COUNTY OF SAN MATEO
PLANNING AND BUILDING DEPARTMENT

DATE: June 12, 2019

TO: Planning Commission

FROM: Planning Staff

SUBJECT: EXECUTIVE SUMMARY: Consideration of a Grading Permit and an Architectural Review Exemption to allow 215 cubic yards (c.y.) of grading associated with the construction of a new single-family residence, second unit, and the removal of 6 significant and 5 non-significant sized trees. The project is located at 229 Huckleberry Trail in the unincorporated Woodside area of San Mateo County.

County File Number: PLN 2018-00289 (Livingston/Zhang)

PROPOSAL

The applicant proposes to construct a new 1936 sq. ft. single-family residence with an attached 462 sq. ft. two-car garage, 614 sq. ft. of rear yard decking, and a detached two-story structure containing a 224 sq. ft. viewing room and a 224 sq. ft. second unit on a vacant, forested, steeply sloped, rural parcel within the Skyline State Scenic Corridor. Located approximately 600 feet away from Skyline Boulevard, the proposed project is not visible from Skyline Boulevard itself due to the surrounding vegetation and distance from the road.

The project proposes 215 cubic yards (c.y.) of grading comprised of 60 c.y. of cut and 155 c.y. of fill and the removal of 11 trees (6 significant, 5 non-significant) of varying species. A majority of these trees are located in the rear of the subject property and will facilitate the construction of the septic system and drainage facilities required for the proposed single-family residence. Trees will be planted to replace the trees removed.

RECOMMENDATION

That the Planning Commission approve the Grading Permit and Architectural Review Exemption, County File Number PLN 2018-00289, by making the required findings and adopting the conditions of approval listed in Attachment A of this staff report.

SUMMARY

Located west of Skyline Boulevard near the Kings Mountain Fire Brigade, the proposed project site is a through lot that fronts Huckleberry Trail and Creek Trail. Situated

between two developed lots the vacant project parcel is relatively flat in the front and slopes steeply downward in the rear toward Creek Trail. Located in an evergreen forest, the project is heavily forested with large redwood trees with smaller oak, Douglas fir, and madrone tress interspersed throughout the parcel.

The proposed project consists of a driveway/firetruck turnaround, two-story single-family residence, attached two-car garage, and a combined two-story second unit and viewing room structure attached to the main structure by a rear deck. The project will have a lot coverage of 12% where 25% is the maximum allowed in the S-10 Zoning District and be constructed on a pier and beam foundation system. This foundation will raise the development above grade, retain a majority of the natural grade of the upper parcel, and result in a height of 29 feet where the maximum allowed is 36 feet.

The project proposes 215 cubic yards (c.y.) of grading comprised of 60 c.y. of cut and 155 c.y. of fill and the removal of 11 trees (6 significant, 5 non-significant) of varying species. A majority of these trees are located in the rear of the subject property and will facilitate the construction of the septic system and drainage facilities required for the proposed single-family residence. Replacement trees will be installed to replace the trees removed.

Though not visible from Skyline Boulevard, the proposed development is built around the existing trees on the lot, minimizes tree removal activities, employs natural wood siding and colors, does not exceed the height the forest canopy, is grouped together in the front of the parcel to reduce the development footprint, and adheres to the design and development standards of the Skyline State Scenic Corridor and the “S-10” Zoning District to blend in with the surrounding environment and minimize visual impacts.

LR:pac - LARDD0185_WPU.DOCX

COUNTY OF SAN MATEO
PLANNING AND BUILDING DEPARTMENT

DATE: June 12, 2019

TO: Planning Commission

FROM: Planning Staff

SUBJECT: Consideration of a Grading Permit and Architectural Review Exemption, pursuant to Section 9280 of the San Mateo County Ordinance Code and Section 261 of the California Streets and Highways Code, to allow 215 cubic yards (c.y.) of grading associated with the construction of a new single-family residence, second unit, and the removal of 6 significant and 5 non-significant sized trees. The project is located at 229 Huckleberry Trail in the unincorporated Woodside area of San Mateo County.

County File Number: PLN 2018-00289 (Livingston/Zhang)

PROPOSAL

The applicant proposes to construct a new 1936 sq. ft. single-family residence with an attached 462 sq. ft. two-car garage, 614 sq. ft. of rear yard decking, and a detached two-story structure containing a 224 sq. ft. viewing room and a 224 sq. ft. second unit on a vacant, forested, steeply sloped, 0.4-acre rural parcel within the Skyline State Scenic Corridor. The installation of a new fire hydrant adjacent to the subject property and the extension and upgrade of an existing waterline under Huckleberry Trail to serve the subject property is also proposed. Located approximately 600 feet away from Skyline Boulevard, the proposed project is not visible from Skyline Boulevard itself due to the surrounding vegetation and distance from the road.

The project includes 215 cubic yards (c.y.) of grading comprised of 60 c.y. of cut and 155 c.y. of fill and the removal of 11 trees (6 significant, 5 non-significant) of varying species. A majority of these trees are located in the rear of the subject property and will facilitate the construction of the septic system, drainage facilities, and retaining walls required for the proposed single-family residence. Replacement trees will be planted to replace the trees removed.

RECOMMENDATION

That the Planning Commission approve the Grading Permit and Architectural Review Exemption, County File Number PLN 2018-00289, by making the required findings and adopting the conditions of approval listed in Attachment A of this staff report.

BACKGROUND

Report Prepared By: Laura Richstone, Project Planner, Telephone 650/363-1829

Applicant: John Livingston (CJW Architecture)

Owner: Zhifan Zhang

Location: 229 Huckleberry Trail, unincorporated Woodside

APNs: 067-167-070 and 067-067-280 (parcels merged in 1983)

Parcel Legality: Legal parcels per merger in 1983 (Merger, June 14, 1983)

Size: 0.4-acre (17,500 sq. ft.)

Existing Zoning: R-1/S-10 (Single-Family Residential/S-10 Combining District with a 20,000 sq. ft. minimum lot size)

General Plan Designation: Low Density Residential Rural (0.3 to 2.3 dwelling units per net acre)

Sphere-of-Influence: None

Existing Land Use: Vacant residential rural parcel

Water Supply: California Water Service Company, Bear Gulch

Sewage Disposal: Septic System

Flood Zone: Zone X (Area of Minimal Flooding); Community Panel No. 06081C0290E, effective date October 16, 2012

Environmental Evaluation: Categorically exempt under provisions of Class 3, Section 15303, of the California Environmental Quality Act (CEQA) Guidelines, relating to the construction of a single-family residential structure in a residentially zoned area.

Setting: Located west of Skyline Boulevard near the Kings Mountain Fire Brigade, the proposed project site is a through lot that fronts Huckleberry Trail and Creek Trail. Situated between two developed lots the vacant project parcel is relatively flat in the front and slopes steeply downward in the rear toward Creek Trail. Located in an evergreen forest, the parcel is heavily forested with large redwood trees and smaller oak and madrone tress interspersed throughout the parcel.

Chronology:

Date		Action
August 3, 2018	-	Application Submitted
December 18, 2018	-	Revised Project to Reduce Grading and Tree Removal Activities Submitted
April 10, 2019	-	Application Deemed Complete
June 12, 2019	-	Planning Commission Hearing Date

DISCUSSION

A. KEY ISSUES

1. Conformance with the General Plan

Staff has reviewed and determined that the proposed project complies with all of the applicable General Plan Policies, including the following:

a. Vegetative, Water, Fish, and Wildlife Resources

Policies 1.23 through 1.28 of the General Plan seek to regulate land uses and development to prevent, or mitigate to the extent possible significant adverse impacts to vegetative, water, fish, and wildlife resources.

Situated off of Skyline Boulevard in a heavily forested area, the project parcel is undeveloped with on-site vegetation dominated by mature redwood, Douglas fir, oak, and madrone trees. No watercourses are present on or near the project site. A search of the California Natural Diversity Database (CNDDB) identified no State or Federal special-status within or adjacent to the project parcel. The proposed development, which consists of the construction of a new two-story single-family residence, two-car garage, and detached viewing room and second unit structure, will result in the removal 11 of the parcel's 43 existing trees.

Of the 11 trees proposed for removal, 6 are significant[1] and 5 are non-significant sized trees. A majority of these trees, located in the rear of the parcel (along Creek Trail), are proposed for removal to accommodate the required onsite septic and drainage systems for the

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

main house and second unit. Compared to the initial project submittal which included the removal 16 trees, the current project has reduced tree removal activities and has retained 5 trees (3 significant and 2 non-significant) that were originally proposed for removal (see Section A.2 for further discussion regarding tree removal, protection, and replacement). Based on the 1:1 replacement ratio[2] as required by the Significant Tree Ordinance, reduced tree removal activities, tree protection measures for the trees on-site and adjacent to the proposed water line upgrades, and due to the fact that no special-status plant or animal species were identified, 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 minimize grading, soil erosion, and sedimentation including, but not limited to, ensuring disturbed areas are stabilized; and protecting and enhancing natural plant communities and nesting and feeding areas of fish and wildlife.

The project will be located on the relatively flat upper portion of the parcel and utilize a pier and beam foundation system. This system will raise the proposed development above grade which, when compared to a slab foundation, retains more of the natural grade of the site and requires less grading. With the pier and beam foundation system, the project proposes 215 c.y. of grading which includes 60 c.y. of cut and 155 c.y. of fill. According to the proposed grading plans (Attachment C), the rear of the parcel has existing slopes of 35-50% with small sections that exceed 50% slopes. Due to the steep slopes in the rear of the parcel, a majority of the proposed grading is associated with reducing these slopes to accommodate the required septic and drainage systems for the main house and second unit. Though some grading and tree removal activities are necessary to develop the parcel, the applicant has designed the proposed project to minimize such activities. Compared to the original proposal, the current project has reduced proposed grading quantities by 30 c.y., retains a majority of the existing natural grade in the rear of the parcel, and preserves five additional trees.

[2] Replacement trees shall be an even mixture of coast redwood, Douglas fir, and coast live oak using at least 15-gallon sized stock.

Table 1	
Initial Project	**Current Project**
Cut: 115 c.y.	Cut: 60 c.y.
Fill: 130 c.y.	Fill: 155 c.y.
Total: 245 c.y.	Total: 215 c.y.

To minimize the transport of sediment and runoff from the immediate project area and protect the trees on site, the applicant has provided erosion control and tree protection plans prepared by Lea & Braze Engineering Inc., that include measures such as installing fiber rolls on slopes and construction Best Management Practices (BMP's). Per Condition of Approval No. 6, the applicant will also implement dust control measures such as covering haul truck transporting soil or other loose 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.

c. Visual Resources

Policy 4.15 (*Appearance of New Development*), Policy 4.21 (*Utility Structures*), Policy 4.22 (*Scenic Corridors*), Policy 4.24 (*Rural Development Design Concept*), and the Rural Site Planning Policies 4.25 through 4.33 seek to protect the natural visual character of scenic areas, including scenic corridors, by regulating the appearance of new development to promote good design, site relationship, and other aesthetic considerations; and minimizing the adverse visual quality of utility structures.

The project site is located within the Skyline State Scenic Corridor and is heavily forested with onsite vegetation dominated by mature redwood, madrone, Douglas fir, and coast live oak trees with low-lying shrubs. Screened by mature redwood trees and located approximately 600 feet away from the road itself, the proposed development will not be visible from Skyline Boulevard. The proposed single-family house and viewing room/second unit structure are grouped together and will be located in the relatively flat upper portion of the parcel. They have been designed, clustered, and oriented to retain 5 large mature redwood trees that dominate the upper portion of the lot and will also retain two groves of redwood trees located near the middle of the property. Of the over 40 trees located on the vacant project parcel, a total of 11 trees are proposed for removal due to their location within the building footprint or interference with proposed septic or drainage systems (See Section A.2 for further details). To further reduce the impact of development and minimize the adverse visual quality impacts of utility infrastructure, all utilities serving the

parcel will be undergrounded per Condition of Approval No. 15. Staff has determined that the proposed development and the associated removal of 11 trees will not be visible from Skyline Boulevard nor impact views from the roadway itself due to screening from the surrounding forest and the parcel's distance from the road.

Architectural Design Standards and Site Planning for Rural Scenic Corridors

Policies 4.48 through 4.55 (*Architectural Design Standards for Rural Scenic Corridors*) and Policies 4.56 through 4.69 (*Site Planning for Rural Scenic Corridors)* seek to ensure structures are complementary and compatible with the surrounding environment and minimally visible from public views through the regulation of colors and materials, size and scale of structures, lot coverage, height, building setbacks, outdoor lighting, and vegetation removal.

The project consists of a driveway/firetruck turnaround within the proposed driveway/front yard setback (along Huckleberry Trail), two-story single-family residence, attached two-car garage, and a combined two-story second unit and viewing room structure attached to the main structure by a rear deck. The project will have a lot coverage of 12% where 25% is the maximum allowed in the S-10 Zoning District and be constructed on a pier and beam foundation system. This foundation will raise the development above grade, retain a majority of the natural grade of the upper parcel, and result in an average height of 29 feet where the maximum allowed average height is 36 feet.

Though not visible from Skyline Boulevard, the proposed development is built around the existing trees on the lot, minimizes tree removal activities, employs natural wood siding and colors, does not exceed the height the forest canopy, is grouped together in the front of the parcel to reduce the development footprint, and adheres to the design and development standards of the Skyline State Scenic Corridor and the zoning district (See Section A.3 below) to blend in with the surrounding environment and minimize visual impacts. In addition, per Condition of Approval No. 16, all exterior lights shall be dark sky compliant and designed and located as to confine direct rays to the subject property and prevent glare to the surrounding area.

d. Rural Land Use Policies

Policy 9.23 (*Land Use Compatibility in Rural Lands*) seeks to encourage compatibility of land uses in order to promote the health

and safety and seek to maintain the scenic and harmonious nature of the rural lands.

The parcel is designated Low Density Residential Rural and development is clustered toward the front of the parcel (Huckleberry Tail). To reduce the development footprint, the proposed development will leave the rear of the parcel undeveloped with the exception of the underground septic and drainage systems and a rear retaining wall. All proposed building materials will be durable, blend with the surrounding environment, and meet the requirements for Moderate Fire Hazard Severity State Responsibility Zones per the California Building Code. To further mitigate potential fire risks, the house has been setback farther from the front property line than is required per the Zoning Regulations in order for the driveway to function as a firetruck turnaround and all utilities will be undergrounded per Condition of Approval No. 15. In addition, the applicant will also install a new fire hydrant near the front left property line per the recommendation of Cal-Fire. As the proposed development is not visible from Skyline Boulevard, staff concludes that there will be no visual impact to the Skyline State Scenic Corridor and that the project is in character with the forested nature of this parcel and the surrounding low density rural development.

e. Wastewater Policies

Policy 11.10 (*Wastewater Management in Rural Areas*) seeks to require individual sewage disposal systems in rural areas.

The proposed project includes a plan to install an onsite septic system. Leach lines for the septic system will be installed in the rear of the parcel with the septic tank located underground in the driveway/firetruck turnaround area. The parcel is large enough to accommodate the primary leach lines and provides room for expansion lines[3] in the event the primary lines fail or the system must be expanded sometime in the future. Due to steep slopes, portions of the rear property will be graded to a slope of less than 50% to accommodate the leach lines (see Section A.5 above for further discussion on grading activities). San Mateo County Environmental Health Services has reviewed and conditionally approved the proposed on-site septic system for compliance with County wastewater policies.

[3] Expansion lines will not be built until such time in the future when they are deemed necessary.

f. Water Supply Policies

Policy 10.15 (*Water Suppliers in Rural Areas*) and Policy 10.25 (*Efficient Water Use*) consider water systems and wells as appropriate methods of water supply and encourage efficient water use for new development.

The project site and surrounding rural residential parcels are serviced by California Water Service Company-Bear Gulch (Cal-Water). The proposed development includes a plan to replace and upgrade 254 linear feet (LF) of an existing water line located underneath Huckleberry Trail in order to serve the proposed development and associated new fire hydrant. Cal-Water has confirmed that the project parcel can be serviced by their system and has reviewed and conditionally approved the proposal to extend and upgrade the existing waterline located under Huckleberry Trail.

2. Conformance with the Significant Tree Ordinance

Forty-three trees are located on the vacant parcel. The upper portion of the parcel fronting Huckleberry Trail is dominated by several large (40-52'' dbh[4]) redwood trees while the steeply sloped rear of the parcel contains two small groves of redwood trees and a mixture of madrone, Douglas fir, and coast live oak trees. As discussed previously, the applicant proposes to remove 11 trees including 6 significant sized trees and 5 non-significant sized trees. Section 12,012 of the County Significant Tree Ordinance defines a "significant tree" as *any live woody plant rising above the ground with a single stem or trunk of a circumference of 38" or more or 12" in diameter as measured at 4 1/2 feet vertically above ground*. The trees proposed for removal, which are identified by certified Master Arborist John McClenahan (WE-1476B) with McClenahan Consulting LLC can be found in Table 2 below.

Table 2

Tree Number	Size (DBH)	Species	Reason for Removal
15*	12''	Madrone	Fallen
16*	12''	Madrone	Poor condition, located close to proposed retaining wall and in area of grading activity
17	7''	Live oak	Very poor condition, located in drainage system footprint
18	8''	Live oak	Very poor condition, located in drainage system footprint

[4] Diameter at Breast Height

Table 2			
Tree Number	**Size (DBH)**	**Species**	**Reason for Removal**
21*	13.5'', 15'', 16.7''	Madrone	Very poor, located in drainage system footprint
22*	22''	Douglas fir	Poor to fair condition, previous top failure, close proximity to septic leach line, in area of grading activities
23*	16.3''	Live oak	Very poor condition, significant die back, close proximity to proposed retaining wall, in area of grading activities
24*	12'', 14'', 15'', 19''	Madrone	Poor to fair condition, within building footprint
25	9.7''	Coast redwood	Poor to fair condition, previous top failure, close proximity to septic leach line, in area of grading activities
A	8''	Madrone	Located in drainage system footprint and in close proximity to drainage system lines
B	6''	Douglas fir	Adjacent to proposed retaining wall, in area of grading activities
* Denotes significant sized tree.			

A majority of the trees proposed for removal were assessed by the project arborist as being in fair to declining health and are proposed for removal either because they are within the footprint of the proposed septic and drainage systems, located in proposed grading areas, or located in close proximity to the rear retaining wall. Two of the trees (Nos. A and B) were noted on the plans but were omitted from the submitted arborist report. Tree A (an 8'' dbh Madrone) and Tree B (a 6'' dbh Douglas fir) are non-significant in size. Located in the rear of the parcel, Tree A is proposed for removal due to its close proximity to drainage system lines. Tree B, also located in the rear of the parcel, is proposed for removal due to its close proximity to the proposed rear retaining wall and because it is located in a steeply sloped area (50% or greater slope) which will see more intensive grading activities. Due to their location, retaining these trees would likely result in root loss and damage which would lead to their decline and possible death. The proposed project and arborist report has been reviewed and approved by the County Arborist. Per the County Arborist, a revised arborist report that properly documents Trees A and B will be required upon building permit submittal (Condition of Approval No. 17).

Foundation System

Located in the front of the parcel in close proximity to several significant sized redwood trees, the proposed two-story house and second unit/viewing room structure have been designed around the existing trees on-site to minimize tree removal activities and construction impacts. The proposed pier and beam foundation system will raise the structures above grade which reduce overall grading quantities and preserve the roots of the surrounding trees. The foundation system will also allow some flexibility to adjust the location of the piers to avoid damaging the structural roots of the surrounding redwood trees. Recommendations from the arborist report such as establishing appropriate Tree Protection Zones (TPZs), hand or air digging within TPZs, and monitoring by an on-site arborist have been incorporated as conditions of approval.

Tree Protection Measures

To ensure construction activities do not damage or unduly impact the remaining trees on the property, a tree protection plan was required for this project. To minimize injuries, the arborist report established Tree Protection Zones for each tree (or group of trees) and recommended that these TPZs be roughly six times the trunk diameter of the trees proposed to be retained. At this distance, associated buttress and anchoring roots would be preserved and minimal injury to the functional root area of the trees is anticipated. As some construction and grading activities encroach within established TPZs the arborist report recommended that all grading activities occur by hand and also included specific requirements for excavation and demolition activities, tree pruning and maintenance, erosion and sediment control, and regular site visits by the project arborist. All tree protection measures discussed in the arborist report are included as conditions of approval in Attachment A.

Tree Replacement

Pursuant to Section 12,024(a) of the County Significant Tree Ordinance, a 1:1 replacement for each significant tree removed is required. With a proposed removal of 6 significant sized trees and 5 non-significant sized trees and based on the County replanting requirements, the County Arborist recommended the applicant plant 6 trees consisting of an even mixture of coast redwood, Douglas fir, and coast live oak using at least 15-gallon sized stock. To ensure that these trees are replanted in areas that will encourage their establishment and long term survival, the applicant will be required to submit a tree replanting plan (generated by the project arborist) upon building permit submittal (Condition of Approval No. 24).

3. Conformance with the Zoning Regulations

a. R-1/S-10 Zoning District Regulations

Located within the R-1/S-10 (Single-Family Residential/S-10 Combining District) Zoning District, the proposed development complies with the development standards set forth by the County Zoning Regulations with the exception of minimum lot size, minimum lot width, and minimum left side yard setback as outlined below:

Table 3		
Main House		
	Required	**Proposed**
Minimum Lot Size	20,000 sq. ft.	17,500 sq. ft.
Minimum Lot Width	75 ft.	50 ft.
Minimum Front Yard Setback (fronting Huckleberry Trail)	20 ft.	25 ft.
Minimum Rear Yard Setback (fronting Creek Trail)	20 ft.	94 ft.
Minimum Right Side Yard Setback	10 ft.	10 ft.
Minimum Left Side Yard Setback	10 ft.	7 ft.
Maximum Height*	36 ft.	29 ft.
Maximum Lot Coverage**	25%	12.18%
Minimum Parking Spaces	2 Covered 1 Uncovered	2 Covered 1 Uncovered
* *Height measured from average finished grade to average roofline.* ** *Lot coverage includes footprint of main house, garage, decking, and second unit.*		

Parcel Size and Width

The R-1/S-10 Zoning District requires a 20,000 sq. ft. minimum parcel size and a 75 ft. minimum parcel width. The project parcel consists of two different lots: one lot that fronts Huckleberry Trail (APN: 067-167-070) and one lot that fronts Creek Trail (APN: 067-167-280). Though smaller than the standard lot size of 20,000 sq. ft., these two lots were merged into one legal 17,500 sq. ft., 50-foot wide[5], developable parcel in 1983 as part of a mass lot merger[6]. This action merged substandard contiguous lots held in common ownership together in an effort to increase base parcel size so that the resulting parcels would be large enough to

[5] 50 feet is the average parcel width established along the midpoints of the parcel length.
[6] Merger June 4, 1983

support required septic systems and would thus be potentially developable. As a result of the merger in 1983, the subject 17,500 sq. ft., 50-foot wide project parcel is a legal non-conforming parcel.

Left Side Yard Setback

The proposed second unit/viewing room two-story raised building is attached to the main house by a connecting rear deck. Due to its raised elevation, a landing and stairway access to this structure encroaches into the left side yard setback by 3 feet resulting in a left side yard setback of 7 feet where 10 feet is required. Section 6406 of the Zoning Regulations allows stairways and landings to encroach a maximum of 3 feet into a side yard setback provided that: *(1) Such landing place or uncovered porch shall have its floor no higher than the entrance floor of the building, (2) a railing no higher than 42 inches may be placed around such landing place, (3) such stairway, landing place, or porch is unroofed and unenclosed above and below, and (4) such stairway, landing place, or uncovered porch shall not reduce the effective side yard clearance to a distance less than 3 feet.* With the entrance to the first floor viewing room at the same elevation as the main house and Conditions of Approval Nos. 22 and 23 which restricts the rail height of the encroaching landing and stair way and requires that such structures remain unroofed, the proposed side yard encroachment meets the requirements of Section 6406 and is permitted under the Zoning Regulations.

General Compliance with Development Standards and Parking

With the exception of the parcel size, parcel width, and left side yard setback as discussed above, the proposed project adheres to the development standards of the R-1/S-10 Zoning District. Located on the smaller portion of the parcel that fronts Huckleberry Trail, the main house will be setback further from the front property line than is otherwise required to accommodate a firetruck turnaround, and adheres to the minimum right side and rear setbacks. The proposed development will result in a lot coverage of 12% (2132 sq. ft.) where 25% (4375 sq. ft.) is the maximum allowed and will have an average height of 29 feet where 36 feet is the maximum. As required by Section 6117 (*Required Automobile Parking Spaces)* and Section 6429 (*Development Standards for New Second Units*), the proposed project must provide at least two covered parking spaces for the main residence and one uncovered parking space for the second unit. The proposed 460 sq. ft. garage will provide the required parking for the main house while the one uncovered parking space required for the second unit will be located adjacent to the garage in front of the entrance to the main house.

4. Conformance with the Architectural Review Permit Exemption

The proposed project is located within the Skyline State Scenic Corridor. Due to the fact that the proposed project is located approximately 600 feet away from Skyline Boulevard and is not visible from the road itself, the project qualifies for an Architectural Review Permit Exemption.

The project, as proposed and conditioned, is consistent with the Standards for Architectural and Site Control within the Skyline Scenic Corridor. Specifically, the proposal accomplishes the following goals and/or meets the following standards:

a. The project is consistent with all General Plan Visual Quality Policies, including the *Architectural Design Standards for Rural Scenic Corridors and Site Planning for Rural Scenic Corridors*, as discussed in Section A.1.c of this report.

b. The proposed grading associated with the project has been kept to a minimum and will follow natural contours of the property to the maximum extent possible and will blend with the natural appearance of the surrounding topography. The project has been situated to minimize tree removal activities, preserve several significant redwood trees in the front and rear of the parcel, and will be required to plant 6 replacement trees for the significant sized trees that are removed. Permanent on-site drainage and septic systems are proposed for the project and erosion and sediment control measures will be implemented throughout project construction to reduce onsite erosion and sedimentation.

5. Conformance with the Grading Regulations

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

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

The grading plan has been prepared by a licensed civil engineer and has been reviewed and preliminarily approved by the Department of Public Works and the County's Civil Section. The project site has also undergone a geotechnical study prepared by ROMIG Engineering Inc., which has been reviewed and preliminarily approved by the County's Geotechnical Section for soil stability. The site specific recommendations contained within the ROMIG Engineering Inc., report along with recommendations from other reviewing agencies have been integrated into this grading permit as conditions of

approval. These conditions of approval will prevent a significant adverse impact on the environment.

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.*

Proposed grading activities meet the (1) Erosion and Sediment Control, (2) Grading, (3) Geotechnical Reports, (4) Dust Control Plans, (5) Fire Safety, and (6) Time Restriction standards referenced in Section 9296 of the Grading and Land Clearing Ordinance. Erosion and sediment control measures will be inspected and must remain in place during grading and construction activities. A dust control plan must be submitted for approval and implemented before the issuance of the grading "hard card." The proposed grading plan was prepared by a licensed civil engineer and reviewed for adequacy by the Department of Public Works. 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 allowed between April 30 and October 1. If the applicant wishes to preform 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 Low Density Residential Rural. The proposed construction and associated grading for a new single-family dwelling, two-car garage, second unit/viewing room building, driveway, and associated septic system 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 with all applicable General Plan goals and policies.

B. ENVIRONMENTAL REVIEW

This project is categorically exempt under provisions of Class 3, Section 15303, of the California Environmental Quality Act (CEQA) Guidelines, relating to the construction of a single-family residential structure in a residentially zoned area.

C. REVIEWING AGENCIES

Building Inspection Section
Department of Public Works

Environmental Health Services
Geotechnical Section
California Water Service Company, Bear Gulch
Cal-Fire

ATTACHMENTS

A. Recommended Findings and Conditions of Approval
B. Vicinity Map
C. Project Plans
D. Arborist Report, dated June 14, 2018
E. Arborist Report, dated March 21, 2019
F. Site Photographs

LR:pac - LARDD0186_WPU.DOCX

Attachment A

County of San Mateo
Planning and Building Department

RECOMMENDED FINDINGS AND CONDITIONS OF APPROVAL

Permit or Project File Number: PLN 2018-00289 Hearing Date: June 12, 2019

Prepared By: Laura Richstone
Project Planner

For Adoption By: Planning Commission

RECOMMENDED FINDINGS

Regarding the Environmental Review, Find:

1. That the project is exempt pursuant to Section 15303, Class 3 of the California Environmental Quality Act Guidelines, consisting of the construction of a new single-family residence in a residentially zoned area.

Regarding the Grading Permit, Find:

2. That the granting of the 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 and the Geotechnical Section and site specific recommendations have been incorporated as conditions of approval to address any adverse environmental effects.

3. That the project conforms to the criteria of Chapter 5 of the San Mateo County Ordinance Code, including the standards referenced in Section 9280. Planning staff, the Geotechnical 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 County Ordinance Code, including the standards referenced in Section 9280 and the San Mateo County General Plan, including the timing of grading activities, and implementation of dust control and erosion and sediment control measures.

4. That the project is consistent with the General Plan. The subject site has a General Plan land use designation of Low Density Residential Urban. The proposed single-family residence remains consistent with the allowed density and use of the designation. As proposed and conditioned, the project complies with General Plan Policy 2.23 (*Regulate Excavation, Grading, Filling, and Land Clearing Activities Against Accelerated Soil Erosion*) and Policy 2.17 (*Erosion and 9 Sedimentation*) because the project includes measures and conditions to address each of these items.

5. The project is consistent with the provisions of the Significant Tree Removal Ordinance, the provisions of which must be considered and applied as part of the grading permit approval process (Significant Tree Removal Ordinance Section 12.020.1(e)). The proposed project has taken steps to minimize the removal of significant trees by reducing the length of the proposed light well and placing the proposed structure in an area of the parcel that is least impactful to the surrounding significant trees.

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 Planning Commission on June 12, 2019. 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 building permit shall be issued. Any extension of this permit shall require a submittal of an application for permit extension and payment of applicable extension fees sixty (60) days prior to the expiration date.

3. Prior to the issuance of a building permit, the applicant shall submit color and material samples for review and approval by the Community Development Director.

4. Prior to scheduling a final inspection, color verification shall occur in the field after the applicant has applied the approved materials and colors. The applicant is required to maintain the approved materials and colors.

5. 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.

   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.

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. 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 hay bales or 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 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 buffers trips, 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.

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

9. Per Section 9280 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.

10. All grading and erosion and sediment control measures shall be in accordance to the plans prepared by ROMIG Engineering, Inc., dated November 2017, and approved by the Department of Public Works 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 Department of Public Works and the Planning Department concurrently prior to commencing any work pursuant to the proposed revision.

11. The engineer who prepared the approved grading plan shall be responsible for the inspection and certification of the grading as required by Section 9297.1 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.

12. For the 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.

13. 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. Prior to Building Permit issuance, the applicant will be notified that an approved job copy of the Erosion Control and Tree Protection Plans are ready for pick-up at the planning counter of the Planning and Building Department. Once the Erosion Control and Tree Protection measures have been installed per the approved plans, please contact Building Inspection Section, at 650/599-7311, to schedule a pre-site inspection. 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.

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. All new power, water, and telephone utility lines from the street or nearest existing utility pole to the main dwelling, second unit, and proposed garage shall be installed underground.

16. All exterior lights shall be dark sky compliant and designed and located as to confine direct rays to the subject property and prevent glare in the surrounding area. A spec sheet of the proposed exterior lighting shall be included upon submittal of the building permit.

17. Upon building permit submittal a revised arborist report documenting Trees A and B shall be submitted on the Planning and Building Department. The trees on the Tree Protection Plan, Erosion Control Plan, Site Plan, and Grading Plan shall be numbered according to the assigned number listed in the revised arborist report.

18. 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.

19. Prior to the issuance of the building permit the project arborist shall submit a letter to the Planning and Building Department verifying that the tree protection fencing has been installed per the recommendations and standards enumerated in the arborist report.

20. Any grading or excavation within a Tree Protection Zone shall be done by hand or utilizing air digging tools.

21. The project arborist shall be on-site during the drilling of the piers for the proposed house and second unit. The project arborist shall observe, document (photo, video, and written, where best prescribed) the digging of the pier holes for the foundation and report to the County that the procedures and processes outlined in the arborist reports are conducted properly. Cutting of any tree roots over 1-inch in diameter shall be overseen and documented by the project arborist. After the drilling of the piers and prior to Building Permit Final Inspection, the project arborist shall submit a letter to the Planning and Building Department verifying that they were present during this time and that the processes outlined in the arborist report(s) were conducted properly.

22. Stairway and landing for the viewing room/second unit located in the left side yard setback shall be uncovered. Prior to Building Permit submittal, the applicant shall amend sheet A5 to remove the overhead covering for the landing that encroaches into the left side yard setback.

23. The railings for the landing and stair case to the viewing room/second unit that shall be no higher than 42 inches tall, unless necessary to satisfy Building Code requirements.

24. Upon building permit submittal the applicant shall have prepared by the project arborist a tree replanting plan that identifies the location, size, and species of the trees required for replanting. The trees proposed for planting shall be located in an area that best promotes their establishment and long term viability. This plan shall be reviewed by the County Arborist upon submittal.

25. Trees 15-18, 21-25 and A and B, as identified in the staff report are approved for removal. All debris associated with tree removal activities shall be removed prior to building permit final inspection. The applicant shall be required to replant a total of six (6) trees consisting of an even mix of coast redwood, Douglas fir, and coast live oak using at least 15-gallon size stock for the trees removed. Replacement planting shall occur prior to the final building inspection approval for the proposed development.

26. No tree removal activity shall occur prior to the issuance of the associated building permit and grading “hard card.” The applicant may be subject to the fines and fees as outlined in Section 12,032 of the Significant Tree Removal Ordinance if trees are removed prior to building permit issuance. A separate Tree Removal Permit shall be required to removal any additional trees.

Building Inspection Section

27. This project requires a building permit.

28. The project shall be designed and constructed according to the currently adopted and locally amended California Building Standards Code, which at the time of this review is the 2016 version.

29. The project is located in an State Responsibility Area (SRA) Moderate Fire Hazard Severity Zone and shall be designed to that criteria found in the California Residential Code.

Geotechnical Section

30. Geotechnical report required at building permit stage. Drainage design is required to be reviewed by the geotechnical engineer of record at building permit stage due to slope stability concern.

Department of Public Works

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

32. Prior to the issuance of the building permit or planning permit (if applicable), the applicant shall submit a driveway “Plan and Profile,” to the Department of Public Works, showing the driveway access to the parcel (garage slab) complying with County Standards for driveway slopes (not to exceed 20%) 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.

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

34. The applicant shall submit a Corner Record Survey Map (based on a field survey) to the project planner for forwarding to the Department of Public Works for review, approval, and recording.

Cal-Fire

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

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

37. 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 72-hours’ notice to the Fire Department at 650/573-3846.

38. A fire flow of 1,000 gallons per minute (gpm) for 2 hours with a 20 pounds per square inch (psi) residual operating pressure must be available as specified by additional project conditions to the project site. The applicant shall provide documentation including hydrant location, main size, and fire flow report at the

building permit application stage. Inspection required prior to Fire's final approval of the building permit or before combustibles are brought on-site.

39. Any chimney or woodstove outlet shall have installed onto the opening thereof an approved (galvanized) spark arrester 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.

40. 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.

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

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

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

<u>California Water Company Bear Gulch</u>

44. The developer shall contact Cal-Water to fill out the appropriate paperwork to determine what size facilities are needed. This paper work shall determine what size facilities are needed, the design and size of the water main, services, and fire hydrants shall be determined from the information provided to Cal-Water.

45. The materials used for Cal-Water facilities shall be per the Cal-Water Engineering Department requirements.

46 Any water line extensions shall be trenched and not bored.

47. Domestic service shall be provided by CWS at Cal-Water's expense with the appropriately engineered size facilities as determined by the required paperwork. Anything larger than the facilities identified by the required paperwork will be paid by the developer. Any required fire services, public fire hydrants, water main extensions or upgrades will be at the developer's expense also.

48. All services will be required to have backflow devices with the exception of the public fire hydrant.

Environmental Health Services

49. At building application stage, the applicant will need to complete a geotechnical slope stability analysis required by the Onsite Wastewater Treatment Systems (OWTS) Ordinance and Section 2 of the Onsite Systems Manual (OSM) for the proposed dispersal systems on >35% slopes.

50. As required by Section 2 and 4 of the OSM, dispersal systems located on ground slopes of >35% will require the use of pressure dose distribution systems.

LR:pac - LARDD0186_WPU.DOCX

County of San Mateo - Planning and Building Department

ATTACHMENT B

VICINITY MAP

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: Attachment:

File Numbers:

County of San Mateo - Planning and Building Department

ATTACHMENT C

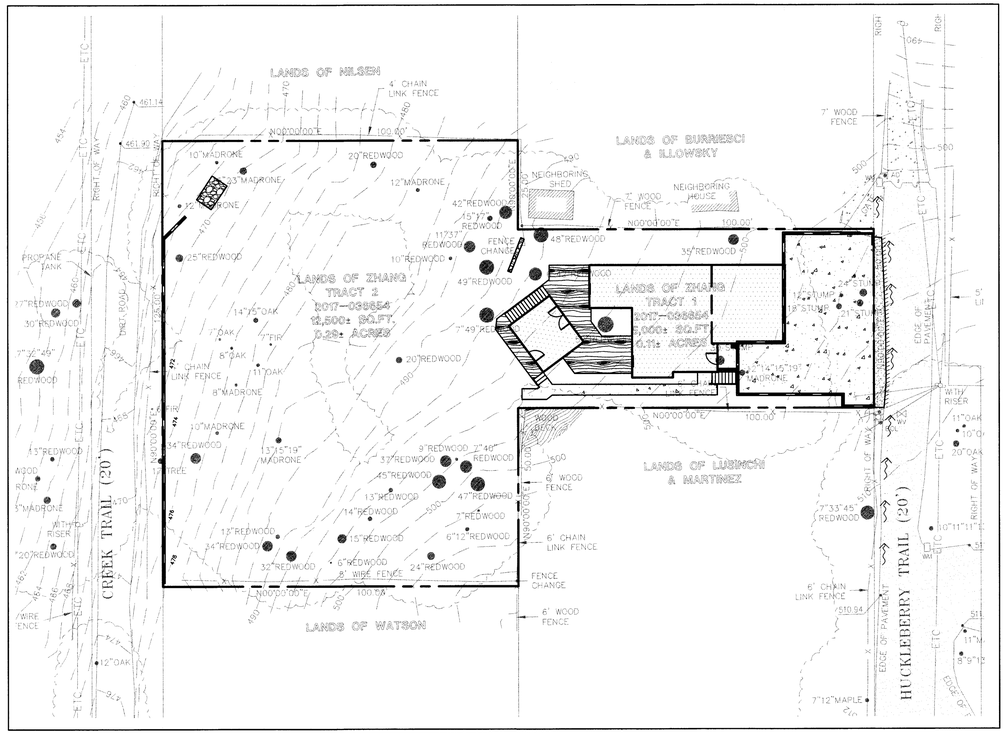
ZHANG RESIDENCE
229 HUCKLEBERRY TRAIL
REDWOOD CITY, CALIFORNIA

LEGEND

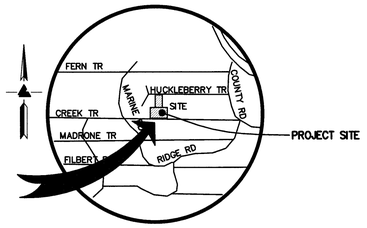
EXISTING	PROPOSED	DESCRIPTION
		BOUNDARY
		PROPERTY LINE
		RETAINING WALL
		LANDSCAPE RETAINING WALL
RW	RW	RAINWATER TIGHTLINE
SUB	SUB	SUBDRAIN LINE
TL	TL	TIGHTLINE
SD	SD	STORM DRAIN LINE
SS	SS	SANITARY SEWER LINE
W	W	WATER LINE
G	G	GAS LINE
P	P	PRESSURE LINE
JT	JT	JOINT TRENCH
		SET BACK LINE
		CONCRETE VALLEY GUTTER
		EARTHEN SWALE
CB	CB	CATCH BASIN
JB	JB	JUNCTION BOX
AD	AD	AREA DRAIN
SDMH	SDMH	STORM DRAIN MANHOLE
SSMH	SSMH	FIRE HYDRANT
222.57 INV	222.57 INV	SANITARY SEWER MANHOLE
		STREET SIGN
		SPOT ELEVATION
	D	FLOW DIRECTION
		DEMOLISH/REMOVE
		BENCHMARK
200	200	CONTOURS
XX" TREE	XX" TREE	TREE TO BE REMOVED

ABBREVIATIONS

AB	AGGREGATE BASE	LF	LINEAR FEET
AC	ASPHALT CONCRETE	MAX	MAXIMUM
ACC	ACCESSIBLE	MH	MANHOLE
AD	AREA DRAIN	MIN	MINIMUM
BC	BEGINNING OF CURVE	MON.	MONUMENT
B & D	BEARING & DISTANCE	(N)	NEW
BM	BENCHMARK	NO.	NUMBER
BW/FG	BOTTOM OF WALL/FINISH GRADE	NTS	NOT TO SCALE
		O.C.	ON CENTER
CB	CATCH BASIN	O/	OVER
C & G	CURB AND GUTTER	(PA)	PLANTING AREA
℄	CENTER LINE	PED	PEDESTRIAN
CPP	CORRUGATED PLASTIC PIPE (SMOOTH INTERIOR)	PIV	POST INDICATOR VALVE
		PSS	PUBLIC SERVICES EASEMENT
CO	CLEANOUT	P.	PROPERTY LINE
COTG	CLEANOUT TO GRADE	PP	POWER POLE
CONC	CONCRETE	PUE	PUBLIC UTILITY EASEMENT
CONST	CONSTRUCT or –TION	PVC	POLYVINYL CHLORIDE
CONC COR	CONCRETE CORNER	R	RADIUS
CY	CUBIC YARD	RCP	REINFORCED CONCRETE PIPE
D	DIAMETER	RIM	RIM ELEVATION
DI	DROP INLET	RW	RAINWATER
DIP	DUCTILE IRON PIPE	R/W	RIGHT OF WAY
EA	EACH	S	SLOPE
EC	END OF CURVE	S.A.D.	SEE ARCHITECTURAL DRAWINGS
EG	EXISTING GRADE	SAN	SANITARY
EL	ELEVATIONS	SD	STORM DRAIN
EP	EDGE OF PAVEMENT	SDMH	STORM DRAIN MANHOLE
EQ	EQUIPMENT	SHT	SHEET
EW	EACH WAY	S.L.D.	SEE LANDSCAPE DRAWINGS
(E)	EXISTING	SPEC	SPECIFICATION
FC	FACE OF CURB	SS	SANITARY SEWER
FF	FINISHED FLOOR	SSCO	SANITARY SEWER CLEANOUT
FG	FINISHED GRADE	SSMH	SANITARY SEWER MANHOLE
FH	FIRE HYDRANT	ST.	STREET
FL	FLOW LINE	STA	STATION
FS	FINISHED SURFACE	STD	STANDARD
G	GAS	STRUCT	STRUCTURAL
GA	GAGE OR GAUGE	T	TELEPHONE
GB	GRADE BREAK	TC	TOP OF CURB
HDPE	HIGH DENSITY CORRUGATED POLYETHYLENE PIPE	TEMP	TEMPORARY
		TP	TOP OF PAVEMENT
HORIZ	HORIZONTAL	TW/FG	TOP OF WALL/FINISH GRADE
HI PT	HIGH POINT	TYP	TYPICAL
H&T	HUB & TACK	VC	VERTICAL CURVE
ID	INSIDE DIAMETER	VCP	VITRIFIED CLAY PIPE
INV	INVERT ELEVATION	VERT	VERTICAL
JB	JUNCTION BOX	W/	WITH
JT	JOINT TRENCH	W, WL	WATER LINE
JP	JOINT UTILITY POLE	WM	WATER METER
L	LENGTH	WWF	WELDED WIRE FABRIC
LNDG	LANDING		



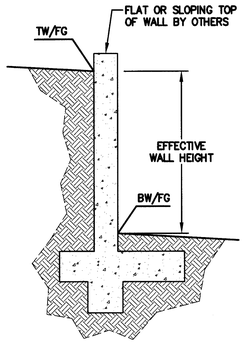
KEY MAP
1" = 20'



VICINITY MAP
NO SCALE

RETAINING WALL NOTES

1. TW/FG REPRESENTS FINISHED EARTHEN GRADE OR PAVEMENT ELEVATION AT TOP OF WALL, NOT ACTUAL TOP OF WALL MATERIAL. BW/FG REPRESENTS FINISH EARTHEN GRADE OR PAVEMENT ELEVATION AT BOTTOM OF WALL NOT INCLUDING FILL FOUNDATION. GRADES INDICATED ON THESE PLANS REFER TO THE FINISHED GRADES ADJACENT TO THE RETAINING WALL, NOT INCLUDING FOOTING, FREEBOARD, ETC.
2. DIMENSIONS SHOWN IN BRACKETS SHOWN AS [X.X'] DENOTE THE EFFECTIVE WALL HEIGHT ONLY. THE ACTUAL WALL HEIGHT AND DEPTH MAY DIFFER DUE TO CONSTRUCTION REQUIREMENTS.
3. REFER TO SPECIFIC WALL CONSTRUCTION DETAIL FOR STRUCTURAL ELEMENTS, FREEBOARD, AND EMBEDMENT.
4. REFER TO ARCHITECTURAL, LANDSCAPE ARCHITECTURE, AND/OR STRUCTURAL PLANS FOR DETAILS, WALL ELEVATIONS, SUBDRAINAGE, WATERPROOFING, FINISHES, COLORS, STEEL REINFORCING, MATERIALS, ETC. PROVIDE CLIPS OR OTHER MEANS OF SECURING FINISH MATERIALS AS NECESSARY (WET SET INTO THE WALL).
5. ALL RETAINING WALLS SHOULD HAVE A BACK-OF-WALL SUB-SURFACE DRAINAGE SYSTEM INCLUDING WEEPHOLES TO PREVENT HYDROSTATIC PRESSURE.
6. SEE DETAIL SHEET FOR SPECIFIC INFORMATION.
7. PROVIDE GUARDRAIL (WHERE APPLICABLE AND DESIGNED BY OTHERS) AS REQUIRED FOR GRADE SEPARATION OF 30 INCHES OR MORE MEASURED 5' HORIZONTALLY FROM FACE OF WALL, PER CBC.



ESTIMATED EARTHWORK QUANTITIES

CUBIC YARDS	WITHIN BUILDING FOOTPRINT	OUTSIDE BUILDING FOOTPRINT	TOTAL CUBIC YARDS
CUT	0	60	60
FILL	0	155	155
EXPORT			95

1

NOTE:
GRADING QUANTITIES REPRESENT BANK YARDAGE. IT DOES NOT INCLUDE ANY SWELLING OR SHRINKAGE FACTORS AND IS INTENDED TO REPRESENT IN-SITU CONDITIONS. QUANTITIES DO NOT INCLUDE OVER-EXCAVATION, TRENCHING, STRUCTURAL FOUNDATIONS OR PIERS, OR POOL EXCAVATION (IF ANY). NOTE ADDITIONAL EARTHWORKS, SUCH AS KEYWAYS OR BENCHING MAY BE REQUIRED BY THE GEOTECHNICAL ENGINEER IN THE FIELD AT TIME OF CONSTRUCTION. CONTRACTOR TO VERIFY QUANTITIES.

OWNER'S INFORMATION

OWNER:
ZHIFAN ZHANG
1348 WINDMERE AVENUE
MENLO PARK, CA

APN: 067-167-070 & 280

REFERENCES

THIS GRADING AND DRAINAGE PLAN IS SUPPLEMENTAL TO:
1. TOPOGRAPHIC SURVEY BY LEA & BRAZE ENGINEERING
   ENTITLED: "TOPOGRAPHIC SURVEY"
   229 HUCKLEBERRY TRAIL
   REDWOOD CITY, CA
   DATED: 07-07-17
   JOB# 2170517
2. SITE PLAN BY CJW ARCHITECTURE
   ENTITLED "ZHANG RESIDENCE"
   229 HUCKLEBERRY TRAIL
   REDWOOD CITY, CA

THE CONTRACTOR SHALL REFER TO THE ABOVE NOTED SURVEY AND PLAN, AND SHALL VERIFY BOTH EXISTING AND PROPOSED ITEMS ACCORDING TO THEM.

OVERALL DRAWING INDEX

SHEET INDEX

CALL BEFORE YOU DIG 1-800-227-2600 USA UNDERGROUND SERVICE ALERT

REGISTERED PROFESSIONAL ENGINEER JAMES TOBY No. 63127 CIVIL STATE OF CALIFORNIA ORIGINAL SIGNATURES IN BLUE INK

LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS · LAND SURVEYORS
BAY AREA REGION
2495 INDUSTRIAL PKWY WEST
HAYWARD, CALIFORNIA 94545
(P) (510) 887-4086
(F) (510) 887-3019
SACRAMENTO REGION
3017 DOUGLAS BLVD, # 300
ROSEVILLE, CA 95661
(P) (916)966-1338
(F) (916)797-7363
WWW.LEABRAZE.COM

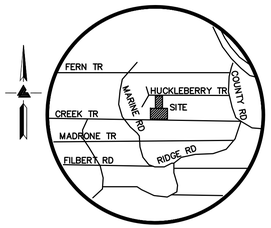
ZHANG RESIDENCE
229 HUCKLEBERRY TRAIL
(UNINCORPORATED SAN MATEO COUNTY)
REDWOOD CITY, CALIFORNIA
SAN MATEO COUNTY
APN: 067-167-070 & 280

PRELIMINARY TITLE SHEET

1 PLAN CHECK 03-29-19	DM
REVISIONS	BY
JOB NO:	2170108
DATE:	12-07-18
SCALE:	AS NOTED
DESIGN BY:	CP/DM
DRAWN BY:	DM

SHEET NO:
C-1.0
1 OF 6 SHEETS

PRELIMINARY - NOT FOR CONSTRUCTION



VICINITY MAP
NO SCALE

NOTES
ALL DISTANCES AND DIMENSIONS ARE IN FEET AND DECIMALS OF A FOOT.

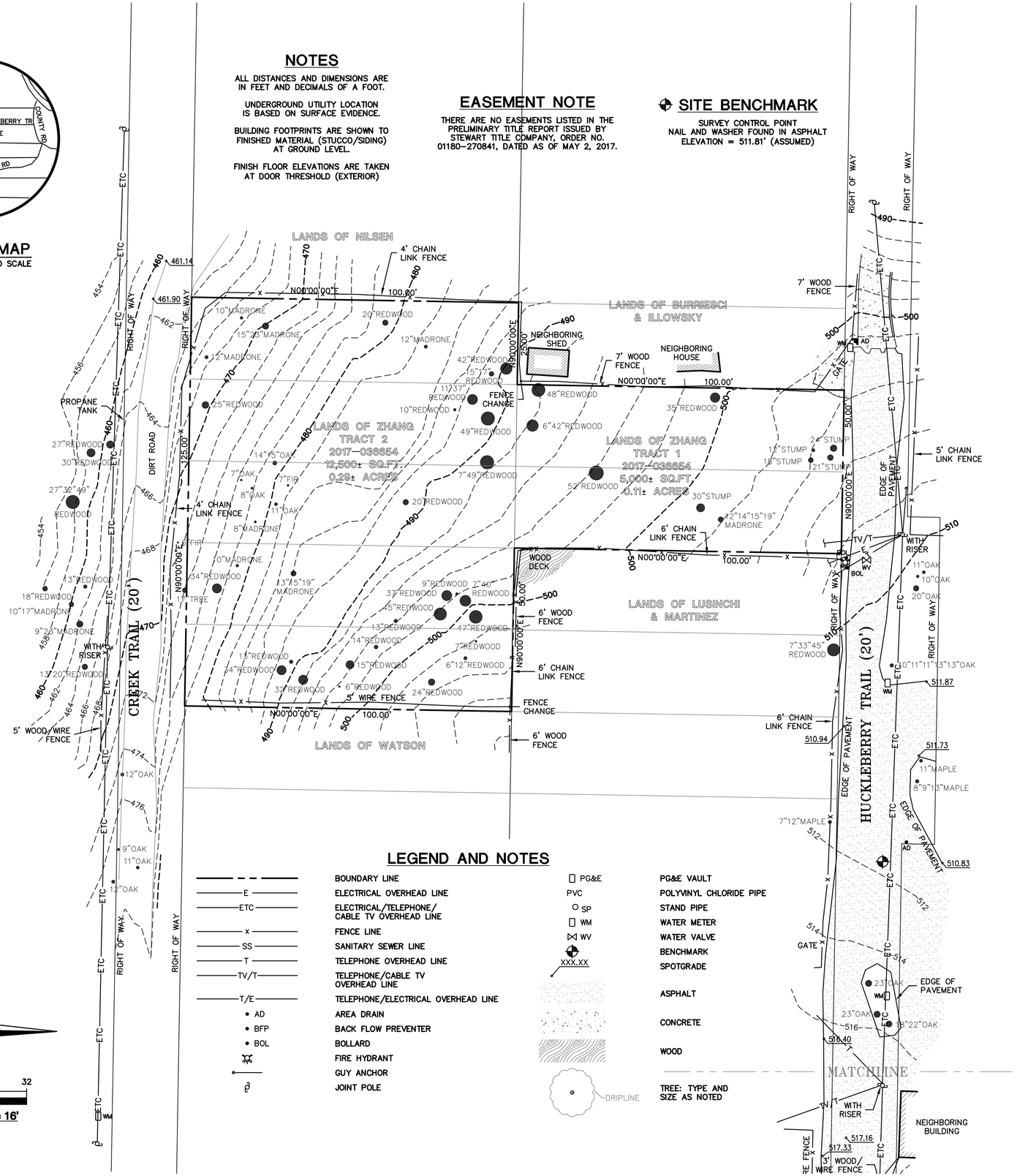
UNDERGROUND UTILITY LOCATION IS BASED ON SURFACE EVIDENCE.

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

FINISH FLOOR ELEVATIONS ARE TAKEN AT DOOR THRESHOLD (EXTERIOR)

EASEMENT NOTE
THERE ARE NO EASEMENTS LISTED IN THE PRELIMINARY TITLE REPORT ISSUED BY STEWART TITLE COMPANY, ORDER NO. 01180-270841, DATED AS OF MAY 2, 2017.

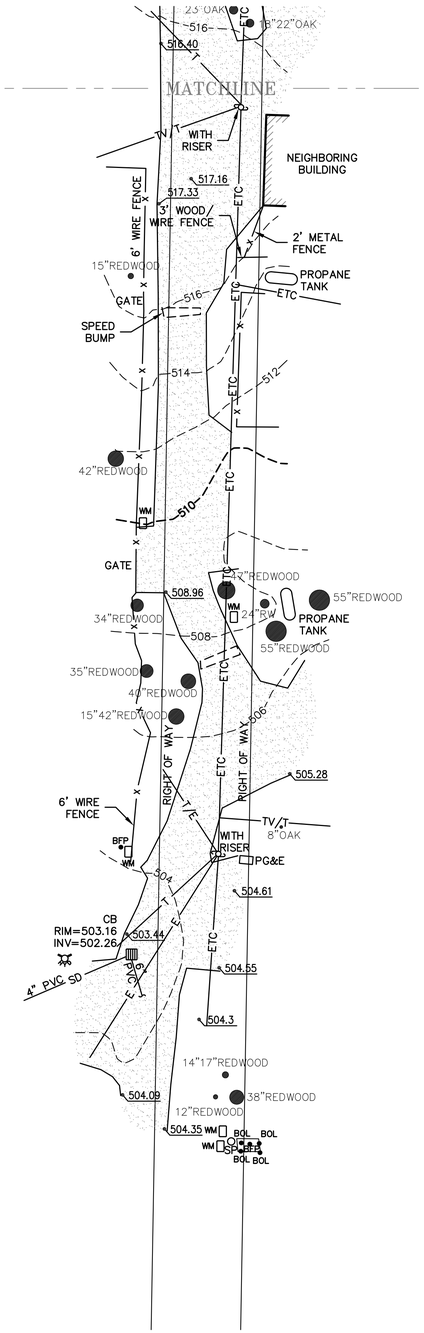
SITE BENCHMARK
SURVEY CONTROL POINT
NAIL AND WASHER FOUND IN ASPHALT
ELEVATION = 511.81' (ASSUMED)



LEGEND AND NOTES

———	BOUNDARY LINE	PG&E	PG&E VAULT
——E——	ELECTRICAL OVERHEAD LINE	PVC	POLYVINYL CHLORIDE PIPE
——ETC——	ELECTRICAL/TELEPHONE/ CABLE TV OVERHEAD LINE	SP	STAND PIPE
——x——	FENCE LINE	WM	WATER METER
——SS——	SANITARY SEWER LINE	WV	WATER VALVE
——T——	TELEPHONE OVERHEAD LINE		BENCHMARK
——TV/T——	TELEPHONE/CABLE TV OVERHEAD LINE	XXX.XX	SPOTGRADE
——T/E——	TELEPHONE/ELECTRICAL OVERHEAD LINE		ASPHALT
• AD	AREA DRAIN		CONCRETE
• BFP	BACK FLOW PREVENTER		WOOD
• BOL	BOLLARD	DRIPLINE	TREE: TYPE AND SIZE AS NOTED
	FIRE HYDRANT		
	GUY ANCHOR		
	JOINT POLE		

0 8 16 32
SCALE: 1" = 16'



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

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

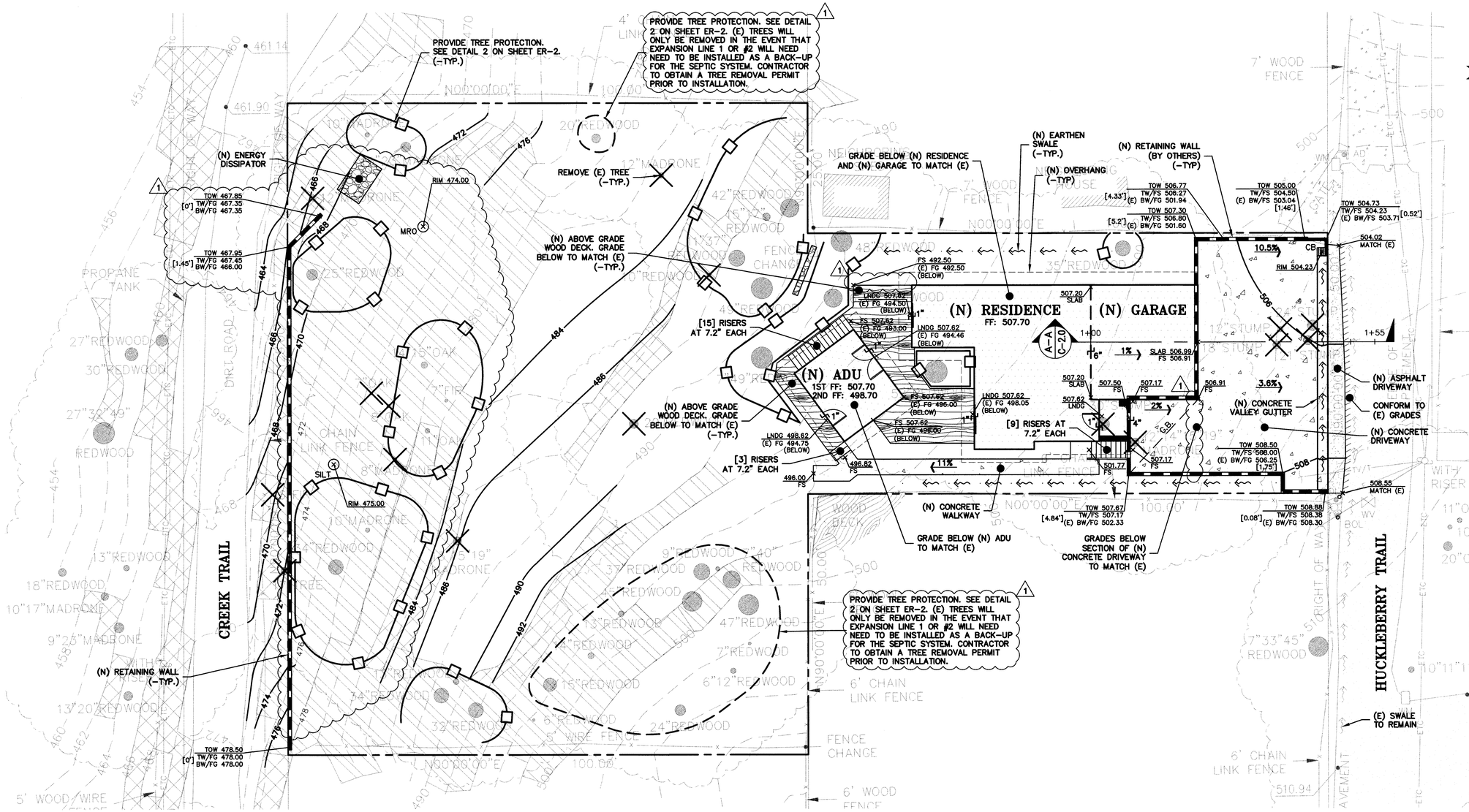
PROFESSIONAL LAND SURVEYOR
JAMES TOBY
L 8102
STATE OF CALIFORNIA

HUCKLEBERRY TRAIL
WOODSIDE, CALIFORNIA
UNINCORPORATED SAN MATEO COUNTY APN: 067-167-070 & 280

TOPOGRAPHIC SURVEY

–	–
–	–
–	–
ADDITIONAL TOPO 8-29-17	DB
REVISIONS	BY
JOB NO:	2170517
DATE:	07-07-17
SCALE:	1" = 16'
FIELD BY:	EH
DRAWN BY:	JN
SHEET NO:	SU1

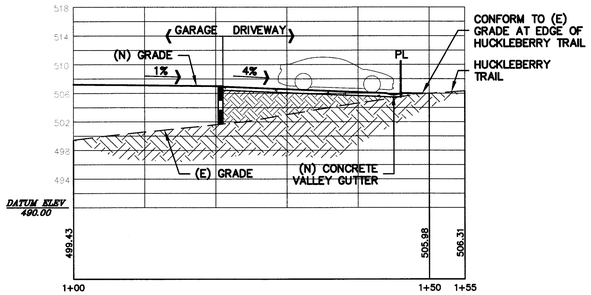
01 OF 01 SHEETS



LEGEND

(E) SLOPES GREATER THAN 35% AND LESS THAN 50%

(E) SLOPES GREATER THAN 50%



A-A / C-2.0 **DRIVEWAY PROFILE**

SCALE: HORIZ. & VERT.: 1"=10'

REGISTERED PROFESSIONAL ENGINEER
JAMES TOBY
No. 63127
CIVIL
STATE OF CALIFORNIA
ORIGINAL SIGNATURES IN BLUE INK

LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS · LAND SURVEYORS
BAY AREA REGION
2495 INDUSTRIAL PKWY WEST
HAYWARD, CALIFORNIA 94545
(P) (510) 887-4086
(F) (510) 887-3019
SACRAMENTO REGION
3017 DOUGLAS BLVD, # 300
ROSEVILLE, CA 95661
(P) (916)966-1338
(F) (916)797-7363
WWW.LEABRAZE.COM

ZHANG RESIDENCE
229 HUCKLEBERRY TRAIL
(UNINCORPORATED SAN MATEO COUNTY)
REDWOOD CITY, CALIFORNIA
APN: 067-167-070 & 280
SAN MATEO COUNTY

PRELIMINARY GRADING PLAN

–	–
–	–
–	–
–	–
1 PLAN CHECK 03-29-19	DM
REVISIONS	BY

JOB NO:	2170108
DATE:	12-07-18
SCALE:	AS NOTED
DESIGN BY:	CP/DM
DRAWN BY:	DM
SHEET NO:	C-2.0
	2 OF 6 SHEETS

PRELIMINARY - NOT FOR CONSTRUCTION

PROVIDE TREE PROTECTION. SEE DETAIL 2 ON SHEET ER-2. (-TYP.)

(N) EXPANSION LINE IS SHOWN FOR FEASIBILITY ONLY AND IS NOT INTENDED TO BE INSTALLED, PER COUNTY OF SAN MATEO ONSITE SYSTEMS MANUAL

1 PROVIDE TREE PROTECTION. SEE DETAIL 2 ON SHEET ER-2. (E) TREES WILL ONLY BE REMOVED IN THE EVENT THAT EXPANSION LINE #1 OR #2 WILL NEED NEED TO BE INSTALLED AS A BACK-UP FOR THE SEPTIC SYSTEM. CONTRACTOR TO OBTAIN A TREE REMOVAL PERMIT PRIOR TO INSTALLATION.

(N) ENERGY DISSIPATOR

1 (N) METERED RELEASE OUTLET MANHOLE.

TOP 36" PIPE 472.55
FLOW LINE 36" PIPE 469.30
BOTTOM 36" PIPE 469.05

469.00 INV

RIM 474.00
OVERFLOW 472.92
ORIFICE INV 469.25

REMOVE (E) TREE (-TYP.)

40' EXPANSION LINE #1B

70' PRIMARY LINE #2

50' STEEP SLOPE SETBACK

(N) BELOW GRADE STORM DRAIN LINE. CONTRACTOR TO HAND DIG DURING INSTALLATION.

1 AREA TO BE REGRADED TO LESS THAN 50% SLOPE

(N) BELOW GRADE 36"ø 20 LF SOLID RETENTION SYSTEM

TOP 36" PIPE 472.75
FLOW LINE 36" PIPE 469.50
BOTTOM 36" PIPE 469.25

(N) SILT BASIN MANHOLE WITH CONCRETE BOTTOM

RIM 475.00
INV 469.55

AREA TO BE REGRADED TO LESS THAN 50% SLOPE

CREEK TRAIL

70' PRIMARY LINE #1

70' EXPANSION LINE #2

(N) DIVERSION VALVE

(N) 1' DEEP GRAVEL PIT WITH PERFORATED SUBDRAIN. CONTRACTOR TO HAND DIG DURING INSTALLTION.

(N) SUBDRAIN (-TYP.)

(N) BELOW GRADE STORM DRAIN LINE

(N) CATCH BASIN

RIM 504.23
INV 501.73

(N) RESIDENCE

(N) GARAGE

(N) ADU

10' BUILDING LEACHFIELD SETBACK

(N) H20 TRAFFIC RATED 1,500 GALLON SEPTIC TANK

5' BUILDING & SUBDRAIN LEACHFIELD SETBACK

10' PROPERTY LINE LEACHFIELD SETBACK

(E) 2" WATER LINE TO REMAIN

(N) ELECTRIC METER

(N) BELOW GRADE EFFLUENT LINE (-TYP.)

(N) UNDERGROUND PROPANE TANK WITH GRADE LEVEL H20 TRAFFIC RATED STEEL LID

1 CONNECT (N) 6" WATER LINE TO (E) 2" WATER LINE (UNDER SEPARATE PERMIT)

(N) WATER METER (UNDER SEPARATE PERMIT)

CONNECT TO (E) UTILITY POLE

(N) WATER VALVE (-TYP.) (UNDER SEPARATE PERMIT)

(N) DIVERSION VALVE TO BE INSTALLED WITH FUTURE EXPANSION LINES

(N) BELOW GRADE TIGHTLINE

(N) ABOVE GRADE 6" CMP STORM DRAIN PIPE

(N) GAS LINE

(N) GAS METER

(N) ELECTRIC LINE

(N) BACKFLOW PREVENTER

(N) HYDRANT (UNDER SEPARATE PERMIT)

(N) BOLLARD (-TYP.) (UNDER SEPARATE PERMIT)

(N) WATER LINE (UNDER SEPARATE PERMIT)

HUCKLEBERRY TRAIL

1 REPLACE (E) 2" WATER LINE WITH (N) 6" WATER LINE (UNDER SEPARATE PERMIT)

(N) EXPANSION LINE IS SHOWN FOR FEASIBILITY ONLY AND IS NOT INTENDED TO BE INSTALLED, PER COUNTY OF SAN MATEO ONSITE SYSTEMS MANUAL

1 PROVIDE TREE PROTECTION. SEE DETAIL 2 ON SHEET ER-2. (E) TREES WILL ONLY BE REMOVED IN THE EVENT THAT EXPANSION LINE #1 OR #2 WILL NEED NEED TO BE INSTALLED AS A BACK-UP FOR THE SEPTIC SYSTEM. CONTRACTOR TO OBTAIN A TREE REMOVAL PERMIT PRIOR TO INSTALLATION.

AREA TO BE REGRADED TO LESS THAN 50% SLOPE

30' EXPANSION LINE #1A

(N) CLEAN OUT (-TYP.)

(N) STAND PIPE (-TYP.)

10' PROPERTY LINE LEACHFIELD SETBACK

50' STEEP SLOPE SETBACK

(N) BELOW GRADE STORM DRAIN LINE. CONTRACTOR TO HAND DIG DURING INSTALLATION.

0 5 10 20

SCALE: 1" = 10'

LEGEND

(E) SLOPES GREATER THAN 35% AND LESS THAN 50%

(E) SLOPES GREATER THAN 50%

1

PROFESSIONAL ENGINEER
JAMES TOBY
No. 63127
CIVIL
STATE OF CALIFORNIA
ORIGINAL SIGNATURES IN BLUE INK

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

SACRAMENTO REGION
3017 DOUGLAS BLVD, # 300
ROSEVILLE, CA 95661
(P) (916)966-1338
(F) (510)797-7363
WWW.LEABRAZE.COM

ZHANG RESIDENCE
229 HUCKLEBERRY TRAIL
(UNINCORPORATED SAN MATEO COUNTY)
REDWOOD CITY, CALIFORNIA
APN: 067-167-070 & 280

PRELIMINARY UTILITY PLAN

1 PLAN CHECK 03-29-19	DM
REVISIONS	BY

JOB NO:	2170108
DATE:	12-07-18
SCALE:	AS NOTED
DESIGN BY:	CP/DM
DRAWN BY:	DM
SHEET NO:	C-3.0
	3 OF 6 SHEETS

PRELIMINARY - NOT FOR CONSTRUCTION

GENERAL NOTES

ALL GENERAL NOTES, SHEET NOTES, AND LEGEND NOTES FOUND IN THESE DOCUMENTS SHALL APPLY TYPICALLY THROUGHOUT. IF INCONSISTENCIES ARE FOUND IN THE VARIOUS NOTATIONS, NOTIFY THE ENGINEER IMMEDIATELY IN WRITING REQUESTING CLARIFICATION.

THESE DRAWINGS AND THEIR CONTENT ARE AND SHALL REMAIN THE PROPERTY OF LEA AND BRAZE ENGINEERING, INC. WHETHER THE PROJECT FOR WHICH THEY ARE PREPARED IS EXECUTED OR NOT. THEY ARE NOT TO BE USED BY ANY PERSONS ON OTHER PROJECTS OR EXTENSIONS OF THE PROJECT EXCEPT BY AGREEMENT IN WRITING AND WITH APPROPRIATE COMPENSATION TO THE ENGINEER.

ALL WORK SHALL COMPLY WITH APPLICABLE CODES AND TRADE STANDARDS WHICH GOVERN EACH PHASE OF WORK INCLUDING, BUT NOT LIMITED TO, CALIFORNIA MECHANICAL CODE, CALIFORNIA PLUMBING CODE, CALIFORNIA ELECTRICAL CODE, CALIFORNIA FIRE CODE, CALTRANS STANDARDS AND SPECIFICATIONS, AND ALL APPLICABLE STATE AND/OR LOCAL CODES AND/OR LEGISLATION.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND ALL SUBCONTRACTORS TO CHECK AND VERIFY ALL CONDITIONS, DIMENSIONS, LINES AND LEVELS INDICATED. PROPER FIT AND ATTACHMENT OF ALL PARTS IS REQUIRED. SHOULD THERE BE ANY DISCREPANCIES, IMMEDIATELY NOTIFY THE ENGINEER FOR CORRECTION OR ADJUSTMENT THE EVENT OF FAILURE TO DO SO, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTION OF ANY ERROR.

ALL DIMENSIONS AND CONDITIONS SHALL BE CHECKED AND VERIFIED ON THE JOB BY EACH SUBCONTRACTOR BEFORE HE/SHE BEGINS HIS/HER WORK. ANY ERRORS, OMISSION, OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER/CONTRACTOR BEFORE CONSTRUCTION BEGINS.

COMMENCEMENT OF WORK BY THE CONTRACTOR AND/OR ANY SUBCONTRACTOR SHALL INDICATE KNOWLEDGE AND ACCEPTANCE OF ALL CONDITIONS DESCRIBED IN THESE CONSTRUCTION DOCUMENTS, OR EXISTING ON SITE, WHICH COULD AFFECT THEIR WORK.

WORK SEQUENCE

IN THE EVENT ANY SPECIAL SEQUENCING OF THE WORK IS REQUIRED BY THE OWNER OR THE CONTRACTOR, THE CONTRACTOR SHALL ARRANGE A CONFERENCE BEFORE ANY SUCH WORK IS BEGUN.

SITE EXAMINATION: THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL THOROUGHLY EXAMINE THE SITE AND FAMILIARIZE HIM/HERSELF WITH THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED. THE CONTRACTOR SHALL VERIFY AT THE SITE ALL MEASUREMENTS AFFECTING HIS/HER WORK AND SHALL BE RESPONSIBLE FOR THE CORRECTIONS OF THE SAME. NO EXTRA COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR EXPENSES DUE TO HIS/HER NEGLECT TO EXAMINE, OR FAILURE TO DISCOVER, CONDITIONS WHICH AFFECT HIS/HER WORK.

LEA AND BRAZE ENGINEERING, INC. EXPRESSLY RESERVES ITS COMMON LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY FORM OR MANNER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO A THIRD PARTY WITHOUT FIRST OBTAINING THE WRITTEN PERMISSION AND CONSENT OF LEA AND BRAZE ENGINEERING, INC. IN THE EVENT OF UNAUTHORIZED REUSE OF THESE PLANS BY A THIRD PARTY, THE THIRD PARTY SHALL HOLD HARMLESS LEA AND BRAZE ENGINEERING, INC.

CONSTRUCTION IS ALWAYS LESS THAN PERFECT SINCE PROJECTS REQUIRE THE COORDINATION AND INSTALLATION OF MANY INDIVIDUAL COMPONENTS BY VARIOUS CONSTRUCTION INDUSTRY TRADES. THESE DOCUMENTS CANNOT PORTRAY ALL COMPONENTS OR ASSEMBLIES EXACTLY. IT IS THE INTENTION OF THESE ENGINEERING DOCUMENTS THAT THEY REPRESENT A REASONABLE STANDARD OF CARE IN THEIR CONTENT. IT IS ALSO PRESUMED BY THESE DOCUMENTS THAT CONSTRUCTION REVIEW SERVICES WILL BE PROVIDED BY THE ENGINEER. SHOULD THE OWNER NOT RETAIN THE ENGINEER TO PROVIDE SUCH SERVICES, OR SHOULD HE/SHE RETAIN THE ENGINEER TO PROVIDE ONLY PARTIAL OR LIMITED SERVICES, THEN IT SHALL BE THE OWNER'S AND CONTRACTOR'S RESPONSIBILITY TO FULLY RECOGNIZE AND PROVIDE THAT STANDARD OF CARE.

IF THE OWNER OR CONTRACTOR OBSERVES OR OTHERWISE BECOMES AWARE OF ANY FAULT OR DEFECT IN THE PROJECT OR NONCONFORMANCE WITH THE CONTRACT DOCUMENTS, PROMPT WRITTEN NOTICE THEREOF SHALL BE GIVEN BY THE OWNER AND/OR CONTRACTOR TO THE ENGINEER.

THE ENGINEER SHALL NOT HAVE CONTROL OF OR CHARGE OF AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

SITE PROTECTION

PROTECT ALL LANDSCAPING THAT IS TO REMAIN. ANY DAMAGE OR LOSS RESULTING FROM EXCAVATION, GRADING, OR CONSTRUCTION WORK SHALL BE CORRECTED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ALL EXISTING SITE UTILITIES AND SHALL COORDINATE THEIR REMOVAL OR MODIFICATIONS (IF ANY) TO AVOID ANY INTERRUPTION OF SERVICE TO ADJACENT AREAS. THE GENERAL CONTRACTOR SHALL INFORM HIM/HERSELF OF MUNICIPAL REGULATIONS AND CARRY OUT HIS/HER WORK IN COMPLIANCE WITH ALL FEDERAL AND STATE REQUIREMENTS TO REDUCE FIRE HAZARDS AND INJURIES TO THE PUBLIC.

STORMWATER POLLUTION PREVENTION NOTES

1) STORE, HANDLE, AND DISPOSE OF CONSTRUCTION MATERIALS AND WASTES PROPERLY, SO AS TO PREVENT THEIR CONTACT WITH STORMWATER.

2) CONTROL AND PREVENT THE DISCHARGE OF ALL POTENTIAL POLLUTANTS, INCLUDING SOLID WASTES, PAINTS, CONCRETE, PETROLEUM PRODUCTS, CHEMICALS, WASH WATER OR SEDIMENT, AND NON-STORMWATER DISCHARGES TO STORM DRAINS AND WATER COURSES.

3) USE SEDIMENT CONTROL OR FILTRATION TO REMOVE SEDIMENT FROM DEWATERING EFFLUENT.

4) AVOID CLEANING, FUELING, OR MAINTAINING VEHICLES ON SITE, EXCEPT IN A DESIGNATED AREA IN WHICH RUNOFF IS CONTAINED AND TREATED.

5) DELINEATE CLEARING LIMITS, EASEMENTS, SETBACKS, SENSITIVE OR CRITICAL AREAS, BUFFER ZONES, TREES AND DISCHARGE COURSE WITH FIELD MARKERS.

6) PROTECT ADJACENT PROPERTIES AND UNDISTURBED AREAS FROM CONSTRUCTION IMPACTS USING VEGETATIVE BUFFER STRIPS, SEDIMENT BARRIERS OF FILTERS, DIKES, MULCHING, OR OTHER MEASURES AS APPROPRIATE.

7) PERFORM CLEARING AND EARTH MOVING ACTIVITIES DURING DRY WEATHER TO THE MAXIMUM EXTENT PRACTICAL.

8) LIMIT AND TIME APPLICATIONS OF PESTICIDES AND FERTILIZERS TO PREVENT POLLUTED RUNOFF.

9) LIMIT CONSTRUCTION ACCESS ROUTES AND STABILIZE DESIGNATED ACCESS POINTS.

10) AVOID TRACKING DIRT OR MATERIALS OFF-SITE; CLEAN OFF-SITE PAVED AREAS AND SIDEWALKS USING DRY SWEEPING METHODS TO THE MAXIMUM EXTENT PRACTICAL.

SUPPLEMENTAL MEASURES

A. THE PHRASE "NO DUMPING – DRAINS TO BAY" OR EQUALLY EFFECTIVE PHRASE MUST BE LABELED ON STORM DRAIN INLETS (BY STENCILING, BRANDING, OR PLAQUES) TO ALERT THE PUBLIC TO THE DESTINATION OF STORM WATER AND TO PREVENT DIRECT DISCHARGE OF POLLUTANTS INTO THE STORM DRAIN.

B. USING FILTRATION MATERIALS ON STORM DRAIN COVERS TO REMOVE SEDIMENT FROM DEWATERING EFFLUENT.

C. STABILIZING ALL DENUDED AREAS AND MAINTAINING EROSION CONTROL MEASURES CONTINUOUSLY FROM OCTOBER 15 AND APRIL 15.

D. REMOVING SPOILS PROMPTLY, AND AVOID STOCKPILING OF FILL MATERIALS, WHEN RAIN IS FORECAST. IF RAIN THREATENS, STOCKPILED SOILS AND OTHER MATERIALS SHALL BE COVERED WITH A TARP OR OTHER WATERPROOF MATERIAL.

E. STORING, HANDLING, AND DISPOSING OF CONSTRUCTION MATERIALS AND WASTES SO AS TO AVOID THEIR ENTRY TO THE STORM DRAIN SYSTEMS OR WATER BODY.

F. AVOIDING CLEANING, FUELING, OR MAINTAINING VEHICLES ON-SITE, EXCEPT IN AN AREA DESIGNATED TO CONTAIN AND TREAT RUNOFF.

GRADING & DRAINAGE NOTES:

1. SCOPE OF WORK

THESE SPECIFICATIONS AND APPLICABLE PLANS PERTAIN TO AND INCLUDE ALL SITE GRADING AND EARTHWORK ASSOCIATED WITH THE PROJECT INCLUDING, BUT NOT LIMITED TO THE FURNISHING OF ALL LABOR, TOOLS AND EQUIPMENT NECESSARY FOR SITE CLEARING AND GRUBBING, SITE PREPARATION, DISPOSAL OF EXCESS OR UNSUITABLE MATERIAL, STRIPPING, KEYING, EXCAVATION, OVER EXCAVATION, RECOMPACTION PREPARATION FOR SOIL RECEIVING FILL, PAVEMENT, FOUNDATION OF SLABS, EXCAVATION, IMPORTATION OF ANY REQUIRED FILL MATERIAL, PROCESSING, PLACEMENT AND COMPACTION OF FILL AND SUBSIDIARY WORK NECESSARY TO COMPLETE THE GRADING TO CONFORM TO THE LINES, GRADING AND SLOPE SHOWN ON THE PROJECT GRADING PLANS.

2. GENERAL

A. ALL SITE GRADING AND EARTHWORK SHALL CONFORM TO THE RECOMMENDATIONS OF THESE SPECIFICATIONS AND THE COUNTY OF SAN MATEO.

B. ALL FILL MATERIALS SHALL BE DENSIFIED SO AS TO PRODUCE A DENSITY NOT LESS THAN 90% RELATIVE COMPACTION BASED UPON ASTM TEST DESIGNATION D1557. FIELD DENSITY TEST WILL BE PERFORMED IN ACCORDANCE WITH ASTM TEST DESIGNATION 2922 AND 3017. THE LOCATION AND FREQUENCY OF THE FIELD DENSITY TEST WILL BE AS DETERMINED BY THE SOIL ENGINEER. THE RESULTS OF THESE TEST AND COMPLIANCE WITH THE SPECIFICATIONS WILL BE THE BASIS UPON WHICH SATISFACTORY COMPLETION OF THE WORK WILL BE JUDGED BY THE SOIL ENGINEER. ALL CUT AND FILL SLOPES SHALL BE CONSTRUCTED AS SHOWN ON PLANS, BUT NO STEEPER THAN TWO (2) HORIZONTAL TO ONE (1) VERTICAL.

C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SATISFACTORY COMPLETION OF ALL THE EARTHWORK IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS. NO DEVIATION FROM THESE SPECIFICATIONS SHALL BE MADE EXCEPT UPON WRITTEN APPROVAL BY THE SOILS ENGINEER. BOTH CUT AND FILL AREAS SHALL BE SURFACE COMPLETED TO THE SATISFACTION OF THE SOILS ENGINEER AT THE CONCLUSION OF ALL GRADING OPERATIONS AND PRIOR TO FINAL ACCEPTANCE. THE CONTRACTOR SHALL NOTIFY THE SOILS ENGINEER AT LEAST TWO (2) WORKING DAYS PRIOR TO DOING ANY SITE GRADING AND EARTHWORK INCLUDING CLEARING.

3. CLEARING AND GRUBBING

A. THE CONTRACTOR SHALL ACCEPT THE SITE IN ITS PRESENT CONDITION. ALL EXISTING PUBLIC IMPROVEMENTS SHALL BE PROTECTED. ANY IMPROVEMENTS DAMAGED SHALL BE REPLACED BY THE CONTRACTOR AS DIRECTED BY THE LOCAL JURISDICTION WITH NO EXTRA COMPENSATION.

B. ALL ABANDONED BUILDINGS AND FOUNDATIONS, TREE (EXCEPT THOSE SPECIFIED TO REMAIN FOR LANDSCAPING PURPOSES), FENCES, VEGETATION AND ANY SURFACE DEBRIS SHALL BE REMOVED AND DISPOSED OF OFF THE SITE BY THE CONTRACTOR.

C. ALL ABANDONED SEPTIC TANKS AND ANY OTHER SUBSURFACE STRUCTURES EXISTING IN PROPOSED DEVELOPMENT AREAS SHALL BE REMOVED PRIOR TO ANY GRADING OR FILL OPERATION. ALL APPURTENANT DRAIN FIELDS AND OTHER CONNECTING LINES MUST ALSO BE TOTALLY REMOVED.

D. ALL ABANDONED UNDERGROUND IRRIGATION OR UTILITY LINES SHALL BE REMOVED OR DEMOLISHED. THE APPROPRIATE FINAL DISPOSITION OF SUCH LINES DEPEND UPON THEIR DEPTH AND LOCATION AND THE METHOD OF REMOVAL OR DEMOLITION SHALL BE DETERMINED BY THE SOILS ENGINEER. ONE OF THE FOLLOWING METHODS WILL BE USED:

(1) EXCAVATE AND TOTALLY REMOVE THE UTILITY LINE FROM THE TRENCH.

(2) EXCAVATE AND CRUSH THE UTILITY LINE IN THE TRENCH.

(3) CAP THE ENDS OF THE UTILITY LINE WITH CONCRETE TO PREVENT THE ENTRANCE OF WATER. THE LOCATIONS AT WHICH THE UTILITY LINE WILL BE CAPPED WILL BE DETERMINED BY THE UTILITY DISTRICT ENGINEER. THE LENGTH OF THE CAP SHALL NOT BE LESS THAN FIVE FEET, AND THE CONCRETED MIX EMPLOYED SHALL HAVE MINIMUM SHRINKAGE.

4. SITE PREPARATION AND STRIPPING

A. ALL SURFACE ORGANICS SHALL BE STRIPPED AND REMOVED FROM BUILDING PADS, AREAS TO RECEIVE COMPACTED FILL AND PAVEMENT AREAS.

B. UPON THE COMPLETION OF THE ORGANIC STRIPPING OPERATION, THE GROUND SURFACE (NATIVE SOIL SUBGRADE) OVER THE ENTIRE AREA OF ALL BUILDING PADS, STREET AND PAVEMENT AREAS AND ALL AREAS TO RECEIVE COMPACTED FILL SHALL BE PLOWED OR SCARIFIED UNTIL THE SURFACE IS FREE OF RUTS, HUMMOCKS OR OTHER UNEVEN FEATURES WHICH MAY INHIBIT UNIFORM SOIL COMPACTION. THE GROUND SURFACE SHALL THEN BE DISCED OR BLADED TO A DEPTH OF AT LEAST 6 INCHES. UPON ENGINEER'S SATISFACTION, THE NEW SURFACE SHALL BE WATER CONDITIONED AND RECOMPACTED PER REQUIREMENTS FOR COMPACTING FILL MATERIAL.

5. EXCAVATION

A. UPON COMPLETION OF THE CLEARING AND GRUBBING, SITE PREPARATION AND STRIPPING, THE CONTRACTOR SHALL MAKE EXCAVATIONS TO LINES AND GRADES NOTED ON THE PLAN. WHERE REQUIRED BY THE SOILS ENGINEER, UNACCEPTABLE NATIVE SOILS OR UNENGINEERED FILL SHALL BE OVER EXCAVATED BELOW THE DESIGN GRADE. SEE PROJECT SOILS REPORT FOR DISCUSSION OF OVER EXCAVATION OF THE UNACCEPTABLE MATERIAL. RESULTING GROUND LINE SHALL BE SCARIFIED, MOISTURE-CONDITIONED AND RECOMPACTED AS SPECIFIED IN SECTION 4 OF THESE SPECIFICATIONS. COMPACTED FILL MATERIAL SHALL BE PLACED TO BRING GROUND LEVEL BACK TO DESIGN GRADE.

B. EXCAVATED MATERIALS SUITABLE FOR COMPACTED FILL MATERIAL SHALL BE UTILIZED IN MAKING THE REQUIRED COMPACTED FILLS. THOSE NATIVE MATERIALS CONSIDERED UNSUITABLE BY THE SOILS ENGINEER SHALL BE DISPOSED OF OFF THE SITE BY THE CONTRACTOR.

6. PLACING, SPREADING AND COMPACTING FILL MATERIAL

A. FILL MATERIALS

THE MATERIALS PROPOSED FOR USE AS COMPACTED FILL SHALL BE APPROVED BY THE SOILS ENGINEER BEFORE COMMENCEMENT OF GRADING OPERATIONS. THE NATIVE MATERIAL IS CONSIDERED SUITABLE FOR FILL; HOWEVER, ANY NATIVE MATERIAL DESIGNATED UNSUITABLE BY THE SOILS ENGINEER SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR. ANY IMPORTED MATERIAL SHALL BE APPROVED FOR USE BY THE SOILS ENGINEER, IN WRITING, BEFORE BEING IMPORTED TO THE SITE AND SHALL POSSESS SUFFICIENT FINES TO PROVIDE A COMPETENT SOIL MATRIX AND SHALL BE FREE OF VEGETATIVE AND ORGANIC MATTER AND OTHER DELETERIOUS MATERIALS. ALL FILL VOIDS SHALL BE FILLED AND PROPERLY COMPACTED. NO ROCKS LARGER THAN THREE INCHES IN DIAMETER SHALL BE PERMITTED.

B. FILL CONSTRUCTION

THE SOILS ENGINEER SHALL APPROVE THE NATIVE SOIL SUBGRADE BEFORE PLACEMENT OF ANY COMPACTED FILL MATERIAL. UNACCEPTABLE NATIVE SOIL SHALL BE REMOVED AS DIRECTED BY THE SOILS ENGINEER. THE RESULTING GROUND LINE SHALL BE SCARIFIED MOISTURE CONDITIONED AND RECOMPACTED AS SPECIFIED IN SECTION 4 OF THESE SPECIFICATIONS. COMPACTED FILL MATERIAL SHALL BE PLACED TO BRING GROUND LEVEL BACK TO DESIGN GRADE. GROUND PREPARATION SHALL BE FOLLOWED CLOSELY BY FILL PLACEMENT TO PREVENT DRYING OUT OF THE SUBSOIL BEFORE PLACEMENT OF THE FILL.

THE APPROVED FILL MATERIALS SHALL BE PLACED IN UNIFORM HORIZONTAL LAYERS NO THICKER THAN 8" IN LOOSE THICKNESS. LAYERS SHALL BE SPREAD EVENLY AND SHALL BE THOROUGHLY BLADE MIXED DURING THE SPREADING TO ENSURE UNIFORMITY OF MATERIAL IN EACH LAYER. THE SCARIFIED SUBGRADE AND FILL MATERIAL SHALL BE MOISTURE CONDITIONED TO AT LEAST OPTIMUM MOISTURE. WHEN THE MOISTURE CONTENT OF THE FILL IS BELOW THAT SPECIFIED, WATER SHALL BE ADDED UNTIL THE MOISTURE DURING THE COMPACTION PROCESS. WHEN THE MOISTURE CONTENT OF THE FILL IS ABOVE THAT SPECIFIED, THE FILL MATERIAL SHALL BE AERATED BY BLADING OR OTHER SATISFACTORY METHODS UNTIL THE MOISTURE CONTENT IS AS SPECIFIED.

AFTER EACH LAYER HAS BEEN PLACED, MIXED, SPREAD EVENLY AND MOISTURE CONDITIONED, IT SHALL BE COMPACTED TO AT LEAST THE SPECIFIED DENSITY.

THE FILL OPERATION SHALL BE CONTINUED IN COMPACTED LAYERS AS SPECIFIED ABOVE UNTIL THE FILL HAS BEEN BROUGHT TO THE FINISHED SLOPES AND GRADES AS SHOWN ON THE PLANS. NO LAYER SHALL BE ALLOWED TO DRY OUT BEFORE SUBSEQUENT LAYERS ARE PLACED.

COMPACTION EQUIPMENT SHALL BE OF SUCH DESIGN THAT IT WILL BE ABLE TO COMPACT THE FILL TO THE SPECIFIED MINIMUM COMPACTION WITHIN THE SPECIFIED MOISTURE CONTENT RANGE. COMPACTION OF EACH LAYER SHALL BE CONTINUOUS OVER ITS ENTIRE AREA UNTIL THE REQUIRED MINIMUM DENSITY HAS BEEN OBTAINED.

7. CUT OR FILL SLOPES

ALL CONSTRUCTED SLOPES, BOTH CUT AND FILL, SHALL BE NO STEEPER THAN 2 TO 1 (HORIZONTAL TO VERTICAL). DURING THE GRADING OPERATION, COMPACTED FILL SLOPES SHALL BE OVERFILLED BY AT LEAST ONE FOOT HORIZONTALLY AT THE COMPLETION OF THE GRADING OPERATIONS, THE EXCESS FILL EXISTING ON THE SLOPES SHALL BE BLADED OFF TO CREATE THE FINISHED SLOPE EMBANKMENT. ALL CUT AND FILL SLOPES SHALL BE TRACK WALKED AFTER BEING BROUGHT TO FINISH GRADE AND THEN BE PLANTED WITH EROSION CONTROL SLOPE PLANTING. THE SOILS ENGINEER SHALL REVIEW ALL CUT SLOPES TO DETERMINE IF ANY ADVERSE GEOLOGIC CONDITIONS ARE EXPOSED. IF SUCH CONDITIONS DO OCCUR, THE SOILS ENGINEER SHALL RECOMMEND THE APPROPRIATE MITIGATION MEASURES AT THE TIME OF THEIR DETECTION.

8. SEASONAL LIMITS AND DRAINAGE CONTROL

FILL MATERIALS SHALL NOT BE PLACED, SPREAD OR COMPACTED WHILE IT IS AT AN UNSUITABLY HIGH MOISTURE CONTENT OR DURING OTHERWISE UNFAVORABLE CONDITIONS. WHEN THE WORK IS INTERRUPTED FOR ANY REASON THE FILL OPERATIONS SHALL NOT BE RESUMED UNTIL FIELD TEST PERFORMED BY THE SOILS ENGINEER INDICATE THAT THE MOISTURE CONDITIONS IN AREAS TO BE FILLED ARE AS PREVIOUSLY SPECIFIED. ALL EARTH MOVING AND WORKING OPERATIONS SHALL BE CONTROLLED TO PREVENT WATER FROM RUNNING INTO EXCAVATED AREAS. ALL EXCESS WATER SHALL BE PROMPTLY REMOVED AND THE SITE KEPT DRY.

9. DUST CONTROL

THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY FOR THE ALLEVIATION OR PREVENTION OF ANY DUST NUISANCE ON OR ABOUT THE SITE CAUSED BY THE CONTRACTOR'S OPERATION EITHER DURING THE PERFORMANCE OF THE GRADING OR RESULTING FROM THE CONDITION IN WHICH THE CONTRACTOR LEAVES THE SITE. THE CONTRACTOR SHALL ASSUME ALL LIABILITY INCLUDING COURT COST OF CO-DEFENDANTS FOR ALL CLAIMS RELATED TO DUST OR WIND-BLOWN MATERIALS ATTRIBUTABLE TO HIS WORK. COST FOR THIS ITEM OF WORK IS TO BE INCLUDED IN THE EXCAVATION ITEM AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.

10. INDEMNITY

THE CONTRACTOR WILL HOLD HARMLESS, INDEMNIFY AND DEFEND THE ENGINEER, THE OWNER AND HIS CONSULTANTS AND EACH OF THEIR OFFICERS AND EMPLOYEES AND AGENTS, FROM ANY AND ALL LIABILITY CLAIMS, LOSSES OR DAMAGE ARISING OR ALLEGED TO HEREIN, BUT NOT INCLUDING THE SOLE NEGLIGENCE OF THE OWNER, THE ARCHITECT, THE ENGINEER AND HIS CONSULTANTS AND EACH OF THEIR OFFICERS AND EMPLOYEES AND AGENTS.

11. SAFETY

IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE. INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

THE DUTY OF THE ENGINEERS TO CONDUCT CONSTRUCTION REVIEW OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES, IN, ON OR NEAR THE CONSTRUCTION SITE.

12. GUARANTEE

NEITHER THE FINAL PAYMENT, NOR THE PROVISIONS IN THE CONTRACT, NOR PARTIAL, NOR ENTIRE USE OR OCCUPANCY OF THE PREMISES BY THE OWNER SHALL CONSTITUTE AN ACCEPTANCE OF THE WORK NOT DONE IN ACCORDANCE WITH THE CONTRACT OR RELIEVES THE CONTRACTOR OF LIABILITY IN RESPECT TO ANY EXPRESS WARRANTIES OR RESPONSIBILITY FOR FAULTY MATERIAL OR WORKMANSHIP.

THE CONTRACTOR SHALL REMEDY ANY DEFECTS IN WORK AND PAY FOR ANY DAMAGE TO OTHER WORK RESULTING THERE FROM WHICH SHALL APPEAR WITHIN A PERIOD OF ONE (1) CALENDAR YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE WORK.

13. TRENCH BACKFILL

EITHER THE ON-SITE INORGANIC SOIL OR APPROVED IMPORTED SOIL MAY BE USED AS TRENCH BACKFILL. THE BACKFILL MATERIAL SHALL BE MOISTURE CONDITIONED PER THESE SPECIFICATIONS AND SHALL BE PLACED IN LIFTS OF NOT MORE THAN SIX INCHES IN HORIZONTAL UNCOMPACTED LAYERS AND BE COMPACTED BY MECHANICAL MEANS TO A MINIMUM OF 90% RELATIVE COMPACTION. IMPORTED SAND MAY BE USED FOR TRENCH BACKFILL MATERIAL PROVIDED IT IS COMPACTED TO AT LEAST 90% RELATIVE COMPACTION. WATER JETTING ASSOCIATED WITH COMPACTION USING VIBRATORY EQUIPMENT WILL BE PERMITTED ONLY WITH IMPORTED SAND BACKFILL WITH THE APPROVAL OF THE SOILS ENGINEER. ALL PIPES SHALL BE BEDDED WITH SAND EXTENDING FROM THE TRENCH BOTTOM TO TWELVE INCHES ABOVE THE PIPE. SAND BEDDING IS TO BE COMPACTED AS SPECIFIED ABOVE FOR SAND BACKFILL.

14. EROSION CONTROL

A. ALL GRADING, EROSION AND SEDIMENT CONTROL AND RELATED WORK UNDERTAKEN ON THIS SITE IS SUBJECT TO ALL TERMS AND CONDITIONS OF THE COUNTY GRADING ORDINANCE AND MADE A PART HEREOF BY REFERENCE.

B. THE CONTRACTOR WILL BE LIABLE FOR ANY AND ALL DAMAGES TO ANY PUBLICLY OWNED AND MAINTAINED ROAD CAUSED BY THE AFORESAID CONTRACTOR'S GRADING ACTIVITIES, AND SHALL BE RESPONSIBLE FOR THE CLEANUP OF ANY MATERIAL SPILLED ON ANY PUBLIC ROAD ON THE HAUL ROUTE.

C. THE EROSION CONTROL MEASURES ARE TO BE OPERABLE DURING THE RAINY SEASON, GENERALLY FROM OCTOBER FIRST TO APRIL FIFTEENTH. EROSION CONTROL PLANTING IS TO BE COMPLETED BY OCTOBER FIRST. NO GRADING OR UTILITY TRENCHING SHALL OCCUR BETWEEN OCTOBER FIRST AND APRIL FIFTEENTH UNLESS AUTHORIZED BY THE LOCAL JURISDICTION.

D. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL DISTURBED AREAS ARE STABILIZED AND CHANGES TO THIS EROSION AND SEDIMENT CONTROL PLAN SHALL BE MADE TO MEET FIELD CONDITIONS ONLY WITH THE APPROVAL OF OR AT THE DIRECTION OF THE SOILS ENGINEER.

E. DURING THE RAINY SEASON, ALL PAVED AREAS SHALL BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE SITE SHALL BE MAINTAINED SO AS TO MINIMIZE SEDIMENT-LADEN RUNOFF TO ANY STORM DRAINAGE SYSTEM.

F. ALL EROSION CONTROL FACILITIES MUST BE INSPECTED AND REPAIRED AT THE END OF EACH WORKING DAY DURING THE RAINY SEASON.

G. WHEN NO LONGER NECESSARY AND PRIOR TO FINAL ACCEPTANCE OF DEVELOPMENT, SEDIMENT BASINS SHALL BE REMOVED OR OTHERWISE DEACTIVATED AS REQUIRED BY THE LOCAL JURISDICTION.

H. A CONSTRUCTION ENTRANCE SHALL BE PROVIDED AT ANY POINT OF EGRESS FROM THE SITE TO ROADWAY. A CONSTRUCTION ENTRANCE SHOULD BE COMPOSED OF COARSE DRAIN ROCK (2" TO 3") MINIMUM DIAMETER) AT LEAST EIGHT INCHES THICK BY FIFTY (50) FEET LONG BY TWENTY (20) FEET WIDE UNLESS SHOWN OTHERWISE ON PLAN AND SHALL BE MAINTAINED UNTIL THE SITE IS PAVED.

I. ALL AREAS SPECIFIED FOR HYDROSEEDING SHALL BE NOZZLE PLANTED WITH STABILIZATION MATERIAL CONSISTING OF FIBER, SEED, FERTILIZER AND WATER, MIXED AND APPLIED IN THE FOLLOWING PROPORTIONS:

FIBER, 2000 LBS/ACRE
SEED, 200 LBS/ACRE (SEE NOTE J, BELOW)
FERTILIZER (11-8-4), 500 LBS/ACRE
WATER, AS REQUIRED FOR APPLICATION

J. SEED MIX SHALL BE PER CALTRANS STANDARDS.

K. WATER UTILIZED IN THE STABILIZATION MATERIAL SHALL BE OF SUCH QUALITY THAT IT WILL PROMOTE GERMINATION AND STIMULATE GROWTH OF PLANTS. IT SHALL BE FREE OF POLLUTANT MATERIALS AND WEED SEED.

L. HYDROSEEDING SHALL CONFORM TO THE PROVISIONS OF SECTION 20, EROSION CONTROL AND HIGHWAY PLANTING", OF THE STANDARD SPECIFICATIONS OF THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION, AS LAST REVISED.

M. A DISPERSING AGENT MAY BE ADDED TO THE HYDROSEEDING MATERIAL, PROVIDED THAT THE CONTRACTOR FURNISHES SUITABLE EVIDENCE THAT THE ADDITIVE WILL NOT ADVERSELY AFFECT THE PERFORMANCE OF THE SEEDING MIXTURE.

N. STABILIZATION MATERIALS SHALL BE APPLIED AS SOON AS PRACTICABLE AFTER COMPLETION OF GRADING OPERATIONS AND PRIOR TO THE ONSET OF WINTER RAINS, OR AT SUCH OTHER TIME AS DIRECTED BY THE COUNTY ENGINEER. THE MATERIAL SHALL BE APPLIED BEFORE INSTALLATION OF OTHER LANDSCAPING MATERIALS SUCH AS TREES, SHRUBS AND GROUND COVERS.

O. THE STABILIZATION MATERIAL SHALL BE APPLIED WITHIN 4-HOURS AFTER MIXING. MIXED MATERIAL NOT USED WITHIN 4-HOURS SHALL BE REMOVED FROM THE SITE.

P. THE CONTRACTOR SHALL MAINTAIN THE SOIL STABILIZATION MATERIAL AFTER PLACEMENT. THE COUNTY ENGINEER MAY REQUIRE SPRAY APPLICATION OF WATER OR OTHER MAINTENANCE ACTIVITIES TO ASSURE THE EFFECTIVENESS OF THE STABILIZATION PROCESS. APPLICATION OF WATER SHALL BE ACCOMPLISHED USING NOZZLES THAT PRODUCE A SPRAY THAT DOES NOT CONCENTRATE OR WASH AWAY THE STABILIZATION MATERIALS.

15. CLEANUP

THE CONTRACTOR MUST MAINTAIN THE SITE CLEAN, SAFE AND IN USABLE CONDITION. ANY SPILLS OF SOIL, ROCK OR CONSTRUCTION MATERIAL MUST BE REMOVED FROM THE SITE BY THE CONTRACTOR DURING CONSTRUCTION AND UPON COMPLETION OF THE PROJECT. COST FOR THIS ITEM OF WORK SHALL BE INCLUDED IN THE EXCAVATION AND COMPACTION ITEM AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.

NOTE:
THESE NOTES ARE INTENDED TO BE USED AS A GENERAL GUIDELINE. THE REFERENCED SOILS REPORT FOR THE PROJECT AND GOVERNING AGENCY GRADING ORDINANCE SHALL SUPERSEDE THESE NOTES. THE SOILS ENGINEER MAY MAKE ON-SITE RECOMMENDATIONS DURING GRADING OPERATIONS.

JAMES TOBY
No. 63127
CIVIL

LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS · LAND SURVEYORS

BAY AREA REGION
2495 INDUSTRIAL PKWY WEST
HAYWARD, CALIFORNIA 94545
(P) (510) 887-4086
(F) (510) 887-3019

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

WWW.LEABRAZE.COM

ZHANG RESIDENCE
229 HUCKLEBERRY TRAIL
(UNINCORPORATED SAN MATEO COUNTY)
REDWOOD CITY, CALIFORNIA
SAN MATEO COUNTY
APN: 067-167-070 & 280

PRELIMINARY
GRADING
SPECIFICATIONS

REVISIONS	BY
–	–
–	–
–	–
–	–
1 PLAN CHECK 03-29-19	DM

JOB NO: 2170108
DATE: 12-07-18
SCALE: NO SCALE
DESIGN BY: CP/DM
DRAWN BY: DM
SHEET NO:
C-4.0
4 OF 6 SHEETS

PRELIMINARY - NOT FOR CONSTRUCTION

PURPOSE:

THE PURPOSE OF THIS PLAN IS TO STABILIZE THE SITE TO PREVENT EROSION OF GRADED AREAS AND TO PREVENT SEDIMENTATION FROM LEAVING THE CONSTRUCTION AREA AND AFFECTING NEIGHBORING SITES, NATURAL AREAS, PUBLIC FACILITIES OR ANY OTHER AREA THAT MIGHT BE AFFECTED BY SEDIMENTATION. ALL MEASURES SHOWN ON THIS PLAN SHOULD BE CONSIDERED THE MINIMUM REQUIREMENTS NECESSARY. SHOULD FIELD CONDITIONS DICTATE ADDITIONAL MEASURES, SUCH MEASURES SHALL BE PER CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD'S FIELD MANUAL FOR EROSION AND SEDIMENTATION CONTROL AND THE CALIFORNIA STORM WATER QUALITY ASSOCIATION BEST MANAGEMENT PRACTICES HANDBOOK FOR CONSTRUCTION. LEA & BRAZE ENGINEERING SHOULD BE NOTIFIED IMMEDIATELY SHOULD CONDITIONS CHANGE.

EROSION CONTROL NOTES:

1. IT SHALL BE THE OWNER'S/CONTRACTOR'S RESPONSIBILITY TO MAINTAIN CONTROL OF THE ENTIRE CONSTRUCTION OPERATION AND TO KEEP THE ENTIRE SITE IN COMPLIANCE WITH THIS EROSION CONTROL PLAN.
2. THE INTENTION OF THIS PLAN IS FOR INTERIM EROSION AND SEDIMENT CONTROL ONLY. ALL EROSION CONTROL MEASURES SHALL CONFORM TO CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD'S FIELD MANUAL FOR EROSION AND SEDIMENTATION CONTROL, THE CALIFORNIA STORM WATER QUALITY ASSOCIATION BEST MANAGEMENT PRACTICES HANDBOOK FOR CONSTRUCTION, AND THE LOCAL GOVERNING AGENCY FOR THIS PROJECT.
3. OWNER/CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO, DURING, AND AFTER STORM EVENTS. PERSON IN CHARGE OF MAINTAINING EROSION CONTROL MEASURES SHOULD WATCH LOCAL WEATHER REPORTS AND ACT APPROPRIATELY TO MAKE SURE ALL NECESSARY MEASURES ARE IN PLACE.
4. SANITARY FACILITIES SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
5. DURING THE RAINY SEASON, ALL PAVED AREAS SHALL BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE SITE SHALL BE MAINTAINED SO AS TO MINIMIZE SEDIMENT–LADEN RUNOFF TO ANY STORM DRAINAGE SYSTEM, INCLUDING EXISTING DRAINAGE SWALES AND WATERCOURSES.
6. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION WILL BE MINIMIZED. COMPLIANCE WITH FEDERAL, STATE AND LOCAL LAWS CONCERNING POLLUTION SHALL BE MAINTAINED AT ALL TIMES.
7. CONTRACTOR SHALL PROVIDE DUST CONTROL AS REQUIRED BY THE APPROPRIATE FEDERAL, STATE AND LOCAL AGENCY REQUIREMENTS.
8. ALL MATERIALS NECESSARY FOR THE APPROVED EROSION CONTROL MEASURES SHALL BE IN PLACE BY OCTOBER 15TH.
9. EROSION CONTROL SYSTEMS SHALL BE INSTALLED AND MAINTAINED THROUGHOUT THE RAINY SEASON, OR FROM OCTOBER 15TH THROUGH APRIL 15TH, WHICHEVER IS LONGER.
10. IN THE EVENT OF RAIN, ALL GRADING WORK IS TO CEASE IMMEDIATELY AND THE SITE IS TO BE SEALED IN ACCORDANCE WITH THE APPROVAL EROSION CONTROL MEASURES AND APPROVED EROSION CONTROL PLAN.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING AND REPAIRING EROSION CONTROL SYSTEMS AFTER EACH STORM.
12. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY LOCAL JURISDICTION'S ENGINEERING DEPARTMENT OR BUILDING OFFICIALS.
13. MEASURES SHALL BE TAKEN TO COLLECT OR CLEAN ANY ACCUMULATION OR DEPOSIT OF DIRT, MUD, SAND, ROCKS, GRAVEL OR DEBRIS ON THE SURFACE OF ANY STREET, ALLEY OR PUBLIC PLACE OR IN ANY PUBLIC STORM DRAIN SYSTEMS. THE REMOVAL OF AFORESAID SHALL BE DONE BY STREET SWEEPING OR HAND SWEEPING. WATER SHALL NOT BE USED TO WASH SEDIMENTS INTO PUBLIC OR PRIVATE DRAINAGE FACILITIES.
14. EROSION CONTROL MEASURES SHALL BE ON–SITE FROM SEPTEMBER 15TH THRU APRIL 15TH.
15. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT THE RAINY SEASON OR FROM OCTOBER 30 THRU APRIL 15, WHICHEVER IS GREATER.
16. PLANS SHALL BE DESIGNED TO MEET C3 REQUIREMENTS OF THE MUNICIPAL STORMWATER REGIONAL PERMIT("MRP") NPDES PERMIT CAS 612008.
17. THE CONTRACTOR TO NPDES (NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM) BEST MANAGEMENT PRACTICES (BMP) FOR SEDIMENTATION PREVENTION AND EROSION CONTROL TO PREVENT DELETERIOUS MATERIALS OR POLLUTANTS FROM ENTERING THE TOWN OR COUNTY STORM DRAIN SYSTEMS.
18. THE CONTRACTOR MUST INSTALL ALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO THE INCEPTION OF ANY WORK ONSITE AND MAINTAIN THE MEASURES UNTIL THE COMPLETION OF ALL LANDSCAPING.
19. THE 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 AT ALL TIMES BE KEPT CLEAN OF DEBRIS, WITH DUST AND OTHER NUISANCE BEING CONTROLLED AT ALL TIMES. THE CONTRACTOR BE RESPONSIBLE FOR ANY CLEAN UP ON ADJACENT STREETS AFFECTED BY THE BY THEIR CONSTRUCTION, METHOD OF STREET CLEANING SHALL BE BY DRY SWEEPING OF ALL PAVED AREAS. NO STOCKPILING OF BUILDING MATERIALS WITHIN THE TOWN RIGHT–OF–WAY.
20. SEDIMENTS AND OTHER MATERIALS SHALL NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC. THE CONTRACTOR SHALL INSTALL A STABILIZED CONSTRUCTION ENTRANCE PRIOR TO THE INSPECTION OF ANY WORK ONSITE AND MAINTAIN IT FOR THE DURATION OF THE CONSTRUCTION PROCESS SO AS TO NOT INHIBIT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC RIGHT–OF–WAY UNTIL THE COMPLETION OF ALL LANDSCAPING.
21. THE CONTRACTOR SHALL PROTECT DOWN SLOPE DRAINAGE COURSES, STREAMS AND STORM DRAINS WITH ROCK FILLED SAND BAGS, TEMPORARY SWALES, SILT FENCES, AND EARTH PERMS IN CONJUNCTION OF ALL LANDSCAPING.
22. STOCKPILED MATERIALS 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 IS SEEDED OR PLANTED TO PROVIDE GROUND COVER PRIOR TO THE FALL RAINY SEASON.
23. EXCESS OR WASTE CONCRETE MUST NOT BE WASHED INTO THE PUBLIC RIGHT–OF–WAYOR ANY OTHER DRAINAGE SYSTEM. PROVISIONS SHALL BE MADE TO RETAIN CONCRETE WASTES ON SITE UNTIL THEY CAN BE DISPOSED OF AS SOLID WASTE.
24. TRASH AND CONSTRUCTION RELATED SOLID WASTES MUST BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION AND DISPERSAL BY WIND

EROSION CONTROL NOTES CONTINUED:

24. 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 MUST NOT BE WASHED INTO THE DRAINAGE SYSTEM,
25. DUST CONTROL SHALL BE DONE BY WATERING AND AS OFTEN AS REQUIRED BY THE TOWN INSPECTOR.
26. SILT FENCE(S) AND/OR FIBER ROLL(S) SHALL BE INSTALLED PRIOR TO SEPTEMBER 15TH AND SHALL REMAIN IN PLACE UNTIL THE LANDSCAPING GROUND COVER IS INSTALLED. CONTRACTOR SHALL CONTINUOUSLY MONITOR THESE MEASURES, FOLLOWING AND DURING ALL RAIN EVENTS,TO PUBLIC OWNED FACILITIES.

EROSION CONTROL MEASURES:

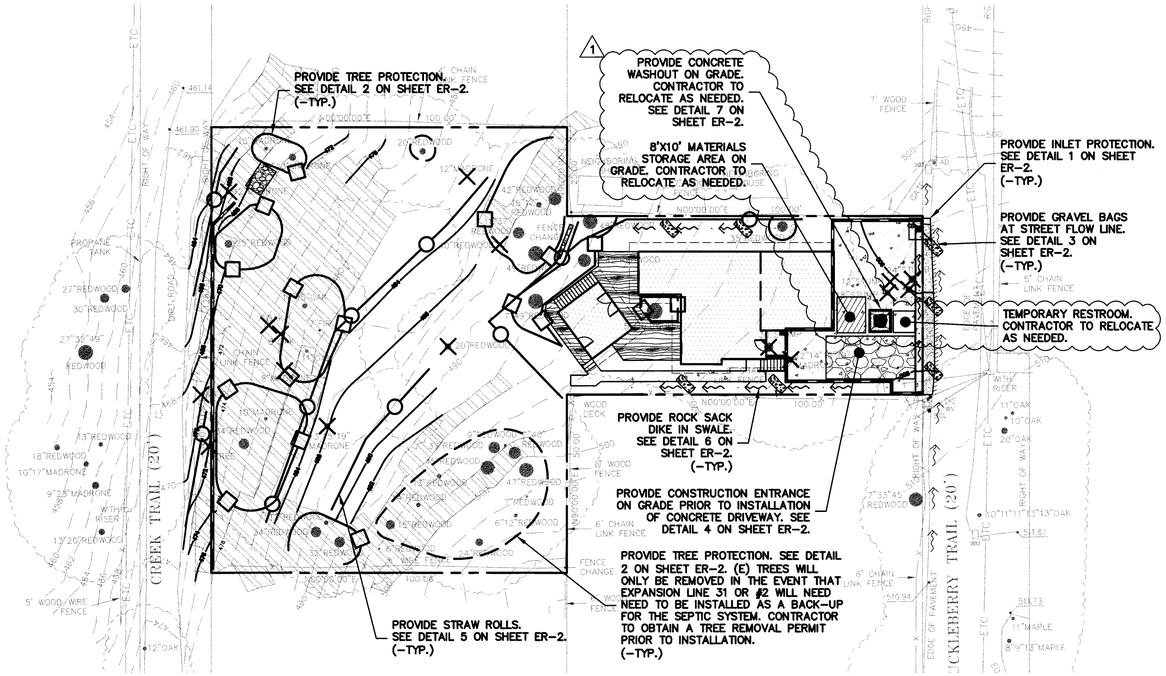
1. THE FACILITIES SHOWN ON THIS PLAN ARE DESIGNED TO CONTROL EROSION AND SEDIMENT DURING THE RAINY SEASON, OCTOBER 15TH TO APRIL 15. EROSION CONTROL FACILITIES SHALL BE IN PLACE PRIOR TO OCTOBER 15TH OF ANY YEAR. GRADING OPERATIONS DURING THE RAINY SEASON WHICH LEAVE DENUDED SLOPES SHALL BE PROTECTED WITH EROSION CONTROL MEASURES IMMEDIATELY FOLLOWING GRADING ON THE SLOPES.
2. SITE CONDITIONS AT TIME OF PLACEMENT OF EROSION CONTROL MEASURES WILL VARY. APPROPRIATE ACTION INCLUDING TEMPORARY SWALES, INLETS, HYDROSEEDING, STRAW BALES, ROCK SACKS, ETC. SHALL BE TAKEN TO PREVENT EROSION AND SEDIMENTATION FROM LEAVING SITE. EROSION CONTROL MEASURES SHALL BE ADJUSTED AS THE CONDITIONS CHANGE AND THE NEED OF CONSTRUCTION SHIFT.
3. CONSTRUCTION ENTRANCES SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF GRADING. ALL CONSTRUCTION TRAFFIC ENTERING ONTO THE PAVED ROADS MUST CROSS THE STABILIZED CONSTRUCTION ENTRANCES. CONTRACTOR SHALL MAINTAIN STABILIZED ENTRANCE AT EACH VEHICLE ACCESS POINT TO EXISTING PAVED STREETS. ANY MUD OR DEBRIS TRACKED ONTO PUBLIC STREETS SHALL BE REMOVED DAILY AND AS REQUIRED BY THE GOVERNING AGENCY.
4. ALL EXPOSED SLOPES THAT ARE NOT VEGETATED SHALL BE HYDROSEEDED. IF HYDROSEEDING IS NOT USED OR IS NOT EFFECTIVE BY OCTOBER 15, THEN OTHER IMMEDIATE METHODS SHALL BE IMPLEMENTED, SUCH AS EROSION CONTROL BLANKETS, OR A THREE–STEP APPLICATION OF 1) SEED, MULCH, FERTILIZER 2) BLOWN STRAW 3) TACKIFIER AND MULCH. HYDROSEEDING SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF SECTION 20" EROSION CONTROL AND HIGHWAY PLANTING" OF THE STANDARD SPECIFICATION OF THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION, AS LAST REVISED. REFER TO THE EROSION CONTROL SECTION OF THE GRADING SPECIFICATIONS THAT ARE A PART OF THIS PLAN SET FOR FURTHER INFORMATION.
5. INLET PROTECTION SHALL BE INSTALLED AT OPEN INLETS TO PREVENT SEDIMENT FROM ENTERING THE STORM DRAIN SYSTEM. INLETS NOT USED IN CONJUNCTION WITH EROSION CONTROL ARE TO BE BLOCKED TO PREVENT ENTRY OF SEDIMENT. MINIMUM INLET PROTECTION SHALL CONSIST OF A ROCK SACKS OR AS SHOWN ON THIS PLAN
6. THIS EROSION AND SEDIMENT CONTROL PLAN MAY NOT COVER ALL THE SITUATIONS THAT MAY ARISE DURING CONSTRUCTION DUE TO UNANTICIPATED FIELD CONDITIONS. VARIATIONS AND ADDITIONS MAY BE MADE TO THIS PLAN IN THE FIELD. A REPRESENTATIVE OF LEA & BRAZE ENGINEERING SHALL PERFORM A FIELD REVIEW AND MAKE RECOMMENDATIONS AS NEEDED. CONTRACTOR IS RESPONSIBLE TO NOTIFY LEA & BRAZE ENGINEERING AND THE GOVERNING AGENCY OF ANY CHANGES.
7. THE EROSION CONTROL MEASURES SHALL CONFORM TO THE LOCAL JURISDICTION'S STANDARDS AND THE APPROVAL OF THE LOCAL JURISDICTION'S ENGINEERING DEPARTMENT.
8. STRAW ROLLS SHALL BE PLACED AT THE TOE OF SLOPES AND ALONG THE DOWN SLOPE PERIMETER OF THE PROJECT. THEY SHALL BE PLACED AT 25 FOOT INTERVALS ON GRADED SLOPES. PLACEMENT SHALL RUN WITH THE CONTOURS AND ROLLS SHALL BE TIGHTLY END BUTTED. CONTRACTOR SHALL REFER TO MANUFACTURES SPECIFICATIONS FOR PLACEMENT AND INSTALLATION INSTRUCTIONS.

REFERENCES:

1. CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD'S FIELD MANUAL FOR EROSION AND SEDIMENTATION CONTROL
2. CALIFORNIA STORM WATER QUALITY ASSOCIATION BEST MANAGEMENT PRACTICES HANDBOOK FOR CONSTRUCTION

PERIODIC MAINTENANCE:

1. MAINTENANCE IS TO BE PERFORMED AS FOLLOWS:
   - A. DAMAGES CAUSED BY SOIL EROSION OR CONSTRUCTION SHALL BE REPAIRED AT THE END OF EACH WORKING DAY.
   - B. SWALES SHALL BE INSPECTED PERIODICALLY AND MAINTAINED AS NEEDED.
   - C. SEDIMENT TRAPS, BERMS, AND SWALES ARE TO BE INSPECTED AFTER EACH STORM AND REPAIRS MADE AS NEEDED.
   - D. SEDIMENT SHALL BE REMOVED AND SEDIMENT TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO A DEPTH OF 1' FOOT.
   - E. SEDIMENT REMOVED FROM TRAP SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
   - F. RILLS AND GULLIES MUST BE REPAIRED.
2. GRAVEL BAG INLET PROTECTION SHALL BE CLEANED OUT WHENEVER SEDIMENT DEPTH IS ONE HALF THE HEIGHT OF ONE GRAVEL BAG.
3. STRAW ROLLS SHALL BE PERIODICALLY CHECKED TO ASSURE PROPER FUNCTION AND CLEANED OUT WHENEVER THE SEDIMENT DEPTH REACHED HALF THE HEIGHT OF THE ROLL.
4. SILT FENCE SHALL BE PERIODICALLY CHECKED TO ASSURE PROPER FUNCTION AND CLEANED OUT WHENEVER THE SEDIMENT DEPTH REACHES ONE FOOT IN HEIGHT.
5. CONSTRUCTION ENTRANCE SHALL BE REGRAVELED AS NECESSARY FOLLOWING SILT/SOIL BUILDUP.
6. ANY OTHER EROSION CONTROL MEASURES SHOULD BE CHECKED AT REGULAR INTERVALS TO ASSURE PROPER FUNCTION



EROSION CONTROL LEGEND

- GRAVEL BAG
- SEDIMENTATION BASIN
- INLET PROTECTION
- STRAW ROLL
- SILT FENCE
- CONCRETE WASHOUT
- CONSTRUCTION ENTRANCE
- TREE PROTECTION
- EROSION CONTROL BLANKET / MATTING

NOTE:
SEAL ALL OTHER INLETS NOT INTENDED TO ACCEPT STORM WATER AND DIRECT FLOWS TEMPORARILY TO FUNCTIONAL SEDIMENTATION BASIN INLETS. –TYP

0 10 20 40

SCALE: 1" = 20'

REGISTERED PROFESSIONAL ENGINEER JAMES TOBY No. 63127 CIVIL STATE OF CALIFORNIA ORIGINAL SIGNATURES IN BLUE INK

LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS · LAND SURVEYORS
BAY AREA REGION
2495 INDUSTRIAL PKWY WEST
HAYWARD, CALIFORNIA 94545
(P) (510) 887–4086
(F) (510) 887–3019
SACRAMENTO REGION
3017 DOUGLAS BLVD, # 300
ROSEVILLE, CA 95661
(P) (916)966–1338
(F) (916)797–7363
WWW.LEABRAZE.COM

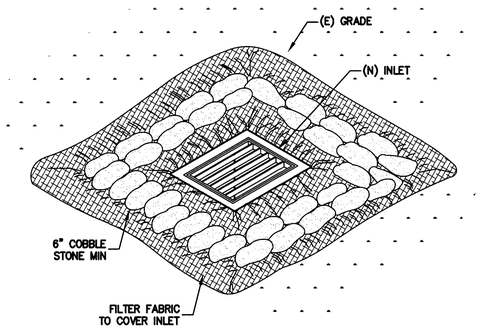
ZHANG RESIDENCE
229 HUCKLEBERRY TRAIL
(UNINCORPORATED SAN MATEO COUNTY)
REDWOOD CITY, CALIFORNIA
APN: 067–167–070 & 280
SAN MATEO COUNTY

PRELIMINARY EROSION CONTROL PLAN

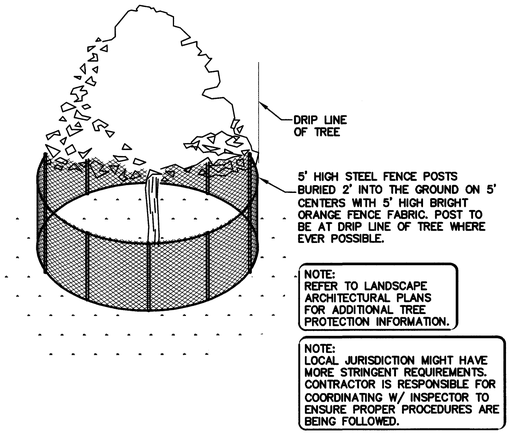
1	PLAN CHECK 03–29–19	DM
	REVISIONS	BY
JOB NO:	2170108	
DATE:	12–07–18	
SCALE:	AS NOTED	
DESIGN BY:	CP/DM	
DRAWN BY:	DM	
SHEET NO:	ER–1	

5 OF 6 SHEETS

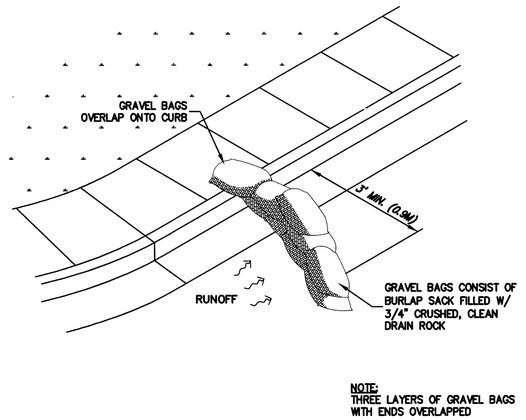
PRELIMINARY - NOT FOR CONSTRUCTION



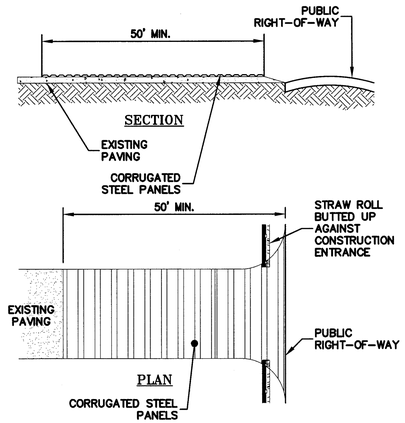
1 ER-2 **INLET PROTECTION**
NTS



2 ER-2 **EXISTING TREE PROTECTION DETAIL**
NTS



3 ER-2 **GRAVEL BAG AT STREET FLOW LINE**
NTS



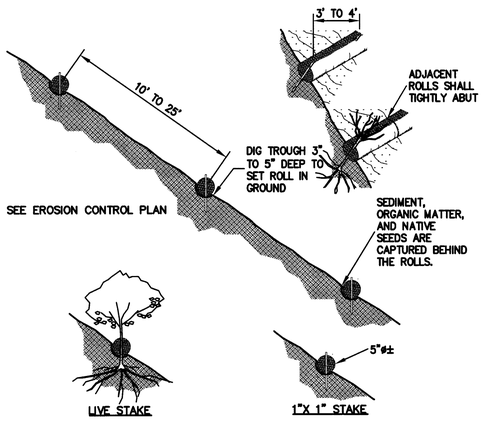
3 ER-2 **STEEL PLATED CONSTRUCTION ENTRANCE**
NTS

NOTES:

CORRUGATED STEEL PANELS SHALL BE A MINIMUM OF 50'.

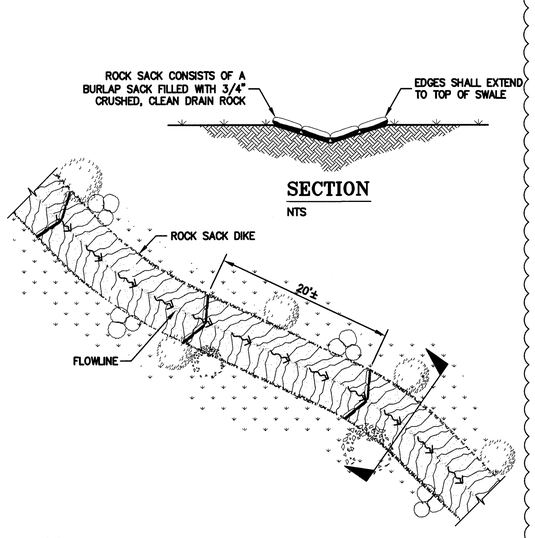
WIDTH SHALL BE A MIN. OF 15' OR GREATER IF NECESSARY TO COVER ALL VEHICULAR INGRESS AND EGRESS. PROVIDE AMPLE TURNING RADII.

ACCESSES SHALL BE INSPECTED WEEKLY DURING PERIODS OF HEAVY USAGE, MONTHLY DURING NORMAL USAGE, AND AFTER EACH RAINFALL, WITH MAINTENANCE PROVIDED AS NECESSARY.

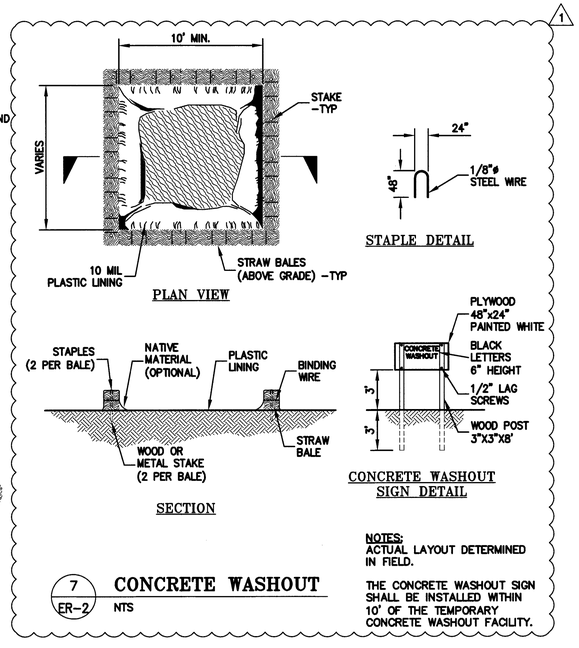


NOTE:
1. STRAW ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE ROLL IN A TRENCH, 3" TO 5" DEEP, DUG ON CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND ROLL.
2. CONTRACTOR IS RESPONSIBLE FOR REGULAR MAINTENANCE AND INSPECTION. THE SILT SHALL BE CLEANED OUT WHEN IT REACHES HALF THE HEIGHT OF THE ROLL.

5 ER-2 **STRAW ROLLS**
NTS



6 ER-2 **ROCK SACK DIKE IN SWALE**
NTS



NOTES:
ACTUAL LAYOUT DETERMINED IN FIELD.

THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 10' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

7 ER-2 **CONCRETE WASHOUT**
NTS

LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS · LAND SURVEYORS
BAY AREA REGION
2495 INDUSTRIAL PKWY WEST
HAYWARD, CALIFORNIA 94545
(P) (510) 887-4086
(F) (510) 887-3019
SACRAMENTO REGION
3017 DOUGLAS BLVD, # 300
ROSEVILLE, CA 95661
(P) (916)966-1338
(F) (916)797-7363
WWW.LEABRAZE.COM

REGISTERED PROFESSIONAL ENGINEER
JAMES TOBY
No. 63127
CIVIL
STATE OF CALIFORNIA
ORIGINAL SIGNATURES IN BLUE INK

ZHANG RESIDENCE
229 HUCKLEBERRY TRAIL
(UNINCORPORATED SAN MATEO COUNTY)
REDWOOD CITY, CALIFORNIA
APN: 067-167-070 & 280
SAN MATEO COUNTY

PRELIMINARY
EROSION CONTROL
DETAILS

–		–
–		–
–		–
–		–
1	PLAN CHECK 03-29-19	DM
	REVISIONS	BY

JOB NO:	2170108
DATE:	12-07-18
SCALE:	AS NOTED
DESIGN BY:	CP/DM
DRAWN BY:	DM
SHEET NO:	ER-2

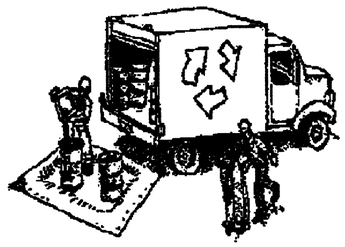
6 OF 6 SHEETS

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

Waste Management

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

Construction Entrances and Perimeter

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

Equipment Management & Spill Control

Maintenance and Parking

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

Spill Prevention and Control

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

Earthmoving

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

Contaminated Soils

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

Paving/Asphalt Work

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

Sawcutting & Asphalt/Concrete Removal

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

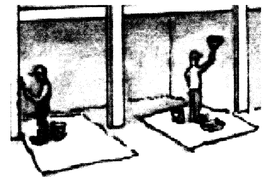
Concrete, Grout & Mortar Application

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

Landscaping

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

Painting & Paint Removal



Painting Cleanup and Removal

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

Dewatering

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

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

PRELIMINARY - NOT FOR CONSTRUCTION

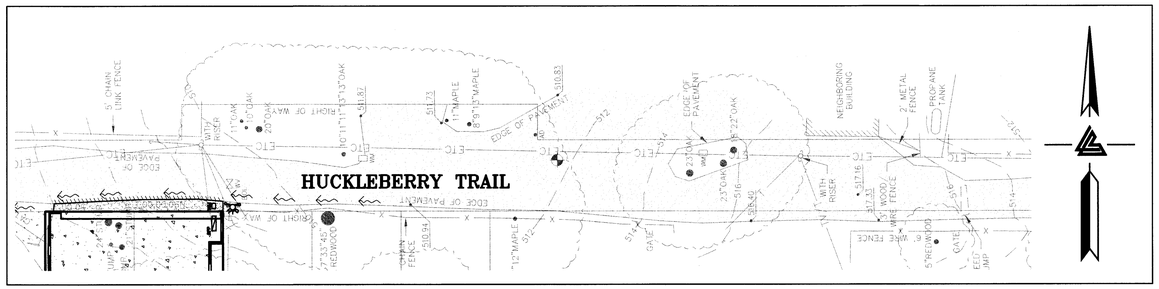
WATER LINE EXTENSION
HUCKLEBERRY TRAIL
WOODSIDE, CALIFORNIA

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		BOUNDARY
		PROPERTY LINE
		RETAINING WALL
		LANDSCAPE RETAINING WALL
	RW RW	RAINWATER TIGHTLINE
	SUB	SUBDRAIN LINE
	TL	TIGHTLINE
SD	SD	STORM DRAIN LINE
SS	SS	SANITARY SEWER LINE
W	W	WATER LINE
G	G	GAS LINE
P	P	PRESSURE LINE
JT	JT	JOINT TRENCH
		SET BACK LINE
		CONCRETE VALLEY GUTTER
		EARTHEN SWALE
CB	CB	CATCH BASIN
JB	JB	JUNCTION BOX
AD	AD	AREA DRAIN
		CURB INLET
SDMH	SDMH	STORM DRAIN MANHOLE
		FIRE HYDRANT
SSMH	SSMH	SANITARY SEWER MANHOLE
		STREET SIGN
222.57 INV	222.57 INV	SPOT ELEVATION
		FLOW DIRECTION
	D	DEMOLISH/REMOVE
		BENCHMARK
200	200	CONTOURS
XX" TREE	XX" TREE	TREE TO BE REMOVED

ABBREVIATIONS

AB	AGGREGATE BASE	LF	LINEAR FEET
AC	ASPHALT CONCRETE	MAX	MAXIMUM
ACC	ACCESSIBLE	MH	MANHOLE
AD	AREA DRAIN	MIN	MINIMUM
BC	BEGINNING OF CURVE	MON.	MONUMENT
B & D	BEARING & DISTANCE	(N)	NEW
BM	BENCHMARK	NO.	NUMBER
BW/FG	BOTTOM OFWALL/FINISH GRADE	NTS	NOT TO SCALE
CB	CATCH BASIN	O.C.	ON CENTER
C & G	CURB AND GUTTER	O/	OVER
℄	CENTER LINE	(PA)	PLANTING AREA
CPP	CORRUGATED PLASTIC PIPE (SMOOTH INTERIOR)	PED	PEDESTRIAN
		PIV	POST INDICATOR VALVE
CO	CLEANOUT	PSS	PUBLIC SERVICES EASEMENT
COTG	CLEANOUT TO GRADE	ℙ	PROPERTY LINE
CONC	CONCRETE	PP	POWER POLE
CONST	CONSTRUCT or –TION	PUE	PUBLIC UTILITY EASEMENT
CONC COR	CONCRETE CORNER	PVC	POLYVINYL CHLORIDE
CY	CUBIC YARD	R	RADIUS
D	DIAMETER	RCP	REINFORCED CONCRETE PIPE
DI	DROP INLET	RIM	RIM ELEVATION
DIP	DUCTILE IRON PIPE	RW	RAINWATER
EA	EACH	R/W	RIGHT OF WAY
EC	END OF CURVE	S	SLOPE
EG	EXISTING GRADE	S.A.D.	SEE ARCHITECTURAL DRAWINGS
EL	ELEVATIONS	SAN	SANITARY
EP	EDGE OF PAVEMENT	SD	STORM DRAIN
EQ	EQUIPMENT	SDMH	STORM DRAIN MANHOLE
EW	EACH WAY	SHT	SHEET
(E)	EXISTING	S.L.D.	SEE LANDSCAPE DRAWINGS
FC	FACE OF CURB	SPEC	SPECIFICATION
FF	FINISHED FLOOR	SS	SANITARY SEWER
FG	FINISHED GRADE	SSCO	SANITARY SEWER CLEANOUT
FH	FIRE HYDRANT	SSMH	SANITARY SEWER MANHOLE
FL	FLOW LINE	ST.	STREET
FS	FINISHED SURFACE	STA	STATION
G	GAS	STD	STANDARD
GA	GAGE OR GAUGE	STRUCT	STRUCTURAL
GB	GRADE BREAK	T	TELEPHONE
HDPE	HIGH DENSITY CORRUGATED POLYETHYLENE PIPE	TC	TOP OF CURB
		TEMP	TEMPORARY
HORIZ	HORIZONTAL	TP	TOP OF PAVEMENT
HI PT	HIGH POINT	TW/FG	TOP OF WALL/FINISH GRADE
H&T	HUB & TACK	TYP	TYPICAL
ID	INSIDE DIAMETER	VC	VERTICAL CURVE
INV	INVERT ELEVATION	VCP	VITRIFIED CLAY PIPE
JB	JUNCTION BOX	VERT	VERTICAL
JT	JOINT TRENCH	W/	WITH
JP	JOINT UTILITY POLE	W, WL	WATER LINE
L	LENGTH	WM	WATER METER
LNDG	LANDING	WWF	WELDED WIRE FABRIC



KEY MAP
1" = 20'

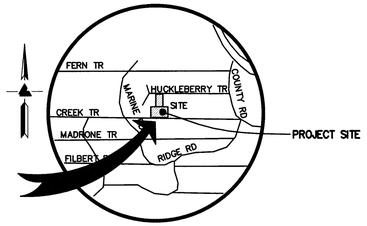
GENERAL NOTES

1. ELEVATIONS AND LOCATIONS OF ALL EXISTING UTILITY CROSSINGS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO START OF ANY CONSTRUCTION AFFECTING SAID LINES. CONTACT USA AT (800) 642–2444 AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATION.
2. ALL APPLICABLE WORK SHALL BE DONE IN ACCORDANCE TO CALWATER PLANS & SPECIFICATIONS, PREPARED IN THE OFFICE OF THE ENGINEERING DIVISION, INCLUDING MODIFICATIONS CONTAINED HEREIN.
3. THE CONTRACTOR SHALL RESTORE ALL DAMAGED, REMOVED OR OTHERWISE DISTURBED WALLS, FENCES, SERVICES, UTILITIES, IMPROVEMENTS OR FEATURES OF WHATEVER NATURE, DUE TO CONTRACTOR'S WORK.
4. HE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE INSTALLATION OF FACILITIES BY PG&E. PACIFIC BELL, AND CABLE T.V. INSTALLATION. VALVE BOXES AND MANHOLES, AND STRUCTURES TO BE SET TO GRADE IN CONCRETE AFTER PAVING.
5. ALL STREET MONUMENTS AND OTHER PERMANENT MONUMENTS DISTURBED DURING THE PROCESS OF CONSTRUCTION SHALL BE REPLACED BEFORE ACCEPTANCE OF THE IMPROVEMENTS BY THE COUNTY ENGINEER.
6. THE CONTRACTOR SHALL GIVE THE CALWATER AND COUNTY OF SAN MATEO INSPECTOR TWO WORKING DAYS ADVANCE NOTICE FOR INSPECTION.
7. NO TREES 12" DIAMETER OR LARGER MEASURED BETWEEN 6" AND 36" ABOVE GRADE, SHALL BE REMOVED WITHOUT THE WRITTEN CONSENT OF THE COUNTY ENGINEER.
8. FOR LANE CLOSURES, THE CONTRACTOR SHALL PREPARE A TRAFFIC CONTROL PLAN AND OBTAIN APPROVAL OF THE CITY ENGINEER BEFORE COMMENCING WORK. THE CONTRACTOR SHALL PROVIDE FLAGMEN, CONES OR BARRICADES, AS NECESSARY TO CONTROL TRAFFIC AND PREVENT HAZARDOUS CONDITIONS PER THE WORK AREA TRAFFIC CONTROL HANDBOOK.
9. PEDESTRIAN, PUBLIC ACCESSES, WHEELCHAIR ACCESSES SHALL BE MAINTAINED DURING THE CONSTRUCTION TO THE SATISFACTION OF THE COUNTY ENGINEER.
10. NO TRENCHES OR HOLES SHALL BE LEFT OPEN OVERNIGHT; USE STEEL PLATING OR HOT–MIX ASPHALT AS REQUIRED TO PROTECT OPEN TRENCHES OVERNIGHT.
11. THE CONTRACTOR SHALL CONTROL DUST AT ALL TIMES AND SWEEP STREETS AS OFTEN AS NECESSARY DURING CONSTRUCTION AS REQUIRED BY THE COUNTY ENGINEER.
12. ALL REVISIONS TO THIS PLAN MUST BE REVIEWED AND APPROVED BY THE CALWATER ENGINEER PRIOR TO CONSTRUCTION AND SHALL BE ACCURATELY SHOWN ON REVISED PLANS STAMPED AND SIGNED BY CALWATER AND THE COUNTY ENGINEER PRIOR TO THE INSTALLATION OF THE IMPROVEMENTS.
13. ALL CONSTRUCTION STAKING FOR CURB, GUTTER, SIDEWALK, SANITARY SEWERS, STORM DRAINS, WATER LINES, FIRE HYDRANTS, ELECTROLIERS, ECT., SHALL BE DONE BY A REGISTERED CIVIL ENGINEER OF LICENSED LAND SURVEYOR.
14. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE MOST CURRENT VERSION OF THE STANDARD PLANS DETAILS AND SPECIFICATIONS FROM CALWATER AND THE COUNTY OF SAN MATEO.

NOTE:
FOR CONSTRUCTION STAKING SCHEDULING OR QUOTATIONS PLEASE CONTACT ALEX ABAYA AT LEA & BRAZE ENGINEERING (510)887-4086 EXT 116.
aabaya@leabraze.com

WATER NOTES

1. ALL LABOR AND MATERIALS SHALL MEET REQUIREMENTS OF CALWATER AND THE COUNTY OF SAN MATEO.
2. CALWATER INSPECTOR MUST BE NOTIFIED AT LEAST TWO FULL WORKING DAYS PRIOR TO EXCAVATING OR CONNECTING TO EXISTING WATER SYSTEM. ONLY THE CITY SHALL OPERATE EXISTING SYSTEM VALVES.
3. STANDARD THRUST BLOCK SHALL BE PROVIDED AT ALL BLOW OFF VALVES AND HYDRANTS. SEE DETAIL 1 ON SHEET C–3.0.
4. PROVIDE 36" MINIMUM COVER FROM ROADWAY SURFACE OVER MAINS; MAINTAIN A ONE FOOT VERTICAL AND FIVE FOOT HORIZONTAL MINIMUM CLEARANCE FROM EXISTING UTILITIES. WATER MAINS SHALL BE INSTALLED ABOVE SANITARY SEWERS, UNLESS NOTED OTHERWISE.
5. CONTRACTOR SHALL USE HAND TOOLS WHEN EXCAVATING NEAR ALL WATER, SEWER, STORM, GAS, ELECTRIC, COMMUNICATION AN CABLE LINES.
6. ALL TAPPED CONNECTIONS (DOMESTIC AND FIRE) SHALL BE "WET–TAPPED". WET TAPS WILL BE PERFORMED BY CALWATER AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL FURNISH TAPPING SLEEVE; PER CALWATER STANDARDS AND DO ALL EXCAVATING, INSTALLING THRUST BLOCKS AND BACKFILLING. CONTRACTOR SHALL CONTACT CALWATER FOR AN ESTIMATED COST OF THE WET TAP.
7. METERS ARE INSTALLED BY CALWATER UPON PAYMENT OF METER CHARGE BY OWNER/DEVELOPER.
8. COMPACTION, TESTING AND INSPECTION COSTS SHALL BE PAID FOR THE CONTRACTOR.
9. PRESSURE AND LEAKAGE TESTS SHALL BE PERFORMED BY CONTRACTOR. DISINFECTION TESTS SHALL BE DONE BY CALWATER AND PAID FOR THE OWNER, DEVELOPER, OR CONTRACTOR.
10. WATER SYSTEM SHALL BE INSTALLED IN ACCORDANCE HEREIN (SEE GENERAL NOTE 2).
11. LOCATION OF EXISTING UTILITIES SHOWN ON PLANS ARE APPROXIMATE ONLY AND ALL UNDERGROUND FACILITIES AND UTILITIES MAY NOT BE SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND FACILITIES BY POTHOLING HORIZONTALLY AND VERTICALLY, PRIOR TO COMMENCING ANY CONSTRUCTION.
12. ALL NEW DOMESTICS SERVICE SHALL BE TESTED PER CALWATER STANDARDS PRIOR TO A TIE–IN TO NEW WATER MAIN.
13. ALL PIPES & FITTINGS SHALL BE WRAPPED IN POLYETHYLENE ENCASEMENT PRODUCT (8–MIL, LOW DENSITY CLEAR POLYETHYLENE TUBE) PER AWWA C105 STANDARD.
14. THE LAYING OF PIPE ON CURVED ALIGNMENT WILL BE PERMITTED UP TO 3° MAXIMUM JOINT DEFLECTION AS RECOMMENDED BY THE RESPECTIVE PIPE MANUFACTURER.
15. THE TRENCH NEEDS TO BE WITHIN PAVING AREA.
16. ALL UTILITY TRENCH EXCAVATION & BACKFILL SHALL BE IN ACCORDANCE TO COUNTY OF SAN MATEO STANDARDS.
17. CONTRACTOR TO MAINTAIN 3–FOOT OF UNDISTURBED EARTH BETWEEN DRY AND WET UTILITES. WHERE 3–FOOT OF UNDISTURBED EARTH CANNOT BE ACHIEVED, CONTRACTOR SHALL PROVIDE SLURRY WALL FOR DRY UTILITIES. SLURRY WALL SHALL BE 4–INCH THICK LEAN CONCRETE (2,000 PSI) EXTENDING FROM 6" BELOW BOTTOM OF CONDUITS TO THE BOTTOM OF STREET PAVING CONCRETE BASE OR BOTTOM OF CONCRETE SIDEWALK. PROVIDE 6" MIN CLEAR BETWEEN SLURRY WALL AND CONDUITS.
21. TAPPING SLEEVES SHALL BE MANUFACTURED BY US PIPE (MODEL T–28 TAPPING SLEEVE – DUCTILE IRON DUAL COMPRESSION SEAL).
22. GATE VALVES: GATE VALVES SHALL BE MANUFACTURED BY US PIPE OR MUELLER CO. WITH REQUIRED MODIFICATIONS TO MEET SPECIFICATIONS BY CALWATER.
    a. PUSH–ON JOINT ENDS (TYTON BY TYTON): A–USP2–40 (US PIPE) OR A–2362–40 (MUELLER)
    b. TAPPING VALVE ENDS (TYTON BY FLANGE): A–USP2–43 (US PIPE) OR A–2362–43 (MUELLER)
    c. FLANGED ENDS (FLANGE BY FLANGE): A–USP2–06 (US PIPE) OR A–2362–06 (MUELLER)
    d. GATE VALVES SHALL BE RIGHT TURN OPEN.



VICINITY MAP
NO SCALE

OWNER'S INFORMATION

OWNER:
ZHIFAN ZHANG
1348 WINDMERE AVENUE
MENLO PARK, CA

APN: 067–167–070 & 280

REFERENCES

THIS GRADING AND DRAINAGE PLAN IS SUPPLEMENTAL TO:
1. TOPOGRAPHIC SURVEY BY LEA & BRAZE ENGINEERING
   ENTITLED: "TOPOGRAPHIC SURVEY"
   HUCKLEBERRY LANE
   WOODSIDE, CA
   DATED: 07–07–17
   JOB# 2170517

THE CONTRACTOR SHALL REFER TO THE ABOVE NOTED SURVEY AND PLAN, AND SHALL VERIFY BOTH EXISTING AND PROPOSED ITEMS ACCORDING TO THEM.

EARTHWORK NOTE

- AMOUNT OF EARTHWORK IS NEGLIGIBLE

CALL BEFORE YOU DIG 1–800–227–2600 USA UNDERGROUND SERVICE ALERT

1

SHEET INDEX

REGISTERED PROFESSIONAL ENGINEER JAMES TOBY No. 63127 CIVIL STATE OF CALIFORNIA ORIGINAL SIGNATURES IN BLUE INK

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

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

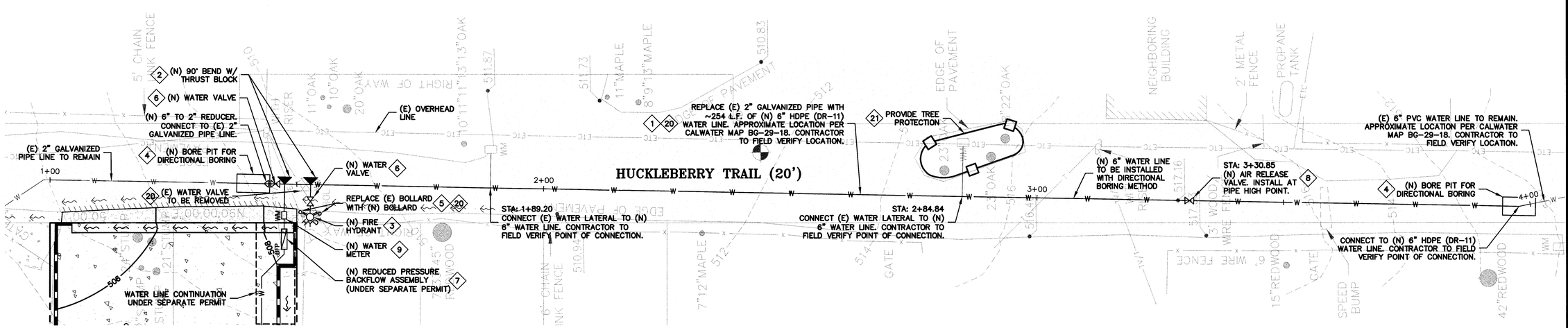
ZHANG RESIDENCE
HUCKLEBERRY TRAIL
(UNINCORPORATED SAN MATEO COUNTY)
WOODSIDE, CALIFORNIA
SAN MATEO COUNTY APN: 067–167–070 & 280

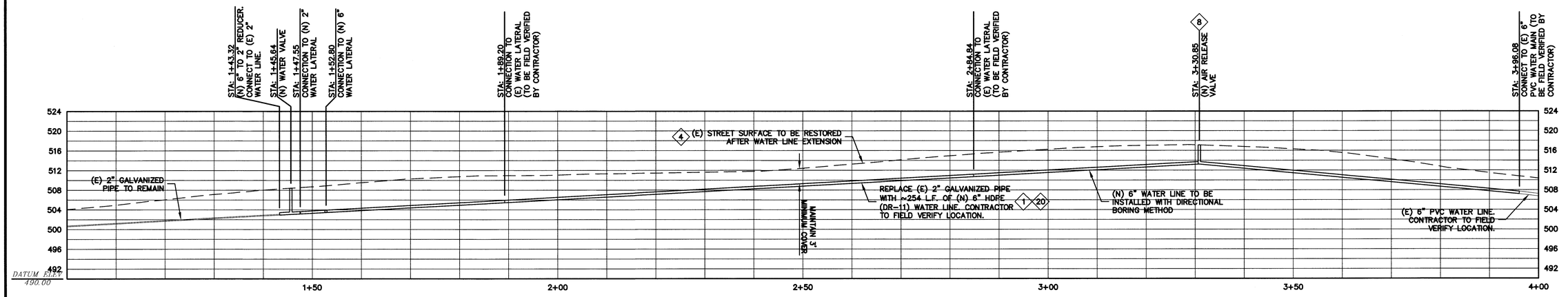
TITLE SHEET

–	–
–	–
–	–
–	–
1 PLAN CHECK 03–29–19	DM
REVISIONS	BY

JOB NO:	2170108
DATE:	06–12–18
SCALE:	AS NOTED
DESIGN BY:	DM/CP
DRAWN BY:	DM
SHEET NO:	W–1.0

1 OF 4 SHEETS





WATER LINE PROFILE

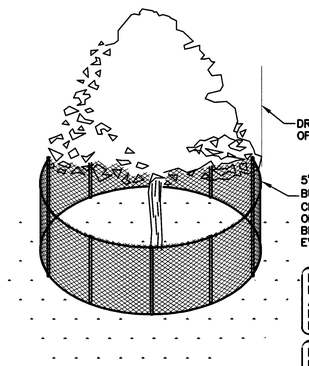
SCALE: 1" = 10' HORIZ & VERT

UTILITIES KEYNOTES 1 TO 9

1. INSTALL (N) WATER LINE. USE 6" HDPE (DR-11) AND MAINTAIN A 3' MINIMUM COVER AT ALL TIMES.
2. INSTALL (N) 24" BY 24" MINIMUM THRUST BLOCKS WITH MATERIALS THAT WILL WITHSTAND ELECTROLYSIS AND WILL HAVE CATHODIC PROTECTION TO WITHSTAND CORROSION, PER WOODISDE FIRE PROTECTION DISTRICT STANDARDS. SEE DETAIL 1 ON SHEET W-3.0.
3. INSTALL CLOW 960 WET BARREL FIRE HYDRANT THAT SHALL BE 3' ABOVE GRADE, PER CAL FIRE STANDARDS. SEE DETAIL 2 ON SHEET W-3.0.
4. ALL TRENCHES MUST COMPLY WITH COUNTY OF SAN MATEO REQUIREMENTS. SEE DETAIL 3 ON SHEET W-3.0.
5. INSTALL (N) BOLLARD PER CAL FIRE STANDARDS. SEE DETAIL 4 ON SHEET W-3.0.
6. INSTALL (N) GATE VALVE PER CALWATER STANDARDS. ALL VALVE COVERS AND BOXES SHALL BE TRAFFIC RATED.
7. (N) REDUCED PRESSURE BACKFLOW ASSEMBLY TO BE INSTALLED UNDER SEPARATE PERMIT. SHOWN FOR REFERENCE ONLY.
8. INSTALL (N) AIR RELEASE VALVE. SEE DETAIL 5 ON SHEET W-3.0.
9. INSTALL (N) WATER METER PER CALWATER STANDARDS.

DEMOLITION KEYNOTES 20 TO 21

20. DEMOLISH (E) IMPROVEMENTS AS NECESSARY TO ACCOMMODATE (N) CONSTRUCTION. NO DEMOLITION SHALL COMMENCE WITHOUT REQUIRED DEMOLITION PERMITS.
21. PROVIDE TREE PROTECTION AROUND TREES TO REMAIN. SEE DETAIL 1 ON THIS SHEET.

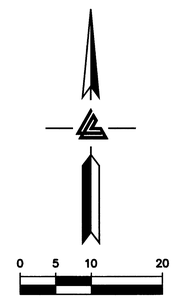


NOTE:
REFER TO LANDSCAPE ARCHITECTURAL PLANS FOR ADDITIONAL TREE PROTECTION INFORMATION.

NOTE:
LOCAL JURISDICTION MIGHT HAVE MORE STRINGENT REQUIREMENTS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING W/ INSPECTOR TO ENSURE PROPER PROCEDURES ARE BEING FOLLOWED.

1 / W-2.0 **EXISTING TREE PROTECTION DETAIL**

NTS



SCALE: 1" = 10'

NOTE:
FOR CONSTRUCTION STAKING SCHEDULING OR QUOTATIONS PLEASE CONTACT ALEX ABAYA AT LEA & BRAZE ENGINEERING (510)887-4086 EXT 116.
aabaya@leabraze.com

REGISTERED PROFESSIONAL ENGINEER
JAMES TOBY
No. 63127
CIVIL
STATE OF CALIFORNIA
ORIGINAL SIGNATURES IN BLUE INK

LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS · LAND SURVEYORS
BAY AREA REGION
2495 INDUSTRIAL PKWY WEST
HAYWARD, CALIFORNIA 94545
(P) (510) 887-4086
(F) (510) 887-3019
SACRAMENTO REGION
3017 DOUGLAS BLVD, # 300
ROSEVILLE, CA 95661
(P) (916)966-1338
(F) (916)797-7363
WWW.LEABRAZE.COM

ZHANG RESIDENCE
HUCKLEBERRY TRAIL
(UNINCORPORATED SAN MATEO COUNTY)
WOODSIDE, CALIFORNIA

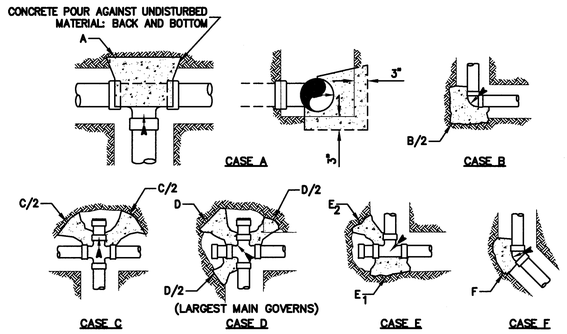
APN: 067-167-070 & 280

SAN MATEO COUNTY

WATER LINE EXTENSION PLAN & SECTION

–	–
–	–
–	–
–	–
1 PLAN CHECK 03-29-19	DM
REVISIONS	BY
JOB NO:	2170108
DATE:	06-12-18
SCALE:	AS NOTED
DESIGN BY:	DM/CP
DRAWN BY:	DM
SHEET NO:	W-2.0

2 OF 4 SHEETS

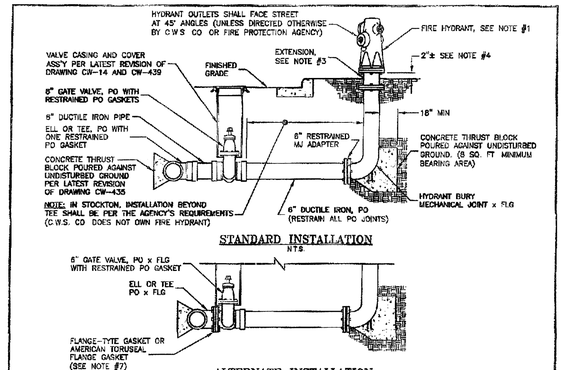


NOTES:

1. CASE "A" IS TYPICAL FOR ALL.
2. ALL BLOCKS TO BE KEPT CLEAR OF LUGS.
3. UNSUPPORTED SURFACES TO BE FORMED.
4. ARROWS ON CASE "A", "C" & "E" INDICATE MAINS WHICH DETERMINE BEARING AREA.
5. BASED ON 150 PSI PRESSURE, 1,000 PSF SOIL BEARING.
6. CONCRETE SHALL BE CLASS B PER STANDARD SPECIFICATIONS.

REQUIRED BEARING AREAS–SQ.FT.							
	A	B	C	D	E_1	E_2	F
4"	2	3	3	3	2	3	2
6"	5	6	7	7	5	7	4
8"	8	12	11	11	8	11	6
10"	12	18	17	17	12	17	8
12"	17	24	24	24	17	24	12

1 / W-3.0 **THRUST BLOCK DETAIL**
NTS



NOTES:

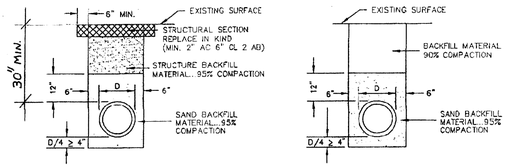
1. For district specific fire hydrant models and requirements, see District fire hydrant form, note 18 on main extension drawing, or verify with C.W.S. Co. representative.
2. All fire hydrant materials shall comply with latest C.W.S. Co material specifications
3. A hydrant extension may be required to adjust for finished grade.
4. For wet barrel hydrants this dimension is from finished grade to bury's flange or extension's flange when an extension is required.
5. Push-on, flanged fitting joints, and/or threaded-flanged risers may be required in certain fire protection districts. Verify with C.W.S. Co. representative all fire hydrant material prior to the installation. (In Stockton verify with the fire protection agency that has jurisdiction.)
6. Fire hydrant barricades shall be required when a vertical or rolled curb does not exist, or when the fire hydrant needs to be protected from moving vehicles, per latest revision of drawing CW-822.
7. All machine bolts and nuts shall be 304 stainless steel, except for break-off bolts.
8. A 90° elbow with restrained push on joints may be required for the fire hydrant installation when space is limited and the hydrant lead must run parallel to the main or the location of the fire hydrant requires the bend.
9. Protect all underground bolts and nuts per C.W.S. Co. standard coating specification
10. A break-off check valve may be required in sloped terrain as specified by district personnel. Use Clow Model LB400 or approved equal

ENGINEERING DEPARTMENT	TITLE: TYPICAL FIRE HYDRANT INSTALLATION		DISTRICT: ALL
	DRAWN BY: L. PERALTA	DESIGNED BY: DATE:	DATE: 5/21/2015
	CHECKED BY:	APPROVED BY: DATE: 5/21/15	PROJECT ID.:
	SCALE: N.T.S.	REVISION: R18 CHANGED "RESTRAINED PO JOINT" NOTE TO "RESTRAINED GASKETS" 5/21/2015 W.S.	DRAWING NO.: CW380-R16

2 / W-3.0 **FIRE HYDRANT**
NTS

SAN MATEO COUNTY DEPARTMENT OF PUBLIC WORKS
REDWOOD CITY CALIFORNIA

DRAWN BY: M.L.
CHECK BY: D.M.W.
APPROVED BY: N.R.C.
SCALE: NONE
DATE: 6/95
REVISED: 7/97



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
3"	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

W–10

3 / W-3.0 **TRENCH DETAIL**
NTS

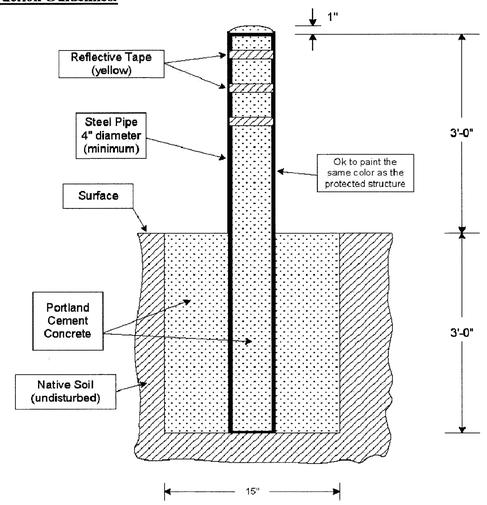
Fire Marshal's Office
San Mateo County Fire
CAL FIRE
320 Paul Scannell Drive, San Mateo, California 94402 (650) 573-3846

Date: Dec. 13, 2011
Revised: Aug. 8, 2015
Number: *CFS-011*

Title: *Bollard/Guard Post*
Approved: *Mark Mondragon*

Bollard/Guard Post

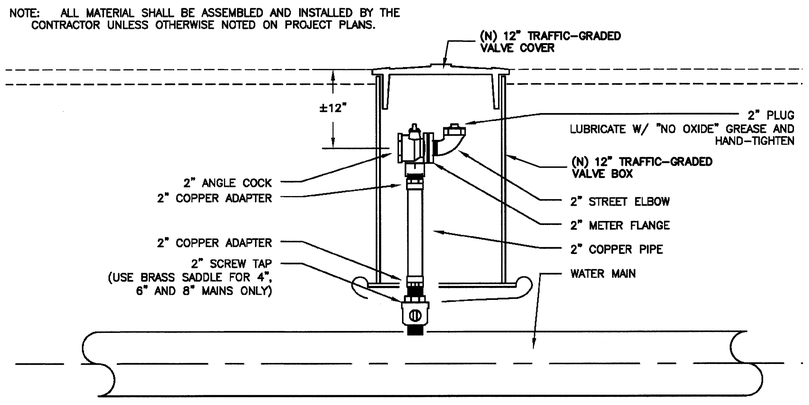
Construction Guidelines:



NOTE: Guard posts shall be spaced not more than 4' on center.

Guard post to be completely filled with concrete. 2016 CFC 312
Note: When protecting aboveground fuel tank, guard posts shall be a minimum of 3 feet

4 / W-3.0 **BOLLARD**
NTS



5 / W-3.0 **AIR RELEASE VALVE**
NTS

REGISTERED PROFESSIONAL ENGINEER
JAMES TOBY
No. 63127
CIVIL
STATE OF CALIFORNIA
ORIGINAL SIGNATURES IN BLUE INK

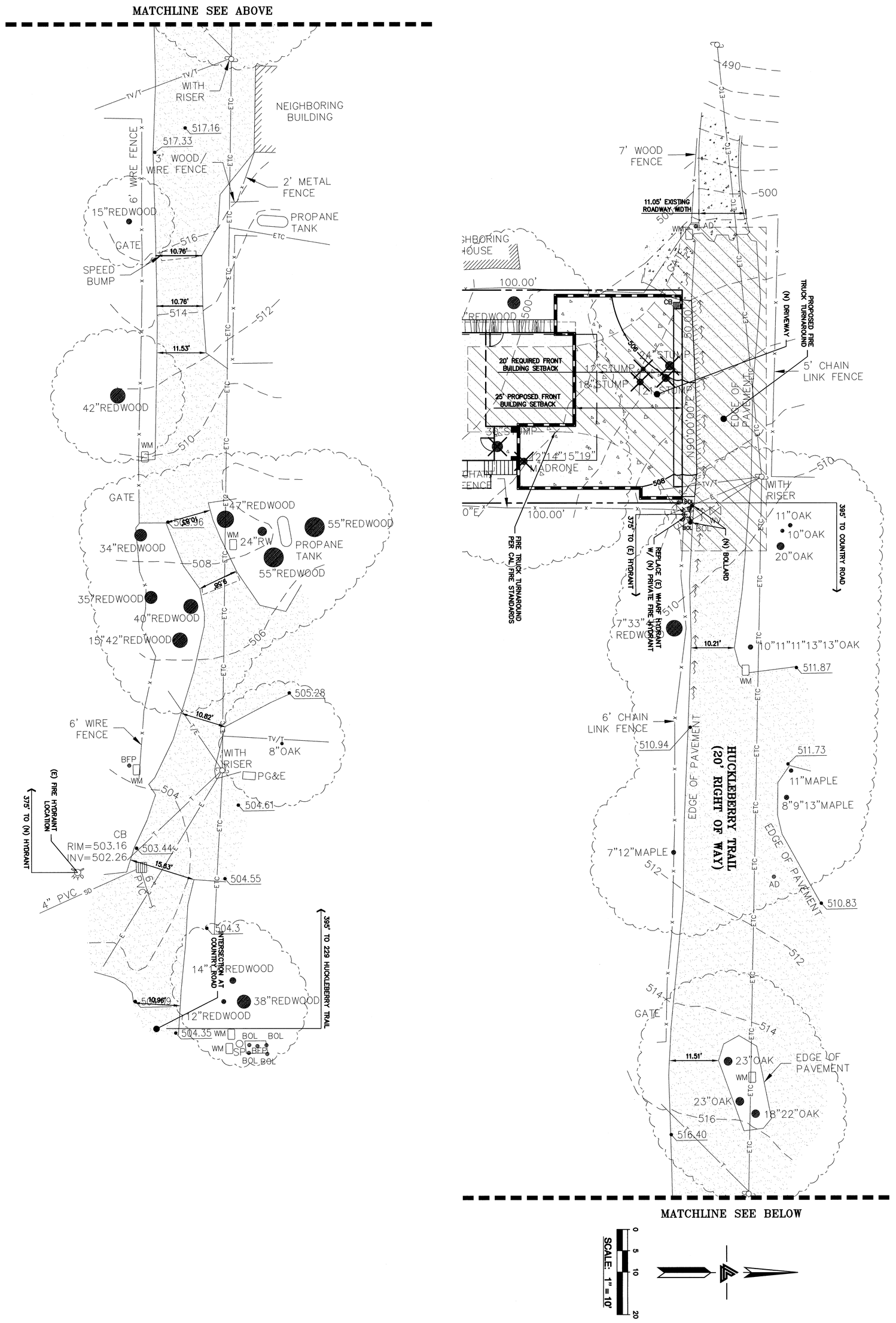
LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS · LAND SURVEYORS
BAY AREA REGION
2495 INDUSTRIAL PKWY WEST
HAYWARD, CALIFORNIA 94545
(P) (510) 887-4086
(F) (510) 887-3019
SACRAMENTO REGION
3017 DOUGLAS BLVD, # 300
ROSEVILLE, CA 95661
(P) (916)966-1338
(F) (916)797-7363
WWW.LEABRAZE.COM

ZHANG RESIDENCE
HUCKLEBERRY TRAIL
(UNINCORPORATED SAN MATEO COUNTY)
WOODSIDE, CALIFORNIA
APN: 067-167-070 & 280
SAN MATEO COUNTY

WATER LINE EXTENSION DETAILS

–	–
–	–
–	–
–	–
1 PLAN CHECK 03-29-19	DM
REVISIONS	BY
JOB NO:	2170108
DATE:	06-12-18
SCALE:	NTS
DESIGN BY:	DM/CP
DRAWN BY:	DM
SHEET NO:	W-3.0

3 OF 4 SHEETS



SHEET NO:	FE-1
DRAWN BY:	DM
DESIGN BY:	LH
SCALE:	AS NOTED
DATE:	10-22-18
JOB NO:	2170108

REVISIONS	BY
-	-
-	-
-	-
-	-
-	-
-	-

1 OF 1 SHEETS

FIRE ACCESS EXHIBIT

ZHANG RESIDENCE
229 HUCKLEBERRY TRAIL
(UNINCORPORATED SAN MATEO COUNTY)
REDWOOD CITY, CALIFORNIA

SAN MATEO COUNTY

APN: 067-167-070 & 280

LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS • LAND SURVEYORS
BAY AREA REGION
2495 INDUSTRIAL PKWY WEST
HAYWARD, CALIFORNIA 94545
(P) (510) 887-4086
(F) (510) 887-3019
SACRAMENTO REGION
3017 DOUGLAS BLVD, # 300
ROSEVILLE, CA 95661
(P) (916)966-1338
(F) (916)797-7363
WWW.LEABRAZE.COM

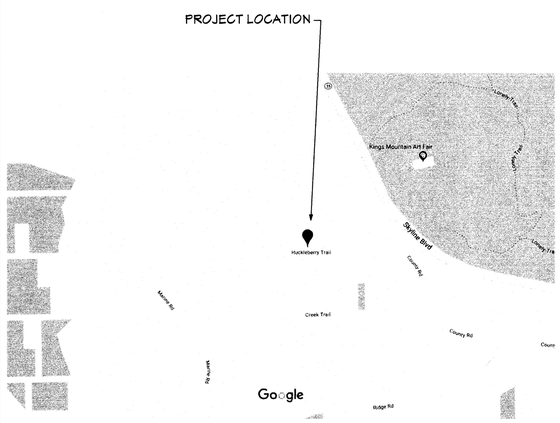
REGISTERED PROFESSIONAL ENGINEER — CIVIL — No. 61127 — STATE OF CALIFORNIA

Zhang Residence

ABBREVIATIONS

ACCESS DOOR	AD.	EXPANSION	EXP.	PAINTED	PTD.
ACCESS PANEL	AP.	EXPANSION JOINT	EXP JT.	PANIC BAR	PB.
ACOUSTICAL	ACOUST.	EXTENSION	EX.	PARTITION	PTN.
ADHESIVE	ADH.	EXTERIOR	EXT.	PERFORATED	PERF.
ADJUSTABLE	ADJ.			PLASTER	PLAS.
AGGREGATE	AGGR.	FACE OF	FO.	PLASTIC	PLSTC.
AIR CONDITIONER	A/C	FIBER BOARD	FB.	PLYWOOD	PLY. WD.
ALUMINUM	AL.	FINISH	FIN.	POINT	PT.
ANCHOR BOLT	AB.	FIRE ALARM	FA.	POLISHED PLATE GLASS	PPGL.
AREA DRAIN	AD.	FIRE EXTINGUISHER	F.E.	POLYVINYL CHLORIDE	PVC.
ASBESTOS	ASB.	FIRE EXTINGUISHER CABINET	F.E.C.	POUNDS PER SQUARE FOOT	PSF.
ASBESTOS CEMENT PIPE	ACP.	FIRE TREATED	F.T.	POUNDS PER SQUARE INCH	PSI.
ASPHALT	ASPH.	FLASHING	FL.	PRE CAST CONCRETE	PC.
ASPHALTIC CONCRETE	AC.	FLAT BAR	FB.	PROPERTY	PROP.
		FLAT HEADED WOOD SCREW	FHWS.	PROPERTY LINE	PL
BEGINNING OF VERTICAL CURVE	BVC.	FLOOR	FLR.		
BENCH MARK	BM.	FLOOR DRAIN	FD.	RADIUS	R.
BLOCKING	BLKG.	FLOORING	FLG.	REDWOOD	RWD.
BOARD	BD.	FLOW LINE	FL.	REFRIGERATOR	REF.
BOTTOM	BTM.	FLUORESCENT	FLUOR.	REINFORCED CONCRETE PIPE	RCP.
BUILDING	BLDG.	FOOTING	FTG.	REINFORCING	REINF.
		FOUNDATION	FDN.	REQUIRED	REQD.
CABINET	CAB.			RESILIENT	RESIL.
CARRIAGE BOLT	CB.	GAGE OR GAUGE	GA.	RESISTANT	RES.
CAST-IN-PLACE	CIP.	GALVANIZED	GALV.	ROOF DRAIN	RD.
CAST-IRON	CI.	GALVANIZED IRON	GI.	ROOM	RM.
CAST IRON PIPE	CIP.	GLASS	GL.	ROUND HEADED WOOD SCREW	RHWS.
CATCH BASIN	CB.	GLUE-LAM BEAM	GLB.	RIGHT OF WAY	R.O.W.
CEILING	CLG.	GRADE	GR.		
CEMENT	CEM.	GROUND	GRND.	SCHEDULE	SCHED.
CENTER	CTR.	GYPSUM	GYP.	SECTION	SECT.
CENTER TO CENTER	C TO C.			SELECT	SEL.
CERAMIC	CER.	HANGER	HGR.	SHEATHING	SHTHG.
CLEAN OUT TO FLOOR	CTF.	HARDBOARD	HDBD.	SIDING	SDG.
CLEAN OUT TO GRADE	CTG.	HARDWARE	HDW.	SIMILAR	SIM.
CLEAR	CLR.	HARDWOOD	HDWD.	SINGLE ACTING	SA.
CLOSET	CLO.	HEADER	HDR.	SLOPE	S.
COLUMN	COL.	HEATER	HTR.	SOLID CORE	SC.
CONCRETE	CONC.	HEIGHT	HT.	SPACE	SP.
CONCRETE PIPE, UN-REINFORCED	CP.	HIGH STRENGTH BOLT	HSB.	SQUARE	SQ.
CONSTRUCTION	CONST.	HOLLOW CORE	HC.	STAINLESS STEEL	S.S.
CONSTRUCTION JOINT	CJ.	HORIZONTAL	HOR.	STANDARD	STD.
CONTINUOUS	CONT.	HOSE BIB	HB.	STEEL	STL.
CORRUGATED METAL PIPE	CMP.	HOUR	HR.	STORAGE	STG.
COUNTER	CTR.			STRUCTURAL	STR.
COUNTERSINK	CSK.	INSIDE DIAMETER	ID.	SUSPENDED	SUSP.
CUBIC YARD	CY.	INSULATION	INS.	SYMBOL	SYMB.
CURB INLET	CI.	INTERIOR	INT.	SYMMETRICAL	SYMM.
		INVERT	INV.		
DETAIL	DET.	INVERT ELEVATION	IE.	TELEPHONE	TEL.
DIAMETER	DIA.			TEMPERED	TEMPD.
DIMENSION	DIM.	JOINT	JT.	TERRAZZO	TER.
DISPENSER	DISP.			TIE DOWN	TD.
DOOR	DR.	LAMINATE(D)	LAM.	TONGUE AND GROOVE	T&G.
DOUBLE	DBL.	LAVATORY	LAV.	TOP OF CURB	TC.
DOUBLE-ACTING	DA.			TOP OF RAIL	TR.
DOUGLAS FIR	DF.	MACHINE	MACH.	TYPICAL	TYP.
DOWN	DN.	MACHINE BOLT	MB.		
DOWN SPOUT	DS.	MAN HOLE	MH.	UNDERGROUND	UG.
DRAIN	DR.	MANUFACTURER	MFR.	UNLESS OTHERWISE NOTED	U.O.N.
DRINKING FOUNTAIN	DF.	MANUFACTURING	MFG.	URINAL	UR.
DRAWING	DWG.	MAXIMUM	MAX.		
DUCTILE IRON PIPE	DIP.	MECHANICAL	MECH.	VENT THROUGH ROOF	VTR.
		METAL	MTL.	VERTICAL	VERT.
EACH	EA.	MINIMUM	MIN.	VERTICAL CURVE	VC.
EACH FACE	EF.	MOUNTING	MTG.	VERTICAL GRAIN	VG.
EACH WAY	EW.			VINYL ASBESTOS TILE	VAT.
EDGE OF PAVEMENT	EP.	NEW	(N)	VITREOUS CLAY PIPE	VCP.
ELECTRIC	ELEC.	NOMINAL	NOM.		
ELECTRIC WATER COOLER	EWC.	NOT IN CONTRACT	N.I.C.	WAREHOUSE	WHSE.
ELEVATION	EL			WATER CLOSET	WC.
ELEVATOR	ELEV.	OBSCURE	OB.	WATER HEATER	WH.
EQUAL	EQ.	ON CENTER	OC.	WATERPROOF	W.P.
EQUIPMENT	EQUIP.	OPENING	OPNG.	WEAKENED PLANE JOINT	WPJ.
EXISTING	(E)	OPPOSITE	OPP.	WINDOW	WDW.
		OUTSIDE DIAMETER	OD.	WITH	W/
		OUTSIDE FACE OF STUD	OFS.	WITHOUT	W/O.
		OVAL HEADED WOOD SCREW	OHWS.	WOOD	WD.

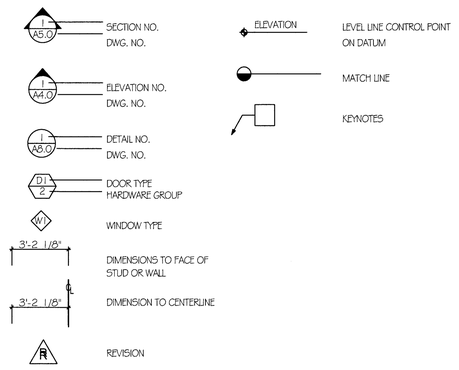
SITE LOCATION MAP



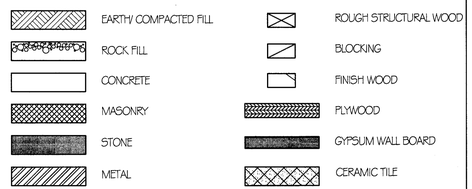
VICINITY MAP

N.T.S.

SYMBOLS LEGEND



MATERIALS LEGEND



PROJECT DATA

CJW Job No. 2017-1600
PROJECT ADDRESS: Huckleberry Trail, Woodside CA 94062
ASSESSOR'S PARCEL No. 067-167-070

PROJECT DESCRIPTION:

CONSTRUCTION OF A NEW RESIDENCE W/ ATTACHED GARAGE AND A.D.U.

PROJECT INFORMATION:

OCCUPANCY CLASS:	R-3U
TYPE OF CONSTRUCTION:	V-B - WOOD FRAME
NUMBER OF STORIES:	2 STORIES
AUTOMATIC SPRINKLER SYSTEM:	YES
SEPTIC SYSTEM:	SEPTIC

BUILDING ALLOWABLE:

FLOOR AREA ALLOWABLE:

- TOTAL LOT COVERAGE - 25%:	4,375 SF	
MAX. BUILDING HEIGHT:	36' HT	3 STORIES

FLOOR AREA:

(N) RESIDENCE :		
MAIN FLOOR	832 SF	
UPPER FLOOR	1,104 SF	
TOTAL	1,936 SF	
(N) ADU:	224 SF	
TOTAL FLOOR AREA:	2,160 SF	OK
(N) LOT COVERAGE:		
BUILDING:	1,056 SF	
DECKS:	614 SF	
TOTAL:	1,670 SF	OK

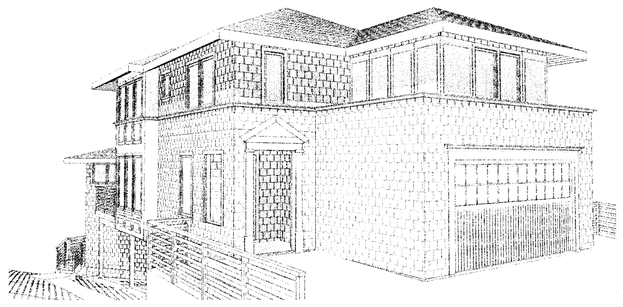
APPLICABLE CODES

ALL CONSTRUCTION SHALL CONFORM TO THE:
2016 CALIFORNIA BUILDING CODE
2016 CALIFORNIA RESIDENTIAL CODE
2016 CALIFORNIA PLUMBING CODE
2016 CALIFORNIA MECHANICAL CODE
2016 CALIFORNIA ELECTRICAL CODE
2016 CALIFORNIA ENERGY CODE
2016 CALIFORNIA GREEN BUILDING STANDARDS

AND LOCAL JURISDICTION OF SAM MATEO COUNTY

SITE DATA:

ZONING	R-1/S-10	
GEOLOGIC ZONE:	SEE GEOTECH. REPORT	
PARCEL AREA:	17,500 sf or .40 acres	
SETBACKS:		
FRONT:	20'	
SIDE:	10'	
REAR:	20'	
MAX. LOT COVERAGE:	25%	4,375 SF



PROJECT TEAM

ARCHITECT:
CJW ARCHITECTURE
130 PORTOLA ROAD, SUITE A
PORTOLA VALLEY, CA 94028
ATT.: Kevin Schwarzkopf
T: 650-851-9335 F: 650-851-9337
E-MAIL: kevin@cjwarchitecture.com

CIVIL ENGINEER:
Lea & Braze Engineering, Inc.
Civil Engineers | Land Surveyors
San Francisco Bay Area Region
2495 Industrial Parkway West
Hayward, CA 94545
ATT.: TONY CAO
Phone: 510-887-4086 x.159
Email: TCao@leabraze.com

GEOTECHNICAL ENGINEER:
ROMIG ENGINEERS
1390 EL CAMINO REAL, 2ND FLOOR
SAN CARLOS, CA 94070
Phone: (650) 349-3369
E-MAIL: tom@romigengineers.com

STRUCTURAL ENGINEER:
W.B. CLAUSEN STRUCTURAL ENGINEERS
1727 64TH STREET
EMERYVILLE, CA 94608
Phone: (510) 655-4144
E-MAIL: clausen@clausenengineers.com

ARBORIST:
McCLENAHAN CONSULTING, LLC
1 ARASTREDERO ROAD
PORTOLA VALLEY, CA 94028
Phone: (650) 326-8781

DRAWING INDEX

ARCHITECTURAL

GENERAL NOTES

1. CODE COMPLIANCE:
1a. Contract and Construction Documents include: AIA Document A201 (2007), the General Conditions of the contract for Construction.

1b. All work is to be performed in accordance with all governing codes, ordinances, and regulations.

2. UTILITIES AND SITE WORK:
2a. General Contractor shall verify all underground utility locations prior to excavation, trenching, or grading of any kind. General Contractor shall coordinate with applicable utility companies when routing electrical, telephone, cable TV, gas, water, sanitary sewer services, or any other utility.

2b. Construction Documents include the Geotechnical Investigation Report By:

2c. Geotechnical Engineer and Civil Engineer shall coordinate drainage system and approved before backfilling. Drainage and positive flow of entire system shall be tested prior to backfill.

2d. General Contractor shall include Soils Engineer in the inspection of foundations, foundation waterproofing and drainage systems, and all related facets of the job. The Architect requires a signed letter stating that the work is in compliance with the Soils Engineer's recommendations.

3. DIMENSIONS:
3a. No dimensions shall be taken by scaling from the drawings. Contact architect for dimension clarifications or additional dimensions as required. Refer to this Cover Sheet for dimensioning standards. Details and the dimensions provided thereon take precedence over general floor plans, elevations, and sections.

3b. Verify all dimensions on the job site prior to ordering or manufacturing.

3c. Dimensions noted 'clear' must be accurately maintained, and shall not vary more than +- 1/8" without written instruction from the Architect. Dimension marked +- mean a tolerance not greater nor smaller than 2" from indicated dimension, u.o.n. verify field dimensions exceeding tolerance with the Architect, and secure Architect's approval.

4. DISCREPANCIES:
4a. In case of any discrepancy in the contract documents, consult the Architect before proceeding.

5. GENERAL CONTRACTOR RESPONSIBILITIES:
5a. General Contractor shall be responsible for coordination and execution of the work shown or implied in the construction documents. General Contractor is responsible for all construction means, methods, and procedures.

5b. General Contractor shall coordinate all facets of work and all trades involved to avoid conflict in the location, installation, and construction of all items of work as indicated on the construction documents. If any work is to be installed by the Owner directly, allowances for such work must be made. Coordinate with Architect.

5c. General Contractor shall review all Contract and Construction Documents; Architectural Drawings include reflected ceiling, finish, electrical, lighting, and mechanical plans; and all schedules prior to pouring concrete and prior to framing. Coordinate locations of shafts, electrical wiring/conduit, HVAC ductwork, and light fixtures with locations of foundations and framing. It is imperative that locations of framing members do not conflict with locations of recessed light fixtures.

5d. General Contractor shall install all appliances specified and all equipment specified according to the respective manufacturer's instructions. All instruction booklets, warrantees, and other information regarding appliances and equipment shall be handed directly to the Owner in a manila envelope at the time of substantial completion. Contractor shall verify that every appliance and every piece of equipment is in perfect working order and that information about all warranties and guarantees is made known to the Owner.

5e. The installer of each major unit of work is required to inspect the substrate and conditions to receive work and shall report all unsatisfactory conditions to the General Contractor and shall not proceed until satisfactory conditions are attained.

5f. No work shall commence with unapproved materials. Any work done with un-approved materials and equipment is at the contractor's risk. See specifications for submittal and substitution requirements.

5g. Construction materials stored on the site shall be properly stacked and protected so as to prevent damage or deterioration until used. Failure in this regard may be cause for rejection of material and/or work.

5h. New/existing finishes and construction shall be protected by the contractor from potential damage caused by construction activity. Damage to finishes or construction caused in the manner shall be repaired or replaced (owner's decision) by the contractor with identical material and/or finishes. Contractor shall make and maintain a photographic record notebook with dated/indexed photographs.

5i. In addition to those shown on drawings, provide and locate access doors or panels in ceiling and wall construction as required by mechanical, plumbing, and electrical work.

5j. General Contractor shall leave the job site "broom clean" at the end of each working day. All materials shall be stored in a neat and safe place to avoid accidents.

6. EQUIPMENT BACKING:
6a. For mounting heights not clearly outlined in the plans or schedules, coordinate with the Architect. Architect shall confirm all electrical device and light fixture locations before contractor pulls wire.

6b. Provide solid backing as necessary for wall mounted shelves, fixtures, and fittings, even when work is to be done by Owner directly. Coordinate work and locations with Owner and Architect.

6c. All fastening devices to be concealed, unless otherwise shown.

7. WEATHER PROOFING:
7a. Weather-strip all exterior doors and windows.

7b. Caulk or otherwise seal around all openings to limit infiltration, including but not limited to: Exterior joints around windows and door frames, between sole plates and floors, at exterior wall intersections and corners, and between exterior wall panels.

7c. General Contractor shall verify that all work on the exterior of the project is watertight. All joints exposed to the elements shall be tested for water tightness prior to substantial completion.

CJ W ARCHITECTURE
130 Portola Road, suite A
Portola Valley, CA 94028
(650) 851-9335 / (Fax) 851-9337

LICENSED ARCHITECT
CARTER JENSEN WARD
No. C-19397
REN. 6-30-19
STATE OF CALIFORNIA

• PROJECT •

Zhang Residence

236 Huckleberry Trail
Woodside CA 94062

• SHEET TITLE •

Title Sheet

• REVISIONS •

No.	Date	Notes
1		

• JOB: 2017-1600

• DATE: 3/28/2019

• SHEET: T-0.1

Material For Fill

All on-site soil containing less than 3 percent organic material by volume (ASTM D2974) is suitable for use as structural fill. However, structural fill placed at the site, should not contain rocks or pieces larger than 6 inches in greatest dimension, and contain no more than 15 percent larger than 2.5 inches. Imported and non-expansive fill should have a plasticity index of less than 15 percent or be predominately granular. Our representative should approve import materials prior to their use on-site.

Compaction

Scarified soil surfaces and all structural fill should be placed and compacted in uniform lifts no thicker than 8 inches in uncompacted thickness, conditioned to the appropriate moisture content, and compacted as recommended for structural fill in Table 3 below. The relative compaction and moisture content recommended in Table 3 is relative to ASTM Test D1557, latest edition.

Table 3. Compaction Recommendations
Zhang Residence
Woodside, California

	Relative Compaction*	Moisture Content*
General		
• Scarified subgrade in areas to receive structural fill.	90 percent	Near optimum
• Structural fill composed of native soil or bedrock.	90 percent	Near optimum
• Structural fill composed of non-expansive fill.	90 percent	Near optimum
• Structural fill below a depth of 4 feet.	93 percent	Near optimum
Pavement Areas		
• Upper 6-inches of soil below baserock.	95 percent	Near optimum
• Aggregate baserock.	95 percent	Near optimum
Utility Trench Backfill		
• On-site soil or bedrock.	90 percent	Near optimum
• Imported sand	95 percent	Near optimum

* Relative to ASTM Test D1557, latest edition.

Temporary Slopes and Excavations

The contractor should be responsible for the design and construction of all temporary slopes and any required shoring. Shoring and bracing should be provided in accordance with all applicable local, state, and federal safety regulations, including current OSHA excavation and trench safety standards.

Temporary slopes less than 4 feet deep excavated in the native soils should be capable of standing near-vertical for short construction periods with minimal bracing. Field modification of temporary cut slopes may be required. Unstable materials encountered on slopes during excavation should be trimmed off even if this requires cutting the slopes back to a flatter inclination.

Protection of structures and improvements near cuts should also be the responsibility of the contractor.

Finished Slopes

We recommend that new finished slopes be cut or filled to an inclination preferably no steeper than 2:1 (horizontal:vertical). Exposed slopes may be subject to minor sloughing and erosion that would require periodic maintenance. We recommend that all slopes and soil surfaces disturbed during construction be planted with erosion resistant vegetation.

Surface Drainage

Finished grades should be designed to prevent ponding and to drain surface water away from foundations and edges slabs and pavements, and toward suitable collection and discharge facilities. Slopes of at least 2 percent are recommended for flatwork and pavement areas with 5 percent preferred in landscape areas within 8 feet of the structures, where possible. At a minimum, splash blocks should be provided at the ends of downspouts to carry surface water away from perimeter foundations. Preferably, downspout drainage should be collected in a closed pipe system that is routed to a storm drain system or other suitable discharge outlet.

Drainage facilities should be observed to verify that they are adequate and that no adjustments need to be made, especially during the first two years following construction. We recommend preparing an as-built plan showing the locations of surface and subsurface drain lines and clean-outs. The drainage facilities should be periodically checked to verify that they are continuing to function properly. It is likely the drainage facilities will need to be periodically cleaned of silt and debris that may build up in the lines.

Retaining walls with backfill that slopes at about 2:1 (horizontal:vertical) should be designed to resist an equivalent fluid pressure of 65 pounds per cubic foot for walls free to rotate, with 8H added as recommended above for walls not free to rotate. Wherever walls will be subjected to surcharge loads, the walls should be designed for an additional uniform lateral pressure equal to one-half of the surcharge load for restrained walls and one-third of the surcharge load for unrestrained walls.

Based on the site peak ground acceleration (PGA), on Seed and Whitman (1970); Al Atik and Sitar (2010); and Lew et al. (2010); seismic loads on retaining walls that can yield may be simulated by a line load of $10H^2$ (in pounds per foot, where H is the wall height in feet). Seismic loads on walls that cannot yield may be subjected to a seismic load as high as about $16H^2$. This seismic surcharge line load should be assumed to act at 1/3H above the base of the wall (in addition to the active wall design pressure of 45 or 65 pounds per cubic foot).

To prevent buildup of water pressure from surface water infiltration, a subsurface drainage system should be installed behind the walls. The drainage system should consist of a 4-inch diameter perforated pipe (perforations placed down) embedded in a section of 1/2- to 3/4-inch, clean, crushed rock at least 12 inches wide. Backfill above the perforated drain line should also consist of 1/2- to 3/4-inch, clean, crushed rock to within about 1½ to 2 feet below exterior finished grade. A filter fabric should be wrapped around the crushed rock to protect it from infiltration of native soil. The upper 1½ to 2 feet of backfill should consist of compacted native soil. The perforated pipe should discharge into a free-draining outlet or sump that pumps to a suitable location. Damp-proofing of the walls should be included in areas where wall dampness and efflorescence would be undesirable.

Miradrain, Enkadrain or other drainage fabrics approved by our office may be used for wall drainage as an alternative to the gravel drainage system described above. If used, the drainage fabric should extend from a depth of about 1 foot below the top of the wall backfill down to the drain pipe at the base of the wall. A minimum 12-inch wide section of ½-inch to ¾-inch clean crushed rock and filter fabric should be placed around the drainpipe, as recommended previously.

Backfill placed behind the walls should be compacted to at least 90 percent relative compaction using light compaction equipment. If heavy equipment is used for compaction of wall backfill, the walls should be temporarily braced. Preferably, the backfill behind the walls should be placed on level benches, rather than directly on the sloping grade.

Basement and site retaining walls should be supported on a drilled pier foundation in accordance with the recommendations presented previously.

DRIVEWAY PAVEMENT

For light residential type traffic using asphalt concrete, we recommend the driveway pavement section consist of at least 2.5 inches of asphalt concrete on at least 8 inches of Class 2 aggregate base.

If the driveway will be constructed with Portland cement concrete (PCC), we recommend the driveway pavement consist of at least 5 inches of PCC on at least 8 inches of Class 2 aggregate base. Un-reinforced concrete for the 5-inch-thick driveway pavement should have a 28-day compressive strength of at least 3,500 psi. PCC pavements should be laterally constrained with curbs or shoulders and sufficient control joints should be incorporated in the design and construction to limit and control cracking.

The soil subgrade and aggregate base below the pavement section should be prepared and compacted as recommended previously. The use of a moisture cut-off or thickened edge along the edges of the driveway would be desirable in order to reduce water seepage below the edges of the driveway and into the underlying aggregate base and subgrade, which can lead to premature pavement distress.

EARTHWORK

Clearing and Subgrade Preparation

All deleterious materials, such as existing surface fill soils, utility lines, vegetation, roots, topsoil, miscellaneous fill, etc., should be cleared from areas of the site for the proposed residence and other improvements. The actual stripping depth should be determined by a member of our staff at the time of construction. Excavations that extend below finish grade should be backfilled with structural fill that is water-conditioned, placed, and compacted as recommended in the section titled "Compaction."

After the site has been properly cleared, stripped, and excavated to the required grades, exposed soil surfaces in areas to receive structural fill or concrete slabs-on-grade should be scarified to a depth of 6 inches, moisture conditioned, and compacted as recommended in the section of this report titled "Compaction." On-site soils, slab and pavement subgrades, and utility trench, pool and foundation excavations should be kept in a moist condition throughout the construction period.

If a temporary ramp is constructed to access the basement excavation, the ramp should be properly backfilled with compacted on-site soil as recommended in this report for structural fill. A member of our staff should observe and test during backfilling of the temporary ramp.

Large fills are generally not desirable on a hillside site like this where not supported by retaining walls. However, if fills are to be constructed on natural slopes (not retained by retaining walls) having an inclination steeper than 6 horizontal to 1 vertical, the fill should be benched, and a key excavated into the underlying bedrock, and subdrains installed if required by our field representative. If significant fills are required, we can evaluate their feasibility and provide benching criteria as necessary.

Lateral Loads for Pier Foundations

Lateral loads Lateral loads on the piers may be resisted by passive earth pressure based upon an equivalent fluid pressure of 350 pounds per cubic foot, acting on 1.5 times the projected area of the pier. The passive resistance of the upper 2.5 feet of the piers should be neglected.

Basement Water Proofing

We have not provided recommendations regarding the method or details for basement damp-proofing since design of damp-proofing systems is outside of our scope of services and expertise. Installing adequate damp-proofing below and behind the edges of the basement floor and behind the basement walls is essential for the success of the basement structure.

Placing concrete with a low water cement ratio should be considered as one step of good damp-proofing as discussed in the Slab-On-Grade section below. The damp-proofing system below the basemen slab should be installed as discussed below may be placed directly on the slab section discussed below, as determined by the water-proofing consultant.

Settlement

Thirty-year post-construction differential movement due to static loads is not expected to exceed about 1-inch across the proposed residence and accessory dwelling unit, provided foundations are designed and constructed as recommended.

SLABS-ON-GRADE

General Slab Considerations

To reduce the potential for movement of the slab subgrade, at least the upper 6-inches of surface soil should be scarified and compacted at a moisture content above the laboratory optimum. The native soil subgrade should be kept moist up until the time the non-expansive fill, crushed rock and vapor barrier, and/or aggregate base is placed. Slab subgrades and non-expansive fill should be prepared and compacted as recommended in the section of this report titled "Earthwork." Exterior flatwork and interior slabs-on-grade should be underlain by a layer of non-expansive fill as discussed below. The non-expansive fill should consist of aggregate base rock or a clayey soil with a plasticity index of 15 or less.

Considering the potential for some movement of the surface soils, we expect that a reinforced slab will perform better than an unreinforced slab. Consideration should also be given to using a control joint spacing on the order of 2 feet in each direction for each inch of slab thickness.

Exterior Flatwork

Concrete walkways and exterior flatwork should be at least 4 inches thick and should be constructed on at least 6 inches of Class 2 aggregate base. To improve performance, exterior slabs-on-grade, such as for patios, may be constructed with a thickened edge to improve edge stiffness and to reduce the potential for water seepage under the edge of the slabs and into the underlying base and subgrade. In our opinion, the thickened edges should be at least 8 inches wide and ideally should extend at least 4 inches below the bottom of the underlying aggregate base layer.

Interior Slabs

Concrete slab-on-grade floors should be constructed on a layer of non-expansive fill at least 6-inches thick. In areas where dampness of concrete floor slabs would be undesirable, such as within building interiors, concrete slabs should be underlain by at least 6 inches of clean, free-draining gravel, such as ½-inch to ¾-inch clean crushed rock with no more than 5 percent passing the ASTM No. 200 sieve. Pea gravel should not be used. The crushed rock should be compacted with vibratory equipment and may be considered the non-expansive fill mentioned above.

To reduce vapor transmission up through at-grade concrete floor slabs, the crushed rock section should be covered with a high-quality vapor barrier conforming to the requirements of ASTM E 1745 Class A, with a water vapor transmission rate less than or equal to 0.01 perms (such as 15-mil thick "Stego Wrap Class A"). The vapor retarder or barrier should be placed directly below the concrete slab. Sand above the vapor retarder/barrier is not recommended. The vapor retarder/barrier should be installed in accordance with ASTM E 1643. All seams and penetrations of the vapor barrier should be sealed in accordance with manufacturer's recommendations.

The permeability of concrete is affected significantly by the water:cement ratio of the mix, with lower water:cement ratios producing more damp-resistant slabs and higher strength. Where moisture protection is important and/or where the concrete will be placed directly on the vapor barrier, the water:cement ratio should be 0.45 or less. To increase the workability of the concrete, mid-range plasticizers may be added to the mix. Water should not be added to the mix unless the slump is less than specified and the water:cement ratio will not exceed 0.45. Other steps that may be taken to reduce moisture transmission through concrete slabs-on-grade include moist curing for 5 to 7 days and allowing the slab to dry for a period of two months or longer prior to placing floor coverings. Prior to installation of floor coverings, it may be appropriate to test the slab moisture content for adherence to the manufacturer's requirements to determine whether a longer drying time is necessary.

For floor slab at the basement level, it would be more appropriate to use a high-quality water-proofing membrane. The membrane should be selected by your water proofing consultant.

RETAINING WALLS

Basement and site retaining walls should be designed to resist lateral pressures from the adjacent native and fill soils and backfill. We recommend retaining walls with level backfill that are not free to deflect or rotate, such as residence retaining walls, be designed to resist an equivalent fluid pressure of 45 pounds per cubic foot, plus an additional uniform lateral pressure of 8H pounds per square foot, where H is the height of the wall in feet. Retaining walls with level backfill that are free to rotate, such as site retaining walls, may be designed to resist an equivalent fluid pressure of 45 pounds per cubic foot.

ROMIG ENGINEERS

November 30, 2017
4202-1

Mr. Zhifan Zhang
1348 Windermere Avenue
Menlo Park, California 94025

RE: GEOTECHNICAL INVESTIGATION
ZHANG RESIDENCE
HUCKLEBERRY TRAIL
APNs: 067-167-070 & 067-167-280
WOODSIDE, CALIFORNIA

Geologic Hazards

As part of our investigation, we reviewed the potential for geologic hazards to impact the site, the proposed residence and associated site improvements, considering the geologic setting and the soils encountered during our investigation. The results of our review are presented below.

- Fault Rupture - The site is not located in a State of California Earthquake Fault Zone or area where fault rupture is considered likely. Therefore, active faults are not believed to exist beneath the site and the potential for fault rupture to occur at the site is considered low.
- Ground Shaking - The site is located in an active seismic area. Moderate to large earthquakes are probable along several active faults in the greater Bay Area over a 30 to 50 year design life. Strong ground shaking should therefore be expected several times during the design life of the proposed residence, as is typical for sites throughout the Bay Area. The structures should be designed and constructed in accordance with current earthquake resistance standards.
- Liquefaction - Liquefaction occurs when saturated, sandy soils lose strength during earthquake shaking. Ground deformation and settlement often accompany liquefaction. The soils most susceptible to liquefaction are saturated, loose, silty sands, sandy silts, and uniformly graded sands. Since relatively shallow bedrock was encountered across the site, and since saturated loose sands and other types of soil prone to liquefaction were not encountered, in our opinion, the likelihood of significant liquefaction damage occurring at the site is low.
- Differential Compaction - Differential compaction can occur during moderate and large earthquakes when soft or loose, natural or fill soils are densified and settle, often unevenly across a site. Since the subsurface materials encountered in our borings generally consisted of very stiff clays and weathered bedrock, which are not prone to differential compaction, the probability of significant differential compaction at the site is low.

CONCLUSIONS

From a geotechnical viewpoint, the site is suitable for the proposed residence, secondary dwelling unit, and associated site improvements, provided the recommendations presented in this report are followed during design and construction. Specific geotechnical recommendations are presented in the following sections of this report.

The primary geotechnical issue of concerns for the proposed development are presence of a variable depth of residual soil overlying bedrock encountered at the residence site, the potential variable support conditions across the basement level foundation, the sloping nature of the site, and the probability of severe ground shaking at the site during a major earthquake. In our opinion, the residence, accessory dwelling unit, site retaining walls, and deck areas should be supported on a pier and grade beam foundation system bearing in weathered bedrock below the near-surface soils.

Based on our discussions with your civil engineer, the proposed septic system will be the only improvement constructed within the relatively steep southern parcel. We understand that the primary lines of this septic system will not be constructed within the areas with slope gradients greater than 35 percent. However, the expansion lines of this septic system, which would only be constructed if needed, could potentially be located within areas with slopes gradients greater than 35 percent. We note that very stiff clays and weathered bedrock was encountered in the area of the septic field with bedrock outcrops observed along the existing cuts. In our opinion, the proposed septic system is unlikely to cause slope instability, result in effluent seeping from the face of the slope, or degrade water quality to create a threat to public health or safety.

Because subsurface conditions may vary from those encountered at the location of our borings, and to observe that our recommendations are properly implemented, we recommend that we be retained to 1) review the project plans for conformance with our recommendations; and 2) observe and test during earthwork and foundation construction.

FOUNDATIONS

Pier and Grade Beam Foundation

We recommend that the at-grade portions of the proposed residence, accessory dwelling unit, site retaining walls, and decks be supported on a pier and grade beam foundation, bearing in weathered bedrock below the residual soils. The piers should be at least 16-inches in diameter. Piers should extend at least 12 feet below the bottom of the grade beams and at least 8 feet into weathered bedrock, whichever is deeper. Piers constructed for site retaining walls may be reduced to a depth of 8 feet below the grade and at least 6 feet into weathered bedrock from a geotechnical viewpoint, whichever is deeper.

The piers may be designed for an allowable skin friction in bedrock of 550 pounds per square foot for dead plus live loads, with a one-third increase allowed when considering additional short-term wind or seismic loading. The uplift capacity of the piers may be based on a skin friction value of 400 pounds per square foot.

We recommend that relatively rigid grade beams be provided between piers supporting the improvements as required by the structural engineer. The grade beams should extend at least 8-inches below the crawl space grade or slab subgrade elevation to help limit the infiltration of surface runoff under the structure.

Pier drilling should be observed by a member of our staff to confirm that the pier holes extend at least the required minimum depth into bedrock and are properly cleaned of all loose or soft soil and debris. The minimum pier depths recommended above may require adjustment if differing conditions are encountered during drilling. While we expect that moderate sized drilling equipment can achieve the required minimum pier embedment depth, a rock bit equipped with carbide teeth may be required due to the hardness of the bedrock present below at least portions of the site.

Concrete should be placed in the pier holes as soon as practical after drilling. Ground water may seep into the pier holes during pier drilling and it is possible that ground water seepage could cause some sloughing or caving of the pier holes. This can be further evaluated during drilling of the initial piers. If ground water cannot be effectively pumped from the pier holes, concrete will need to be placed in the pier holes by the tremie method. The contractor should plan on placing concrete the same day the piers are drilled.

CJW ARCHITECTURE
130 Portola Road, suite A
Portola Valley, CA 94028
(650) 851-9335 / (Fax) 851-9337

LICENSED ARCHITECT CARTER JENSEN WARD No. C-19397 REN. 6-30-19 STATE OF CALIFORNIA

• PROJECT •

Zhang Residence
236 Huckleberry Trail
Woodside CA 94062

• SHEET TITLE •

Geotechnical Report

• REVISIONS •

No.	Date	Notes
1		

• JOB: 2017-1600

• DATE: 3/28/2019

• SHEET: T-0.2

GENERAL NOTES:

1. SITE ADDRESS MUST BE CLEARLY POSTED AND VISIBLE FROM THE STREET W/ MIN. OF 4" TALL NUMBERS ON CONTRASTING BACKGROUND.
2. CONTRACTOR SHALL COORDINATE SITE ACCESS FOR CONSTRUCTION WITH OWNER PRIOR TO COMENCMENT OF WORK.

EXISTING TREES:

SEE REVISED ARBORIST REPORT BY McCLENAHAN CONSULTING, LLC. THE REPORT COVERS ALL TREE PROTECTION MEASURES AND MITIGATIONS.

SEE CIVIL PLANS FOR THE TREE REMOVAL PLAN.

SITE LIGHTING LEGEND:

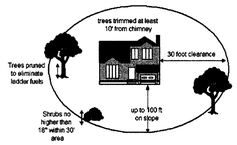
1. WALL MOUNTED LIGHT FIXTURE (E)
2. SEE EM-SHEETS & T-0.2 FOR MORE LIGHTING INFORMATION & DETAILS.

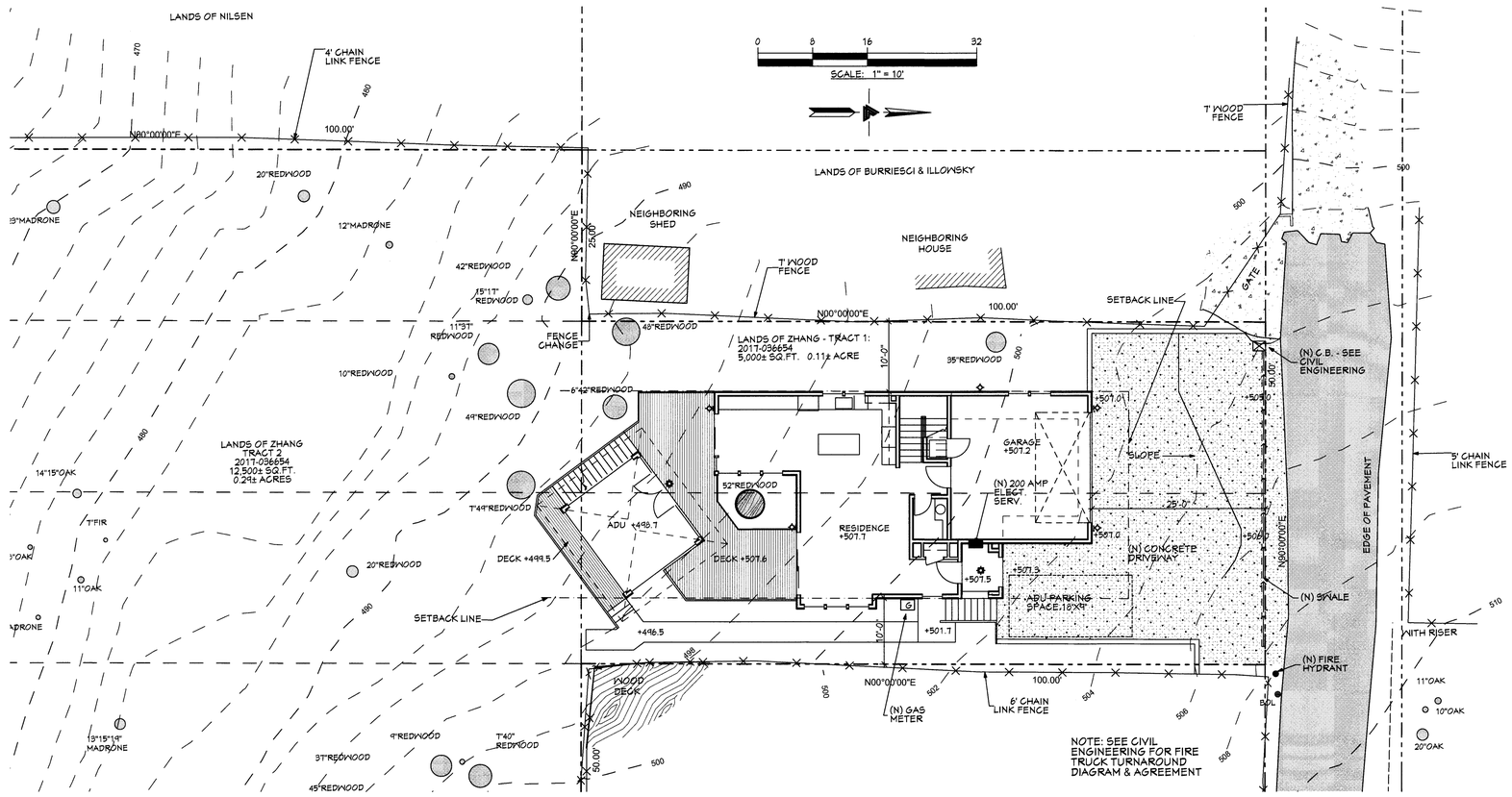
DEFENSIBLE SPACE:

Section 304.1.2.A Perimeter Property Line Clearance
Persons owning, controlling, or leasing structures and or property are required to remove, a minimum of 30 feet from the perimeter of the property line, hazardous vegetation specifically, flashy fuels consisting of weeds and annual grasses, as well as dead vegetative material and litter that is capable of being easily ignited and endangering property as determined by the Fire Marshal.

FIRE PROTECTION MAINTENANCE PLAN

LANDSCAPE CONTRACTOR SHALL COMPLETE ALL WORK TO EFFECT THE PLAN SHOWN BELOW PRIOR TO FINAL INSPECTION.OWNER TO MAINTAIN FIRE PROTECTION PLAN EACH SUMMER.





1 Proposed Site Plan 1" = 10'

POLLUTION PREVENTION

1. PROTECT DOWN SLOPE DRAINAGE COURSE, STREAMS, AND STORM DRAINS WITH ROCK BAGS, HAY BALES, TEMPORARY DRAINAGE SWALES, SILT FENCES, BERMS, OR STORM DRAIN INLET FILTERS.

2. THE EXISTING DRIVEWAY (PAVED) WILL BE USED AS A STABILIZED CONSTRUCTION ENTRANCE TO THE PROPERTY.

3. STRAW ROLLS SHALL BE INSTALLED PRIOR TO THE INCEPTION OF ANY WORK ON-SITE, AND SHALL REMAIN IN PLACE UNTIL THE LANDSCAPING GROUND COVER IS INSTALLED.

4. DRY SWEEPING METHODS SHALL BE USED TO REMOVE ANY DEBRIS AND/OR SOIL TRACKED ONTO WESTRIDGE DRIVE. DRY SWEEPING SHALL BE DONE AT THE END OF EACH WORK DAY.

5. THE CONTRACTOR SHALL FOLLOW AND USE BEST MANAGEMENT PRACTICES (BMP) FOR DISCHARGE INTO THE TOWN'S STORM WATER SYSTEM DURING SITE STRIPPING, HAULING, EARTH MOVING ACTIVITIES, HEAVY EQUIPMENT OPERATIONS AND GENERAL CONSTRUCTION. THOROUGHLY SUPERVISE THE WORK AT ALL TIMES TO INSURE NO PAINTING MATERIALS, SOLVENTS, ADHESIVES, LANDSCAPING MATERIALS OR OTHER SUCH MATERIALS WASH AWAY FROM THE SITE OR OTHERWISE ENTER THE FLOW OF STORM WATER RUNOFF.

6. STOCKPILED MATERIAL SHALL BE COVERED WITH POLY-ETHALENE SHEETING 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 PRIOR TO THE FALL RAINY SEASON.

7. DUST CONTROL SHALL BE DONE BY WATERING.

8. IF EROSION DEVELOPS IN A TEMPORARY EROSION PROTECTED AREA OR ANY ESTABLISHED VEGETATED AREA, THE CONTRACTOR SHALL IMMEDIATELY ALLEVIATE AND REMEDY THE PROBLEM AND TAKE PREVENTATIVE MEASURES TO MINIMIZE THE POSSIBILITY OF ITS RECURRENCE, AND ALSO TO PREVENT THE RESULTING FLOW OF SOILS OR WATER WITH SUSPENDED SOILS FROM GETTING INTO THE TOWN'S DRAINAGE SYSTEM OR ANY NATURAL DRAINAGE CHANNEL OR DITCH.

9. ALL DISTURBED SOILS SHALL BE "MATTED" AND SEEDED WITHIN TWO (2) WEEKS OF "FINAL DISTURBANCE".

10. STOCKPILE SHALL BE COVERED, PROTECTED WITH SANDBAGS, AND PROVIDED WITH ADDITIONAL PROTECTION AT THE BASE UNTIL AFTER APRIL 15. NO FILLING OR SPREADING OF MATERIAL CAN OCCUR UNTIL AFTER APRIL 15.

11. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED AND APPROVED PRIOR TO THE RELEASE OF PERMITS.

12. STEEP GRADED SLOPES SHALL BE PROTECTED WITH A PERMANENT EROSION CONTROL FABRIC, SUCH AS ENKAMAT 7000 SERIES OR EQUIVALENT.
A.) ENKAMAT CONTACT INFO: P.O.BOX 1057, SAND HILL ROAD, ENKA, NC 28728, PHONE (800) 365-7391, (828) 665-5050
B.) THE CONTRACTOR SHALL HANDLE, STORE, PLACE, AND INSTALL/ANCHOR THE PERMANENT EROSION CONTROL SLOPE FABRIC IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND INSTALLATION SPECIFICATIONS AND DETAILS.
C.) THE CONTRACTOR AND/OR HOME OWNER SHALL INSPECT, MAINTAIN AND REPAIR PERMANENT EROSION CONTROL SLOPE FABRIC IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND NOTES IDENTIFIED ABOVE.

SAN MATEO COUNTYWIDE STORM WATER POLLUTION PREVENTION PROGRAM, 555 COUNTY CENTER, REDWOOD CITY, CA 94063, (650) 363-4100

CJ W ARCHITECTURE
130 Portola Road, suite A
Portola Valley, CA 94028
(650) 851-9335 / (Fax) 851-9337

LICENSED ARCHITECT CARTER JENSEN WARD No. C-19397 REN. 6-30-19 STATE OF CALIFORNIA

• PROJECT •

Zhang Residence
236 Huckleberry Trail
Woodside CA 94062

• SHEET TITLE •

Site Plan

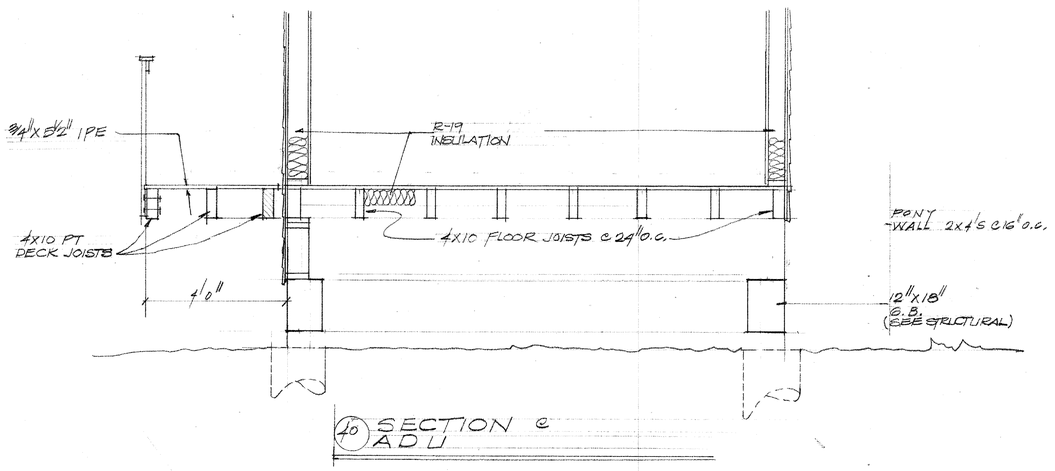
• REVISIONS •

No.	Date	Notes
1		

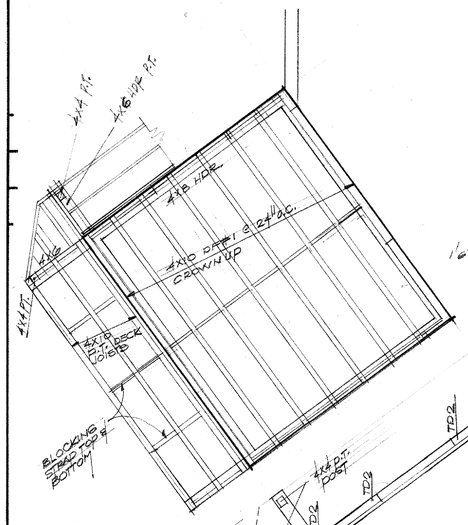
• JOB: 2017-1600

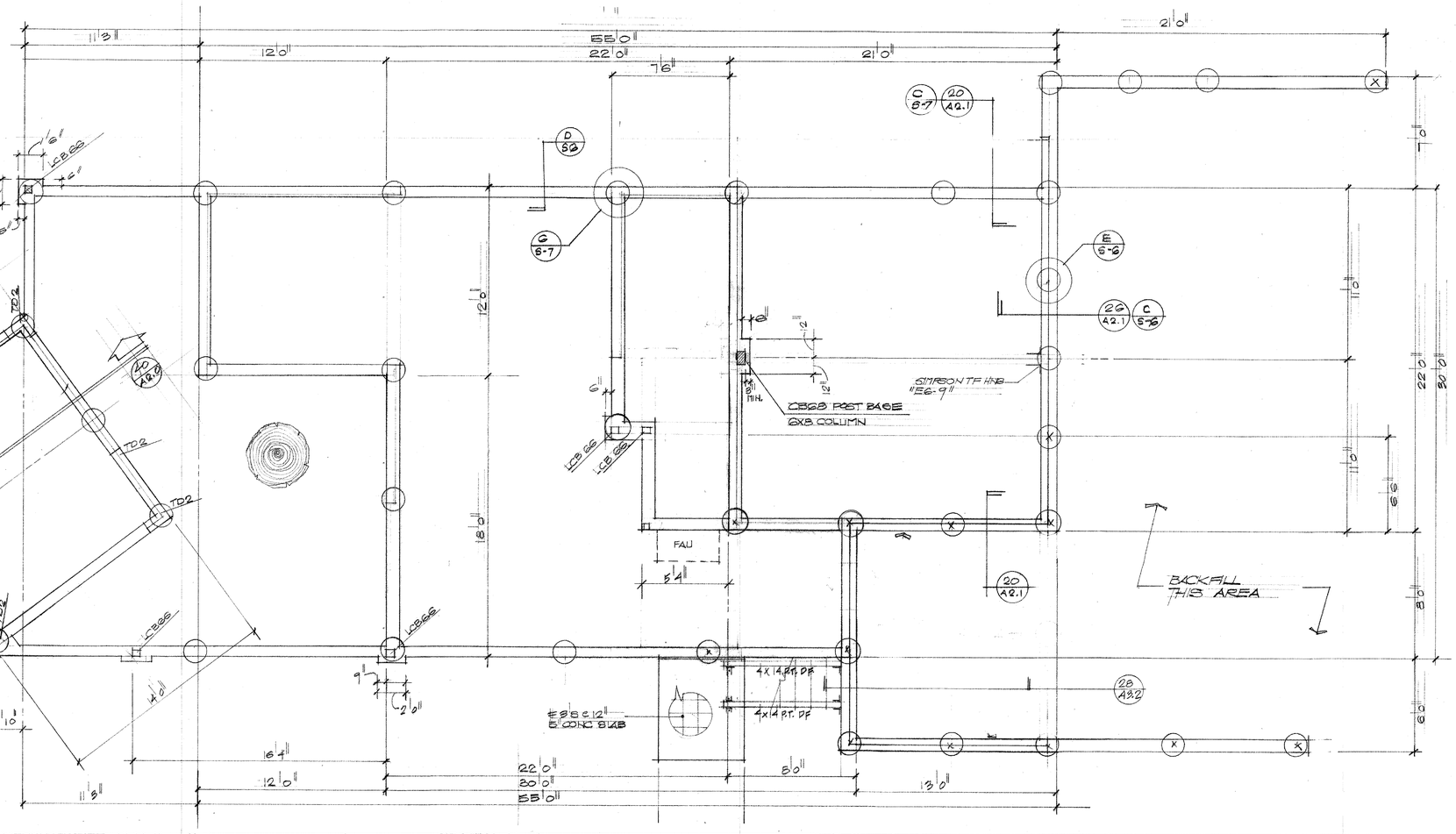
• DATE: 3/28/2019

• SHEET: A-1.1



40 SECTION @ ADU





CJW ARCHITECTURE
130 Portola Road, suite A
Portola Valley, CA 94028
(650) 851-9335 / (Fax) 851-9337

• PROJECT •

ZHANG RESIDENCE
HUCKLEBERRY TRAIL
REDWOOD CITY

• SHEET TITLE •

FOUNDATION PLAN
SEE STRUCTURAL FOUNDATION PLAN S5 FOR DETAIL
SEE THIS SHEET FOR LAYOUT & RELATED ARCH DETAILS

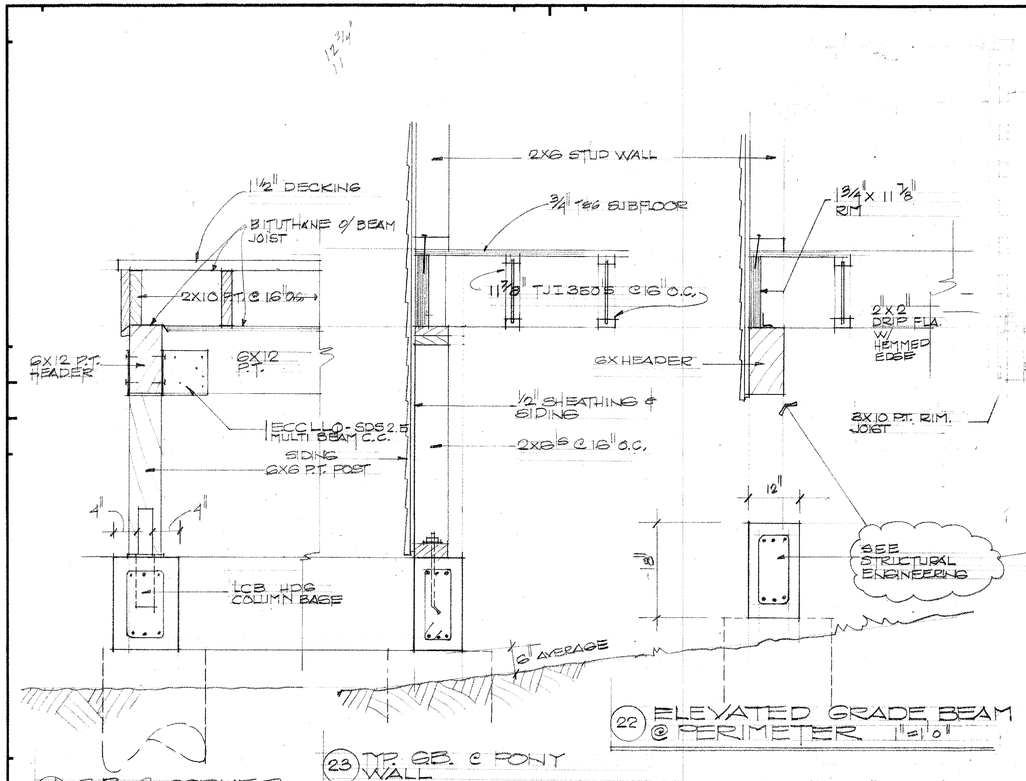
• REVISIONS •

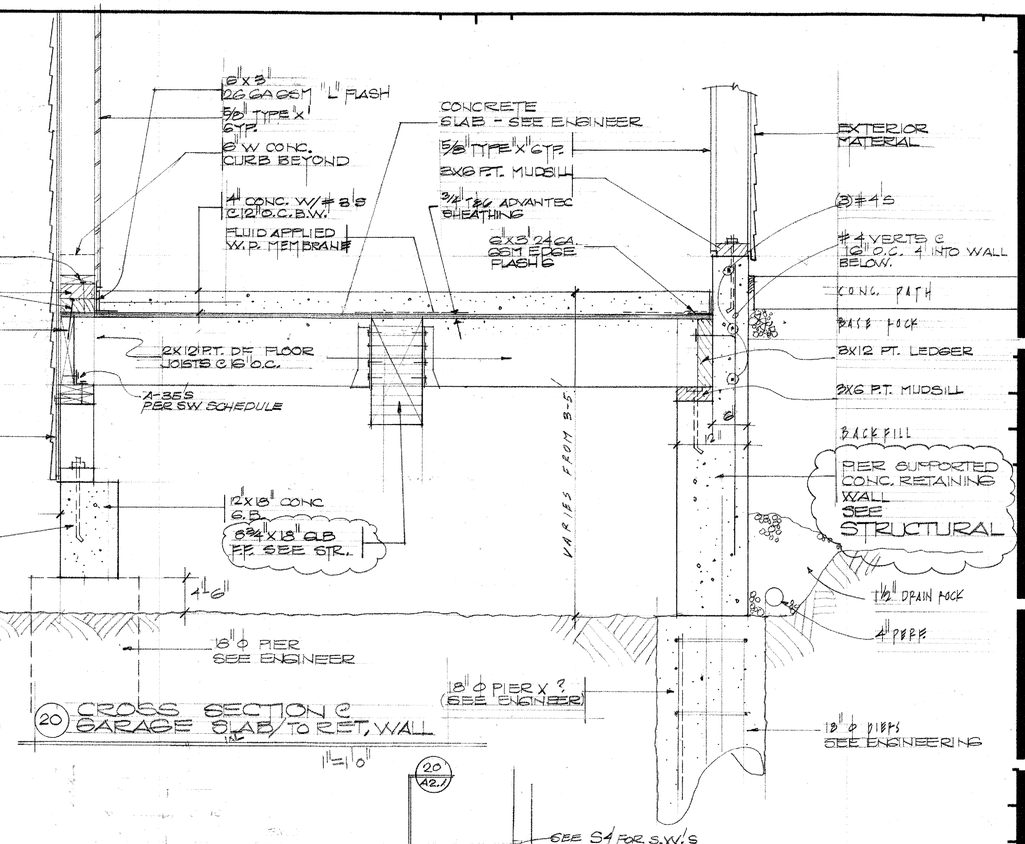
No.	Date	Notes
1	11/20/18	DELETE DECK
2	2/28/19	P.C. VERSION

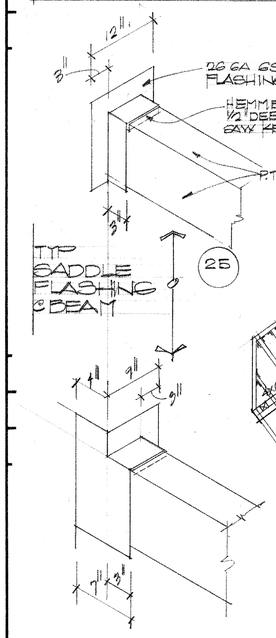
• JOB:

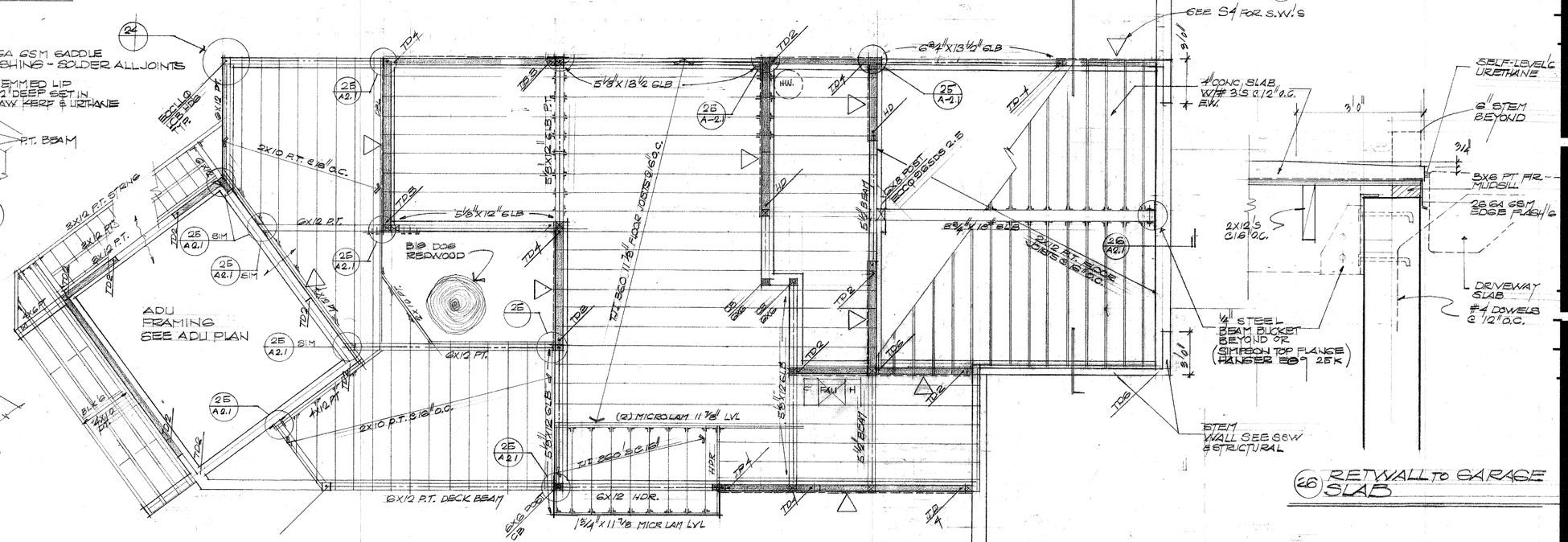
• DATE:

• SHEET: A-2.0









12 3/4"
11"

㉔ G.B. @ CORNER POST

㉓ TYP. G.B. @ PONY WALL

㉒ ELEVATED GRADE BEAM @ PERIMETER 1"=1'0"

⑳ CROSS SECTION @ GARAGE SLAB TO RET. WALL 1"=1'0"

TYP SADDLE FLASHING @ BEAM ㉕

㉖ RETWALL TO GARAGE SLAB

CJW ARCHITECTURE
130 Portola Road, suite A
Portola Valley, CA 94028
(650) 851-9335 / (Fax) 851-9337

• PROJECT •

ZHANG RESIDENCE
HUCKLEBERRY TRAIL
REDWOOD CITY

• SHEET TITLE •

ARCHITECTURAL MAIN FLOOR FRAMING DETAILS
SEE STRUCT ENG. S4 FOR MAIN FLOOR FRAMING AND DETAILS

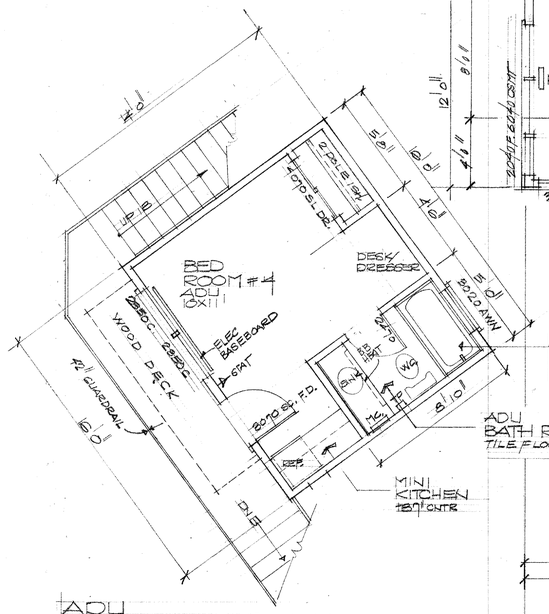
• REVISIONS •

No.	Date	Notes
1	11/28/18	PLAN CHECK
2	3/28/19	P.C. VERSION

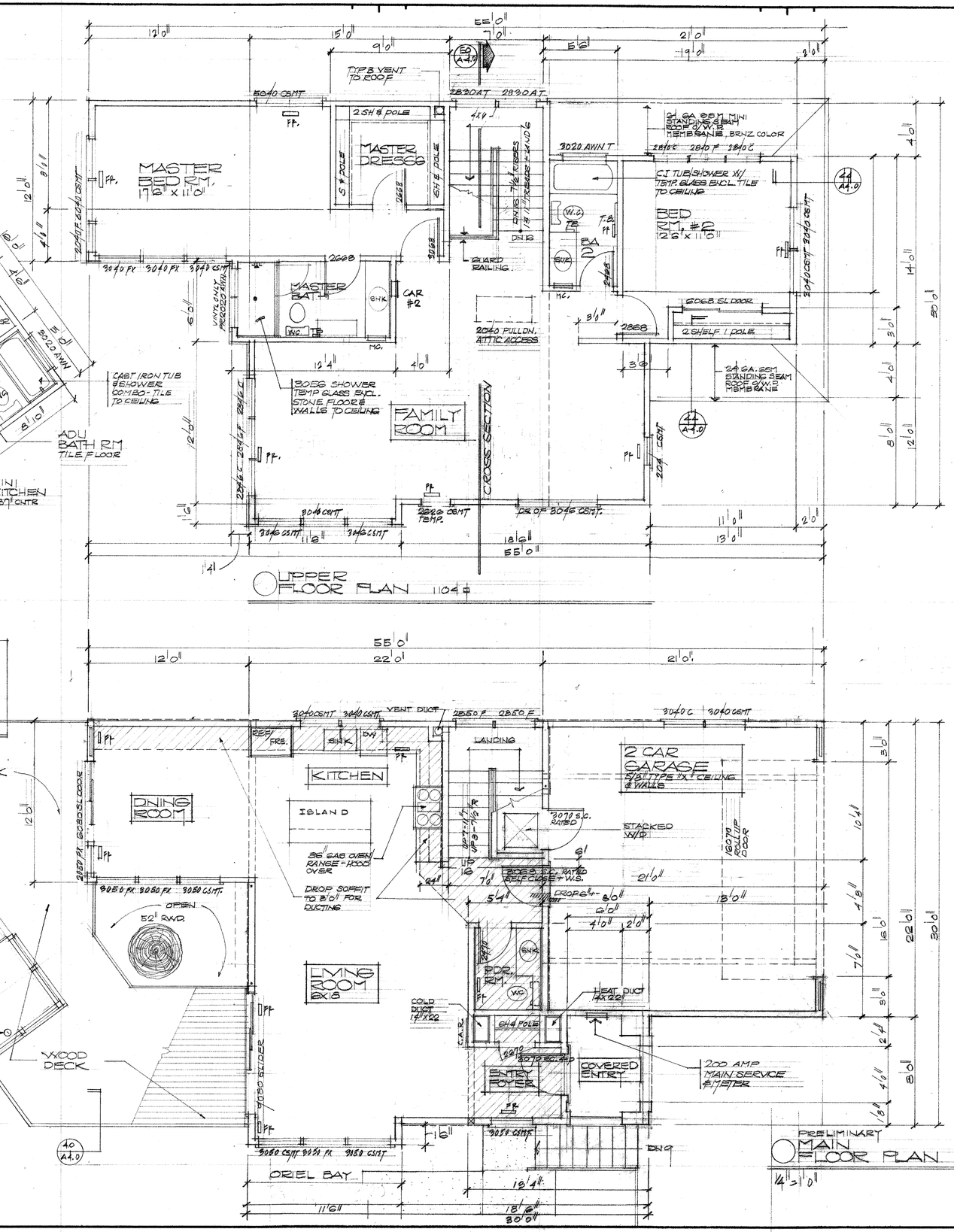
• JOB:

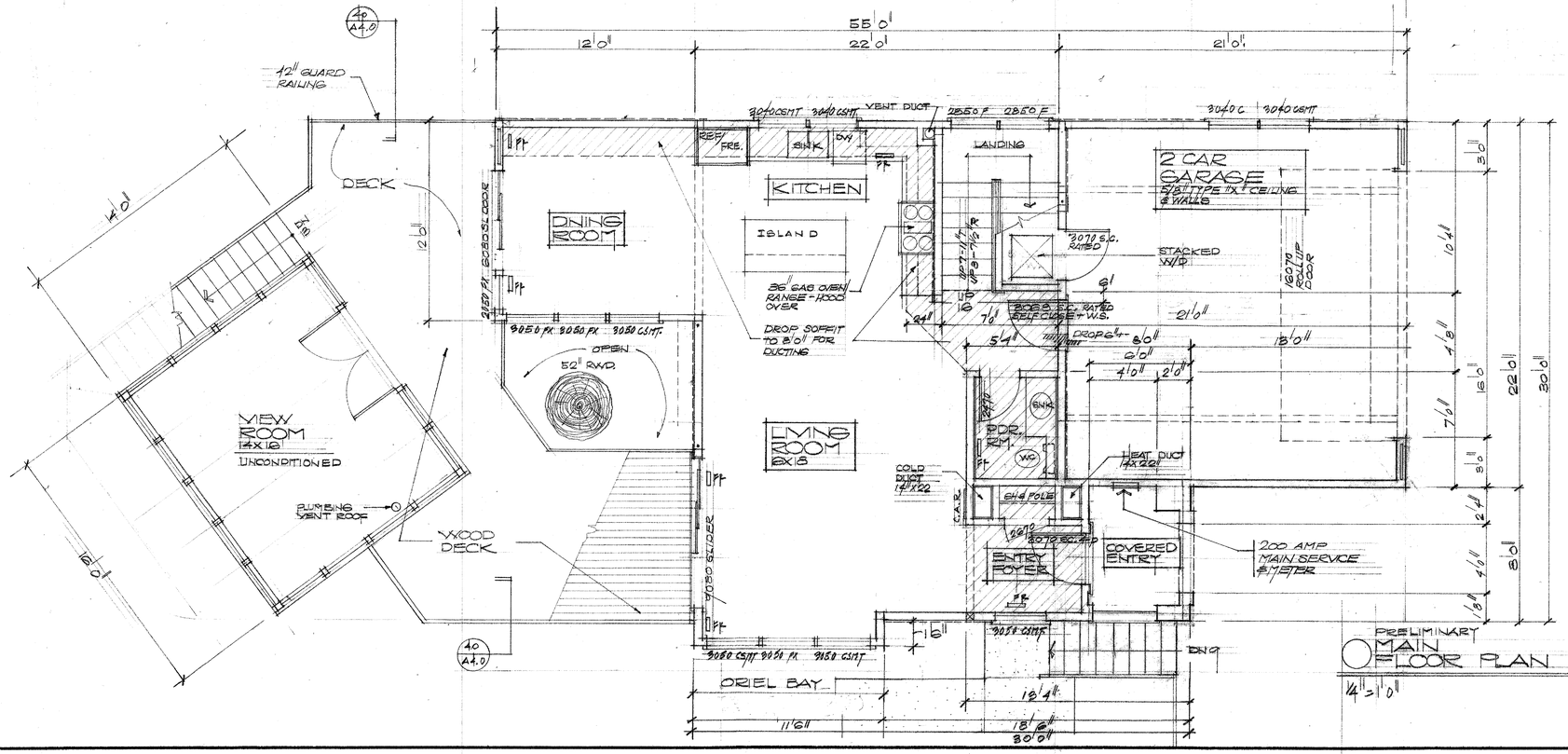
• DATE:

• SHEET: A-2.1



ADU
FLOOR PLAN 1/4"=1'0"
224 ♯





PRELIMINARY
MAIN
FLOOR PLAN 832 ♯
1/4"=1'0"

FLOOR AREA TABULATIONS

MAIN FLOOR AREA	832 ♯
UPPER FLOOR AREA	1104 ♯
ADU FLOOR AREA	224 ♯
TOTAL FLOOR AREA	2,160 ♯
MAIN HOUSE ONLY	1936

CJW ARCHITECTURE
130 Portola Road, suite A
Portola Valley, CA 94028
(650) 851-9335 / (Fax) 851-9337

• PROJECT •

ZHANG RESIDENCE
HUCKLEBERRY TRAIL
WOODSIDE CA.

• SHEET TITLE •

PRELIMINARY MAIN AND UPPER FLOOR PLAN

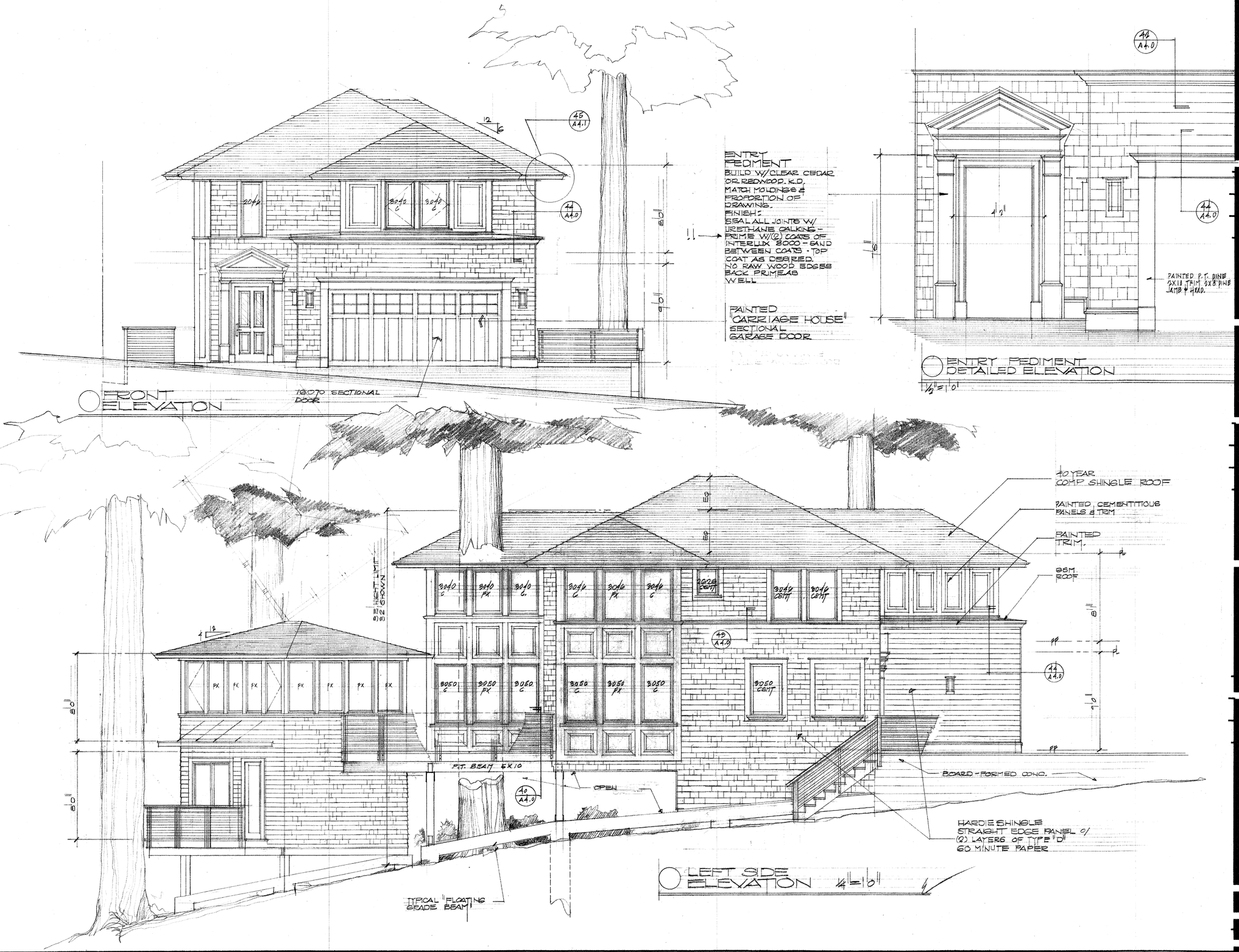
• REVISIONS •

No.	Date	Notes
1	11/28/17	REMOVED SIDE DECK
2	3/20/18	P.C. VERSION

• JOB:

• DATE: 1/9/18

• SHEET: A-2.2



CJW ARCHITECTURE
130 Portola Road, suite A
Portola Valley, CA 94028
(650) 851-9335 / (Fax) 851-9337

• PROJECT •

ZHANG RESIDENCE
HUCKLEBERRY TRAIL
WOODSIDE, CA.

• SHEET TITLE •

PRELIMINARY EXTERIOR ELEVATIONS

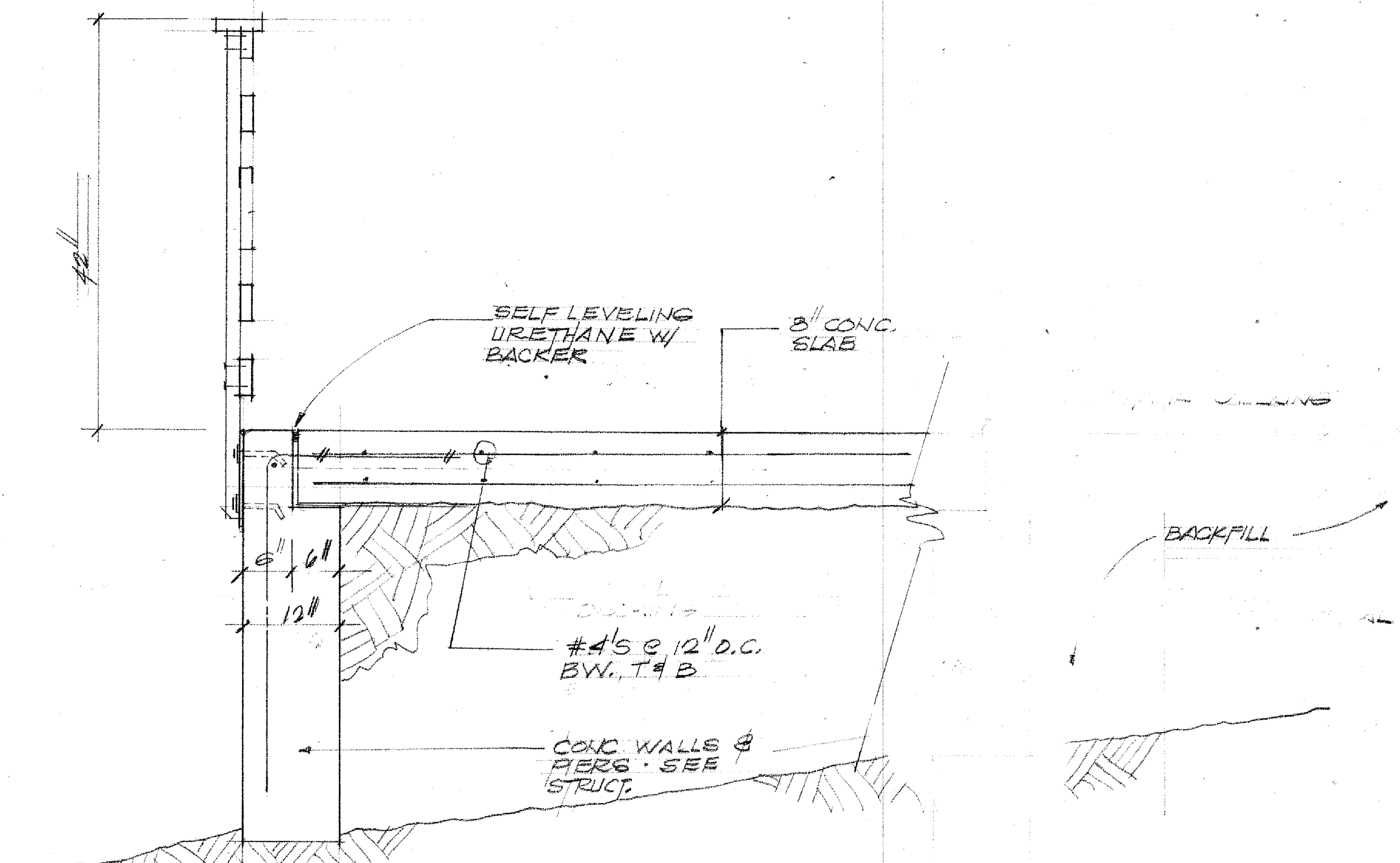
• REVISIONS •

No.	Date	Notes
1	11/20/18	PERMIT EDITION

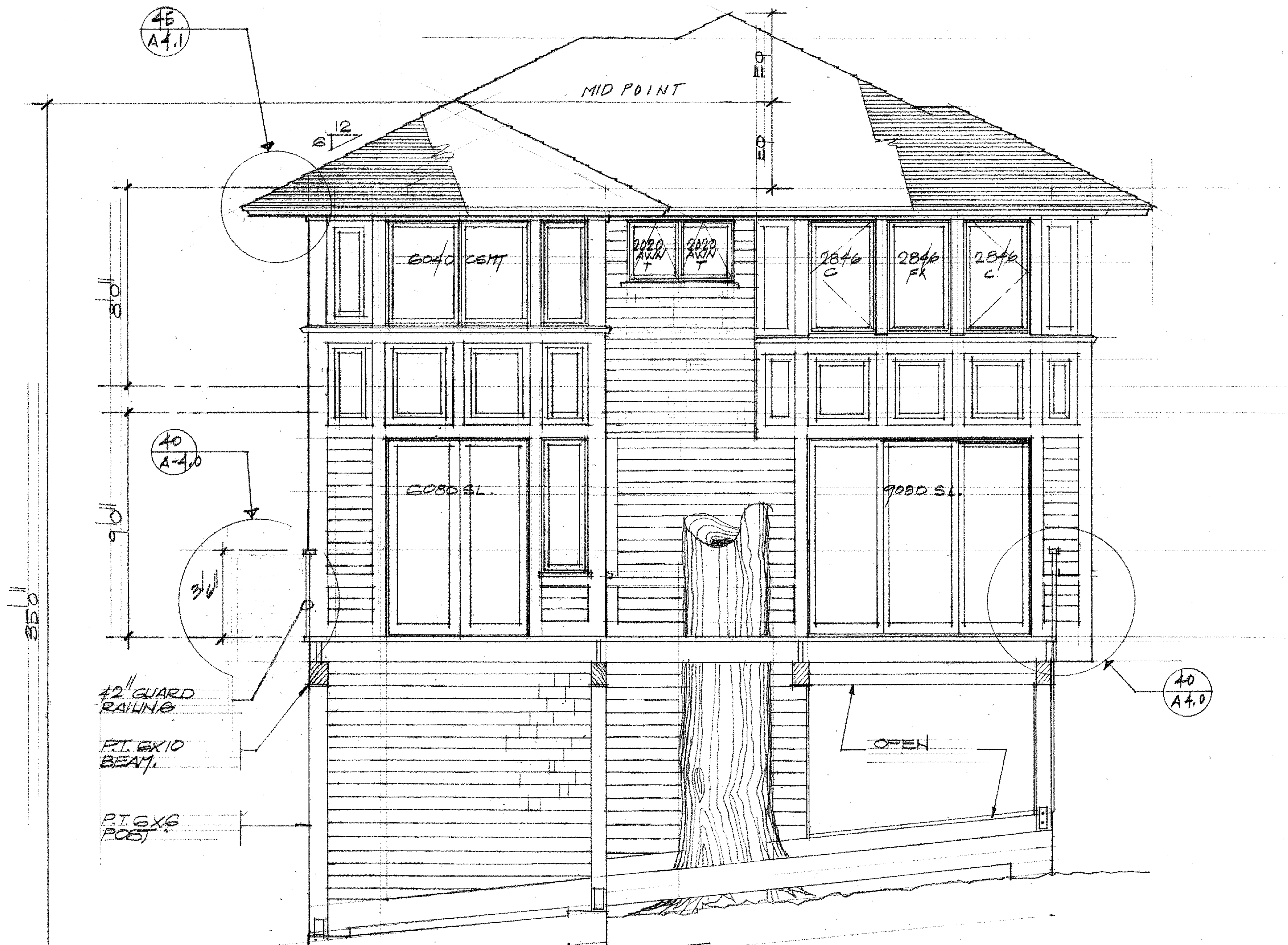
• JOB:

• DATE: 2/22/18

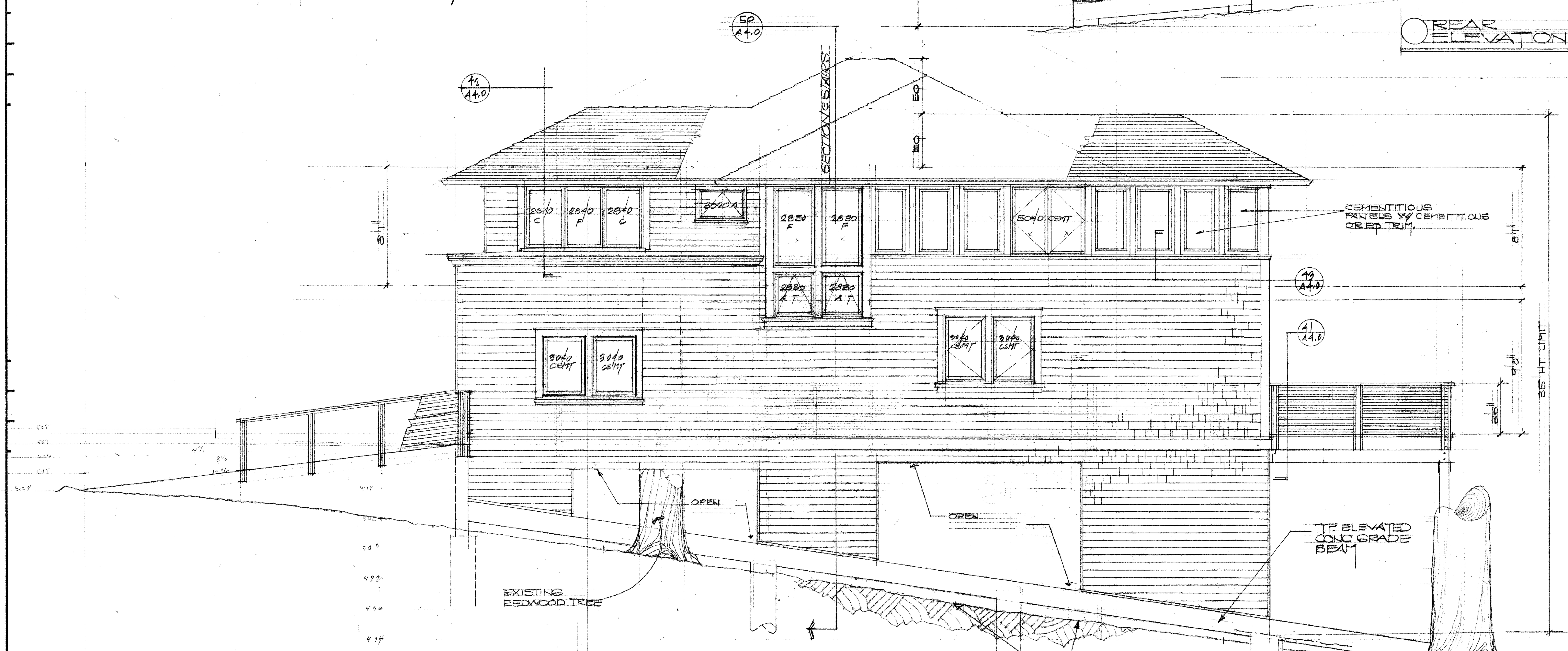
• SHEET: A-3.1



28 SECTION @DRIVEWAY EDGE 1"=1'0"



REAR ELEVATION 1/4"=1'0"



RIGHT SIDE ELEVATION

EXTERIOR MATERIALS

SIDING - CEMENTITIOUS SHINGLE SIDING O/ 2 LAYERS TYPE "D" PAPER 60 MIN. RATED

CJW ARCHITECTURE
130 Portola Road, suite A
Portola Valley, CA 94028
(650) 851-9335 / (Fax) 851-9337

• PROJECT •

ZHANG RESIDENCE
HUCKLEBERRY TRAIL
REDWOOD CITY

• SHEET TITLE •

RIGHT SIDE AND REAR EXTERIOR ELEVATIONS

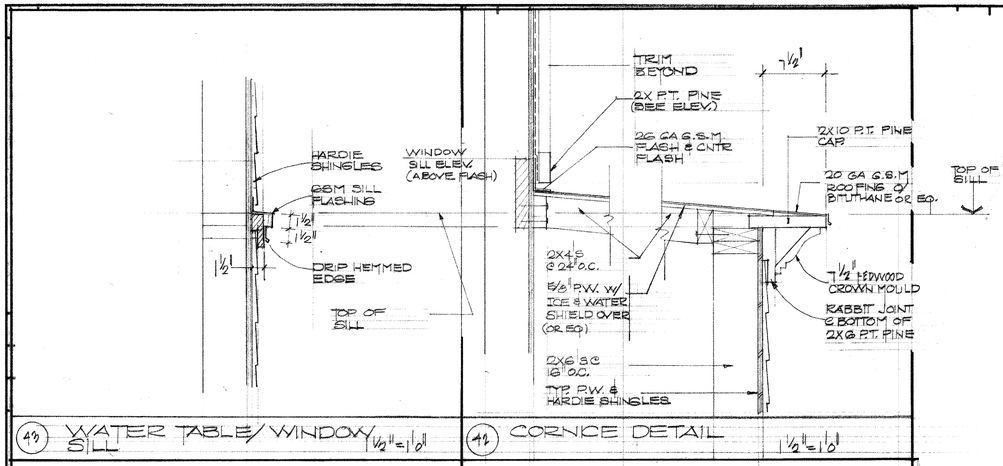
• REVISIONS •

No.	Date	Notes
1	3/20/17	P.C. VERSION

• JOB:

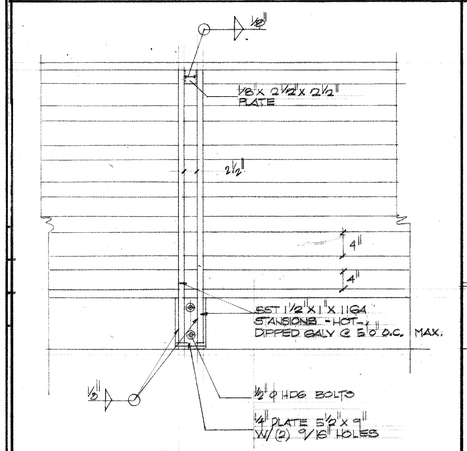
• DATE: 2/22/18

• SHEET: A-3.2

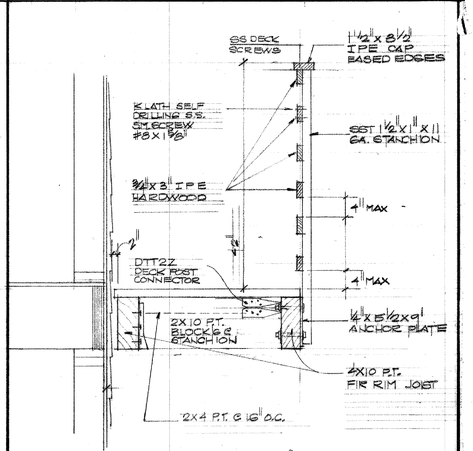


43 WATER TABLE/WINDOW SILL 1/2"=1'0"

42 CORNICE DETAIL 1 1/2"=1'0"

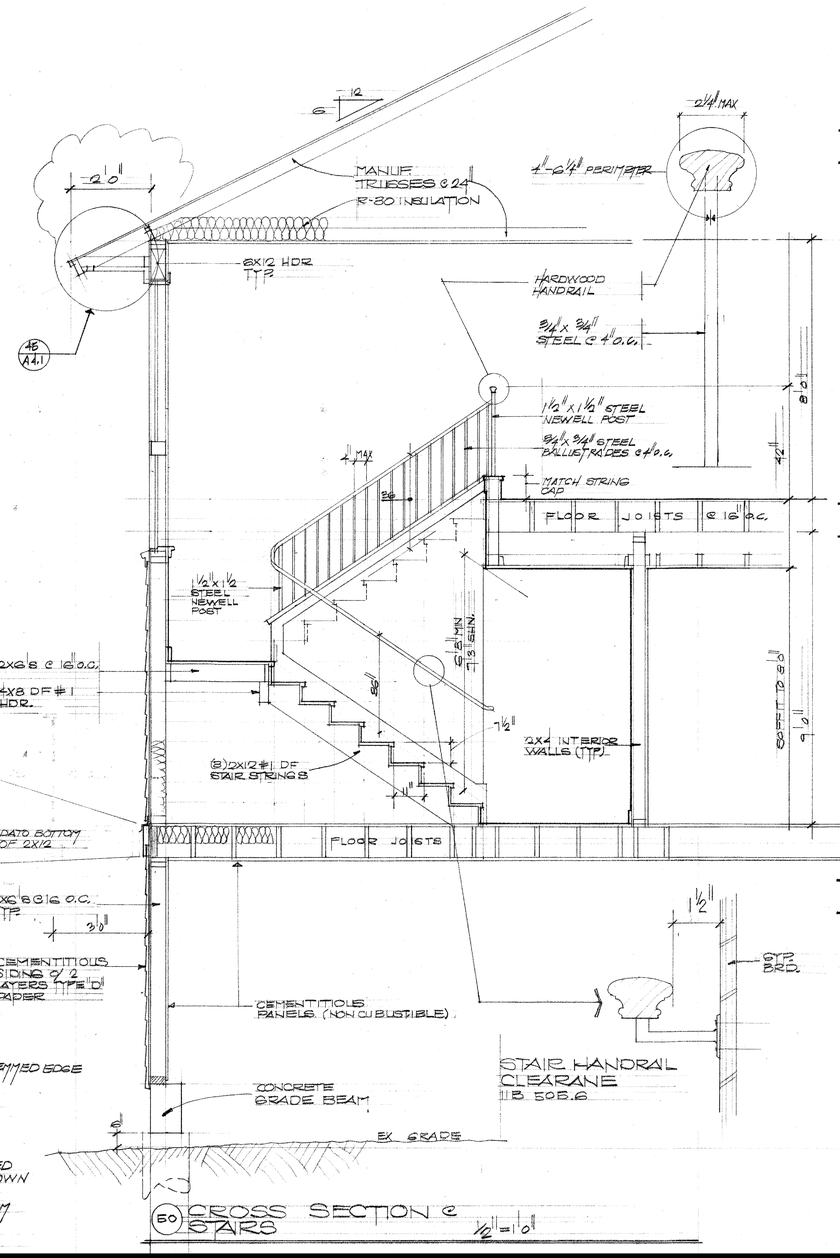


41 GUARD RAILING ELEVATION



40 TYP. GUARD RAILING DETAIL 1"=1'0"

2 CAR GARAGE
41 SECTION @ GARAGE TO SECOND FLOOR 1"=1'0"



50 CROSS SECTION @ STAIRS 1/2"=1'0"

CJW ARCHITECTURE
130 Portola Road, suite A
Portola Valley, CA 94028
(650) 851-9335 / (Fax) 851-9337

• PROJECT •

ZHANG RESIDENCE
HUCKLEBERRY TRAIL - WOODSIDE

• SHEET TITLE •

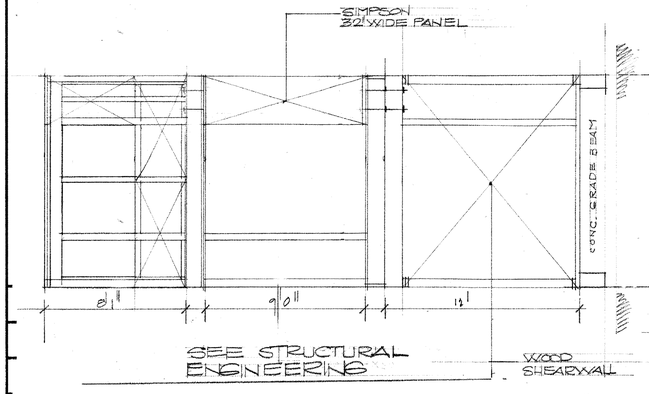
SELECTED CROSS SECTIONS
EXTERIOR DETAILS

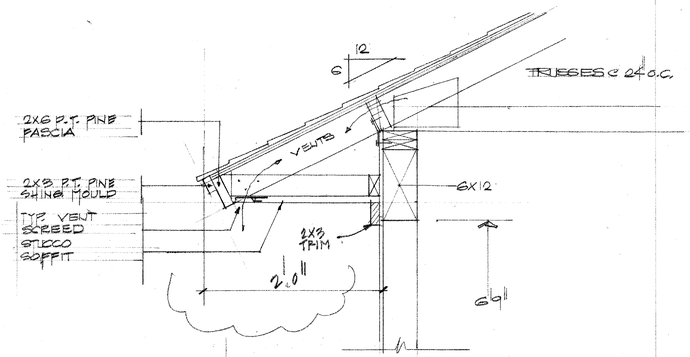
• REVISIONS •

No.	Date	Notes
	11/28/18	DELETE SIDE DECK
2	1/28/19	0.4 FROM 4'6" TO 4'0"

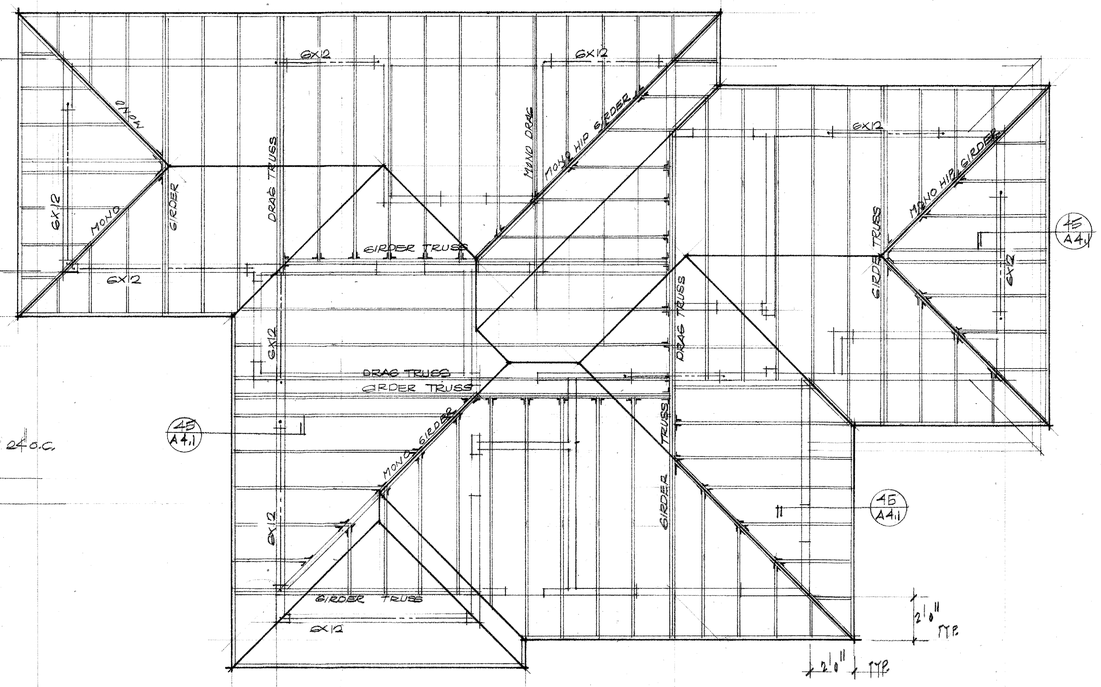
• JOB:

• DATE: 7/5/18





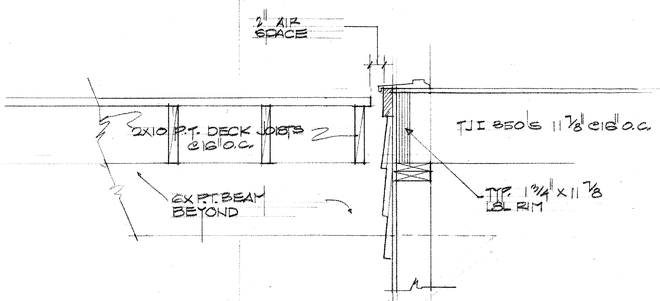
15 TYP EYE DETAIL 1"=1'0"



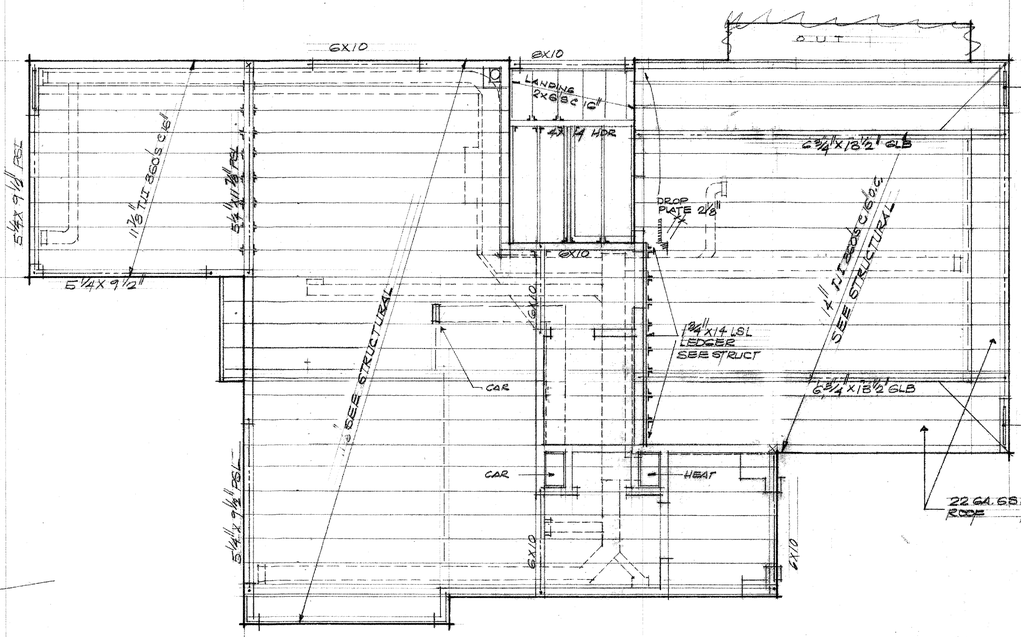
ROOF PLAN 1/4"=1'0"

ROOFING NOTES.

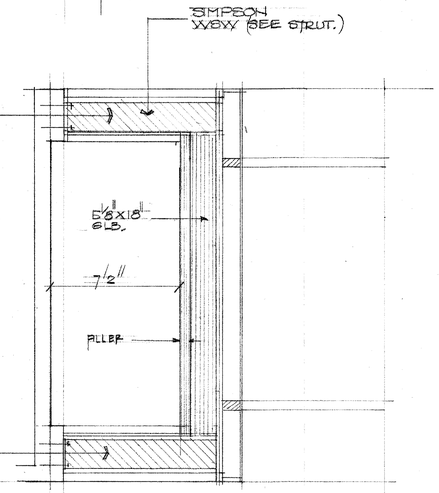
- ROOF SHEATHING TO BE 5/8 T&G O.S.B. OR P.W. W/ 8d @ 6 @ 10
- ROOFING : 40 YEAR COMP SHINGLE
- MANUF TRUSSES @ 24" O.C. DIFFERED SUBMITTAL REQUESTED



14 TYP. FLOOR TO DECK DETAIL 1"=1'0"



SECOND FLOOR "ARCHITECTURAL" FRAMING PLAN 1/4"=1'0"
SEE STRUCTURAL FOR DETAILS



FLOOR FRAMING NOTES:

- SUB FLOOR = 23/32" ADVANTECH ENGINEERED WOOD T&G SHEATHING NOTE SEE STRUCTURAL FOR FRAMING INFO. THIS PLAN IS FOR DUCTING & REFERENCE

CJW ARCHITECTURE
130 Portola Road, suite A
Portola Valley, CA 94028
(650) 851-9335 / (Fax) 851-9337

• PROJECT •

ZHANG RESIDENCE
HUCKLEBERRY TR.
REDWOOD CITY, CA

• SHEET TITLE •

ROOF FRAMING PLAN AND SECOND FLOOR HEAT DUCTING PLAN

• REVISIONS •

No.	Date	Notes
	3/28/17	P.C. VERSION
		D.H. MOD.

• JOB:

• DATE:

• SHEET: A-4.1

AVAILABLE @ CABLE MOORE OAKLAND, CA.

½"ϕ STEEL ROD H.D.G. W/ 12 I OF COARSE THREAD EACH END. CUT, BLIND NOTCH FOR NUT & WASHER

5/8" R.S. FIR PW. R.S. FACE DOWN. COMP ROOF B/MEMBRANE @

4X8 S.S. F.O.H.C. D.F. ROOF BEAM

5½" x 9¼" PSL TOP PLATE ½" LAP JOINTS @ EA. CORNER (2) ¼" x 12" SDS EA SPLICE

H/ 2.5 T @ 32" O.C. (TYP.)

5/8" R.S. P.W. SOFFIT

2X6 P.T. PINE FASCIA

2'0" TYP.

1 12

TAPER CUT.

CROSS SECTION @ ROOF BEAMS
½"=1'0"

5½" x 9¼" PSL

4X8 D.F. #1

4X8 D.F. #1

4X8 D.F. #1

4X8 D.F. #1

5½" x 9¼" P.S.L.

5½" x 9¼" PSL

5½" x 9¼" PSL

30

2'-0"

2'-0"

ADU ROOF FRAMING PLAN ¼"=1'0"

2X10 @ 16" O.C. R-30 BATT INSULATION ON 5/8 @ T1-11

¾" T&G PLYWOOD

6X10

6X10

ADU SECOND FLOOR FRAMING PLAN
¼"=1'0"

16'0"

3'7 3/16"

4'0 13/16"

2840 F

5107Ø FD

2840 F

2840 F

CRUMB VENT FROM BELOW

ART STUDIO UNCONDITIONED FF @ 307.7

14'0"

7'0"

4'0 5/8"

4'0 5/8"

4'0 3/8"

3040 F

3040 C

3040 F

3040 F

3040 F

3040 F

2840

2840

2840

3'7 3/16"

2840

ADU UPPER FLOOR PLAN ¼"=1'0"

SEE MAIN FLOOR PLANS FOR LOWER F.P.

FLAT ROOF FRAME

FLAT ROOF

DRIP FLASHING

RABBITED 2X10 P.T. LEDGER

2" 3 1/16"

2'-6"

3'-6"

2'-6"

32

1X6 T&G IPE OR CLEAR RED CEDAR ROOF

EDGE DRIP FLASHING

(2) ¼" x 6" SDS EACH BEAM

W.P. MEMBRANE ROOFING

3X8 D.F. #1 HIP BMS

(3) ¼" x 6" SDS

RIDGE

4X8 S.S. F.O.H.C. BEAM

26 GA GSM EDGE FLASHING

W.P. MEMBRANE ROOFING

4" x 2" ALUM.

¾" x 5½" IPE - MILLED W/T&G ALSO CAN USE CEDAR

4" x 2" ALUMINUM TUBE

x2"

HARDI-SHINGLES

32 FLAT ROOF SECTION 1½"=1'0"

HIP BEAM TO ROOF BEAM 3"=1'0"

40 YEAR COMP SHINGLES

1 12

2840 F

2840 F

51070 F.D. OR 5870 F.D. (W/TURNING)

2840 F

3020 AWN (T)

OPEN

NORTHWEST ADU ELEVATION

3040 FX

3040 C

3040 F

3040 F

3040 F

NORTH EAST ADU ELEVATION

3040 F

3040 C

3040 C

3040 C

3040 FX

½" ϕ COPPER PIPE STRUT (TYP.)

4X6 POST BURIED IN WALL TYP.

32

2X10 PT. PINE LEDGER BEHIND

P.T. BEAM

2X12 P.T. FIR STRINGER

HARDI-SHINGLES

FF 429.66

OPEN

SOUTH WEST ADU ELEVATION

2840 C

2840 F

2840 F

2840 F

2840 C

26 GA GSM SILL FLASHING SEE MAIN HOUSE

(6) ½" ϕ COPPER PIPE STRUTS.

32

2850 C

3070 FD

RAILING- SEE MAIN HOUSE

4'8

4'7

4'6

4'5

4'4

4X6 P.T. POST

SOUTH EAST ADU ELEVATION ¼"=1'0"

CJW ARCHITECTURE
130 Portola Road, suite A
Portola Valley, CA 94028
(650) 851-9335 / (Fax) 851-9337

• PROJECT •

• SHEET TITLE •

ADU PLAN

• REVISIONS •

No.	Date	Notes
1	3/28/19	I.G. VERSION

• JOB:

• DATE:

• SHEET: A5.0

County of San Mateo - Planning and Building Department

ATTACHMENT D

ARBORIST REPORT

Submitted To:

Mr. Zhifan Zhang
513 Central Avenue Apt. Q
Mountain View, CA 94043

Project Location:

236 Huckleberry Trail
Woodside, CA

Submitted By:
McCLENAHAN CONSULTING, LLC
John H. McClenahan
ISA Board Certified Master Arborist, WE-1476B
member, American Society of Consulting Arborists
June 14, 2018

McClenahan Consulting, LLC
Arboriculturists Since 1911
1 Arastradero Road, Portola Valley, CA 94028-8012
Telephone (650) 326-8781
Fax (650) 854-1267
www.spmcclenahan.com

June 14, 2018

Mr. Zhifan Zhang
513 Central Avenue Apt. Q
Mountain View, CA 94043

RE **236 Huckleberry Trail**
Woodside, CA

Assignment
As requested, I performed a visual inspection of 5 trees to determine species, size and condition and provide tree protection and tree preservation guidelines.

Summary
Currently this site is a vacant lot with plans to build a single-family residence with accessory structure. While the structures are near the trees, it has been designed to minimize excavation by utilizing a pier and grade beam type foundation, with the grade beam being above grade. In addition, design will allow some flexibility to adjust pier holes to preserve structural roots. Tree Protection Zones are defined as six times the trunk diameter. Any grading or excavation within a TPZ must be accomplished by hand or air digging. A qualified arborist must supervise any cutting of roots within a TPZ and provide mitigation. Many of the trees on site and on neighboring properties were topped and appears to have been a cooperative effort between neighbors.

Methodology
No root crown exploration, climbing or plant tissue analysis was performed as part of this survey. For purposes of identification, trees have been numbered on the preliminary site plan shown in Figure 1.

In determining Tree Condition several factors have been considered which include:

Rate of growth over several seasons;
Structural decays or weaknesses;
Presence of disease or insects; and
Life expectancy.

Tree Description/Observation
1 Coast redwood *(Sequoia sempervirens)*
Diameter: 36.5"
Height: 55' **Spread:** 40'
Condition: Fair
Location: Front right
Observation:
Crown previously topped. Old stubs and a few dead limbs observed in lower canopy. A pier and grade beam foundation will be utilized with the grade beam above grade. Pier holes shall be hand dug and adjusted per design to preserve roots greater than two inches diameter.

2 Coast redwood
Diameter: 51"
Height: 75' **Spread:** 40'
Condition: Fair
Location: Left of proposed house
Observation:
Ivy is growing on trunk to 15-feet. Proposed home and deck will be within the Tree Protection Zone of 26-feet. A pier and grade beam foundation will be utilized with the grade beam above grade. Pier holes shall be hand dug and adjusted per design to preserve roots greater than two inches diameter.

3 Coast redwood
Diameter: 43.5"
Height: 80+ **Spread:** 35'
Condition: Fair
Location: Rear of proposed house
Observation:
Crown overlaps with adjacent trees. The TPZ is 22-feet. A pier and grade beam foundation will be utilized with the grade beam above grade. Pier holes shall be hand dug and adjusted per design to preserve roots greater than two inches diameter.

4 Coast redwood
Diameter: 50.6"
Height: 80+ **Spread:** 40'
Condition: Fair
Location: Right rear of proposed house
Observation:
Crown is one-sided with a slight lean. The TPZ is 26-feet. A pier and grade beam foundation will be utilized with the grade beam above grade. Pier holes shall be hand dug and adjusted per design to preserve roots greater than two inches diameter.

5 Coast redwood
Diameter: 52.2"
Height: 65' **Spread:** 35'
Condition: Fair
Location: Near proposed ADU
Observation:
Crown is slightly water stressed. The TPZ is 26-feet. A pier and grade beam foundation will be utilized with the grade beam above grade. Pier holes shall be hand dug and adjusted per design to preserve roots greater than two inches diameter.

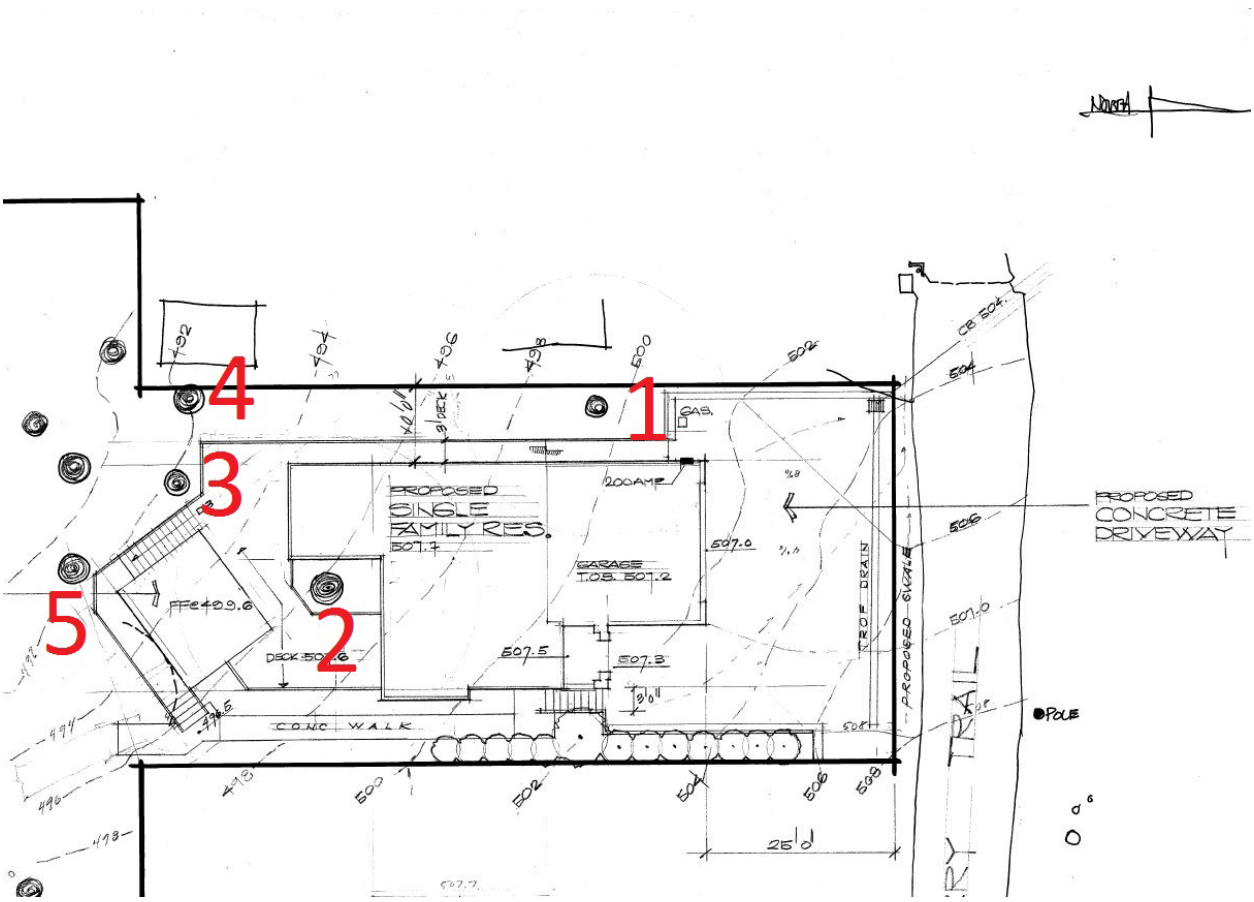


Figure 1: Site plan

TREE PRESERVATION GUIDELINES

Tree Preservation and Protection Plan

In providing recommendations for tree preservation, we recognize that injury to trees as a result of construction include mechanical injuries to trunks, roots and branches, and injury as a result of changes that occur in the growing environment.

To minimize these injuries, we recommend grading operations encroach no closer than six times the trunk diameter, (i.e. 30" diameter tree x 6=180" distance). At this distance, buttress/anchoring roots would be preserved and minimal injury to the functional root area would be anticipated. Should encroachment within the area become necessary, hand digging is ***mandatory.***

Barricades

Prior to initiation of construction activity, temporary barricades should be installed around all trees in the construction area. Six-foot high, chain link fences are to be mounted on steel posts, driven 2 feet into the ground, at no more than 10-foot spacing. The fences shall enclose the entire area under the drip line of the trees or as close to the drip line area as practical. These barricades will be placed around individual trees and/or groups of trees as the existing environment dictates.

The temporary barricades will serve to protect trunks, roots and branches from mechanical injuries, will inhibit stockpiling of construction materials or debris within the sensitive 'drip line' areas and will prevent soil compaction from increased vehicular/pedestrian traffic. No storage of material, topsoil, vehicles or equipment shall be permitted within the tree enclosure area. The

ground around the tree canopy shall not be altered. Designated areas beyond the drip lines of any trees should be provided for construction materials and onsite parking.

Root Pruning (if necessary)
During and upon completion of any trenching/grading operation within a Tree Protection Zone, clean pruning cuts of exposed, damaged or severed roots greater than one inch diameter should be accomplished under the supervision of a qualified Arborist to minimize root deterioration beyond the soil line ***within twenty-four (24) hours.***

Pruning
Pruning of the foliar canopies to include removal of deadwood is recommended and should be initiated prior to construction operations. Such pruning will provide any necessary construction clearance, will lessen the likelihood or potential for limb breakage, reduce 'windsail' effect and provide an environment suitable for healthy and vigorous growth.

Fertilization
A program of fertilization by means of deep root soil injection is recommended with applications in spring and summer for those trees to be impacted by construction. Fertilizer should include organic blends and components such as mycorrhizae and bio stimulants.

Such fertilization will serve to stimulate feeder root development, offset shock/stress as related to construction and/or environmental factors, encourage vigor, alleviate soil compaction and compensate for any encroachment of natural feeding root areas.

Inception of this fertilizing program is recommended prior to the initiation of construction activity.

Mulch
Mulching with wood chips (maximum depth 3") within tree environments (outer foliar perimeter) will lessen moisture evaporation from soil, protect and encourage adventitious roots and minimize possible soil compaction.

Inspection
Periodic inspections by the ***Site Arborist*** are recommended during construction activities, particularly as trees are impacted by trenching/grading operations.

Inspections at approximate four (4) week intervals would be sufficient to assess and monitor the effectiveness of the Tree Preservation Plan and to provide recommendations for any additional care or treatment.

All written material appearing herein constitutes original and unpublished work of the Arborist and may not be duplicated, used or disclosed without written consent of the Arborist.

We thank you for this opportunity to be of assistance in your tree preservation concerns.

Should you have any questions, or if we may be of further assistance in these concerns, kindly contact our office at any time.

McCLENAHAN CONSULTING, LLC

By: **John H. McClenahan**
ISA Board Certified Master Arborist, WE-1476B
member, American Society of Consulting Arborists

JHMc: cm

McClenahan Consulting, LLC
Arboriculturists Since 1911
1 Arastradero Road, Portola Valley, CA 94028-8012
Telephone (650) 326-8781
Fax (650) 854-1267
www.spmcclenahan.com

ARBORIST DISCLOSURE STATEMENT

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

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

Treatment, pruning, and removal of trees may involve considerations beyond the scope of the arborist's services such as property boundaries, property ownership, site lines, disputes between neighbors, landlord-tenant matters, etc. Arborists cannot take such issues into account unless complete and accurate information is given to the arborist. The person hiring the arborist accepts full responsibility for authorizing the recommended treatment or remedial measures.

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

Arborist: John H. McClenahan
Date: June 14, 2018

County of San Mateo - Planning and Building Department

ATTACHMENT E

ARBORIST REPORT

Submitted To:

Mr. Zhifan Zhang
513 Central Avenue Apt. Q
Mountain View, CA 94043

Project Location:

236 Huckleberry Trail
Woodside, CA

Submitted By:
McCLENAHAN CONSULTING, LLC
John H. McClenahan
ISA Board Certified Master Arborist, WE-1476B
member, American Society of Consulting Arborists
March 21, 2019

McClenahan Consulting, LLC
Arboriculturists Since 1911
1 Arastradero Road, Portola Valley, CA 94028-8012
Telephone (650) 326-8781
Fax (650) 854-1267
www.spmcclenahan.com

March 21, 2019

Mr. Zhifan Zhang
513 Central Avenue Apt. Q
Mountain View, CA 94043

RE **229 Huckleberry Trail**
Woodside, CA 94062

Assignment

As requested, I performed a visual inspection of 25 trees, within 10-feet of grading and or construction, to determine species, size and condition and provide tree protection and tree preservation guidelines.

Summary

Currently this site is a vacant lot with plans to build a single-family residence with accessory structure. While the structures are near the trees 1-5, it has been designed to minimize excavation by utilizing a pier and grade beam type foundation, with the grade beam being above grade. The grading and drainage portion on the lower lot will be within 10-feet of trees 6-13. *However, trees 6, 7, 9 and 10 should be removed due to poor or dead condition.* Trees 14 through 25 are proposed for removal and generally in worse condition than poor to fair. Tree 15 appears to be a fallen tree. Many trees are covered with ivy. *Preconstruction meetings with project arborist are recommended to better preserve trees that will remain.* Tree Protection Zones are defined as six times the trunk diameter. Any grading or excavation within a TPZ must be accomplished by hand (hand tools) or air digging. A qualified arborist must supervise any cutting of roots within a TPZ and provide mitigation. Many of the trees on site and on neighboring properties were topped and appears to have been a cooperative effort between neighbors. Arborist monitoring during construction is necessary to assess actual impacts to remaining trees. The water main improvements along Huckleberry Trail will be accomplished using directional boring. Any pits associated with drilling will be more than 10-feet from a county protected tree.

Methodology

No root crown exploration, climbing or plant tissue analysis was performed as part of this survey. For purposes of identification, trees have been numbered on the preliminary site plan shown in Figure 1.

In determining Tree Condition several factors have been considered which include:

Rate of growth over several seasons;
Structural decays or weaknesses;
Presence of disease or insects; and
Life expectancy.

Number	Name	Diameter	Condition	Location	Dispostion	Observation
1	Coast redwood	36.5"	Fair	Front right	Retain	Crown previously topped. Old stubs and a few dead limbs observed in lower canopy. The TPZ is 19-feet. Impacts from construction should occur to less than 30 percent of the root environment due to pier and grade beam foundation. Arborist monitoring should occur to confirm actual impacts to roots.
2	Coast redwood	51"	Fair	Left of proposed house	Retain	Ivy is growing on trunk to 15-feet. Proposed home and deck will be within the Tree Protection Zone of 26-feet. A pier and grade beam foundation will be utilized with the grade beam above grade. Pier holes shall be hand dug and adjusted per design to preserve roots greater than two inches diameter. Although much of the root area will be covered by deck and house, the grading, drainage and utilities should impact less than 30 percent of the roots, to be confirmed by arborist monitoring.
3	Coast redwood	43.5"	Fair	Rear of proposed house	Retain	Crown overlaps with adjacent trees. The TPZ is 22-feet. Proposed deck on piers should impact less than 25 percent of the root environment.
4	Coast redwood	50.6"	Fair	Rear of proposed house	Retain	Crown is one-sided with a slight lean. The TPZ is 26-feet. Proposed deck on piers should impact less than 25 percent of the root environment.
5	Coast redwood	52.2"	Fair	Near proposed ADU	Retain	Crown is slightly water stressed. The TPZ is 26-feet. Proposed deck on piers should impact less than 25 percent of the root environment.
6	Madrone	23"	Poor	Right rear of lot	Retain	Crown is sparse. Tree is covered with ivy to 35-feet. The TPZ is 12-feet. Although this tree should be removed, drainage and retention area will impact less than 20 percent of the root environment.
7	Madrone	10"	Poor	Right rear of lot	Retain	Crown is sparse . Tree is covered with ivy to 16-feet. The TPZ is 6-feet. Although this tree should be removed, drainage and retention area will impact less than 15 percent of the root environment.
8	Coast redwood	32.8”	Poor to Fair	Rear of lot	Retain	Crown is one sided in lower 3/4 of canopy. The TPZ is 17-feet. Storm drains and retention area should impact less than 15 percent of the root environment.
9	Live oak	15.3”	Poor	Rear of lot	Retain	Crown is sparse. Ivy covers trunk to 20-feet. The TPZ is 8-feet. Storm drains and retention area should impact less than 15 percent of the root environment.

Number	Name	Diameter	Condition	Location	Dispostion	Observation
10	Madrone	11.5”	Dead	Rear of lot	Remove	Dead.
11	Douglas fir	39.2”	Poor to Fair	Rear of lot	Retain	Heavy accumulation of deadwood in the low crown. The TPZ is 20-feet. Grading and drainage should impact less than 15 percent of the root environment, to be confirmed by arborist during operations.
12	Coast redwood	40.4”	Fair	Left rear	Retain	Cluster of three trees. Ivy covers trunk to 20-feet. Burls observed on low trunk. The TPZ is 19-feet. Grading and drainage should impact less than 30 percent of the root environment, to be confirmed by arborist during operations.
13	Coast redwood	39.4”	Fair	Left rear	Retain	Cluster of three trees. Ivy covers trunk to 20-feet. Burls observed on low trunk irregular top growth. The TPZ is 19-feet. Grading and drainage should impact less than 30 percent of the root environment, to be confirmed by arborist during operations.
14	Douglas fir	25.7”	Poor to Fair	Right rear fence	Remove	Ivy covers trunk to 45-feet. Proposed for removal.
15	Madrone	12”	Fell	Right rear fence	Remove	Tree fell and is laying on the ground. Proposed for removal.
16	Madrone	12”	Poor	Rear of lot	Remove	Sparse canopy with dieback. Proposed for removal.
17	Live oak	7”	Very Poor	Rear of lot	Remove	Ivy covered tree. Proposed for removal.
18	Live oak	8”	Very Poor	Rear of lot	Remove	Ivy covered tree. Proposed for removal.
19	Douglas fir	7”	Poor	Rear of lot	Remove	Sparse crown low vigor. Proposed for removal.
20	Live oak	11”	Very Poor	Rear of lot	Remove	Severe branch dieback. Exaggerated lean. Proposed for removal.
21	Madrone	13.5, 15, 16.7”	Very Poor	Rear of lot	Remove	Canopy is mostly dead. Proposed for removal.
22	Douglas fir	22”	Poor to Fair	Rear of lot	Remove	Poor vigor. Proposed for removal.
23	Live oak	16.3”	Very Poor	Rear fence	Remove	Significant dieback. Ivy covered. Proposed for removal.
24	Madrone	12,14, 15, 19”	Poor to Fair	Left front setback	Remove	Ivy covers stems to 20-feet. Proposed for removal.
25	Coast redwood	9.7”	Poor to Fair	Below tree 5	Remove	Previous top failure. Poor structure. Proposed for removal.

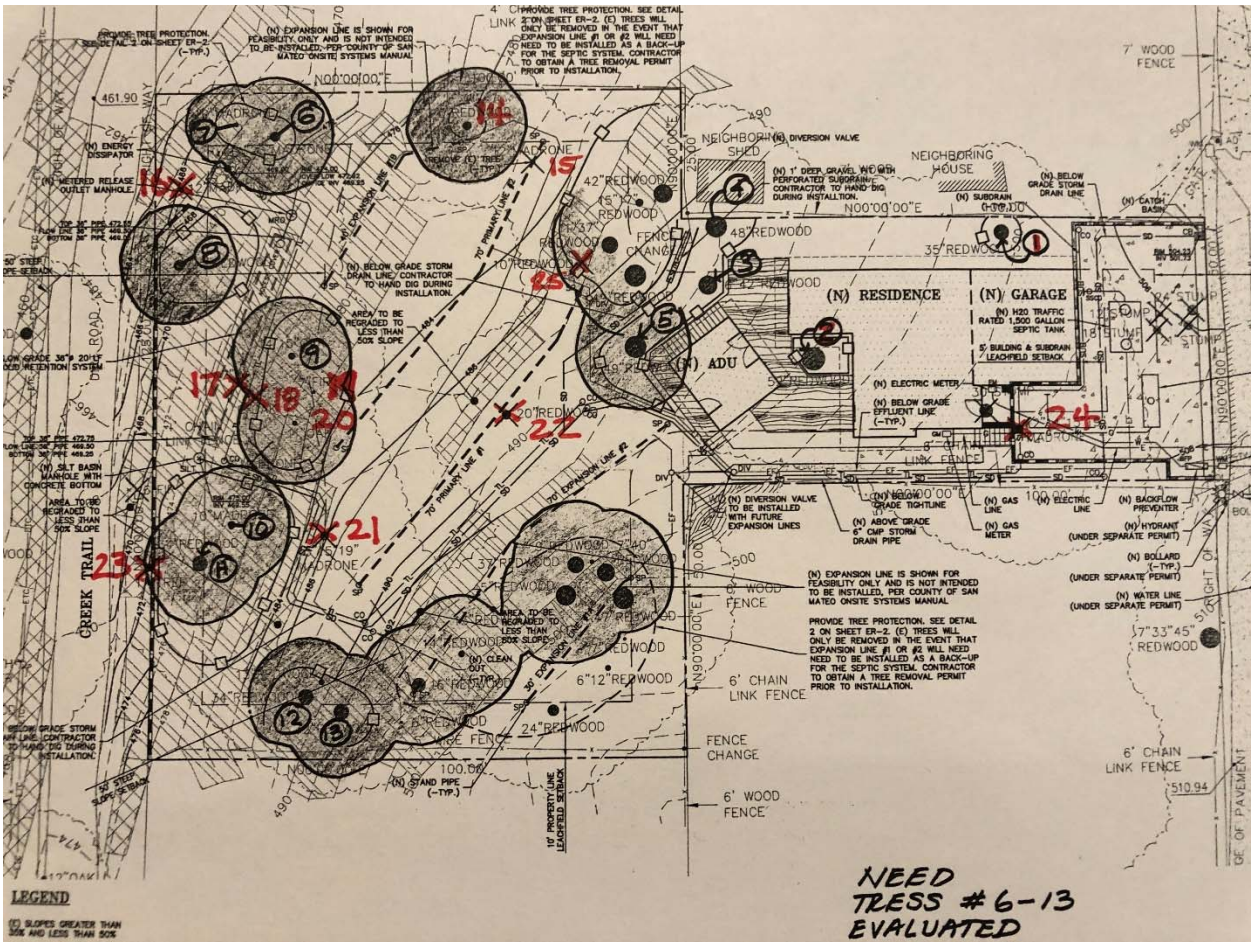
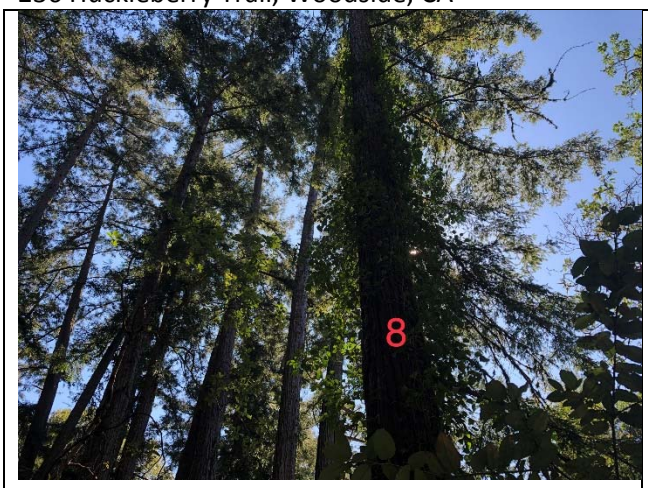


Figure 1: Site plan


8


9


11
10


13
12


14
15


7
6
16

Replacement trees will occur at a 1:1 ratio and will be planted in coordination with the construction project during the final phases of construction. Redwood and bigleaf maple will be suitable species for replacement.

Mr. Zhifan Zhang
236 Huckleberry Trail, Woodside, CA

TREE PRESERVATION GUIDELINES

Tree Preservation and Protection Plan

In providing recommendations for tree preservation, we recognize that injury to trees as a result of construction include mechanical injuries to trunks, roots and branches, and injury as a result of changes that occur in the growing environment.

To minimize these injuries, we recommend grading operations encroach no closer than six times the trunk diameter, (i.e. 30" diameter tree x 6=180" distance). At this distance, buttress/anchoring roots would be preserved and minimal injury to the functional root area would be anticipated. Should encroachment within the area become necessary, hand digging is ***mandatory.***

Barricades

Prior to initiation of construction activity, temporary barricades should be installed around all trees in the construction area. Six-foot high, chain link fences are to be mounted on steel posts, driven 2 feet into the ground, at no more than 10-foot spacing. The fences shall enclose the entire area under the drip line of the trees or as close to the drip line area as practical. These barricades will be placed around individual trees and/or groups of trees as the existing environment dictates.

The temporary barricades will serve to protect trunks, roots and branches from mechanical injuries, will inhibit stockpiling of construction materials or debris within the sensitive 'drip line' areas and will prevent soil compaction from increased vehicular/pedestrian traffic. No storage of material, topsoil, vehicles or equipment shall be permitted within the tree enclosure area. The ground around the tree canopy shall not be altered. Designated areas beyond the drip lines of any trees should be provided for construction materials and onsite parking.

Root Pruning (if necessary)

During and upon completion of any trenching/grading operation within a Tree Protection Zone, clean pruning cuts of exposed, damaged or severed roots greater than one inch diameter should be accomplished under the supervision of a qualified Arborist to minimize root deterioration beyond the soil line ***within twenty-four (24) hours.***

Pruning

Pruning of the foliar canopies to include removal of deadwood is recommended and should be initiated prior to construction operations. Such pruning will provide any necessary construction clearance, will lessen the likelihood or potential for limb breakage, reduce 'windsail' effect and provide an environment suitable for healthy and vigorous growth.

Irrigation

A supplemental irrigation program is recommended for the ? trees and should be accomplished at regular three to four-week intervals during the period of May 1st through October 31st. Irrigation is to be applied at or about the 'drip line' in an amount sufficient to supply approximately ten (10) gallons of water for each inch in trunk diameter.

Irrigation can be provided by means of a soil needle, 'soaker' or permeable hose. When using 'soaker' or permeable hoses, water is to be run at low pressure, avoiding runoff

Fertilization
A program of fertilization by means of deep root soil injection is recommended with applications in spring and summer for those trees to be impacted by construction. Fertilizer should include organic blends and components such as mycorrhizae and bio stimulants.

Such fertilization will serve to stimulate feeder root development, offset shock/stress as related to construction and/or environmental factors, encourage vigor, alleviate soil compaction and compensate for any encroachment of natural feeding root areas.

Inception of this fertilizing program is recommended prior to the initiation of construction activity.

Mulch
Mulching with wood chips (maximum depth 3") within tree environments (outer foliar perimeter) will lessen moisture evaporation from soil, protect and encourage adventitious roots and minimize possible soil compaction.

Inspection
Periodic inspections by the ***Site Arborist*** are recommended during construction activities, particularly as trees are impacted by trenching/grading operations.

Inspections at approximate four (4) week intervals would be sufficient to assess and monitor the effectiveness of the Tree Preservation Plan and to provide recommendations for any additional care or treatment.

We thank you for this opportunity to be of assistance in your tree preservation concerns.

Should you have any questions, or if we may be of further assistance in these concerns, kindly contact our office at any time.

McCLENAHAN CONSULTING, LLC

By: **John H. McClenahan**
ISA Board Certified Master Arborist, WE-1476B
member, American Society of Consulting Arborists

JHMc: cm

Mr. Zhifan Zhang
236 Huckleberry Trail, Woodside, CA

McClenahan Consulting, LLC
Arboriculturists Since 1911
1 Arastradero Road, Portola Valley, CA 94028-8012
Telephone (650) 326-8781
Fax (650) 854-1267
www.spmcclenahan.com

ARBORIST DISCLOSURE STATEMENT

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

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

Treatment, pruning, and removal of trees may involve considerations beyond the scope of the arborist's services such as property boundaries, property ownership, site lines, disputes between neighbors, landlord-tenant matters, etc. Arborists cannot take such issues into account unless complete and accurate information is given to the arborist. The person hiring the arborist accepts full responsibility for authorizing the recommended treatment or remedial measures.

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

Arborist: John H. McClenahan
Date: March 21, 2019

County of San Mateo - Planning and Building Department

ATTACHMENT F