SAN MATEO CO. APN #038-141-140

Heacox Associates
Landscape Architects
25 HAZEL AVENUE
MILL VALLEY, CA 94941
PHONE NO. (415) 717-7883 stanheacox@mac.com

DATE: 3/15/19
DRAWN: S.W.H.
SCALE: AS SHOWN
JOB NO: 201710

PRELIMINARY IRRIGATION PLAN

SHEET NUMBER
L-3.0
OF 5 SHEETS

Hydrozone Information Table

Hydrozone*	Zone or Valve	Irrigation Method**	Area (Sq.Ft.)	% of Landscape Area
H-1	H-1, SHRUBS	DRIP	270	28%
H-2	H -2, SHRUBS	DRIP	101	11%
H=3	H-3, SHRUBS	DRIP	523	55%
H-4	H-4, TREES	DRIP	60	6%
Total			954	100%

Hydrozone Summary Table

Hydrozone *	Area (Sq. Ft.)	% of Landscape Area
L	894	94%
M	60	6%
Total	954	100%

*Hydrozone per WUCOLS
H = High water use plants or Lawn
M = Moderate water use plants
L = Low water use plants
VL = Very Low water use plants

**Irrigation Method
MS= Micro Spray
S= spray
R=Rotor
B=Bubbler
D=Drip
O=Other

Water Use Calculator

Notes: The annual rainfall and ETo (evapotranspiration rate) are pre-entered specifically for San Mateo County. EXCEL program incorportd as used by the City of Pleasanton

Maximum Applied Water Allowance (MAWA)

A) Net Evapotranspiration Calculation (NEC)

24 annual rainfall	x 0.25 = adjustment factor	=	6 effective rainfall
46.3 annual ETo	-6 effective rainfall	=	40 NEC

B) Adjusted Landscape Area Calculation

954.40 (landscape area, sq. ft.)	x 0.6 adjustment factor	=	572.40
0.00 (special landscape area, sq. ft.)	x 0.4 adjustment factor	=	0
	Sum of Adjusted Landscape Area (SALA)	=	572.40

MAWA = 40 (NEC) x 0.62 x conversion to gal. / sq. ft. 572.40 (SALA), sq. ft. = 14,195.52 Gallons

MAWA = (Net ETo) (0.62) [(0.6 x LA) + (0.4 x SLA)] CCFs = 11.78

Estimated Total Water Use (ETWU)

A) Net Evapotranspiration Calculation (NEC)

Net Evapotranspiration Calculation (NEC) = annual ETo - effective rainfall = 45.43 NEC

B) Adjusted Landscape Area Calculation

0.00 (very low wate use, sq. ft.)	x 0.1 adjustment factor	=	0
894.40 (low water use, sq. ft.)	x 0.3 adjustment factor	=	268.2
60.00 (moderate wate use, sq. ft.)	x 0.6 adjustment factor	=	36
0.00 (high water use, sq. ft.)	x 1.0 adjustment factor	=	0.00
	Sum of Adjusted Landscape Area (SALA)	=	304.20

ETWU = 45.43 (NEC) x 0.62 x conversion to gal. / sq. ft. 304.20 (SALA) x 0.85 / IE factor = 10,080.33 Gallons

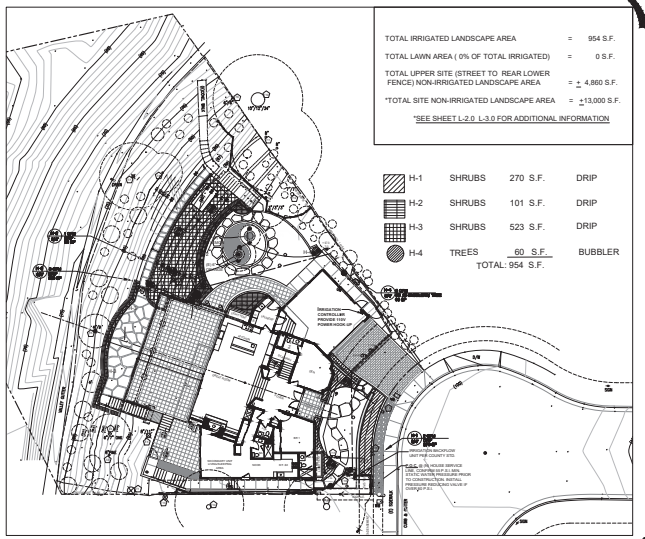
CCFs = 8.37 Congratulations!!

Net ETo = Annual Eto – effective rainfall
0.62 = conversion factor (to gallons per square foot)
0.6 = ET adjustment factor
LA = standard Landscaped Area (square feet)
0.4 = additional ET adjustment factor for SLA
SLA = Special Landscape Area (square feet)
CCFs (hundred cubic feet) = Gallons x 0.00083
SALA = Sum of Adjusted Landscape Area
Nes. = Net evapotranspiration Calculation

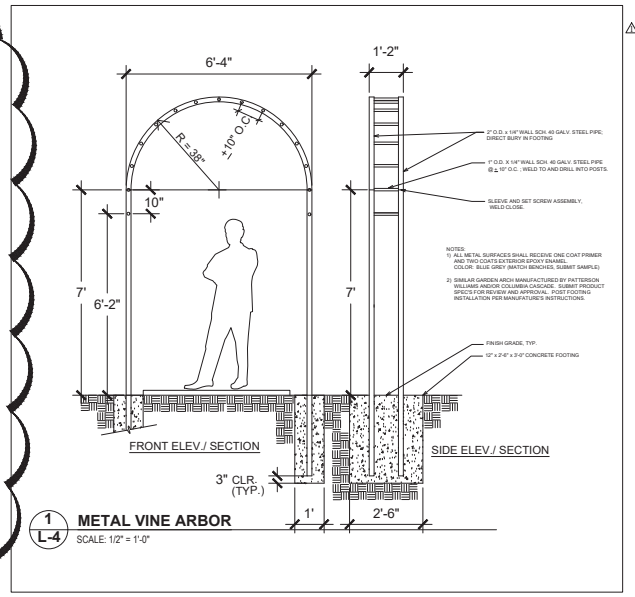
% of Total Landscape Irrigation with Drip	Irrigation Efficiency (IE) Factor
0-25%	Enter 0.71 above
26-50%	Enter 0.75 above
51-75%	Enter 0.80 above
76-100%	Enter 0.85 above

Certificate of Completion form : example

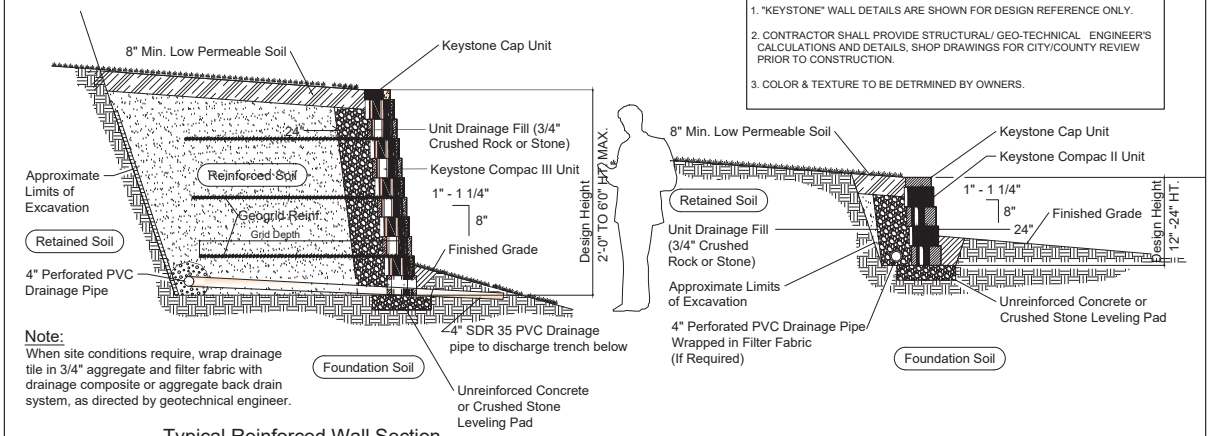
Certificate of Completion form to be included with Building Permit Plan submittal.



2 L-4 **IRRIGATION HYDROZONE DIAGRAM**



1 L-4 **METAL VINE ARBOR**
SCALE: 1/2" = 1'-0"



NOTES:
1. "KEYSTONE" WALL DETAILS ARE SHOWN FOR DESIGN REFERENCE ONLY.
2. CONTRACTOR SHALL PROVIDE STRUCTURAL/ GEO-TECHNICAL ENGINEER'S CALCULATIONS AND DETAILS, SHOP DRAWINGS FOR CITY/COUNTY REVIEW PRIOR TO CONSTRUCTION.
3. COLOR & TEXTURE TO BE DETRMINED BY OWNERS.

3 L-4 **"DRY- STACK" CONC. BLOCK RETAINING WALL (2' - 6' HT.)**
Scale: 1/2" = 1' 0"

4 L-4 **DRY-STACK CONC. BLOCK RETAINING EDGE (2' HT.)**
Scale: 1/2" = 1' 0"

REVISIONS:	BY:
3.5.19 PERMIT PLAN SUBMITTAL	S.H.
1.01.20 PLAN CHECK COMMENT RESPONSES & ARBORIST REPORT REQUIREMENTS	S.H.

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DATE:	3/15/19
DRAWN:	S.W.H.
SCALE:	AS SHOWN
JOB NO:	201710

LANDSCAPE DETAILS & WELO REQUIREMENTS

SHEET NUMBER
L-4.0
OF 5 SHEETS

Advanced Tree Care

965 East San Carlos Ave, San Carlos — 1330 Enchanted Way, San Mateo — October 14, 2020

Tree Survey

Tree#	Species	DBH	Ht/Sp	Con Rating	Comments
1	**Bailey acacia** *Acacia baileyana*	24.1"	30/40	40	Poor health and condition, decay at base, **Significant**
2	**Coast live oak** *Quercus agrifolia*	11.0"@1' above grade	15/15	65	Good health and condition, suppressed by#1, **Not Significant**
3	Bailey acacia *Acacia baileyana*	6 x 4"est	12/10	20	Poor health and condition, topped for view, **Significant**
4	Coast live oak *Quercus agrifolia*	6.2"@1'above grade	6/6	20	Poor health and condition, topped for view, **Not Significant**
5	Black acacia *Acacia melanoxylon*	9.2"/4.9"	15/8	30	Poor health and condition, topped for view, **Significant**
6	Weeping willow *Salix babylonica*	17.2"	18/12	40	Poor health and condition, topped for view, **Significant**
7	Blue gum *Eucalyptus globulus*	10"/8"/8"	8/3	10	Topped for view, poor health and condition, **Significant**
8	Monterey cypress *Cupressus macrocarpa*	9.3"	10/6	20	Poor health and condition, topped for views, **Not Significant**
9	Coast live oak *Quercus agrifolia*	8.4"	15/10	60	Fair health and condition, suppressed by#10, **Not Significant**
10	Silver dollar eucalyptus *Eucalyptus polyanthemos*	10"/12"/34"est	50/40	65	Fair health and condition, neighbors tree, **Significant**
11	Monterey pine *Pinus radiata*	22"est	40/30	65	Fair health and condition, neighbors tree, **Significant**
12	Bottlebrush *Callistemon viminalis*	8.2"/8.1"	15/10	65	Fair health and condition **Significant**
13	Monterey pine *Pinus radiata*	20"est	25/15	5	Very poor health and condition, neighbors tree, **Significant**
14	Monterey pine *Pinus radiata*	20"est	30/20	50	Fair health and condition, neighbors tree, **Significant**
15	Coulter pine *Pinus coulteri*	24"est	30/20	50	Fair health and condition, neighbors tree, **Significant**
16	Coast live oak *Quercus agrifolia*	11.9"	18/10	65	Fair health and condition topped for utility, **Not Significant**
17	Pear *Pyrus spp*	12.5"	20/10	60	Fair health and condition **Significant**
18	Modesto Ash *Fraxinus 'Modesto'*	18.0"	25/10	40	Poor health and condition, street tree, **Significant**

Advanced Tree Care

965 East San Carlos Ave, SanCarlos — 1330 Enchanted Way, San Mateo — October 14, 2020

Tree#	Species	DBH	Ht/Sp	Con Rating	Comments
19	Sweet gum *Liquidamber styraciflua*	14.3"	30/20	60	Fair health and condition, street tree, **Significant**

Summary:
The trees on the site are a variety of natives and non-natives.

Tree #s 1 and 3 are Bailey acacias in poor health and condition. These rees should be removed.

Tree #s 5, 6, and 7 are in poor health and condition due to being toppec for the view. These trees should be removed.

Tree #s 10 and 11 are on the neighbor's property and should be protected during construction.

Tree # 12 is in fair health and condition and should be protected during construction.

Tree #s 13, 14 and 15 are on the neighbor's property. Tree # 13 is almost dead and should be removed. Tree #s 14 and 1! should be protected during construction.

Tree # 17 is in fair health and condition and should be protected during construction.

Tree # 18 is a street tree in poor health and condition and should be removed.

Tree # 19 is a street tree that has been requested for removal

Tree #s 2, 4, 8, 9 and 16 are not Significant trees and can be removed i' desired.

Advanced Tree Care

965 East San Carlos Ave, San Carlos — 1330 Enchanted Way, San Mateo — October 14, 2020

Tree Protection Plan

1. The Tree Protection Zone (TPZ) should be defined with protective fencing. This should be cyclone or chain link fencing on 11/2" or 2" posts driven at least 2 feet in to the ground standing at least 6 feet tall. Normally a TPZ is defined by the dripline of the tree. I recommend the TPZ's as follows:-

Tree #s 10, 11, 14 and 15: TPZ should be at 15 feet from the trunk in accordance with Type I Tree Protection as outlined and illustrated in image 2.15-1 and 2 [6] .

The location of the TPZ fencing is marked in a thick red line on the drawing. This can be reduced to edge of building for the demolition within the TPZ of Tree # 14.

Demolition of existing property within the TPZ of Tree # 14 should be done by hand or with equipment reaching into the TPZ. Area shaded in blue.

After demolition the TPZs for Tree #s 14 and 15 can be reduced to accommodate the new construction.

Excavation for the foundation of the new home and ADU within the TPZs of Tree #s 14 and 15 should be done by hand. No roots greater than 2 inches in diameter shoud be cut.

Tree #s 12 and 17: TPZ should be at 10 feet from the trunk in accordance with Type I Tree Protection as outlined and illustrated in image 2.15-1 and 2 [6]

The TPZ for Tree # 17 can be reduced to accommodate the proposed nev construction.

Advanced Tree Care

965 East San Carlos Ave, San Carlos — 1330 Enchanted Way, San Mateo — October 14, 2020



IMAGE 2.15-1
Tree Protection Fence at the Dipline



IMAGE 2.15-2
Tree Protection Fence at the Dipline

• Type I Tree Protection
The fences shall enclose the entire area under the **canopy dripline or TPZ** of the tree(s) to be saved throughout the life of the project, or until final improvement work within the area is required, typically near the end of the project (*see Images 2.15-1 and 2.15-2*). Parking Areas: If the fencing must be located on paving or sidewalk that will not be demolished, the posts may be supported by an appropriate grade level concrete base.

2. Any pruning and maintenance of the tree shall be carried out before construction begins. This should allow for any clearance requirements for both the new structure and any construction machinery This will eliminate the possibility of damage during construction. **The pruning should be carried out by an arborist, not by construction personnel**. No limbs greater than 4" in diameter shall be removed.

3. Any excavation in grounc where there is a potential to damage roots of 1" or more in diameter should be carefully handdug. Where possible, roots should be dug around rather than cut.[2]

4. If roots are broken, every effort should be made to remove the damaged area and cut it back to its closest lateral root. A clean cut should be made with a saw or pruners. This will pevent any infection from damaged roots spreading throughout the root system and into the tree.[2]

Advanced Tree Care

965 East San Carlos Ave, SanCarlos — 1330 Enchanted Way, San Mateo — October 14, 2020

5. **Do Not**:[6]
   a. Allow run off or spillage of damaging materials into the area below any tree canopy.
   b. Store materials, stockpile soil, park or drive vehicles within the TPZ of the tree.
   c. Cut, break, skin or bruise roots, branches or trunk without first obtaining permission from the city arborist.
   d. Allow fires under any adjacent trees.
   e. Discharge exhaust into foliage.
   f. Secure cable, chain or rope to trees or shrubs.
   g. Apply soil sterilants under pavement near existing trees.

6. Where roots are exposed,they should be kept covered with the native soil or four layers of wetted, untreated burlap.Roots will dry out and die if left exposed to the air for too long.[6]

7. Route pipes into alternate locations to avoid conflict with roots.[6]

8. Where it is not possible toreroute pipes or trenches, the contractor is to bore beneath the dripline of the tree. The boring shal take place no less than 3 feet below the surface of the soil in order to avoid encountering "feeder" roots.[6]

9. Compaction of the soil within the dripline shall be kept to a minimum.[2] If access is required to go through the TPZ of a protected tree, the area within the TPZ should be protected from compaction either with steel plates or with 4" of wood chip overlaid with plywood.

10. Any damage due to consruction activities shall be reported to the project arborist or city arborist within 6 hours so that remedial action can be taken.

11. Ensure upon completion of the project that the original ground level is restored

Advanced Tree Care

965 East San Carlos Ave, San Carlos — 1330 Enchanted Way, San Mateo — October 14, 2020

Glossary

Canopy	The part of the crown composed of leaves and small twigs.[2]
Cavities	An open wound, characterized by the presence of extensive decay and resulting in a hollow.[1]
Decay	Process of degradation of woody tissues by fungi and bacteria through the decomposition of cellulose and lignin[1]
Dripline	The width of the crown as measured by the lateral extent of the foliage.[1]
Genus	A classification of plants showing similar characteristics.
Root plate	The point at which the trunk flares out at the base of thetree to become the root system.
Species	A Classification that identifies a particular plant.
Standard height	Height at which the girth of the tree is measured. Typically 4 1/2 feet above ground level

References

(1) Matheny, N.P., and Clark, J.P. Evaluation of Hazard Trees in Urban Areas. International Society of Arboriculture,1994.

(2) Harris, R.W., Matheny, N.P. and Clark, J.R.. Arboriculture: Integrated Management of Landscape Trees, Shrubs and Vines. Prentice Hall, 1999.

(3) Carlson, Russell E. Paulownia on The Green: An Assessment of Tree Health and Structural Condition. Tree Tech Consulting, 1998.

(4) Extracted from a copy of Tree Protection guidelines. Anon

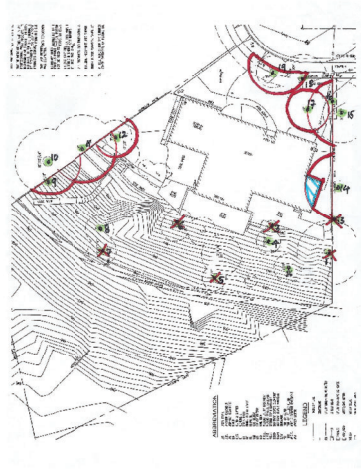
(5) T. D. Sydnor, Arboricultural Glossary, School of Natural Resources, 2000

(6) D Dockter, Tree Technical Manual, City of Palo Alto, June, 2001

(7)

Advanced Tree Care

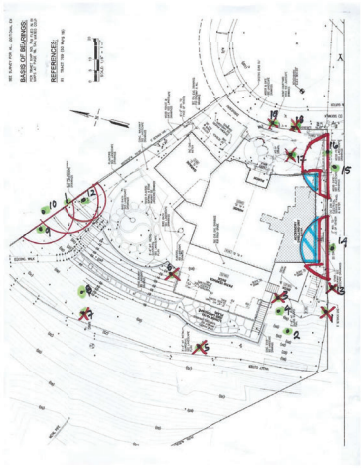
965 East San Carlos Ave, San Carlos — 1330 Enchanted Way, San Mateo — October 14, 2020



Location of existing house, protected trees and their Tree Protection Zones

Advanced Tree Care

965 East San Carlos Ave, San Carlos — 1330 Enchanted Way, San Mateo — November 7, 2019



Location of proposed new home and ADU, protected trees and their Tree Protection Zones

SEE SHT. L-1 FOR PRECISE TREE PROTECTION FENCING LOCATION AROUND PROPOSED NEW CONSTRUCTION

REVISIONS:	BY:
3.5.19 PERMIT PLAN SUBMITTAL	S.H.
1 01.20 PLAN CHECK COMMENT RESPONSES & ARBORIST REPORT REQUIREMENTS	S.H.

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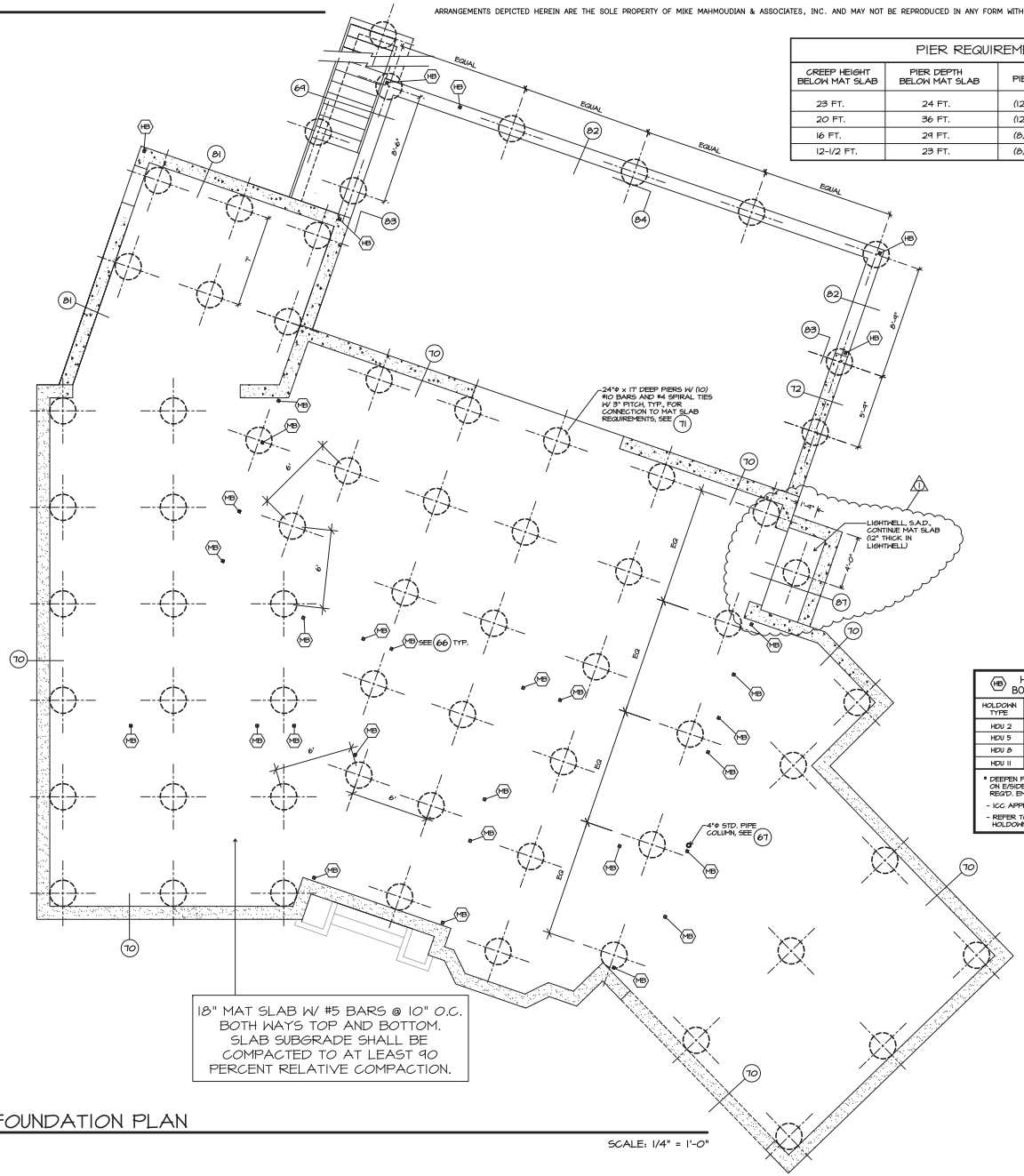
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DATE:	3/15/19
DRAWN:	S.W.H.
SCALE:	AS SHOWN
JOB NO:	201710

4 ARBORIST REPORT & REQUIREMENTS

SHEET NUMBER
L-5.0
OF 5 SHEETS

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FOUNDATION PLAN

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

PIER REQUIREMENTS			
CREEP HEIGHT BELOW MAT SLAB	PIER DEPTH BELOW MAT SLAB	PIER REBARS	PIER TIES
23 FT.	24 FT.	(12) #10 BARS	#4 W/ 3" PITCH
20 FT.	36 FT.	(12) #8 BARS	#4 W/ 3" PITCH
16 FT.	29 FT.	(8) #8 BARS	#3 W/ 3" PITCH
12-1/2 FT.	23 FT.	(8) #6 BARS	#3 W/ 3" PITCH

1 RE-SUBMITTAL 11/10/20

NOTES:

- SEE STRUCTURAL MATERIAL SPECIFICATIONS ON SHEET S-10 FOR FURTHER REQUIREMENTS.
- FOR WATERPROOFING, AND DRAINAGE REQUIREMENTS, SEE ARCHITECTURAL AND/OR CIVIL DRAWINGS, THESE REQUIREMENTS HAVE NOT BEEN ADDRESSED ON THE STRUCTURAL DRAWINGS.
- FOUNDATION EXCAVATION SHALL PERFORMED UNDER THE OBSERVATION OF MICHELUCCI & ASSOCIATES, INC.
- SOILS ENGINEER SHALL VERIFY IN WRITING TO THE BUILDING OFFICIAL THAT THE DRAWINGS COMPLY WITH THE REQUIREMENTS OF THE SOILS REPORT, AND THAT THE BUILDING PAD WAS PREPARED IN ACCORDANCE WITH THE SOILS REPORT, AND THE UTILITY TRENCHES BEEN PROPERLY BACKFILLED. ALL SOILS SITE WORK SHALL BE DONE UNDER THE DIRECT OBSERVATION OF THE SOILS ENGINEER.
- PIERS SHALL BE DRILLED UNDER THE OBSERVATION OF MICHELUCCI & ASSOCIATES, INC. PIERS SHALL BE 24" IN DIAMETER. FOR DEPTH AND REINFORCEMENT REQUIREMENTS, SEE CHART ABOVE. PIERS DEPTHS INDICATED ARE SUBJECT TO MODIFICATION BY THE GEOTECHNICAL ENGINEER BASED ON SUBSURFACE CONDITIONS ENCOUNTERED DURING DRILLING. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONDITIONS ENCOUNTERED DURING THE DRILLING OPERATION THAT PREVENT CONFORMANCE WITH THESE PLANS AND SPECIFICATIONS AND SHALL PROCEED WITH DRILLING ONLY UPON RECEIVING INSTRUCTIONS FROM THE ENGINEER.
- ANY ACCUMULATED WATER IN PIER EXCAVATION SHOULD BE REMOVED PRIOR TO PLACING REINFORCING STEEL AND CONCRETE, OR THE CONCRETE SHOULD BE TREMIED FROM THE BOTTOM OF HOLE.
- MAT SLABS SHALL BE 18" THICK AND REINFORCED WITH #5 BARS AT 10" O.C. BOTH WAYS TOP AND BOTTOM. REFER TO THE ARCHITECTURAL DRAWINGS FOR WATERPROOFING DETAILS AND REQUIREMENTS. FOR PIPE PENETRATION INTO THE MAT SLAB REFER TO DETAIL 68/S-8.
- GRADE BEAMS SHALL BE 12" WIDE X 30" THICK AND REINFORCED WITH (2) #5 BARS TOP, MIDDLE, AND BOTTOM WITH #3 STIRRUPS AT 24" O.C. U.N.O. SEE DETAIL 84/S-9 FOR GRADE BEAM DETAIL, SEE DETAIL 85/S-9 FOR REINFORCEMENT SPLICE REQUIREMENTS.
- HB INDICATES HOLDOWN ANCHORAGE REQUIREMENTS TO THE MAT SLAB SEE DETAIL 66/S-8.
- HB INDICATES HOLDOWN ANCHORAGE REQUIREMENTS TO THE FOUNDATION, SEE CHART.
- SEE ARCHITECTURAL DRAWINGS FOR EXACT SIZES AND LOCATIONS OF OPENINGS IN WALLS AND FLOOR, THE CONTRACTOR SHALL COORDINATE WITH ALL TRADES FOR THEIR SPECIFIC REQUIREMENTS PRIOR TO ANY FRAMING.
- DO NOT SCALE THESE DRAWINGS FOR DIMENSIONS, REFER TO THE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS.
- CONTRACTOR SHALL PROVIDE ALL NECESSARY AND REQUIRED SHORING AND SHALL VERIFY ALL CONDITIONS IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO PERFORMING ANY WORK IN THE AFFECTED AREAS.

HB HOLDOWN ANCHOR BOLT REQUIREMENTS		
HOLDOWN TYPE	ANCHOR BOLT TYPE	MIN. REQ'D. EMBEDMENT *
HDU 2	SSTB 24	20-5/8"
HDU 5	SB 5/8X24	18"
HDU 8	SB 7/8X24	18"
HDU 11	SB 1X30	24"

* DEEPEN FOOTING LOCALLY, FOR 12" ON EISIDE OF ANCHOR, TO ACHIEVE REQ'D. EMBEDMENT DEPTH, + 3" COVER
- ICC APPROVAL ESR-2611
- REFER TO THE FRAMING PLAN FOR HOLDOWN TYPE REQUIREMENTS

NOTE TO THE CONTRACTOR

ALL CONFLICTS BETWEEN THE ELEMENTS OF THE DRAWINGS MUST BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH ANY WORK

GREEN POINT REQUIREMENT

REPLACE PORTLAND CEMENT IN CONCRETE WITH UP TO 25% OF RECYCLED FLYASH

SOILS ENGINEER'S OBSERVATION

THE SOILS ENGINEER SHALL BE RETAINED TO PROVIDE OBSERVATION AND TESTING SERVICES DURING THE GRADING AND FOUNDATION PHASES OF CONSTRUCTION PER SOILS REPORT RECOMMENDATIONS. SUBMIT INSPECTION AND TESTING REPORTS TO THE BUILDING DEPARTMENT PRIOR TO FINAL

DESIGN CRITERIA - CBC 1603

FLOOR LIVE LOAD (PSF) = 40
ROOF LIVE LOAD (PSF) = 20

WIND DESIGN DATA

BASIC WIND SPEED (MPH) = 110
WIND IMPORTANCE FACTOR = 1.0
WIND EXPOSURE CATEGORY = B

SEISMIC DESIGN DATA

IMPORTANCE FACTOR = 1
MAPPED SPECTRAL RESPONSE ACCELERATIONS
Ss= 2.481
S1= 1.182
SPECTRAL RESPONSE COEFFICIENTS
Sds= 1.484
Sd1= 1.908
SEISMIC DESIGN CATEGORY= E
SITE CLASS = E
BASIC SEISMIC-FORCE RESISTING SYSTEM:
BEARING WALL SYSTEM
SEISMIC RESPONSE COEFFICIENT, CS = 0.229
DESIGN BASE SHEAR: V=(CS*0.1*W) = 0.1603
RESPONSE MODIFICATION FACTOR, R = 6.5
ANALYSIS PROCEDURE USED = EQUIVALENT LATERAL FORCE PROCEDURE

MIKE MAHMOUDIAN LIC. # C35053 IS ONLY RESPONSIBLE FOR THE PORTIONS OF THE STRUCTURE COVERED BY THE ATTACHED CALCULATIONS

REVISION	BY
1 11/10/20	SD

FILE: 6826-FO-R1

MIKE MAHMOUDIAN & ASSOCIATES, INC.
STRUCTURAL ENGINEERING SINCE 1989
851 Burlway Road, Suite 519
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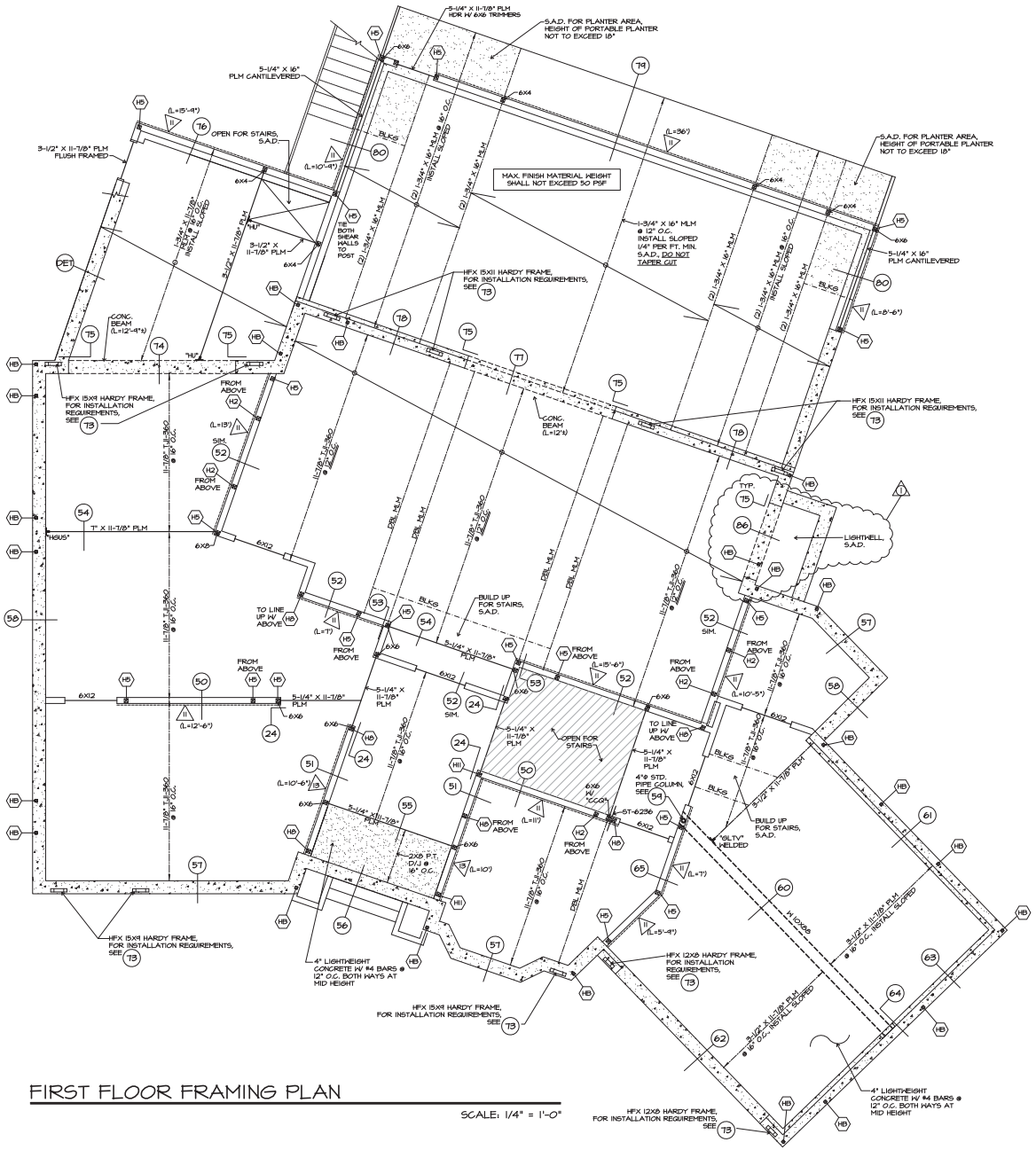
REGISTERED PROFESSIONAL ENGINEER MIKE MAHMOUDIAN No. C035053 CIVIL STATE OF CALIFORNIA

QIU-SHEN RESIDENCE
1330 ENCHANTED WAY
SAN MATEO, CA

JOB No:	6826
DATE:	3/22/19
SCALE:	AS NOTED
DRAWN BY:	SD

S-1
OF 10 SHEETS

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FIRST FLOOR FRAMING PLAN

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

NOTES:

- SEE STRUCTURAL MATERIAL SPECIFICATIONS ON SHEET S-10 FOR FURTHER REQUIREMENTS.
- FOR WATERPROOFING, AND DRAINAGE REQUIREMENTS, SEE ARCHITECTURAL AND/OR CIVIL DRAWINGS, THESE REQUIREMENTS HAVE NOT BEEN ADDRESSED ON THE STRUCTURAL DRAWINGS.
- PROVIDE 5/8"ø X 12" LONG ANCHOR BOLTS WITH 3" X 3" X 0.229" WASHER PLATES AT 48" O.C. U.N.O. ON SHEAR WALL SCHEDULE. BOLTS MUST BE SET IN PLACE WITH THE FORMS. ALL FASTENERS IN CONTACT WITH PRESSURE TREATED FRAMING SHALL BE HOT-DIPPED GALVANIZED (HDG) AS PER ASTM A153.
- PROVIDE SOLID BLOCKING UNDER DOUBLE TRIMMERS AND POSTS IN BETWEEN FLOOR SPACE. PROVIDE POSTS TO MATCH THOSE CALLED FOR AT THE UPPER FLOORS, AND CONTINUE TO THE FOUNDATION. HOLDOWNS CALLED FOR ON THE UPPER FLOORS SHALL BE MATCHED AT THE LOWER FLOOR AND TO BE CONTINUED TO FOUNDATION, U.N.O. ON PLANS.
- USE TRUSS JOISTS AS SHOWN ON THE PLAN. INSTALL BLOCKING AND/OR BRIDGING AS RECOMMENDED BY THE TRUSS JOIST COMPANY. PARALLAMS SHALL BE RATED AS 2.0E. ALL MICRO=LAMS SHALL BE 1.8E. ALL BEAMS 5-1/4" AND WIDER SHALL HAVE FULL BEARING ON THE TOP PLATES BY EXTENDING THEM TO THE OUTSIDE FACE OF STUDS. ALL MICRO-LAMS SHALL BE 1-3/4" WIDE AND THE SAME DEPTH AS THE TRUSS JOISTS. SEE DETAIL 4/S-1 FOR ALLOWABLE HOLE SIZES IN BEAMS.
- JOISTS HANGERS SHALL BE SIMPSON "US" SERIES, U.N.O. AND INSTALLED AS PER MANUFACTURER'S SPECIFICATIONS.
- USE 3/4" APA RATED T & G FLOOR SHEATHING WITH 10d NAILS AT 6" O.C. EDGES AND 10" O.C. FIELD. (BLOCKING IS NOT REQUIRED). GLUE FIRST, WITH MINIMUM PLYWOOD SHEET DIMENSION OF 24". UNLESS ALL EDGES OF THE UNDERSIZED SHEETS ARE SUPPORTED BY FRAMING MEMBERS OR 2X4 FLAT BLOCKING. PLYWOOD SHALL BE INSTALLED WITH THE LONG DIMENSION PERPENDICULAR TO THE JOIST WITH STAGGERED END JOINTS AND WITH 1/8" SPACING IN BETWEEN PANELS, UNLESS OTHERWISE INDICATED BY THE MANUFACTURER.
- USE 2X6 STUDS AT 16" O.C. FOR EXTERIOR WALL FRAMING. (UNLESS NOTED WIDER ON THE ARCHITECTURAL DRAWINGS) INTERIOR WALLS MAY BE 2X4 STUDS AT 16" O.C. SEE DETAIL 1/S-5 FOR ALLOWABLE NOTCH AND HOLE SIZES IN STUDS. SEE DETAIL 2/S-5 FOR TYPICAL WALL FRAMING. ALL DOUBLE STUDS SHALL BE JOINED WITH 16d NAILS AT 8" O.C.
- PROVIDE MINIMUM NAILING IN ACCORDANCE WITH NAILING SCHEDULE ON SHEET S-10, UNLESS OTHERWISE CALLED FOR ON THE PLAN.
- △1 INDICATES SHEAR WALL, SEE SHEET S-10. ONLY WALLS QUALIFYING AS STRUCTURAL SHEAR WALLS ARE SHOWN, PLYWOOD TO MATCH THICKNESS OF THE SHEAR WALLS WILL BE REQUIRED TO ALLOW FOR EITHER BACKING FOR FINISH MATERIAL OR AS SHIM TO CREATE SAME THICKNESS BEFORE A FINISHING MATERIAL IS APPLIED. SHEAR WALL TYPE 10 AND HIGHER REQUIRE A 3X STUD AT ALL ADJOINING PANEL EDGES. STAGGER JOINTS ON OPPOSITE SIDES OF STUDS WHEN PLYWOOD IS APPLIED ON BOTH FACES OF THE STUDS. FOR SHEAR TRANSFER CLIP REQUIREMENTS, SEE DETAIL 3/S-5.
- ⟨H2⟩ INDICATES HDU2 ON 4X POSTS AT END OF A SHEAR WALL. USE "CNH" COUPLER NUTS WITH THREADED RODS FOR EXTENDING ANCHOR BOLTS, WHEN REQUIRED.
- ⟨H5⟩ INDICATES HDU5 ON 4X POSTS AT END OF A SHEAR WALL. USE "CNH" COUPLER NUTS WITH THREADED RODS FOR EXTENDING ANCHOR BOLTS, WHEN REQUIRED.
- ⟨H8⟩ INDICATES HDU8 ON 6X6 POSTS AT END OF A SHEAR WALL. USE "CNH" COUPLER NUTS WITH THREADED RODS FOR EXTENDING ANCHOR BOLTS, WHEN REQUIRED.
- ⟨HB⟩ INDICATES HOLDOWN ANCHORAGE REQUIREMENTS TO THE FOUNDATION, SEE CHART.
- HARDY FRAMES ARE PRODUCT OF HARDY INDUSTRIES INC. ICC REPORT No. ESR-2084. ALL FRAMES INDICATED ON THE DRAWINGS ARE "HFX" SERIES U.N.O. INSTALLATION SHALL BE AS SHOWN ON THESE DRAWINGS. ALL HARDY FRAMES MUST REST ON TOP OF CONCRETE THE HEIGHT OF FRAMES INDICATED MIGHT REQUIRE SPECIAL HEIGHT ORDER OR SOLID SHIM MEMBERS (MAX 12" TALL) ON TOP OF THE FRAMES. CONTRACTOR MUST VERIFY THE HEIGHTS OF ALL FRAMES IN FIELD PRIOR TO PLACEMENT OF A PURCHASE ORDER.
- SEE ARCHITECTURAL DRAWINGS FOR EXACT SIZES AND LOCATIONS OF OPENINGS IN WALLS AND FLOOR. THE CONTRACTOR SHALL COORDINATE WITH ALL TRADES FOR THEIR SPECIFIC REQUIREMENTS PRIOR TO ANY FRAMING.
- DO NOT SCALE THESE DRAWINGS FOR DIMENSIONS, REFER TO THE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS.
- CONTRACTOR SHALL PROVIDE ALL NECESSARY AND REQUIRED SHORING AND SHALL VERIFY ALL CONDITIONS IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO PERFORMING ANY WORK IN THE AFFECTED AREAS.

△1 RE-SUBMITTAL 11/10/20

NOTE TO THE CONTRACTOR

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GREEN POINT OPTIONS

- SUBSTITUTE SOLID LUMBER WITH PARALLAMS (EXCEPT WHERE EXPOSED TO WEATHER)
- ORIENTED STRAND BOARD (OSB) SHEETS MAY BE USED IN LIEU OF PLYWOOD SHEAR WALLS AND ROOF SHEATHING, USING SAME THICKNESS PANELS, WITH THE SAME NAILING SCHEDULE.

⟨HB⟩ HOLDOWN ANCHOR BOLT REQUIREMENTS

HOLDOWN TYPE	ANCHOR BOLT TYPE	MIN. REQ'D. EMBEDMENT *
HDU 2	SSTB 24	20-5/8"
HDU 5	SB 5/8X24	18"
HDU 8	SB 7/8X24	18"
HDU 11	SB 1X30	24"

* DEEPEN FOOTING LOCALLY, FOR 12" ON E/SIDE OF ANCHOR, TO ACHIEVE REQ'D. EMBEDMENT DEPTH, + 3" COVER

- ICC APPROVAL, ESR-2611
- REFER TO THE FRAMING PLAN FOR HOLDOWN TYPE REQUIREMENTS

REVISION	BY
△1 11/10/20	SD
FILE:	6826-F1-R1

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REGISTERED PROFESSIONAL ENGINEER MIKE MAHMOUDIAN No. C035053 CIVIL STATE OF CALIFORNIA

M. Mahmoudian

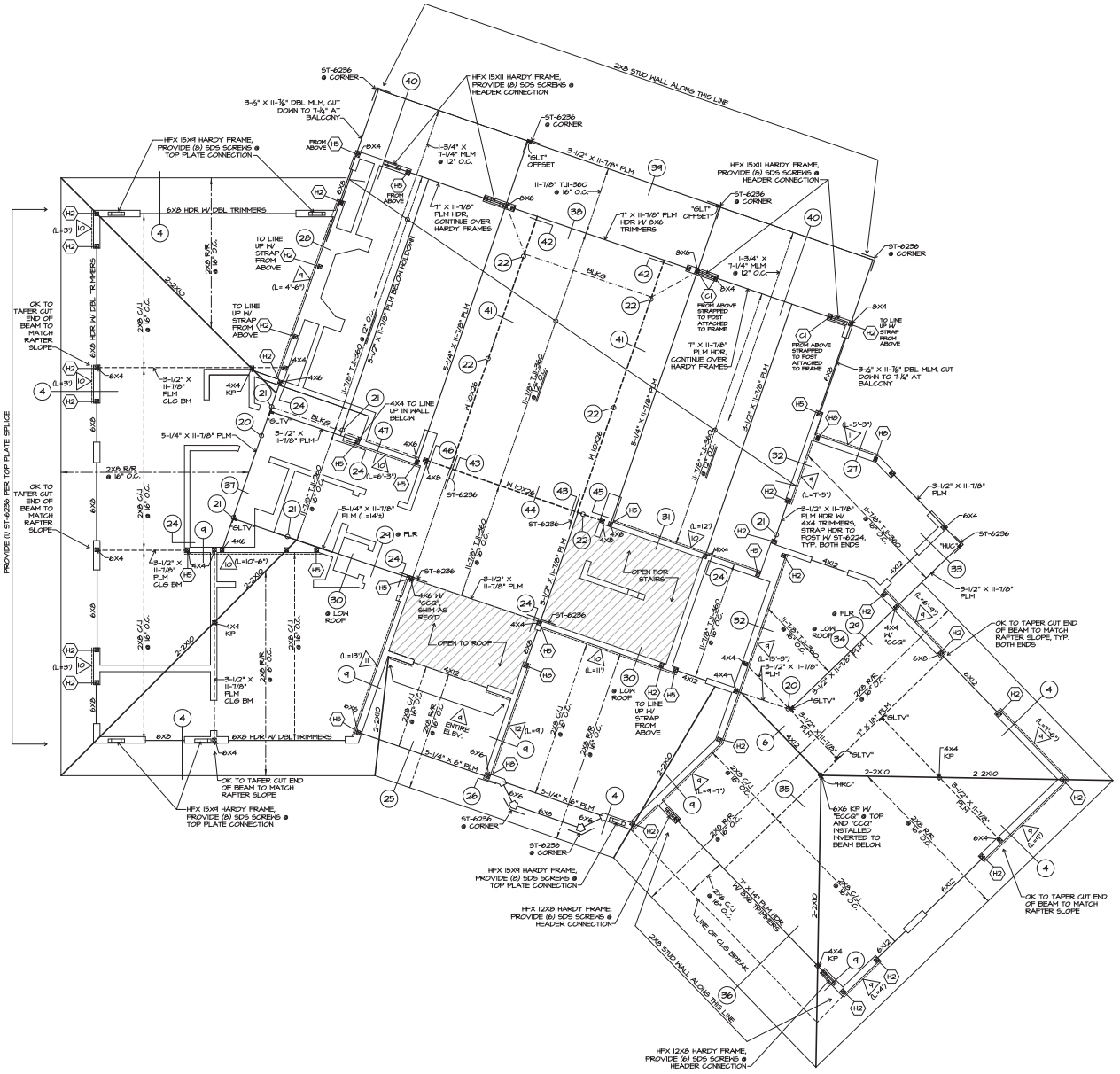
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1330 ENCHANTED WAY
SAN MATEO, CA

JOB No:	6826
DATE:	3/22/19
SCALE:	AS NOTED
DRAWN BY:	SD

S-2
OF 10 SHEETS

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SECOND FLOOR / LOW ROOF FRAMING PLAN

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

RE-SUBMITTAL 11/10/20

NOTES:

- SEE STRUCTURAL MATERIAL SPECIFICATIONS ON SHEET S-10 FOR FURTHER REQUIREMENTS.
- PROVIDE SOLID BLOCKING UNDER DOUBLE TRIMMERS AND POSTS IN BETWEEN FLOOR SPACE. PROVIDE POSTS TO MATCH THOSE CALLED FOR AT THE UPPER FLOORS, AND CONTINUE TO THE FOUNDATION. HOLDOWNS CALLED FOR ON THE UPPER FLOORS SHALL BE MATCHED AT THE LOWER FLOOR AND TO BE CONTINUED TO FOUNDATION, U.N.O. ON PLANS.
- USE TRUSS JOISTS AS SHOWN ON THE PLAN. INSTALL BLOCKING AND/OR BRIDGING AS RECOMMENDED BY THE TRUSS JOIST COMPANY. PARALLAMS SHALL BE RATED AS 2.0E, ALL MICROLLAMS SHALL BE 1.9E, ALL BEAMS 5-1/4" AND WIDER SHALL HAVE FULL BEARING ON THE TOP PLATES BY EXTENDING THEM TO THE OUTSIDE FACE OF STUDS. ALL MICRO-LAMS SHALL BE 1-3/4" WIDE AND THE SAME DEPTH AS THE TRUSS JOISTS. SEE DETAIL 4/S-1 FOR ALLOWABLE HOLE SIZES IN BEAMS.
- JOISTS HANGERS SHALL BE SIMPSON "U5" SERIES AND INSTALLED AS PER MANUFACTURER'S SPECIFICATIONS, U.N.O. ON PLANS.
- USE 3/4" APA RATED T & G FLOOR SHEATHING WITH 10d NAILS AT 6" O.C. EDGES AND 10" O.C. FIELD. (BLOCKING IS NOT REQUIRED). GLUE FIRST, WITH MINIMUM PLYWOOD SHEET DIMENSION OF 24". UNLESS ALL EDGES OF THE UNDERSIZED SHEETS ARE SUPPORTED BY FRAMING MEMBERS OR 2X4 FLAT BLOCKING. PLYWOOD SHALL BE INSTALLED WITH THE LONG DIMENSION PERPENDICULAR TO THE JOIST WITH STAGGERED END JOINTS AND WITH 1/8" SPACING IN BETWEEN PANELS, UNLESS OTHERWISE INDICATED BY THE MANUFACTURER.
- USE 2X6 STUDS AT 16" O.C. FOR EXTERIOR WALL FRAMING, UNLESS NOTED HIGHER ON THE ARCHITECTURAL DRAWINGS. INTERIOR WALLS MAY BE 2X4 STUDS AT 16" O.C. SEE DETAIL 1/S-5 FOR ALLOWABLE NOTCH AND HOLE SIZES IN STUDS. SEE DETAIL 2/S-5 FOR TYPICAL WALL FRAMING. ALL DOUBLE STUDS SHALL BE JOINED WITH 16d NAILS AT 8" O.C.
- PROVIDE MINIMUM NAILING IN ACCORDANCE WITH NAILING SCHEDULE ON SHEET S-10, UNLESS OTHERWISE CALLED FOR ON THE PLAN.
- △ INDICATES SHEAR WALL, SEE SHEET S-10. ONLY WALLS QUALIFYING AS STRUCTURAL SHEAR WALLS ARE SHOWN. PLYWOOD TO MATCH THICKNESS OF THE SHEAR WALLS WILL BE REQUIRED TO ALLOW FOR EITHER BACKING FOR FINISH MATERIAL OR AS SHIM TO CREATE SAME THICKNESS BEFORE A FINISHING MATERIAL IS APPLIED. SHEAR WALL TYPE 10 AND HIGHER REQUIRE A 3X STUD AT ALL ADJOINING PANEL EDGES. STAGGER JOINTS ON OPPOSITE SIDES OF STUDS WHEN PLYWOOD IS APPLIED ON BOTH FACES OF THE STUDS. FOR SHEAR TRANSFER CLIP REQUIREMENTS, SEE DETAIL 3/S-5.
- (H2) INDICATES HDU2 ON 4X POSTS AT END OF A SHEAR WALL. FOR CONNECTION IN BETWEEN FLOORS SEE DETAIL 22/S-6 OR 23/S-6. USE "DNT" COUPLER NUTS WITH THREADED RODS FOR EXTENDING ANCHOR BOLTS, WHEN REQUIRED.
- (H5) INDICATES HDU5 ON 4X POSTS AT END OF A SHEAR WALL. FOR CONNECTION IN BETWEEN FLOORS SEE DETAIL 22/S-6 OR 23/S-6. USE "DNT" COUPLER NUTS WITH THREADED RODS FOR EXTENDING ANCHOR BOLTS, WHEN REQUIRED.
- (H8) INDICATES HDU8 ON 6X6 POSTS AT END OF A SHEAR WALL. FOR CONNECTION IN BETWEEN FLOORS SEE DETAIL 22/S-6 OR 23/S-6. USE "DNT" COUPLER NUTS WITH THREADED RODS FOR EXTENDING ANCHOR BOLTS, WHEN REQUIRED.
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  RODS FOR EXTENDING ANCHOR BOLTS, WHEN REQUIRED.
- SEE SHEET S-4 FOR ROOF FRAMING NOTES.
- SEE ARCHITECTURAL DRAWINGS FOR EXACT SIZES AND LOCATIONS OF OPENINGS IN WALLS AND FLOOR. THE CONTRACTOR SHALL COORDINATE WITH ALL TRADES FOR THEIR SPECIFIC REQUIREMENTS PRIOR TO ANY FRAMING.
- DO NOT SCALE THESE DRAWINGS FOR DIMENSIONS. REFER TO THE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS.
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REVISION	BY
1 11/10/20	SD

FILE: 6826-F2-R1

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REGISTERED PROFESSIONAL ENGINEER MIKE MAHMOUDIAN No. C035053 CIVIL STATE OF CALIFORNIA

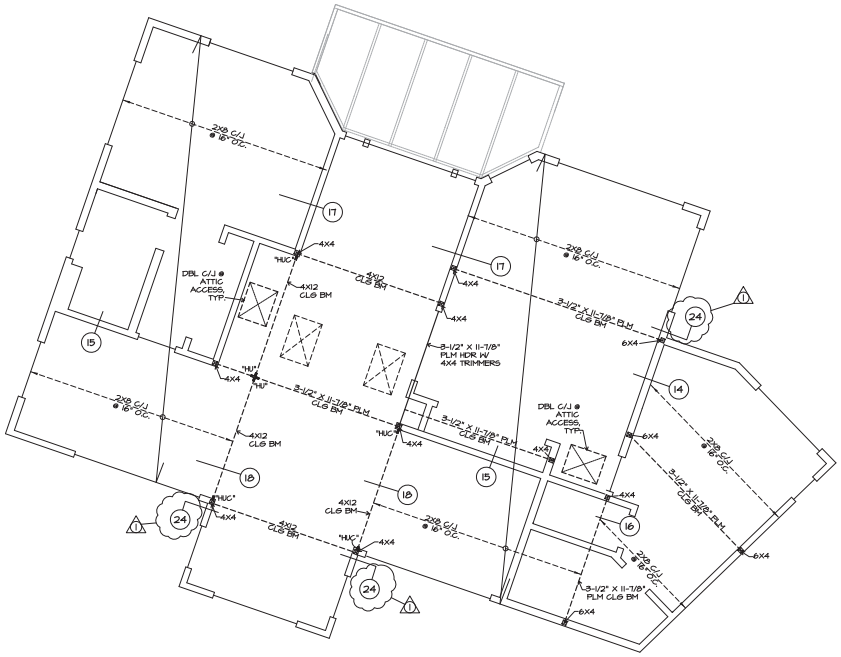
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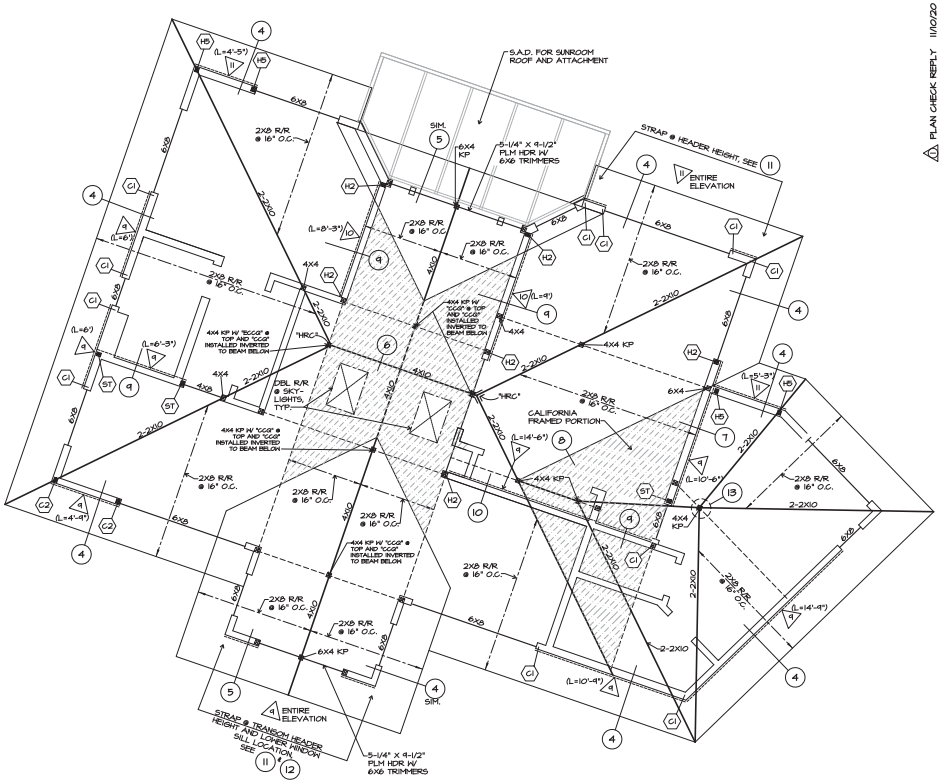
JOB No:	6826
DATE:	3/22/19
SCALE:	AS NOTED
DRAWN BY:	SD

S-3
OF 10 SHEETS

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PLAN CHECK REPLY 11/10/20

CEILING FRAMING PLAN

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

ROOF FRAMING PLAN

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

NOTES:

- SEE STRUCTURAL MATERIAL SPECIFICATIONS ON SHEET S-10 FOR FURTHER REQUIREMENTS.
- FOR WATERPROOFING, AND DRAINAGE REQUIREMENTS, SEE ARCHITECTURAL AND/OR CIVIL DRAWINGS, THESE REQUIREMENTS HAVE NOT BEEN ADDRESSED ON THE STRUCTURAL DRAWINGS.
- PROVIDE SOLID BLOCKING UNDER DOUBLE TRIMMERS AND POSTS IN BETWEEN FLOOR SPACE. PROVIDE POSTS TO MATCH THOSE CALLED FOR AT THE UPPER FLOORS, AND CONTINUE TO THE FOUNDATION. HOLDOWNS CALLED FOR ON THE UPPER FLOORS SHALL BE MATCHED AT THE LOWER FLOOR AND TO BE CONTINUED TO FOUNDATION, U.N.O. ON PLANS.
- USE ROOF RAFTERS AS INDICATED ON THE DRAWINGS. ROOFING WEIGHT SHALL NOT EXCEED 600 LBS PER 100 SQUARE FEET.
- USE 1/2" APA RATED ROOF SHEATHING (VERIFY THE THICKNESS WITH THE ROOFING MANUFACTURER) WITH 10d NAILS AT 6" O.C. EDGES AND 12" O.C. FIELD (BLOCKING IS NOT REQUIRED), WITH MINIMUM PLYWOOD SHEET DIMENSION OF 24", UNLESS ALL EDGES OF THE UNDERSIZED SHEETS ARE SUPPORTED BY FRAMING MEMBERS OR 2X4 FLAT BLOCKING. PLYWOOD SHALL BE INSTALLED WITH THE LONG DIMENSION PERPENDICULAR TO THE TRUSSES, WITH STAGGERED END JOINTS AND WITH 1/8" SPACING IN BETWEEN PANELS, UNLESS OTHERWISE INDICATED BY THE MANUFACTURER.
- PARALLAMS ARE PRODUCTS OF TRUSS JOISTS COMPANY. PARALLAMS SHALL BE RATED AS 2.0E, ALL MICRO.LLAMS SHALL BE 1.8E. ALL BEAMS 5-1/4" AND WIDER SHALL HAVE FULL BEARING ON THE TOP PLATES BY EXTENDING THEM TO THE OPPOSITE FACE OF STUDS.
- USE 2X6 STUDS AT 16" O.C. FOR EXTERIOR WALL FRAMING. (UNLESS NOTED WIDER ON THE ARCHITECTURAL DRAWINGS) INTERIOR WALLS MAY BE 2X4 STUDS AT 16" O.C. SEE DETAIL 1/S-5 FOR ALLOWABLE NOTCH AND HOLE SIZES IN STUDS. SEE DETAIL 2/S-5 FOR TYPICAL WALL FRAMING. ALL DOUBLE STUDS SHALL BE JOINED WITH 16d NAILS AT 8" O.C.
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- (C1) INDICATES CS16 STRAP AT END OF A SHEAR WALL FOR CONNECTION IN BETWEEN FLOORS, SEE DETAIL 14/S-6 OR DETAIL 19/S-5 OR DETAIL 20/S-5.
- (ST) INDICATES ST-6236 STRAP ON 2-2X STUDS AT END OF A SHEAR WALL FOR CONNECTION IN BETWEEN FLOORS SEE DETAIL 21/S-6.
- (H2) INDICATES HDU2 ON 4X POSTS AT END OF A SHEAR WALL FOR CONNECTION IN BETWEEN FLOORS SEE DETAIL 22/S-6 OR 23/S-6. USE "DNH" COUPLER NUTS WITH THREADED RODS FOR EXTENDING ANCHOR BOLTS, WHEN REQUIRED.
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1 11/10/20	SD

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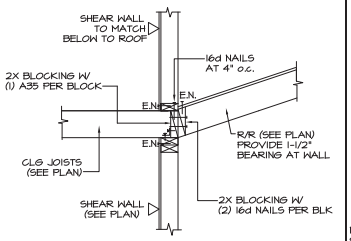
REGISTERED PROFESSIONAL ENGINEER MIKE MAHMOUDIAN No. C035053 STATE OF CALIFORNIA Civil

QIU-SHEN RESIDENCE
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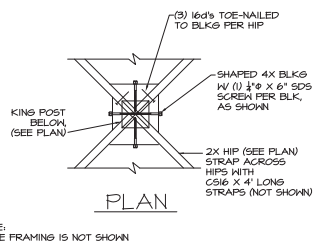
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S-4
OF 10 SHEETS

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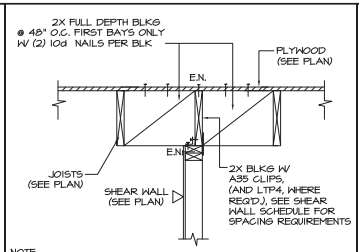


17 SHEAR TRANSFER NTS



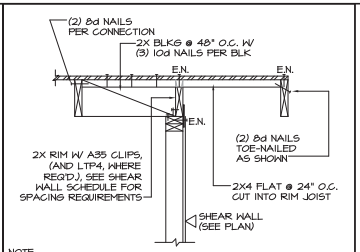
NOTE: SOME FRAMING IS NOT SHOWN HERE FOR CLARITY, SEE PLAN

13 FRAMING DETAIL NTS



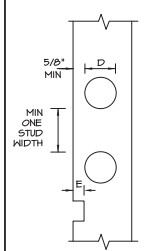
NOTE: SOME FRAMING IS NOT SHOWN HERE FOR CLARITY, SEE PLAN

9 SHEAR TRANSFER NTS



NOTE: SOME FRAMING IS NOT SHOWN HERE FOR CLARITY, SEE PLAN

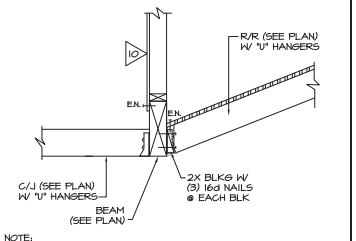
5 SHEAR TRANSFER NTS



NOTES:
- IF THE BORED HOLE DIAMETER EXCEEDS 40% OF THE STUD WIDTH DOUBLE UP THE STUDS, PROVIDED THAT THE HOLE DIAMETER IS LESS THAN 60% OF THE STUD WIDTH AND NOT MORE THAN TWO SUCH SUCCESSIVE DOUBLE STUDS ARE SO BORED.
- BORED HOLES SHALL NOT BE LOCATED AT THE SAME SECTION OF STUD AS A CUT OR NOTCH.

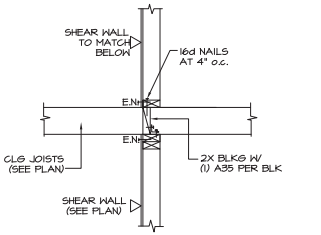
SIZE	D (IN)	E (IN)
2X4	1-3/8"	7/8"
2X6	2-3/16"	1-3/8"

1 ALLOWABLE HOLES & NOTCHES IN LOAD-BEARING STUDS NTS

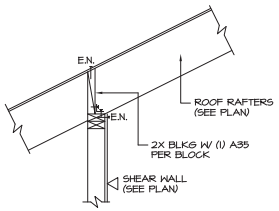


NOTE: SOME FRAMING IS NOT SHOWN HERE FOR CLARITY, SEE PLAN

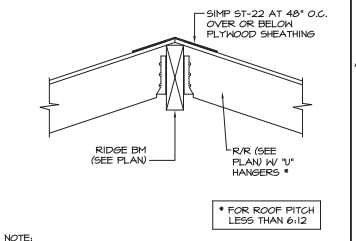
18 FRAMING DETAIL NTS



14 SHEAR TRANSFER NTS

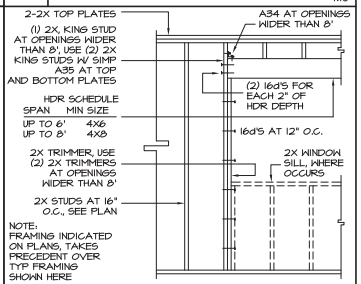


10 SHEAR TRANSFER NTS



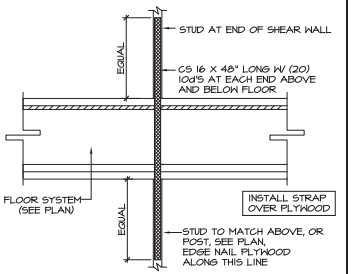
NOTE: SOME FRAMING IS NOT SHOWN HERE FOR CLARITY, SEE PLAN

6 RIDGE BEAM NTS

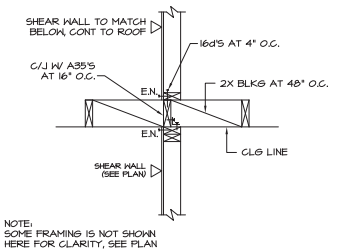


NOTE: FRAMING INDICATED ON PLANS, TAKES PRECEDENT OVER TYP FRAMING SHOWN HERE

2 TYP WALL FRAMING NTS

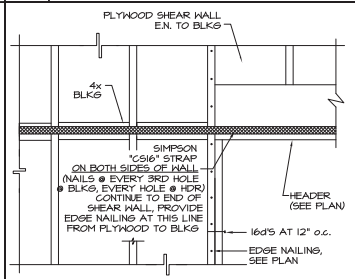


19 HOLDOWN DETAIL NTS

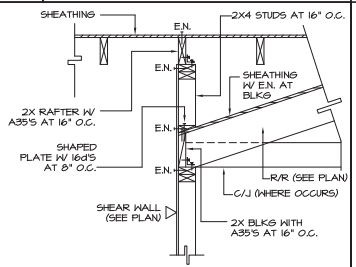


NOTE: SOME FRAMING IS NOT SHOWN HERE FOR CLARITY, SEE PLAN

15 SHEAR TRANSFER NTS



11 FRAMING DETAIL NTS



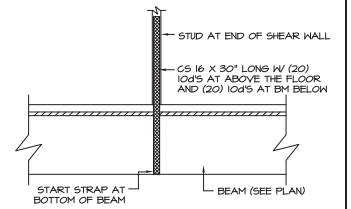
7 SHEAR TRANSFER AT CALIFORNIA FRAMED ROOF NTS

ROOF	CLIP REQUIREMENT PER BLOCK FOR RAFTERS SPACED AT: *			
	16" O.C.		24" O.C.	
SHEAR WALL	A35	LTP4	A35	LTP4
TYPE 9	1	---	2	---
TYPE 10	2	---	1	1
TYPE 11	2	---	2	1
TYPE 12	1	1	2	1
TYPE 13	2	1	2	2

FLOOR	CLIP REQUIREMENT @ RIM BEAM *	
SHEAR WALL	A35	LTP4
TYPE 9	@ 16" O.C.	----
TYPE 10	@ 8" O.C.	----
TYPE 11	@ 8" O.C.	----
TYPE 12	@ 16" O.C.	@ 16" O.C.
TYPE 13	@ 8" O.C.	@ 16" O.C.

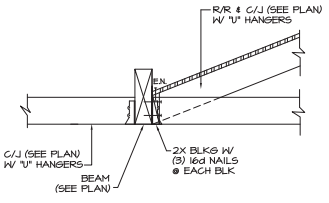
* WHEN PLYWOOD IS APPLIED ON BOTH FACES OF WALL, DOUBLE THE NOTED ANCHORAGE REQUIREMENTS

3 CLIP REQUIREMENTS AT SHEAR TRANSFER DETAILS NTS



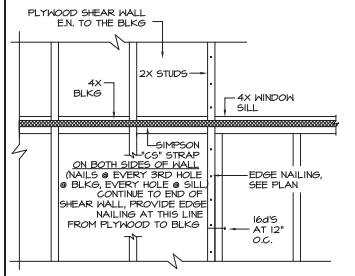
NOTE: SOME FRAMING IS NOT SHOWN HERE FOR CLARITY, SEE PLAN

20 STRAP DETAIL NTS

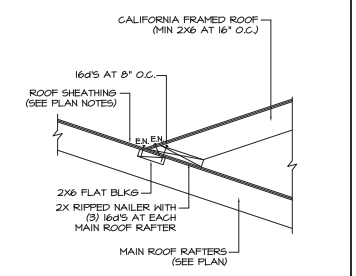


NOTE: SOME FRAMING IS NOT SHOWN HERE FOR CLARITY, SEE PLAN

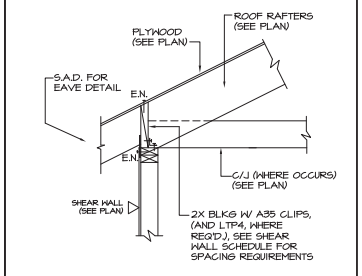
16 FRAMING DETAIL NTS



12 FRAMING DETAIL NTS



8 SHEAR TRANSFER NTS



4 SHEAR TRANSFER NTS

MIKE MAHMOUDIAN LIC. # C35053 IS ONLY RESPONSIBLE FOR THE PORTIONS OF THE STRUCTURE COVERED BY THE ATTACHED CALCULATIONS

REVISION	BY

FILE: 6826-D1

MIKE MAHMOUDIAN & ASSOCIATES, INC.
STRUCTURAL ENGINEERING SINCE 1989
851 Burlway Road, Suite 519
Burlingame, CA 94010
TEL 650.348.3457 - FAX 650.348.7119
mma@pacbell.net mmaengineers.com

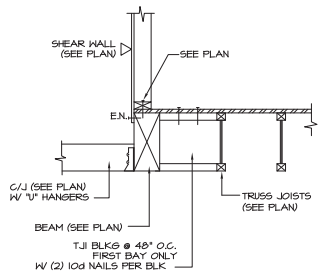
REGISTERED PROFESSIONAL ENGINEER MIKE MAHMOUDIAN No. C035053 CIVIL STATE OF CALIFORNIA

QIU-SHEN RESIDENCE
1330 ENCHANTED WAY
SAN MATEO, CA

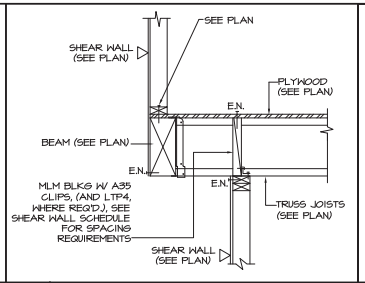
JOB No:	6826
DATE:	3/22/19
SCALE:	AS NOTED
DRAWN BY:	SD

S-5
OF 10 SHEETS

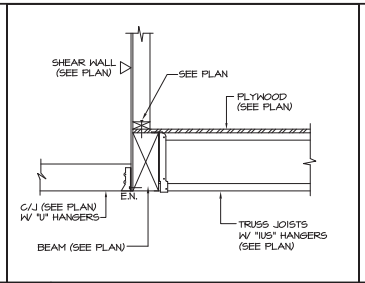
ARRANGEMENTS DEPICTED HEREIN ARE THE SOLE PROPERTY OF MIKE MAHMOUDIAN & ASSOCIATES, INC. AND MAY NOT BE REPRODUCED IN ANY FORM WITHOUT ITS WRITTEN PERMISSION



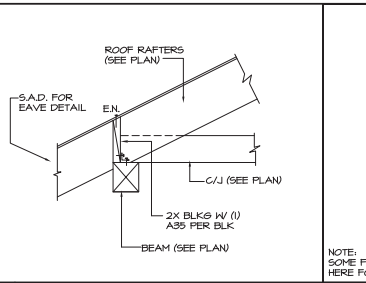
37 FRAMING DETAIL NTS



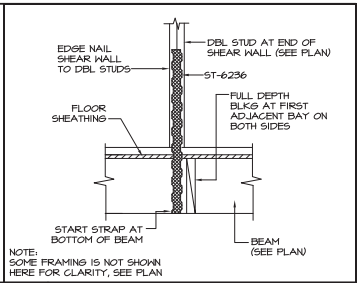
33 FRAMING DETAIL NTS



29 FRAMING DETAIL NTS

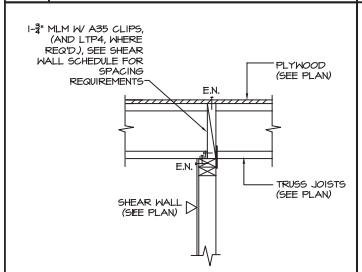


25 FRAMING DETAIL NTS

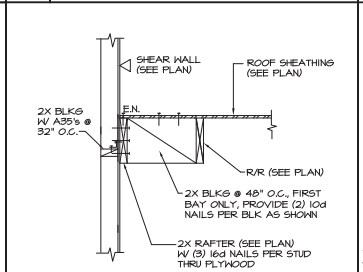


NOTE:
SOME FRAMING IS NOT SHOWN HERE FOR CLARITY, SEE PLAN

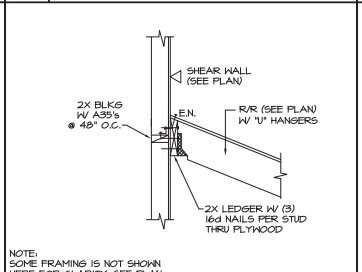
21 HOLDOWN STRAP NTS



38 SHEAR TRANSFER NTS

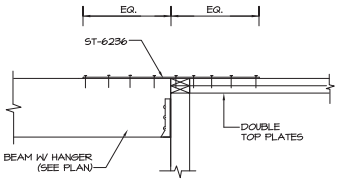


34 SHEAR TRANSFER NTS



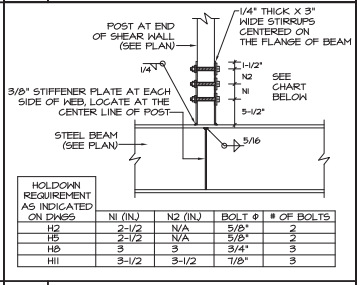
NOTE:
SOME FRAMING IS NOT SHOWN HERE FOR CLARITY, SEE PLAN

30 FRAMING DETAIL NTS



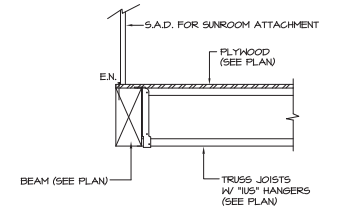
NOTE:
SOME FRAMING IS NOT SHOWN HERE FOR CLARITY, SEE PLAN

26 DRAG DETAIL NTS



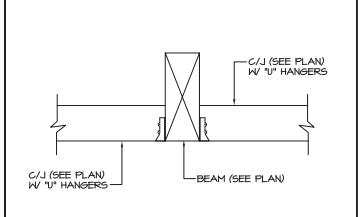
HOLDOWN REQUIREMENT AS INDICATED ON DWGS	N1 (IN.)	N2 (IN.)	BOLT Φ	# OF BOLTS
H2	2-1/2	N/A	5/8"	2
H5	2-1/2	N/A	5/8"	2
H8	3	3	3/4"	3
H11	3-1/2	3-1/2	7/8"	3

22 HOLDOWN AT STEEL BEAM NTS



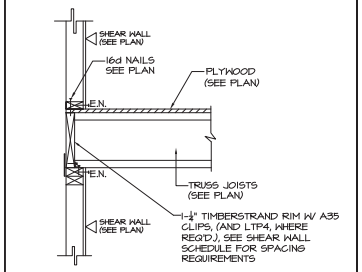
NOTE:
SOME FRAMING IS NOT SHOWN HERE FOR CLARITY, SEE PLAN

39 FRAMING DETAIL NTS

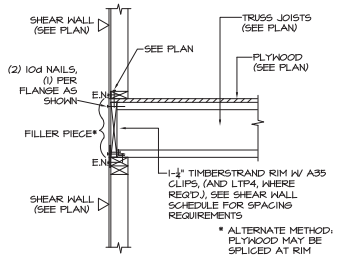


NOTE:
SOME FRAMING IS NOT SHOWN HERE FOR CLARITY, SEE PLAN

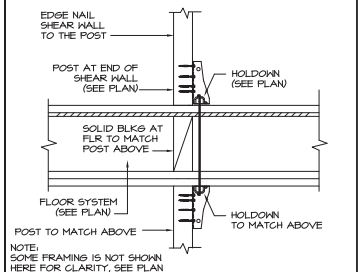
35 FRAMING DETAIL NTS



31 SHEAR TRANSFER NTS

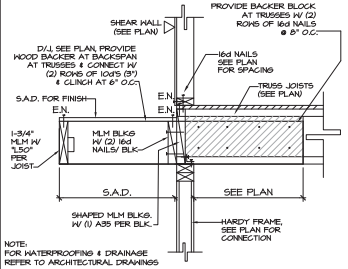


27 SHEAR TRANSFER NTS



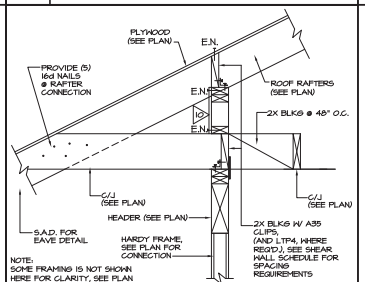
NOTE:
SOME FRAMING IS NOT SHOWN HERE FOR CLARITY, SEE PLAN

23 HOLDOWN DETAIL NTS



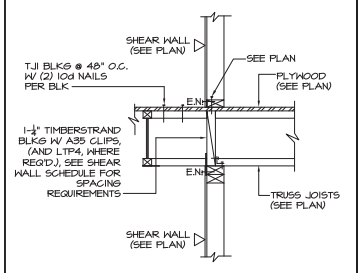
NOTE:
FOR WATERPROOFING & DRAINAGE REFER TO ARCHITECTURAL DRAWINGS

40 SHEAR TRANSFER NTS

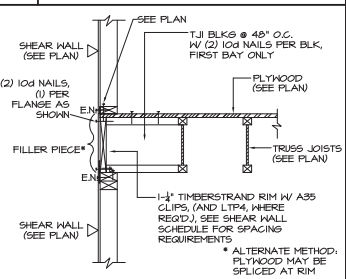


NOTE:
SOME FRAMING IS NOT SHOWN HERE FOR CLARITY, SEE PLAN

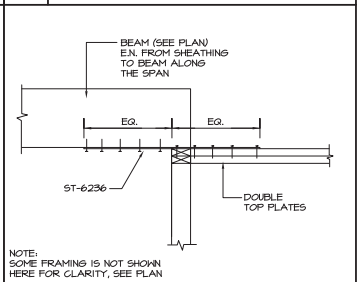
36 SHEAR TRANSFER NTS



32 SHEAR TRANSFER NTS



28 SHEAR TRANSFER NTS



NOTE:
SOME FRAMING IS NOT SHOWN HERE FOR CLARITY, SEE PLAN

24 DRAG DETAIL NTS

MIKE MAHMOUDIAN LIC. # C35053 IS ONLY RESPONSIBLE FOR THE PORTIONS OF THE STRUCTURE COVERED BY THE ATTACHED CALCULATIONS

REVISION	BY

FILE: 6826-D2

MIKE MAHMOUDIAN & ASSOCIATES, INC.
STRUCTURAL ENGINEERING SINCE 1989
851 Burlway Road, Suite 519
Burlingame, CA 94010
TEL 650.348.3457 - FAX 650.348.7119
mma@pacbell.net mmaengineers.com

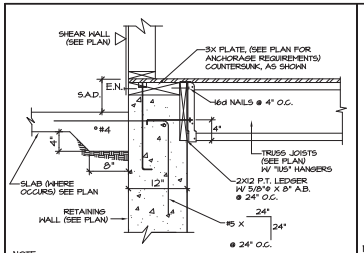
REGISTERED PROFESSIONAL ENGINEER MIKE MAHMOUDIAN No. C035053 CIVIL STATE OF CALIFORNIA

QIU-SHEN RESIDENCE
1330 ENCHANTED WAY
SAN MATEO, CA

JOB No:	6826
DATE:	3/22/19
SCALE:	AS NOTED
DRAWN BY:	SD

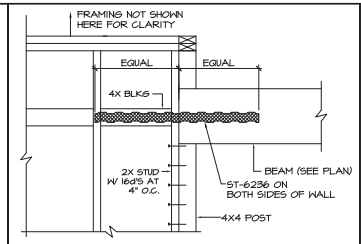
S-6
OF 10 SHEETS

ARRANGEMENTS DEPICTED HEREIN ARE THE SOLE PROPERTY OF MIKE MAHMOUDIAN & ASSOCIATES, INC. AND MAY NOT BE REPRODUCED IN ANY FORM WITHOUT ITS WRITTEN PERMISSION



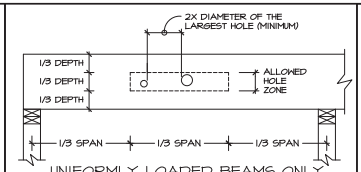
NOTE:
FOR WATERPROOFING & DRAINAGE
REFER TO ARCHITECTURAL DRAWINGS

57 FRAMING DETAIL NTS



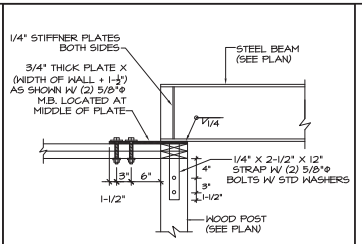
NOTES:
- SOME FRAMING IS NOT SHOWN HERE FOR CLARITY, SEE PLAN
- EDGE NAIL PLYWOOD TO BLKG

53 FRAMING DETAIL NTS



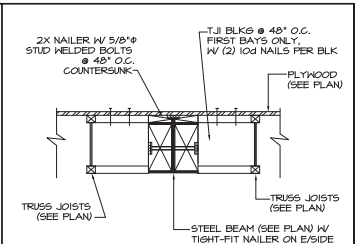
NOTES:
- DO NOT CUT, NOTCH, OR DRILL HOLES EXCEPT AS INDICATED ABOVE
- RECTANGULAR HOLES ARE NOT ALLOWED
- MAXIMUM ROUND HOLE SIZE IS 2"Φ
- NO HOLES IN CANTILEVERED SPANS

49 ALLOWABLE HOLES FOR PARALLAMS & MICROLLAMS NTS



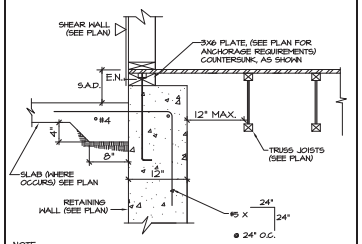
NOTE:
SOME FRAMING IS NOT SHOWN HERE FOR CLARITY, SEE PLAN

45 DRAG DETAIL NTS



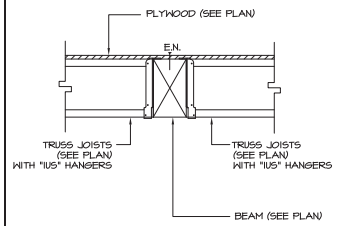
NOTE:
SOME FRAMING IS NOT SHOWN HERE FOR CLARITY, SEE PLAN

41 FRAMING DETAIL NTS

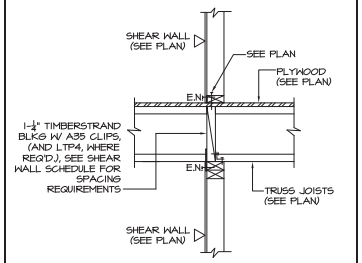


NOTE:
FOR WATERPROOFING & DRAINAGE
REFER TO ARCHITECTURAL DRAWINGS

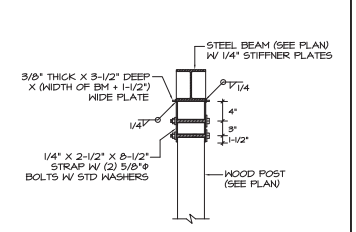
58 FRAMING DETAIL NTS



54 FRAMING DETAIL NTS

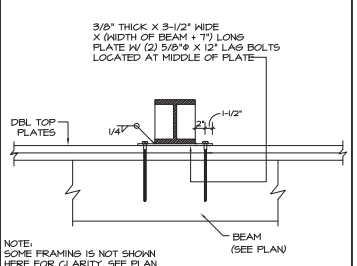


50 SHEAR TRANSFER NTS



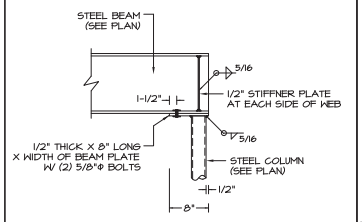
NOTE:
SOME FRAMING IS NOT SHOWN HERE FOR CLARITY, SEE PLAN

46 STEEL BM TO WOOD POST NTS

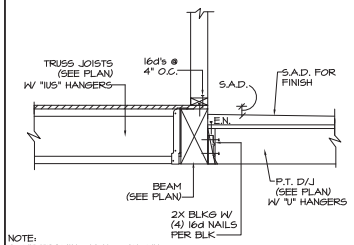


NOTE:
SOME FRAMING IS NOT SHOWN HERE FOR CLARITY, SEE PLAN

42 STEEL BEAM TO WOOD BEAM NTS

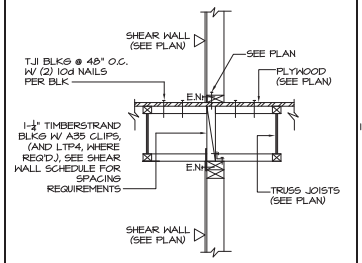


59 FRAMING DETAIL NTS

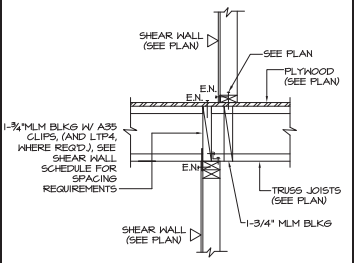


NOTE:
SOME FRAMING IS NOT SHOWN HERE FOR CLARITY, SEE PLAN

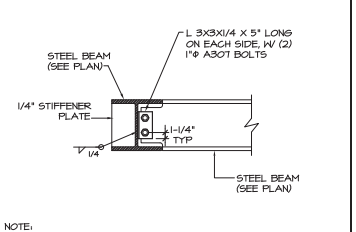
55 SHEAR TRANSFER NTS



51 SHEAR TRANSFER NTS

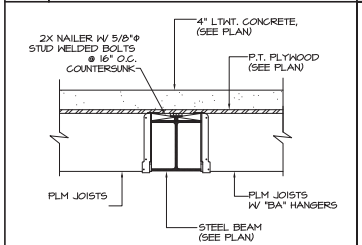


47 SHEAR TRANSFER NTS

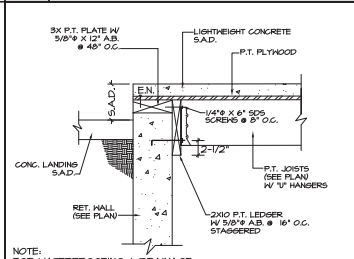


NOTE:
SOME FRAMING IS NOT SHOWN HERE FOR CLARITY, SEE PLAN

43 FRAMING DETAIL NTS

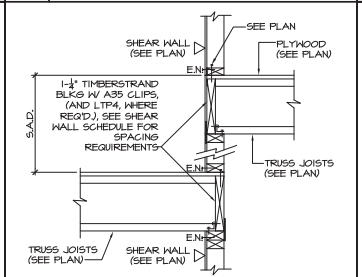


60 SHEAR TRANSFER NTS

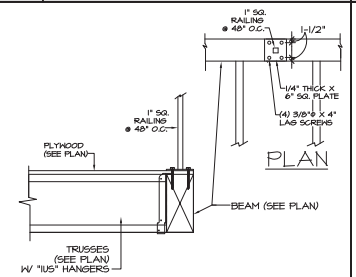


NOTE:
FOR WATERPROOFING & DRAINAGE
REFER TO THE ARCHITECTURAL DRAWINGS

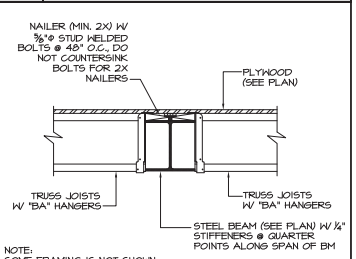
56 FRAMING DETAIL NTS



52 SHEAR TRANSFER NTS



48 FRAMING DETAIL NTS



NOTE:
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44 FRAMING DETAIL NTS

MIKE MAHMOUDIAN LIC. # C35053 IS ONLY RESPONSIBLE FOR THE PORTIONS OF THE STRUCTURE COVERED BY THE ATTACHED CALCULATIONS

REVISION	BY
FILE:	6826-D3

MIKE MAHMOUDIAN & ASSOCIATES, INC.
STRUCTURAL ENGINEERING SINCE 1989
851 Burlway Road, Suite 519
Burlingame, CA 94010
TEL 650.348.3457 - FAX 650.348.7119
mma@pacbell.net mmaengineers.com

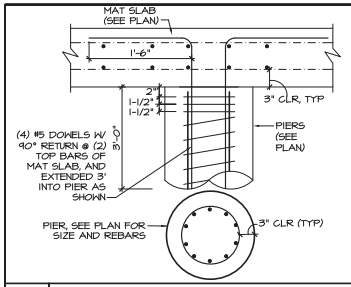
REGISTERED PROFESSIONAL ENGINEER MIKE MAHMOUDIAN No. C035053 STATE OF CALIFORNIA Civil

QIU-SHEN RESIDENCE
1330 ENCHANTED WAY
SAN MATEO, CA

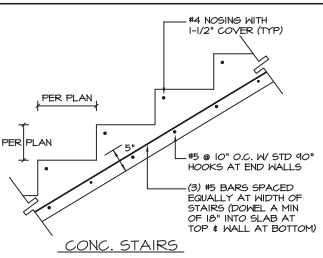
JOB No:	6826
DATE:	3/22/19
SCALE:	AS NOTED
DRAWN BY:	SD

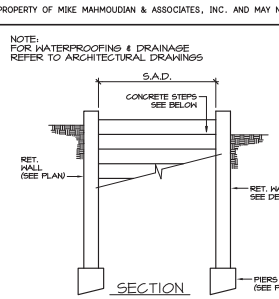
S-7
OF 10 SHEETS

ARRANGEMENTS DEPICTED HEREIN ARE THE SOLE PROPERTY OF MIKE MAHMOUDIAN & ASSOCIATES, INC. AND MAY NOT BE REPRODUCED IN ANY FORM WITHOUT ITS WRITTEN PERMISSION

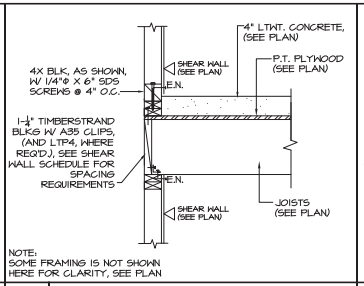


71 PIER @ MAT SLAB NTS

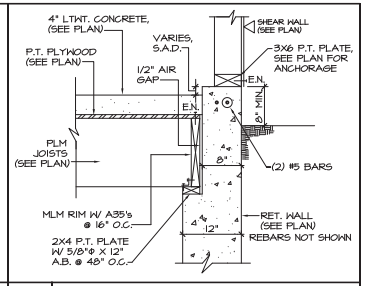




69 STAIR WALL DETAIL NTS

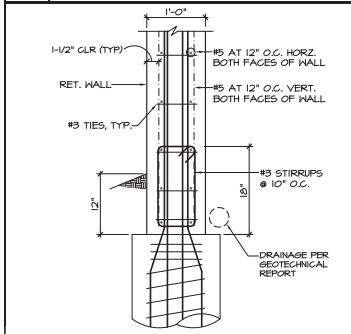


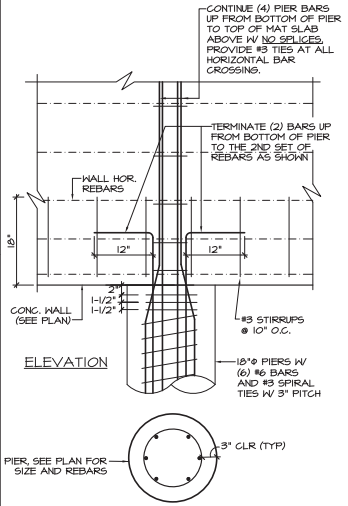
65 SHEAR TRANSFER NTS



61 RET. WALL DETAIL NTS

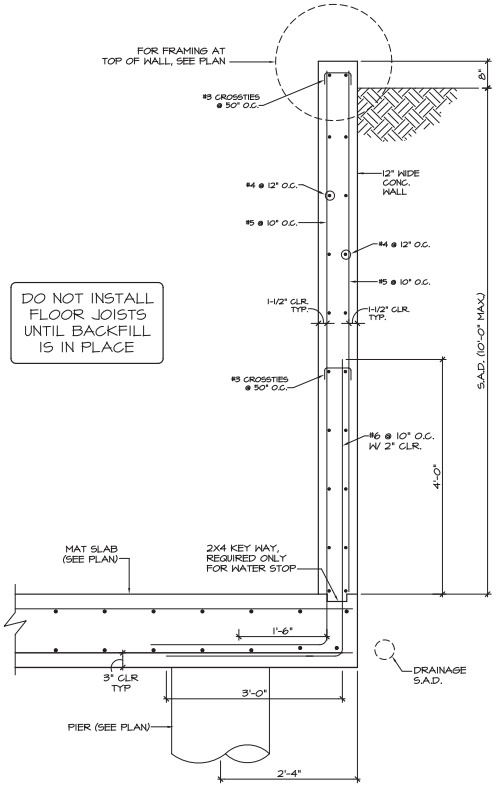
PLAN CHECK REPLY 11/10/20





NOTE:
SOME FRAMING IS NOT SHOWN HERE FOR CLARITY, SEE PLAN

72 CONNECTION DETAIL NTS

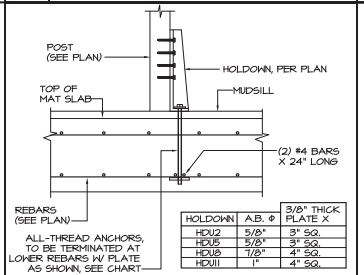


DO NOT INSTALL FLOOR JOISTS UNTIL BACKFILL IS IN PLACE

NOTES:

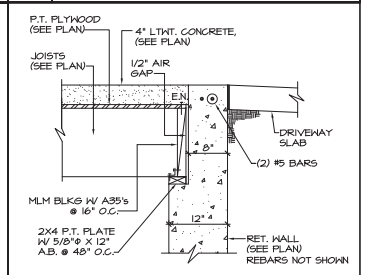
- REFER TO THE ARCHITECTURAL AND/OR CIVIL DRAWINGS FOR WATERPROOFING AND DRAINAGE REQUIREMENTS. THESE ITEMS HAVE NOT BEEN ADDRESSED ON THE STRUCTURAL DRAWINGS.
- CONTRACTOR TO PROVIDE ADEQUATE SHORING, AND TO COMPLY WITH ALL SAFETY REGULATIONS FOR CONSTRUCTION OF ALL WALLS.

70 RETAINING WALL DETAIL NTS

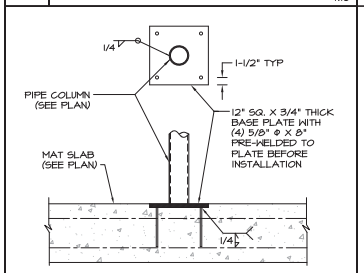


HOLDOWN	A.B. Φ	3/8" THICK PLATE X
HDU2	5/8"	3" SQ.
HDU5	5/8"	3" SQ.
HDU8	7/8"	4" SQ.
HDU11	1"	4" SQ.

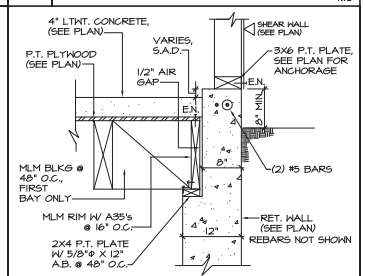
66 HOLDOWN AT SLAB NTS



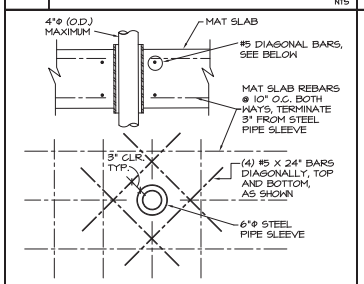
62 RET. WALL DETAIL NTS



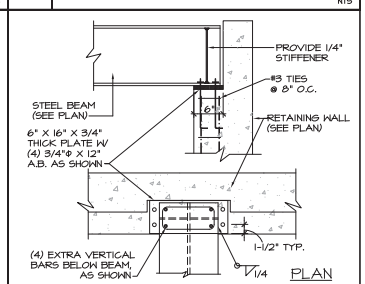
67 PIPE COLUMN TO FTG NTS



63 RET. WALL DETAIL NTS



68 PIPE @ MAT SLAB NTS



64 FRAMING DETAIL NTS

MIKE MAHMOUDIAN LIC. # C35053 IS ONLY RESPONSIBLE FOR THE PORTIONS OF THE STRUCTURE COVERED BY THE ATTACHED CALCULATIONS

REVISION	BY
1 11/10/20	SD
FILE: 6826-D4-R1	

MIKE MAHMOUDIAN & ASSOCIATES, INC.
STRUCTURAL ENGINEERING SINCE 1989
851 Burlway Road, Suite 519
Burlingame, CA 94010
TEL 650.348.3457 - FAX 650.348.7119
mma@pacbell.net mmaengineers.com

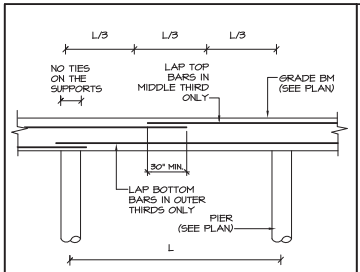
REGISTERED PROFESSIONAL ENGINEER MIKE MAHMOUDIAN No. C035053 STATE OF CALIFORNIA CIVIL

QIU-SHEN RESIDENCE
1330 ENCHANTED WAY
SAN MATEO, CA

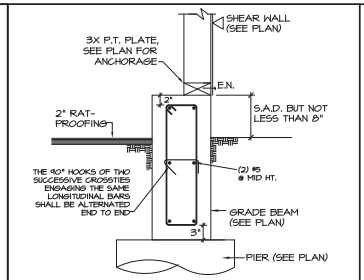
JOB No:	6826
DATE:	3/22/19
SCALE:	AS NOTED
DRAWN BY:	SD

S-8
OF 10 SHEETS

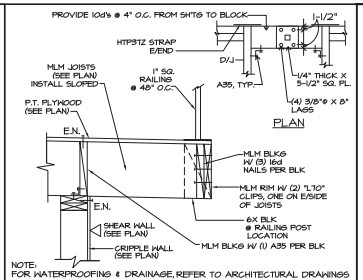
ARRANGEMENTS DEPICTED HEREIN ARE THE SOLE PROPERTY OF MIKE MAHMOUDIAN & ASSOCIATES, INC. AND MAY NOT BE REPRODUCED IN ANY FORM WITHOUT ITS WRITTEN PERMISSION



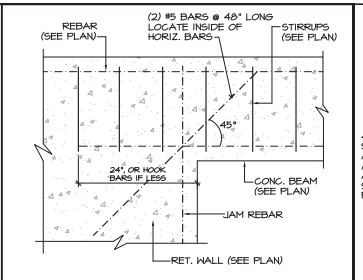
85 GRADE BM REBAR SPLICE NTS



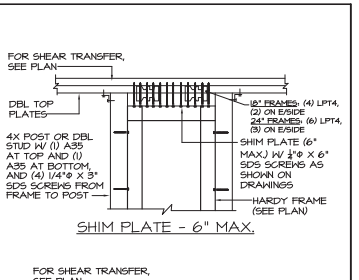
82 GRADE BEAM DETAIL NTS



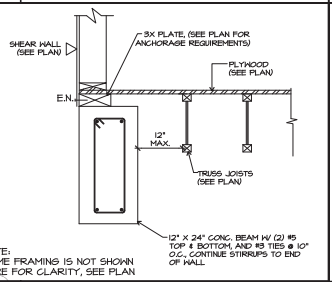
79 DECK FRAMING DETAIL NTS



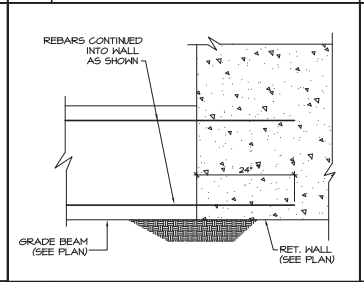
75 CONC. BEAM TO WALL NTS



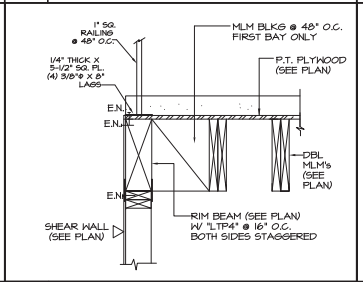
RE-SUBMITTAL 11/10/20



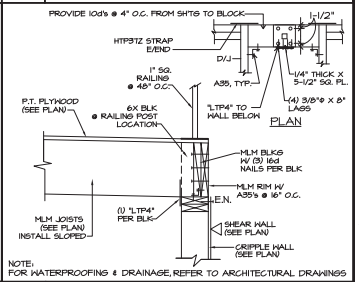
86 CONCRETE BEAM NTS



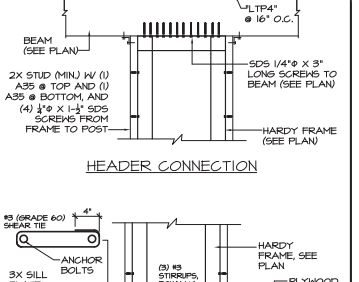
83 FOUNDATION DETAIL NTS



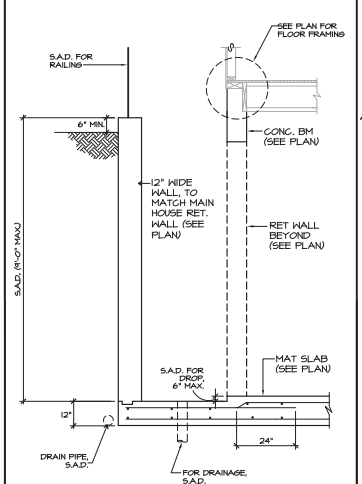
80 SHEAR TRANSFER NTS



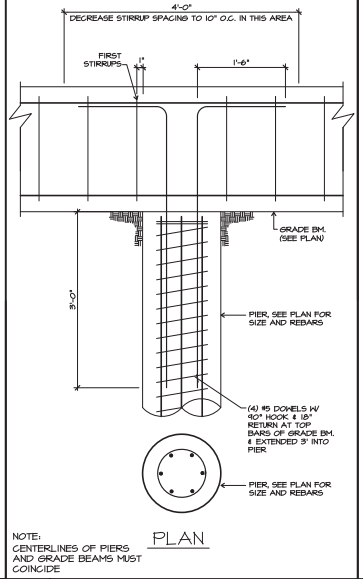
76 DECK FRAMING DETAIL NTS



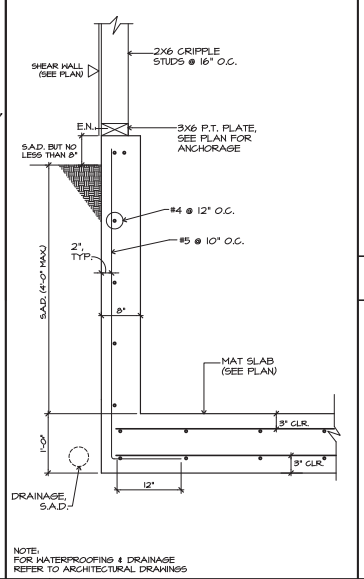
73 HARDY FRAME @ CONC. WALL NTS



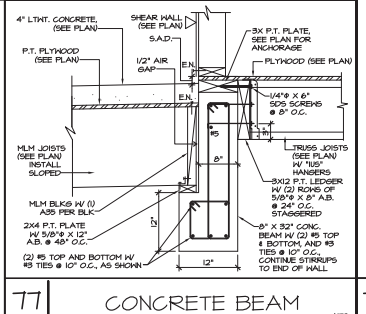
87 RETAINING WALL DETAIL (AT LIGHT WELL) NTS



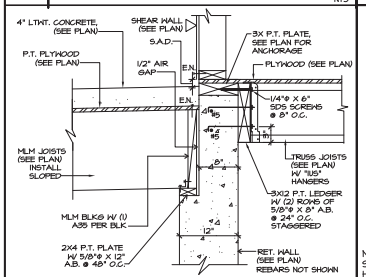
84 GRADE BM AT PIER NTS



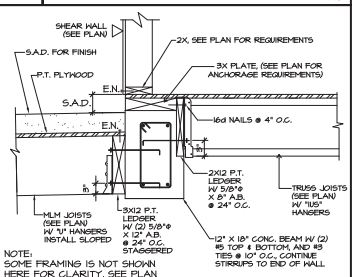
81 RETAINING WALL NTS



77 CONCRETE BEAM NTS



78 RET. WALL DETAIL NTS



74 CONCRETE BEAM NTS

MIKE MAHMOUDIAN LIC. # C35053 IS ONLY RESPONSIBLE FOR THE PORTIONS OF THE STRUCTURE COVERED BY THE ATTACHED CALCULATIONS

REVISION	BY
1 11/10/20	SD

FILE: 6826-D5-RI

MIKE MAHMOUDIAN & ASSOCIATES, INC.
STRUCTURAL ENGINEERING SINCE 1989
851 Burlway Road, Suite 519
Burlingame, CA 94010
TEL 650.348.3457 - FAX 650.348.7119
mma@pacbell.net mmaengineers.com

REGISTERED PROFESSIONAL ENGINEER No. C035053 CIVIL STATE OF CALIFORNIA

M Mahmoudian

QIU-SHEN RESIDENCE
1330 ENCHANTED WAY
SAN MATEO, CA

JOB No:	6826
DATE:	3/22/19
SCALE:	AS NOTED
DRAWN BY:	SD

S-9
OF 10 SHEETS

ARRANGEMENTS DEPICTED HEREIN ARE THE SOLE PROPERTY OF MIKE MAHMOUDIAN & ASSOCIATES, INC. AND MAY NOT BE REPRODUCED IN ANY FORM WITHOUT ITS WRITTEN PERMISSION

STRUCTURAL MATERIALS SPECIFICATIONS

UNLESS OTHERWISE NOTED HEREIN, STRUCTURAL MATERIALS SHALL COMPLY WITH THE FOLLOWING SPECIFICATIONS.

GENERAL REQUIREMENTS:

1. Contractor shall verify all dimensions, elevations, and conditions of the site and existing conditions prior to commencing construction. If there are any discrepancies between the existing conditions and the drawings and specifications, the Contractor shall notify the Owner immediately in writing. In no case shall dimensions be scaled from plans, sections, or details on the drawings or calculations.
2. All construction shall be in accordance with the 2016 California Building Code.
3. All omissions and conflicts between the various elements of the working drawings and/or specifications shall be brought to the attention of the Engineer before proceeding with any work so involved.
4. The Contractor shall locate and protect all existing Utility lines and connections including sewer, water, gas, and electric services before and during his work.
5. Where a construction detail is not shown or noted, the detail shall be the same as for other similar work.
6. No pipes, ducts, sleeves, chases, etc., shall be placed in slabs, footing, beams, or walls unless specifically shown or noted, nor shall any structural member be cut for pipes, ducts, etc., unless otherwise noted. Contractor shall obtain prior approval for installation of any additional pipes, ducts, etc.
7. Contractor agrees that he shall assume sole and complete responsibility for job site conditions during the course of construction of this project, including safety of all persons and property; that this requirement shall apply continuously and not be limited to normal working hours; and that the Contractor shall defend, indemnify and hold the Owner and the Engineer harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting for liability arising from the sole negligence of the Owner or the Engineer.
8. Contractor shall take precautionary measures to ensure that all property is protected during this operation. Any damage or changed conditions shall be repaired and restored to a condition equal to that existing at the commencement of the work. Contractor shall restore any damage at his own expense.

REGULATORY REQUIREMENTS:

1. All work shall comply with applicable Federal Laws, State statutes, local ordinances, and the regulations of agencies having jurisdiction. The Contractor shall assume full responsibility for complying with the construction safety orders of the State Division of Industrial Safety, the regulations of the Federal and State Occupational Safety and Health Administrations, and such other agencies governing the Contractor's acts. The Contractor shall be responsible for and hold harmless the Design Engineer for any damages and/or penalties resulting from his failure to comply with the said laws, statutes, ordinances, and regulations.
2. The design, adequacy and safety of erection bracing, shoring, temporary supports, etc., is the responsibility of the Contractor, and has not been considered by the Design Engineer. The Contractor is responsible for the stability of the structure prior to the application of all shear walls, roof and floor diaphragms and finished materials, and shall provide required bracing to provide stability.
3. No alternate methods of construction or substitutions shall be allowed without prior approval of the Engineer.

SITE WORK AND FOUNDATION:

1. Soils Report by:
   Michelucci & Associates, Inc.
   1801 Maritime Drive, Suite B8
   Burlingame, CA 94010
   Refer to the Soils Report for all requirements.
2. All excavations for footings shall have firm level bottoms in approved soil as noted in the soils report. Excavations shall be kept free of standing water. Where excavations have been made to a depth greater than indicated such additional depth shall be filled with concrete as specified for the footings. Fill materials shall be free from debris, vegetable matter, and other foreign substances.
3. No pipes and conduits shall extend under isolated column footings or under continuous wall footings unless specifically detailed or approved by the Engineer and the Building Official.
4. The finish excavations for Foundations shall be neat and true to line with all loose material removed.
5. Soils Engineer shall verify in writing to the building official that the building pad was prepared in accordance with the soils report, the utility trenches have been properly backfilled, and that the foundation excavations comply with the Soils Report and the approved Plans.
6. All soils site work shall be done under the direct observation of the Soils Engineer.

REINFORCED CONCRETE:

1. Cement shall conform to ASTM C150 type II or V. Water shall be clean, fresh, free from detrimental quantities of acids, alkalis, and organic materials.
2. Aggregates for normal weight Concrete shall conform to ASTM C33, maximum size of aggregate shall be 1".
3. Aggregates for lightweight Concrete shall conform to ASTM C330
4. Ready-Mix Concrete shall be mixed and delivered in accordance with ASTM C94.
5. Concrete shall have a minimum compressive strength at 28 days of 2,500 PSI, unless otherwise noted.
6. Admixtures shall comply with ASTM A94 and be of a type that increases the workability of the Concrete but shall not be considered to reduce the specified minimum cement content. Calcium Chloride shall not be used.
7. There shall be a minimum of 5-1/2 sacks of cement per cubic yard of Concrete (for f'c = 2,500).
8. Concrete work shall conform to all requirements of ACI 301, "SPECIFICATION FOR STRUCTURAL CONCRETE FOR BUILDINGS", except as modified herein.
9. Refer to the Architectural Drawings for molds, grooves, ornaments, clips, or other required elements to be cast in Concrete.
10. No conduit placed in a Concrete slab shall have an outside diameter greater than 1/3 the thickness of the slab. No conduit shall be embedded in a slab that is less than 3-1/2". Minimum clear distance between conduits shall not be less than 6".
11. All concrete shall be thoroughly compacted by a mechanical vibrator during the operation of placing and shall be thoroughly worked around reinforcement and embedded fixtures and into the corners of forms.
12. Concrete in contact with forms shall be cured by one of the following methods to prevent premature drying of Concrete for at least 7 days:
    a. Application of absorptive mats or fabric kept continuously wet;
    b. Application of waterproof sheet materials conforming to ASTM C171;
    c. Application of a curing compound conforming to ASTM C309. The compound shall not be used on any surface against which additional concrete or other material is to be bonded.

REINFORCING STEEL:

1. Steel Bars shall conform to ASTM A615 and be Grade 60 except that No. 3 and No. 4 bars used as ties or stirrups may be Grade 40. Steel bars shall not be welded.
2. The wire shall be 16 gauge, black annealed and conform to ASTM A28.
3. Wire fabric shall conform to ASTM A185.
4. Reinforcing detailing, bending, and placing shall be in accordance with the Concrete Reinforcing Steel Institute's "MANUAL OF STANDARD PRACTICE", latest edition.
5. Reinforcing steel shall be provided with the following dimensions of cover for cast-in-place concrete:
   a. CONCRETE DEPOSITED AGAINST EARTH; ..... 3"
   b. FORMED CONCRETE EXPOSED TO EARTH OR WEATHER;
      #6 THROUGH # 18 BARS ..... 2"
      #5 BARS AND SMALLER ..... 1-1/2"
   c. CONCRETE NOT EXPOSED TO EARTH OR WEATHER;
      SLABS, WALLS, JOISTS:
      #14 AND # 18 BARS ..... 2"
      #11 BARS AND SMALLER ..... 1-1/2"
      BEAMS, COLUMNS:
      PRIMARY REINFORCEMENT ..... 1-1/2"
      STIRRUPS, TIES, SPIRALS ..... 1-1/2"
6. All reinforcing steel, anchor bolts, dowels, and inserts shall be positively secured in position prior to placing of concrete or grout. Vertical bars in Masonry walls shall be positioned as detailed and shall be tied in position at top and bottom and at intervals of not less than 192 bar diameters. All reinforcing bar bends shall be made cold.
7. Lap splices of reinforcing bars in Concrete shall be Class B tension splices as defined in ACI 318 latest edition unless otherwise noted. Lap splices of reinforcing bars in Masonry shall be 40 bar diameters, or 18" minimum.
8. Dowels between footings and walls shall be the same grade, size, and spacing as that of the wall reinforcing unless otherwise noted.

STRUCTURAL WOOD:

1. All solid framing lumber shall be DOUGLAS FIR LARCH (D.F.L.), grade marked and conform to the standard grading and dressing rules of the West Coast Lumber Inspection Bureau. Wood grades shall be as follows:
   a. JOISTS AND RAFTERS ..... GRADE # 2
   b. PURLINS AND SUBPURLINS ..... GRADE # 1
   c. BEAMS AND HEADERS ..... GRADE # 1
   d. LEDGERS ..... GRADE # 2
   e. PLATES ..... GRADE # 2
   f. 2X4 STUDS TO 8'-0" LONG ..... STUD GRADE
   g. 2X4 STUDS 8'-1" TO 14'-0" LONG ..GRADE # 2
   h. OTHER STUDS ..... GRADE # 2
   i. POSTS ..... GRADE # 1
2. Untreated lumber shall be dry and well seasoned, and the moisture content shall not exceed 19%. All lumber shall be air seasoned not less than 30 days before being covered with finished materials. Store all lumber off ground, considerably ventilated, and covered.
3. All nails shown on the drawings shall be common wire nails, and conform to table 2304.9.1 of C.B.C. unless otherwise noted. Noted machine bolts shall conform to ASTM A307.
4. Manufactured hardware shall be ICC approved. Design is based on Simpson Company. Where rough carpentry is exposed to weather or in ground contact, provide fasteners and anchorages with a hot-dip zinc coating. Unless otherwise noted, installation shall comply with the manufacturers recommendations. All bolt heads and nuts bearing on wood shall have standard cut washers. All bolt holes in wood shall be drilled 1/32" diameter larger than the bolt diameter.
5. All framing shall be in accordance with the requirements of chapter 23 of the California Building Code, unless otherwise noted. Install joists and beams with the crown edge up. provide all necessary bridging, blocking , and fire blockings.
6. Cutting, notching or drilling of studs or sawn joists is to be permitted only as detailed by the Engineer.
7. All wood resting on concrete or masonry shall be pressure treated.
8. Provide double joists under all parallel non bearing walls. Provide steel straps at pipes as required by chapter 23 of the C.B.C.
9. All fasteners in contact with pressure-treated wood shall be hot-dipped galvanized, HDG as per ASTM A153.

PLYWOOD SHEATHING:

1. All wood product panels (plywood, composite, waferboard, oriented strand board, structural particleboard) shall comply with U.S. Product Standard PS 1 or shall comply with the American Plywood Association standards for APA Structural Use Panels. Panels which may have any edge or surface permanently exposed to the weather or to the moisture shall be classified as Exterior. The spacing in inches of roof and floor supports over which panels are applied shall not exceed the Span Rating stamped on the panels. panel thickness shall be as shown on the drawings. panels shall be identified with the appropriate grade mark of the American Plywood Association as follows:
   a. Plywood roof sheathing shall be APA Rated Sheathing Exposure 1.
   b. Plywood wall sheathing shall be APA Rated Sheathing Exposure 1.
   c. Plywood floor sheathing shall be APA rated Sheathing Exposure 1or APA Rated Sturd-I-Floor Exposure 1.

STRUCTURAL ABBREVIATIONS

The following list applies only to Structural Drawings.

ALT	Alternate	GLB	Glue Laminated Beam
A.B.	Anchor Bolt	HGR	Hanger
BLK(G)	Blocking)	HSS	Hollow Structural Section
BM	Beam	HT	Height
BOF	Bottom Of Footing	IN	Inch
BOTT	Bottom	KP	King Post
C	Channel Steel	KS	King Stud
CANT	Cantilevered	L	Angle, Steel
CL	Center Line	LVL	Laminated Veneer Lumber
CLG	Ceiling	MAX	Maximum
CONT	Continuous	MIN	Minimum
C.J.	Ceiling Joist	MLM	Microlam by Truss Joist
d	Penny, Nail	MTL	Machine Bolt
DBL	Double	NTS	Not To Scale
DF	Douglas Fir	OC	On Center
ø	Diameter	PC	Precast Concrete Column
DO	Ditto	PLM	Parallam by Truss Joist
D.J.	Deck Joist	R.R.	Roof Rafter
EQ	Equal	SQ.	Square
EE	Each End	STD	Standard
EF	Each Face	THK	Thick
E/S	Each Side	U.N.O.	Unless Noted Otherwise
E/H	Each Way	W	Wide Flange Beam, Steel
FOS	Face Of Stud	W	With
FT	Foot	W/O	Without
FTG	Footing	&	And
F/J	Floor Joist	/	Per
dia	diaage	@	At

NAILING SCHEDULE (IN ACCORDANCE WITH CBC 2304.10.1)

CONNECTION	NAILING (ALL 8d NAILS = 2-1/2" X 0.131" ALL 16d NAILS = 3-1/2" X 0.162")
Joists to sill or girder, toenail	3-8d
Sole plate to joist or blocking, typical face nail	16d at 16" o.c.
Sole plate to joists or blocking at braced wall panels	3-16d per 16"
Top plate to stud, end nail	2-16d
Stud to sole plate (For shear walls type 10 and higher, use 2-20d nails when 3x sole plate or msdrill is used)	4-8d, toenail or 2-16d, end nail
Double studs, face nail	16d at 8" o.c.
Doubled top plates, typical face nail Double top plates, lap splice Top plates, laps and intersections	16d at 8" o.c. 8-16d 2-16d
Blocking between joists or rafters to top plate, toenail	3-8d
Rim joist to top plate, toenail	8d at 6" o.c.
Ceiling joists to plate, toenail	3-8d
Ceiling joists, lap over partitions, face nail	3-16d
Ceiling joists to parallel rafters, face nail	3-16d
Rafter to plate, toenail	3-8d
Rafters to hips, valley, and ridges, toe-nailed	16d @ 3" o.c. both sides (no less than 2 nails per side)
Built-up corner studs	16d at 12" o.c.
2" planks	2-16d at each bearing

SHEAR WALL SCHEDULE (2016 California Building Code)

TYPE **	MATERIAL	SHEAR (plf)	EDGE NAILING	FIELD NAILING *	SOLE PLATE NAILING	ANCHOR BOLTS (2X Sill Plate)	ANCHOR BOLTS (3X Sill Plate)**
1	1/2" Plywood	310	10d Nails @ 6"	10d Nails @ 12"	16d nails @ 4" o.c.	5/8" ø X 12" @ 32"	5/8" ø X 12" @ 48"
1A	1/2" Plywood	460	10d Nails @ 4"	10d Nails @ 12"	16d nails @ 3" o.c.	5/8" ø X 12" @ 12"	5/8" ø X 12" @ 32"
1B	1/2" Plywood	600	10d Nails @ 3"	10d Nails @ 12"	1"#X4-J" SDS screws @ 4" o.c. staggered	5/8" ø X 12" @ 8"	5/8" ø X 12" @ 24"
2	1/2" Plywood	770	10d Nails @ 2"	10d Nails @ 12"	1/4" X 6" SDS screws @ 4" o.c. staggered (Do not use 2x plate)	Do not use 2x plate	5/8" ø X 12" @ 16"
3	5/8" Plywood ***	870	10d Nails @ 2"	10d Nails @ 12"	1/4" X 6" SDS screws @ 4" o.c. staggered (Do not use 2x plate)	Do not use 2x plate	5/8" ø X 12" @ 16"

FOR SHEAR WALLS TYPE 1A AND HIGHER, PROVIDE A 3X MEMBER AT ALL ADJOINING PANEL EDGES

* FOR STUDS SPACED AT 24" O.C., FIELD NAILING SHALL BE 6" O.C.
** WHEN PLYWOOD IS APPLIED ON BOTH FACES OF WALL, DOUBLE THE NOTED ANCHORAGE REQUIREMENTS
***STRUCTURAL 1 PLYWOOD MUST BE USED

Notes:
- All nails shall be common nails.
- Panels may be installed either horizontally or vertically.
- All panel edges must be blocked with 2X or wider members, except as noted below.
- Where shear values exceed 350 plf on one face of a wall, foundation sill plates and all framing members receiving edge nailing from abutting panels shall not be less than a single 3-inch nominal member, and nails shall be staggered. When shear load does not exceed 600 plf, a 2X sill plate may be used with anchor bolt spacing as shown above.
- Where panels are applied on both faces of a wall, and nail spacing is less than 6" o.c. on either side, adjoining panel edges shall be offset to fall on different framing members, or framing shall be 3-inch nominal or thicker and nails on each side shall be staggered.
- Anchor bolts shall be 5/8" diameter J-bolts and embedded at least 7" into concrete or masonry and shall be spaced no more than 48" apart. There shall be a minimum of 2 bolts per piece with one bolt located not more than 12 inches or less than 5" from end of each piece. All bolts must have a 3" X 3" X 0.224" thick plate washer.
- Shear wall types 12, and 13, or when panels are applied on both faces of a wall, must have 4X blkg under the wall.
- See drawings for shear transfer details, and detail -3- for clip requirements, where applicable. (see plan)

STRUCTURAL METAL:

1. Structural steel shapes and plates shall conform to ASTM A36.
   Pipe columns shall conform to ASTM A53 Grade B. Steel tubes shall conform to ASTM A500 Grade B.
2. All workmanship and materials shall conform to the latest edition of the American Institute of Steel Construction specifications for design, fabrication, and erection of structural steel for buildings.
3. All welding shall be done by the shielded arc process using approved electrodes per American Welding Society specification. Use E7000 electrodes.
4. All shop welding and fabrication shall be done in the shop of a steel fabricator approved by the Building Official. A Certificate of Fabrication shall be furnished by the shop to the Building Official, prior to its inspection, and to the Architect. All field welding and fabrication shall be performed by operators who have been qualified as prescribed in "QUALIFICATION PROCEDURE" of the American Welding Society and who shall be approved, as required, by the Building Official. A registered Deputy Inspector shall continuously inspect all structural welding. A certificate of inspection shall be submitted to the Building Official, prior to his inspection, and to the Architect.
5. All metal shall be shop-primed with a rust inhibitive primer. Fabricated metal exposed to the exterior shall be hot-dip galvanized. After erection is complete, touch up all shop priming coats, damaged during transportation and erection.
6. High strength bolts shall conform to ASTM A325. Nuts for high strength bolts shall conform to ASTM A563 grade C. A registered Deputy Inspector shall inspect all high strength bolting. Other machine bolts and anchor bolts shall conform to ASTM A307 grade A. Nuts for machine bolts shall conform to ASTM A563 grade A hex type.
7. Holes for bolts in structural steel shall be drilled or punched, burning of holes shall not be permitted.
8. Shop drawings of structural and miscellaneous steel shall be submitted for review prior to fabrication. Reviews of the shop drawings by the Engineer shall not alleviate the Contractor from the responsibility for compliance with the drawings and specifications.
9. Supply all fasteners and anchors required for mounting and attachment of metal fabrications.

MIKE MAHMOUDIAN LIC. # C35053 IS ONLY RESPONSIBLE FOR THE PORTIONS OF THE STRUCTURE COVERED BY THE ATTACHED CALCULATIONS

REVISION	BY
FILE: 6826-D6	

MIKE MAHMOUDIAN & ASSOCIATES, INC.
STRUCTURAL ENGINEERING SINCE 1989
851 Burlway Road, Suite 519
Burlingame, CA 94010
TEL 650.348.3457 - FAX 650.348.7119
mma@pacbell.net mmaengineers.com

REGISTERED PROFESSIONAL ENGINEER MIKE MAHMOUDIAN CIVIL No. C035053

QIU-SHEN RESIDENCE
1330 ENCHANTED WAY
SAN MATEO, CA

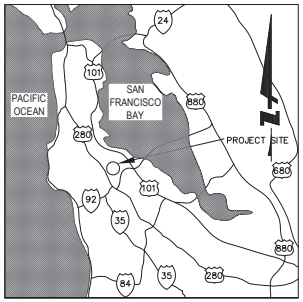
JOB No:	6826
DATE:	3/22/19
SCALE:	AS NOTED
DRAWN BY:	SD

S-10
OF 10 SHEETS

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QIU/SHEN RESIDENCE
1330 ENCHANTED WAY
SAN MATEO, CA

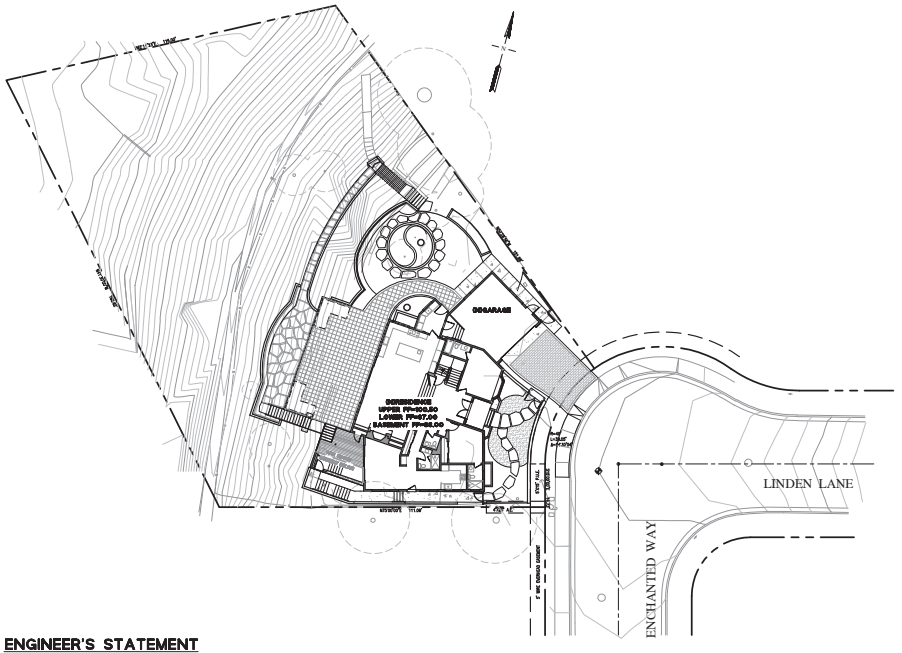
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VICINITY MAP
N.T.S.



LOCATION MAP
N.T.S.



ABBREVIATIONS:

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
AD	AREA DRAIN
ATD	ATRIUM DRAIN
BFPD	BACK FLOW PREVENTION DEVICE
BS	BOTTOM OF STAIR ELEVATION
BSTD	BRICKSLOT TRENCH DRAIN
BW	BOTTOM OF WALL ELEVATION
CB	CATCH BASIN
CL	CENTER LINE
CS OP	CRAWL SPACE ELEVATION
CONC	CAST IRON PIPE
DD	CONCRETE
DDCV	DECK DRAIN
DIP DS	DOUBLE DETECTOR CHECK VALVE
DW DWL	DUCTILE IRON PIPE
DWY	ROOF DOWN SPOUT
(E)	DOMESTIC WATER LINE
EG	DRYWELL CATCH BASIN
ELEC	DRIVEWAY
EM	EXISTING
EP	EXISTING GRADE
FC	ELECTRICAL
FDC	ELECTRICAL METER
FF	EDGE OF PAVEMENT
FG	FACE OF CURB ELEVATION
FL	FIRE DEPARTMENT CONNECTION
FM	FINISHED FLOOR ELEVATION
FS	FINISHED GROUND ELEVATION
FP	FLOW LINE ELEVATION
FW	FORCE MAIN LINE
GB	FINISHED SURFACE ELEVATION
GM	FINISHED PAVEMENT ELEVATION
GR	FIRE WATER LINE
GV	GRADE BREAK
HP INV	GAS METER
JT	GRATE ELEVATION
JP	GATE VALVE
LD	HIGH POINT
LF	INVERT ELEVATION
LP	JOINT TRENCH
(N)	JOINT POLE
PIV	LANDSCAPE DRAIN
PKG	LINEAR FEET
POC	LOW POINT
RET RIM	NEW
S	POST INDICATOR VALVE
SAP	PARKING
SBD	POINT OF CONNECTION
SBDCO	RETAINING WALL
SD	RIM ELEVATION
SDCO	SLOPE
SGR	SEE ARCHITECTURAL PLANS
SICB	STORM SUB DRAIN
SLP	STORM SUB DRAIN CLEANOUT
SPP	STORM DRAIN
SS	STORM DRAIN CLEANOUT
SSCO	SEE GEOTECHNICAL REPORT
SSP	SIDE INLET CATCH BASIN
TS	SEE LANDSCAPE PLANS
TW	SEE PLUMBING PLANS
TYP	SANITARY SEWER
USD	SANITARY SEWER CLEANOUT
VD	SEE STRUCTURAL PLANS
W	TOP OF STAIR ELEVATION
WM	TOP OF WALL ELEVATION
	TYPICAL
	UNDERSLAB DRAIN
	PIPE VERTICAL DROP
	DOMESTIC WATER LINE
	WATER METER

LEGEND:

EXISTING	PROPOSED	
		BOUNDARY
		LIMIT OF WORK
6" SS	6" SS	SANITARY SEWER
10" SD	10" SD	SOLID STORM DRAIN
4" SBD	4" SBD	PERFORATED SUB DRAIN
FM	2" FM	FORCE MAIN
10" FW	10" FW	FIRE SERVICE
2" W	2" W	DOMESTIC WATER SERVICE
IRR	2" IRR	IRRIGATION SERVICE
G	G	NATURAL GAS
T	T	TELEPHONE
TV	TV	TV/CABLE TV
E	E	ELECTRIC
JT	JT	JOINT TRENCH
O/H	O/H	OVERHEAD WIRES
X	X	FENCE
		CLEAN OUT TO GRADE
		FOUND MONUMENT
		DOUBLE DETECTOR CHECK VALVE
		VALVE
		METER BOX
		STREET LIGHT
		DRAIN
		ATRIUM DRAIN
		CATCH BASIN
		FIRE HYDRANT
		FIRE DEPARTMENT CONNECTION
		BENCHMARK
		MANHOLE
		SIGN
		SPLASH BLOCK
		TREE TO BE REMOVED
	2 / C5.1	DETAIL NUMBER / SHEET LOCATION

IMPERVIOUS AREAS

TOTAL PROPERTY AREA	21,474 SF
IMPERVIOUS AREAS:	
PRE-CONSTRUCTION	4,698 SF
POST-CONSTRUCTION	6,672 SF

ENGINEER'S STATEMENT

THIS SITE IMPROVEMENT PLAN SUBMITTAL HAS BEEN PREPARED UNDER MY DIRECTION.

08/21/2020
DATE

ROLAND N.V. HAGA
VICE PRESIDENT
P.E. #43971 EXP 06/30/2019
BKF ENGINEERS

REGISTERED PROFESSIONAL ENGINEER ROLAND N.V. HAGA C 43971 CIVIL STATE OF CALIFORNIA

ENGINEER OF WORK

I HEREBY DECLARE THAT I AM THE CIVIL ENGINEER OF WORK FOR THIS PROJECT AND THAT I HAVE EXERCISED RESPONSIBLE CHARGE OVER THE DESIGN OF THIS PROJECT AS DEFINED IN SECTION 6703 OF THE STATE OF CALIFORNIA, BUSINESS PROFESSIONAL CODES, AND THAT THE DESIGN IS CONSISTENT WITH CURRENT STANDARDS.

08/21/2020
DATE

DALE LEDA
PROJECT MANAGER
P.E. #78436 EXP 09/30/19
BKF ENGINEERS

REGISTERED PROFESSIONAL ENGINEER DALE J. LEDA C 78436 CIVIL STATE OF CALIFORNIA

EARTHWORK QUANTITIES

GROSS FIGURES	
CUT	1,240 CUBIC YARDS
FILL	95 CUBIC YARDS
TOTAL	1,335 CUBIC YARDS
BALANCE	1,145 CUBIC YARDS OF EXPORT

FOR SITE DEVELOPMENT REVIEW SUBMITTAL, EARTHWORK CUT VOLUME WITHIN FOOTPRINT OF HOUSE, POOL AND GARAGE ENTRY HAVE BEEN OMITTED.

NET FIGURES	
CUT	60 CUBIC YARDS
FILL	95 CUBIC YARDS
TOTAL	155 CUBIC YARDS
BALANCE	35 CUBIC YARDS OF IMPORT

QUANTITY BREAKDOWN	
BUILDINGS	
CUT	1,180 CUBIC YARDS
FILL	0 CUBIC YARDS
SITE WORK AND LANDSCAPING	
CUT	60 CUBIC YARDS
FILL	95 CUBIC YARDS

EARTHWORK QUANTITIES SHOWN ARE FOR PLANNING PURPOSES ONLY. CONTRACTOR SHALL PERFORM THEIR OWN EARTHWORK QUANTITY CALCULATION, AND USE THEIR CALCULATION FOR BIDDING AND COST ESTIMATING PURPOSES.

SHEET INDEX

SHEET NO.	DESCRIPTION
C0.0	TITLE SHEET
C0.1	NOTES
C1.1	EXISTING CONDITIONS
C2.1	GRADING PLAN
C3.1	UTILITY PLAN
C4.1	EROSION CONTROL PLAN
C4.2	BEST MANAGEMENT PRACTICES
C5.1	DETAIL SHEET
C5.2	DETAIL SHEET

0 20 40
GRAPHIC SCALE

811 Know what's below. Call before you dig.

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1330 ENCHANTED WAY
SAN MATEO COUNTY
CALIFORNIA
SAN MATEO

REGISTERED PROFESSIONAL ENGINEER DALE J. LEDA C 78436 CIVIL STATE OF CALIFORNIA

No.	Revisions	Date
1	PLAN CHECK COMMENTS	10/21/2020

Date 08/21/2020
Scale AS SHOWN
Design DJL
Drawn CW
Approved RH
Job No. 20170215

Drawing Number:
C0.0
OF

DRAWING NAME: J:\2017\170215_1330 Enchanted Way\ENG\ws\sheets.dwg
PLOT DATE: 11-11-20 PLOTTED BY: leda

© BKF Engineers

CAUTION:

1. CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT FOR LOCATION OF UNDERGROUND UTILITIES AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION– PHONE (800) 642–2444. CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES PRIOR TO BEGINNING ANY WORK ON THIS SITE.

GENERAL SITE NOTES:

1. CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING ON THIS WORK AND CONSIDER THE EXISTING CONDITIONS AND SITE CONSTRAINTS IN THE BID. CONTRACTOR SHALL BE IN THE POSSESSION OF AND FAMILIAR WITH ALL APPLICABLE GOVERNING AGENCIES STANDARD DETAILS AND SPECIFICATIONS PRIOR TO SUBMITTING OF A BID.
2. ALL WORK ON–SITE AND IN THE PUBLIC RIGHT–OF–WAY SHALL CONFORM TO ALL APPLICABLE GOVERNING AGENCIES STANDARD DETAILS & SPECIFICATIONS.
3. PRIOR TO BEGINNING WORK, AND AFTER INITIAL HORIZONTAL CONTROL STAKING, CONTRACTOR SHALL FIELD CHECK ALL ELEVATIONS MARKED WITH (E) AND REPORT ANY DISCREPANCIES GREATER THAN 0.05' TO PROJECT MANAGER.
4. DAMAGE TO ANY EXISTING SITE IMPROVEMENTS, UTILITIES AND/OR SERVICES TO REMAIN SHALL BE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL REPAIR AND/OR REPLACE IN KIND.
5. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT INCLUDING SAFETY OF ALL PERSONS AND PROPERTY THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AND THAT THE CONTRACTOR SHALL DEFEND INDEMNIFY AND HOLD THE CLIENT, THE CONSULTING ENGINEER AND THE TOWN HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE CLIENT OR THE CONSULTING ENGINEER.
6. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT BY MICHELUCCI AND ASSOCIATES, INC. DATED AUGUST 9, 2016.

DEMOLITION NOTES :

1. CONTRACTOR IS TO COMPLY WITH ALL GENERAL AND STATE REQUIREMENTS INVOLVING THE REMOVAL AND DISPOSAL OF HAZARDOUS MATERIAL(S).
2. CONTRACTOR'S BID IS TO INCLUDE ALL VISIBLE SURFACE AND ALL SUBSURFACE FEATURES IDENTIFIED TO BE REMOVED OR ABANDONED IN THESE DOCUMENTS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR A SITE INSPECTION TO FULLY ACKNOWLEDGE THE EXTENT OF THE DEMOLITION WORK.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY AND ALL PERMITS NECESSARY FOR ENCROACHMENT, GRADING, DEMOLITION, AND DISPOSAL OF SAID MATERIALS AS REQUIRED BY PRIVATE, LOCAL AND STATE JURISDICTIONS. THE CONTRACTOR SHALL PAY ALL FEES ASSOCIATED WITH THE DEMOLITION WORK.
5. BACKFILL ALL DEPRESSIONS AND TRENCHES FROM DEMOLITION TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER.
6. REMOVAL OF LANDSCAPING SHALL INCLUDE ROOTS AND ORGANIC MATERIALS TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER.
7. PRIOR TO BEGINNING DEMOLITION WORK ACTIVITIES, CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES OUTLINED IN THE EROSION CONTROL PLAN & DETAILS.
8. THE CONTRACTOR SHALL MAINTAIN ALL SAFETY DEVICES, AND SHALL BE RESPONSIBLE FOR CONFORMANCE TO ALL LOCAL, STATE AND FEDERAL SAFETY AND HEALTH STANDARDS LAWS AND REGULATIONS.
9. THE CONTRACTOR SHALL PROTECT FROM DAMAGE ALL EXISTING IMPROVEMENTS FACILITIES AND STRUCTURES WHICH ARE TO REMAIN. ANY ITEMS DAMAGED BY THE CONTRACTOR OR HIS AGENTS OR ANY ITEMS REMOVED FOR HIS USE SHALL BE REPLACED IN EQUAL OR BETTER CONDITION AS APPROVED BY THE ARCHITECT OR OWNER'S REPRESENTIVE.
10. COORDINATE WITH ELECTRICAL, MECHANICAL, LANDSCAPING AND ARCHITECTURAL DRAWINGS FOR UTILITY SHUT–DOWN/DISCONNECT LOCATIONS. CONTRACTOR IS TO SHUT OFF ALL UTILITIES AS NECESSARY PRIOR TO DEMOLITION. CONTRACTOR TO COORDINATE SERVICE INTERRUPTIONS WITH THE CLIENT. DO NOT INTERRUPT SERVICES TO ADJACENT OFF–SITE OWNERS. ALSO SEE ARCHITECTURAL PLANS FOR ADDITIONAL DEMOLITION SCOPE OF WORK.
11. THIS PLAN IS NOT INTENDED TO BE A COMPLETE CATALOGUE OF ALL EXISTING STRUCTURES AND UTILITIES. THIS PLAN INTENDS TO DISCLOSE GENERAL INFORMATION KNOWN BY THE ENGINEER AND TO SHOW THE LIMITS OF THE AREA WHERE WORK WILL BE PERFORMED. THIS PLAN SHOWS THE EXISTING FEATURES TAKEN FROM A FIELD SURVEY, FIELD INVESTIGATIONS AND AVAILABLE INFORMATION. THIS PLAN MAY OR MAY NOT ACCURATELY REFLECT THE TYPE OR EXTENT OF THE ITEMS TO BE ENCOUNTERED AS THEY ACTUALLY EXIST. WHERE EXISTING FEATURES ARE NOT SHOWN, IT IS NOT IMPLIED THAT THEY ARE NOT TO BE DEMOLISHED OR REMOVED. THE CONTRACTOR SHALL PERFORM A THOROUGH FIELD INVESTIGATION AND REVIEW OF THE SITE WITHIN THE LIMIT OF WORK SHOWN IN THIS PLAN SET TO DETERMINE THE TYPE, QUANTITY AND EXTENT OF ANY AND ALL ITEMS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR DETERMINING THE EXTENT OF EXISTING STRUCTURES AND UTILITIES AND QUANTITY OF WORK INVOLVED IN REMOVING THESE ITEMS FROM THE SITE.

RECORD DRAWINGS:

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

STORM DRAIN MAINTENANCE NOTES:

PLEASE NOTE THAT REGULAR MAINTENANCE ON GRADING AND DRAINAGE STRUCTURES IS REQUIRED TO ENSURE FUNCTIONALITY THROUGHOUT THE LIFE OF THE PROPERTY. MAINTENANCE SHOULD INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:

1. THE CLEARING OF DEBRIS FROM THE DETENTION SYSTEM/SEDIMENTATION INLET AND STORM DRAIN LINES.
2. ROOF GUTTERS AND DOWNSPOUTS SHOULD BE CLEARED BEFORE THE BEGINNING OF EACH RAINY SEASON AND AS NEEDED THROUGHOUT THE WINTER MONTHS.
3. FOUNDATION SUBDRAINS SHOULD BE INSPECTED VIA CLEANOUTS ONCE EVERY 5 YEARS AND SNAKED AS NEEDED TO CLEAR DEBRIS.
4. SURFACE GRADING MAY ALSO REQUIRE CONTINUED REFINEMENT, INCLUDING THE CLEARING AND RE–FINISHING OF VEGETATED SWALES AND SLOPES TO MINIMIZE PONDING, MAINTAIN POSITIVE DRAINAGE AWAY FROM IMPROVEMENTS AND PROTECT AGAINST EROSION.
5. GRADED SLOPES SHOULD BE MONITORED AND RE–VEGETATED AS NEEDED.
6. FINALLY, DRAINAGE SWALES UPHILL OF THE SITE WALLS SHOULD BE CONTINUOUSLY MONITORED AND CLEARED OF LEAVES AND DIRT DEBRIS.

TREE/PLANT PROTECTION NOTES:

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

HORIZONTAL CONTROL NOTES:

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

PAVEMENT SECTION:

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

SITE MAINTENANCE:

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

DUST CONTROL:

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

NPDES REQUIREMENTS:

1. ALL CONSTRUCTION ON OFF–SITE OR ON–SITE IMPROVEMENTS SHALL ADHERE TO NPDES (NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM) BEST MANAGEMENT PRACTICES TO PREVENT DELETERIOUS MATERIALS OR POLLUTANTS FROM ENTERING THE TOWN OR COUNTY STORM DRAIN SYSTEMS.
2. ERODED SEDIMENTS AND OTHER POLLUTANTS MUST BE RETAINED ON SITE AND MAY NOT BE TRANSPORTED FROM THE SITE VIA SHEET FLOW, SWALES, AREA DRAINS, NATURAL DRAINAGE COURSES, OR WIND.
3. STOCKPILES OF EARTH AND OTHER CONSTRUCTION RELATED MATERIALS MUST BE PROTECTED FROM BEING TRANSPORTED FROM THE SITE BY THE FORCES OF WIND OR WATER.
4. FUELS, OILS, SOLVENTS, AND OTHER TOXIC MATERIALS MUST BE STORED IN ACCORDANCE WITH THEIR LISTING AND ARE NOT TO CONTAMINATE THE SOIL AND SURFACE WATERS. ALL APPROVED STORAGE CONTAINERS ARE TO BE PROTECTED FROM THE WEATHER. SPILLS MUST BE CLEANED UP IMMEDIATELY AND DISPOSED OF IN A PROPER MANNER. SPILLS MAY NOT BE WASHED INTO THE DRAINAGE SYSTEM.
5. EXCESS OR WASTE CONCRETE MAY NOT BE WASHED INTO THE PUBLIC RIGHT–OF–WAY OR ANY OTHER DRAINAGE SYSTEM. PROVISIONS SHALL BE MADE TO RETAIN CONCRETE WASTES ON SITE UNTIL THEY CAN BE DISPOSED OF AS SOLID WASTE.
6. TRASH AND CONSTRUCTION RELATED SOLID WASTES MUST BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION AND DISPERSAL BY WIND.
7. SEDIMENTS AND OTHER MATERIALS MAY NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS MUST BE STABILIZED SO AS TO INHIBIT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC RIGHT–OF–WAY. ACCIDENTAL DEPOSITIONS MUST BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS.
8. ANY SLOPES WITH DISTURBED SOILS OR DENUDED OF VEGETATION MUST BE STABILIZED SO AS TO INHIBIT EROSION BY WIND AND WATER.
9. CLEAN UP ALL SPILLS USING DRY METHODS.
10. SWEEP ALL GUTTERS AT THE END OF EACH WORKING DAY. GUTTERS SHALL BE KEPT CLEAN AFTER LEAVING CONSTRUCTION SITE.
11. CALL 911 IN CASE OF A HAZARDOUS SPILL.
12. BMP'S AS OUTLINED IN, BUT NOT LIMITED TO, CALIFORNIA STORM WATER QUALITY TASK FORCE, SACRAMENTO, CALIFORNIA, JANUARY 2003, OR THE LATEST REVISED EDITION, MAY APPLY DURING THE CONSTRUCTION OF THIS PROJECT (ADDITIONAL MEASURES MAY BE REQUIRED IF DEEMED APPROPRIATE BY TOWN INSPECTORS).
13. UPON SATISFACTORY COMPLETION OF THE WORK, THE ENTIRE WORK SITE SHALL BE CLEANED BY THE CONTRACTOR AND LEFT WITH A SMOOTH AND NEATLY GRADED SURFACE FREE OF CONSTRUCTION WASTE, RUBBISH, AND DEBRIS OF ANY NATURE.

EROSION AND SEDIMENTATION CONTROL NOTES:

1. CONTRACTOR SHALL ASSUME THE CONCEPTS ON THE EROSION CONTROL PLAN, IF PROVIDED, ARE SCHEMATIC MINIMUM REQUIREMENTS. THE FULL EXTENT OF WHICH ARE TO BE DETERMINED BY THE CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR THE EXACT DESIGN AND EXTENT OF THE EROSION CONTROL SYSTEM SO THAT IT WORKS WITH THE CONTRACTOR'S INTENDED USE AND MANAGEMENT OF THE CONSTRUCTION SITE.
2. ALL EROSION CONTROL FACILITIES SHALL BE INSPECTED BY THE CONTRACTOR AND REPAIRED, AS REQUIRED, AT THE CONCLUSION OF EACH WORKING DAY. THE CONTRACTOR SHALL INSPECT THE EROSION CONTROL FACILITIES AND MAKE NECESSARY REPAIRS PRIOR TO ANTICIPATED STORMS AND AT REASONABLE INTERVALS DURING STORMS OF EXTENDED DURATION. REPAIRS TO DAMAGED FACILITIES SHALL BE MADE IMMEDIATELY UPON DISCOVERY.
3. AS SOON AS PRACTICAL FOLLOWING EACH STORM, THE CONTRACTOR SHALL REMOVE ANY ACCUMULATION OF SILT OR DEBRIS FROM THE EROSION CONTROL SEDIMENT BASINS AND SHALL CLEAR THE OUTLET PIPES OF ANY BLOCKAGE.
4. STOCKPILED MATERIAL SHALL BE COVERED WITH VISQUEEN OR A TARPAULIN UNTIL THE MATERIAL IS REMOVED FROM THE SITE. ANY REMAINING BARE SOIL THAT EXISTS AFTER THE STOCKPILE HAS BEEN REMOVED SHALL BE COVERED UNTIL A NATURAL GROUND COVER IS ESTABLISHED OR IT MAY BE SEEDED OR PLANTED TO PROVIDE GROUND COVER.
5. PRIOR TO THE COMMENCEMENT OF ANY CLEARING, GRADING, OR EXCAVATION, THE CONTRACTOR SHALL VERIFY THAT THE CLIENT HAS SUBMITTED TO THE STATE WATER RESOURCES CONTROL BOARD A NOTICE OF INTENT (NOI) FOR COVERAGE UNDER THE STATE CONSTRUCTION STORM WATER GENERAL PERMIT, IF REQUIRED BY THE STATE. THE CONTRACTOR SHALL MAINTAIN A COPY OF THE NOI ON THE CONSTRUCTION SITE.
6. NECESSARY MATERIALS SHALL BE AVAILABLE ON SITE AND STOCKPILED AT CONVENIENT LOCATIONS TO FACILITATE RAPID CONSTRUCTION OF TEMPORARY DEVICES WHEN RAIN IS IMMINENT.
7. PROTECT ADJACENT PROPERTIES AND UNDISTURBED AREAS FROM CONSTRUCTION IMPACTS USING VEGETATIVE BUFFER STRIPS, SEDIMENT BARRIERS OR FILTERS, DIKES, MULCHING OR OTHER MEASURES AS APPROPRIATE.
8. CONTRACTOR SHALL MAINTAIN ADJACENT STREETS IN A NEAT, CLEAN, DUST FREE AND SANITARY CONDITION AT ALL TIMES AND TO THE SATISFACTION OF THE TOWN INSPECTOR. THE ADJACENT STREET SHALL BE KEPT CLEAN OF DEBRIS, WITH DUST AND OTHER NUISANCE BEING CONTROLLED AT ALL TIMES. DEVELOPER SHALL BE RESPONSIBLE FOR ANY CLEAN UP ON ADJACENT STREETS AFFECTED BY THEIR CONSTRUCTION, METHOD OF STREET CLEANING SHALL BE BY DRY SWEEPING OF ALL PAVED AREAS. NO STOCKPILING OF BUILDING MATERIALS WITHIN THE TOWN'S RIGHT–OF–WAY IS PERMITTED.
9. ALL EROSION CONTROL MATERIALS SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS OTHERWISE NOTED.
10. PROTECT DOWN SLOPE DRAINAGE COURSES, STREAMS AND STORM DRAINS WITH ROCK FILLED SAND BAGS, TEMPORARY DRAINAGE SWALES, SILT FENCES, EARTH BERMS, STORM DRAIN INLET FILTERS AND/OR STRAW BALES USED ONLY IN CONJUNCTION WITH PROPERLY INSTALLED SILT FENCES.

SITE FENCE NOTES:

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

GENERAL UTILITY SYSTEM NOTES:

1. ALL TRENCHES SHALL BE BACK FILLED PER THE SPECIFICATIONS WITH APPROPRIATE TESTS BY THE GEOTECHNICAL ENGINEER TO VERIFY COMPACTION VALUES.
2. CLEAN OUTS, CATCH BASINS AND AREA DRAINS ARE TO BE ACCURATELY LOCATED BY THEIR RELATIONSHIP TO THE BUILDING, FLATWORK, ROOF DRAINS, AND/OR CURB LAYOUT, NOT BY THE LENGTH OF PIPE SPECIFIED IN THE DRAWINGS (WHICH IS APPROXIMATE).
3. CONTRACTOR SHALL STAKE LOCATION OF ABOVE GROUND UTILITY EQUIPMENT (BACKFLOW PREVENTOR, SATELLITE DISH, TRANSFORMER, GAS METER, ETC.) AND MEET WITH CLIENT TO REVIEW LOCATION PRIOR TO INSTALLATION. PLANNING DEPARTMENT MUST SPECIFICALLY AGREE WITH LOCATION PRIOR TO PROCEEDING WITH THE INSTALLATION.
4. CONTRACTOR SHALL PREPARE AN ACCURATE COMPOSITE UTILITY PLAN THAT TAKES INTO ACCOUNT THE ACTUAL LOCATION OF EXISTING UTILITIES AS DETERMINED DURING THE DEMOLITION WORK. THE UTILITIES SHOWN ON THE CIVIL DRAWINGS, AND THE SITE POWER, CONDUITS AND LIGHTING SHOWN ON THE ELECTRICAL PLANS. THE FIRE SPRINKLER SYSTEM SHALL BE INCLUDED AS DESIGNED BY THE DESIGN/BUILD UNDERGROUND FIRE SPRINKLER CONTRACTOR.
5. CATHODIC PROTECTION MAY BE REQUIRED ON ALL METALLIC FITTINGS AND ASSEMBLIES THAT ARE IN CONTACT WITH THE SOIL, IF RECOMMENDED BY THE GEOTECHNICAL REPORT. CONTRACTOR IS RESPONSIBLE TO FULLY ENGINEER AND INSTALL THIS SYSTEM AND COORDINATE ANODE AND TEST STATION LOCATIONS WITH OWNER'S PROJECT MANAGER.
6. COMPLETE SYSTEMS: ALL UTILITY SYSTEMS ARE DELINEATED IN A SCHEMATIC MANNER ON THESE PLANS. CONTRACTOR IS TO PROVIDE ALL FITTINGS, ACCESSORIES AND WORK NECESSARY TO COMPLETE THE UTILITY SYSTEM SO THAT IT IS FULLY FUNCTIONING FOR THE PURPOSE INTENDED.
7. UNDERGROUND UTILITIES OR STRUCTURES ARE SHOWN IN THEIR APPROXIMATE LOCATIONS AND EXTENT BASED UPON RECORD INFORMATION. LOCATIONS MAY NOT HAVE BEEN VERIFIED IN THE FIELD AND NO GUARANTEE IS MADE TO THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE CLIENT, BY ACCEPTING THESE PLANS OR PROCEEDING WITH IMPROVEMENTS PURSUANT THERETO, AGREES TO ASSUME LIABILITY AND TO HOLD UNDERSIGNED HARMLESS FOR ANY DAMAGES RESULTING FROM THE EXISTENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED; NOT INDICATED ON THE PUBLIC RECORDS EXAMINED, LOCATED AT VARIANCE WITH THOSE REPORTED OR SHOWN ON RECORDS EXAMINED.
8. CONTRACTOR SHALL VERIFY ALL EXISTING INVERT ELEVATIONS FOR STORM DRAIN AND SANITARY SEWER CONSTRUCTION PRIOR TO COMMENCEMENT OF ANY WORK. ALL WORK FOR STORM AND SANITARY SEWER INSTALLATION SHALL BEGIN AT THE DOWNSTREAM CONNECTION POINT. THIS WILL ALLOW FOR ANY NECESSARY ADJUSTMENTS TO BE MADE PRIOR TO THE INSTALLATION OF THE ENTIRE LINE. IF THE CONTRACTOR FAILS TO BEGIN AT THE DOWNSTREAM CONNECTION POINT AND WORKS UP STREAM, HE SHALL PROCEED AT HIS OWN RISK AND BE RESPONSIBLE FOR ANY ADJUSTMENTS NECESSARY. CONTRACTOR SHALL VERIFY LOCATION OF SANITARY SEWER LATERAL WITH OWNER PRIOR TO CONSTRUCTION.
9. EXISTING UTILITY CROSSINGS OF NEW PIPELINE ARE SHOWN ACCORDING TO THE BEST AVAILABLE INFORMATION. GAS, WATER AND SEWER SERVICE LATERALS ARE SHOWN ACCORDING TO THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL VERIFY THE TYPE, SIZE, LOCATION AND DEPTH OF ALL THE UTILITY CROSSING (BOTH MAINS AND LATERALS) ARE CORRECT AS SHOWN. NO GUARANTEE IS MADE THAT ALL EXISTING UTILITIES (BOTH MAINS AND LATERALS) ARE SHOWN. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN EXCAVATING AND SHALL PROTECT ALL EXISTING UTILITIES (BOTH MAINS AND LATERALS) FROM DAMAGE DUE TO HIS OPERATION.
10. VERTICAL SEPARATION REQUIREMENTS:

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

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

11. HORIZONTAL SEPARATION REQUIREMENTS:

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

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

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING APPROPRIATE UTILITIES AND REQUESTING VERIFICATION OF SERVICE POINTS, FIELD VERIFICATION OF LOCATION, SIZE, DEPTH, ETC. FOR ALL THEIR FACILITIES AND TO COORDINATE WORK SCHEDULES.
13. ANY EXISTING UNDERGROUND UTILITY LINES TO BE ABANDONED, SHOULD BE REMOVED FROM WITHIN THE PROPOSED BUILDING ENVELOPE AND THEIR ENDS CAPPED OUTSIDE OF THE BUILDING ENVELOPE.

FIRE PROTECTION NOTES:

1. CONTRACTOR SHALL INSTALL THE DESIGN BUILD FIRE SERVICE LINE, BACKFLOW PREVENTOR, SPRINKLERS AND EQUIPMENT IN ACCORDANCE WITH THE FIRE PROTECTION CONSULTANT'S PLANS, SPECIFICATIONS, LATEST EDITION OF THE UNIFORM/CALIFORNIA FIRE CODE AND CITY/TOWN STANDARDS.
2. THE UNDERGROUND FIRE PROTECTION SYSTEM INSTALLER SHALL PREPARE SHOP DRAWINGS SHOWING ALL INFORMATION REQUIRED BY THE LOCAL FIRE MARSHAL, INCLUDING ANGLES, THRUST BLOCKS, VALVES, FIRE HYDRANTS, PIV's, FDC's, BACKFLOW ASSEMBLIES, FLEXIBLE CONNECTIONS, VAULTS, ETC.
3. SHOP DRAWINGS SHALL BE SUBMITTED TO THE LOCAL FIRE MARSHAL, THE RATING AGENCY AND THE PROJECT MANAGER, ALLOWING TIME FOR REVIEW AND ACCEPTANCE, PRIOR TO START OF WORK.
4. THE UNDERGROUND FIRE PROTECTION SYSTEM INSTALLER SHALL OBTAIN ALL APPROVALS AND PERMITS PRIOR TO ORDERING MATERIALS, FABRICATING SYSTEMS OR ANY INSTALLATION.
5. GENERAL CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS AND EQUIPMENT LOCATIONS. RISER LOCATIONS ARE SHOWN ON ARCHITECTURAL AND PLUMBING DRAWINGS AND ARE TO BE COORDINATED WITH ACTUAL FIELD CONDITIONS.

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NOTES
QIU/SHEN RESIDENCE
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SAN MATEO COUNTY
SAN MATEO CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
DAVID T. LEE
C 78436
CIVIL
STATE OF CALIFORNIA

No.	Revisions	Date
1	PLAN CHECK COMMENTS	10/21/2020

Date 08/21/2020
Scale NO SCALE
Design DJL
Drawn CW
Approved RH
Job No. 20170215

Drawing Number:
CO.1
OF

DRAWING NAME: J:\2017\170215_1330 Enchanted_Way\ENG\sheets.dwg
PLOT DATE: 11-11-20 PLOTTED BY: Iede

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EXISTING CONDITIONS:

1. EXISTING TOPOGRAPHIC SURVEY PERFORMED BY RW ENGINEERING ON JANUARY 28, 2018. GRADES ENCOUNTERED ON-SITE MAY VARY FROM THOSE SHOWN. CONTRACTOR SHALL REVIEW THE PLANS AND CONDUCT FIELD INVESTIGATIONS AS REQUIRED TO VERIFY EXISTING CONDITIONS AT THE PROJECT SITE.
2. CLIENT SHALL HOLD HARMLESS BKF ENGINEERS FROM ANY AND ALL OCCURRENCES RESULTING FROM THE INACCURACY OF THE CLIENT SUPPLIED TOPOGRAPHIC AND BOUNDARY SURVEY (AS PREPARED BY OTHERS).

SURVEYOR'S NOTES:

GENERAL NOTES:

1. THIS ELECTRONIC FILE IS SOLELY FOR THE USE OF THE ARCHITECT FOR THE DEVELOPMENT OF HIS/HER ARCHITECTURAL DRAWINGS TO OBTAIN BUILDING PERMITS.
2. THIS MAP SHALL BE USED TO STAKE OUT CONSTRUCTION IMPROVEMENTS IN THE FIELD.
3. THE DELIVERY OF THIS MAP IN AN ELECTRONIC FILE DOES NOT CONSTITUTE THE DELIVERY OF MY PROFESSIONAL WORK PRODUCT. THE SIGNED PAPER PRINT IS PROVIDED TO THE CLIENT AS AN INSTRUMENT OF SERVICE. IN EVENT THE ELECTRONIC FILE IS ALTERED, THE SAID PAPER PRINT MUST BE REFERRED TO FOR THE ORIGINAL AND CORRECT SURVEY INFORMATION. RW ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR MODIFICATIONS MADE BY OTHERS, TO THE ELECTRONIC FILE OR ANY PRODUCTS DERIVED FROM THE ELECTRONIC FILE.
4. THIS MAP REPRESENTS TOPOGRAPHY OF THE SURFACE FEATURES ONLY AT THE TIME SURVEY WORK WAS COMPLETED.
5. BOUNDARY LINES DELINEATED ON THIS MAP ARE INFORMATIONAL BASED ON THE SURVEYORS OPINION UTILIZING FOUND PHYSICAL EVIDENCE AND RECORD DATA. THIS MAP IS NOT INTENDED AND SHALL NOT BE USED TO ESTABLISH BOUNDARY LINES.
6. UNLESS SPECIFIED ON THIS MAP, LOCATIONS OF THE UNDERGROUND AND OVERHEAD UTILITIES ARE NEITHER INTENDED NOR IMPLIED. FOR THE LOCATIONS OF UNDERGROUND UTILITIES CALL "USA" (1-800-642-2440).
7. ALL DISTANCES AND DIMENSIONS ARE IN FEET AND DECIMALS.
8. BUILDING FOOTPRINTS ARE SHOWN AT GROUND LEVEL.
9. FINISH FLOOR ELEVATION TAKEN AT DOOR THRESHOLD EXTERIOR.
10. A TITLE REPORT FOR THE SUBJECT PROPERTY HAS NOT BEEN EXAMINED BY RW ENGINEERING, INC., OTHER EASEMENTS OF RECORD MAY EXIST THAT ARE NOT SHOWN ON THIS MAP.

BASIS OF BEARING:

PER TRACT MAP NO. 769 FILED IN BOOK 50 OF MAPS AT PAGE 16, SAN MATEO COUNTY RECORDS.

BENCHMARK:

SET NAIL
ELEVATION = 100.00' ASSUMED

REFERENCES:

R1 TRACT 769 (50 MAPS 16)

ABBREVIATIONS

AD	AREA DRAIN
A.E.	ANCHOR EASEMENT
AC	ASPHALT CONCRETE
BRK	BRICK
C/G	CURB & GUTTER
C	CONCRETE
DI	DRAIN INLET
FF	FINISH FLOOR GRADE
FL	FLOWLINE
GM	GAS METER
LG	LIP OF GUTTER
MB	MAIL BOX
P.U.E.	PUBLIC UTILITY EASEMENT
P.S.E.	PUBLIC SERVICE EASEMENT
SDMH	STORM DRAIN MANHOLE
SSCO	SANITARY SEWER CLEANOUT
SSMH	SANITARY SEWER MANHOLE
S/W	SIDEWALK
TC	TOP OF CURB
TRC	TOP OF ROLLED CURB
W.C.E.	WIRE CLEARANCE EASEMENT
WM	WATER METER

LEGEND

- PROPERTY LINE
- CENTERLINE
- EASEMENT
- SS — UTILITY LINE–TYPE AS NOTED
- STREET LIGHT
- PG&E — UTILITY BOX–TYPE AS NOTED
- WM/GM — WATER/GAS METER
- WV — WATER VALVE
- CURB CATCH BASIN
- FIRE HYDRANT
- MH — MANHOLE–TYPE AS NOTED
- CO — SANITARY SEWER CLEANOUT
- PP — OH — POWER POLE W/ OVERHEAD WIRE
- BENCHMARK
- 200 — CONTOUR LINE
- MONUMENT
- TREE–TRUNK DIAMETER IN INCHES SPECIES NOTED WHEN KNOWN
- GUY WIRE

SURVEY BY OTHERS SHOWN FOR REFERENCE ONLY.

SEE SHEETS C0.0 AND C0.1 FOR NOTES AND LEGENDS

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1330 ENCHANTED WAY
SAN MATEO COUNTY, CALIFORNIA

SAN MATEO

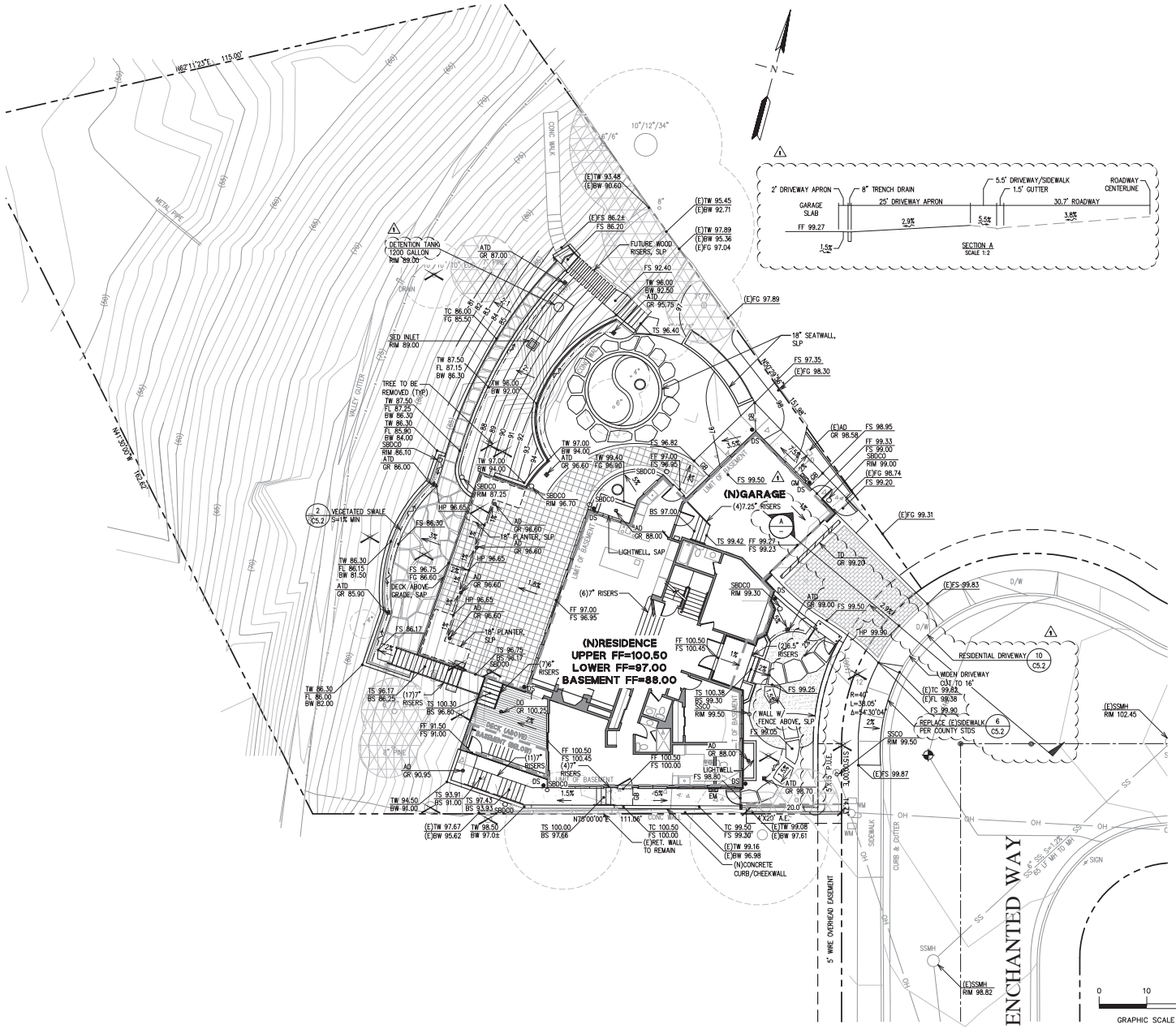
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Date 08/21/2020
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GRADING NOTES:

1. PROVIDE POSITIVE SURFACE DRAINAGE AWAY FROM ALL STRUCTURES BY SLOPING THE FINISHED GROUND SURFACE AT 5% FOR A DISTANCE OF 8', WHERE POSSIBLE, UNLESS OTHERWISE NOTED ON THE PLANS. SLOPE PORCHES, LANDINGS AND TERRACES 2% (1/4" PER FOOT) AWAY FROM, STRUCTURES UNLESS OTHERWISE NOTED ON PLANS.
2. CONTRACTOR TO VERIFY ALL CONTROLLING DIMENSIONS WITH ARCHITECTURAL PLANS.
3. CONTRACTOR SHALL DETERMINE EARTHWORK QUANTITIES BASED ON THE TOPOGRAPHIC SURVEY, THE GEOTECHNICAL INVESTIGATION AND THE PROPOSED SURFACE THICKNESS AND BASE THE BID ACCORDINGLY. IT IS THE CONTRACTORS RESPONSIBILITY TO CONFIRM IF A SEPARATE DEMOLITION CONTRACT HAS BEEN ISSUED TO TAKE THE SITE FROM THE WAY IT IS AT THE TIME OF THE BID TO THE CONDITIONS DESCRIBED IN THESE DOCUMENTS. ANY DIFFERENCES BETWEEN THE STATE IN WHICH THE SITE IS DELIVERED TO THE CONTRACTOR AND THESE DOCUMENTS SHOULD BE NOTED TO THE ENGINEER/ARCHITECT.
4. ALL FILL SHALL BE COMPACTED PER THE GEOTECHNICAL REPORT AND THE CONTRACTOR SHALL COORDINATE AND COMPLY WITH THE CLIENT'S GEOTECHNICAL ENGINEER TO TAKE THE APPROPRIATE TESTS TO VERIFY COMPACTION VALUES.
5. IMPORT SOILS SHOULD MEET THE REQUIREMENTS OF THE SOILS REPORT AND SPECIFICATIONS.
6. COORDINATE THE PLACEMENT OF ALL SLEEVES FOR LANDSCAPE IRRIGATION (WATER AND CONTROL WIRING) AND SITE LIGHTING PRIOR TO THE PLACEMENT OF ANY ASPHALT, BASEROCK OR CONCRETE SURFACING. SEE LANDSCAPING AND SITE ELECTRICAL DRAWINGS.
7. DO NOT ADJUST GRADES ON THIS PLAN WITHOUT PRIOR WRITTEN APPROVAL OF THE ENGINEER/ARCHITECT.
8. SITE STRIPPINGS THAT CONTAIN ONLY ORGANIC MATERIAL (NO DEBRIS TRASH, BROKEN CONC. OR ROCKS GREATER THAN 1" IN DIAMETER) MAY BE USED IN LANDSCAPE AREAS, EXCEPT FOR AREAS IDENTIFIED AS IMPORT TOP SOIL BY THE LANDSCAPE DRAWINGS. EXCESS STRIPPINGS SHALL BE REMOVED FROM SITE.
9. ROUGH GRADING TO BE WITHIN 0.1' AND FINISH GRADES ARE TO BE WITHIN 0.05', HOWEVER CONTRACTOR SHALL NOT CONSTRUCT ANY IMPROVEMENTS THAT WILL CAUSE WATER TO POND OR NOT MEET REQUIREMENTS IN GRADING NOTE #1.
10. THE CONTRACTOR SHALL EXERCISE EXTREME CARE TO CONFORM TO THE LINES, GRADES, SECTIONS, AND DIMENSIONS AS SET FORTH ON THESE PLANS. ALL GRADED AREAS SHALL CONFORM TO THE VERTICAL ELEVATIONS SHOWN WITH A TOLERANCE OF ONE-TENTH OF A FOOT. WHERE GRADED AREAS DO NOT CONFORM TO THESE TOLERANCES, THE CONTRACTORS SHALL BE REQUIRED TO DO CORRECTIVE GRADING, AT NO EXTRA COST TO THE CLIENT.
11. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM THE GROUND ELEVATIONS AND OVERALL TOPOGRAPHY OF THE SITE PRIOR TO THE START OF CONSTRUCTION AS TO THE ACCURACY BETWEEN THE WORK SET FORTH ON THESE PLANS AND THE WORK IN THE FIELD. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND CIVIL ENGINEER IN WRITING PRIOR TO START OF CONSTRUCTION WHICH MAY REQUIRE CHANGES IN DESIGN AND/OR AFFECT THE EARTHWORK QUANTITIES.
12. TRENCHES SHALL NOT BE LEFT OPEN OVERNIGHT IN EXISTING PUBLIC STREET AREAS. CONTRACTOR SHALL BACKFILL TRENCHES, OR PLACE STEEL PLATING WITH ADEQUATE CUTBACK TO PREVENT SHIFTING OF STEEL PLATE AND/OR HOT-MIX ASPHALT REQUIRED TO PROTECT OPEN TRENCHES AT THE END OF THE WORKING DAY.
13. DISTURBED AREAS OF THE SITE SHOULD BE STABILIZED DURING THE RAINY SEASON USING STRAW MULCH (EC-6) OR WOOD MULCHING (EC-8).
14. PERMANENT EROSION CONTROL SHALL BE PROVIDED BY LANDSCAPING SUCH AS SHRUBS, SOD OR MULCH. LANDSCAPE DESIGN MAY BE SUBJECT TO CHANGE.

PAVEMENT/HATCH LEGEND:

SEE GEOTECHNICAL REPORT BY MICHELUCCI AND ASSOCIATES, INC. DATED AUGUST 9, 2016 FOR EXACT RECOMMENDATION FOR GRADING OPERATIONS AND OVEREXCAVATION ON-SITE.

	WALKWAY CONCRETE	4" CONCRETE W/#4 BARS 12" O.C. – EACH WAY OVER 8" OF CALTRANS CLASS 2 BASE ROCK. SEE LANDSCAPE PLANS FOR SCORE JOINTS.
	DRIVEWAY PAVER	SALVAGE AND REUSE EXISTING INTERLOCKING CONCRETE PAVERS, SEE LANDSCAPE PLAN
	STONE PAVER	SEE LANDSCAPE PLAN
	DECK	SEE ARCHITECTURAL PLAN
	TREE PROTECTION	SEE SHEET C4.1 FOR DETAIL

PAVEMENT NOTES:

1. PAVEMENT SECTION TO BE APPROVED BY GEOTECHNICAL ENGINEER
2. COLOR AND FINISH OF CONCRETE TO BE SPECIFIED BY LANDSCAPE ARCHITECT.
3. SEE LANDSCAPE PLANS FOR ALL WALKWAY FINISHES AND MATERIALS

SEE SHEETS C0.0 AND C0.1 FOR NOTES AND LEGENDS

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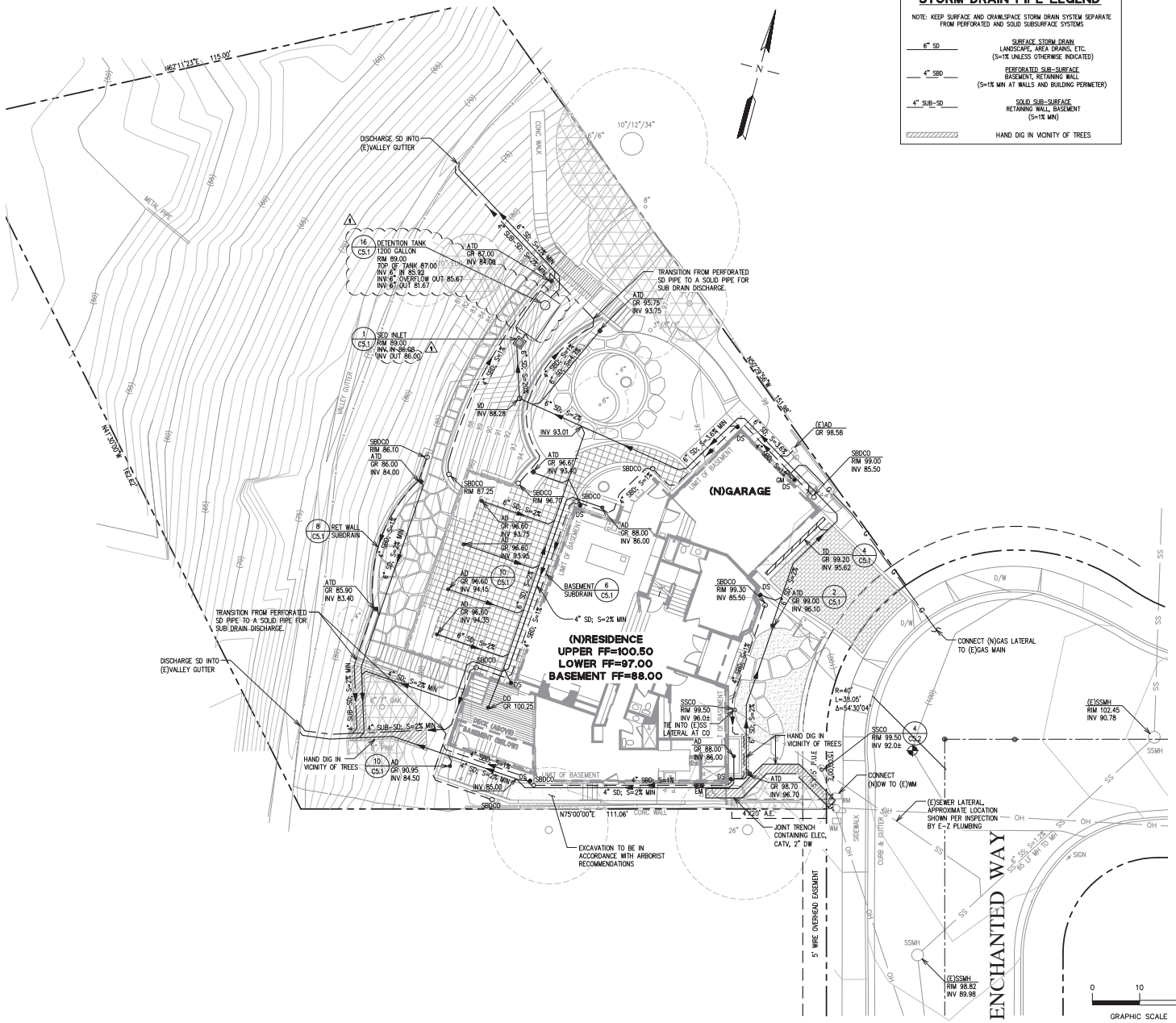
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STORM DRAIN PIPE LEGEND

NOTE: KEEP SURFACE AND CRAWLSPACE STORM DRAIN SYSTEM SEPARATE FROM PERFORATED AND SOLID SUBSURFACE SYSTEMS

6" SD	SURFACE STORM DRAIN LANDSCAPE, AREA DRAINS, ETC. (S=1% UNLESS OTHERWISE INDICATED)
4" SBD	PERFORATED SUB-SURFACE BASEMENT, RETAINING WALL (S=1% MIN AT WALLS AND BUILDING PERIMETER)
4" SUB-SD	SOLID SUB-SURFACE RETAINING WALL, BASEMENT (S=1% MIN)
	HAND DIG IN VICINITY OF TREES

STORM DRAIN NOTES:

1. PRIVATE STORM DRAIN LINE 4-INCH THROUGH 12-INCH WITH A MINIMUM OF TWO (2) FEET OF COVER IN NON-TRAFFIC AREAS SHALL BE POLYVINYL CHLORIDE (PVC) SDR 35 WHITE PIPE AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION D 3034-73 WITH GLUED JOINTS. ALL DIRECTION CHANGES SHALL BE MADE WITH WYE CONNECTIONS, 22.5° ELBOWS, 45° ELBOWS OR LONG SWEEP ELBOWS, 90° ELBOWS AND TEE's ARE PROHIBITED.
2. PRIVATE STORM DRAIN LINE 6-INCH THROUGH 12-INCH WITH LESS THAN THREE (3) FEET OF COVER IN VEHICULAR TRAFFIC AREAS SHALL BE POLYVINYL CHLORIDE (PVC) C900, RATED FOR 150 PSI CLASS PIPE. PROVIDE AND INSTALL "STORM DRAIN" MARKER TAPE FOR THE ENTIRE LENGTH OF PIPE TRENCH IN ACCORDANCE WITH TOWN STANDARDS. ALL DIRECTION CHANGES SHALL BE MADE WITH WYE CONNECTIONS, OBTUSE ELBOWS OR LONG SWEEP ELBOWS, 90° ELBOWS AND TEE's ARE PROHIBITED.
3. ALL AREA DRAINS AND CATCH BASINS GRATES WITHIN PEDESTRIAN ACCESSIBLE AREAS SHALL MEET ADA REQUIREMENTS.
4. ALL TRENCHES SHALL BE BACK FILLED PER THE SPECIFICATIONS WITH APPROPRIATE TESTS BY THE GEOTECHNICAL ENGINEER TO VERIFY COMPACTION VALUES.
5. FOR GRAVITY FLOW SYSTEMS CONTRACTOR SHALL VERIFY (POTHOLE IF NECESSARY) SIZE, MATERIAL, LOCATION AND DEPTH OF ALL SYSTEMS THAT ARE TO BE CONNECTED TO OR CROSSED PRIOR TO THE TRENCHING OR INSTALLATION OF ANY GRAVITY FLOW SYSTEM.
6. DRAINS SHOWN ON CIVIL PLANS ARE NOT INTENDED TO BE THE FINAL NUMBER AND LOCATION OF ALL DRAINS. PLACEMENT AND NUMBER OF LANDSCAPING DRAINS ARE HIGHLY DEPENDENT ON GROUND COVER TYPE AND PLANT MATERIAL. CONTRACTOR SHALL ADD ADDITIONAL AREA DRAINS AS NEEDED AND AS DIRECTED BY THE LANDSCAPE ARCHITECT OR CIVIL ENGINEER.
7. INSTALL SEPARATE SUB-DRAIN SYSTEM BEHIND RETAINING WALLS PER GEOTECHNICAL REPORT AND CONNECT TO STORM DRAIN SYSTEM AS SHOWN ON PLANS.
8. ALL DOWN SPOUTS SHALL BE CONNECTED TO THE STORM DRAIN SYSTEM WITH 4" PVC SDR 35 PIPE OR EQUIVALENT UNLESS OTHERWISE NOTED. SEE ARCHITECTURAL PLANS FOR EXACT LOCATION OF THE DOWN SPOUTS.

SANITARY SEWER NOTES:

1. ALL SEWER WORK SHALL BE IN CONFORMANCE WITH THE CITY OR APPROPRIATE SANITARY SEWER DISTRICT.
2. PRIVATE SANITARY SEWER SERVICE LINE 4-INCH THROUGH 8-INCH SHALL BE POLYVINYL CHLORIDE (PVC) SDR 26 GREEN SEWER PIPE AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION D 3034-73 WITH GLUED JOINTS. ALL DIRECTION CHANGES SHALL BE MADE WITH WYE CONNECTIONS, 22.5° ELBOWS or 45° ELBOWS, 90° ELBOWS AND TEE's ARE PROHIBITED. PUBLIC SANITARY SEWER LINES AND MAINS SHALL BE PER TOWN STANDARDS.
3. ALL LATERALS SHALL HAVE A CLEANOUT AT FACE OF BUILDING AND AS SHOWN ON PLANS PER THE CITY STANDARD OR APPROPRIATE SANITARY SEWER DISTRICT.
4. IF (E) SEWER LATERAL IS TO BE USED, CONTRACTOR SHALL PERFORM PRESSURE TEST ON (E) SEWER LATERAL, AND SHALL PERFORM ANY NEEDED REPAIRS. EXTEND (N) OR (E) SEWER LINE AS SHOWN ON THE PLANS SLOPED AT 2% MINIMUM. INSTALL CLEANOUT AT FACE OF BUILDING AND AT PROPERTY LINE.

WATER SYSTEM NOTES:

1. MAINTAIN WATER LINES 10' AWAY FROM SANITARY SEWER LINES.
2. WHERE WATER LINES HAVE TO CROSS SANITARY SEWER LINES, DO SO AT A 90 DEGREE ANGLE AND WATER LINES SHALL BE MINIMUM OF 12" ABOVE TOP OF SANITARY SEWER LINES.
3. WATER LINES ARE SHOWN SCHEMATICALLY, CONTRACTOR SHALL IDENTIFY EACH ANGLE AND/OR BEND THAT MAY BE REQUIRED TO ACCOMPLISH THE INTENDED DESIGN.
4. ALL WATER SERVICE CONNECTIONS SHALL BE INSTALLED IN ACCORDANCE WITH THE TOWN OR APPLICABLE WATER DISTRICT STANDARDS.
5. CONNECTIONS TO THE EXISTING WATER MAIN SHALL BE APPROVED BY THE TOWN. THE CONTRACTOR SHALL PAY THE ACTUAL COSTS OF CONSTRUCTION. THE CONTRACTOR SHALL PERFORM ALL EXCAVATION, PREPARE THE SITE, FURNISH ALL MATERIALS, INSTALL TAPPING TEE, VALVE AND ALL THRUST BLOCKS, BACKFILL, RESTORE THE SURFACE, AND CLEAN UP. THE TOWN WILL PROVIDE THE CLIENT WITH A LIST OF APPROVED CONTRACTORS FOR MAKING WET TAPS. NONMETALLIC WATER LINES SHALL HAVE TRACER WIRES INSTALLED.
6. ALL WATER LINES SHALL BE INSTALLED WITH 36" MINIMUM COVER.
7. CONTRACTOR SHALL SIZE AND INSTALL ALL NEW DESIGN BUILD DOMESTIC IRRIGATION AND FIRE WATER LINE(S) IN ACCORDANCE WITH THE LATEST EDITION OF THE UNIFORM/CALIFORNIA PLUMBING AND FIRE CODES. (ALL FIXTURE UNIT COUNTS SHALL BE REVIEWED AND APPROVED BY THE TOWN'S BUILDING AND/OR WATER DEPARTMENT PRIOR TO CONSTRUCTION.)
8. CONCRETE THRUST BLOCKS SHALL BE INSTALLED AT ALL TEES, CROSSES, BENDS (HORIZONTAL AND VERTICAL), AT SIZE CHANGES AND AT FIRE HYDRANTS PER TOWN STANDARD, AWWA C600, SECTION 3.8 UNLESS NOTED OTHERWISE.
9. ALL ON AND OFF-SITE LANDSCAPE IRRIGATION SYSTEMS SHALL BE IN ACCORDANCE WITH THE LANDSCAPE ARCHITECTURAL PLANS AND SPECIFICATIONS AND SHALL BE CONNECTED TO THE EXISTING AND/OR NEW WATER SYSTEM AND METERED ACCORDINGLY.
10. INSTALL TOWN APPROVED PRESSURE REGULATOR AND REDUCED BACKFLOW PREVENTOR ON WATER LINE AT ENTRANCE TO BUILDING. REFERENCE PLUMBING PLANS FOR MORE DETAIL.

GRAPHIC SCALE 0 10 20

SEE SHEETS C0.0 AND C0.1 FOR NOTES AND LEGENDS

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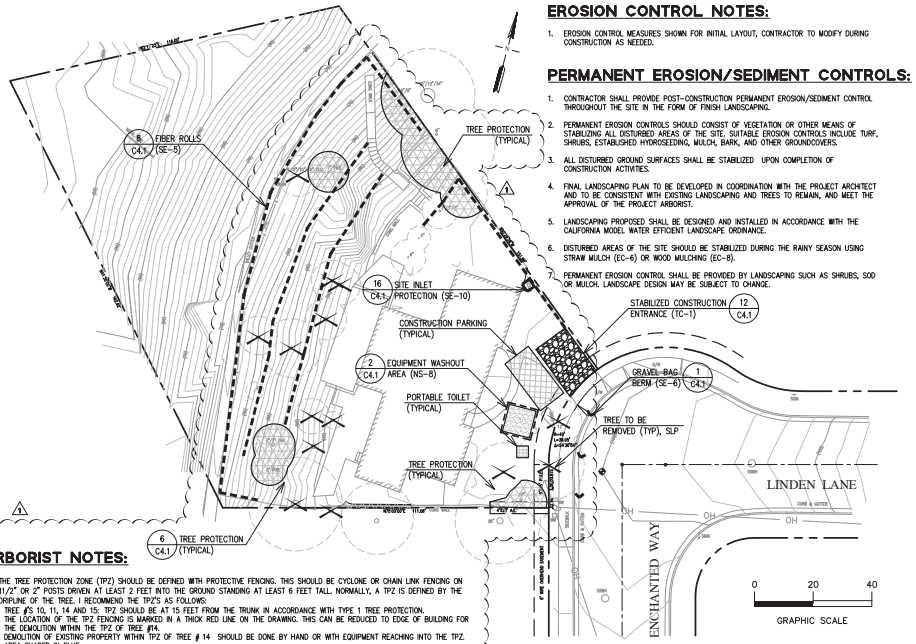
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ARBORIST NOTES:

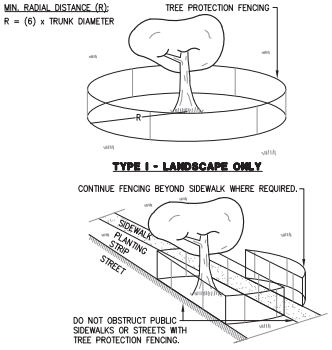
1. THE TREE PROTECTION ZONE (TPZ) SHOULD BE DEFINED WITH PROTECTIVE FENCING. THIS SHOULD BE CYCLONE OR CHAIN LINK FENCING ON 11/2" OR 2" POSTS DRIVEN AT LEAST 2 FEET INTO THE GROUND STANDING AT LEAST 6 FEET TALL. NORMALLY, A TPZ IS DEFINED BY THE DRIPLINE OF THE TREE. I RECOMMEND THE TPZ'S AS FOLLOWS:
   A. TREE #'S 10, 11, 14 AND 15: TPZ SHOULD BE AT 15 FEET FROM THE TRUNK IN ACCORDANCE WITH TYPE 1 TREE PROTECTION.
   B. THE LOCATION OF THE TPZ FENCING IS MARKED IN A THICK RED LINE ON THE DRAWING. THIS CAN BE REDUCED TO EDGE OF BUILDING FOR THE DEMOLITION WITHIN THE TPZ OF TREE #14.
   C. DEMOLITION OF EXISTING PROPERTY WITHIN TPZ OF TREE # 14 SHOULD BE DONE BY HAND OR WITH EQUIPMENT REACHING INTO THE TPZ. AREA SHADED IN BLUE.
   D. AFTER DEMOLITION THE TPZS FOR TREE #S 14 AND 15 CAN BE REDUCED TO ACCOMMODATE THE NEW CONSTRUCTION.
   E. EXCAVATION FOR THE FOUNDATION OF THE NEW HOME AND ADU WITHIN TPZS OF TREE #S 14 AND 15 SHOULD BE DONE BY HAND.
   F. TREE #S 12, 17 AND 19: TPZ SHOULD BE AT 10 FEET FROM THE TRUNK IN ACCORDANCE WITH TYPE 1 TREE PROTECTION AS OUTLINED.
   G. THE TPZ FOR TREE # 17 CAN BE REDUCED TO ACCOMMODATE THE PROPOSED NEW CONSTRUCTION.
2. ANY PRUNING AND MAINTENANCE OF THE TREE SHALL BE CARRIED OUT BEFORE CONSTRUCTION BEGINS. THIS SHOULD ALLOW FOR ANY CLEARANCE REQUIREMENTS FOR BOTH THE NEW STRUCTURE AND ANY CONSTRUCTION MACHINERY. THIS WILL ELIMINATE THE POSSIBILITY OF DAMAGE DURING CONSTRUCTION. THE PRUNING SHOULD BE CARRIED OUT BY AN ARBORIST, NOT BY CONSTRUCTION PERSONNEL. NO LIMBS GREATER THAN 4" IN DIAMETER SHALL BE REMOVED.
3. ANY EXCAVATION IN GROUND WHERE THERE IS A POTENTIAL TO DAMAGE ROOTS OF 1" OF MORE IN DIAMETER SHOULD BE CAREFULLY HAND DUG. WHERE POSSIBLE, ROOTS SHOULD BE DUG AROUND RATHER THAN CUT.
4. IF ROOTS ARE BROKEN, EVERY EFFORT SHOULD BE MADE TO REMOVE THE DAMAGED AREA AND CUT IT BACK TO ITS CLOSEST LATERAL ROOT. A CLEAN CUT SHOULD BE MADE THE A SAW OR PRUNERS. THIS WILL PREVENT ANY INFECTION FROM DAMAGED ROOTS SPREADING THROUGHOUT THE ROOT SYSTEM AND INTO THE TREE.
5. DO NOT:
   A. ALLOW RUN OFF OR SPILLAGE OF DAMAGING MATERIALS INTO THE AREA BELOW ANY TREE CANOPY.
   B. STORE MATERIALS, STOCKPILE SOIL, PARK OR DRIVE VEHICLES WITHIN THE TPZ OF THE TREE.
   C. CUT, BREAK, SKIN OR BRUISE ROOTS, BRANCHES OR TRUNK WITHOUT FIRST OBTAINING PERMISSION FROM THE CITY ARBORIST.
   D. ALLOW FIRES UNDER ANY ADJACENT TREES.
   E. DISCHARGE EXHAUST INTO FOLIAGE.
   F. SECURE CABLE, CHAIN OR ROPE TO TREES OR SHRUBS.
   G. APPLY SOIL STERILANTS UNDER PAVEMENT NEAR EXISTING TREES.
6. WHERE ROOTS ARE EXPOSED, THEY SHOULD BE KEPT COVERED WITH THE NATIVE SOIL OR FOUR LAYERS OF WETTED, UNTREATED BURLAP. ROOTS WILL DRY OUT AND DIE IF LEFT EXPOSED TO THE AIR FOR TOO LONG.
7. ROUTE PIPES INTO ALTERNATE LOCATIONS TO AVOID CONFLICT WITH ROOTS.
8. WHERE IT IS NOT POSSIBLE TO REROUTE PIPES OR TRENCHES, THE CONTRACTOR IS TO BORE BENEATH THE DRIPLINE OF THE TREE. THE BORING SHALL TAKE PLACE NO LESS THAN 3 FEET BELOW THE SURFACE OF THE SOIL IN ORDER TO AVOID ENCOUNTERING "FEEDER" ROOTS.
9. COMPACTION OF THE SOIL WITHIN THE DRIPLINE SHALL BE KEPT TO A MINIMUM. IF ACCESS IS REQUIRED TO GO THROUGH TPZ OF A PROTECTED TREE, THE AREA WITHIN THE TPZ SHOULD BE PROTECTED FROM COMPACTION EITHER WITH STEEL PLATES OR WITH 4" OF WOOD CHIP OVERLAID WITH PLYWOOD.
10. ANY DAMAGE DUE TO CONSTRUCTION ACTIVITIES SHALL BE REPORTED TO THE PROJECT ARBORIST OR CITY ARBORIST WITHIN 6 HOURS SO THAT REMEDIAL ACTION CAN BE TAKEN.
11. ENSURE UPON COMPLETION OF THE PROJECT THAT THE ORIGINAL GROUND LEVEL IS RESTORED.

EROSION CONTROL NOTES:

1. EROSION CONTROL MEASURES SHOWN FOR INITIAL LAYOUT, CONTRACTOR TO MODIFY DURING CONSTRUCTION AS NEEDED.

PERMANENT EROSION/SEDIMENT CONTROLS:

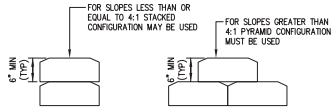
1. CONTRACTOR SHALL PROVIDE POST-CONSTRUCTION PERMANENT EROSION/SEDIMENT CONTROL THROUGHOUT THE SITE IN THE FORM OF FINISH LANDSCAPING.
2. PERMANENT EROSION CONTROLS SHOULD CONSIST OF VEGETATION OR OTHER MEANS OF STABILIZING ALL DISTURBED AREAS OF THE SITE. SUITABLE EROSION CONTROLS INCLUDE TURF, SHRUBS, ESTABLISHED HYDROSEEDING, MULCH, BARK, AND OTHER GROUNDCOVERS.
3. ALL DISTURBED GROUND SURFACES SHALL BE STABILIZED UPON COMPLETION OF CONSTRUCTION ACTIVITIES.
4. FINAL LANDSCAPING PLAN TO BE DEVELOPED IN COORDINATION WITH THE PROJECT ARCHITECT AND TO BE CONSISTENT WITH EXISTING LANDSCAPING AND TREES TO REMAIN, AND MEET THE APPROVAL OF THE PROJECT ARBORIST.
5. LANDSCAPING PROPOSED SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE CALIFORNIA MODEL WATER EFFICIENT LANDSCAPE ORDINANCE.
6. DISTURBED AREAS OF THE SITE SHOULD BE STABILIZED DURING THE RAINY SEASON USING STRAW MULCH (EC-6) OR WOOD MULCHING (EC-8).
7. PERMANENT EROSION CONTROL SHALL BE PROVIDED BY LANDSCAPING SUCH AS SHRUBS, SOD OR MULCH. LANDSCAPE DESIGN MAY BE SUBJECT TO CHANGE.



TREE PROTECTION NOTES:

1. TREE PROTECTION FENCING (TPF) SHALL BE SET A RADIAL DISTANCE (R) AT THE BASE OF THE TREE, OR EXTENDING TO THE LIMITS OF THE TREE DRIPLINE, WHICHEVER IS GREATER.
2. FENCING SHALL CONSIST OF 6 FT MIN. HEIGHT CHAIN LINK FENCE SET ON STEEL POSTS DRIVEN 2 FT INTO GROUND. SPACE FENCE POSTS TO 10 FT MIN. O.C.
3. FENCING MUST BE INSTALLED PRIOR TO ARRIVAL OF MATERIALS, VEHICLES, OR CONSTRUCTION EQUIPMENT.
4. ONCE INSTALLED, TPF MUST NOT BE MOVED, EVEN TEMPORARILY, UNLESS APPROVED BY A CERTIFIED ARBORIST, OR WHEN CONSTRUCTION IS COMPLETE.
5. NO STOCKPILING OF CONSTRUCTION MATERIALS OR SOIL IS ALLOWED WITHIN TPF.
6. NO GRADING, TRENCHING OR SURFACE SCRAPING IS ALLOWED INSIDE THE TPF OF PROTECTED TREES UNLESS SPECIFIED BY A CERTIFIED ARBORIST.
7. TRENCHING FOR UNDERGROUND UTILITIES WITHIN THE TPF MUST BE APPROVED BY A CERTIFIED ARBORIST AND BE COMPLETED BY HAND. NO ROOTS ENCOUNTERED SHALL BE CUT WITHOUT APPROVAL OF A CERTIFIED ARBORIST.
8. COVER ALL BARE SOILS WITHIN THE TPF. THIS MATERIAL MUST BE 6 TO 8 INCHES IN DEPTH AFTER SPREADING, WHICH MUST BE DONE BY HAND. COURSE WOOD CHIPS ARE PREFERRED.

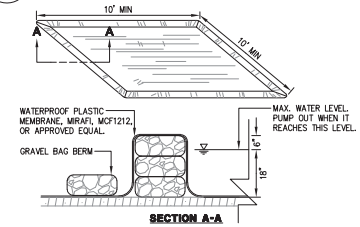
6 — TREE PROTECTION FENCING
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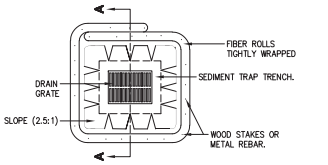
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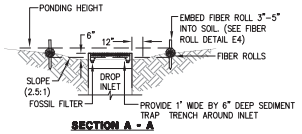
1. INSTALL AT LOCATIONS AS SHOWN ON EROSION CONTROL PLAN, AND IN ADDITION, PROTECT ALL EXISTING AND PROPOSED STORM DRAIN STRUCTURES WITH GRAVEL BAGS.

1 — GRAVEL BAG BERM
NTS



2 — EQUIPMENT WASHOUT AREA
NTS

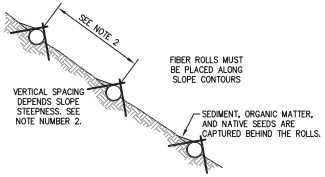


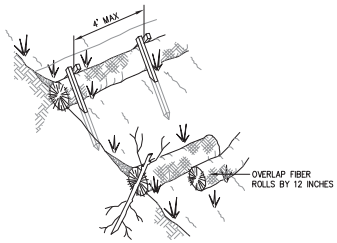


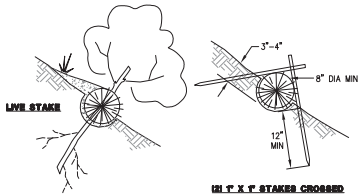
NOTES:

1. PLACE FIBER ROLLS AROUND THE INLET CONSISTENT WITH BASIN SEDIMENT BARRIER DETAIL ON THIS SHEET. FIBER ROLLS ARE TUBES MADE FROM STRAW BOUND W/ PLASTIC NETTING. THEY ARE APPROXIMATELY 8" DIA. AND 20 – 30 FT. LONG.
2. FIBER ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE FIBER ROLL IN A TRENCH, 3" – 5" DEEP, DUG ON CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND FIBER ROLL.
3. THE TOP OF THE STRUCTURE (PONDING HEIGHT) MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE TO PREVENT RUNOFF FROM BY-PASSING THE INLET. EXCAVATION OF A BASIN ADJACENT TO THE DROP INLET OR A TEMPORARY DIKE ON THE DOWNSLOPE OF THE STRUCTURE MAY BE NECESSARY.
4. FOSSIL FILTERS SHALL BE INCORPORATED IN ALL CATCH BASINS AND FIELD INLETS 24" AND LARGER AND SHALL BE INSTALLED PER MANUFACTURER SPECIFICATIONS. FOSSIL FILTERS TO BE SILT SACK OR APPROVED EQUIVALENT.

12 — SITE INLET PROTECTION
NTS



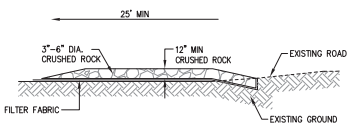




NOTES:

1. FIBER ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE ROLL IN A TRENCH, 3" TO 4" DEEP, DUG ON CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND ROLL.
1. VERTICAL SPACING FOR SLOPE INSTALLATIONS:
   SLOPE OF 2:1 OR GREATER = 10 FEET APART
   SLOPE BETWEEN 4:1 AND 2:1 = 15 FEET APART
   SLOPE OF 4:1 OR FLATTER = 20 FEET APART
2. INSPECT AND REPAIR FIBER ROLLS AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

8 — FIBER ROLL
NTS



NOTES:

1. PROVIDE A FANNED STABILIZED CONSTRUCTION ENTRANCE TO ACCOMMODATE THE TURNING RADIUS OF CONSTRUCTION EQUIPMENT ON AND OFF THE PUBLIC STREET.
2. INSTALL ALONG NEW DWY CORRIDOR FOR THE FULL PROPOSED WIDTH.

16 — TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
NTS

SEE SHEETS C0.0 AND C0.1 FOR NOTES AND LEGENDS

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SAN MATEO CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER — DAVID L. LEE — C 78436 — CIVIL — STATE OF CALIFORNIA

No.	Revisions	Date
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Date 08/21/2020
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Drawing Number: C4.1
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DRAWING NAME: J:\2017\170215_1330_Enchanted_Way\ENG\ws\sheets.dwg
PLOT DATE: 11-11-20 PLOTTED BY: leda

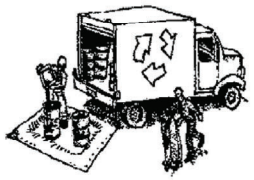
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SAN MATEO COUNTYWIDE
Water Pollution Prevention Program
Clean Water. Healthy Community.

Construction Best Management Practices (BMPs)

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

Materials & Waste Management



Non-Hazardous Materials

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

Hazardous Materials

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

Waste Management

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

Construction Entrances and Perimeter

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

Equipment Management & Spill Control



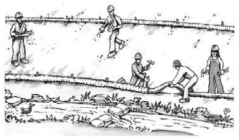
Maintenance and Parking

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

Spill Prevention and Control

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

Earthwork & Contaminated Soils



Erosion Control

- ❑ Schedule grading and excavation work for dry weather only.
- ❑ Stabilize all denuded areas, install and maintain temporary erosion controls (such as erosion control fabric or bonded fiber matrix) until vegetation is established.
- ❑ Seed or plant vegetation for erosion control on slopes or where construction is not immediately planned.

Sediment Control

- ❑ Protect storm drain inlets, gutters, ditches, and drainage courses with appropriate BMPs, such as gravel bags, fiber rolls, berms, etc.
- ❑ Prevent sediment from migrating offsite by installing and maintaining sediment controls, such as fiber rolls, silt fences, or sediment basins.
- ❑ Keep excavated soil on the site where it will not collect into the street.
- ❑ Transfer excavated materials to dump trucks on the site, not in the street.
- ❑ Contaminated Soils
- ❑ If any of the following conditions are observed, test for contamination and contact the Regional Water Quality Control Board:
  - Unusual soil conditions, discoloration, or odor.
  - Abandoned underground tanks.
  - Abandoned wells
  - Buried barrels, debris, or trash.

Paving/Asphalt Work

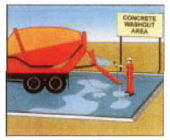


- ❑ Avoid paving and seal coating in wet weather, or when rain is forecast before fresh pavement will have time to cure.
- ❑ Cover storm drain inlets and manholes when applying seal coat, tack coat, slurry seal, fog seal, etc.
- ❑ Collect and recycle or appropriately dispose of excess abrasive gravel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

Sawcutting & Asphalt/Concrete Removal

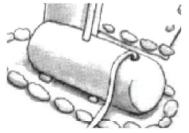
- ❑ Completely cover or barricade storm drain inlets when saw cutting. Use filter fabric, catch basin inlet filters, or gravel bags to keep slurry out of the storm drain system.
- ❑ Shovel, abosorb, or vacuum saw-cut slurry and dispose of all waste as soon as you are finished in one location or at the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

Concrete, Grout & Mortar Application



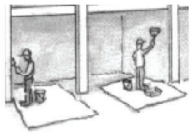
- ❑ Store concrete, grout and mortar under cover, on pallets and away from drainage areas. These materials must never reach a storm drain.
- ❑ Wash out concrete equipment/trucks offsite or in a contained area, so there is no discharge into the underlying soil or onto surrounding areas. Let concrete harden and dispose of as garbage.
- ❑ Collect the wash water from washing *exposed aggregate concrete and remove it* for appropriate disposal offsite.

Dewatering



- ❑ Effectively manage all run-on, all runoff within the site, and all runoff that discharges from the site. Divert run-on water from offsite away from all disturbed areas or otherwise ensure compliance.
- ❑ When dewatering, notify and obtain approval from the local municipality before discharging water to a street gutter or storm drain. Filtration or diversion through a basin, tank, or sediment trap may be required.
- ❑ In areas of known contamination, testing is required prior to reuse or discharge of groundwater. Consult with the Engineer to determine whether testing is required and how to interpret results. Contaminated groundwater must be treated or hauled off-site for proper disposal.

Painting & Paint Removal



Painting cleanup

- ❑ Never clean brushes or rinse paint containers into a street, gutter, storm drain, or surface waters.
- ❑ For water-based paints, paint out brushes to the extent possible. Rinse to the sanitary sewer once you have gained permission from the local wastewater treatment authority. Never pour paint down a drain.
- ❑ For oil-based paints, paint out brushes to the extent possible and clean with thinner or solvent in a proper container. Filter and reuse thinners and solvents. Dispose of residue and unusable thinner/solvents as hazardous waste.

Paint removal

- ❑ Chemical paint stripping residue and chips and dust from marine paints or paints containing lead or tributyltin must be disposed of as hazardous waste.
- ❑ Paint chips and dust from non-hazardous dry stripping and sand blasting may be swept up or collected in plastic drop cloths and disposed of as trash.

Landscape Materials



- ❑ Contain stockpiled landscaping materials by storing them under tarps when they are not actively being used.
- ❑ Stack erodible landscape material on pallets. Cover or store these materials when they are not actively being used or applied.
- ❑ Discontinue application of any erodible landscape material within 2 days before a forecast rain event or during wet weather.

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

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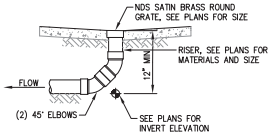
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Date 08/21/2020
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Drawn CW
Approved RH
Job No. 20170215

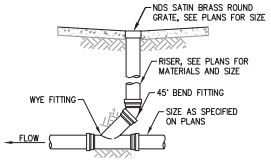
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END OF LINE

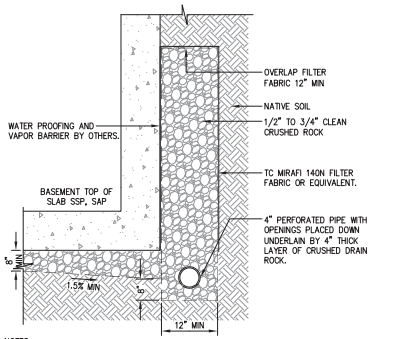


IN-LINE

NOTES:

1. GLUED FITTINGS MAY BE SUBSTITUTED FOR GASKETED FITTINGS AT THE OPTION OF THE INSTALLATION CONTRACTOR.

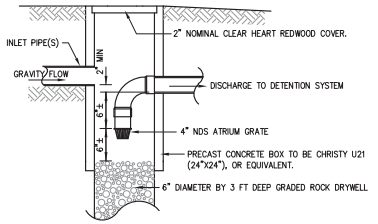
10 — **SMALL AREA DRAIN**
NTS



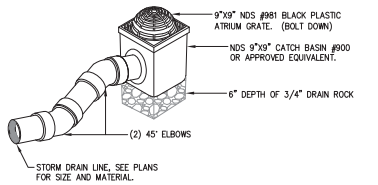
NOTES:

1. PROVIDE A MINIMUM SLOPE OF 1% ON SUB-DRAIN PIPE. SEE PLANS FOR CLEANOUT LOCATIONS AND INVERT ELEVATIONS.
2. PLACE PIPE IN A MINIMUM 60" DEEP BY 12" WIDE TRENCH.
3. SEE GEOTECHNICAL REPORT FOR ALL COMPACTION RECOMMENDATIONS. GEOTECHNICAL ENGINEER SHALL INSPECT AND APPROVE THE FINAL INSTALLATION OF THE SUBDRAIN SYSTEM.
4. SEE WATERPROOFING PLANS FOR ADDITIONAL INFORMATION REGARDING VAPOR BARRIER AND BUILDING WATERPROOFING.
5. SEE STRUCTURAL PLANS FOR BASEMENT SLAB, FOOTING, AND PIER DESIGN.
6. THE SUBGRADE SOIL BENEATH THE MAT SHOULD BE SLOPED AT AN INCLINATION OF 1.5% MINIMUM TOWARD PERIMETER SUBDRAIN TRENCH.
7. 4" PERFORATED PIPE TO BE SDR 35 OR BETTER.

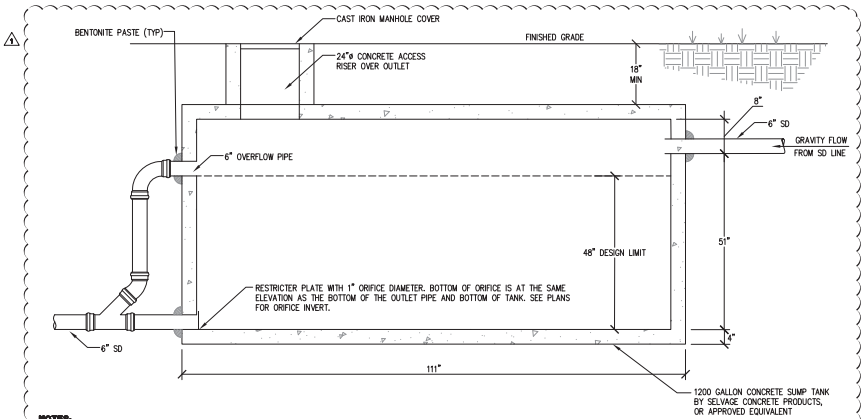
6 — **BASEMENT SUBDRAIN**
NTS



1 — **SEDIMENTATION INLET**
NTS



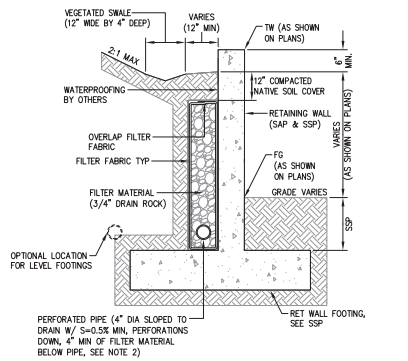
2 — **9'x9' ATRIUM DRIAN**
NTS



NOTES:

1. PROVIDE BENTONITE PASTE AT ALL PIPE CONNECTIONS TO TANK.
2. CONTRACTOR SHALL COORDINATE LOCATION OF DETENTION TANK WITH PROJECT ARCHITECT PRIOR TO CONSTRUCTION AND FIELD VERIFY ACTUAL BASE ELEVATION BASED ON FINAL FIELD CONDITIONS.

16 — **1200 GALLON DETENTION TANK**
NTS

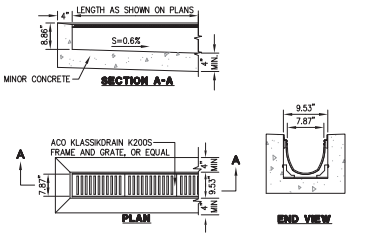


TYPICAL SECTION

NOTES:

1. REFER TO PROJECT GEOTECHNICAL REPORT REGARDING SPECIFIC MATERIALS AND INSTALLATION REQUIREMENTS FOR RETAINING WALL SUBDRAIN SYSTEM.
2. SLOPE SUBDRAIN PIPE IN SAME DIRECTION/DOWNHILL AS WALL FOOTING. (IF A STEPPED FOOTING IS CONSTRUCTED INSTALL SUBDRAIN PIPE ON THE SIDE/END OF THE FOOTING WITH APPROPRIATE DRAIN ROCK WRAPPED IN FILTER FABRIC AS DIRECTED IN THE FIELD BY THE PROJECT GEOTECHNICAL ENGINEER.)

8 — **RETAINING WALL SUBDRAIN**
NTS



NOTES:

1. ACO KLASSIKDRAIN 0.6% SLOPED CHANNELS IN METER LENGTHS AND 30 DEPTHS WHICH CONNECT TO CREATE CONTINUOUSLY SLOPING RUN. HALF METER CHANNELS AND NEUTRAL SLOPING CHANNELS ARE ALSO AVAILABLE. INSTALL PER MANUFACTURERS RECOMMENDATIONS.
2. CONTRACTOR SHALL PROVIDE TRAFFIC RATED GRATES IN VEHICULAR LOADING AREAS.

4 — **8" WIDE TRENCH DRAIN**
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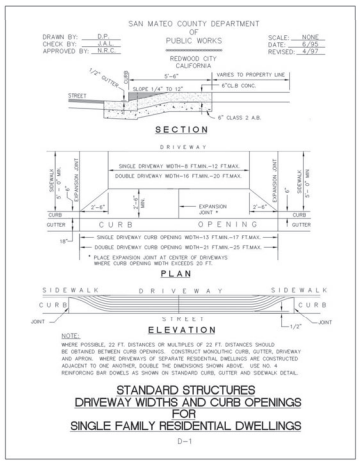
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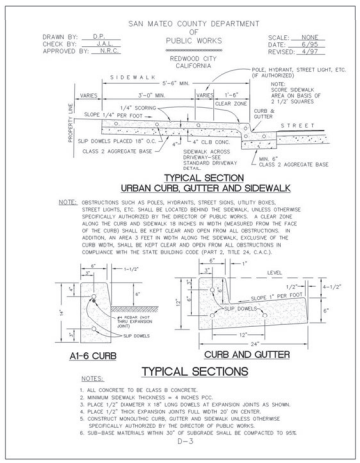
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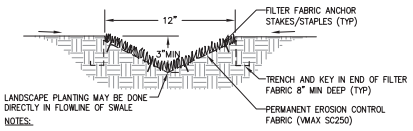
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10 — RESIDENTIAL DRIVEWAY [SMC D-1]
NTS

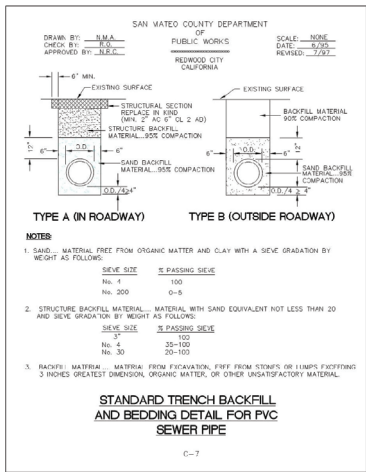


6 — CURB, GUTTER, SIDEWALK [SMC D-3]
NTS



NOTES:
1. ALL GRASS SWALES SHALL BE LINED WITH A PERMANENT EROSION CONTROL FABRIC SUCH AS VMAX SC250 OR EQUIVALENT.
2. THE CONTRACTOR SHALL HANDLE, STORE, PLACE AND INSTALL/ANCHOR THE PERMANENT EROSION CONTROL FABRIC IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND INSTALLATION SPECIFICATIONS AND DETAILS.
3. THE CONTRACTOR SHALL INSPECT, MAINTAIN AND REPAIR VEGETATED SWALE DIMENSIONS, SLOPE AND EROSION CONTROL FABRIC IN ACCORDANCE WITH THE EROSION CONTROL PLAN NOTES AND RECOMMENDATIONS.

2 — VEGETATED SWALE
NTS



NOTES:
1. SAND... MATERIAL FREE FROM ORGANIC MATTER AND CLAY WITH A SIEVE GRADATION BY WEIGHT AS FOLLOWS:

SIEVE SIZE	% PASSING SIEVE
No. 4	100
No. 200	0–5

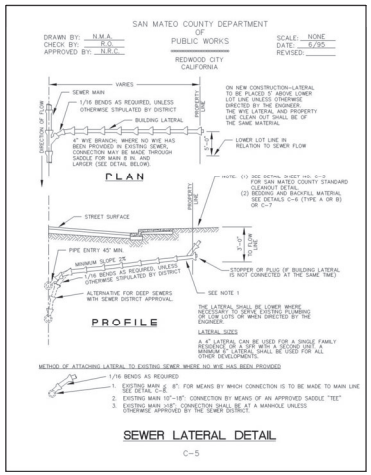
2. STRUCTURE BACKFILL MATERIAL... MATERIAL WITH SAND EQUIVALENT NOT LESS THAN 20 AND SIEVE GRADATION BY WEIGHT AS FOLLOWS:

SIEVE SIZE	% PASSING SIEVE
1"	100
No. 4	35–100
No. 30	20–100

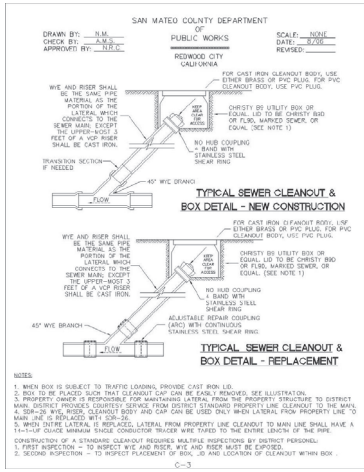
3. BACKFILL MATERIAL... MATERIAL FROM EXCAVATION, FREE FROM STONES OR LUMPS EXCEEDING 3 INCHES GREATEST DIMENSION, ORGANIC MATTER, OR OTHER UNSATISFACTORY MATERIAL.

STANDARD TRENCH BACKFILL AND BEDDING DETAIL FOR PVC SEWER PIPE
C-7

12 — STANDARD SEWER TRENCH [SMC C-7]
NTS



8 — SANITARY SEWER LATERAL [SMC C-5]
NTS



4 — SANITARY SEWER CLEANOUT [SMC C-3]
NTS

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DETAIL SHEET
QIU/SHEN RESIDENCE
1330 ENCHANTED WAY
SAN MATEO COUNTY CALIFORNIA

SAN MATEO

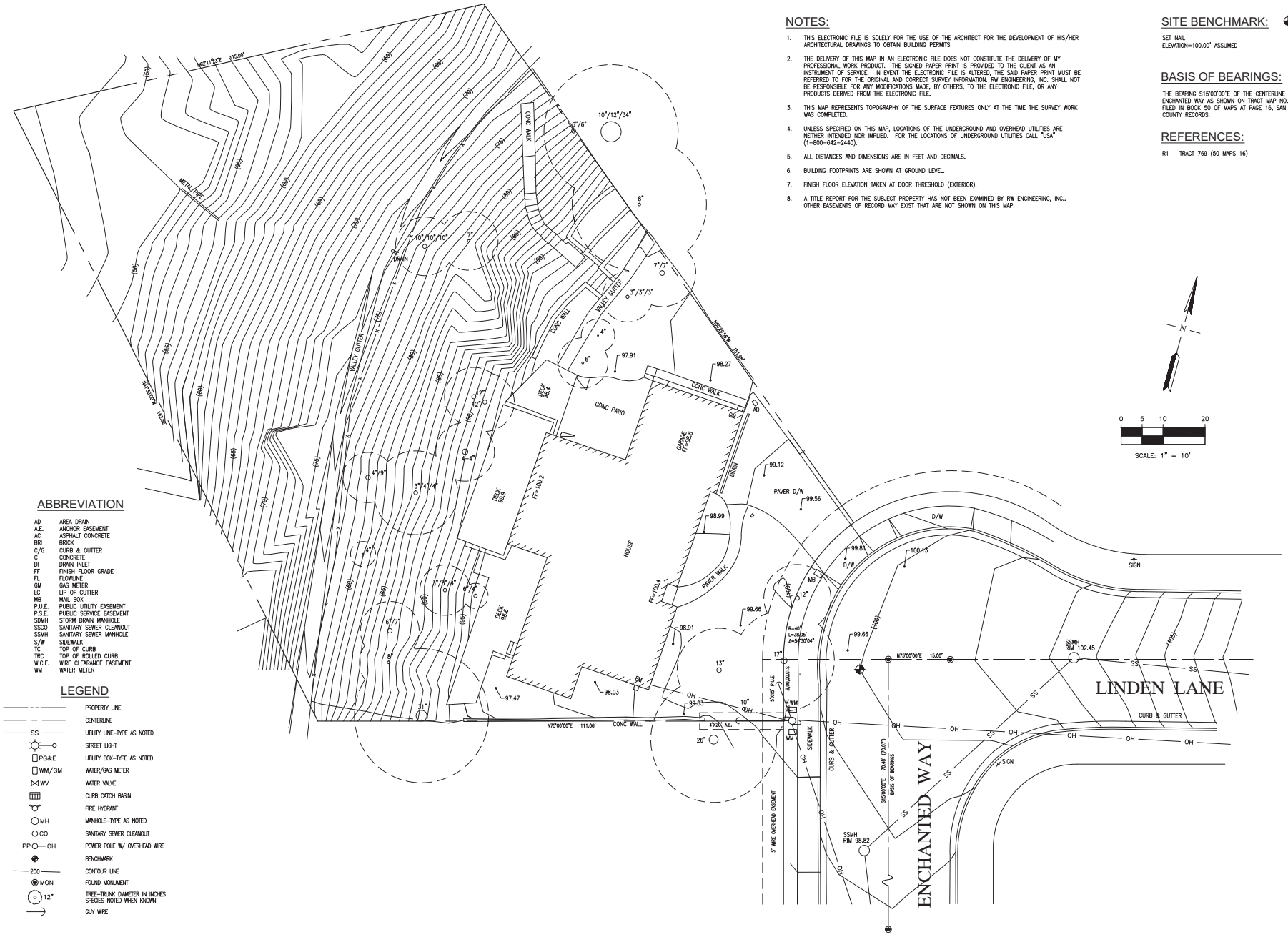
REGISTERED PROFESSIONAL ENGINEER — DAVID L. LEE — C 78436 — CIVIL — STATE OF CALIFORNIA

No.	Revisions	Date
1	PLAN CHECK COMMENTS	10/21/2020

Date 08/21/2020
Scale AS SHOWN
Design DJL
Drawn CW
Approved RH
Job No. 20170215

Drawing Number:
C5.2
OF

DRAWING NAME: J:\2017\170215_1330_Enchanted_Way\ENG\ewsheets.dwg
PLOT DATE: 11-11-20 PLOTTED BY: leda



NOTES:

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2. THE DELIVERY OF THIS MAP IN AN ELECTRONIC FILE DOES NOT CONSTITUTE THE DELIVERY OF MY PROFESSIONAL WORK PRODUCT. THE SIGNED PAPER PRINT IS PROVIDED TO THE CLIENT AS AN INSTRUMENT OF SERVICE. IN EVENT THE ELECTRONIC FILE IS ALTERED, THE SAID PAPER PRINT MUST BE REFERRED TO FOR THE ORIGINAL AND CORRECT SURVEY INFORMATION. RW ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR ANY MODIFICATIONS MADE, BY OTHERS, TO THE ELECTRONIC FILE, OR ANY PRODUCTS DERIVED FROM THE ELECTRONIC FILE.
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6. BUILDING FOOTPRINTS ARE SHOWN AT GROUND LEVEL.
7. FINISH FLOOR ELEVATION TAKEN AT DOOR THRESHOLD (EXTERIOR).
8. A TITLE REPORT FOR THE SUBJECT PROPERTY HAS NOT BEEN EXAMINED BY RW ENGINEERING, INC.. OTHER EASEMENTS OF RECORD MAY EXIST THAT ARE NOT SHOWN ON THIS MAP.

SITE BENCHMARK:

SET NAIL
ELEVATION=100.00' ASSUMED

BASIS OF BEARINGS:

THE BEARING S15°00'00"E OF THE CENTERLINE OF ENCHANTED WAY AS SHOWN ON TRACT MAP NO. 769 FILED IN BOOK 50 OF MAPS AT PAGE 16, SAN MATEO COUNTY RECORDS.

REFERENCES:

R1 TRACT 769 (50 MAPS 16)

ABBREVIATION

AD	AREA DRAIN
A.E.	ANCHOR EASEMENT
AC	ASPHALT CONCRETE
BRI	BRICK
C/G	CURB & GUTTER
C	CONCRETE
DI	DRAIN INLET
FF	FINISH FLOOR GRADE
FL	FLOWLINE
GM	GAS METER
LG	LIP OF GUTTER
MB	MAIL BOX
P.U.E.	PUBLIC UTILITY EASEMENT
P.S.E.	PUBLIC SERVICE EASEMENT
SDMH	STORM DRAIN MANHOLE
SSCO	SANITARY SEWER CLEANOUT
SSMH	SANITARY SEWER MANHOLE
S/W	SIDEWALK
TC	TOP OF CURB
TRC	TOP OF ROLLED CURB
W.C.E.	WIRE CLEARANCE EASEMENT
WM	WATER METER

LEGEND

	PROPERTY LINE
	CENTERLINE
SS	UTILITY LINE–TYPE AS NOTED
	STREET LIGHT
PG&E	UTILITY BOX–TYPE AS NOTED
WM/GM	WATER/GAS METER
WV	WATER VALVE
	CURB CATCH BASIN
	FIRE HYDRANT
MH	MANHOLE–TYPE AS NOTED
CO	SANITARY SEWER CLEANOUT
PP OH	POWER POLE W/ OVERHEAD WIRE
	BENCHMARK
200	CONTOUR LINE
MON	FOUND MONUMENT
12"	TREE–TRUNK DIAMETER IN INCHES SPECIES NOTED WHEN KNOWN
	GUY WIRE

NO.	REVISION	DATE	BY

RW ENGINEERING, INC.
CIVIL ENGINEERS • LAND SURVEYORS
505 ALTAMONT DRIVE
MILPITAS, CA 95035
(M) (408) 824-1899
(FAX) (408) 824-5568
rwengineering@gmail.com

LICENSED LAND SURVEYOR
RANDY T. WARNER
NO. 8093
RENEWAL DATE
08-30-20
STATE OF CALIFORNIA

1330 ENCHANTED WAY
SAN MATEO, CA

SAN MATEO COUNTY

APN: 038-141-140

TOPOGRAPHIC & BOUNDARY SURVEY

DATE: 9/5/20
SCALE: AS NOTED
DESIGNED BY: RW
DRAWN BY: RW
SHEET NO.

SU-1

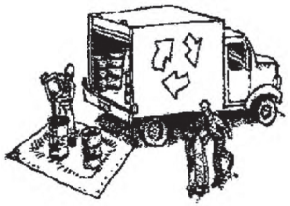
OF 1 SHEETS

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

Construction Best Management Practices (BMPs)

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

Materials & Waste Management



Non-Hazardous Materials

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

Hazardous Materials

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

Waste Management

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

Construction Entrances and Perimeter

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

Equipment Management & Spill Control



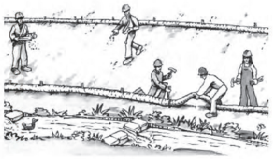
Maintenance and Parking

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

Spill Prevention and Control

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

Earthmoving



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

Contaminated Soils

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

Paving/Asphalt Work



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

Sawcutting & Asphalt/Concrete Removal

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

Concrete, Grout & Mortar Application



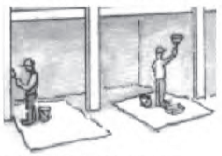
- ❑ Store concrete, grout, and mortar away from storm drains or waterways, and on pallets under cover to protect them from rain, runoff, and wind.
- ❑ Wash out concrete equipment/trucks offsite or in a designated washout area, where the water will flow into a temporary waste pit, and in a manner that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

Landscaping



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

Painting & Paint Removal



Painting Cleanup and Removal

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

Dewatering



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

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

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT D

Advanced Tree Care
965 East San Carlos Ave, San Carlos

1330 Enchanted Way, San Mateo
October 14, 2020

Holly Qui
1330 Enchanted Way
San Mateo, CA 94402

Site: 1330 Enchanted Way, San Mateo

Dear Holly,

At your request I visited the above site for the purpose of inspecting and commenting on the regulated trees around the property. A new home and Accessory Dwelling Unit (ADU) are planned, prompting the need for this tree protection report.

Method:
San Mateo County regulates Significant Trees whereby a "SIGNIFICANT TREE" shall mean any live woody plant rising above the ground with a single stem or trunk of a circumference of 38" (Diameter 12.1") or more measured at 4 1/2' vertically above the ground or immediately below the lowest branch, whichever is lower, and having the inherent capacity of naturally producing one main axis continuing to grow more vigorously than the lateral axes.

The location of the Significant Trees that will be impacted on this site and the proposed new construction and ADU can be found on the attached drawing.
Each tree is given an identification number. The trees are measured at 54 inches above ground level (DBH or Diameter at Breast Height). A condition rating of 1 to 100 is assigned to each tree representing form and vitality on the following scale:

1 to 29	Very Poor
30 to 49	Poor
50 to 69	Fair
70 to 89	Good
90 to 100	Excellent

The height and spread of each tree is estimated. A Comments section is provided for any significant observations affecting the condition rating of the tree.

A Summary and Tree Protection Plan are at the end of the survey providing recommendations for maintaining the health and condition of the trees during and after construction.

If you have any questions, please don't hesitate to call.

Sincerely

Robert Weatherill
Certified Arborist WE 1936A

Advanced Tree Care

965 East San Carlos Ave, San Carlos

1330 Enchanted Way, San Mateo

October 14, 2020

Tree Survey

Tree#	Species	DBH	Ht/Sp	Con Rating	Comments
1	Bailey acacia *Acacia baileyana*	24.1"	30/40	40	Poor health and condition, decay at base, **Significant**
2	Coast live oak *Quercus agrifolia*	11.0"@1' above grade	15/15	65	Good health and condition, suppressed by #1, **Not Significant**
3	Bailey acacia *Acacia baileyana*	6 x 4"est	12/10	20	Poor health and condition, topped for view, **Significant**
4	Coast live oak *Quercus agrifolia*	6.2"@1'above grade	6/6	20	Poor health and condition, topped for view, **Not Significant**
5	Black acacia *Acacia melanoxylon*	9.2"/4.9"	15/8	30	Poor health and condition, topped for view, **Significant**
6	Weeping willow *Salix babylonica*	17.2"	18/12	40	Poor health and condition, topped for view, **Significant**
7	Blue gum *Eucalyptus globulus*	10"/8"/8"	8/3	10	Topped for view, poor health and condition, **Significant**
8	Monterey cypress *Cupressus macrocarpa*	9.3"	10/6	20	Poor health and condition, topped for views, **Not Significant**
9	Coast live oak *Quercus agrifolia*	8.4"	15/10	60	Fair health and condition, suppressed by #10, **Not Significant**
10	Silver dollar eucalyptus *Eucalyptus polyanthemos*	10"/12"/34"est	50/40	65	Fair health and condition, neighbors tree, **Significant**
11	Monterey pine *Pinus radiata*	22"est	40/30	65	Fair health and condition, neighbors tree, **Significant**
12	Bottlebrush *Calistemon viminalis*	8.2"/8.1"	15/10	65	Fair health and condition **Significant**
13	Monterey pine *Pinus radiata*	20"est	25/15	5	Very poor health and condition, neighbors tree, **Significant**
14	Monterey pine *Pinus radiata*	20"est	30/20	50	Fair health and condition, neighbors tree, **Significant**
15	Coulter pine *Pinus coulteri*	24"est	30/20	50	Fair health and condition, neighbors tree, **Significant**
16	Coast live oak *Quercus agrifolia*	11.9"	18/10	65	Fair health and condition, topped for utility, **Not Significant**
17	Pear *Pyrus spp*	12.5"	20/10	60	Fair health and condition **Significant**
18	Modesto Ash *Fraxinus 'Modesto'*	18.0"	25/10	40	Poor health and condition, street tree, **Significant**

Tree#	Species	DBH	Ht/Sp	Con Rating	Comments
19	Sweet gum *Liquidambar styraciflua*	14.3"	30/20	60	Fair health and condition, street tree, **Significant**

Summary:
The trees on the site are a variety of natives and non-natives.

Tree #s 1 and 3 are Bailey acacias in poor health and condition. These trees should be removed.

Tree #s 5, 6, and 7 are in poor health and condition due to being topped for the view. These trees should be removed.

Tree #s 10 and 11 are on the neighbor's property and should be protected during construction.

Tree # 12 is in fair health and condition and should be protected during construction.

Tree #s 13, 14 and 15 are on the neighbor's property. Tree # 13 is almost dead and should be removed. Tree #s 14 and 15 should be protected during construction.

Tree # 17 is in fair health and condition and should be protected during construction.

Tree # 18 is a street tree in poor health and condition and should be removed.

Tree # 19 is a street tree that has been requested for removal

Tree #s 2, 4, 8, 9 and 16 are not Significant trees and can be removed if desired.

Tree Protection Plan

1. The Tree Protection Zone (TPZ) should be defined with protective fencing. This should be cyclone or chain link fencing on 11/2" or 2" posts driven at least 2 feet in to the ground standing at least 6 feet tall. Normally a TPZ is defined by the dripline of the tree. I recommend the TPZ's as follows:-

Tree #s 10, 11, 14 and 15: TPZ should be at 15 feet from the trunk in accordance with Type I Tree Protection as outlined and illustrated in image 2.15-1 and 2 [6] .

The location of the TPZ fencing is marked in a thick red line on the drawing. This can be reduced to edge of building for the demolition within the TPZ of Tree # 14.

Demolition of existing property within the TPZ of Tree # 14 should be done by hand or with equipment reaching into the TPZ. Area shaded in blue.

After demolition the TPZs for Tree #s 14 and 15 can be reduced to accommodate the new construction.

Excavation for the foundation of the new home and ADU within the TPZs of Tree #s 14 and 15 should be done by hand. No roots greater than 2 inches in diameter should be cut.

Tree #s 12 and 17: TPZ should be at 10 feet from the trunk in accordance with Type I Tree Protection as outlined and illustrated in image 2.15-1 and 2 [6]

The TPZ for Tree # 17 can be reduced to accommodate the proposed new construction.

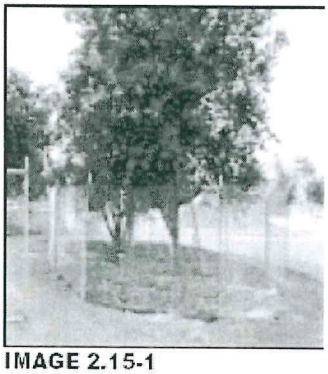


IMAGE 2.15-1
Tree Protection Fence at the Dripline

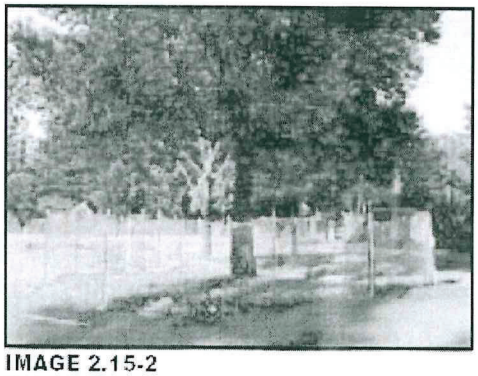


IMAGE 2.15-2
Tree Protection Fence at the Dripline

- **Type I Tree Protection**

The fences shall enclose the entire area under the **canopy dripline or TPZ** of the tree(s) to be saved throughout the life of the project, or until final improvement work within the area is required, typically near the end of the project (*see Images 2.15-1 and 2.15-2*). Parking Areas: If the fencing must be located on paving or sidewalk that will not be demolished, the posts may be supported by an appropriate grade level concrete base.

2. Any pruning and maintenance of the tree shall be carried out before construction begins. This should allow for any clearance requirements for both the new structure and any construction machinery. This will eliminate the possibility of damage during construction. **The pruning should be carried out by an arborist, not by construction personnel**. No limbs greater than 4" in diameter shall be removed.

3. Any excavation in ground where there is a potential to damage roots of 1" or more in diameter should be carefully hand dug. Where possible, roots should be dug around rather than cut.[2]

4. If roots are broken, every effort should be made to remove the damaged area and cut it back to its closest lateral root. A clean cut should be made with a saw or pruners. This will prevent any infection from damaged roots spreading throughout the root system and into the tree.[2]

5. **Do Not**:.[4]
   a. Allow run off or spillage of damaging materials into the area below any tree canopy.
   b. Store materials, stockpile soil, park or drive vehicles within the TPZ of the tree.
   c. Cut, break, skin or bruise roots, branches or trunk without first obtaining permission from the city arborist.
   d. Allow fires under any adjacent trees.
   e. Discharge exhaust into foliage.
   f. Secure cable, chain or rope to trees or shrubs.
   g. Apply soil sterilants under pavement near existing trees.

6. Where roots are exposed, they should be kept covered with the native soil or four layers of wetted, untreated burlap. Roots will dry out and die if left exposed to the air for too long.[4]

7. Route pipes into alternate locations to avoid conflict with roots.[4]

8. Where it is not possible to reroute pipes or trenches, the contractor is to bore beneath the dripline of the tree. The boring shall take place no less than 3 feet below the surface of the soil in order to avoid encountering "feeder" roots.[4]

9. Compaction of the soil within the dripline shall be kept to a minimum.[2] If access is required to go through the TPZ of a protected tree, the area within the TPZ should be protected from compaction either with steel plates or with 4" of wood chip overlaid with plywood.

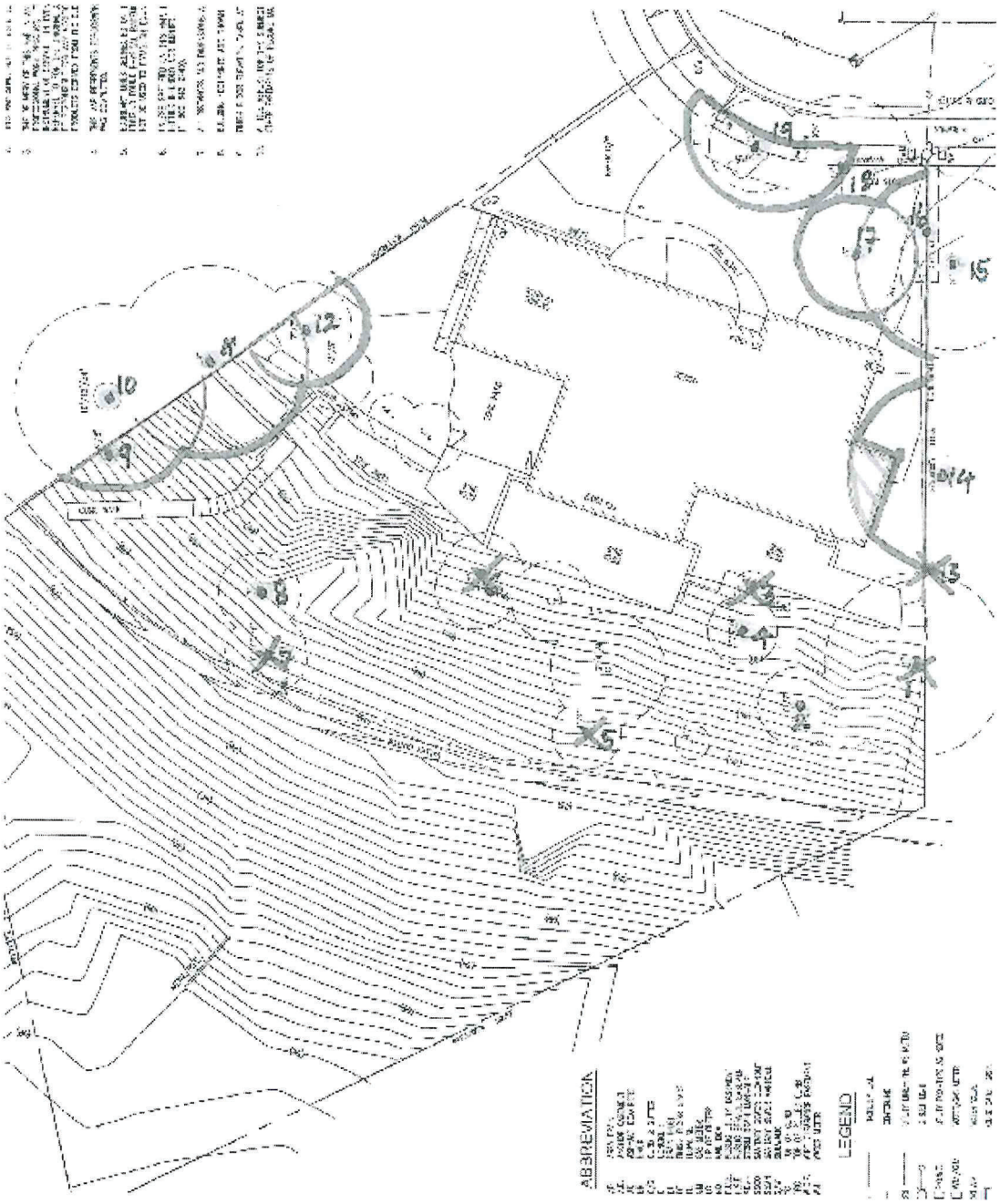
10. Any damage due to construction activities shall be reported to the project arborist or city arborist within 6 hours so that remedial action can be taken.

11. Ensure upon completion of the project that the original ground level is restored

Advanced Tree Care

965 East San Carlos Ave, San Carlos

1330 Enchanted Way, San Mateo
October 14, 2020

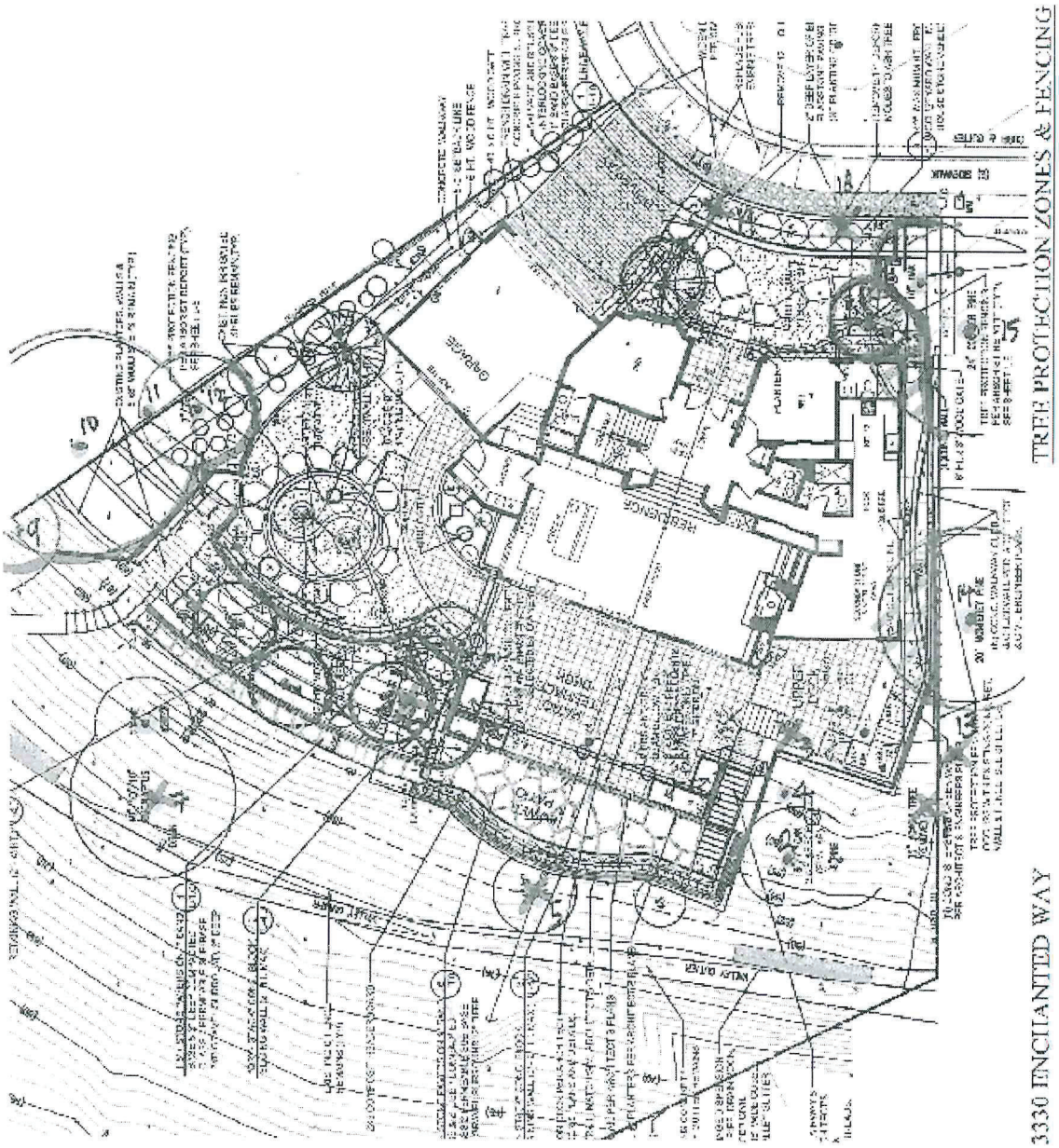


Location of existing house, protected trees and their Tree Protection Zones

Advanced Tree Care

965 East San Carlos Ave, San Carlos

1330 Enchanted Way, San Mateo
October 14, 2020



Location of proposed new home and ADU, protected trees and their Tree Protection Zones

Glossary

Canopy	The part of the crown composed of leaves and small twigs.(2)
Cavities	An open wound, characterized by the presence of extensive decay and resulting in a hollow.(1)
Decay	Process of degradation of woody tissues by fungi and bacteria through the decomposition of cellulose and lignin(1)
Dripline	The width of the crown as measured by the lateral extent of the foliage.(1)
Genus	A classification of plants showing similar characteristics.
Root plate	The point at which the trunk flares out at the base of the tree to become the root system.
Species	A Classification that identifies a particular plant.
Standard height	Height at which the girth of the tree is measured. Typically 4 1/2 feet above ground level

References

(1) Matheny, N.P., and Clark, J.P. Evaluation of Hazard Trees in Urban Areas. International Society of Arboriculture,1994.

(2) Harris, R.W., Matheny, N.P. and Clark, J.R.. Arboriculture: Integrated Management of Landscape Trees, Shrubs and Vines. Prentice Hall, 1999.

(3) Carlson, Russell E. Paulownia on The Green: An Assessment of Tree Health and Structural Condition. Tree Tech Consulting, 1998.

(4) Extracted from a copy of Tree Protection guidelines. Anon

(5) T. D. Sydnor, Arboricultural Glossary. School of Natural Resources, 2000

(6) D Dockter, Tree Technical Manual. City of Palo Alto, June, 2001

(7)

Advanced Tree Care

965 East San Carlos Ave, San Carlos

1330 Enchanted Way, San Mateo
October 14, 2020

***Certification of Performance*[3]**

I, Robert Weatherill certify:

* That I have personally inspected the tree(s) and/or the property referred to in this report, and have stated my findings accurately. The extent of the evaluation and appraisal is stated in the attached report and the Terms and Conditions;

* That I have no current or prospective interest in the vegetation or the property that is the subject of this report, and I have no personal interest or bias with respect to the parties involved;

* That the analysis, opinions and conclusions stated herein are my own, and are based on current scientific procedures and facts;

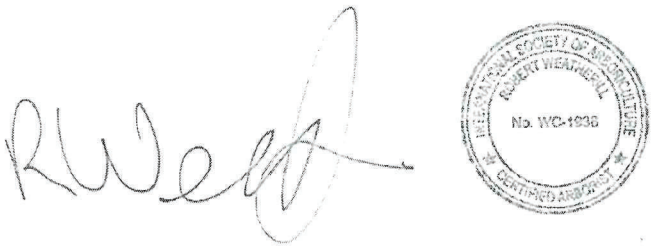
* That my compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party, nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events;

* That my analysis, opinions, and conclusions were developed and this report has been prepared according to commonly accepted Arboricultural practices;

* That no one provided significant professional assistance to the consultant, except as indicated within the report.

I further certify that I am a member of the International Society of Arboriculture and a Certified Arborist. I have been involved in the practice of arboriculture and the care and study of trees for over 15 years.

Signed



Robert Weatherill
Certified Arborist WE 1936a
Date: 10/14/20

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2. It is assumed that any property referred to in any report or in conjunction with any services performed by Advanced Tree Care, is not in violation of any applicable codes, ordinances, statutes, or other governmental regulations, and that any titles and ownership to any property are assumed to be good and marketable. Any existing liens and encumbrances have been disregarded.
3. All reports and other correspondence are confidential, and are the property of Advanced Tree Care and it's named clients and their assignees or agents. Possession of this report or a copy thereof does not imply any right of publication or use for any purpose, without the express permission of the consultant and the client to whom the report was issued. Loss, removal or alteration of any part of a report invalidates the entire appraisal/evaluation.
4. The scope of any report or other correspondence is limited to the trees and conditions specifically mentioned in those reports and correspondence. Advanced Tree Care and the consultant assume no liability for the failure of trees or parts of trees, either inspected or otherwise. The consultant assumes no responsibility to report on the condition of any tree or landscape feature not specifically requested by the named client.
5. All inspections are limited to visual examination of accessible parts, without dissection, excavation, probing, boring or other invasive procedures, unless otherwise noted in the report. No warrantee or guarantee is made, expressed or implied, that problems or deficiencies of the plants or the property will not occur in the future, from any cause. The consultant shall not be responsible for damages caused by any tree defects, and assumes no responsibility for the correction of defects or tree related problems.
6. The consultant shall not be required to provide further documentation, give testimony, be deposed, or attend court by reason of this appraisal/report unless subsequent contractual arrangements are made, including payment of additional fees for such services as described by the consultant or in the fee schedules or contract.
7. Advanced Tree Care has no warrantee, either expressed or implied, as to the suitability of the information contained in the reports for any purpose. It remains the responsibility of the client to determine applicability to his/her particular case.
8. Any report and the values, observations, and recommendations expressed therein represent the professional opinion of the consultants, and the fee for services is in no manner contingent upon the reporting of a specified value nor upon any particular finding to be reported.
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COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT E

GEOTECHNICAL INVESTIGATION

Proposed Foundation Stabilization
1330 Enchanted Way
San Mateo, California

RECEIVED
OCT 17 2019
San Mateo County
Planning Division

Prepared for:

Holly Qian Quang

August 9, 2016

Michelucci & Associates, Inc.
Geotechnical Consultants

Joseph Michelucci, G.E.
joe@michelucci.com

Richard Quarry
rich@michelucci.com

August 9, 2016
Job No. 16-4602

via mail and e-mail: hollyqiu.ca@gmail.com

Holly Qian Quang
1330 Enchanted Way
San Mateo, CA 94402

Re: Geotechnical Investigation
Foundation Settlement
1330 Enchanted Way
San Mateo, California

Dear Ms. Quang:

As authorized, we have completed a geotechnical investigation of the site of the proposed foundation stabilization project located at 1330 Enchanted Way in San Mateo, California.

It is our basic conclusion that the project is feasible from a geotechnical viewpoint, provided that the recommendations contained in the accompanying report are incorporated into the final plans and followed during construction. It is our basic finding that the structure is underlain by a prism of man-placed fill that was not compacted sufficiently to minimize settlement.

We are pleased to have been of service to you on this project, and will be available to review our findings with you and your other consultants as needed.

Very truly yours,
MICHELUCCI & ASSOCIATES, INC.

John Petroff
Project Geologist

Joseph Michelucci
Geotechnical Engineer #593
(Expires 3/31/17)



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GEOTECHNICAL ENGINEERING INVESTIGATION

Foundation Settlement
1330 Enchanted Way
San Mateo, California

INTRODUCTION

This report covers our investigation of the soil conditions that occur at the site of the existing residence located at 1330 Enchanted Way in San Mateo, California (Site Vicinity Map, Figure 1). An overview of the property, including the location of test borings performed in conjunction with this study, is included on the attached Site Plan, Figure 2.

The purpose of our study was to evaluate the soil conditions that occur at the site, and to provide geotechnical recommendations and design criteria pertaining to possible foundation stabilization. We will also provide a variety of alternatives that may be considered ranging from literally doing nothing to demolishing the home and constructing a new structure.

SCOPE OF SERVICES

Our study included:

1. Detailed site inspections by our geotechnical personnel (including the foundation "crawlspace");

2. A review of our 2008 file for the property, which contained the results of a preliminary study we performed at the property for a previous owner along with our report dated February 7, 2008;

3. The performance of a relative floor elevation survey on the existing structure with a water-filled manometer (to aid in evaluating foundation performance and to compare the results to the survey that we performed in 2008);

4. A review of available current published geologic maps and literature;

5. Examination of online aerial photographs of the site vicinity taken over several decades;

6. The excavation of 3 exploratory test borings with portable minuteman power augering and sampling equipment;

7. The recovery of samples from the borings, and the performance of a variety of engineering tests upon the various soil layers encountered;

8. The performance of geotechnical engineering analysis utilizing the above items; and,

9. The preparation of this report.

FIELD INVESTIGATION AND LABORATORY TESTS

In order to evaluate the geotechnical engineering characteristics of the soil layers which underlie the site, 3 borings were drilled at the approximate locations indicated on the attached Site Plan, Figure 2. The borings were drilled by Access Soil Drilling of San Mateo on July 12, and July 19, 2016 with portable minuteman augering equipment. Relatively undisturbed samples were recovered in thin brass tubes from the borings at selected intervals with a free-falling, 140-pound hammer (with a 30-inch drop) advancing modified California, and in some cases standard penetration, drive samplers up to 24 inches into the subsurface soil layers. The brass tube encased samples were labeled in the field and carefully sealed to preserve their in-situ moisture content. They were ultimately transported to our laboratory.

As the borings were excavated, logs of the materials encountered were prepared based upon an inspection of the recovered samples and close observation of the auger cuttings as they emerged from the borehole. The final Boring Logs, as presented on the attached Figures 3 through 5, are based upon the field logs with occasional modifications based upon further laboratory examinations of the recovered samples as well as the laboratory test results.

Laboratory tests were performed upon samples that were extruded from the brass tubes. These tests, which are useful in evaluation of the general strength properties of the materials tested, included the determinations of moisture content, dry density and unconfined compressive strength of selected samples. The results of these tests, along with the resistance to penetration of the sampler, are listed opposite the corresponding sample location on the final Boring Logs, Figures 3 through 5. A Boring Log Key is also included as Figure 6.

Our investigation also included a relative floor elevation survey on the existing home. The survey, made with a water-filled manometer, aids in evaluating how well the foundation has performed and also can be compared to a survey we performed in 2008. The results of the most recent survey are included on Figure 7. It should be noted that a survey was also performed in 2003 by "Special Building Inspections".

BACKGROUND

In 2008, during our preliminary study (for a previous owner) we were informed that two additions were constructed at the residence. One addition is located at the right-rear corner of the structure and the other adjacent to the left-rear corner. It was suspected that the additions were completed sometime in the 1980's, although the actual date of completion is unknown (in 2008 the County reportedly did not have any geotechnical documentation regarding the construction).

Ongoing foundation settlement problems have affected the residence over time. Previous efforts have been made to mitigate the settlement by underpinning a limited portion of the structure. We understand that the previous underpinning was performed without geotechnical input and without building permits. *We were informed that Uni-Struct Engineering performed the partial underpinning and partial releveling in about 2004 and that two rows of hand-dug piers were excavated beneath the area of the addition along the right-rear portion of the residence beneath the kitchen and dining room areas. The upslope row of piers was placed beneath the older original foundation and the newer addition foundation that abuts the older original foundation, and the second row of piers was placed along the downhill perimeter edge of the addition.*

It appears that since 2008 that interior cosmetic work has been performed.

SITE CONDITIONS

The subject property is situated within a subdivision where mass-grading was performed prior to the construction of new residences. Many drainage swales and ravines were backfilled, and some deep cuts were excavated into existing ridge areas. Our document review suggests that the home is located within an area that was to be filled. *As will be discussed later in this report, our test borings corraborate that deep fills were placed at the site.*

The subject residence is located along the northwest edge of Enchanted Way about 50 feet west of its intersection with Linden Lane in unincorporated San Mateo County, California. The property has been improved with a one-story, wood frame, single-family dwelling that was constructed upon a relatively level building pad created by grading operations. As noted, addtions were apparently constructed to the rear of the structure in the 1980's.

The driveway is surfaced with brick pavers, and it appears that the portion of the driveway closest to the front of the garage is sloped to direct surface flow towards the garage entry. We were told in 2008 that during periods of extended moderate to heavy rainfall, that water will tend to flow from the driveway, into the garage where the water will then pool and gradually seep into the residence's sub-floor area through a gap and cracks that had developed in the garage slab. We do not know if this was rectified.

The rear-yard area features a wooden deck that extends off the back of much of the residence. The deck appears to be in disrepair as many of the boards are missing or warped, and it is evident that some dry rot has affected the deck. We also observed a failing wood retaining wall located beneath the outboard edge of the central portion of the existing deck. From the outboard edge of the deck, the topography slopes downward towards the northwest at a rather steep inclination that is on the order of 1.75 to 2 horizontal to 1 vertical.

We noted a concrete v-ditch at the top of the slope that extends underneath the right side of the existing wooden deck and a second v-ditch farther down the slope. We observed a series of newer looking steps and terrace walls along the portion of the slope to the right of the residence.

Site drainage is moderately controlled. We observed that the downspouts are all connected to subsurface pipes, which deposit water away from the residence. We observed two pipes outletting into the aforementioned v-ditch on the slope below the residence, which we understand are the outlet points for the downspouts along the front and right sides of the residence. We also observed a single flex pipe that daylighted adjacent to the left-rear corner of the residence beneath the end of the existing wood deck (we suspect that the flex pipe is the outlet pipe for at least one of the downspouts along the rear of the property).

CONDITION OF RESIDENCE AND IMPROVEMENTS

Our study included a detailed inspection of the interior of the residence, which appeared to be in relatively good cosmetic condition (as was the case during our 2008 study). Our observations suggest that the interior was probably recently remodeled. We did not observe any major signs of distress (e.g. large cracks) in the interior wall boards. We did observe gaps in several of the hard wood floor boards in the family and living rooms. There was also a noticeable floor slope (as documented below), which generally trends from the front of the residence towards the rear of the structure. The floor slope had a similar pattern to 2008, but an additional inch or more of differential settlement has occurred in the subsequent 8 years.

In order to evaluate the pattern and magnitude of possible differential foundation movement, we conducted a relative floor elevation survey upon the main floor of the residence with a water-filled manometer. The results of the most recent survey, presented on Figure 7, indicate that the floors of the residence are now approximately 5.7 inches out-of-level. The high point of the survey was measured in the corner of the bedroom that is adjacent to the main entry area, and the low point was measured in the office area located adjacent to the master bedroom (at the transition point from the original residence's footprint to the left-rear addition). The residence ws 4.8 inches out of level in 2008, four years after partial releveling was performed.

Also, a 2003 survey by "Special Building Inspections" indicated that over 7 inches of differential settlement had affected the right-rear corner of the residence. Our 2008 and 2016 surveys indicate that this portion of the residence was just over 3 inches out-of-level in 2008 and 3.9 inches out of level in 2016, which is where the underpinning and releveling was done in 2004. *We were informed by Uni-Struct Engineering that the underpinning piers extended approximately 10 feet below grade and the bottom 1 or 2 feet of each pier was extended into what they describe as fairly hard material, however as will be discussed, the piers did not encountered bedrock as a rather significant amount of fill was placed along this portion of the property.*

It should be noted that the magnitude of measured differential settlement might not reflect all of the settlement that has affected the residence. For example, it is possible that the low point has settled 9 inches (or more) and the high point has settled 2 inches (or more). Furthermore, previous releveling efforts may have skewed the results. The measured differential floor eleveations do however indicate that a much more than "normal" amount of differential settlement has affected the property.

CRAWLSPACE OBSERVATIONS

Our observations within the foundation crawl space revealed that there have been attempts to underpin and possibly relevel the structure in the past.

In general, we observed many hairline cracks in the perimeter foundation, particularly along the rear side of the structure. A photo of a typical crack follows.



Photo 1: An example of the hairline cracking that was observed in the foundation.

We observed several areas of newer appearing concrete (probable evidence of the 2004 underpinning hand-dug piers) beneath the footing along the rear of the right-rear wing of the residence around which the soil was noted to have dropped several inches below the concrete. This suggests that that the soil at the surface is settling around the underpinning piers. A photo of the settled soil around one of the underpinning piers follows.



Photo 2: Settled soil around one of the underpinning piers beneath the rear footing.

We should point out that almost one additional inch of settlement has affected this wing of the residence since our previous relative floor elevation survey in 2008. This coupled with the fact that the soil around the underpinning piers is now lower than the top of the pier suggests that the soil beneath the residence is continuing to settle, but the soil near the ground surface may be settling at a faster rate than the soil at depth where the piers terminate.

We also observed a ½- to 1-inch thick layer of fresh appearing concrete that was placed atop the intermediate footing that extends in a north-south direction beneath the middle portion of the residence. Concrete packing was also observed atop an intermediate footing that separates the original south side of the residence and the master bedroom bathroom addition. These areas of newer concrete atop the footings are evidence of past releveling of the structure. A photo of the concrete packing follows.

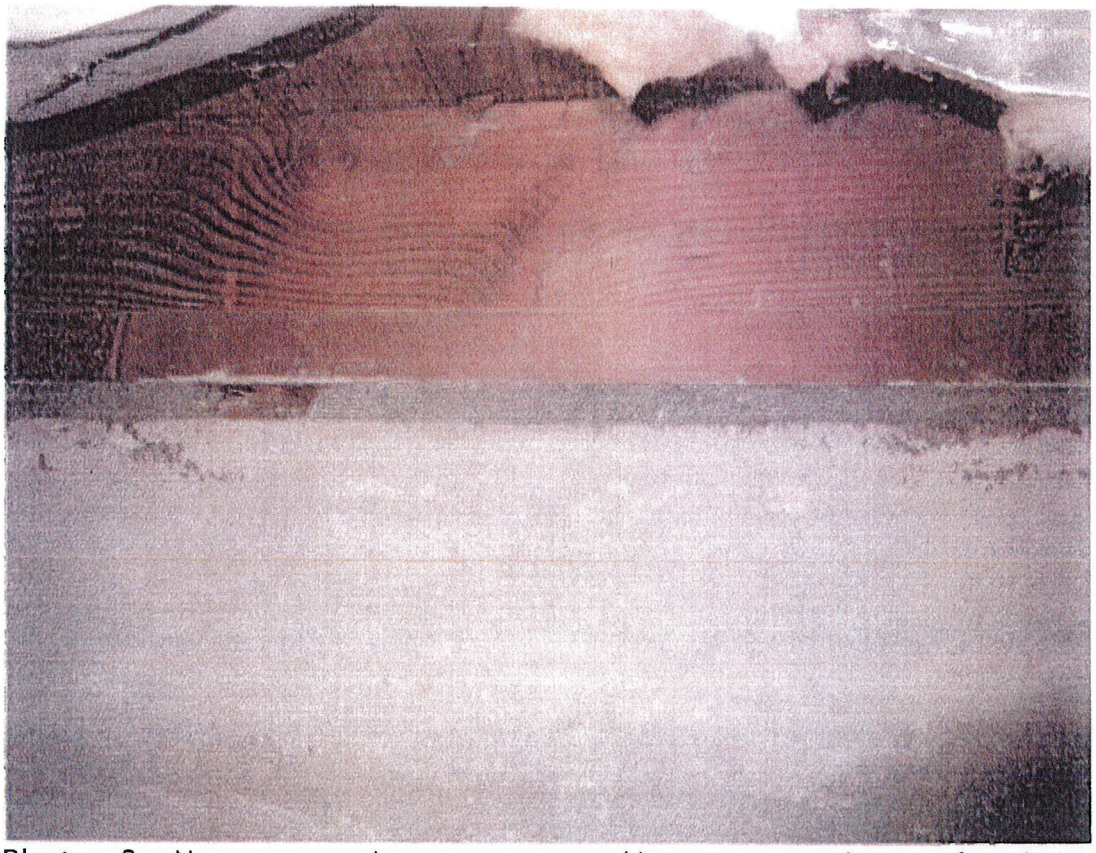


Photo 3: Newer appearing concrete packing atop continuous foundation element.

We also noted that many of the isolated footings appeared to be of newer construction, but several of the posts appeared to be leaning slightly in random directions, and several were partially off of their respective concrete pedestals. Examples of the posts follow.



Photo 4: Leaning posts in the foundation crawl space.



Photo 5: Post partially off of concrete pedestal.

Beneath the area where the high point was measured as part of our relative floor elevation survey, we observed what appeared to be a newer row of isolated interior posts within a foot or two of the perimeter foundation. These newer posts are along the perimeter foundation beneath the left-front corner of the structure. A photo of one of the newer posts follows.



Photo 6: Newer post below the left-front portion of the residence.

We should also point out that we observed that some of the steel within the concrete was exposed and rusting below the main entry area. A photo of this follows.

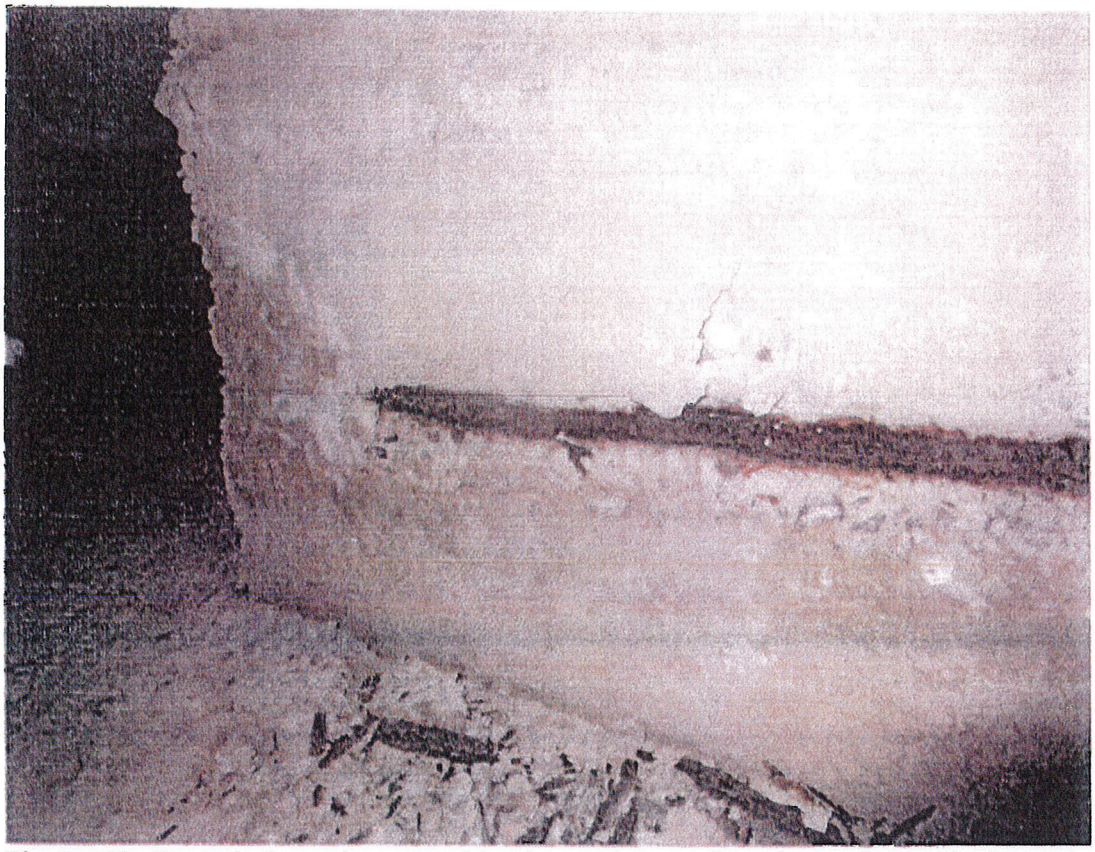


Photo 7: Corroded steel exposed in the perimeter foundation beneath the main entry area.

We also noted that there was evidence of past moisture in the subfloor area. We did not observe any evidence of standing water at the time of our inspection, but there was a prominent brown mud stain on the perimeter foundation indicating the presence of past moisture. A photo of the mud stain follows.

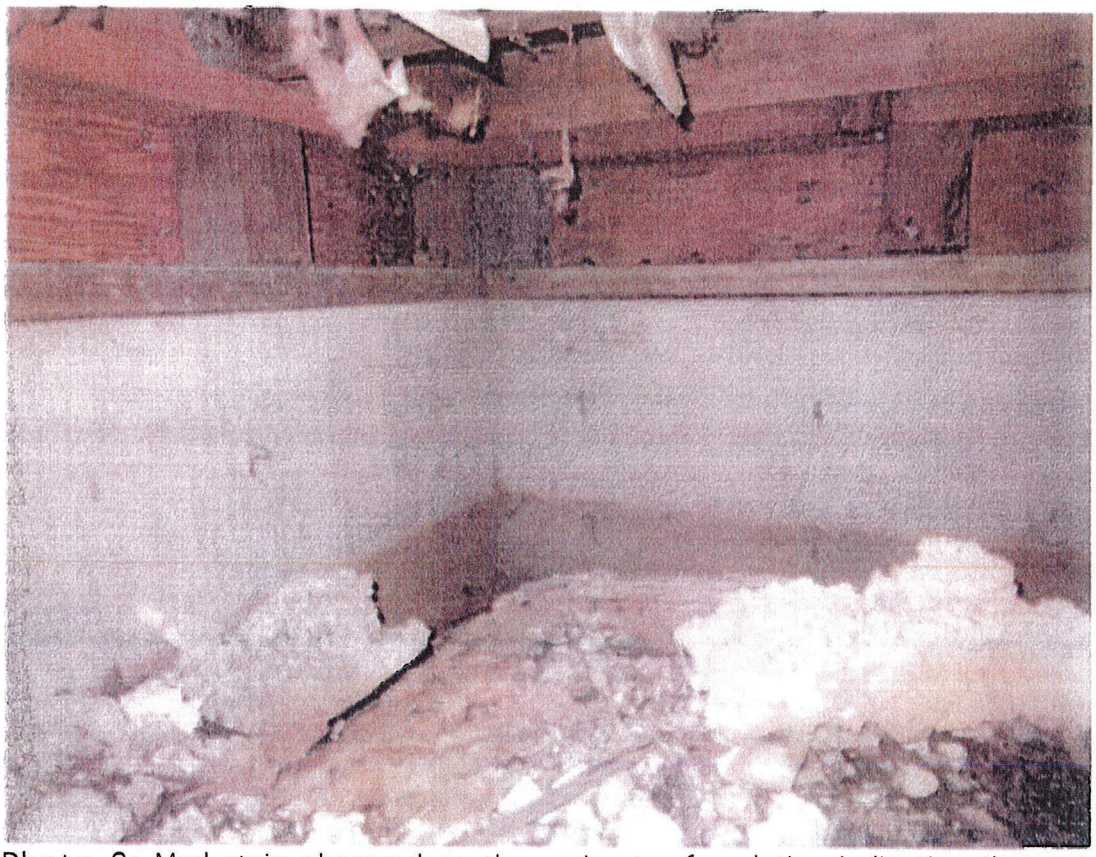


Photo 8: Mud stain observed on the perimeter foundation indicating the past presence of moisture within the subfloor area.

SOIL CONDITIONS

In order to evaluate the soil conditions we logged excavation of 3 test borings that were drilled at the locations shown on the attached Site Plan, Figure 2.

Boring 1, which was drilled at the left-rear corner of the structure (when viewed from the street) encountered up to 28 feet of man-placed fill. This fill consisted of a variety of materials as described on the final Boring Log, and it should be noted that portions of the fill appeared to be well compacted as other portions appeared to be poorly compacted. The fill was underlain by residual soil (soil derived from the in-place weathering of bedrock) consisting of stiff to very stiff olive brown to light olive brown silty clay. This material showed some bedrock structure.

Boring 2 was drilled near the right-rear corner of the residence and encountered about 31 feet of man-placed fill, which also appeared to be well to poorly compacted. The fill was underlain by a soft to medium stiff dark grayish green silty clay, which was judged to be the original topsoil.

Boring 3, which was drilled near the front-middle of the residence encountered approximately 19-½ feet of man-placed fill. The fill was underlain by about 3-½ feet of natural topsoil, which graded into what appeared to be residual soil (soil derived from the in-place weathering of bedrock) at a depth of 24 feet.

Groundwater was not encountered in any of the borings at the time of drilling. Groundwater and perched groundwater levels, however, tend to fluctuate seasonally, and could rise to the depths explored in the future.

A sketch of the general site features is included on the Site Plan, Figure 2. For a more complete description of the soil layers encountered in the borings, refer to the final Boring Logs included as Figures 3 through 5 and the Boring Log Key included as Figure 6.

SITE GEOLOGY

The site has been mapped to be within close proximity to a geologic contact between Franciscan sheared rock (fsr) along the eastern portion of the site and artificial fill (Qf_1) along the western portion of the property (Brabb, Graymer and Jones, 1998; Pampeyan, 1994). Pampeyan describes the sheared bedrock as being a *mixture of predominately soft, light to dark gray in color, sheared shale, siltstone and graywacke sandstone containing various size inclusions of other Franciscan rock types.* The material is typically surrounded by a sheared clay matrix and may include other Franciscan rock type s such as greenstone, chert and related rocks. Pampeyan describes the artificial fill as *poorly consolidated to well-consolidated gravel, sand, silt and rock fragments in various combinations used in a variety of applications.* As noted, siginificant fill was encountered in our borings.

The closest mapped major active fault to the site is the San Andreas Fault, which is located approximately 1.2 miles to the southwest. The Hayward Fault is located approximately 17.4 miles to the northeast of the subject property, and the Calaveras Fault several miles further to the northeast. This fault system is active and the source of numerous earthquakes throughout California. It is highly probable that the site will experience very strong ground shaking in the

future during a moderate to large earthquake on any active or potentially active Bay Area fault that is a part of the San Andreas Fault System.

CONCLUSIONS

The residence has been affected by significant and ongoing foundation settlement related to the consideration of deep fills that were placed during the original subdivision development. As discussed, it appears that portions of the fill were not well compacted. The underpinning that was performed in 2004 did not extend through the fill and therefore served very little purpose in mitigating the settlement problem. It is our opinion that on-going settlement will continue to affect the entire residence in the future.

There are various approaches that could be considered to deal with the situation, and we will discuss them below. In any case, it will be necessary for the services of a structural and possible civil engineer, to be retained to provide necessary stabilization plans.

Alternative A- Do nothing

This alternative would involve living with the situation and accepting the fact that future settlement will occur. This is, obviously, the least expensive approach, but it is also somewhat risky as lateral creep and settlement will continue to weaken the structure.

Alternative B- Releveling

Releveling could be considered to help mitigate the out-of-levelness and make the home more serviceable. If releveling is preformed, we would suggest that the portion of the home that is currently most out of level, be releveled such that it is an inch or two higher than the remainder of structure. That way as future settlement occurs the structure would tend to become more level over time.

This approach also shares the same risks as Alternative A; however, releveling could make the structure somewhat stronger.

Alternative C- Foundation Underpinning

Consideration could be given to underpinning the building foundation. If this were to be performed the entire building would require underpinning, as underpinning only portions of the structure would create a "hinge" effect where the non-underpinned areas would continue to settle and the underpinned areas would not.

Underpinning could prove to be very expensive due to the depth of fill encountered and the need to protect the structure from both vertical settlement as well as lateral soil creep.

Alternative D- Removal of Residence and Construction of a New Structure

This alternative would also require a deep foundation; however, it would be easier to construct a deep foundation if the residence was removed than to underpin the existing structure. Deep-drilled piers would be connected to grade beams and would need to be designed to resist both vertical and lateral loading. This could also prove to be expensive due to the depth of fill.

Specific recommendations follow.

RECOMMENDATIONS

The following recommendations are contingent upon our firm being retained to review the development plans and to observe the geotechnical aspects of construction. It should also be anticipated that our recommendations may require "fine tuning" once ore report is reviewed by the other design professionals.

A. Seismic Criteria Per 2013 CBC

As of January 1, 2014, the 2013 CBC is being utilized for projects in California. This new code is based upon the 2012 International Building Code.

It is our opinion that the subject site can be classified as Site Class "E" for the purpose of structural engineering calculations as defined in Section 1613 of the 2013 CBC.

B. Foundations

The differential thickness of fill beneath the existing residence requires consideration regardless if underpinning takes places or if a new building is constructed. Vertical loads may be resisted by an allowable skin friction value of 500 pounds per square foot beginning 3 feet below the base of the fill that exists at the site. This would necessitate that top of supporting material to range from about 23 to 34 feet below the existing grade.

The foundation piers will also be affected by significant lateral creep loading. A lateral load equal to an equivalent fluid pressure of 40 pounds per cubic foot projected over 2-½ pier diameters and extending from the ground surface to the top of support as described above would be required. The structural engineer will need to evaluate methods of mitigating the creep forces. An allowable passive resistant of 450 pounds per cubic foot projected over 2 pier diameters beginning at the top of supporting material may be utilized.

It should be noted, that in similar projects where deep fills where present, a method of minimizing the lateral loads could involve consideration of putting some sort of a basement or lower living area, which could remove several feet of the creep prone soil. If this is to be considered, the structural engineer should contact us so that a discussion can be held regarding the feasibility regarding such an approach.

C. Subdrainage

In order to mitigate the potential for water to seep into the building "crawl areas", it is also recommended that a foundation drain be constructed along all sides of the structures as is illustrated on Figure 8. Material specifications are also included on this figure.

D. Review of Plans and Construction Observations

It is recommended that all of the plans related to our recommendations be submitted to our office for review. The purpose of our review will be to verify that our recommendations are understood and reflected on the plans, and to allow us to provide supplemental recommendations, if necessary.

It is important that our firm be retained to provide observation services during construction. Our observations will allow us to verify that the materials encountered are consistent with those found during our study, and will allow us to provide supplemental, on-site recommendations, as necessary.

LIMITATIONS

The conclusions and opinions expressed in this report are based upon the exploratory borings that were drilled on the site, spaced as shown on the Site Plan, Figure 2. While in our opinion these borings adequately disclose the soil conditions across the site, the possibility exists that abnormalities or changes in the soil conditions, which were not discovered by this investigation, could occur between borings.

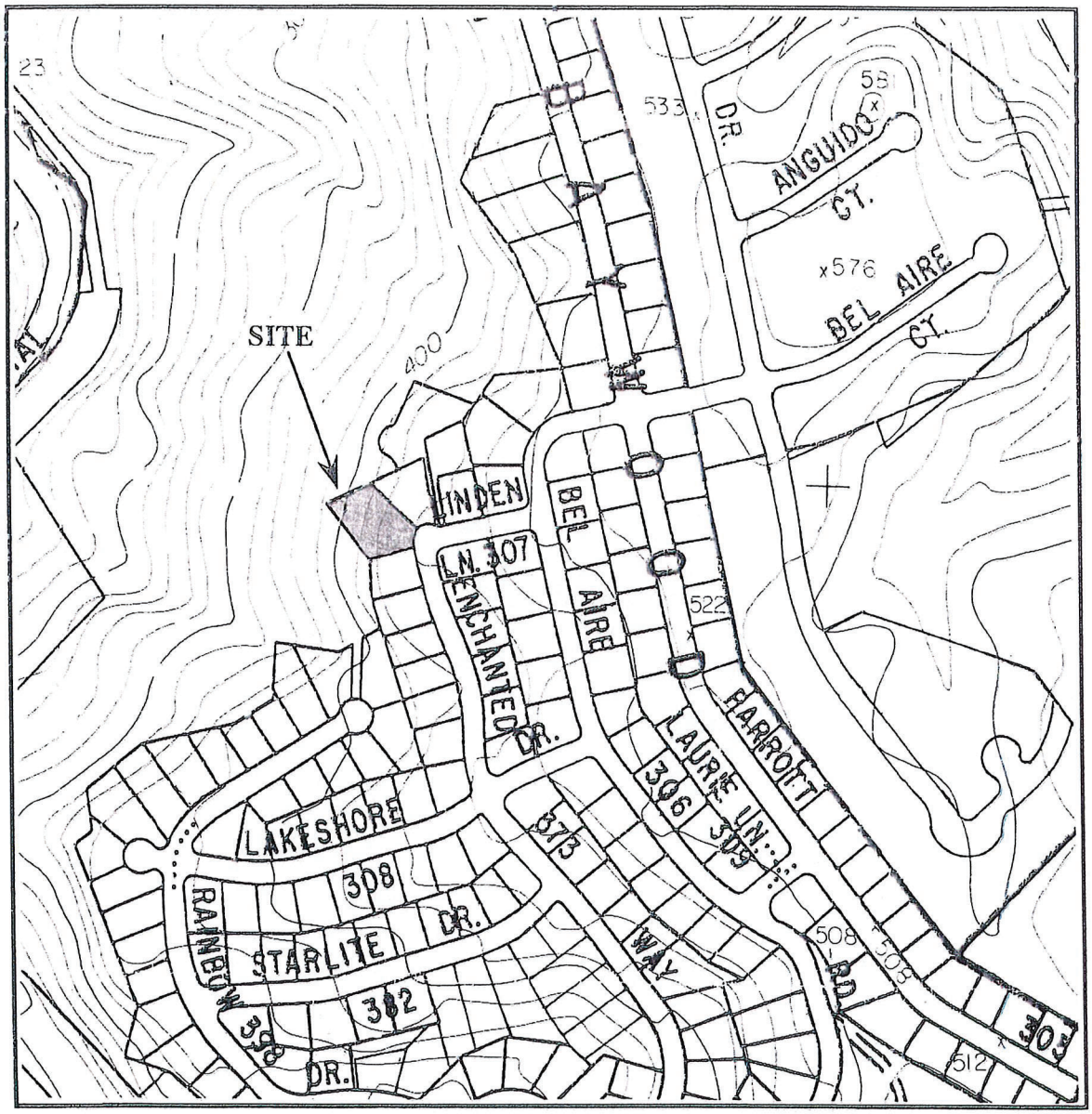
This study was not intended to disclose the locations of any existing utilities, septic tanks, leaching fields, hazardous wastes, or other buried structures. The contractor or other people should locate these items, if necessary.

The passage of time may result in significant changes in technology, economic conditions, or site variations that could render this report inaccurate. Accordingly, neither Holly Qian Quang nor any other party shall rely on the information or conclusions contained in this report after 12 months from its date of issuance without the express written consent of Michelucci & Associates, Inc. Reliance on this report after such period of time shall be at the user's sole risk. Should Michelucci & Associates, Inc. be required to review the report after 12 months from its date of issuance, Michelucci & Associates, Inc. shall be entitled to additional compensation at then-existing rates or such other terms as may be agreed upon between Michelucci & Associates, Inc. and Holly Qian Quang.

This report was prepared to provide engineering opinions and recommendations only. It should not be construed to be any type of guarantee or insurance.

SITE VICINITY MAP*

1330 Enchanted Way
San Mateo, San Mateo County, California

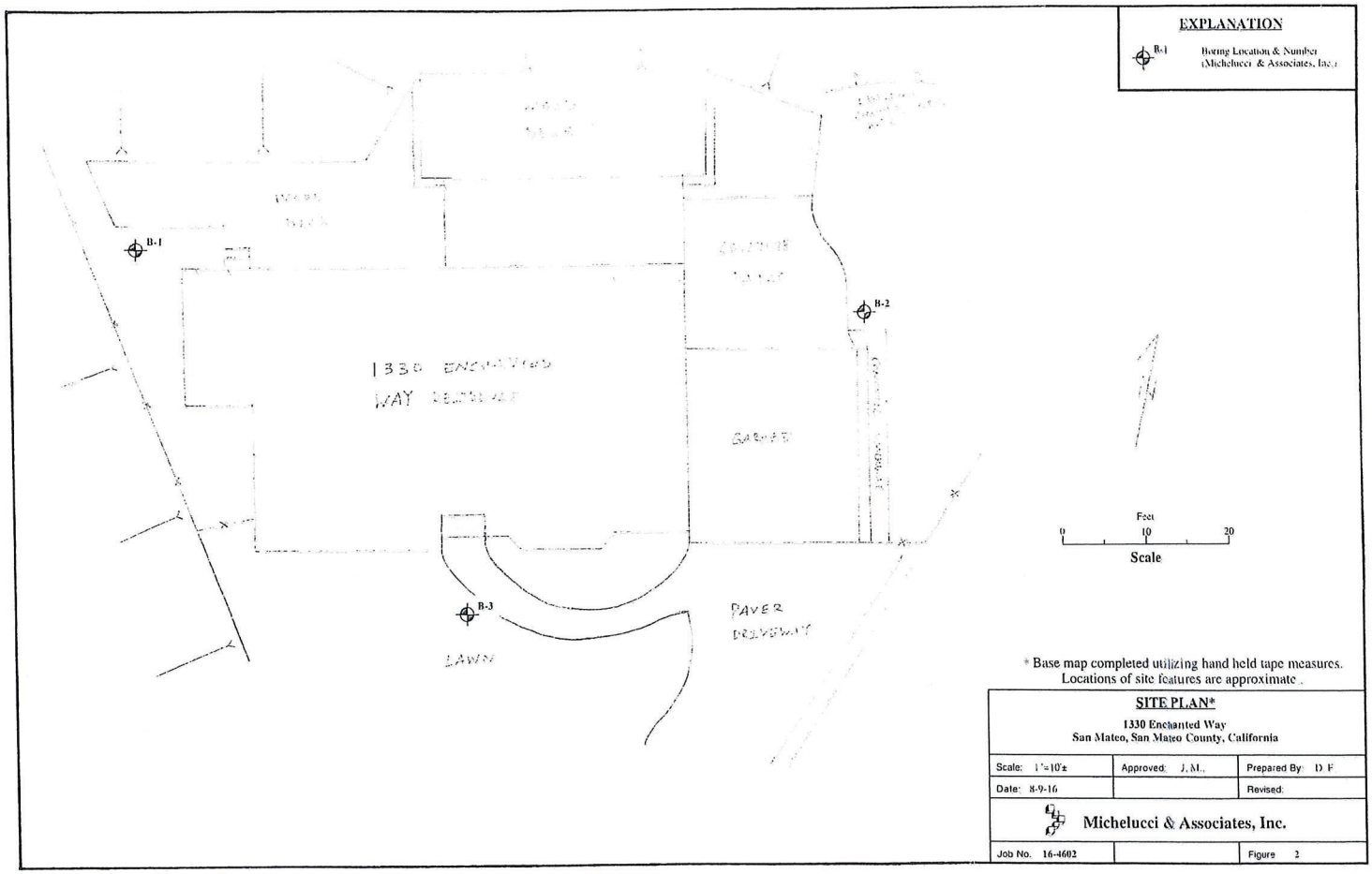


0 400' 800'

Scale

*BASE MAP FROM COUNTY OF SAN MATEO CADASTRAL TOPOGRAPHIC SERIES, SHEET 9E, 1973, (REVISED 1-1-82)

Job No. **16-4602**	Michelucci & Associates, Inc.	Figure **1**



* Base map completed utilizing hand held tape measures. Locations of site features are approximate.

SITE PLAN*

1330 Enchanted Way
San Mateo, San Mateo County, California

Scale: 1"=10'±	Approved: J. M.	Prepared By: D. F.
Date: 8-9-16		Revised:

Michelucci & Associates, Inc.

Job No. 16-4602		Figure 2

Project: 1330 Enchanted Way Project Location: San Mateo, CA Project Number: 16-4602	Log of Boring 1 Sheet 1 of 2

Date(s) Drilled 07/12/16	Logged By J.P, D.F	Checked By J.P
Drilling Method	Drill Bit Size/Type	Total Depth of Borehole 29 feet
Drill Rig Type Minuteman	Drilling Contractor Access Soil Drilling	Approximate Surface Elevation
Groundwater Level and Date Measured Dry	Sampling Method(s) 2.5", 2.0", SPT	Hammer Data 140 lb; 30 inch drop

Depth (feet)	Graphic Log	Material Type	MATERIAL DESCRIPTION	Sample Type	Sample Number	Driving Resistance, blows/ft	Dry Unit Weight, pcf	Water Content, %	UC, psf	Deg. of Saturation (%)
0		Fill	Loose to medium dense, grayish brown to yellowish brown, silty clayey fine sand with rock fragments and rootlets, slightly damp. (Fill)		1-1 (2.5")	26				
		Fill	Medium dense, olive brown, silty clayey fine sand with rock fragments and strong brown, brownish yellow and light olive brown mottling, damp (Fill)		1-2 (2.5")	38	96.8	9.1	2535	33.3
5					1-3 (2.0")	60	107.0	9.6	3449	44.9
		Fill	Medium stiff, olive brown to yellowish brown, fine to medium sandy clay to sandy silt with scattered rock fragments and brownish yellow, light olive brown and dark yellowish brown mottling, damp. (Fill)		1-4 (2.0")	35	110.6	12.8	6608	65.9
					1-5 (SPT)	21				
10					1-6 (SPT)	22				
					1-7 (SPT)	31				
15		Fill	Medium stiff to stiff, dark grayish brown, abundantly fine sandy silt to sandy clay with rock fragments and brownish yellow, dark yellowish brown and strong brown mottling, damp to moist. (Fill)		1-8 (2.5")	59				
					1-9 (2.0")	35	99.2	12.7	3232	49.3
20					1-10 (2.0")	30	112.3	13.2	3780	71.5
					1-11 (SPT)	21				
					1-12 (SPT)	16				
25										

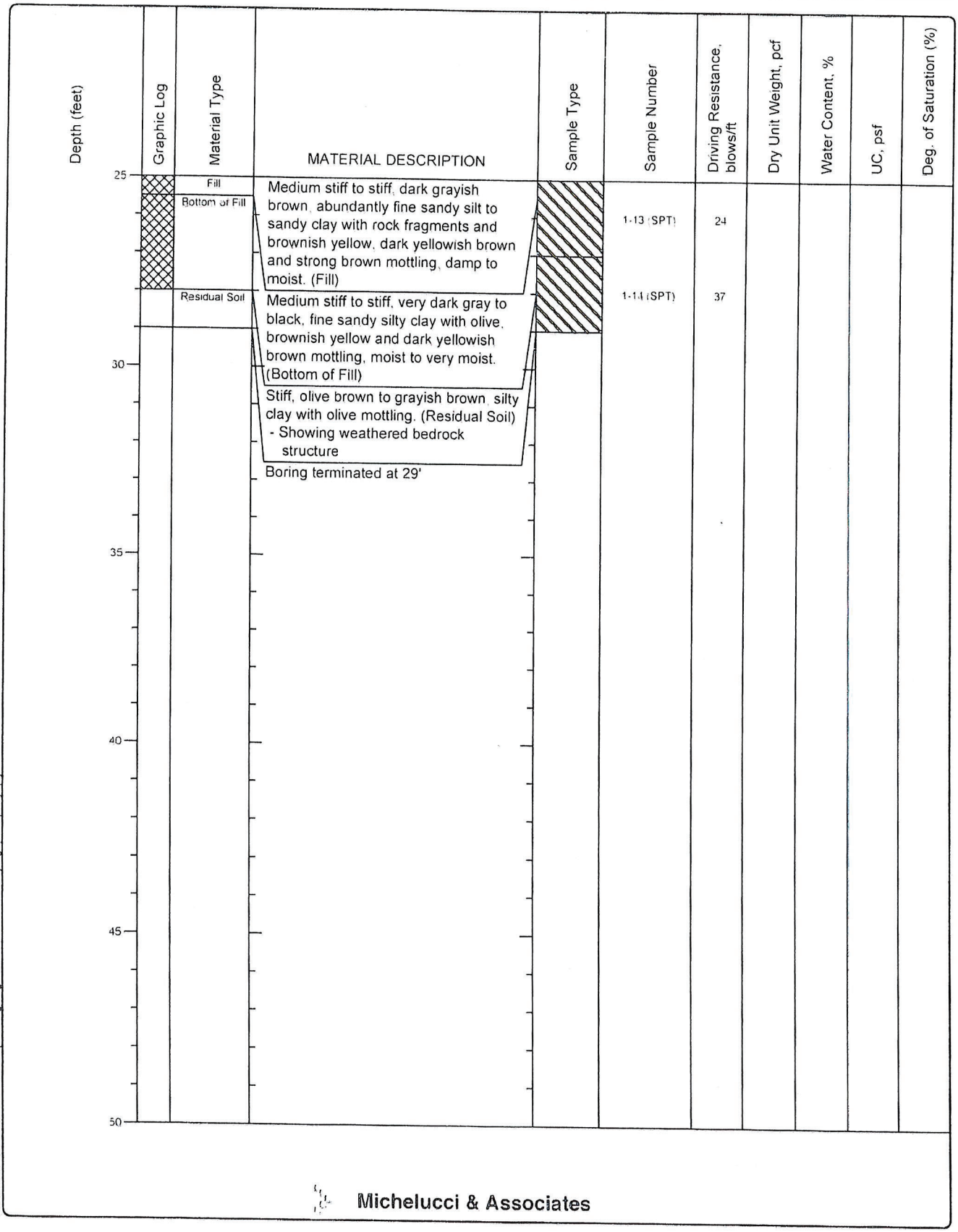
Michelucci & Associates

Macintosh HD:Users:user:Desktop:Boring Logs:1330 Enchanted Way.bg4[Company.tpl]

Figure 3

Project: **1330 Enchanted Way**
Project Location: **San Mateo, CA**
Project Number: **16-4602**

Log of Boring 1
Sheet 2 of 2



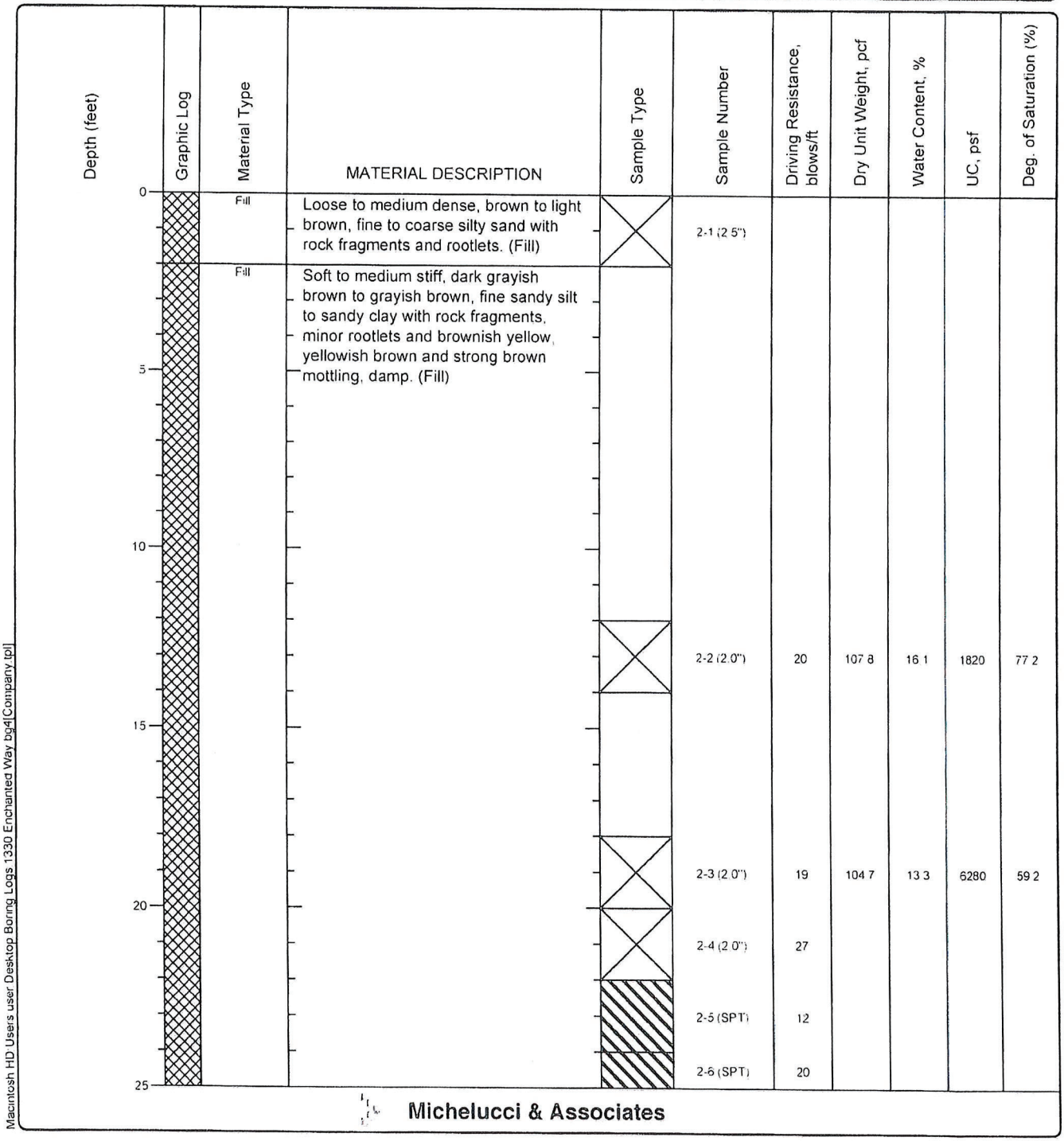
Michelucci & Associates

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Figure 3

Project: **1330 Enchanted Way** Project Location: **San Mateo, CA** Project Number: **16-4602**	Log of Boring 2 **Sheet 1 of 2**

Date(s) Drilled **07/12/16**	Logged By **J.P, D.F**	Checked By **J.P**
Drilling Method	Drill Bit Size/Type	Total Depth of Borenole **32 feet**
Drill Rig Type **Minuteman**	Drilling Contractor **Access Soil Drilling**	Approximate Surface Elevation
Groundwater Level and Date Measured **Dry**	Sampling Method(s) **2.5", 2.0", SPT**	Hammer Data **140 lb; 30 inch drop**



Michelucci & Associates

Macintosh HD Users user Desktop Boring Logs 1330 Enchanted Way bg4[Company.tpl]

Figure 4

Project: **1330 Enchanted Way**
Project Location: **San Mateo, CA**
Project Number: **16-4602**

Log of Boring 2
Sheet 2 of 2

Depth (feet)	Graphic Log	Material Type	MATERIAL DESCRIPTION	Sample Type	Sample Number	Driving Resistance, blows/ft	Dry Unit Weight, pcf	Water Content, %	UC, psf	Deg. of Saturation (%)
25		Fill	Soft to medium stiff, dark grayish brown to grayish brown, fine sandy silt to sandy clay with rock fragments, minor rootlets and brownish yellow, yellowish brown and strong brown mottling, damp. (Fill)		2-6 (SPT)	20				
					2-7 (SPT)	16				
					2-8 (SPT)	17				
30		OL	Medium stiff, dark grayish green, silty clay, damp to moist. (Bottom of Native Soil)		2-9 (SPT)	26				
			Boring terminated at 32'							
35										
40										
45										
50										

Michelucci & Associates

Figure 4

Macintosh HD Users user Desktop Boring Logs 1330 Enchanted Way bg4[Company.tpl]

Project: 1330 Enchanted Way Project Location: San Mateo, CA Project Number: 16-4602	Log of Boring 3 Sheet 1 of 1

Date(s) Drilled 07/19/16	Logged By J.P	Checked By J.P
Drilling Method	Drill Bit Size/Type	Total Depth of Borehole 24 feet
Drill Rig Type Minuteman	Drilling Contractor Access Soil Drilling	Approximate Surface Elevation
Groundwater Level and Date Measured Dry	Sampling Method(s) 2.5", 2.0", SPT	Hammer Data 140 lb; 30 inch drop

Depth (feet)	Graphic Log	Material Type	MATERIAL DESCRIPTION	Sample Type	Sample Number	Driving Resistance, blows/ft	Dry Unit Weight, pcf	Water Content, %	UC, psf	Deg. of Saturation (%)
0		Fill	Soft, dark brown, abundantly fine sandy clayey silt to silty clayey fine sand with rootlets and rock fragments, damp. (Fill)		3-1 (2.5")	47				
		Fill	Medium dense to dense, light olive brown to dark brown, silty clayey fine sand with strong brown, brownish yellow and very dark gray mottling, rock fragments and rootlets, slightly damp. (Fill)		3-2 (2.5")	62				
5		Fill			3-3 (2.5")	32	102.2	11.6	4127	48.4
			Medium stiff to stiff, olive brown to grayish brown, fine sandy clay to sandy silt with brownish yellow, olive mottling and rock fragments, damp to moist. (Fill)		3-4 (2.5")	33				
					3-5 (2.0")	19	108.7	12.8	1298	62.9
10					3-6 (2.0")	20				
		Fill	Soft to medium stiff, grayish brown to olive brown, fine to medium sandy clay to sandy silt with olive and brownish yellow mottling and lenses of brownish yellow sandy clay, damp to moist. (Fill)		3-7 (2.0")	35	105.1	14.9	1185	67.0
15					3-8 (SPT)	23				
					3-9 (SPT)	17				
					3-10 (SPT)	19				
20		SM-MH	Soft to medium stiff, very dark gray to dark grayish green, fine sandy silty clay with rock fragments and olive, brownish yellow mottling, moist. (Native Soil) - Grades to sandy silt at 21'6"		3-11 (SPT)	19				
		SM-MH	Medium stiff, grayish brown, fine sandy silty clay with rock fragments, moist. (Residual Soil)		3-12 (SPT)	26				
25			Boring terminated at 24'							

Michelucci & Associates

Figure 5

Macintosh HD Users user Desktop Boring Logs 1330 Enchanted Way bg4[Company to]

Project: **1330 Enchanted Way**
Project Location: **San Mateo, CA**
Project Number: **16-4602**

Key to Log of Boring

Sheet 1 of 1

Depth (feet) [1]	Graphic Log [2]	Material Type [3]	MATERIAL DESCRIPTION [4]	Sample Type [5]	Sample Number [6]	Driving Resistance, blows/ft [7]	Dry Unit Weight, pcf [8]	Water Content, % [9]	UC, psf [10]	Deg. of Saturation (%) [11]

COLUMN DESCRIPTIONS

1. Depth (feet): Depth in feet below the ground surface.
2. Graphic Log: Graphic depiction of the subsurface material encountered.
3. Material Type: Type of material encountered.
4. MATERIAL DESCRIPTION: Description of material encountered. May include consistency, moisture, color, and other descriptive text.
5. Sample Type: Type of soil sample collected at the depth interval shown.
6. Sample Number: Sample identification number.
7. Driving Resistance, blows/ft: Number of blows to advance driven sampler one foot (or distance shown) beyond seating interval using the hammer identified on the boring log.
8. Dry Unit Weight, pcf: Dry weight per unit volume of soil sample measured in laboratory, in pounds per cubic foot.
9. Water Content, %: Water content of the soil sample, expressed as percentage of dry weight of sample.
10. UC, psf: Unconfined compressive strength, in pounds per square foot.
11. Deg. of Saturation (%): Deg. of Saturation (%)

FIELD AND LABORATORY TEST ABBREVIATIONS

CHEM: Chemical tests to assess corrosivity
COMP: Compaction test
CONS: One-dimensional consolidation test
LL: Liquid Limit, percent
PI: Plasticity Index, percent
SA: Sieve analysis (percent passing No. 200 Sieve)
UC: Unconfined compressive strength test, Qu, in ksf
WA: Wash sieve (percent passing No. 200 Sieve)

MATERIAL GRAPHIC SYMBOLS

AF

Silty SAND to Sandy SILT (SM-MH)

TYPICAL SAMPLER GRAPHIC SYMBOLS

- Auger sampler
- Bulk Sample
- 3-inch-OD California w/ brass rings
- CME Sampler
- Grab Sample
- 2.5-inch-OD Modified California w/ brass liners
- Pitcher Sample
- 2-inch-OD unlined split spoon (SPT)
- Shelby Tube (Thin-walled, fixed head)

OTHER GRAPHIC SYMBOLS

- Water level (at time of drilling, ATD)
- Water level (after waiting)
- Minor change in material properties within a stratum
- Inferred/gradational contact between strata
- ? Queried contact between strata

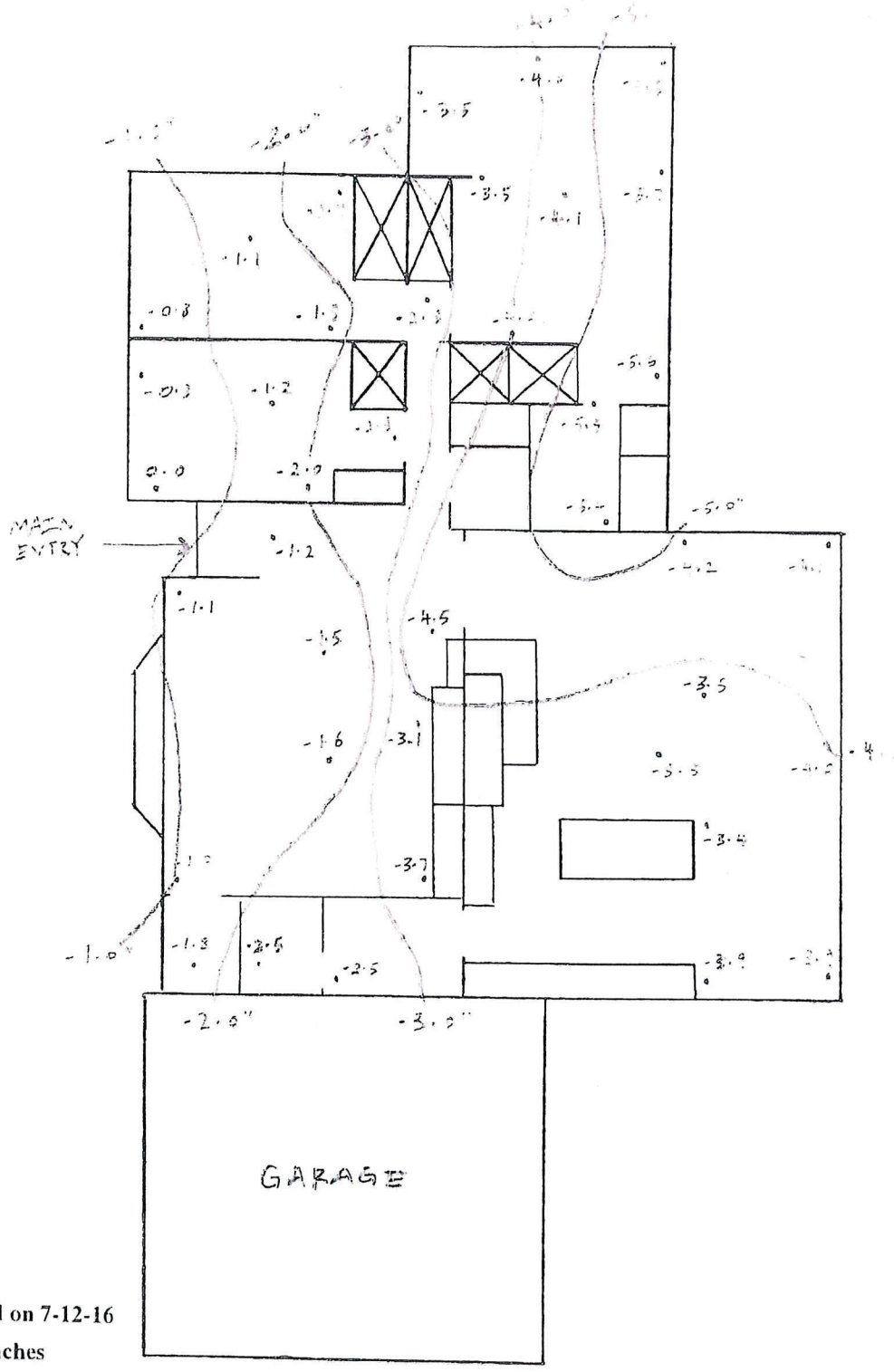
GENERAL NOTES

1. Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive, and actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
2: Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.

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RELATIVE FLOOR ELEVATION SURVEY

1330 Enchanted Way
San Mateo, San Mateo County, California
SCALE: 1" = 10' +/-

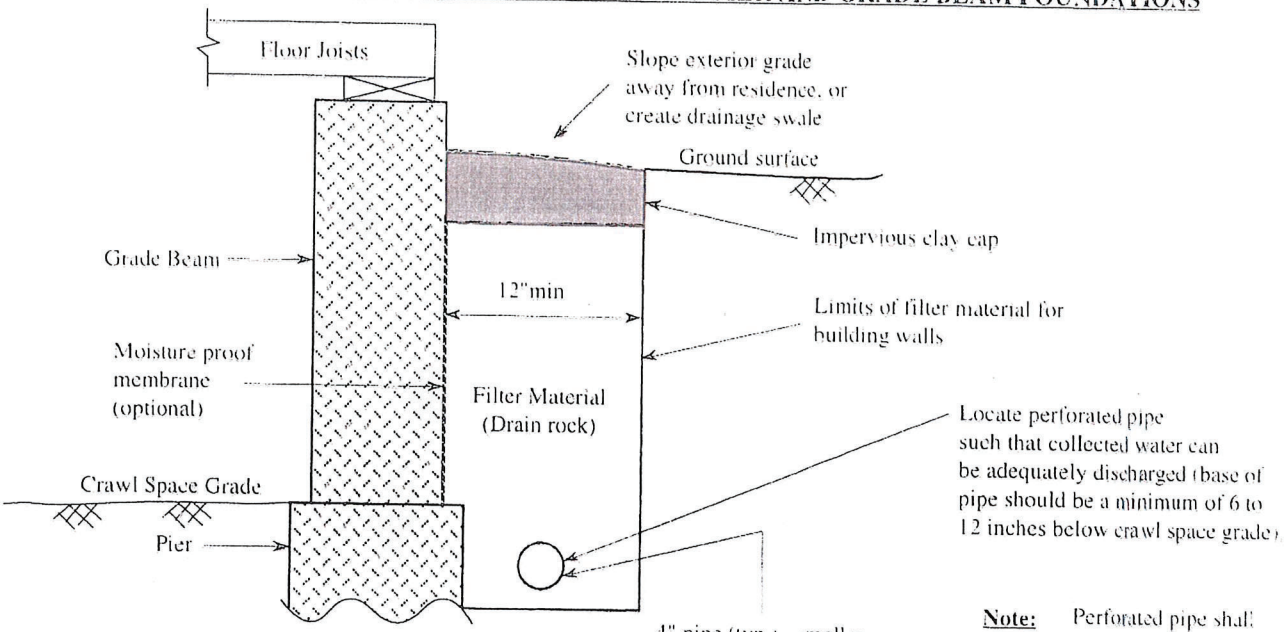


NOTES

1) Survey performed on 7-12-16
2) Readings are in inches
3) 0.0 indicates high point

Job No. 16-4602	Michelucci & Associates, Inc.	Figure 7

GUIDE SPECIFICATIONS FOR SUBDRAINS ALONG PIER AND GRADE BEAM FOUNDATIONS



TYPICAL SECTION

(Not to Scale)

Subdrain pipe shall be manufactured in accordance with the following requirements:

a. Acrylonitrile-butadiene-styrene (ABS) plastic pipe shall conform to the specifications for ABS plastic pipe given in ASTM Designation D2282 and ASTM Designation D2751. ABS pipe shall have a minimum pipe stiffness of 45 psi at 5% deflection when measured in accordance with ASTM Method D2412.

b. Polyvinyl chloride (PVC) pipe shall conform to AASHTO Designation M278. PVC pipe shall have a minimum pipe stiffness of 50 psi at 5% deflection when measured in accordance with ASTM Method D2412 except that pipe conforming to F758 shall be suitable. Schedule 40 PVC pipe shall be suitable. SDR-35 PVC pipe conforming to ASTM D3034 shall be suitable when the thickness of pipe cover does not exceed 12 feet.

Filter material for use in backfilling trenches around and over subdrain pipes and behind retaining walls shall consist of clean coarse sand and gravel or crushed stone conforming to the following requirements:

Sieve Size	% Passing Sieve
2"	100
3/4"	70 to 100
3/8"	40 to 100
#4	25 to 50
#8	15 to 45
#30	5 to 25
#50	0 to 20
#200	0 to 3

a. Class 2 " Permeable Material" conforming to the State of California Department of Transportation Standard Specifications, latest edition, Section 68-1.025 shall be suitable.

b. Clean, coarse gravel ("drain rock") shall also be suitable, provided that it is wrapped in an acceptable geotextile ("filter fabric") such as Mirafi 140N.

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT F

Michelucci & Associates, Inc.
Geotechnical Consultants

Joseph Michelucci, G.E.
joe@michelucci.com

Richard Quarry
rich@michelucci.com

August 21, 2020
Job No. 16-4602

Via e-mail: hollyqui@gmail.com

Holly Qui and Jiangiang Shen
1330 Enchanted Way
San Mateo, CA 94402

Re: Response to Item 2
County of San Mateo
Planning and Building Department
Correction List of November 12, 2019
1330 Enchanted Way
San Mateo, California

Dear Ms. Qui and Mr. Shen:

The purpose of this letter is to verify that the recommendations in our soil report dated August 11, 2017, based on 2013 CBC are the still valid under the 2016 CBC.

We are pleased to assist you on this project. Please contact us with any questions or comments.

Very truly yours,
MICHELUCCI & ASSOCIATES, INC.

Joseph Michelucci
Geotechnical Engineer #593
(Expires 3/31/21)



cc: Panko Architects (pa@pankoarchitects.com)
Mike Mahmoudian & Associates (mma@pacbell.net)

pa@pankoarchitects.com

From:	Sherry Liu <xliu@smcgov.org>
Sent:	Wednesday, July 29, 2020 5:17 PM
To:	Lee Green
Cc:	Panko Architects; stanheacox@msn.com; Mma@pacbell.net; Joe Michelucci; John Petroff; Holly Qiu
Subject:	Re: 1330 Enchanted Way, San Mateo County, California County File No. BLD2019-1550

Hi Lee & Joe,

The project is now conditionally approved by Geotechnical Section, pending other departments.

The project geotechnical engineer shall inspect and approve all relevant geotechnical work. Inspections requirements shall be in compliance with CBC2016. Periodic construction observation letters shall be submitted to the County and stamped GCA Section II shall be submitted and approved at Building Final.

All the best & Stay Safe,
Sherry

Michelucci & Associates, Inc.
Geotechnical Consultants

Joseph Michelucci, G.E.
joe@michelucci.com

Richard Quarry
rich@michelucci.com

April 23, 2019
Job No. 16-4602

via e-mail: hollyqiu.ca@gmail.com

RECEIVED
OCT 17 2019
San Mateo County
Planning Division

Hao Qiu and Jiangiang Shen
1330 Enchanted Way
San Mateo, CA 94402

Re: Review of Architectural Plans, Landscape Plans, Structural Plans
Proposed New Residence
1330 Enchanted Way
San Mateo, California

Dear Ms. Qiu:

As authorized, we have reviewed the architectural, landscape and structural plans for the new residence project at 1330 Enchanted Way in San Mateo, California.

We reviewed sheets A1.0 through A5.2 (21 sheets) of the architectural plans prepared by Panko Architects, dated March 1, 2019, sheets L-1.0 through L-4.0 (4 sheets) of the landscape plans prepared by Heacox Associates, dated March 15, 2019 and sheets S-1 through S-10 (10 sheets) of the structural plans prepared by Mike Mahmoudian and Associates, Inc., dated March 22, 2019.

The purpose of our review was to verify that the plans conform to the general intent of the recommendations contained in our August 11, 2017 Geotechnical Consultation report.

Architectural Plans

Sheet A-1.0 of the architectural plans names our firm as geotechnical engineer of record for the project. Sheet A-1.2 depicts a site plan showing the proposed new residence, attached garage and landscape improvements on the slope along the rear of the residence. The site plan also indicates that there will be an attached accessory dwelling unit along the south site of the new residence. Cross sectional views shown on sheets A-3.0 and A-3.1A indicate that a subterranean basement is planned.

Landscape Plans

Sheet L-1.10 depicts a landscape site plan, which indicates that several stacked concrete block walls are planned on the slope along the rear of the new residence. The walls will be constructed adjacent to new patio decking and will allow for terracing of the slope along the west side of the residence. Drainage is shown on the typical retaining wall details shown on sheet L-4.0.

Structural Plans

Sheet S-1 depicts a foundation plan, which that indicates that the new residence will be supported upon an 18-inch thick mat slab that is supported upon 24-inch diameter drilled piers that are to extend between 23 and 36 feet below grade based on the pier-depth schedule shown on the same sheet.

CONCLUSIONS

In our opinion, the plans generally conform to our recommendations for the project. It is important that we be contacted to provide observation services during the geotechnical aspects of construction, which include, but not be limited to, the foundation excavations, site grading, drainage (surface and subsurface) and any other geotechnical items of work related to the project.

It should be noted that our review was confined to geotechnically relevant items that are contained on the plans only. We do not review portions of the plans that do not relate to our recommendations.

It should be noted that deep fills susceptible to settlement and creep exist on the property and any improvements that are not supported upon piers may require periodic maintenance.

It is a pleasure working with you on this project. If you have any questions or comments, please feel free to contact our office.

Very truly yours,
MICHELUCCI & ASSOCIATES

John Petroff
Project Geologist

Joseph Michelucci
Geotechnical Engineer #593
(Expires 3/31/21)

cc: pa@pankoarchitects.com
stanheacox@msn.com
mma@pacbell.net

Michelucci & Associates, Inc.
Geotechnical Consultants

Joseph Michelucci, G.E.
joe@michelucci.com

Richard Quarry
rich@michelucci.com

August 11, 2017
Job No. 16-4602

via mail and e-mail: hollyqiu.ca@gmail.com

RECEIVED
OCT 17 2019
San Mateo County
Planning Division

Hao Qiu and Jianqiang Shen
1330 Enchanted Way
San Mateo, CA 94402

Re: Geotechnical Consultation Service
Update of our August 9, 2017 Geotechnical Investigation Report
1330 Enchanted Way
San Mateo, California

Dear Hao Qiu and Jianqiang Shen:

Introduction

As you know, on August 9, 2016 we issued a geotechnical investigation for the property, the purpose of which was to provide geotechnical recommendations for the then-proposed foundation stabilization. Our 2016 study included the results of our most recent relative floor elevation survey as well as the logs of 3 test borings that were excavated at the locations indicated on Figure 2 of the report. Our report provided recommendations for various approaches/alternatives that could be considered in dealing with the on-going foundation settlement problem that was affecting the existing residence. Specifically, the alternatives included, 1) doing nothing, 2) only re-leveling the existing structure, 3) existing foundation underpinning and 4) tear down and rebuilding of the residence.

Purpose of Update Report

The purpose of this letter is to provide updated recommendations (for instance, seismic codes have changed since our original soil report was issued) that should supplement or 2016 report. For convenience, we have also appended the August 9, 2016 report to this letter.

Description of Project

At this time, we understand that the current plans are to tear down the existing structure, decking and retaining walls and to rebuild a new residence and walls on the property.

Scope of Services

Our update study included:

* A review of our previous file and our report dated August 9, 2016;

* A visit to the site on August 9, 2017 by the undersigned Project Geologist to verify the site conditions since issuance of our previous report; and,

* The preparation of this letter.

August 9, 2017 Site Visit

Our observations suggest that the site conditions have changed in the rear yard area since our previous study. Specifically, a couple of the short stacked block walls at the top of the slope in the rear yard have completely failed since issuance of our 2016 report. We should point out that the failed walls were in poor condition at the time of our 2016 study and were on the verge of failing. In all likelihood, the historic wet winter that the Bay area experienced during the 2016/2017 season caused the walls to completely fail. The failed walls are located at the top of the slope about 15 to 20 feet away from the residence in the northwest corner of the rear yard.

In general, the remainder of the property appeared to be in about the same condition as it did during our 2016 study.

Conclusions

Although there have been changes at the site since issuance of our 2016 geotechnical report, the test borings we excavated during that study should be sufficient for the proposed tear down and rebuild project that is planned at the property.

In our opinion, the recommendations contained in our report remain applicable and could be utilized during the preparation of design plans for the foundation stabilization of the residence.

Supplemental Recommendations

The following updated seismic criteria should also be applied to the design.

Seismic Criteria Per 2016 CBC

As of January 1, 2017, the 2016 CBC is being utilized for projects in California. This new code is based upon the 2015 International Building Code.

It is our opinion that the subject site can be classified as Site Class "E" for the purpose of structural engineering calculations as defined in Section 1613 of the 2016 CBC.

Review of Plans and Construction Observations

It is recommended that all of the plans related to our recommendations be submitted to our office for review. The purpose of our review will be to verify that our recommendations are understood and reflected on the plans, and to allow us to provide supplemental recommendations, if necessary.

It is important that our firm be retained to provide observation and testing services during construction. Our observations and tests will allow us to verify that the materials encountered are consistent with those found during our study, and will allow us to provide supplemental, on-site recommendations, as necessary.

It is a pleasure working with you on this project. Please contact us with any questions or comments.

Very truly yours,
MICHELUCCI & ASSOCIATES, INC.

John Petroff
Project Geologist

Joseph Michelucci
Geotechnical Engineer #593
(Expires 03/31/19)



APPENDIX

Michelucci & Associates, Inc.
Geotechnical Consultants

Joseph Michelucci, G.E.
Daniel S. Caldwell, G.E.
Richard Quarry

February 7, 2008
Job No. 08-3791

Read and Acknowledged

_____

_____

Pages

RECEIVED
OCT 17 2019
San Mateo County
Planning Division

Ms. Susan Chong
1330 Enchanted Way
San Mateo, CA 94402

Re: Preliminary Geotechnical Evaluation
Existing Residence and Related Improvements
1330 Enchanted Way - San Mateo, California

Dear Ms. Chong:

As requested, we have completed a preliminary geotechnical evaluation of the single-family residence located at 1330 Enchanted Way in unincorporated San Mateo County, California. The purpose of our study was to evaluate the residence and foundation performance, to comment on the overall drainage conditions that exist on the property and to discuss the feasibility of future improvements (such as deck construction and possible foundation underpinning). Our findings are summarized below.

Background

We were informed that two additions were constructed at the residence, one of which is located at the right-rear corner of the structure and the other adjacent to the left-rear corner. It is suspected that the additions were completed sometime in the 1980's, although the actual date of completion is unknown (the County reportedly did not have any geotechnical documentation regarding the construction).

We understand that an ongoing foundation settlement problem has affected the residence and that previous efforts have been made to mitigate the settlement by underpinning a limited portion of the structure. We also understand that the previous underpinning was done without geotechnical input and without building permits. *We were informed that Uni-Struct Engineering performed the partial underpinning in about 2004 and that two rows of hand-dug piers were excavated beneath the area of the addition along the right-rear portion of the residence beneath the kitchen and dining room areas. The upslope row of piers was placed beneath the older original foundation and the newer addition foundation that abuts the older original foundation, and the second row of piers was placed along the downhill perimeter edge of the addition.*

1801 Murchison Drive, Suite #88 • Burlingame, California 94010 • (650) 692-0163 Fax: (650) 692-0169
2455 Bennett Valley Rd., Suite B104 • Santa Rosa, California 95404 • (707) 527-7434 Fax: (707) 527-5664

Discussion

It is our understanding that among other possibilities, future plans will call for the construction of a new deck along the rear of the residence (an existing wooden deck is in a deteriorated condition). Future plans are also to mitigate the ongoing foundation settlement problem affecting the residence, and consideration may be given to underpinning portions of the residence that have experienced settlement at the same time that the new deck is constructed (it may end up being necessary to also underpin the same area that was underpinned in 2004). In addition, we understand that a drainage problem is affecting the garage, and recommendations aimed at mitigating the problem are desired.

Study Methods

Our study included a detailed site reconnaissance by members of our staff on January 23, 2008. At that time, the interior and exterior of the residence were observed and a relative floor elevation survey was completed with a water-filled manometer. The individual survey points were recorded upon a rough floor plan that was generated using a measuring tape. The survey was performed to evaluate the levelness of the floor system, as floors that are significantly out of level usually reflect movement of the underlying foundation system. We then made a reconnaissance of the foundation crawl space area and a visual inspection of other improvements on the property such as existing wood retaining walls and decking, the paver driveway, patio and walkway areas, and site drainage characteristics.

This study also included a review of our project files for other sites investigated in the subject site area and a review of published geologic maps and literature. In addition, we contacted County officials in order to conduct research on the availability of any geotechnical files pertaining to the subject property (during our correspondence with the County, we were informed that they did not have any files related to the site geotechnical development). It should be noted that the county did provide us with a 1957 grading plan for "Enchanted Hills Unit 1" prepared by Murphy and Hastings, Civil Engineers. We also found (in our files) copies of the original geotechnical reports prepared by Woodward Clyde & Associates in 1956 and 1957.

We also contacted Vini Joy of Uni-Struct Engineering to discuss the underpinning work that was done in 2004. Also, we reviewed a copy of a report by Special Building Inspections, LLC dated November 26, 2003 titled "Foundation Inspection and Site Drainage Assessment" which contained the results of a relative floor elevation survey that was performed on the subject residence as part of the study.

Prior to the issuance of this report, we met with you at our office to discuss our findings and to show you copies of the various maps that we were able to obtain pertaining to site grading prior to the construction of the subject residence.

It should be emphasized that our study was preliminary in nature, as subsurface exploration, soil and bedrock sampling, laboratory testing, and rigorous analysis were not performed. Furthermore, our study was not meant to represent a structural engineering evaluation of the home or its foundation system.

Site Characteristics

The subject property is within a subdivision where mass-grading was performed prior to the construction of new residences. Many drainage swales and ravines were backfilled, and some deep cuts were excavated into existing ridge areas. Our document review suggests that the home is located within an area that was to be filled. *The fact that the home has been affected by significant differential settlement corroborates the probability that deep artificial fill underlies the property.*

The subject residence is located along the northwest edge of Enchanted Way about 50 feet west of its intersection with Linden Lane in unincorporated San Mateo County, California. The property has been improved with a one-story, wood frame, single-family dwelling that was constructed upon a relatively level building pad created by grading operations.

The driveway is surfaced with brick pavers, and it appears that the portion of the driveway closest to the front of the garage is sloped to direct surface flow towards the garage entry. We understand that during periods of extended moderate to heavy rainfall, water will tend to flow from the driveway, into the garage where the water will then pool and gradually seep into the residence's sub-floor area through a gap and cracks that have developed in the garage slab.

The rear-yard area features a wooden deck that extends off the back of much of the residence. The deck appears to be in disrepair as many of the boards are missing or warped, and it is evident that some dry rot has affected the deck. We also observed a failing wood retaining wall located beneath the outboard edge of the central portion of the existing deck. From the outboard edge of the deck, the topography slopes downward towards the northwest at a rather steep inclination that is on the order of 1.75 to 2 horizontal to 1 vertical.

We noted a concrete v-ditch at the top of the slope that extends underneath the right side of the existing wooden deck and a second v-ditch farther down the slope. We observed a series of newer looking steps and terrace walls along the portion of the slope to the right of the residence.

Site drainage is moderately controlled. We observed that the downspouts are all connected to subsurface pipes, which deposit water away from the residence. We observed two pipes outletting into the aforementioned v-ditch on the slope below the residence, which we understand are the outlet points for the downspouts along the front and right sides of the residence. Water was flowing from these pipes into the v-ditch at the time of our site visit. We also observed a single flex pipe that daylighted adjacent to the left-rear corner of the residence beneath the end of the existing wood deck (we suspect that the flex pipe is the outlet pipe for at least one of the downspouts along the rear of the property).

Condition of Residence and Improvements

Our study included a detailed inspection of the interior of the residence, which appeared to be in relatively good cosmetic condition; our observations suggest that the interior was probably recently remodeled. We did not observe any major signs of distress (e.g. large cracks) in the interior wall board, however we did observe that several door frames, particularly around the main entry area, were out-of-square, and it was pointed out to us that small gaps had recently been noticed between several of the hard wood floor boards in one of the bedrooms along the front portion of the residence. We were also shown an area where a small gap had developed between the pieces of crown molding in the corner of one of the bedrooms. There was also a noticeable floor slope (as documented below), which generally trended from the front of the residence towards the rear of the structure.

In order to evaluate the pattern and magnitude of possible differential foundation movement, we conducted a relative floor elevation survey upon the main floor of the residence with a water-filled manometer. The results of the survey are presented on Figure 1 and indicate that the floors of the residence are approximately 4.8 inches out-of-level. The high point of the survey was measured in the corner of the bedroom that is adjacent to the main entry area, and the low point was measured in the office area located adjacent to the master bedroom (at the transition point from the original residence's footprint to the left-rear addition).

We compared our survey to the survey completed by Special Building Inspections, LLC in 2003 (which was completed prior to any underpinning and releveling of the residence) and found that an additional amount of differential settlement has affected the laundry room and adjacent closet that both abut the garage (we noted moist soil in the crawl space area beneath the aforementioned laundry room and closet as will be discussed in the following section of this report).

Also, the 2003 survey indicates that over 7 inches of differential settlement had affected the right-rear corner of the residence; our survey indicates that the residence is just over 3 inches out-of-level in this area, which is where the underpinning and releveling was done in 2004. *We were informed by Uni-Struct Engineering that the underpinning piers extended approximately 10 feet below grade and the bottom 1 or 2 feet of each pier was extended into what they describe as fairly hard material, however it is likely that the piers did not encountered bedrock as it appears that a rather significant amount of fill was placed along this portion of the property.*

It should be noted that the magnitude of measured differential settlement might not reflect all of the settlement that has affected the residence. For example, it is possible that the low point has settled 9 inches (or more) and the high point has settled 2 inches (or more). Furthermore, previous releveling efforts may have skewed the results. The measured differential does however indicate that much a more than "normal" amount of differential settlement has affected the property.

Crawl Space Observations

Our observations within the crawl space area suggest that the structure is likely supported upon continuous perimeter reinforced concrete footings with isolated interior posts that are supported upon isolated concrete footings. We noted several 1/16-inch to 1/4-inch wide vertical cracks along the right side (kitchen and dining room side) perimeter foundation and a 1/16-inch wide vertical crack in the foundation where the low point of our relative floor elevation survey was measured. The aforementioned crack occurs in the older foundation where the corner of the original residence used to be.

For the most part, the soil exposed in the crawl space was dry to slightly damp except in the area adjacent to the left-front corner of the garage and an area located about midway along the rear-perimeter foundation. We did not observe any standing water throughout the crawl space, however it appeared that at some point in the past, several inches of water likely had puddled atop the crawl space subgrade. We observed a brown mud stain that extended along most of the perimeter foundation, which suggests that water levels likely reached several inches within the subfloor area. *We were informed that there were chronic pipe leaks in the subfloor area in the past, and water was allowed to leak from the shallow piping system onto the crawl space grade for over a year before the leaks were fixed. The aforementioned mud stain on the perimeter foundation may have been related to the leakage problem that was occurring in the subfloor area, however this was not confirmed by our observations.*

We also noted that many of the isolated interior posts appeared to be slightly leaning with the tops in the downhill direction. This was particularly noticeable beneath both the small bedroom adjacent to the main entry (where the highpoint of our relative floor elevation survey was recorded) as well as the area beneath the right-rear corner of the residence beneath the kitchen and dining room. In addition, several of the wood posts were severely off center from their respective concrete footings.

We noted evidence of the re-leveling that had taken place beneath the continuous foundation elements supporting the addition at the right-rear corner of the structure. Our observations suggest that the continuous foundation elements beneath the addition had been raised slightly above crawlspace grade and are currently being supported by the underlying underpinning piers. *It should be noted that many of the posts in the underpinned area were replaced while the underpinning was taking place and were observed to be leaning at the time of our inspection, which suggests ongoing movement.*

It should also be noted that our observations of the newer foundation for the addition to the left-rear side of the residence suggest that the newer foundation was not doweled into the older foundation. We observed that the addition foundation appears to abut the old stucco siding of the residence (in the area of the low point of our relative floor elevation survey).

Site Geology

The site has been mapped to be within close proximity to a geologic contact between Franciscan sheared rock (fsr) along the eastern portion of the site and artificial fill (Qf_1) along the western portion of the property (Pampeyan, 1994). The sheared rock is described as being a mixture of predominately soft, light to dark gray in color, sheared shale, siltstone and graywacke sandstone containing various size inclusions of other Franciscan rock types. The material is typically surrounded by a sheared clay matrix and may include other Franciscan rock types such as greenstone, chert and related rocks. The artificial fill is described as poorly consolidated to well-consolidated gravel, sand, silt and rock fragments in various combinations used in a variety of applications.

The closest mapped major active fault to the site is the San Andreas Fault, which is located approximately 1.2 miles to the southwest. The Hayward Fault is located approximately 17.4 miles to the northeast of the subject property, and the Calaveras Fault several miles further to the northeast. This fault system is active and the source of numerous earthquakes throughout California. It is highly probable that the site will experience very strong ground shaking in the future during a moderate to large earthquake on any active or potentially active Bay Area fault that is a part of the San Andreas Fault System.

Preliminary Conclusions

Based upon our preliminary study, it is our opinion that the residence has experienced differential settlement of a magnitude that would be considered significantly more than normal for a structure of this size and age. Although not confirmed by subsurface exploration and testing, the settlement is most likely the result of ongoing consolidation and lateral "creep" of underlying artificial fill. The floor slope and other signs suggest that long-term and ongoing differential foundation movement has and will continue to occur. If the artificial fill that was placed during the initial site grading was not well compacted, it would be prone to long-term densification, which in turn could cause the settlement that has occurred. Our experience in this area (numerous other projects that have included subsurface exploration and testing) suggests that most of the deeper fills that were placed were not adequately compacted. Compaction standards are much different now than they were at the time the subdivision was developed. Therefore, assuming that the above assumptions are correct (again site specific subsurface studies have not been completed) additional future settlement and lateral "creep" are likely.

It is very likely that subdrains were placed at the bottom of the fill during the mass-grading for the site, as was indicated on the grading plan for the subdivision. The aforementioned grading plan also indicates that the outlet for any subdrainage done in conjunction with site grading should be within very close proximity to the westernmost corner of the subject property (at the property's furthest point down the slope). If possible, we recommend that the outlet pipe be located and monitored to ensure that the pipe remains clear and water is being discharged from the pipe (the outfall pipe likely discharges into a concrete v-ditch as opposed to directly onto the hillside, which may make locating the pipe easier.)

In order to evaluate the depth of fill, the extent of the fill (i.e. there may be significant fill under certain areas, and less fill in other locations) and the type of material present below the fill, subsurface exploration would be necessary. In order to adequately characterize the site, a minimum of 4 to 5 test borings would be necessary, as was discussed during our office meeting with you. The borings would enable us to evaluate the specific cause(s) of the settlement and to provide recommendations as to the type and extent of repairs necessary. It would also allow us to provide recommendations for the new rear deck foundation. At that point, recommendations and design criteria could be given to a civil or structural engineer to prepare formal repair plans.

In regards to the drainage problem affecting the garage area, we recommend that a slot type collection grate be placed along the front of the garage (where the driveway pavers abut the concrete slab). The slot drain could collect any surface runoff before it enters the garage and the adjacent sub-floor area. The slot drain should be connected to the tightline disposal pipe already in place servicing the downspouts along the right side of the residence.

It would also be prudent to construct a foundation subdrain along the uphill and sides of the residence; however, we recommend that a new subdrain be constructed after completion of any underpinning as a new drain could be compromised if constructed prior to such work. We will be able to make the appropriate recommendations for a new subdrain once the underpinning work has been completed.

Limitations

The opinions expressed in this report are based upon the previously described scope of work. No subsurface investigation was undertaken. While we believe that our conclusions are well founded, it is possible that there may be undiscovered conditions that would cause us to revise our opinions.

This report was prepared to provide geotechnical opinions only. it should not be construed to be any type of guarantee or insurance.

We are pleased to have been of service to you on this project. Please contact us if you have any questions.

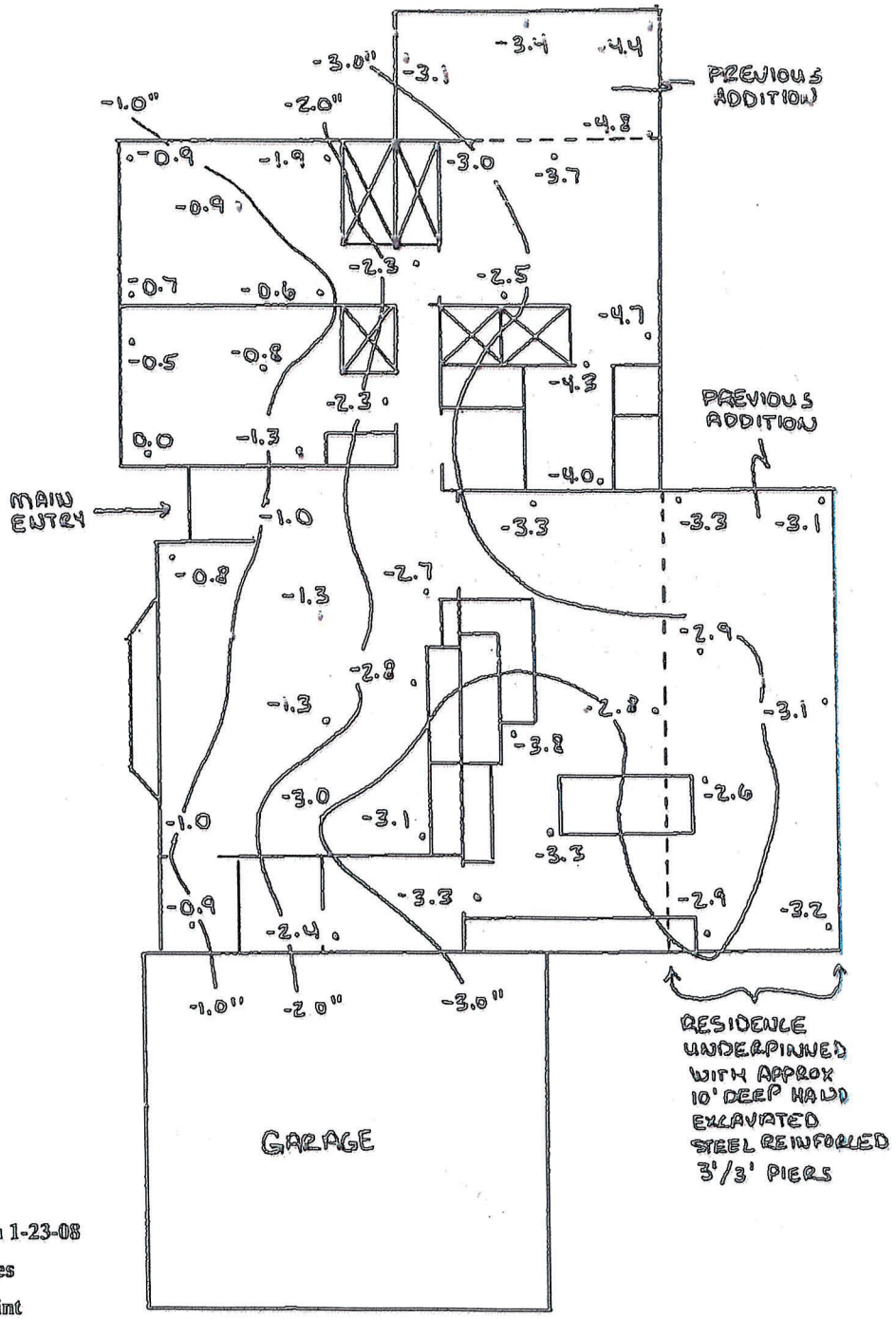
Very truly yours,
MICHELUCCI & ASSOCIATES, INC.

John Petroff
Staff Geologist

Joseph Michelucci
Geotechnical Engineer #593
(expires 3/31/09)

RELATIVE FLOOR ELEVATION SURVEY

1330 Enchanted Way
San Mateo, California
Scale: 1"=10' +/-



NOTES

1) Survey performed on 1-23-08
2) Readings are in inches
3) 0.0 indicates high point
4) -2.3 elevation point/reading
5) -1.0" Contour of equal floor elevation

Job No. 08-3791	Michelucci & Associates, Inc.	Figure 1