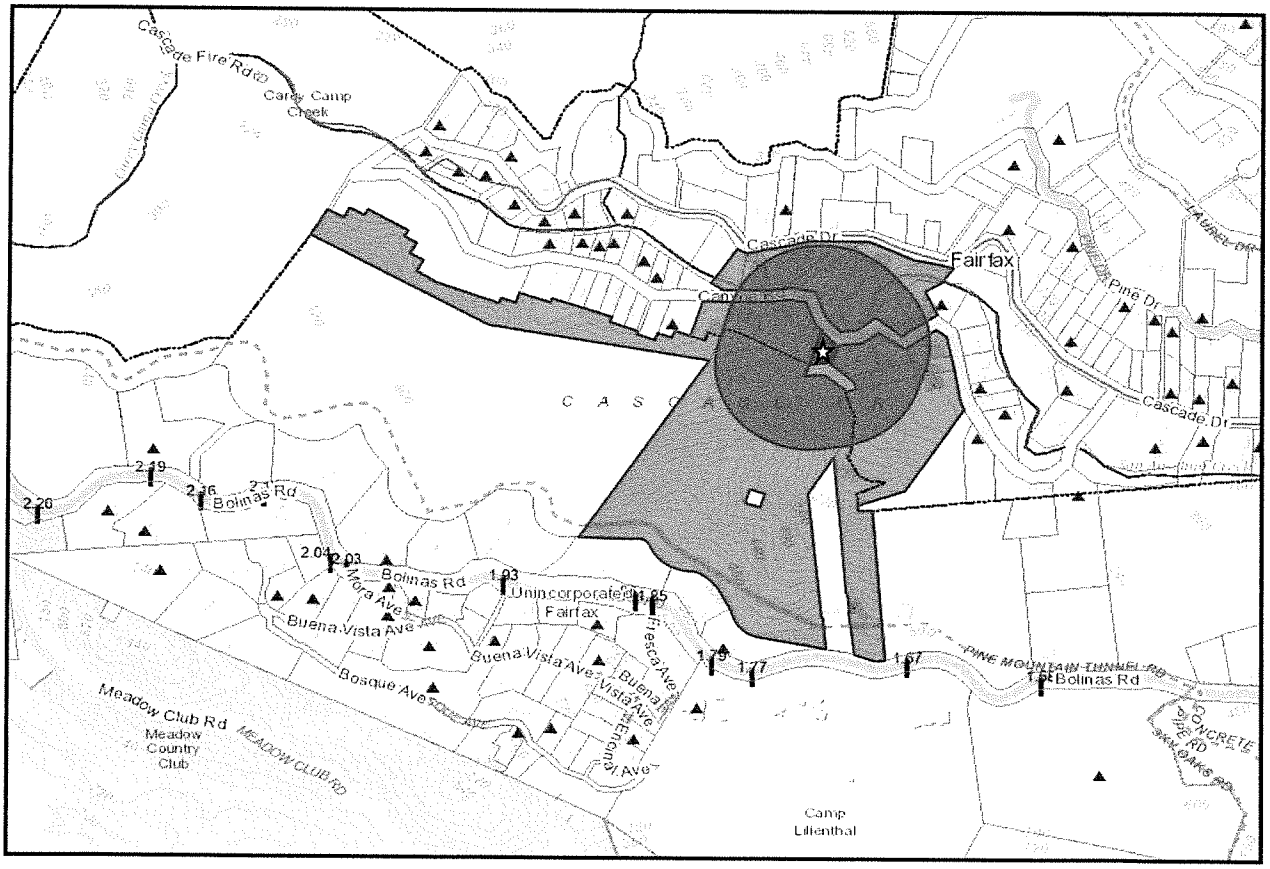
TOWN OF FAIRFAX
STAFF REPORT
Department of Planning and Building Services

TO:	Fairfax Planning Commission
DATE:	July 16, 2020
FROM:	Ben Berto, Director of Planning and Building Services Linda Neal, Principal Planner
LOCATION:	131 Canyon Rd.; APN # 003-032-16
PROJECT:	Single-family Residence
ACTION:	Hill Area Residential Development, Design Review, Excavation, Encroachment and Tree Removal Permits, Retaining Wall Height Variance; Application # 20-7
APPLICANT:	Vlad and Paula Iojica
OWNER:	Same
CEQA STATUS:	Categorical Exemption, § 15303(a) and 15305(b)



131 CANYON ROAD
APN # 003-032-16

AGENDA ITEM # 4

DESCRIPTION

Applications were submitted for Hill Area Residential Development, Design Review, Excavation and Encroachment permits as well as a Retaining Wall height variance on December 16, 2019. The project was declared complete on June 17, 2020.

The project consists of the following: a) construction of a 3 story, 23 foot-tall, 1,230 square-foot, 2 bedroom, 1 ½ bathroom, single-family residence with an attached one car carport and a 150 square-foot storage room on the first floor, 643 square feet providing a living room, kitchen, dining room, and ½ bath on the second floor with a roughly 217 square-foot triangular deck off the dining room, entry and living room and 587 square feet providing 2 bedrooms and 1 bathroom on the third floor; b) construction of a 17 foot wide driveway accessing the carport and additional 2 uncovered parking spaces; c) construction of a 5 foot-tall rock retaining wall along 34 feet of the site frontage to create the Ross Valley Fire Department required fire department turnout; and d) excavation to the rear of the structure and construction of a roughly 2 to 7 ½ foot-tall retaining wall to create a 411 square-foot patio.

The project grading consists of roughly 118 cubic yards of cut material to create the driveway, fire truck turn out, structure foundation, rear patio area and drainage improvements, and roughly 82 cubic yards of off-haul.

The house entryway is located on the west side of the structure providing entry to the second floor living area from the driveway and parking area.

The residence complies with the regulations set forth in the Residential Single-family RS -6 Zone District as follows:

	Front Setback	Rear Setback	Combined Front/rear Setback	Side Setbacks	Combined Side Setbacks	FAR	Coverage	Height
Required/ Permitted	**6 ft.**	**12 ft.**	**35 ft.**	**5 ft. and 5 ft.**	**20 ft.**	**.40**	**.35**	**28.5 ft., 3 stories**
Proposed	**10 ft.**	**33 ft.**	**43 ft.**	**6 ft. & 14 ft.**	**20 ft.**	**.26**	**.29**	**23 ft., 3 stories**

BACKGROUND

The 5,353 square-foot site is 55 to 58 feet wide and slopes up from the south side of Canyon Road at an average rate of 58%.

The parcel was created by the recording of Map No. 1 of Cascade Estates on May 25, 1926 at the Marin County Recorder's Office.

There is an existing utility box located within the Canyon Road right-of-way just east of the site.

A seasonal drainage course enters the property from the developed property to the west near the center of the site and runs along its west side to the street where it flows along the south side of Canyon Road to 121 Canyon where the water is taken underneath Canyon Road and into the San Anselmo Creek channel north of the site.

REQUIRED DISCRETIONARY PERMITS

The project requires the approval of a Hill Area Residential permit, Excavation permit, Tree Removal permit, Retaining Wall Height Variance and a Design Review permit. The required discretionary permits and analysis of project compliance with the related sections of the Town Code and Zoning Ordinance are found below.

The project provides the required 3 parking spaces per Town Code § 17.052.030(A)(1) and (2), and the open carport partially underneath the house provides the one covered parking space required by Town Code § 17.052.010(D).

Hill Area Residential Development

The purpose of the Hill Area Residential Development Permit is to encourage the maximum retention of natural topographic features, minimize grading of hillside areas, provide a safe means of ingress and egress to and within hillside areas, minimize water run-off and soils erosion during and after construction, prevent loss of life, reduce injuries and property damage and minimize economic dislocations from geologic hazards, and to ensure that infill development on hillside lots is of a size and scale appropriate to the property and is consistent with other properties in the vicinity under the same zone classification [Town Code sections 17.072.010(A) and (B)].

Town Code §17.072.090(C)(1) requires graded slopes to be sculptured and contoured to blend with the natural terrain and Town Code §17.072.090(C)(3) requires that the height of retaining walls be minimized within the Hill Area Residential Development Overlay Zones.

Town Code § 17.072.090(D) indicates that projects within the Hill Area Residential Development Overlay Zone shall be designed to minimize disruptions of existing ecosystems.

The only walls proposed on the site are the foundation walls within the footprint of the proposed house, the walls to create the driveway and a wall to create the level patio area at the rear, south side of the residence. A roughly 5 foot-tall gabion wall is proposed within the right-of-way along the property frontage to widen the road and create a fire truck pull out.

The house design is relatively unarticulated, with the top of the front façade approximately 37 feet above the street. The 23-foot tall x 36 foot-wide front mass is broken up by the triangularly-shaped front entry deck extending out a maximum of 17 feet from the first floor (second level) of the residence.

The property is within ¼ mile of a known Northern Spotted Owl nesting site. Therefore, construction may not occur or must be minimized and/or monitored to be kept below certain noise levels to limit negative impacts to the birds during the nesting season which runs from February 1st through July 1st. Acts that result in the disturbance or death of Northern Spotted owns are a federal offense.

Drainage and Slope Stability

The Town Engineers have reviewed the entire body of information provided by the applicants on the project including the project engineering and architectural plans as well as the geotechnical letter by Dennis Furby, Consulting Geotechnical Engineer dated 9/22/17, the geotechnical report by Earth Science Consultants dated 2/9/14 and the hydrology report (storm water control plan) by VIA Atelier, dated November 2019. After completing their review and visiting the site on 1/3/20, they have determined that the project can be constructed as proposed without creating any significant geologic or hydrologic hazards for adjacent public or private properties as long as certain conditions are met (Attachment B – Town Engineer's memorandum dated 6/9/20).

Runoff from the roof, rear patio, and portions of the parking and driveway will be collected with downspouts, storm drain inlets, and drainage piping that will carry the water around the house and deposit most of it into storm water storage tank under the uncovered parking area where it will be released in a controlled manner to a bioretention planter located within the Canyon Road right-of-way along the property frontage. A public works encroachment permit shall be obtained and a recordable encroachment/improvement maintenance agreement for the private drainage improvement within the public right-of-way shall be prepared, approved by the Fairfax Public Works Department, and recorded at the Marin County Recorder's Office prior to issuance of the building permit for the project if approved. Some run-off would be directed to a storm drain inlet on the west side of the proposed driveway where it would be collected, taken underneath the driveway entrance and then be released alongside Canyon Road where it eventually flows to a culvert that runs under the road at 121 Canyon and then is deposited into the San Anselmo Creek.

Retaining Wall Height Variance and Excavation Permit

The house has been designed with a driveway accessing the parking area because the front property line for the site is set back from the edge of the paved portion of Canyon Road some 5 to 24 feet at an angle. Designing the project with head-in parking would have resulted in the parking being located almost entirely off the property within the right-way-way, or, if pushed back onto the site, would require retaining walls that would reach roughly 16 feet in height. The proposed design results in retaining walls for the driveway up to 6 ½ feet in height and minimizes the amount of required excavation.

The site is steep and the only usable outdoor area will be provided by the front deck and the patio at the rear of the site which will have walls reaching 8 feet height due to

the site steep slope.

In order to provide the roadway width to accommodate the fire truck pull out required by the Ross Valley Fire Department along the property frontage will require the construction of a wall reaching roughly 5 to 6 feet in height.

The proposed design minimizes excavation while also keeping the retaining walls at the minimum heights necessary to construct the improvements while complying with parking and Ross Valley Fire requirements and providing a minimum amount of usable outdoor living space similar to that available to other properties on hillside sites throughout the neighborhood.

It is noted that the retaining wall for the downhill (northeast) parking space will necessitate the removal of a healthy 18" dbh Valley Oak, the only tree the applicant hasn't already removed from the front of the site.

Design Review

Town Code §17.020.030(A) requires that the design of new residences be reviewed and approved by the Fairfax Planning Commission for compliance with the design review criteria contained in Town Code §17.020.040.

These criteria include but are not limited to the following:

"The proposed development shall create a well composed design harmoniously related to other facilities in the immediate area and to the total setting as seen from hills and other key vantage points in the community".

"The size and design of the structure shall be considered for the purpose of determining that the structure is in proportion to its building site and that it has balance and unity among its external features so as to present a harmonious appearance".

"The extent to which natural features, including trees, shrubs, creeks and rocks and the natural grade of the site are to be retained".

The house has been designed with a triangular deck that projects out from the front of the house and follows the angled front property line. The deck forms a portion of the covered parking space and breaks up the 3 story façade of the building frontage. The roof line slopes up away from the street following the natural upsloping site contours. Further articulation is achieved by alternating horizontal, hardi-plank siding on the first and 3rd levels painted gray (Benjamin Moore "Coventry Grey") with stucco siding and trim painted white (Benjamin Moore "Brilliant White") on the second level and through the use of various windows shapes and sizes. The roof will be dark grey asphalt shingled ("Weathered Wood") and the windows will be Milgard vinyl in white.

Staff believes there is a good likelihood that the 18" dbh Valley Oak proposed for

removal on northeast side of the parking area could be preserved if the parking space and attendant retaining wall were shifted to the northwest by 10 feet or so, and other tree protection measures are taken. The applicant has already removed virtually all of the other trees on the site with any proximity to the project, It is noted that the Fairfax Tree Committee has approved all of the tree removals, provided that a building permit (and preceding planning approvals) are received first. With the exception of the oak, the applicant has removed trees ahead of the approval timing and any opportunity for redesign for preservation. Given the unbroken façade of the front of the building, in staff's opinion is it important to preserve the one remaining healthy mature Valley oak that provides any natural context and visual screening of the front of the site. Recommended conditions of approval are proposed that will shift the parking space to the northwest and require other protection measures as deemed necessary by the Town Arborist.

A fire truck pull out will be created by widening the roadway to 20 - 21 feet along 34 foot-long section of the Canyon Road frontage east of the driveway entrance by constructing a gabion wall that will increase in height from roughly 2 feet to 5 feet.

The Commission may want to consider requiring the gabion wall to be replaced by an I-beam and wood lagging wall which is more typical of the type of walls found within the rights-of-way throughout Fairfax.

House Siting and Design

As indicated above, the siting of the proposed house is in an area that is already modified by the pre-emptive tree removal. The grading being proposed for the site is to construct the foundation, garage, drainage system, driveway, and supply line improvements for the proposed house. Most of the trees that need to be removed for the project construction have already been cut by the property owner. Justification for tree removal, as shown in the tree removal permit information, are because they are within the construction footprint, pose a fire hazard to the development once it is built, or they have serious health issues that cannot be mitigated. Only 2 trees remain on the site, which were also recommended to the Commission for removal by the Tree Committee.

The house and the resulting floor area ratio (FAR) are similar in size to other homes on similar sized lots in the neighborhood, having an FAR of .23 while homes at 189 Canyon, 195 Canyon, 181 Canyon, 177 Canyon and 171 Canyon have FAR's of .26, .28, .23, .26 and .27 (see table below).

131 CANYON ROAD – SIMILAR PROPERTIES DEVELOPMENT							
APN #	ADDRESS	LOT SIZE	HOUSE SIZE	# BEDROOMS	# BATHS	GARAGE	FAR
003-014-07	189 Canyon	6,750	1,650	3	2.5	0	.26
003-014-08	185 Canyon	7,000	1,974	2	2	456	.28
003-014-12	181 Canyon	6,750	1,572	2	2	0	.23
003-014-15	177 Canyon	7,000	1,840	2	2	0	.26

003-014-14	171 Canyon	6,250	1,690	2	2	180	.27
DEVELOPMENT OF PROPERTIES IN THE IMMEDIATE NEIGHBORHOOD ON CANYON ROAD							
003-032-02	155 Canyon	13,000	1,908	3	2	361	.15
003-032-06	75 Canyon	9,170	2,223	3	3	391	.24
003-032-19	145 Canyon	12,200	1,560	2	2	320	.13
003-032-23	151 Canyon	29,700	1,869	3	2	720	.07
003-032-28	35 Canyon	13,761	1.892	3	2.5	0	.14
003-032-41	67 Canyon	102,372	1,816	3	2	0	.02
003-032-43	49 Canyon	20,684	828	1	1	360	.04
131 Canyon		5,353	1,230	2	1.5	0	.23

Overall, the house has been designed to be in scale with the site and is similar in size to other structures on similar sized and sloped sites in the neighborhood and on similar sized and sloped sites throughout the hillsides of Fairfax.

However, the two of the three stories have been designed directly in line and they present a façade towards the street that reaches 28.5 feet in height, although only projecting 23 feet above the natural grade factors into measured maximum height as set forth in Town Code § 17.008.020, Height of Building. The referenced section of the code reads, "The vertical distance measured from a point of the structure directly above. At no point shall the height of the building exceed the allowable height above natural grade".

The visual impact of the front façade from the street will be substantial. It would be lessened significantly if the top story were stepped back 5 feet from the lower 2 stories. This would still leave room for a 7 foot deep patio at the rear of the house before reaching the large rock outcropping to the south of the proposed structure.

As noted previously, Staff also believes that the oak tree at the north east corner (number 52 in the tree removal recommendation and circled and numbered in red on page L2.0 of the project plans) adjacent to the uncovered parking space at the top of the driveway could be saved if the adjacent uncovered parking space, and section of wall creating the space were set back from tree # 52's trunk some distance. Subject to the review and recommendation of the Town Arborist, staff is recommending that the northeast parking space and accompanying retaining wall be moved 10 feet in a northerly direction. The relocation of the wall could also occur without reducing that on-site parking space, preserving the required 3 spaces. In light of the number of trees that have been removed from the site without prior required approval from the Town, this minor redesign seems reasonable. This tree is described by the project arborist as having good vigor though leaning to the east with the reason for removal being the location of the proposed retaining wall.

Landscaping and Lighting

The combination vegetative management/landscaping plan was reviewed and approved by the Ross Valley Fire Department on January 14, 2020 and requires the removal of 13 Bay trees and 5 Oak trees. The Tree Committee reviewed the tree removal application and recommended approval to the Commission at their 2/24/20 meeting (Attachment D). All but 2 of the trees recommended for removal at the January 14, 2020 Tree Committee meeting have already been cut down by the owner. Staff is familiar with Fire's standards for tree clearance, and believes that the Valley oak could be preserved with little if any pruning.

The proposed landscaping plan shown on page L2.0 of the project plans as the Vegetative Management Plan was approved by the Ross Valley Fire Department on 1/14/20 and will also have to be approved by the Marin Municipal Water District as complying with their indoor and outdoor requirements of District Code Title 13, Water Conservation, prior to issuance of the project building permit. Proposed planting in front consists of Salvia (sage). The plans propose drip irrigation for planted areas.

Four light fixtures are proposed for the exterior of the structure, 2 on either side of the front entry way on the second floor and 2 on the rear of the house by the sliding doors off each of the bedrooms. The fixtures direct light downward and are dark sky compliant (see page A7.1) of the plans.

Public Comment

The staff received e-mails from 2 neighbors urging the Commission to prohibit construction of the house until 2 pre-existing portions of Canyon Road that show signs of instability are repaired by the Town. They are concerned that the construction vehicles will cause the sections to collapse resulting in access to the rest of the homes on Canyon being eliminated or constricted to one-way path of travel.

Preventing construction under these circumstances is not a viable option for the Town. Condition # 18 of the attached Resolution No.2020-07 recommending approval of the project, provides that the applicant is responsible for any roadway damage that occurs due to the construction activities. The applicant is also required to create a video of roadway condition with the Public Works Department prior to issuance of the building permit and to submit a bond to the Town, in an amount determined by Public Works and/or the Town Engineer, to cover the costs of roadway damage should it occur during construction.

We have also received communication from member of the Tree Committee that the owner went ahead and removed trees from the site prior to the granting of the planning approvals for the project (Attachment F). The trees that have been removed within the footprint of the proposed house, which the applicant indicates was necessary to erect the story poles, in conflict with both the 2017 tree removal permit and the 2020 tree

removal recommendation. The 2017 permit was conditioned upon the trees not being removed until after issuance of the building permit and the 2020 application which was only a recommendation for approval to the Planning Commission (Attachment D). She is requesting that the owner be issued after the fact citations for the unpermitted tree removals from the site.

Other Agency/Department Comments/Conditions

Ross Valley Fire Department (RVFD)

RVFD submitted written requirements for the project and the approved Vegetative Management Plan (VMP) which have been incorporated into conditions of approval in the attached resolution and are summarized as follows:

All vegetation and construction materials are to be maintained away from the residence during construction, hydrant flow and location are to be identified before construction begins and hydrant must no flow less than 500 gallons per minute at 20 pounds per square inch (psi), a fire sprinkler system shall be installed throughout the entire building in compliance with the requirements of the National Fire Protection Association 13-D and local standards (plans must be submitted to the fire department and be approved prior to issuance of the building permit), interconnected smoke detectors with AC power shall be installed throughout the structure in each bedroom, centrally located in the corridor and over the center of all stairways with a minimum of one detector per story, carbon monoxide alarms shall be installed throughout the building and back lit or internally illuminated address numbers at least 4 inches tall must be installed near the front door and controlled by a photocell that is switched off only by a breaker so the address remains illuminated all night. Conditions pertaining to the VMP are: no tree subject to regulation by the Fairfax Tree Ordinance shall be removed without obtaining a tree removal permit from the Town, vegetation within 30 feet of the structure shall be irrigated and no seasonal grasses shall be allowed, every effort shall be taken to ensure erosion control efforts are in compliance with standards established by Town regulations, the approved VMP is in effect for the life of the property, vegetation shall be maintained to ensure address numbers are visible from the street from both angles of approach and minimum standards must be in place prior to final fire clearance which is required prior to the project final inspection.

Ross Valley Sanitary District (FVSD)

RVFD submitted written requirements which have been incorporated into conditions of approval in the attached resolution and are summarized as follows:

A permit shall be obtained from the Sanitary District prior to the issuance of the building permit, the existing sewer lateral shall be tested in accordance with RVSD Ordinance 100 and Section 02735 and correction made if necessary, a certificate of compliance shall be obtained from the district, and if possible, the proposed sewer lateral should be

relocated so that it does not run under the proposed retaining wall to avoid settlement damage and promote better access for maintenance and repair.

Marin Municipal Water District (MMWD)

MMWD submitted written requirements which have been incorporated into conditions of approval in the attached resolution and are summarized as follows:

Complete a High Pressure Water Service application, submit a copy of the building permit, pay fees, complete structure foundation within 120 days of application, comply with District's rules and regulations in effect at the time service is requested, comply with all indoor and outdoor requirements of District Code 13 (Water Conservation), landscaping plans must be reviewed and approved by the district, comply with backflow prevention requirements and Ordinance 429 requiring the installation of greywater recycling systems when practicable.

Fairfax Public Works Department

All large trucks with more than 2 axels accessing the site for construction will be limited to the hours of 9 AM to 3 PM.

Trucks removing off-haul will be limited to 10-yard dump trucks.

The driveway improvements shall be completed and be signed off by the Town Engineer, the Building Official/Public Works Managers and the Ross Valley Fire Department before construction on the house begins.

Road closures shall be noticed in the field a minimum of 5 days prior to the event and individual written notifications shall be delivered to each resident on Bay Road.

RECOMMENDATION

Conduct the public hearing.

Move to approve application # 20-7 by adopting Resolution No. 2020-07 setting forth the findings and conditions for the project approval, including but not limited to the following amendments:

1. The design of the structure shall be modified to shift the 3rd upper floor back from the façade of the lower two floors 5 feet with the final design reviewed and approved by the Planning Director and the Town Engineer prior to issuance of the project building permit.

2. The northeasterly parking space and retaining wall parking area shall be moved in a northerly direction a distance from tree # 52 that is recommended by the Town Arborist, but in no case shall be less than 10 feet. Other tree protection

measures recommended by the Town Arborist (e.g.,mulch, tree protection fencing, foundation modifications, are herein incorporated by reference as conditions of approval.

3. Prior to issuance of any of any building permits for the project the applicant or his assigns shall submit a construction plan to the Public Works Department which may include but is not limited to the following:

a. Construction delivery routes approved by the Department of Public Works.
b. Construction schedule (deliveries, worker hours, etc.)
c. Notification to area residents
d. Emergency access routes

4. The applicant shall prepare, and file with the Public Works Director, a video tape of the roadway conditions on the public construction delivery routes (routes must be approved by Public Works Director).

5. Submit a cash deposit, bond or letter of credit to the Town in an amount that will cover the cost of grading, weatherization and repair of possible damage to public roadways. The applicant shall submit contractor's estimates for any grading, site weatherization and improvement plans for approval by the Town Engineer. Upon approval of the contract costs, the applicant shall submit a cash deposit, bond or letter of credit equaling 100% of the estimated construction costs.

6. All large trucks with more than 2 axels accessing the site for construction will be limited to the hours of 9 AM to 3 PM.

7. Trucks removing off-haul will be limited to 10-yard dump trucks.

8. The driveway and fire truck pull out improvements shall be completed and be signed off by the Town Engineer, the Building Official/Public Works Managers and the Ross Valley Fire Department before construction on the house begins.

9. Road closures shall be noticed in the field a minimum of 48 hours prior to the event and individual written notifications shall be delivered to each potentially impacted resident on Canyon Road.

ATTACHMENTS

Attachment A – Resolution No. 2020-07
Attachment B – Town Engineer memorandum dated 6/9/20
Attachment C - Project geotechnical and hydrology reports
Attachment D – 2020 Fairfax Tree Committee recommendation and tree removal application & 2017 Tree Committee approval application

Attachment E – Public comments: E-mail from Martha Ture, dated 2/16/20, e-mail from Jean Irving dated 7/6/20
Attachment F – e-mails from Tree Committee Member Benson
Attachment G – e-mail from property owner/applicant

RESOLUTION NO. 2020-07

A Resolution of the Fairfax Planning Commission Approving Application No. 20-7 for a Hill Area Residential Development, Excavation, Tree Removal, Retaining Wall Height Variance and Design Review Permits for a Residence at 131 Cascade Drive

WHEREAS, the Town of Fairfax has received an application from to build a 3-story, 1,230 square-foot, 2 bedroom, 1½ bathroom single-family residence with an attached carport on 12/16/19 which was declared complete on 6/17/20; and

WHEREAS, the Planning Commission held a duly noticed Public Hearing on May 21, 2020 at which time the Planning Commission determined that the project complies with the Hill Area Residential Development Overlay Ordinance, Excavation Ordinance, Tree Removal Ordinance, Retaining Wall Height Variance and Design Review Regulations; and

WHEREAS, based on the plans and other documentary evidence in the record the Planning Commission has determined that the applicant has met the burden of proof required to support the findings necessary to approve the Hill Area Residential Development, Excavation, Tree Removal, Retaining Wall Height Variance and Design Review Permits; and

WHEREAS, the Commission has made the following findings:

The project is consistent with the 2010-2030 Fairfax General Plan as follows:

Policy LU-7.1.5: New and renewed residential development shall preserve and enhance the existing character of the Town's neighborhoods in diversity, architectural character, size and mass.

Policy LU-7.2.2: To the extent feasible natural features including the existing grade, mature trees and vegetation shall be preserved for new and renewed development.

Policy LU-4.1.4: New and renewed development shall be designed to minimize run-off in a manner that does not cause undue hardship on neighboring properties.

Policy S-3.1.3: Maximize access and egress for emergency response vehicles.

Hill Area Residential Development

As amended, the proposed development is consistent with the General Plan and the Residential Single-family RS 6 Zone regulations.

1. The site planning preserves identified natural features as much as possible while also complying with other agencies' regulations and being designed to

meet the owner's personal needs.

2. Vehicular access and parking are adequate.

3. Once the project design has been amended to; a) step the 3rd floor back 5 feet from the 1st 2 floors; b) relocate the uncovered parking space at the top of the drive a distance recommended by the project arborist but no less than 10 feet to retain oak # 52 as shown in the Tree Committee recommendation packet dated 2/27/20; and, c) replace the gabion wall at the property frontage with an I beam and wood lagging wall, the proposed development will harmonize with surrounding residential development and meets the design review criteria contained in Town Code § 17.020.040.

4. The approval of the Hill Area Residential Development permit for one single-family residence and one accessory dwelling unit on this 5,353 square foot parcel shall not constitute a grant of special privilege and shall not contravene the doctrines of equity and equal treatment.

5. The development and use of property as approved under the Hill Area Residential Development Permit will not cause excessive or unreasonable detriment to adjoining properties or premises, or cause adverse physical or economic effects thereto, or create undue or excessive burdens in the use and enjoyment thereof, or any or all of which effects are substantially beyond that which might occur without approval or issuance of the use permit.

6. Approval of the proposed Hill Area Residential Development permit is not contrary to those objectives, goals or standards pertinent to the particular case and contained or set forth in any Master Plan, or other plan or policy, officially adopted by the City.

7. Approval of the Hill Area Residential Development permit will result in equal or better development of the premises than would otherwise be the case.

Excavation Permit

8. The Town Engineers have reviewed the following plans and reports and have determined the project can be constructed, with certain conditions of approval, without creating any hazards:

    a. Architectural plans by Rich Rushton, revision date 35/20, pages A1.1, A4.3, A2.5, A6.1, and A7.1, A6.1, A7.1, Engineering plans by Vlad Iojica, P.E. dated 4/30/20, pages C1.0, C2.0, C2.0a, C2.1, C3.0, C3.1, C4.0, C4.1, two different page C5.0's showing different construction details and L2.0, the tree protection and removal plan and report by Dan McKenna, ISA certified project arborist, report dated 7/12/17, plan revision date 12/19/19.

9. Based on the Town Engineer's review and recommendation that the project can be safely constructed, the Planning Commission finds that:

10. The health safety and welfare of the public will not be adversely affected;

11. Adjacent properties are adequately protected by project investigation and design from geologic hazards as a result of the work;

12. Adjacent properties are adequately protected by project design with the following revisions; a) step the 3rd floor back 5 feet from the 1st 2 floors; b) relocate the uncovered parking space at the top of the drive a distance recommended by the project arborist to retain oak # 52 as shown in the Tree Committee recommendation packet dated 2/27/20; and, c) replace the gabion wall at the property frontage with an I beam and wood lagging wall.

13. The proposed drainage system depicted on page C4.0 of the 4/30/20 engineering plans by Vlad Iojica, from drainage and erosion problems as a result of the work;

14. The amount of the excavation or fill proposed is not more than that required to allow the property owner substantial use of his or her property;

15. The visual and scenic enjoyment of the area by others will not be adversely affected by the project more than is necessary;

16. Natural landscaping will not be removed by the project more than is necessary; and

17. In compliance with Town code § 17.072.090(c)(4), grading of site will not occur from October 1st through April 1st of each year. Therefore, the time of year during which construction will take place is such that work will not result in excessive siltation from storm runoff nor prolonged exposure of unstable excavated slopes.

22. Construction may not occur or must be minimized and/or monitored to be kept below certain noise levels between February 1st and July 1st each year during the Northern Spotted Owl nesting season unless a plan for allowing construction activities during this period is submitted by a qualified spotted owl biologist and approved by the State, with documentation of the approval provided to the Town, prior to initiating any construction activities. All requirements listed in the plan, including potential onsite monitoring, must be met by the applicants at all times. Therefore, negative impacts to the owl species will be limited.

Retaining Wall Height Variance

23. The proposed retaining walls heights, due to the steep slope and narrow width of the site, are necessary construct required parking, fire truck pull out and foundation for the structure while minimizing excavation. Therefore, the site topography and small size are the special circumstances that require the walls exceeding the permitted height to allow the owner construction privileges enjoyed by other property owners in the vicinity and under identical zone classification.

24. The wall height variance will not constitute a grant of special privilege, is consistent with the limitations upon other properties in the vicinity and under identical zone classification, and is consistent with the objectives of this title.

25. The strict application of this title would result in excessive or unreasonable hardship.

26. The granting of the variance of adjustment will not be detrimental to the public welfare or injurious to other property in the vicinity in which the property is situated.

WHEREAS, the Commission has approved the project subject to the applicant's compliance with the following conditions:

1. Architectural plans by Rich Rushton, revision date 35/20, pages A1.1, A4.3, A2.5, A6.1, and A7.1, A6.1, A7.1, Engineering plans by Vlad Iojica, P.E. dated 4/30/20, pages C1.0, C2.0, C2.0a, C2.1, C3.0, C3.1, C4.0, C4.1, two different page C5.0's showing different construction details and L2.0, the tree protection and removal plan and report by Dan McKenna, ISA certified project arborist, report dated 7/12/17, plan revision date 12/19/19 with the following design modifications to be approved by the Planning Director and the Town Engineer prior to issuance of the building permit:

a. The design of the structure shall be modified to shift the 3rd upper floor back from the façade of the lower two floors 5 feet with the final design reviewed and approved by the Planning Director and the Town Engineer prior to issuance of the project building permit.

b. The retaining wall on the east side of the parking area shall be moved a distance from the trunk of tree # 52 recommended by the project arborist, and approved by the Planning Director/ Town Arborist as adequate to retain and maintain the continued good health of the tree.

2. Prior to issuance of any of the building permits for the project the applicant or his assigns shall submit a construction plan to the Public Works Department which may include but is not limited to the following:

a. Construction delivery routes approved by the Department of Public Works.
b. Construction schedule (deliveries, worker hours, etc.)
c. Notification to area residents
d. Emergency access routes

3. The applicant shall prepare, and file with the Public Works Director, a video tape of the roadway conditions on the public construction delivery routes (routes must be approved by Public Works Director).

4. Submit a cash deposit, bond or letter of credit to the Town in an amount that will cover the cost of grading, weatherization and repair of possible damage to public roadways. The applicant shall submit contractor's estimates for any grading, site weatherization and improvement plans for approval by the Town Engineer. Upon approval of the contract costs, the applicant shall submit a cash deposit, bond or letter of credit equaling 100% of the estimated construction costs.

5. The foundation and retaining elements shall be designed by a structural engineer certified as such in the state of California. Plans and calculations of the foundation and retaining elements shall be stamped and signed by the structural engineer and submitted to the satisfaction of the Town Structural Engineer.

6. The grading, foundation, retaining, and drainage elements shall also be stamped and signed by the site geotechnical engineer as conforming to the recommendations made by the project Geotechnical Engineer.

7. Prior to submittal of the building permit plans, the applicant shall secure written approval from the Ross Valley Fire Authority, Marin Municipal Water District and the Ross Valley Sanitary District noting the development conformance with their recommendations.

8. Submit 3 copies of the record of survey with the building permit plans.

9. All retaining walls that are visible from the street and are constructed of concrete shall be heavily textured or colorized in a manner approved by planning staff prior to issuance of the building permit. This condition is intended to mitigate the visual impact of the proposed walls.

10. Three copies of the Tree Protection/Preservation Plan by prepared by Dan McKenna, project arborist, shall be submitted with the building permit application and all recommendations included in this report shall be conditions of the project approval including but not limited to recommendations for the treatment of multi-stemmed trees and tree protection fencing, trunk and limb protection and soil armoring. All the inspections contained in the inspection schedule on page I4 of the report shall be made by the project arborist who shall provide the Town with

written verification after each inspection that the work is progressing in compliance with the recommendations and conditions of the arborist.

11. Prior to the removal of any trees not approved by the Planning Commission through this action, the applicant shall secure a tree cutting permit, if required, from the Fairfax Tree Committee prior to removal of any on-site trees subject to a permit under Town Code Chapter 8.36. To further minimize impacts on trees and significant vegetation, the applicant shall submit plans for any utility installation (including sewer, water and drainage) which incorporates the services of the project arborist to prune and treat trees having roots 2 inches or more in diameter that are disturbed during the construction, excavation or trenching operations. In particular, cross country utility extensions shall minimize impacts on existing trees. Tree root protection measures may include meandering the line, check dams, rip rap, hand trenching, soil evaluation and diversion dams. Any pruning shall take place during the winter when trees are dormant for deciduous species and during July to August for evergreen species.

12. If deemed necessary by the Town Engineers, the applicants shall prepare a drainage system maintenance agreement including a recordable exhibit of the proposed drainage system in its entirety including a maintenance schedule to be approved by the Town Engineer. The maintenance agreement will have to be signed by the owner, notarized and recorded at the Marin County Recorder's office prior to issuance of the building permit.

13. During the construction process the following shall be required:

14. The geotechnical engineer and the project arborist shall be on-site during the grading process and both shall submit written certification to Town Staff that the grading and tree protection measures have been completed as recommended prior to installation of foundation and/or retaining forms and drainage improvements, piers and supply lines.

15. Prior to the concrete form inspection by the building official, the geotechnical and structural engineers shall field check the forms of the foundations and retaining elements and provide written certification to Town staff that the work to this point has been completed in conformance with their recommendations and the approved building plans.

16. The Building Official shall field check the concrete forms prior to the pour.

17. All construction-related vehicles including equipment delivery, cement trucks and construction materials shall be situated off the travel lane of the adjacent public right(s)-of-way at all times. This condition may be waived by the Building Official on a case-by-case basis with prior notification from the project sponsor.

18. Any proposed temporary closures of a public right-of-way shall require prior approval by the Fairfax Police Department and any necessary traffic control, signage or public notification shall be the responsibility of the applicant or his/her assigns. Any violation of this provision will result in a stop work order being placed on the property and issuance of a citation.

19. Prior to issuance of an occupancy permit the following shall be completed:

a. The geotechnical engineer shall field check the completed project and submit written certification to Town Staff that the foundation, retaining, grading and drainage elements have been installed in conformance with the approved building plans and the recommendations of the soils report.

b. The Planning Department and Town Engineer shall field check the completed project to verify that all planning commission conditions and required engineering improvements have been complied with including installation of landscaping and irrigation prior to issuance of the certificate of occupancy.

20. Excavation shall not occur between October 1st and April 1st of any year. The Town Engineer has the authority to waive this condition depending upon the weather.

21. The roadways shall be kept free of dust, gravel and other construction materials by sweeping them, daily, if necessary.

22. Any changes, modifications, additions or alterations made to the approved set of plans will require a modification of Application #20-7. Modifications that do not significantly change the project, the project design or the approved discretionary permits ***may*** be approved by the Planning Director. Any construction based on job plans that have been altered without the benefit of an approved modification of Application 20-7 will result in the job being immediately stopped and red tagged.

23. Any damages to the public portions of Cascade Drive or Canyon Road, or other public roadway used to access the site resulting from construction-related activities shall be the responsibility of the property owner.

24. The applicant and its heirs, successors, and assigns shall, at its sole cost and expense, defend with counsel selected by the Town, indemnify, protect, release, and hold harmless the Town of Fairfax and any agency or instrumentality thereof, including its agents, officers, commissions, and employees (the "Indemnitees") from any and all claims, actions, or proceedings arising out of or in any way relating to the processing and/or approval of the project as described

herein, the purpose of which is to attack, set aside, void, or annul the approval of the project, and/or any environmental determination that accompanies it, by the Planning Commission, Town Council, Planning Director, Design Review Board or any other department or agency of the Town. This indemnification shall include, but not be limited to, suits, damages, judgments, costs, expenses, liens, levies, attorney fees or expert witness fees that may be asserted or incurred by any person or entity, including the applicant, third parties and the Indemnitees, arising out of or in connection with the approval of this project, whether or not there is concurrent, passive, or active negligence on the part of the Indemnitees. Nothing herein shall prohibit the Town from participating in the defense of any claim, action, or proceeding. The parties shall use best efforts, acting in good faith, to select mutually agreeable defense counsel. If the parties cannot reach agreement, the Town may select its own legal counsel and the applicant agrees to pay directly, or timely reimburse on a monthly basis, the Town for all such court costs, attorney fees, and time referenced herein, provided, however, that the applicant's duty in this regard shall be subject to the Town's promptly notifying the applicant of any said claim, action, or proceeding.

25. The applicant shall comply with all applicable local, county, state and federal laws and regulations. Local ordinances which must be complied with include, but are not limited to: the Noise Ordinance, Chapter 8.20, Polystyrene Foam, Degradable and Recyclable Food Packaging, Chapter 8.16, Garbage and Rubbish Disposal, Chapter 8.08, Urban Runoff Pollution Prevention, Chapter 8.32 and the Americans with Disabilities Act.

26. Conditions placed upon the project by outside agencies or by the Town Engineer may be eliminated or amended with that agency's or the Town Engineer's written notification to the Planning Department prior to issuance of the building permit.

27. Conditions placed upon the project by the project arborist may be amended or eliminated by the approval of the Planning Director after receiving a request for the elimination/amendment in writing from the project arborist.

28. The building permit plans shall be reviewed and approved by the Town Engineer, at the expense of the applicant, prior to issuance of the building permit. The project shall be inspected by the Town Engineer prior to issuance of the occupancy permit for the residential structures for compliance with the engineering plans.

Ross Valley Fire Department (RVFD)

29. All vegetation and construction materials are to be maintained away from the residence during construction.

30. Hydrant flow and location are to be identified before construction begins and hydrant must no flow less than 500 gallons per minute at 20 pounds per square inch (psi).

31. A fire sprinkler system shall be installed throughout the entire building in compliance with the requirements of the National Fire Protection Association 13-D and local standards (plans must be submitted to the fire department and be approved prior to issuance of the building permit).

32. Interconnected smoke detectors with AC power shall be installed throughout the structure in each bedroom, centrally located in the corridor and over the center of all stairways with a minimum of one detector per story and carbon monoxide alarms shall be installed throughout the building.

33. Back lit or internally illuminated address numbers at least 4 inches tall must be installed near the front door and controlled by a photocell that is switched off only by a breaker so the address remains illuminated all night.

34. No tree subject to regulation by the Fairfax Tree Ordinance shall be removed without obtaining a tree removal permit from the Town.

35. Vegetation within 30 feet of the structure shall be irrigated and no seasonal grasses shall be allowed.

36. Every effort shall be taken to ensure erosion control efforts are in compliance with standards established by Town regulations.

37. The approved VMP is in effect for the life of the property.

38. Vegetation shall be maintained to ensure address numbers are visible from the street from both angles of approach and minimum standards must be in place prior to final fire clearance which is required prior to the project final inspection.

Ross Valley Sanitary District (FVSD)

39. A permit shall be obtained from the Sanitary District prior to the issuance of the building permit for the sewer lateral.

40. If possible, the proposed sewer lateral should be relocated so that it does not run under the proposed retaining wall to avoid settlement damage and promote better access for maintenance and repair (this condition has already been met by the applicant as shown on page C4.0 of the project engineering plans).

Marin Municipal Water District (MMWD)

41. Complete a High Pressure Water Service application.

42. Submit a copy of the building permit.

43. Pay fees and complete structure foundation within 120 days of application.

44. Comply with District's rules and regulations in effect at the time service is requested.

45. Comply with all indoor and outdoor requirements of District Code 13 (Water Conservation).

46. Landscaping plans must be reviewed and approved by the district prior to installation and irrigation system installation.

47. Comply with backflow prevention requirements and Ordinance 429 requiring the installation of greywater recycling systems when practicable.

Fairfax Building and Public Works Departments

48. All large trucks with more than 2 axels accessing the site for construction will be limited to the hours of 9 AM to 3 PM.

49. Trucks removing off-haul will be limited to 10-yard dump trucks.

50. The driveway improvements shall be completed and be signed off by the Town Engineer, the Building Official/Public Works Managers and the Ross Valley Fire Department before construction on the house begins.

51. Road closures shall be noticed in the field a minimum of 48 hours prior to the event and individual written notifications shall be delivered to each potentially impacted resident on Cascade Drive.

Miscellaneous

52. Construction shall be prohibited during the Northern Spotted Owl nesting season from February 1st through July 1st unless a plan for allowing construction activities during this period is submitted by a qualified spotted owl biologist and approved by the State, with documentation of the approval provided to the Town, prior to initiating any construction activities. All requirements listed in the plan, including potential onsite monitoring, must be met by the applicants at all times.

NOW, THEREFORE BE IT RESOLVED, the Planning Commission of the Town of Fairfax hereby finds and determines as follows:

The approval of the Hill Area Residential Development Permit, Excavation Permit, and Design Review Permit are in conformance with the 2010 – 2030 Fairfax General Plan, the Fairfax Town Code and the Fairfax Zoning Ordinance, Town Code Title 17; and

Construction of the project can occur without causing significant impacts on neighboring residences and the environment.

The foregoing resolution was adopted at a regular meeting of the Planning Commission held in said Town, on the 16th day of July, 2020 by the following vote:

AYES:
NOES:
ABSTAIN:

_____
Chair Green

Attest:

_____
Ben Berto, Director of Planning and Building Services

MILLER PACIFIC ENGINEERING GROUP

June 9, 2020
File: 201.186bltr.doc

Town of Fairfax
Planning and Building Services Department
142 Bolinas Avenue
Fairfax, California 94930

Attn: Ms. Linda Neal, Principal Planner

Re: Second Planning-Level Geologic, Geotechnical, and Civil Engineering Review
New Single-Family Residence
Canyon Road Parcel (APN 003-032-16)
Fairfax, California

Introduction

In response to your request and in accordance with our agreement dated March 20, 2018, this letter summarizes our second review of project plans and supporting documentation for the proposed construction of a new single-family residence, carport, and associated improvements on a currently-vacant parcel off of Canyon Road (APN 002-162-20) in Fairfax, California. The purpose of our services is to review the submitted documents, comment on the completeness and adequacy of the submittal in consideration of Town requirements, and to provide a recommendation to Town Planning and Building staff regarding project approval.

The scope of our services includes:

- A site reconnaissance to observe existing conditions and review proposed development features;
- Review of provided project documents for conformance to the Town of Fairfax Hill Area Residential Development Ordinance, specifically Town Code Sections 17.072.080(B), (C), (E), and (F), and Section 17.072.110 (C).
- Development of opinions regarding project compliance with applicable Town Code requirements; and
- Development of recommendations to Town staff as to whether the project may be safely constructed in consideration of any geologic, hydrologic, or geotechnical hazards.

It should be noted that the scope of our review is limited solely to geologic, geotechnical, and civil portions of the project, and does not include review of structural, architectural, mechanical, or other items beyond the scope of our qualifications. We recommend that non-geotechnical aspects of the plans be reviewed by suitably qualified professionals.

Project Description

The project generally includes construction of a new 1,200 square-foot, 3-story residence with attached 1-car carport on a moderately- to steeply-sloping, approximately 0.12-acre lot on the upslope side of Canyon Road. The residence will be constructed primarily via excavation into the slope, with new retaining walls up to about 9-feet high supporting the lower floors. The ground floor will include conditioned interior storage and a crawl space, while primary interior spaces will

ATTACHMENT B

occupy the upper 2-stories. An at-grade exterior patio off the upper floor will be accommodated by a new 9-foot site wall on the uphill side.

A new driveway will be graded to extend upslope from the northern corner of the property, which require new site retaining walls up to about 5-feet high. A new off-street parking space along Canyon Road will also be facilitated by a new retaining wall. Ancillary improvements will include new utility connections, site drainage improvements, landscaping, and other "typical" residential items.

Project Review

We performed a brief site reconnaissance on January 3, 2020 to observe existing conditions at the site. We also previously reviewed the following documents provided by the Town:

- Earth Science Consultants (2014), "Geotechnical Investigation, Smaller New House with Concrete Wall Parking Area, APN 003-032-16, Canyon Road/Fairfax, CA", Job No. 14-7044, dated February 9, 2014

- David L. Cramer, PLS (2014), "Record of Survey, Lands of iojica, D.N. 2013-064832, Marin County, California", Sheet 1 of 1, recorded October 31, 2014.

- Dan McKenna (2017), "Tree Protection Plan, Canyon Rd – Fairfax, CA 94930", dated July 12, 2017.

- Dennis Furby, P.E. (2017), "Geotechnical Engineering Services, Proposed Residential Development, Canyon Road, Fairfax, CA (AP No. 003-032-16)", Job No. 1226-2, dated September 22, 2017.

- Richard Rushton Architect (2019), "Iojica Residence, New Residence for Vlad Iojica, Canyon Road, Fairfax, CA", (Preliminary Architectural Plans) Project No. 15117, Sheets A1.1 through A7.5 (6 sheets total), dated November 28, 2019.

- Via Atelier (2019), "Single Family Residence, Canyon Road, Town of Fairfax, CA" (Preliminary Civil Plans), Job No. 1307A, Sheets C1.0 through C6.0 and L2.0 (10 sheets total), dated/signed December 12, 2019.

More recently, we reviewed the following documents in response to our first review comments:

- County of Marin Assessor-Recorder (2013), "Grant Deed, APN 003-032-16, File No.4901-4448753(LW), recorded October 11, 2013.

- First American Title Insurance Company (2013), "ALTA Owner's Policy", Policy No. 4448753, APN 003-032-16", dated October 11, 2013.

- Richard Rushton Architect (2020), "Iojica Residence, New Residence for Vlad Iojica, Canyon Road, Fairfax, CA", (Preliminary Architectural Plans) Project No. 15117, Sheets A1.1 A4.3, A6.1, and A7.1 (4 sheets total), planning submittal revision set dated March 5, 2020.

- Via Atelier (2019), "Single Family Residence, Canyon Road, Town of Fairfax, CA" (Preliminary Civil Plans), Job No. 1307A, Sheets C1.0 through C5.1 and L2.0 (11 sheets total), first revision set dated April 30, 2020.

Conclusions

Based on our site reconnaissance and document review, the following submittal items required by the Town of Fairfax Hill Area Residential Development Ordinance remain outstanding.

Hill Area Residential Development Ordinance

- Section 17.072.080(C) – Site Plan

1) The Site Plan indicates that site drainage will be collected and discharged via a cobble-lined level spreader/dissipator system within the Canyon Road right-of-way. Other improvements in the right-of-way include new utility connections, a new retaining wall, and a new off-street parking space. An encroachment permit should be required for all improvements within the right-of-way.

2) Conceptual site drainage plans indicate a new buried detention basin will be located beneath the driveway. Discharge will be via a new level spreader set on the slope below the driveway, and above the planned parking space/retaining wall, all of which is in the public right-of-way.

   It appears that the proposed drainage system will concentrate runoff in the corner of the property, where much of that water was previously sheet flow across the undeveloped slopes. The Civil and/or Geotechnical Engineers should comment on the potential for erosion and/or adverse drainage conditions within the ROW, or revise plans as necessary.

- Section 17.072.080(E) – Geotechnical Report

  The project geotechnical report was prepared in 2014 by Earth Science Consultants on the basis of subsurface exploration including 6 shallow test borings which were advanced to maximum depths between about 1- and 5.5-feet below the ground surface. No laboratory testing was apparently performed for the project. The report provides brief discussion of geologic hazards including erosion and slope instability/landsliding. Design criteria and geotechnical recommendations are provided for shallow footing foundations, retaining walls, concrete slabs on grade, and geotechnical site drainage.

  The 2017 letter by Dennis Furby indicates he will assume the role of Geotechnical Engineer of Record for the project and provide an updated report at the time of Building submittal. His letter indicates the design intent is to utilize a drilled-pier and grade beam foundation system for the residence, and shallow footings for site walls where shallow rock is encountered. The updated Geotechnical report should, at minimum, include subsurface exploration extending to the maximum planned excavation depth and provide discussion of temporary shoring/cut slope requirements based on OSHA soil-type classifications.

- Section 17.072.110(C) – Geotechnical Report Adequacy

3) We judge the existing geotechnical report does not adequately address geologic hazards which may affect the site. The report provides outdated seismic design criteria, does not provide exploration data at the depth of maximum planned excavations or suitably address temporary shoring requirements, and lacks recommendations for deep foundation systems and other geotechnical project elements.

   It is understood and expected that Dennis Furby will provide an updated Geotechnical Report with building-level submittals, which we judge is appropriate.

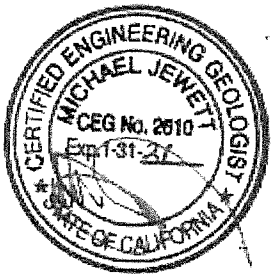
Recommendations

Based on our review, we recommend geotechnical project approval at the Planning level. Remaining items, including review of and design-level Grading, Drainage, and Erosion control plans, review of Structural and Construction Management plans, and review of the design-level geotechnical report can be handled at the Building Permit submittal level with minimal anticipated impact.

We trust that this letter contains the information you require at this time. If you have any questions, please call. We will directly discuss our comments with the applicant's consultants if they wish to do so.

Yours very truly,
MILLER PACIFIC ENGINEERING GROUP

REVIEWED BY:



Mike Jewett
Town of Fairfax Contract Geologist
Engineering Geologist No. 2610
(Expires 1/31/21)

Scott Stephens
Town of Fairfax Contract Engineer
Geotechnical Engineer No. 2398
(Expires 6/30/21)

DENNIS H. FURBY, PE
CONSULTING GEOTECHNICAL ENGINEER

DEC 16 2019

September 22, 2017
Job No. 1226-2

Vlad Iojica
9 Brookside Court
San Anselmo, CA 94960

Subject: Geotechnical Engineering Services
Proposed Residential Development
Canyon Road, Fairfax, CA
(AP No. 03-032-16)

Dear Mr. Iojica,
This letter is to inform the Town of Fairfax that I will be replacing Earth Science Consultants and providing geotechnical engineering services for the remainder of this project, as outlined in my Professional Services Agreement dated September 9, 2017. Prior to accepting the project, I performed the following tasks:

1. Reviewed the following preliminary drawings being prepared for planning submittal:
   - Architectural plans, sections & elevations, sheets A4.2, -4.3, -6.1 & -7.1 dated 8/2/17, by Rushton – Chartock Architects; and
   - Grading & Drainage Plan, sheet C4.0 dated 9/21/17, by VIA Atelier;
2. Reviewed the Geotechnical Investigation report dated February 9, 2016, including six test borings, prepared for the project by Earth Science Consultants (I understand that this report will be submitted to the Town of Fairfax for their Planning review);
3. Observed the existing site surface conditions on September 8, 20127.

The hillside site extends up to the south from Canyon Road (no street number designated yet). The proposed development is for a two-story single-family residence stepped into the hillside, and that will be supported above grade on a combination of drilled cast-in-place reinforced concrete piers interconnected with reinforced concrete gradebeams, and spread footings for the foundation stem walls where planned excavations expose firm natural soil/rock. The covered parking area will be created by excavation into the slope that will be retained by reinforced concrete walls up to a maximum of approximately 10 feet high. A smaller excavation into the toe of the slope is required by the fire department to increase the width of the road, and will be supported by a stone-filled gabion wall.

Based on my reviews and observations, I am prepared to assume responsibility for the geotechnical engineering services for the remainder of the project. Following Planning approvals, I will prepare an up-dated geotechnical report that confirms or modifies the soil design criteria for foundations and retaining walls, as appropriate, along with site drainage guidelines, for the Permit submittal. I also will be providing the required services during construction, and reporting the results upon satisfactory completion.

30 Via Holon, #18
Greenbrae, CA 94904

ATTACHMENT C

I trust this provides the information required at this time. Should you or others have further questions regarding the soil engineering aspects of this project, please call me.

Yours very truly,

D. H. FURBY, PE
ENGINEERING CONSULTANT

Dennis H. Furby
Geotechnical Engineer-326
(Expires 12/31/17)

DHF/dhf

1 copy submitted (viojica@via-eng.com)
cc: Rushton – Chartock Architects
Attn: Rich Rushton (rushtonchartock@comcast.net)
(additional copies may be printed as required for submittal to the Town of Fairfax)

EARTH SCIENCE CONSULTANTS
SOIL • FOUNDATION AND GEOTECHNICAL ENGINEERS

P. O. BOX 3410 / SAN RAFAEL, CA 94912-3410
415.383.0935 / FAX 415.388.6111
EMAIL: dirtsoil@sbcglobal.net

February 9, 2014
Job No. 14-7044

Mr. & Mrs. Iojica
1700 Albemarle Way
Burlingame, CA 94010

GEOTECHNICAL INVESTIGATION
Smaller New House with
Concrete Wall Parking Area
APN: 003-032-16
Canyon Road / Fairfax, CA

INTRODUCTION

This report presents the results of the geotechnical investigation we recently performed at the above site.

We understand it is desired to construct a moderate size 1-and-2 story, wood frame, single family residence slightly above the central portion of the property and construct a 2-car retaining wall supported parking area in the lower northern portion of the property. We understand the main house will be cut to varying depths into the underlying bedrock, including retaining walls of an increasing height as one proceeds from the front to the rear of the new house structure.

The purpose of our work was to perform a visual site observation and reconnaissance of exposed surface features, review existing soil and geologic data of the area, log representative exploration test borings, and provide our opinion in the form of conclusions and recommendations as they relate to our specialty field of practice, geotechnical engineering.

SITE CONDITIONS

The irregular-shaped natural hillside property is located adjacent to, up slope and south of Canyon Road, as shown on the Site Location Map, Plate 2. Generally, the site appears to be at natural grade and contour, with the ground cover consisting of variable grasses and plants, and variable sized trees within the property. However, in the lower eastern portion of the property, an apparent water service exists from the Marin Water District. Beyond the lower portion of the property is a variable location of an older roadway excavated cut slope generally about 7 feet in height with a steeper inclination of 55 degrees.

There appears to be natural terrain along the east side of the property. Also, there appears to be on the east side of the property natural terrain that shortly encounters a medium up slope to the house to the east. Generally, the terrain within the property line limits is moderately steep to steep with the terrain along the rear of the proposed concrete parking wall area having an inclination of about 23-25 degrees. The terrain at about the 4 corners of where the new house will be built has sloping inclination of about 24-25 degrees along the west side of the house footprint area. Along the right side of the proposed house footprint area, the terrain is steeper with an inclination varying from about 33-36 degrees. The greater property appears to be covered with natural variable vegetation, including apparent bay trees.

The terrain, where the proposed new house will be located, appears to consist of approximately parallel contours with, the terrain present in the western side of the property and extending into the adjacent property to the west, consisting of concave contours in the form of an apparent winter season drainage course that appears to have experienced previous intermittent erosion and sloughing. It appears that the terrain to the west of the proposed new house and extending into the adjacent property to the west serves as an apparent occasional intermittent drainage during the wet season

that has resulted in apparent sloughing and erosion and probably along with occasional surficial sliding.

The subsurface conditions at the site were explored by exploration test borings at the locations shown on the Site Plan, Plate 2. Each test boring was logged by our geotechnical engineer who recorded the various materials encountered. Logs of the test borings are presented on Plates 2-8. The Unified Soil Classification Chart which was used to describe the various materials encountered is presented on Plate 9.

Due to the presence of the existing steep terrain, we utilized portable exploration methods. The core samples were generally obtained with a 2 inch diameter, standard penetration, split barrel alloy steel sampler meeting the requirements of ASTM D1586.92, except that the drop hammer energy was a 42 pound hammer with a 24 inch drop and not a 140 hammer with 30 inch drop. Therefore, it was necessary to convert-reduce the field blow counts to equivalent standard penetration blow counts in accordance with the well established blow count conversion factor method as provided in the Proceedings of the American Society of Civil Engineers, No. 435, May 1954 by Sowers. This well established method has been used at Harding Lawson Associates for many years both in the U.S. and overseas. The field blow counts and blows per foot were multiplied by 0.24 to obtain the equivalent standard penetration blow counts. The actual original field blow counts can be obtained by multiplying the standard penetration blow counts as shown on the various boring logs by a factor of 4.16.

TEST BORING 1 was located at the down slope northwestern corner of the proposed new house location. Test Boring 1 initially encountered 2.5 feet of silty fine sand that was loose and dry that became medium dense at 2.5 feet. From 2.5-5 feet, we encountered silty fine sand that was dense. At a depth of 5 feet, we encountered gray-green Marine Volcanic Greenstone bedrock materials that were fresh and hard.

TEST BORING 2 was drilled adjacent to the upper southwestern corner of the proposed location of the new house. Test Boring 2 encountered 2 feet of silty fine sand that was loose and dry that became dense at a depth of 1 foot. Test Boring 2 could not be advanced beyond 2 feet due to the presence of an adjacent 5 foot slope with hard rock outcrop.

TEST BORING 3 was located at the upper southeastern corner of the proposed new house. Test Boring 3 initially encountered 1.1 foot of silty fine sand that was loose and dry that became dense at 1 foot. At 1.2 feet, we encountered greenish-gray Marine Volcanic Greenstone bedrock that was massive and hard.

TEST BORING 4 was performed adjacent to the lower right northeastern corner of the proposed new house. Test Boring 4 initially encountered 1.2 feet of silty fine sand that was loose and dry with small rock fragments. At 1.2 feet, we encountered gray-green Volcanic Greenstone bedrock that was fresh and hard.

TEST BORING 5, located at the upper southeastern corner of the proposed new garage or concrete wall parking area, initially encountered 4.4 feet of silty fine sand that was loose with small rock fragments that became medium dense at 1.5 feet and dense at 3 feet. At 4.4 feet, we encountered siltstone bedrock that was fractured, slightly weathered and medium to hard.

TEST BORING 6 was located adjacent to the northwestern corner of the proposed new garage or concrete wall parking area. Test Boring 6 initially encountered 1.5 feet of silty fine sand that was loose with small rock fragments that became medium dense at 0.9 feet. From 1.5-3 feet, we encountered silty fine sand that was dense with small rock fragments. At 3 feet, we encountered siltstone bedrock that was fractured, slightly friable and medium hard to hard.

Based upon our 40 years of continuous geotechnical engineering experience, IT IS OUR OPINION THAT THE VARIABLE ROCK EXCAVATION FOR THE PROPOSED NEW HOUSE FOOTPRINT AREA, CONSISTING OF A SPLIT-

LEVEL HOUSE, CONSISTING OF A HALF (1/2) STORY 1ST STORY and A FULL. STORY SECOND STORY (SECOND FLOOR), WILL GENERALLY RUN INTO HARDER-THAN-AVERAGE BEDROCK EXCAVATION. However, splitting the house structure within 2-floor levels will help lessen the rock excavation somewhat when compared with a full new house excavation at the same level.

For the up slope two corners of the proposed new concrete wall parking area or garage, below depths of 3-5.4 feet will likely encounter harder-than-average bedrock excavation. Also, it will be necessary to perform excavation of the short driveway between the edge of the existing asphalt roadway and the front of the two sides and rear concrete retaining wall for garage.

HOUSE RETAINING WALLS - In order to provide adequate lateral support for the new house retaining walls, it will be necessary to construct concrete retaining walls gaining their support from the underlying bedrock materials. Within the underlying bedrock formation, the retaining walls may be designed for a lateral earth pressure of 30 pounds per cubic foot, equivalent fluid weight. When the surface of the bedrock ends, then the retaining wall for the new house will have to be designed for a lateral earth pressure of 50 pounds per cubic foot, equivalent fluid weight, for the soil zone.

For resistance to lateral retaining wall loading, the portion of the spread footing foundations into the underlying bedrock may be designed for a bearing capacity value of at least 3,000 pounds per square foot for dead load plus live load. For resistance to retaining wall loading within the underlying bedrock, a passive pressure resistance of 400 pounds per cubic foot, equivalent fluid weight may be used.

All retaining walls should be provided with adequate subdrains and also be very carefully waterproofed. Because the retaining walls for the new house will cut into the natural hillside soil and rock materials, the retaining walls should be provided with a batch plant concrete waterproofing additive consisting of xypex or equivalent to help lesson the likelihood of seepage through construction joints within the retaining walls. All retaining walls should be provided with a gravel back subdrain as shown on Appendix 2.

For a lateral retaining wall resistance, the side of the footing extended into the underlying harder bedrock may be designed for a lateral passive pressure resistance of 400 pounds per cubic foot, equivalent fluid weight, and a co-efficient of sliding friction of 0.45. If harder bedrock is encountered during construction, these values may be increased at the direction of the soil engineer at that time if the conditions warrant such changes.

For retaining walls greater than 8 feet in height, a seismic surcharge should be added above that value for a soil surcharge of 10 pounds per cubic foot, equivalent fluid weight, and no surcharge necessary if reasonably hard bedrock is encountered.

The concrete floor slabs of the house should be a minimum of 5 inches in thickness and provided with at least No. 5 Steel Reinforcing Bars in both perpendicular directions of 12 inch centers. Beneath the concrete floor slabs, there should be an approved ASTM waterproof membrane and at least 4 inches of gravel drain rock. The concrete floor slabs should be provided with trench subdrains a minimum of 12 inches in width and a minimum of 12 inches in depth and provided with 4 inch diameter heavy-duty drainage pipes, holes down. Generally, the under-house concrete slab subdrain should be located on no more than about 16 feet centers.

OUTDOOR CONCRETE RETAINING WALLS OR GARAGE RETAINING WALLS should be designed and constructed in accordance with the previous section of this report for HOUSE RETAINING WALLS.

MITIGATION OF UNSTABLE AND EROSION-PRONE/ERODIBLE SITE SOILS ADJACENT TO AND UP SLOPE OF HOUSE AND PARKING WALL IMPROVEMENTS - During our site investigation, it was readily apparent that the soil materials along the up hill edge of the house and up slope into the east and extending locally down slope were performing well in place; we observed no apparent evidence of erosion and sloughing. However, as one proceeds towards the west, the soil materials were irregular with variable cracking and irregularities and hummocky in nature that indicated that those soils had been experiencing previous erosion and sloughing and are potentially of lower stability and were likely be a nuisance unless the unsatisfactory condition is mitigated. Recommended mitigation measures would include:

* Using the potentially unstable soils with a geogrid earth buttress similar to that shown on Plate 15; or

* Use of periodic engineered retaining walls gaining their support from the underlying competent and well-confined bedrock and with the wall back-fill provided with a retaining wall back-subdrain and with well-compacted rill and periodic concrete lined V-ditches.

In Summary, the irregular soil surface areas that have been subjected to previous sloughing, erosion and sliding are unsatisfactory and need to be mitigated by the use of the geogrid compacted fill buttress or periodic reinforced concrete retaining walls or a combination thereof depending upon the location.

*** It should be noted that the site soil materials generally consist of sandy soils and sandy soils are lacking binder and are prone to erosion and sloughing.

COLLECTION AND DISPERSAL OF ADJACENT TO AND UP SLOPE OF WALL SLABS AND RECONSTRUCTED SLOPE AREAS - At the present time, the area of previous erosion and sloughing and surface sliding has occurred and it must be adequately repaired and mitigated otherwise it will be a nuisance.

As part of the site improvements in addition to mitigation of the weaker soil areas, it will be necessary to intercept and discharge the drainage waters from the rain falling on the roof and slabs, steps, etc. Because the site soils are sandy in nature, greater-than-average care will be required with the proper collection and dispersal.

There is no adequate storm drain system at this site nor along the road.

The asphalt pavement in front of this property tilts very slightly towards the cut slope bank and appears to flow down slope towards the east and tilting towards the toe of the existing cut slope area to a drainage dispersal collection device in the edge of yard of the adjacent house to the east, that enters a 12 inch diameter drainage culvert and discharges in an area of lesser road-ability on the opposite side and down slope of the Canyon Road roadway. Therefore, in order to accomplish this procedure, we believe it is likely that it will be necessary to temporarily provide storage for the storm water that is collected by utilizing retention tank devices that are either manufactured from heavy-duty, plastic-type materials or use cast in place concrete materials. The amount of the runoff storage will be primarily influenced by the total square feet of concrete and roof and related surfaces, as well as the runoff from the soil materials adjacent to and up slope of the Marin improvements. The temporary-interim storage of the site generated runoff waters will have an adjustable valve control so that the amount of discharging temporarily stored storm water be adjusted as necessary, depending upon the performance, duration and type of storms. IT IS OUR OPINION THAT DRAINAGE STORAGE AND DISPERSAL METHOD I WOULD BE THE MOST SUITABLE.

SEISMIC AND EARTHQUAKE HAZARDS - For the California Building Code and periodic adjustments by the U.S. Geological Survey, this site is currently classified as a Class "C" Site (dense soil and rock).

Longitude of the site: -122.609 degrees
Latitude of the site: 37.975 degrees

The Risk Category is Category 2. However, due to occasional changes by the U.S. Geological Survey, these values and methods should be verified by the structural engineer.

We trust this report provides the information you require. Please call if you have further questions.

The following are attached and complete this report:

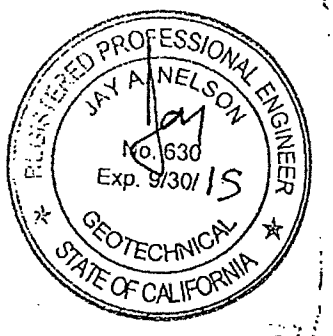
Plate 1	Site Location Map
Plate 2	Site Plan
Plates 3-8	Logs of Test Borings
Plate 9	Soil Classification Chart
Plate 10	Area Topographical Map
Plate 11	Upper Ross Valley Geology
Plate 12	Relative Stability Map
Plate 13	1982 Slope Failures
Plate 14	Site Profile
Plate 15	Geogrid Fill Details

Appendix 2 -	Subdrain Details
Appendix 3 -	Wall Surcharge Details
Appendix 3.1 -	House Appendages
Appendix 4 -	Fill Placement
Appendix 4.1 -	Hillside Fill Details
Appendix 4.3 -	Existing Older Cut and Fill Slope Maintenance
Appendix 5 -	Effect Upon Adjacent Land
Appendix 6 -	Construction Safety
Appendix 8 -	Land Maintenance
Appendix 8.1 -	Earth Buttress Details

Appendix 9 - Limitations
Appendix 10 - Construction Observation

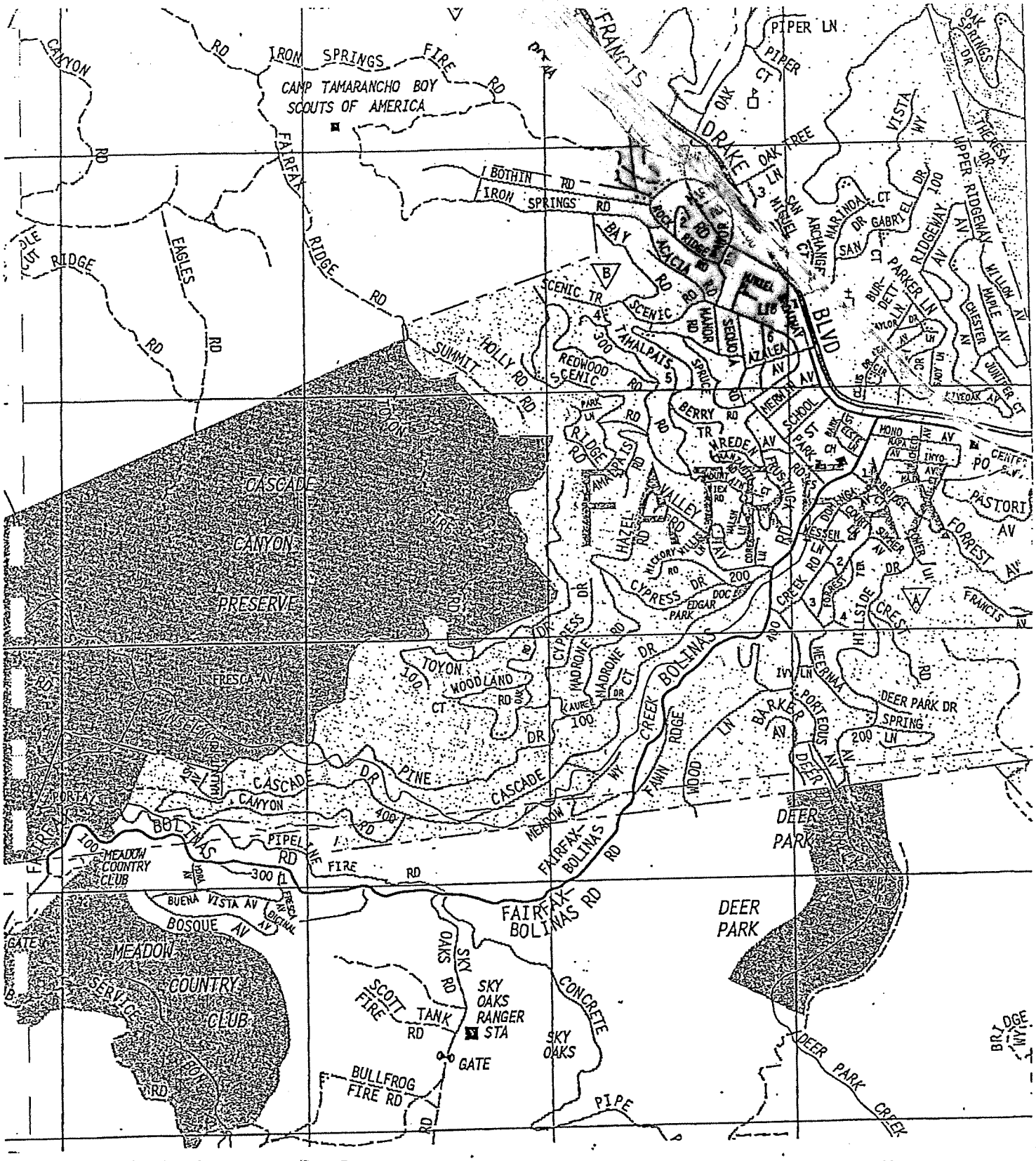
Appendix A - General Recommendations, Risks, Material Notes, Responsibility, Limitations and Related Items
Appendix B - Section 832, California Civil Code
Appendix G - General Foundation Notes
Appendix I - Nuisance and Liability for Land Condition
Appendix S - Sidewalks, Curbs, Patios, Etc.
Appendix V - Vegetation and Erosion Control

Yours very truly,
EARTH SCIENCE CONSULTANTS



Jay A. Nelson
Principal Geotechnical Engineer
Civil Engineer - 19738, expires 9/30/15
Geotechnical Engineer - 630

4 copies submitted

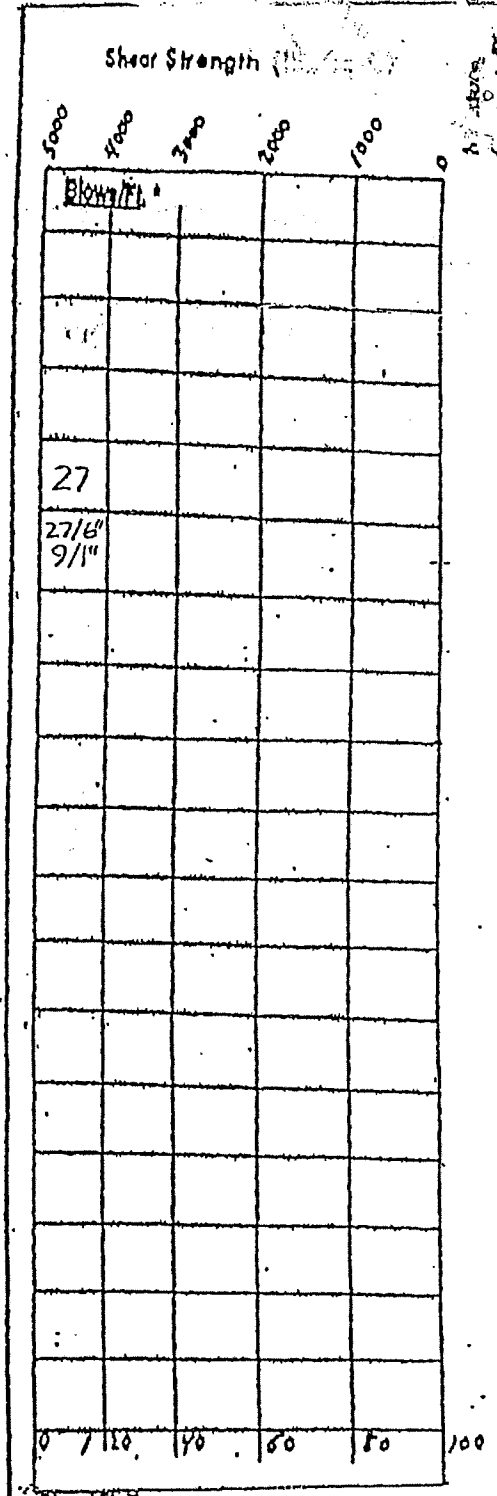


THOMAS BROS.

EARTH SCIENCE CONSULTANTS Soil • Foundation and Geotechnical Engineers Job No. 14-7044 Appr. Date: 1/31/14	SITE LOCATION MAP APN 003-032-16 CANYON ROAD FAIRFAX, CA	PLATE 1

LOG OF BORING: 1

Equipment: Portable
Elevation: Exist Grade Date: 1-28-14



** 1-3/4" diameter cone penetration test, converted to Equivalent Standard Penetration Blow Counts
* Standard Penetration Test

DARK GRAY BROWN SILTY FINE SAND (SM), loose, dry, with small rock fragments

Medium dense @ 2.5'

GRAY BROWN SILTY FINE SAND (SM), dense.

GRAY GREEN MARINE VOLCANIC GREENSTONE, fresh, hard.

The log of subsurface conditions shown herein applies only at the specific boring or test pit or probe location on the date indicated. It may not be representative of subsurface conditions at other locations and/or other times.

NO FREE WATER WAS OBSERVED IN TEST PIT OR BORING AT TIME OF INVESTIGATION. HOWEVER, THE GROUND WATER TABLE MAY RISE OR SEEPAGE MAY BE PRESENT DURING THE WINTER

LOG OF BORING 1 / PLATE 3

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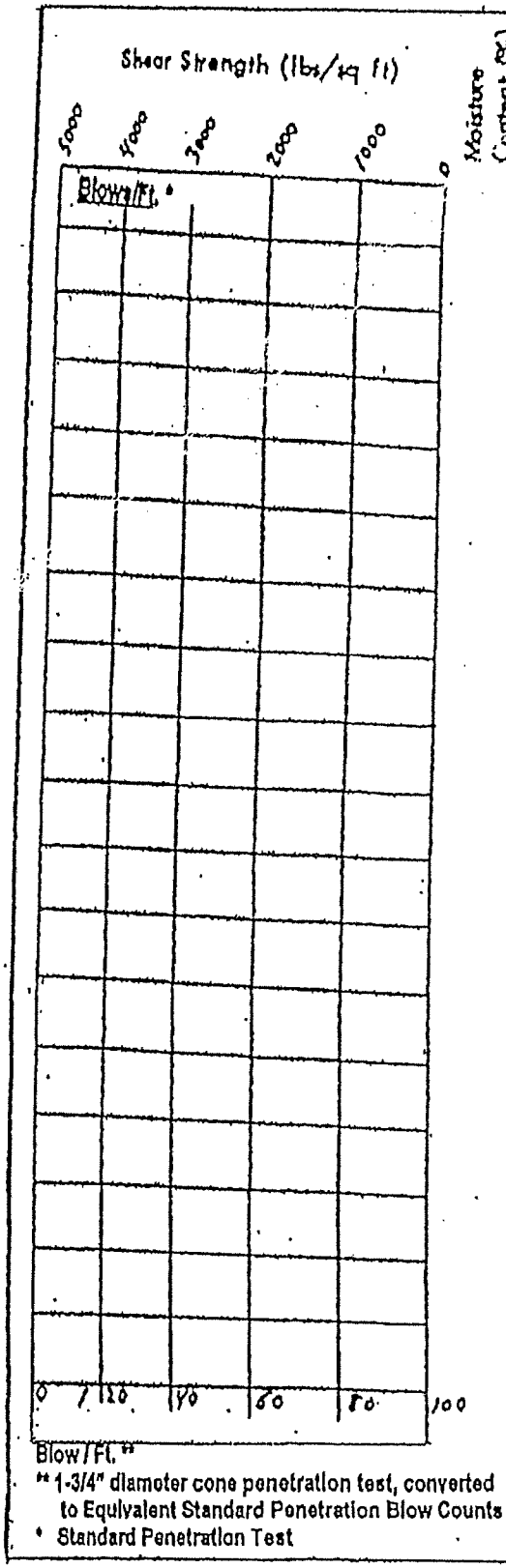
Job No. 14-7044 Appr. Date: 1/31/14

APN 003-032-16
CANYON ROAD
FAIRFAX, CA



Moisture Content (%)

Dry Density (pcf)

Depth (ft)

Sample

LOG OF BORING: 2

Equipment: Portable

Elevation: Exist Grade Date: 1-28-14

0

BROWN SILTY FINE SAND (SM) loose, dry with occ. rock fragments

Dense @ 1'

COULD NOT ADVANCE HOLE DUE TO HARD ROCK

5' DOWN SLOPE TO HARD ROCK OUTCROP

5

10

15

20

The log of subsurface conditions shown herein applies only at the specific boring or test pit or probe location on the date indicated. It may not be representative of subsurface conditions at other locations and/or other times

NO FREE WATER WAS OBSERVED IN TEST PIT OR BORING AT TIME OF INVESTIGATION. HOWEVER, THE GROUND WATER TABLE MAY RISE OR SEEPAGE MAY BE PRESENT DURING THE WINTER

** 1-3/4" diameter cone penetration test, converted to Equivalent Standard Penetration Blow Counts

* Standard Penetration Test

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Job No. 14-7044 Appr. Date: 1/31/14

LOG OF BORING 2 / PLATE 4

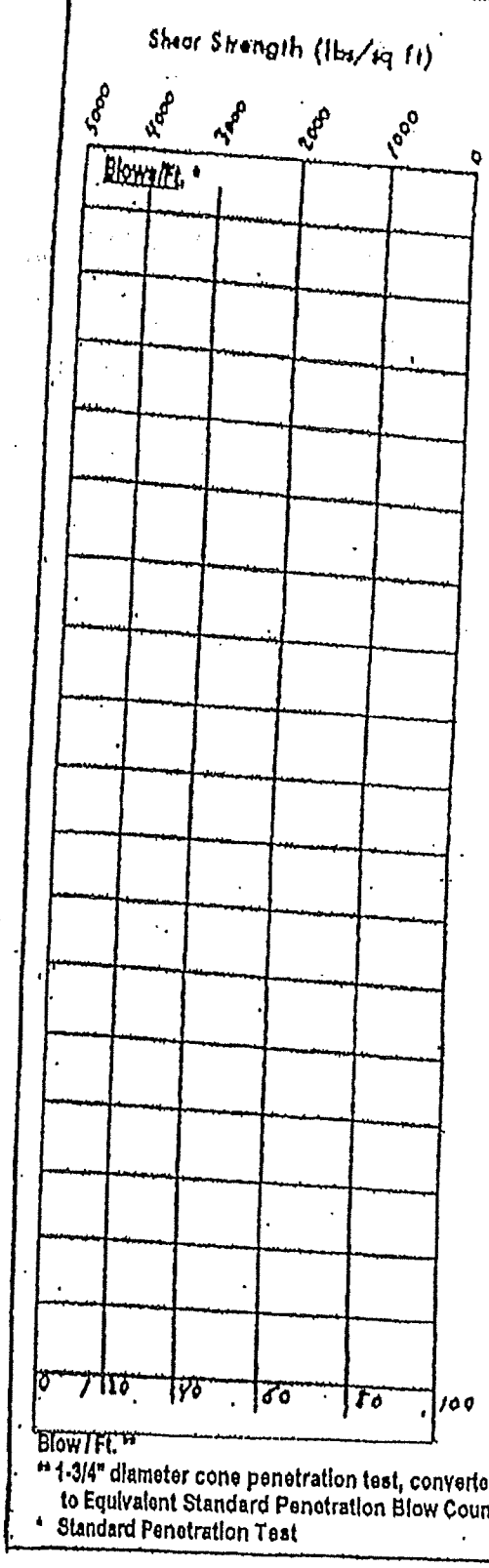
APN 003-032-16

CANYON ROAD

FAIRFAX, CA

LOG OF BORING: 3

Equipment: Portable
Elevation: Exist Grade Date: 1-28-14



** 1-3/4" diameter cone penetration test, converted to Equivalent Standard Penetration Blow Counts
* Standard Penetration Test

0 — GRAY BROWN SILTY FINE SAND (SM), loose, dry, with small rock fragments

Dense @ 1'

GREENISH GRAY MARINE VOLCANIC GREENSTONE, massive, hard

The log of subsurface conditions shown herein applies only at the specific boring or test pit or probe location on the date indicated. It may not be representative of subsurface conditions at other locations and/or other times

NO FREE WATER WAS OBSERVED IN TEST PIT OR BORING AT TIME OF INVESTIGATION. HOWEVER, THE GROUND WATER TABLE MAY RISE OR SEEPAGE MAY BE PRESENT DURING THE WINTER

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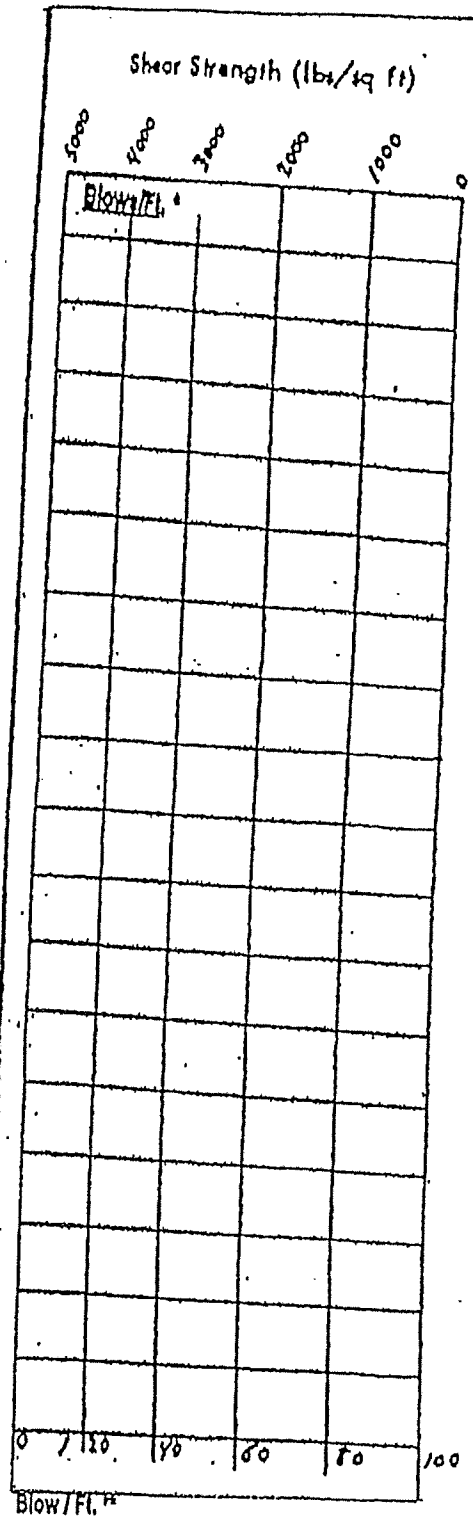
Job No. 14-7044 Appr. Jam Date: 1/31/14

LOG OF BORING 3 / PLATE 5

APN 003-032-16
CANYON ROAD
FAIRFAX, CA

LOG OF BORING: 4

Equipment: Portable
Elevation: Exist Grade
Date: 1-28-14



Moisture Content (%) | Dry Density (pcf) | Depth (ft) | Sample

0
5
10
15
20

← BROWN SILTY FINE SAND (SM) loose, dry with small rock fragments
GRAY GREEN MARINE VOLCANIC GREENSTONE, fresh, hard

The log of subsurface conditions shown herein applies only at the specific boring or test pit or probe location on the date indicated. It may not be representative of subsurface conditions at other locations and/or other times

NO FREE WATER WAS OBSERVED IN TEST PIT OR BORING AT TIME OF INVESTIGATION. HOWEVER, THE GROUND WATER TABLE MAY RISE OR SEEPAGE MAY BE PRESENT DURING THE WINTER

** 1-3/4" diameter cone penetration test, converted to Equivalent Standard Penetration Blow Counts
* Standard Penetration Test

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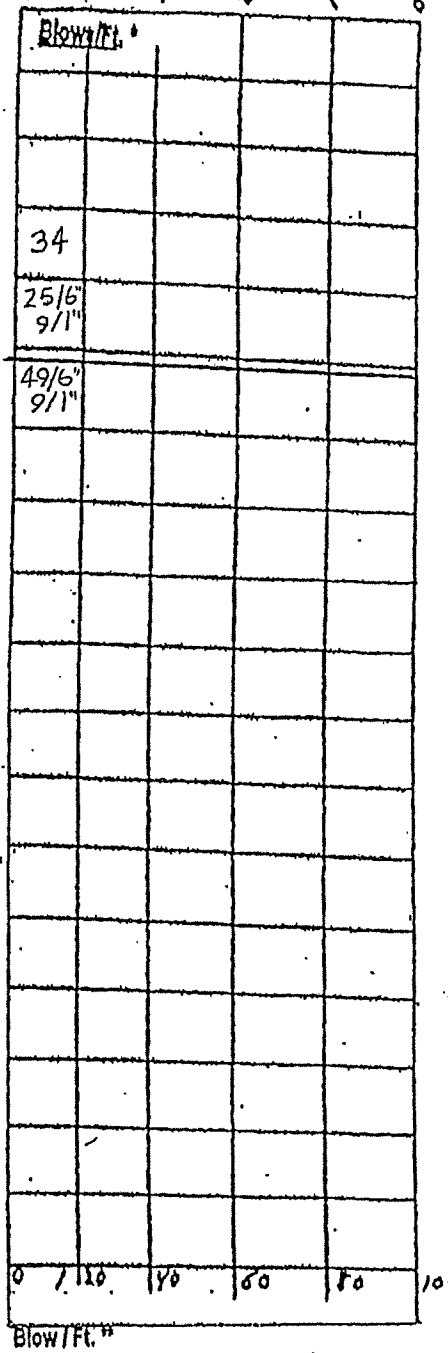
Job No. 14-7044 Appr. [signature] Date: 1/31/14

LOG OF BORING 4 / PLATE 6

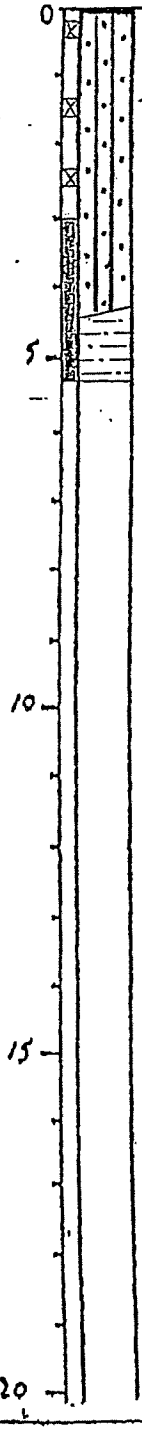
APN 003-032-16
CANYON ROAD
FAIRFAX, CA

LOG OF BORING: 5

Equipment: Portable
Elevation: Exist Grade Date: 1-



** 1-3/4" diameter cone penetration test, converted to Equivalent Standard Penetration Blow Counts
* Standard Penetration Test



DARK BROWN SILTY FINE SAND (SM), loose, dry with very small rock fragments

Med. dense @ 1.5'
Dense @ 3'

LIGHT BROWN SILTSTONE, fractured, slightly weathered, med. hard to hard

The log of subsurface conditions shown herein applies only at the specific boring or test pit or probe location on the date indicated. It may not be representative of subsurface conditions at other locations and/or other times

NO FREE WATER WAS OBSERVED IN TEST PIT OR BORING AT TIME OF INVESTIGATION. HOWEVER, THE GROUND WATER TABLE MAY RISE OR SEEPAGE MAY BE PRESENT DURING THE WINTER

LOG OF BORING 5 / PLATE 7

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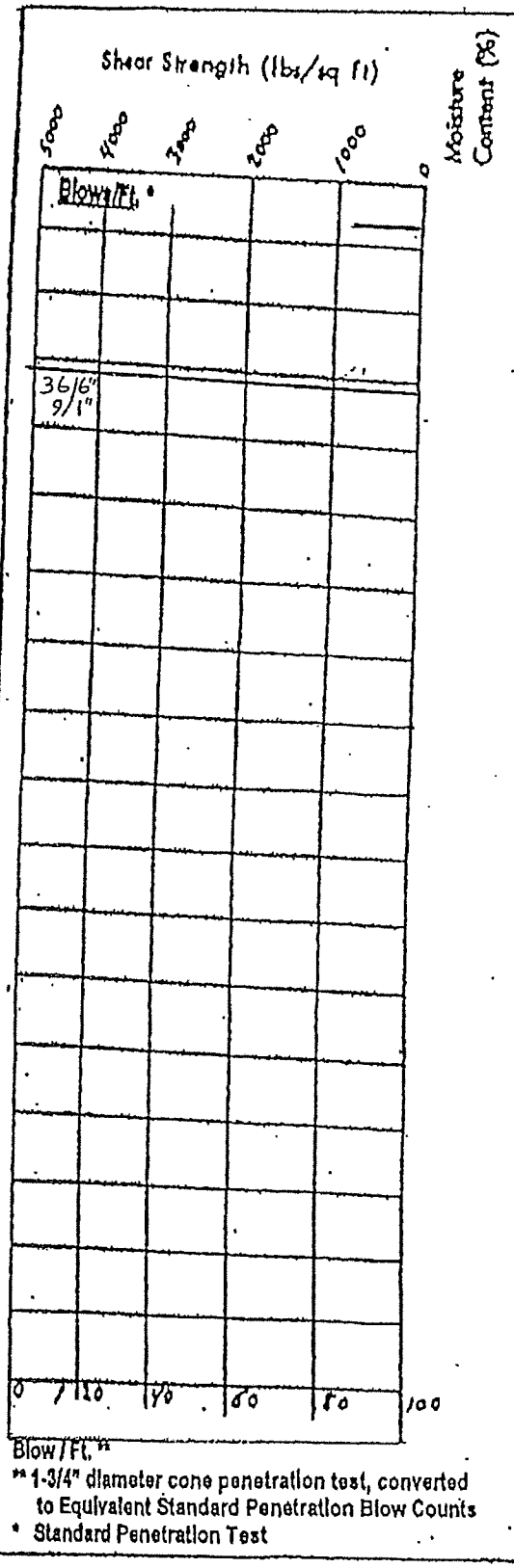
Job No. 14-7044 Appr. Date: 1/31/14

APN 003-032-16
CANYON ROAD
FAIRFAX, CA

LOG OF BORING: 6

Equipment: Portable
Elevation: Exist Grade
Date: 1-28-14



** 1-3/4" diameter cone penetration test, converted to Equivalent Standard Penetration Blow Counts
* Standard Penetration Test

0 — GRAY BROWN SILTY FINE SAND (SM), loose, dry with very small rock fragments
Med. dense @ 0.9'
GRAY BROWN SILTY FINE SAND (SM), dense, dry with small rock fragments
GRAY BROWN SILTSTONE, fractured, slightly friable, medium hard to hard

5

10

15

20

The log of subsurface conditions shown herein applies only at the specific boring or test pit or probe location on the date indicated. It may not be representative of subsurface conditions at other locations and/or other times

NO FREE WATER WAS OBSERVED IN TEST PIT OR BORING AT TIME OF INVESTIGATION. HOWEVER, THE GROUND WATER TABLE MAY RISE OR SEEPAGE MAY BE PRESENT DURING THE WINTER

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Job No. 14-7044 Appr. JM Date: 1/31/14

LOG OF BORING 6 / PLATE 8

APN. 003-032-16
CANYON ROAD.
FAIRFAX, CA

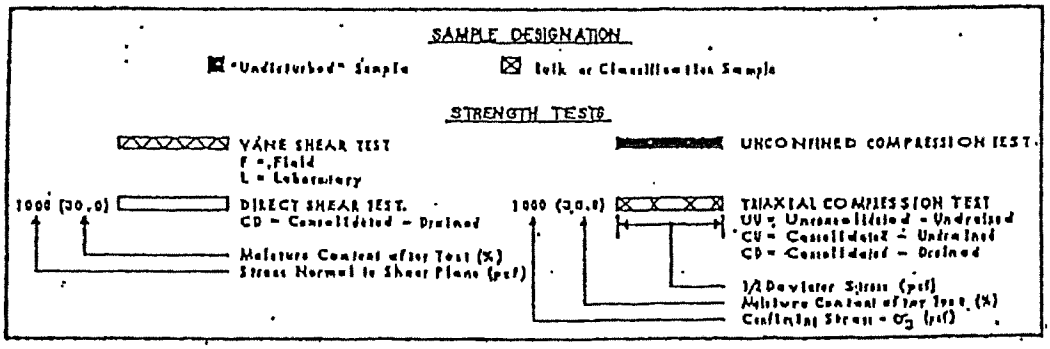
[Qd]

[ ]

Fine
Dune
Sand

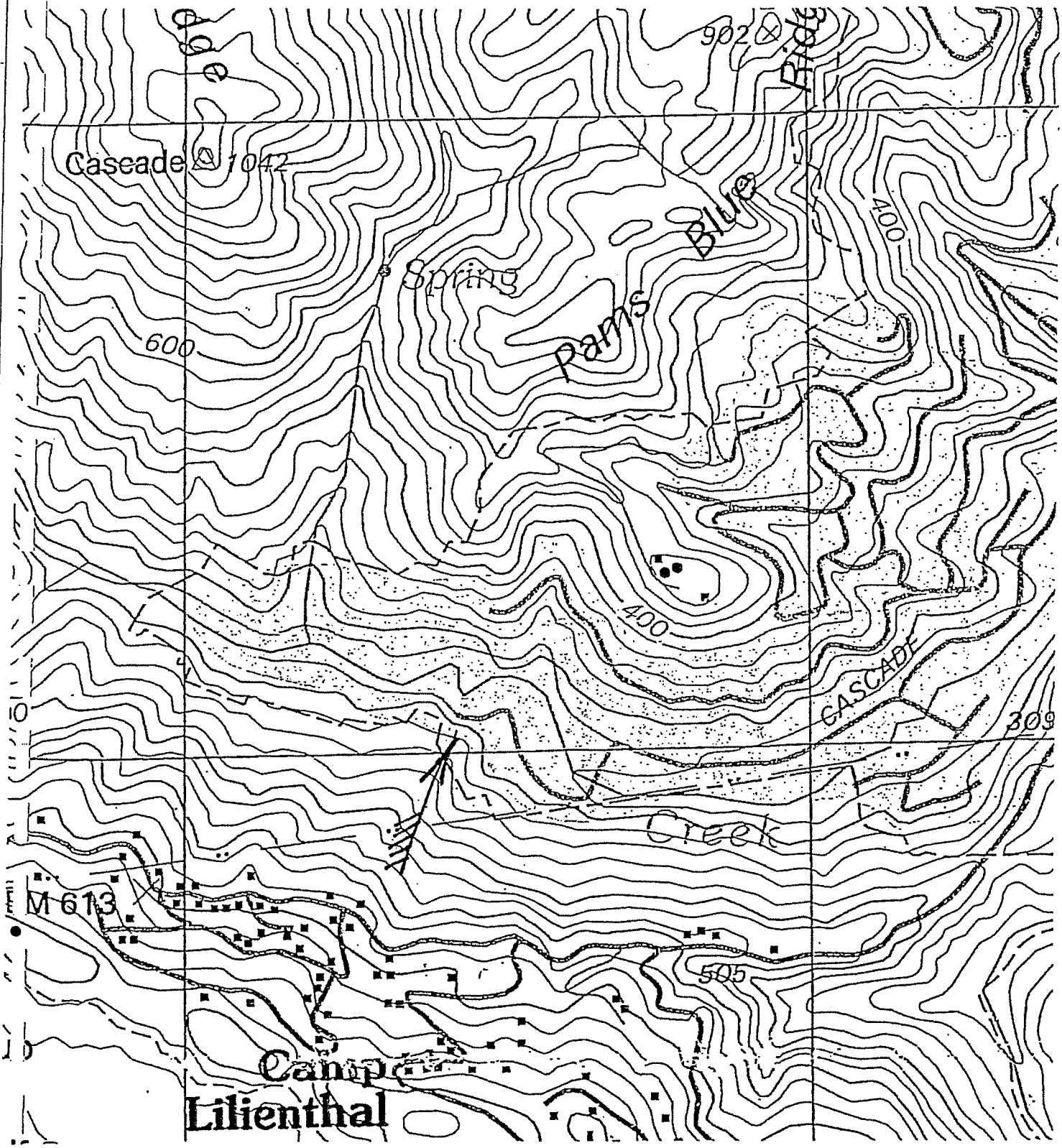
MAJOR DIVISIONS					TYPICAL NAMES
COARSE GRAINED SOILS (MORE THAN HALF IS LARGER THAN #200 SIEVE)	GRAVELS (MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE)	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		WELL GRADED GRAVELS, GRAVEL - SAND MIXTURES
			GP		POORLY GRADED GRAVELS, GRAVEL - SAND MIXTURES
		GRAVELS WITH OVER 12% FINES	GM		SILTY GRAVELS, POORLY GRADED GRAVEL - SAND - SILT MIXTURES
			GC		CLAYEY GRAVELS, POORLY GRADED GRAVEL - SAND - CLAY MIXTURES
	SANDS (MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE)	CLEAN SANDS WITH LITTLE OR NO FINES	SW		WELL GRADED SANDS, GRAVELLY SANDS
			SP		POORLY GRADED SANDS, GRAVELLY SANDS
		SANDS WITH OVER 12% FINES	SM		SILTY SANDS, POORLY GRADED SAND - SILT MIXTURES
			SC		CLAYEY SANDS, POORLY GRADED SAND - CLAY MIXTURES
FINE GRAINED SOILS (MORE THAN HALF IS SMALLER THAN #200 SIEVE)	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		ML		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL		ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50		MH		INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH		ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			Pt		PEAT AND OTHER HIGHLY ORGANIC SOILS

UNIFIED SOIL CLASSIFICATION SYSTEM



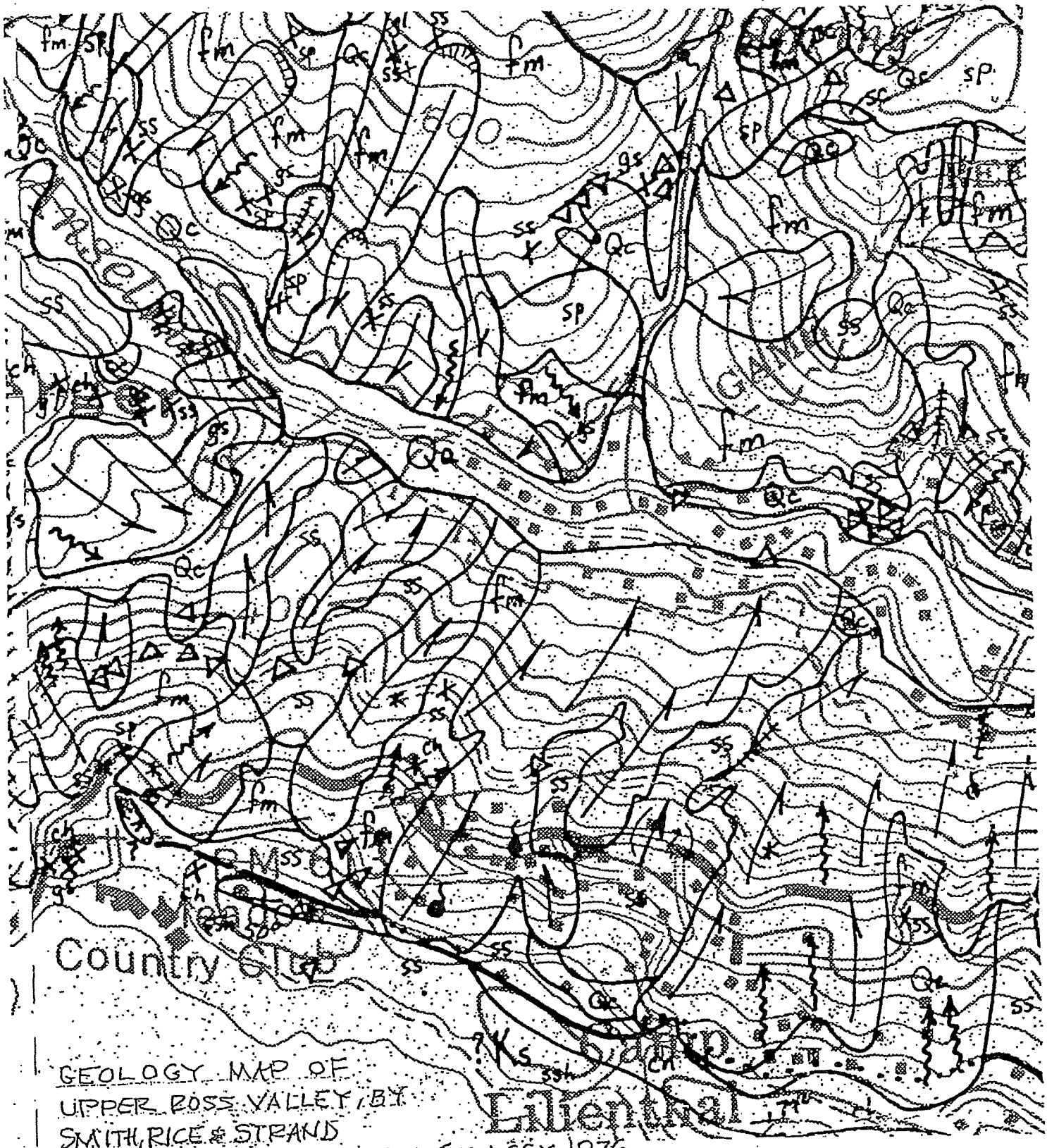
KEY TO TEST DATA

EARTH SCIENCE CONSULTANTS Soil • Foundation and Geotechnical Engineers Job No. 14-7044 Appr. Date: 1/31/14	SOIL CLASSIFICATION APN 003-032-16 CANYON ROAD FAIRFAX, CA	PLATE 9



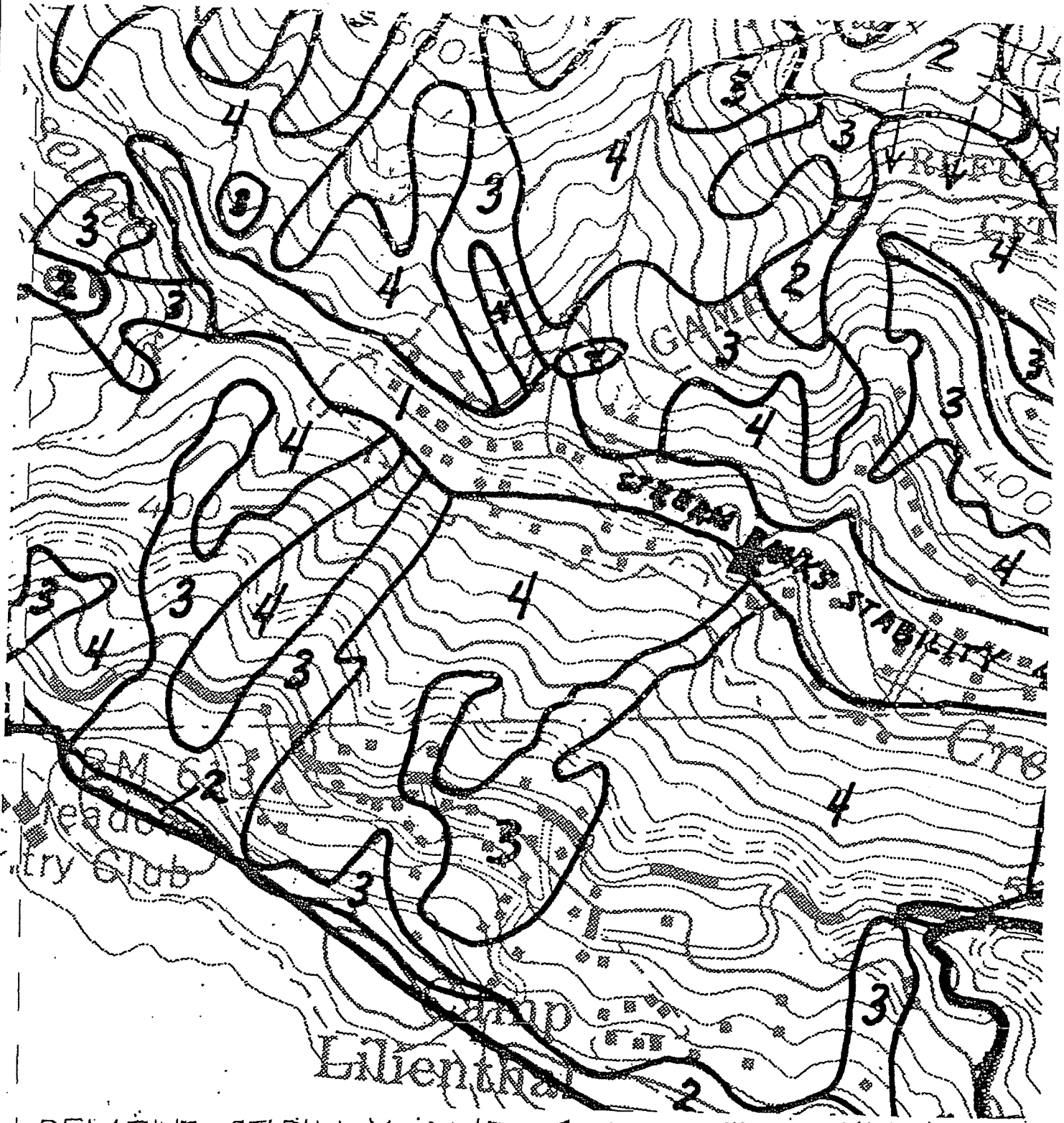
*USGS 1993

EARTH SCIENCE CONSULTANTS Soil • Foundation and Geotechnical Engineers Job No. 14-7044 Appr. Date: 1/31/14	AREA TOPOGRAPHY MAP APN 003-032-16 CANYON ROAD FAIRFAX, CA	PLATE 10



GEOLOGY MAP OF
UPPER ROSS VALLEY, BY
SMITH, RICE & STRAND
CALIF. DIVISION OF MINES & GEOLOGY, 1976

EARTH SCIENCE CONSULTANTS Soil • Foundation and Geotechnical Engineers Job No. 14-7044 Appr. Date: 1/31/14	UPPER ROSS VALLEY GEOLOGY APN 003-032-16 CANYON ROAD FAIRFAX, CA	PLATE 11

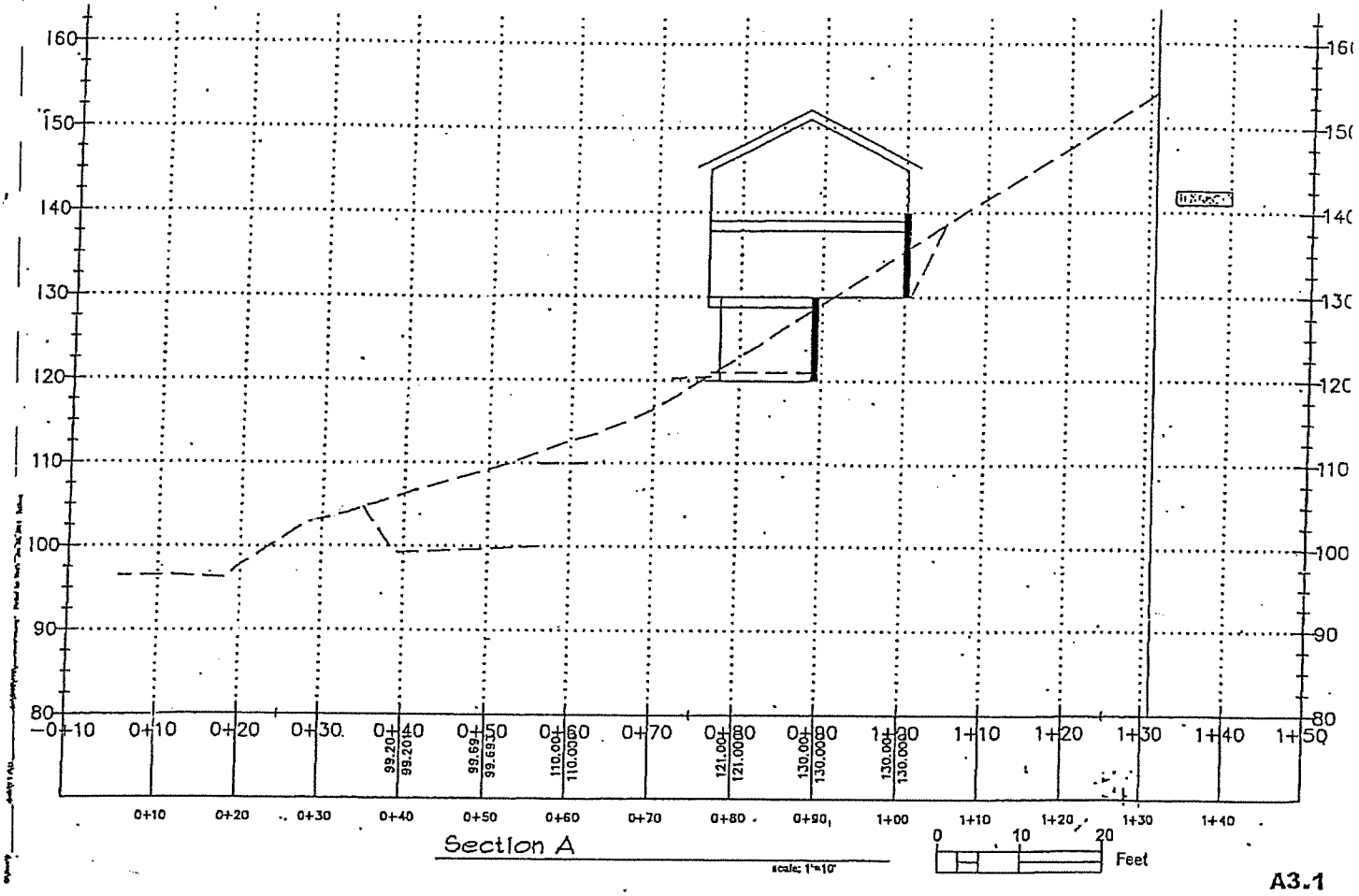


RELATIVE STABILITY MAP OF UPPER ROSS VALLEY BY SMITH, RICE & STRAND, CALIF. DIVISION OF MINES & GEOLOGY, 1976

EARTH SCIENCE CONSULTANTS Soil • Foundation and Geotechnical Engineers		PLATE
Job No. 14-7044 Appr [signature] Date: 1/31/14	APN 003-032-16 CANYON ROAD FAIRFAX, CA	12

LOCATION OF MAJOR SLOPE FAILURES IN MARIN COUNTY, PREPARED BY C. DAVENPORT OF U.S. GEOLOGY SURVEY IN 1982.

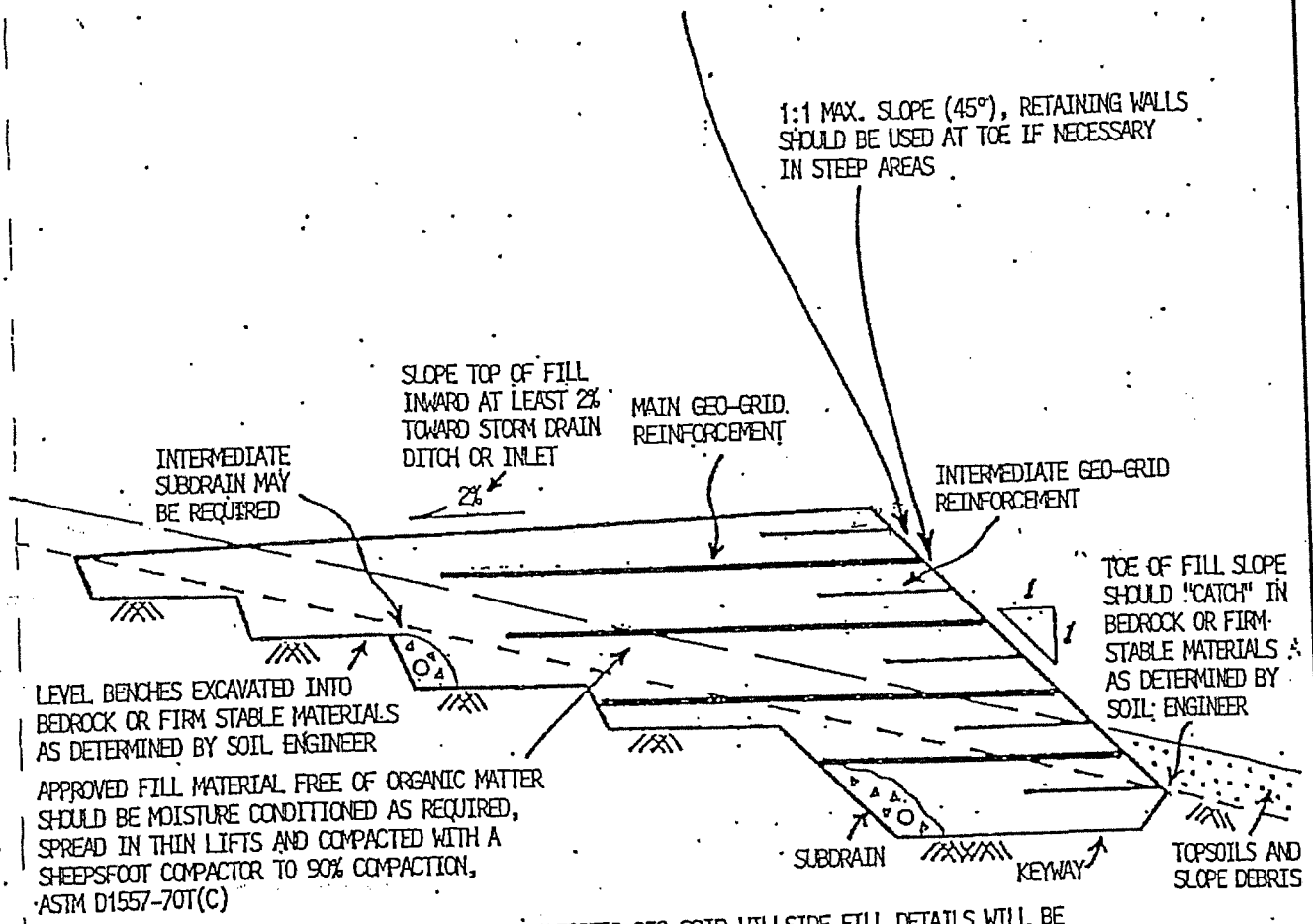
EARTH SCIENCE CONSULTANTS Soil • Foundation and Geotechnical Engineers Job No. 14-7044 Appr ____ Date: 1/31/14	1982 SLOPE FAILURES APN 003-032-16 CANYON ROAD FAIRFAX, CA	PLATE 13



A3.1

EARTH SCIENCE CONSULTANTS Soil • Foundation and Geotechnical Engineers Job No. 14-7044 Appr. Date: 1/31/14	SITE PROFILE APN 003-032-16 CANYON ROAD FAIRFAX, CA	PLATE 14

ALL FILL SLOPES SHOULD BE WELL COMPACTED AND LOOSE MATERIALS REMOVED. SLOPES SHOULD BE PLANTED AND GOOD GRASS-PLANT COVER ESTABLISHED PRIOR TO WINTER RAINS. CONSULT WITH LANDSCAPE EXPERT REGARDING TYPE OF GRASS & PLANTS. COVER ALL 1:1 SLOPES WITH MIRAFI "MIRAMAT" 2400 EROSION CONTROL REVEGETATION MAT OR APPROVED EQUIVALENT.



NOTE: DETAILS AS SHOWN ARE APPROXIMATE AND SPECIFIC GEO-GRID HILLSIDE FILL DETAILS WILL BE DETERMINED BY THE SOIL ENGINEER DURING CONSTRUCTION INCLUDING KEYWAY OBSERVATION AND PERIODIC COMPACTION TESTS.

GEO-GRID FILL REINFORCEMENT SHALL BE "TENSAR" OR APPROVED EQUIVALENT. MAIN GEO-GRID IS TENSAR SR-2 (UX-1500) EVERY 2'. INTERMEDIATE GEO-GRID IS TENSAR SS-1 EVERY 2'. EVERY 1' ALTERNATE FROM LIGHT TO HEAVY GEO-GRID.

EARTH SCIENCE CONSULTANTS *SOIL • FOUNDATION AND GEOLOGICAL ENGINEERS* Job No. 14-7044 Appr. Date 1-31-14	GEO-GRID FILL DETAILS APN 003-032-16 CANYON ROAD FAIRFAX, CA	PLATE 15

A P P E N D I X 1

SITE DRAINAGE

Care should be used so that drainage waters are not concentrated and discharged on downslope or adjacent properties. Site drainage waters should be well dispersed in as natural a manner as possible and should not be discharged in a concentrated manner if a legally-approved storm drain system is not present.

During the next several years we believe it would be appropriate to periodically monitor the site drainage to observe drainage trends, and additional drainage measures may be required depending upon the actual site drainage and land performance.

We also recommend that the attorney for the developer and owner be consulted to determine the legal manner of discharging drainage at this site. It should be noted that improperly discharged concentrated drainage may be a source of liability and litigation between adjacent property owners.

In those areas where legal area storm drain systems may not be present, then site drainage waters should be handled in a reasonable and prudent manner in the spirit of "Keys vs. Romley" (64 Cal 2nd 396, 1966) and the associated "rule of reasonable use" pertaining to surface waters as provided in the next three paragraphs.

"It is encumbent on every person to take reasonable care in using his property to avoid injury to adjacent property through the flow of surface waters, and any person so threatened with injury has the equal duty to take reasonable precautions to avoid or reduce actual or potential injury. Though failure to exercise reasonable care may result in liability by an upper to a lower landowner, where the actions of both are reasonable, necessary, and generally in accord with reasonable care, the injury must necessarily be borne by the upper landowner who changes a natural system of drainage."

"In an action to recover damages for the discharge of surface waters from adjoining land, the question of reasonableness of conduct is not related solely to the actor's interest, however legitimate; it must be weighed against the effect of the act on others. The issue of reasonableness is a question of fact to be determined by considering all relevant circumstances, including the amount of harm caused, the foreseability of the harm that results, and the purpose or motive with which the possessor acted."

"In land development problems, it is proper to consider whether the utility of the possessor's use of his land outweighs the gravity of the harm that results from his alteration of the flow of surface waters. Where the weight is on the side of the one who alters a natural watercourse, he has acted reasonably and without liability; where the harm to the lower landowner is unreasonably severe, then the economic costs incident to the expulsion of surface waters must be borne by the upper owner. But if both parties conducted themselves reasonably, then the courts are bound by the old civil law rule."

The old civil law rule...is that "a person who interferes with the natural flow of surface waters so as to cause an invasion of another's interests in the use and enjoyment of his land is subject to liability to the other."

Also, site drainage should be provided as necessary and maintained and repaired as necessary so as to be in accordance with California common and statute law and the more recent interpretations of the "rule of reasonable use" pertaining to surface waters, including: "Martinson vs. Hughey" (199 Cal App 3rd 318, 1988), "Weaver vs. Bishop" (206 Cal App 3rd 1351, 1988), "Aalso vs. Leslie Salt" (218 Cal App 3rd 417, 1990), and California Civil Code Sections 1714 and 3479. "The old civil law rule, under which a landowner was liable for any harm caused to neighboring owners by an alteration in the flow of surface waters

across his or her land has been qualified by the rule of reasonable use. Under this rule, an owner modifying the flow of surface waters can successfully defend a claim for damages showing that his conduct was reasonable and that of the plaintiff was unreasonable."

If good retaining wall performance is desired, such as in habitable portions of the structure, then such retaining walls should be very carefully waterproofed.
We recommend that provision be made for the relief of hydrostatic pressure that might build up beneath any concrete floor slabs. Adequate gravity outlets or weep holes should be provided so that all portions of the drain rock beneath the concrete floor slabs may drain. However, such weep holes or drain outlets should be carefully located in such a manner that water will not flow inward to beneath the floor slabs.

It should be realized that considerable normal runoff water from prolonged and intense rainfall flows along the surface of the ground. However, a significant amount of water may percolate through the upper portions of the porous topsoil materials, then flow along the surface of impervious soil layers or along the surface of the bedrock because the bedrock is much more dense and compact than the above soil materials. Furthermore, a small amount of water may infiltrate through the various joints and cracks within the underlying bedrock materials. Therefore, our usual recommendation on hillside and steeper slope construction is to build in conformity with the existing hillside grades and not to excavate or cut into the various soil layers and through the soil/rock interface into the underlying bedrock materials. Such excavating penetrates and therefore intercepts natural drainage paths, resulting in water and moisture falling from the cut. However, due to functional and aesthetic reasons or requirements, there are many times when such cutting into the natural earth-soil and rock materials is required. However, it should be realized that drainage waters will most likely be present in such areas and will have to be either accepted and/or dealt with as required.

The building designer and contractor should use special care with respect to drainage considerations if the site development results in cutting or excavating the soil or rock materials. Such cutting may cut through and intercept natural drainage and seepage paths and may result in considerable drainage waters flowing toward, into or beneath the structure. Also, excavating in areas of level or gentle slope may result in adjacent water seeping into the ground and flowing towards the excavation.

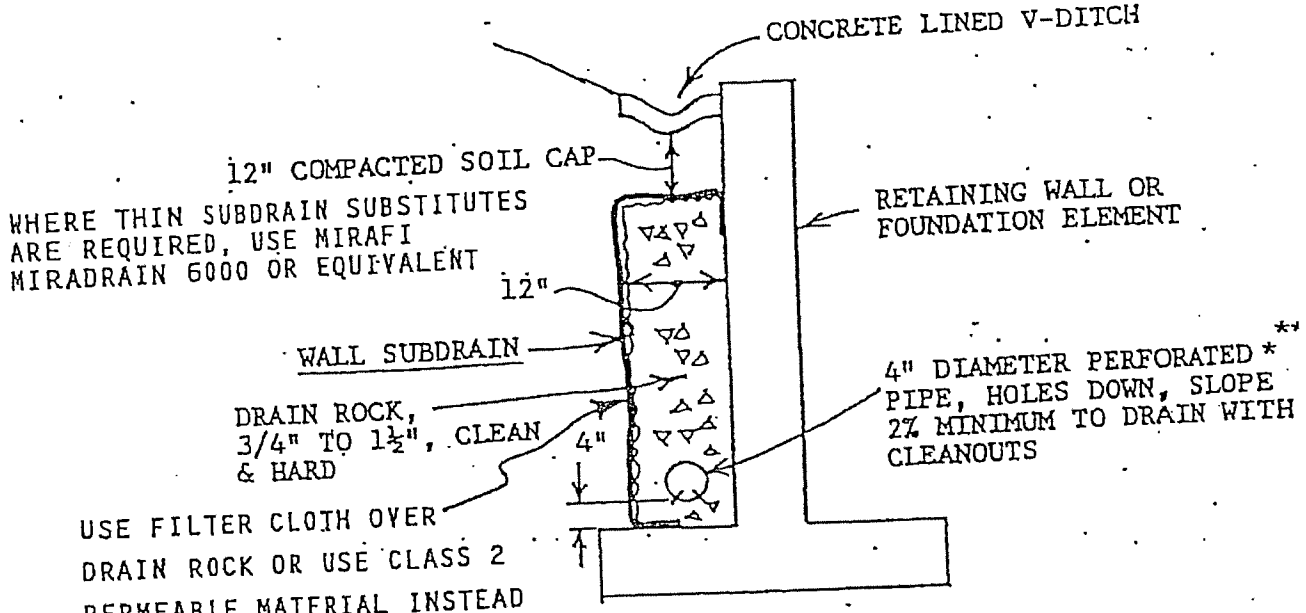
Generally, under no circumstances should crawl space areas be excavated below the adjacent site grades (such as to provide adequate clearance for wood joist floors) unless the building designer and contractor very carefully consider and provide for drainage waters that might flow into and be trapped in the foundation crawl space area and also consider potential higher humidity and very good cross-ventilation.

The designer of the proposed structure and the contractor should make sure that sufficient weeps or drainage holes are present within the foundation elements inside the structure so that if drainage waters should flow or infiltrate into the foundation area, then they can easily flow out and away from the structure and not pond or slowly seep into habitable areas.

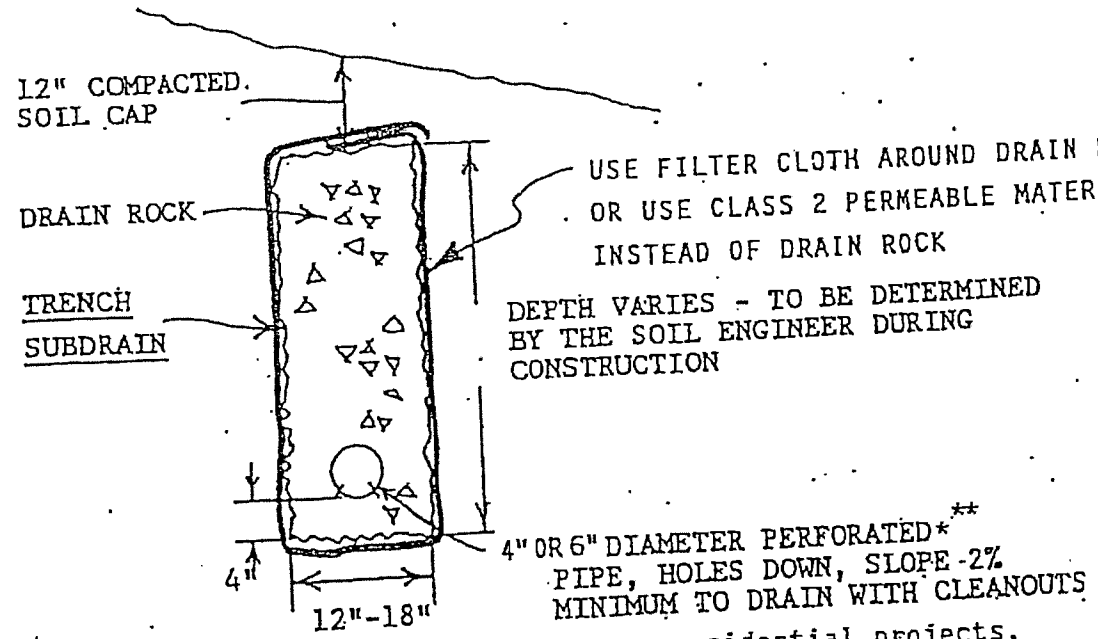
The above site drainage recommendations are general in nature and should be carried out by the house designer, contractor, owner, and future owners to the fullest possible extent. However, from many years of soil engineering experience within Northern California, we have found that water and moisture below most structures is relativley common. Therefore, we suggest that if the owner desires assurance with respect to site drainage, an expert in the field of hydrology and drainage should be retained to prepare specific recommendations.

APPENDIX 2

SUBDRAIN DETAILS



* Plastic pipe ASTM-F-810 2,000 lb. crush for average light residential use

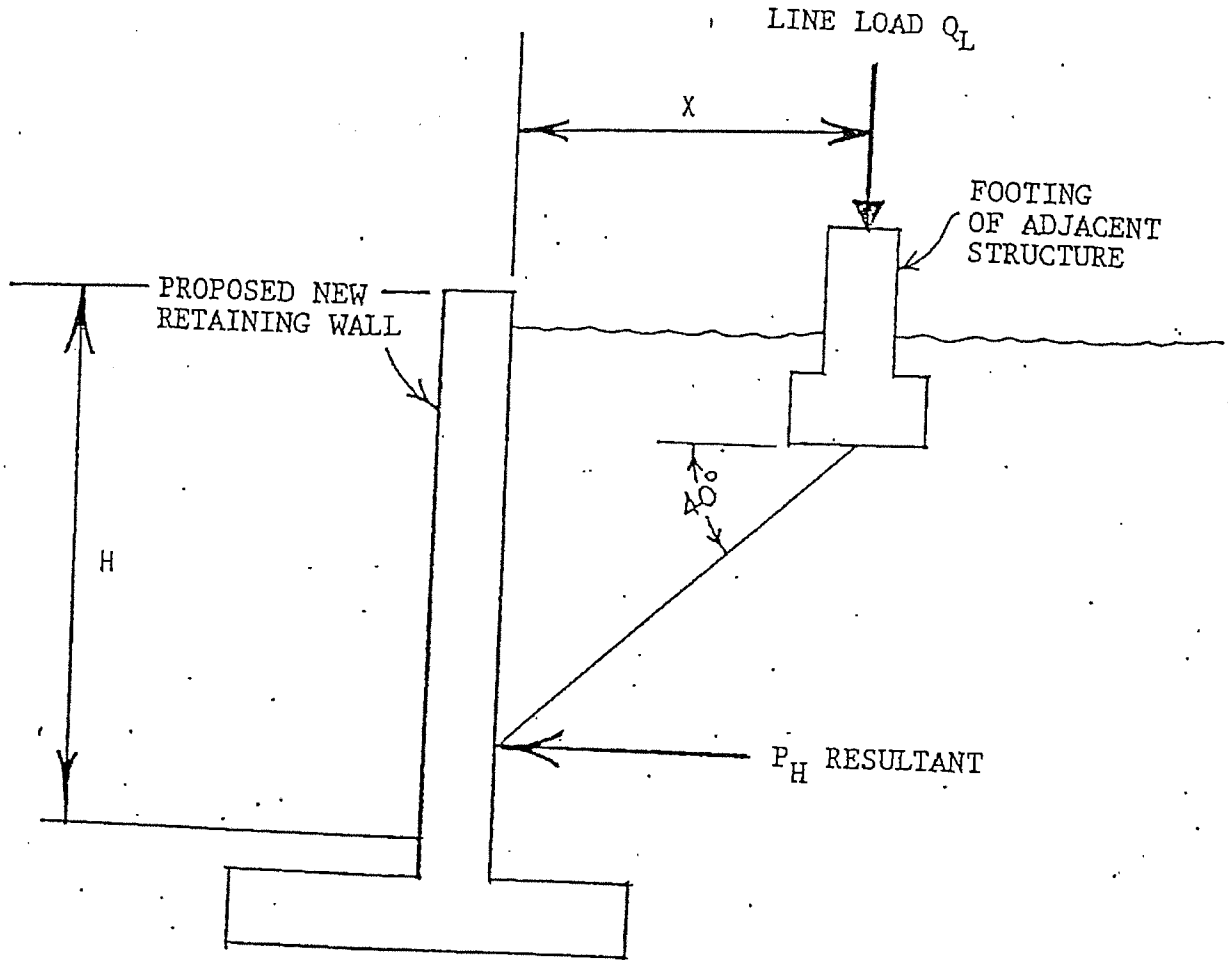


** For deeper fills, higher walls, & larger residential projects, use SDR-35 heavy duty plastic pipe, ASTM D3034

SUBDRAIN DETAILS **APPENDIX 2**

APPENDIX 3

WALL SURCHARGE DETAILS



REV. 10-96

RESULTANT FORCE (P_H) DUE TO LINE LOAD (Q_L)

$$P_H = 0.30\ Q_L$$

IF X IS EQUAL TO OR LESS THAN 0.4H,
THEN USE $P_H = 0.55\ Q_L$

APPENDIX 3.1

HOUSE ADDITION APPENDAGES

When minor appendages are required adjacent to the house addition construction, such appendages should be structurally separated from the house addition with a 1/2-inch flexible joint, or placed upon foundations similar to the house foundations and designed to resist expansive soil effects. If shallow foundation appendages are attached to the house addition foundation, then, with time, such appendages could experience uplift and settlement due to expansive soil effects and could cause some stress to the house addition foundations.

APPENDIX 4

FILL PLACEMENT

All fill placement should be prepared and placed in accordance with CALIF. Building Code, and in accordance with the requirements as shown on Appendix 4.1 and as described in Appendix H of this report.

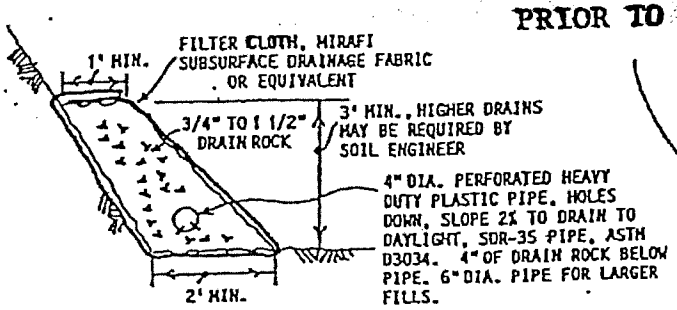
It should be noted that even well-compacted fill, with time, may settle up to 1/2 percent to 1 percent of its total thickness.

REV. 08

APPENDIX 4.1

HILLSIDE FILL DETAILS

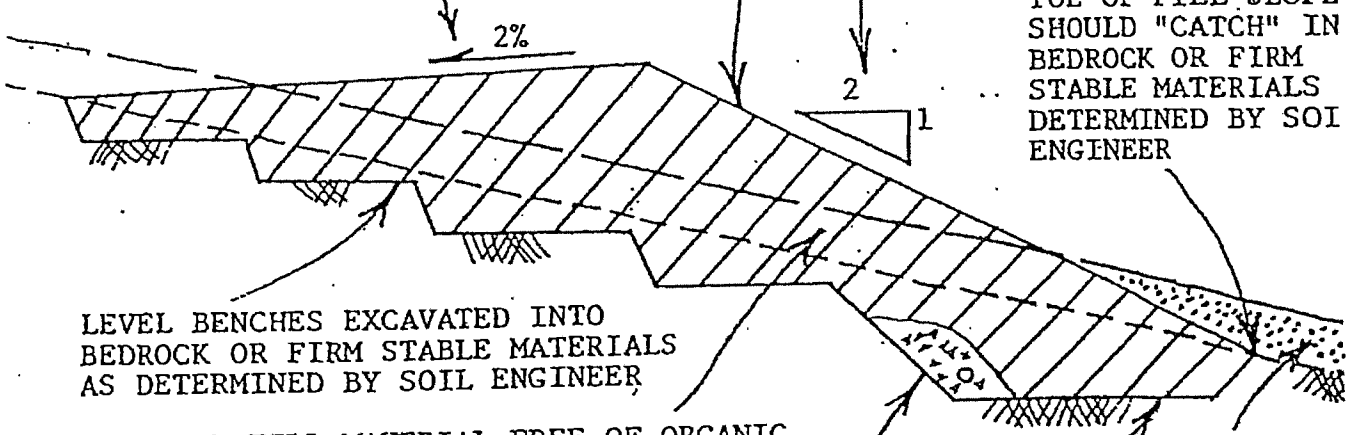
ALL FILL SLOPES SHOULD BE WELL COMPACTED AND LOOSE MATERIALS REMOVED. SLOPES SHOULD BE **PLANTED AND GOOD** GRASS COVER ESTABLISHED **PRIOR TO WINTER** RAINS



TYPICAL KEY SUBDRAIN

2:1 MAX. SLOPE, RETAINING WALLS SHOULD BE USED AT TC IF NECESSARY IN STEEP AREA

SLOPE TOP OF FILL INWARD AT LEAST 2% *



NOTE: SPECIFIC HILLSIDE FILL DETAILS WILL BE DETERMINED BY THE SOIL ENGINEER DURING CONSTRUCTION INCLUDING KEYWAY OBSERVATION AND PERIODIC COMPACTION TESTS.

* GENERALLY SLOPE FILL INWARD AT LEAST 2% SO TO FLOW INTO SITE STORM DRAIN SYSTEM AND NOT OVER FILL SLOPE. A SITE GRADING AND DRAINAGE PLAN SHOULD BE PREPARED SHOWING SLOPING OF FILL SURFACE TO DRAIN. ALSO, DRAINAGE SHOULD FLOW AWAY FROM STRUCTURE AND IMPROVEMENTS AND NOT BE ALLOWED TO POND.

APPENDIX 6

CONSTRUCTION SAFETY

In order to construct foundations, retaining walls, subdrains, fill keyways, etc., it is usually required to excavate temporary construction slopes during the construction process. During construction, the contractor should take appropriate care to provide safe construction slopes so as not to endanger the workmen who will be performing the work or others nearby, including children who might be passing by or who are attracted by the work. Therefore, all construction slopes and construction activities should be carried out in accordance with accepted, safe, and prudent procedures, and also in accordance with the State of California Construction Safety Orders and O.S.H.A. requirements.

The contractor, and not the engineer, shall be responsible for the means, methods, techniques and sequence of construction. The contractor shall also be solely responsible for all safety programs and procedures during construction.

The contractor shall provide adequate shoring and bracing of the structure, cuts, and excavations as required during construction, and shall maintain the shoring and bracing until the new permanent structure can provide adequate vertical and lateral support for the soils, bedrock and structures.

APPENDIX 8

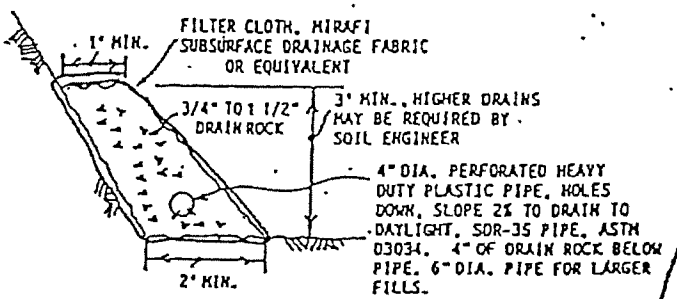
LAND MAINTENANCE

Good periodic land maintenance should be performed as required. All surface and subsurface waters and facilities should be controlled and maintained to the fullest possible extent. Surface sloughing, sliding or excessive erosion, should it occur, should be promptly repaired as required.

It should be realized that just as a car and a house need periodic care and maintenance, so does the land which is subject to the continuing or intermittent natural forces of rain, gravity and earthquakes. At almost all sites, topsoils and surficial soils are especially in need of periodic maintenance.

APPENDIX 8.1

EARTH BUTTRESS DETAILS



TYPICAL KEY SUBDRAIN

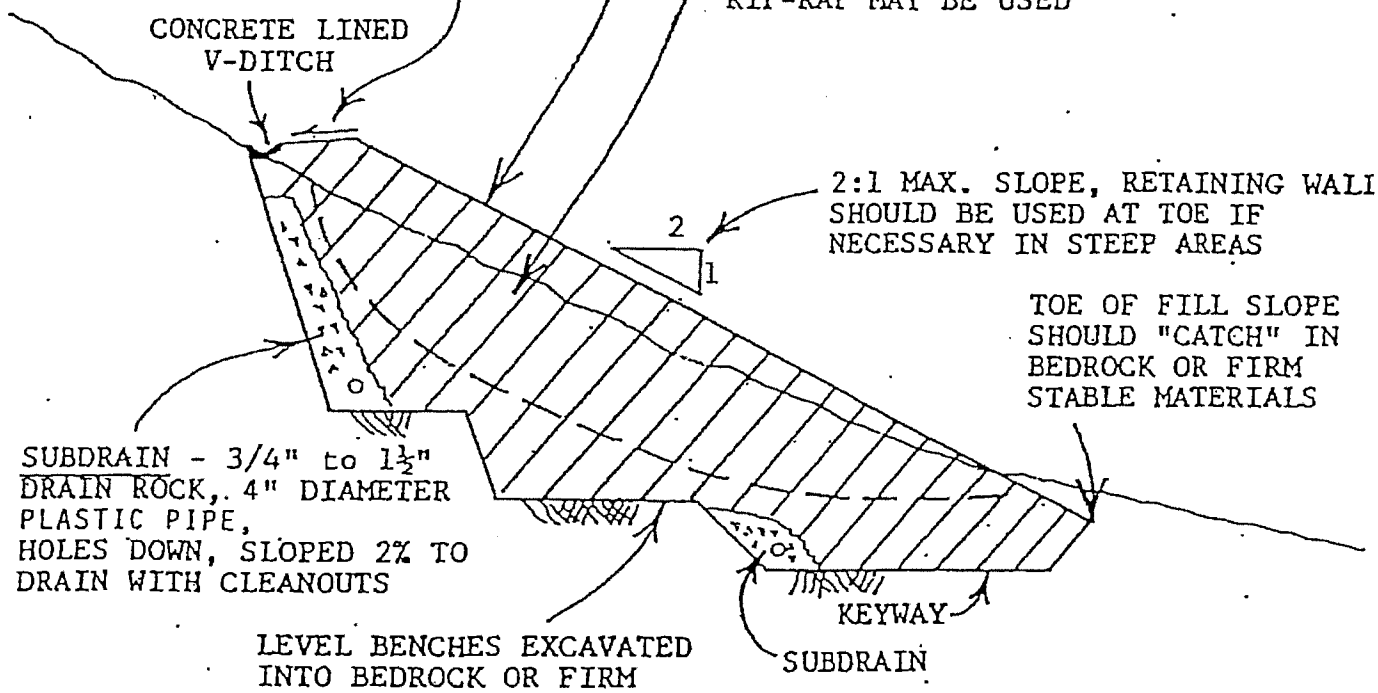
ALL FILL SLOPES SHOULD BE WELL COMPACTED AND LOOSE MATERIALS REMOVED. SLOPES SHOULD BE PLANTED AND GOOD GRASS COVER ESTABLISHED PRIOR TO WINTER RAINS

COMPACTED EARTH BUTTRESS
COMPACTED TO 90% COMPACTION, ASTM D1557-70T(C). IF ECONOMICALLY FEASIBLE BUTTRESS MATERIALS SHOULD HAVE A PLASTICITY INDEX LESS THAN 15 FOR SMALLER SLIDES CAREFULLY PLACED RIP-RAP MAY BE USED

DRAINAGE BENCH, SLOPED INWARD

CONCRETE LINED V-DITCH

2:1 MAX. SLOPE, RETAINING WALL SHOULD BE USED AT TOE IF NECESSARY IN STEEP AREAS



TOE OF FILL SLOPE SHOULD "CATCH" IN BEDROCK OR FIRM STABLE MATERIALS

SUBDRAIN - 3/4" to 1½" DRAIN ROCK, 4" DIAMETER PLASTIC PIPE, HOLES DOWN, SLOPED 2% TO DRAIN WITH CLEANOUTS

LEVEL BENCHES EXCAVATED INTO BEDROCK OR FIRM STABLE MATERIALS

1. SPECIFIC EARTH BUTTRESS SLIDE REPAIR DETAILS WILL BE DETERMINED BY THE SOIL ENGINEER DURING CONSTRUCTION.

2. V-DITCH AND SUBDRAIN WATERS SHOULD BE COLLECTED IN CLOSED PIPES WITH PERIODIC CLEANOUTS AND DISCHARGED INTO THE AREA STORM DRAIN SYSTEM.

APPENDIX 9

LIMITATIONS

We have endeavored to provide our best professional judgment and opinion based upon engineering and geological eduction and experience within the authorized scope of work. However, it must be realized that subsurface conditions may vary from those observed at the surface or exposed in subsurface explorations, or conditions may change with time due to natural or man-caused effects. Therefore, there can be no guarantee or warranty, either expressed or implied, of the performance of this or any site.

Our scope of work is specifically limited to geotechnical engineering considerations which are the limits of our field of specialty practice. In this report, where we have provided comments regarding other fields of practice such as structural, drainage and landscaping considerations, these comments have been made only to alert the client as to the importance of these related fields, and the client should obtain advice from the appropriate design professionals who specialize in these related fields for more specific review and recommendations as required.

A P P E N D I X A

GENERAL RECOMMENDATIONS, RISKS, MATERIAL NOTES, RESPONSIBILITY, LIMITATIONS AND RELATED ITEMS

1.0 GENERAL RECOMMENDATIONS

1.1 Structural and Utility Trench Backfill - All structural backfill and utility trench backfill within improved areas and all other backfill where good performance is desired should be placed in thin lifts, moisture conditioned as required, and compacted with an approved compaction device to at least 90 percent compaction, ASTM D1557-92T(C) Compaction Test Method. The soil backfill should be moisture conditioned to at least 3 percent wet of optimum where expansive soils are present. Backfill materials should be on-site materials approved by the soil engineer or select imported materials approved by the soil engineer.

Where compaction is being performed adjacent to retaining walls, foundations, and other structural elements, care should be taken so that the compaction device does not damage or over-stress or vibrate the structural elements or adjacent land and improvements. Also, the contractor should take care to allow a sufficient amount of time for the concrete to achieve the minimum structural strength prior to any structural backfill operations. This amount of time will have to be determined by the structural engineer and may vary from 7 to 28 days after the concrete pour, and may be longer during the cold season of the year when it takes a greater length of time for the concrete hydration process to occur.

1.11 Utility Trench Seal - All utility trenches entering buildings with a downward slope or a drainage or seepage flow toward buildings should be backfilled with on-site impervious clay-silt soils or lean concrete for a horizontal distance of at least 3 feet near their entry points to the buildings so as to provide a seal against subsurface water infiltration through granular trench backfill below the building. Also, in sloping terrain including roads, driveways, parking areas, yard areas, open areas, etc., similar utility seals should be installed at 50 to 100 feet intervals so that utility trench granular backfill will not inadvertently act as a subdrain and change and concentrate natural and historical subsurface drainage flow in a possible adverse manner.

1.2 Landscape and Vegetation Restoration - At the conclusion of the site construction, all barren and disturbed areas as well as any graded areas such as cuts and fills should be adequately seeded and planted with a variety of erosion-resistant grasses,

and vegetation and growth established and maintained prior to the start of the heavy winter rains. Also, numerous shrubs and trees should be planted for longer range protection. Such long-range landscape efforts should hopefully include numerous drought-tolerant plants as well as fast-growing shrubs and trees.

During construction, adequate temporary interim erosion control should be provided in accordance with the "Manual of Standards for Erosion and Sediment Control Measures" published by the Association of Bay Area Governments (ABAG).

1.3 Construction Season - We generally recommend that site development and foundation construction and related work be performed during the dry season of the year. If the work is performed during the winter rainy season or shortly thereafter, then the owner must accept the presence of higher earth hazard risks and probable greater construction costs.

1.4 Future Construction and Improvements - We generally and usually recommend that natural site grades be left in their present condition and all site vegetation be left "as is" or increased in density. Clearing or removing the site vegetation so as to expose soil materials could result in future erosion and sloughing. If it is desired to construct any new additions or any significant yard improvements, then such improvements should generally be built to conform with the existing hillside grades. New cutting or filling could undermine and upset the existing site equilibrium. All significant structural, yard and landscape improvements should not be built without some consultation with the appropriate design professionals, including architects, landscape architects, soil and foundation engineers, and civil and structural engineers.

1.5 Ground Water and Seepage Conditions - It should be realized that ground water and seepage conditions may differ from that observable at the surface and/or observed in test pits or test borings. The ground water table will likely rise during periods of intense and prolonged rainfall, and seepages may be present during the winter months that may not be present at other times of the year. If the owner desires accurate ground water and seepage data, then observation wells should be installed by the owner and monitored periodically.

1.6 Execution of Recommendations - This report, correspondence, opinion, document or plan(s) has been prepared and issued to the client with the understanding that it is the responsibility of the owner and the contractor to fully execute and carry out to the fullest extent the recommendations as provided in this report, correspondence, opinion, document or plan(s).

If the recommendations presented in this report, correspondence, opinion, document or plan(s) are not followed and carried out, the client is warned that adverse site performance and problems may occur including, but not limited to, surface and subsurface drainage problems, erosion, sloughing, sliding, settlement or creep effects, and associated litigation.

If the soil engineer is not retained to observe the final plans and is not retained to observe the soil engineering work during construction, then the client should take warning that poor performance or problems may arise and we cannot be responsible for any such poor performance or problems.

1.7 Site Changes - The soil-geotechnical engineering opinions, conclusions and recommendations as indicated in this report, correspondence, document or plan(s) are based upon and were specifically prepared for the site as it physically existed at the time of our investigation or observation. Therefore, if the site is in any way physically altered from the time of our investigation or observation, such as by the placement of fill upon the site or the excavation or removal of materials from the site, or if similar physical changes occur on adjacent properties so as to be close enough to influence this project or property, then all of our opinions, conclusions and recommendations should be considered null and void until we have provided written supplemental soil-geotechnical engineering opinions, conclusions and recommendations based upon a reevaluation of the changed site conditions.

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1.8 Codes and Ordinances - All present work and also future use of the project shall be in accordance with the Calif. Building Code, California Civil Code, California common and case law, and also in accordance with all local applicable codes, regulations and procedures.

2.0 RISKS

2.1 Earth Construction Risk - The client should clearly understand that there is an inherent and assumed risk of sliding, earth movement, settlement, land subsidence, erosion and sloughing in all hillside, excavation, or fill embankment construction regardless of precautions taken, and no guarantee or warranty can be made as to the results that may be obtained. Erosion and sliding are common in the earth scene and are a part of natural landscape forming processes even when man has not entered the natural scene in any way. Also, there is a quite common risk of the very slow downslope movement or creep of soil and weathered rock materials in hillside, excavation and fill embankment construction. Also, expansive soils can heave upward with great force.

2.2 Earthquake Risk - It should be clearly understood that California and especially the greater San Francisco Bay Area is an area of higher seismic risk. It should also be realized that it is generally economically not feasible to build totally earthquake-resistant structures or land improvements that would be resistant to any and all earthquakes. Therefore, it is possible that if a large or close earthquake occurred to this site, the site and structure and improvements and land could be damaged and there is an irreducible and assumed risk associated with living in a seismically active area such as California with many active faults.

2.3 High Rainfall Risk - There is an inherent and assumed risk of occasional high to very high rainfall for those that reside in or near the coast range hills and mountains of Northern California. Occasionally, periods of intensive and/or prolonged rainfall may occur that may result in erosion, sloughing, sliding and/or flooding. Sometimes 4 to 8 inches of rain may fall in one storm or in one day. In 1981-82 and 1982-83, more than 70 inches of rain fell in San Rafael two years in a row. In January of 1982, 9 to 15 inches of rain fell from one 29-hour storm. In February of 1986, up to 25 inches of rain fell in one week.

3.0 MATERIAL NOTES

3.1 Concrete - Generally, and unless specifically modified by the foundation or structural engineer, all foundation concrete should be 5 sack minimum, 3/4-inch maximum aggregate size, with a compressive strength of 3,000 p.s.i. @ 28 days. For pumped concrete, additional cement content is usually required to achieve a strength of 3,000 p.s.i.

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3.2 Reinforcing Steel - All reinforcing steel, unless otherwise noted, should be #40 grade, have a yield strength of 40,000 p.s.i., and conform to ASTM Specification A615-40.

3.3 Uniform Building Code - All materials and workmanship shall be in accordance with the current edition of the Uniform Building Code and also in conformance with generally accepted construction practices.

4.0 CONTRACTOR'S AND BUILDING DESIGNER'S RESPONSIBILITY

4.1 Notice of Changed Conditions - The opinions, findings and recommendations made in this report, correspondence, document or plan(s) are based on the assumption that soil conditions do not deviate significantly from those encountered by the test pits and/or test borings and/or observed at the surface. Therefore, it is the responsibility of the contractor to notify the soil

engineer of all unforeseen or unanticipated subsurface conditions encountered during construction; of particular importance are springs and subsurface waters, weak and compressible soils, abnormal hillside soil thickness, and the presence of landslide or unstable materials or expansive soils.

4.2 Field Layout - The contractor shall be responsible for all layout, field dimensions and conformance with architectural, structural and foundation plans. All layout shall be verified and approved by the building designer and owner prior to construction and concrete pours.

4.3 Notice of Construction Observations - The contractor shall give the soil engineer 10 days tentative notice and 3 days specific notice of all required construction observations.

4.4 Material Certification - The contractor shall be responsible for verifying, testing and certifying that all materials meet the minimum specified and should make the use of a commercial materials testing laboratory as required.

4.5 Conformance with Codes and Ordinances - The building designer and contractor shall be responsible for verifying that all building plans and layout are in accordance with all governing building codes, and local regulations and ordinances, and commonly accepted practices of personal and vehicular use and access.

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5.0 JOB SAFETY

5.1 Safety and Shoring - The contractor shall be responsible for seeing that all work is performed in a safe and reasonable manner with respect to both personal safety and property safety, and in accordance with all governing safety regulations and commonly-accepted safety practices. All work should be performed in accordance with the Construction Safety Orders of the State of California Department of Industrial Relations and O.S.H.A. regulations, CAL/OSHA. It should be noted that trenches and excavations can be dangerous to workmen and the public due to cave-ins and/or falling boulders. Adequate shoring or construction slopes as indicated in the CAL/OSHA Construction Safety Orders shall be adhered to. The contractor (and not the engineer) shall be responsible for the means, methods, techniques and sequences of construction.

5.2 Underground Utilities - The contractor shall carefully verify the location of all underground utilities prior to starting work.

5.3 Protect Adjacent Structures - It shall be the responsibility of the contractor to adequately shore and/or underpin and/or retain and/or protect all existing adjacent structures, land, utilities, roadways or other improvements during all site construction as required by California Civil Code Section 832 and California common law, and give adequate notice to all adjacent property owners.

6.0 LIMITATIONS

6.1 Variability of Subsurface Conditions - It should be clearly understood that subsurface conditions are often complex and may vary from those indicated by surface conditions or surface observation or those encountered at test pit or test hole locations. Also, the passage of time and natural and man-caused effects may change subsurface and surface conditions at the test pit or test hole locations. Therefore, it should be clearly understood that the information and recommendations developed by the soil-geotechnical engineer are only expressions of professional opinion and are based solely on information available to him at the time of the site observation and/or site investigation and/or rendering of services within the authorized scope of work and fee, and the soil-geotechnical engineer can make no warranty, either expressed or implied, as to the findings, opinions, conclusions, recommendations or professional advice.

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6.2 Liability of Soil Engineer - It should be clearly understood by the client that professional persons such as soil engineers sell services for the guidance of others in their economic, financial and personal affairs and they are not liable in the absence of negligence or intentional misconduct. The services of experts such as soil engineers are sought because of their special skill. When a person hires such a specialist, he is not justified to expect infallibility, but can expect only reasonable care and competence within the engineer's scope of work and fee limitations. The client who hires such an expert purchases a service in the form of professional opinion and not insurance. A soil engineer cannot be held liable on the grounds of strict liability. (Swett vs. Gribaldo, Jones & Associates, 40 Cal. App. 3rd 573)

8.2 Difficult Pier Drilling - It has been our experience that occasionally on drilled pier projects it is not possible to drill the drilled pier holes due to abundant boulders and/or hard or erratic bedrock conditions. Therefore, the client should be clearly warned that there is an inherent risk in all drilled pier foundation construction and that added cost may be encountered at such sites where drilled piers are recommended based on test pit or test boring data or visual observation, but during construction drilled piers cannot be drilled due to boulders or bedrock conditions. In such cases, it may be required to excavate, either with backhoes and/or hand excavation, larger deep spread footings extending through various boulder materials and bottoming in competent bedrock materails and/or relocating the building to a new location and/or using an alternative foundation scheme and/or using special drilling procedures including the use of a gad, spud or boulder buster, hoe ram, blasting, or special drilling bits or coring buckets.

8.3 Spread Footings - All spread footings should bottom in firm or stiff soil or rock materials as determined by the soil engineer and shall be free of all loose materials and free of standing water at the time of the concrete pour.

9.0 ENGINEER-CLIENT RELATIONS AND ADDITIONAL LIMITATIONS

9.1 Soil Report for Client Only - Any and all reports, correspondences, documents, plan(s), findings, opinions, recommendations, specifications or professional advice provided are intended for the sole and exclusive use of the client and specifically for the named project within a reasonable time after the rendering of the engineering services described in this report. To avoid any misinterpretation or improper use of information provided by the soil engineer, the client shall not make any such information available to others nor disclose content thereof (except to owners and future owners) without the specific expressed consent of the soil engineer.

9.2 Adherence to Recommendations - The conclusions and recommendations as presented in this report, correspondence, document or plan(s) are based upon the assumption that the client, contractor, owner and future owners will strictly adhere to these recommendations to the fullest possible extent during both the construction and future use of the project. A complete copy of this report shall be fully disclosed and made available to the first owner of the project and all subsequent owners during the economic life of the project.

9.3 Engineer's Scope of Work - The engineer's scope of work for this soil report, correspondence, opinion, document or plan(s) is outlined in the introduction of this document and is limited to that specifically stated, and is dependent upon the size and extent of the project, anticipated conditions, and the fee and

budget made available to the engineer by the client. During construction, all construction observations made by the soil engineer will be on an on-call basis and will be charged at an hourly rate plus expenses, and are not included in the fee for the soil report. It is the responsibility of the contractor to adequately notify the soil engineer of all construction observations.

9.31 Hazardous Materials or Wastes - The soil-geotechnical engineers's scope of work DOES NOT include toxic or hazardous man-made and/or natural wastes or materials. The client would have to consult with a speciality hazardous-toxic materials-environmental consultant regarding this topic.

9.32 Corrosion - The soil-geotechnical engineer's scope of work DOES NOT include an evaluation of the corrosion properties of the soil. A corrosion engineer would have to be consulted regarding this topic.

9.33 Tree Hazard - The soil-geotechnical engineer's scope of work DOES NOT include tree hazard evaluation. A qualified and experienced tree expert such as a certified arborist or registered forester would have to be consulted regarding this topic.

9.34 Hydrology, Hydraulics, and Flood Hazard - The soil-geotechnical engineer's scope of work DOES NOT include hydrology, hydraulics and/or flood hazards. A specialist in that field would have to be consulted regarding this topic.

9.35 Landscape-Agricultural Qualities - The soil-geotechnical engineer's scope of work DOES NOT include the landscape, gardening, and/or agricultural qualities and properties of the soil for vegetation growth. A specialist in that field would have to be consulted regarding this topic.

9.4 Acceptance and Use of Soil Report, Payment for Soil Report, and Construction Observations - The client, by accepting, keeping, and/or using this report or correspondence or opinion or document or plan(s), hereby obligates himself/herself/themselves to accept and to agree to all of the total contents therein of the text, plates, and appendices, and agrees to follow all recommendations, and also to pay the soil engineer for the preparation of the soil report, correspondence, opinion, document or plan(s), and to pay for all construction observations called for by the client or his agent or contractor.

9.5 Time Limit of Report - This geotechnical report, correspondence, opinion, document or plan(s) is valid only for 3 years (unless updated and amended by the soil engineer) from the date of issue, or until the occurence of a significant special local event such as a larger earthquake, a very wet winter or very large storm or significant changes on any adjacent land.

9.6 Construction Contingency/Unanticipated Conditions - Subsurface conditions commonly may vary between the various points of exploration or from those observed from the surface and/or may vary from those anticipated. Such variations, if encountered during construction, frequently require additional costs to satisfactorily complete the project. Therefore, we suggest that a reserve contingency fund be available to deal with unanticipated and unforeseen conditions.

9.7 Limitations and Liability - Soil-geotechnical engineering associated with soil, rock, and structures and improvements thereon or therein is a very high risk-low compensation service, and the fee of the engineer is very small in relation to the total cost of the project. Also, the engineer receives no long-term or lasting benefit from the project. Also, the engineer is not in control of the work and is not the superintendent of the work. The soil-geotechnical engineer is in the business of providing geotechnical engineering opinions and is not an insurer. Therefore, the total aggregate liability and indemnity of the soil-geotechnical engineer for any actual design errors or omissions or claims for damages arising out of the soil-geotechnical engineer's services is limited to five times the fee paid to the soil-geotechnical engineer. This total aggregate limit of liability shall also apply to any claims of any sort from future owners and/or users of the project and/or other parties.

APPENDIX B

CALIFORNIA CIVIL CODE
SECTION 832
LATERAL SUPPORT FROM ADJOINING OWNER

Each coterminous owner is entitled to the lateral and subjacent support which his land receives from the adjoining land, subject to the right of the owner of the adjoining land to make proper and usual excavations on the same for purposes of construction or improvement, under the following conditions:

1. Any owner of land or his lessee intending to make or to permit an excavation shall give reasonable notice to the owner or owners of adjoining lands and of buildings or other structures, stating the depth to which such excavation is intended to be made, and when the excavating will begin.

2. In making any excavation, ordinary care and skill shall be used, and reasonable precautions taken to sustain the adjoining land as such, without regard to any building or other structure which may be thereon, and there shall be no liability for damage done to any such building or other structure by reason of the excavation, except as otherwise provided or allowed by law.

3. If at any time it appears that the excavation is to be of greater depth than are the walls or foundations of any adjoining building or other structure, and is to be so close as to endanger the building or other structure in any way, then the owner of the building or other structure must be allowed at least 30 days if he so desires, in which to take measures to protect the same from any damage, or in which to extend the foundations thereof, and he must be given for the same purposes reasonable license to enter on the land on which the excavation is to be or is being made.

4. If the excavation is intended to be or is deeper than the standard depth of foundations, which depth is defined to be a depth of nine feet below the adjacent curb level, at the point where the joint property line intersects the curb and if on the land of the coterminous owner there is any building or other structure the wall or foundation of which goes to standard depth or deeper then the owner of the land on which the excavation is being made shall, if given the necessary license to enter on the adjoining land, protect the said adjoining land and any such building or other structure thereon without cost to the owner thereof, from any damage by reason of the excavation, and shall be liable to the owner of such property for any such damage, excepting only for minor settlement cracks in building or other structures.

APPENDIX G

GENERAL FOUNDATION NOTES

All pier holes and foundation excavations should be promptly poured after excavation. If it is required to leave pier holes or excavations open, then they should be very securely and safely covered so that children, small animals and people cannot fall into the pier holes or excavations.

All pier holes should be dry and free of all loose materials at the time of the concrete pour. If water is present in any pier holes, then such water should be removed by the use of a commercial sump pump or other approved method. If the pier holes experience any caving effects, then casing should be provided by the contractor with the casing removed as the concrete pour is made. If the rate of water and flow into the pier hole is such that it is not possible to pump the pier hole dry, then special tremie-type pouring methods should be used with the soil engineer present so that appropriate inspection and recommendations can be provided.

The proposed structure and all site development should, at the very minimum, be designed and constructed in accordance with the minimum requirements of the CALIF. Building Code, latest edition. In areas where wood joist floors are used, adequate crawl space clearance should be provided. Also, all foundation crawl space areas should be provided with adequate openings and ventilation as required by the Uniform Building Code. All foundation crawl space elements should be provided with access openings so that they may be inspected and entered in future times as required.

Rev. 80

APPENDIX I

NUISANCE AND LIABILITY FOR CONDITION OF LAND

3479. CALIFORNIA CIVIL CODE - Nuisance defined:

Anything which is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property, or unlawfully obstructs the free passage or use, in the customary manner, of any navigable lake, or river, bay, stream, canal, or basin, or any public park, square, street, or highway, is a nuisance.

3483. CALIFORNIA CIVIL CODE - Continuing nuisance; liability of successive owners for failure to abate:

Successive owners. Every successive owner of property who neglects to abate a continuing nuisance upon, or in the use of, such property, created by a former owner, is liable therefor in the same manner as the one who first created it.

364. RESTATEMENT OF TORTS, 2ND: Creation or Maintenance of Dangerous Artificial Conditions

A possessor of land is subject to liability to others outside of the land for physical harm caused by a structure or other artificial condition on the land, which the possessor realizes or should realize will involve an unreasonable risk of such harm, if

(a) the possessor has created the condition, or

(b) the condition is created by a third person with the possessor's consent or acquiescence while the land is in his possession, or

(c) the condition is created by a third person without the possessor's consent or acquiescence, but reasonable care is not taken to make the condition safe after the possessor knows or should know of it.

365. RESTATEMENT OF TORTS, 2ND: Dangerous Disrepair

A possessor of land is subject to liability to others outside of the land for physical harm caused by the disrepair of a structure or other artificial condition thereon, if the exercise of reasonable care by the possessor or by any person to whom he entrusts the maintenance and repair thereof

(a) would have disclosed the disrepair and the unreasonable risk involved therein, and

(b) would have made it reasonably safe by repair or otherwise.

366. RESTATEMENT OF TORTS, 2ND: Artificial Conditions Existing When Possession is Taken

One who takes possession of land upon which there is an existing structure or other artificial condition unreasonably dangerous to persons or property outside of the land is subject to liability for physical harm caused to them by the condition after, but only after,

(a) the possessor knows or should know of the condition, and

(b) he knows or should know that it exists without the consent of those affected by it, and

(c) he has failed after a reasonable opportunity, to make it safe or otherwise to protect such persons against it.

APPENDIX S

SIDEWALKS, CURBS, PATIOS, DRIVEWAYS, ETC.

It should be noted that the site soils are relatively loose and weak in their upper portions. Therefore, sidewalks, curbs, patio areas, driveways, porches, decks, landscaping walls and similar minor development may be subjected to some settlement, cracking, creep and related movement effects and these effects may have to be considered a part of building on a site where the upper soils are somewhat weak, as is typical of most natural sites. Significantly reducing or eliminating settlement and cracking effects may not be totally economically feasible for residential and commercial structures outside of the main structure itself.

However, if it is desired to reduce or eliminate the effects of settlement and cracking of concrete and paved areas, we can provide specific recommendations if you so request.

Such recommendations may include one or some combination of the following: special and additional steel reinforcement; total or partial overexcavation and recompaction; limitation of the size of concrete flatwork areas; use of flexible joints; special drainage measures and/or placement of drilled piers.

However, unless somewhat thorough and somewhat costly measures are taken, some movement and periodic repair and maintenance can usually be anticipated due to the settlement and consolidation of loose and weak upper topsoil and weaker residual soil materials.

APPENDIX V

INTERIM CONSTRUCTION EROSION CONTROL

1. The contractor should disturb the existing natural ground surface only at the footprint location of the house, driveway, and new roadway construction, and no general clearing or stripping of the entire area or lot should occur. This is very important as natural vegetation erosion control is currently in place, and it would be wrong to clear the area outside of the actual building footprint area.

2. All barren areas that are generated during the winter house construction should be covered with straw or equivalent, or well-secured with heavy plastic tarps or gravel, depending upon the location, conditions, and frequency of access.

3. Generally, all waste excavated soil materials should be removed promptly from the property after excavation.

4. Any minor stockpiled soil materials should be covered with plastic tarps and well-secured during any period of possible rain. No major or large amounts of stockpiled materials should be placed upon the property.

5. As barren areas are completed with respect to the winter house construction, then the areas as completed should be incrementally seeded with an annual rye grass mix or approved equivalent, and then covered with at least 2 to 3 inches of straw or equivalent. In areas of steeper terrain, staked 2 by 6 inch erosion control boards should be placed parallel to the contours of the land, extending about 2 inches below grade and on at least 10 foot centers, depending upon the steepness of the slope, and the area covered with jute slope protection matting or equivalent, securely staked in place, in addition to the above-indicated seeding and straw.

6. During and after periods of intensive and prolonged rainfall, the contractor should periodically monitor and observe the site and perform remedial and corrective measures as necessary.

7. A geotechnical fabric silt fence should be located downslope from the entire construction area. This silt fence should remain in place until after the project has been completed and natural vegetation growth or equivalent has been reestablished. This silt fence should consist of a Mirafi silt fence made from geotextile filter cloth or equivalent, and should extend at least 6 inches below the existing site grade in accordance with the Mirafi installation recommendations. In areas where it would be required to pass through the silt fence, bales of hay may be substituted.

8. No waste soil materials shall be left on the slopes as loose fill on slopes could result in a potential nuisance, hazard, or peril to downslope property owners and development. Therefore, all waste soil materials must be promptly removed from the property.

9. All soil, mud, and all other earth materials must be kept off the private and city street, and the contractor should take whatever measures necessary so as to keep the city street pavement clean and free of silt.

10. As storm drain facilities are constructed and completed, and storm waters flow into such storm drain facilities, adequate temporary silting basins constructed of sandbags, hale bales, timber, etc. should be utilized as necessary so as not to allow silt-laden water to enter the drainage dispersal system and clog it up.

11. In the event of a severe winter or a period of an extended very wet winter, it could be required to halt construction.

12. The erosion control measures as recommended in this correspondence should be fully implemented by the contractor, and additional or supplemental erosion control measures may be required depending upon the actual erosion control performance and/or storm intensity, duration and frequency.

13. Historically, the average rainy season usually begins around October 15th, and the heavier rainy season may begin around November 15th. Therefore, we recommend that the erosion control winterization measures be geared around these historical average dates. However, by October 15th, the contractor should have fully implemented the erosion control recommendations.

14. The contractor should have sufficient additional extra bales of hay on the site so as to be able to place in critical areas where concentrated erosion appears to be occurring.

15. All drilled pier holes should be promptly poured after they are drilled.

16. All construction activities, and especially construction slopes, should be in full accordance with Cal OSHA State of California Construction Safety Orders.

17. The references in the attached erosion control bibliography should be consulted and followed as necessary.

PERMANENT EROSION CONTROL

At the conclusion of the construction, all barren areas not established with dense vegetation growth should be seeded with an annual mixed grass seed, covered with jute slope protection matting or equivalent and covered with several inches of straw, and the area periodically irrigated as necessary so that dense vegetation growth is established prior to the start of the winter rainy season. In more steeply sloping areas, staked 2-inch by 6-inch erosion control boards should be placed at 10-foot centers, including all utility line backfill trenches that run in an upslope-downslope direction. The silt fence should remain in place after construction until dense vegetation has been established.

We also recommend that in moderately sloping to more steeply sloping areas, additional biotechnical erosion protection measures be taken by planting and establishing growth of medium-rooted and deep-rooted plants and shrubs as necessary so as to more fully reinforce the topsoil and surficial soil mass. Generally, the grass only provides shallow-rooted protection for the surface, and from the long-range standpoint, medium-rooted and deep-rooted plants and shrubs are generally needed so as to provide more complete long-term biotechnical slope protection.

In lieu of the above generalized permanent erosion control measures, an equivalent landscaping scheme could be provided by a qualified and experienced landscape consultant so as to result in the overall net long-term effect.

EROSION CONTROL BIBLIOGRAPHY

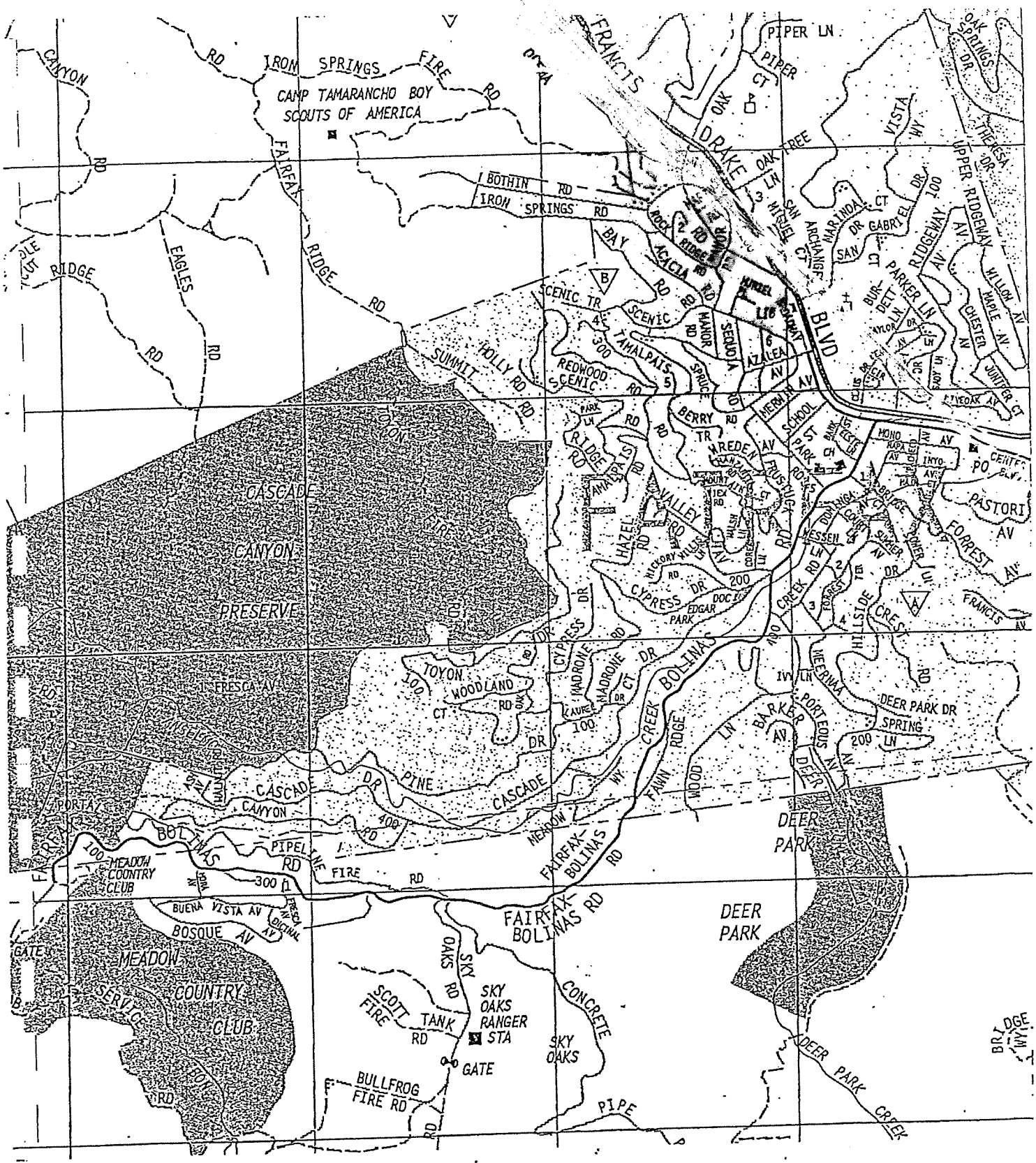
1. MANUAL OF STANDARDS FOR EROSION AND SEDIMENT CONTROL MEASURES, Association of Bay Area Governments, Oakland, CA (415-464-7900), 1981.

2. EROSION AND SEDIMENT CONTROL HANDBOOK, by Goldman, Jackson, and Bursztynsky (Association of Bay Area Governments), McGraw Hill Book Company, Hightstown, New Jersey (212-512-2000), 1986

3. BIOTECHNICAL SLOPE PROTECTION AND EROSION CONTROL, by Dr. Andrew T. Leiser - Professor of Environmental Horticulture at the University of California at Davis, and D. Gray, Krieger Publishing Company, Malabar, Florida (407-724-9542), 1989.

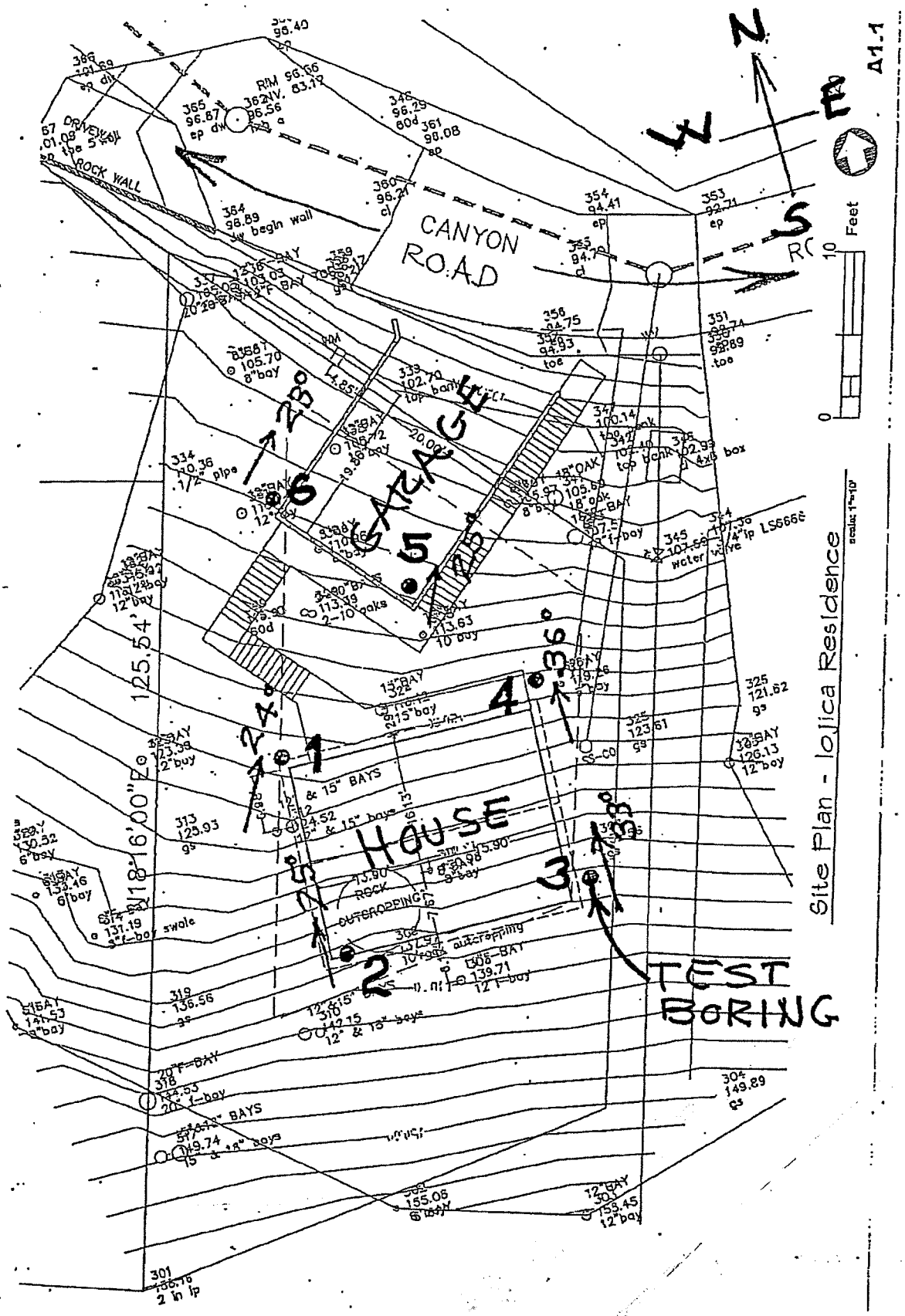
4. PLANTS FOR CALIFORNIA LANDSCAPES - A CATALOGUE OF DROUGHT TOLERANT PLANTS, State of California Department of Water Resources, Sacramento, CA, Bulletin 209, 1979.

5. EROSION AND SEDIMENT CONTROL HANDBOOK, by P. Amimoto, California Division of Mines & Geology, Pleasant Hill, CA, (415-646-5920), 1981



THOMAS BROS.

EARTH SCIENCE CONSULTANTS Soil • Foundation and Geotechnical Engineers Job No. 14-7044 Appr. Date: 1/31/14	SITE LOCATION MAP APN 003-032-16 CANYON ROAD FAIRFAX, CA	PLATE 1



EARTH SCIENCE CONSULTANTS Soil • Foundation and Geotechnical Engineers	SITE PLAN APN 003-032-16 CANYON ROAD FAIRFAX, CA	PLATE 2
Job No. 14-7044 Appr. Date: 1/31/14		

VIA
Atelier

Stormwater Control Plan

Iojica Residence

Parcel Address:

Canyon Road
Fairfax CA 94930
(APN: 003-032-16)

Prepared For:

Vlad and Paula Iojica
9 Brookside Ct.
San Anselmo, CA 94960

Prepared By:

ViA Atelier, Inc.
Vlad Iojica, P.E., QSD

REGISTERED PROFESSIONAL ENGINEER
VLAD G. IOJICA
C 73861
Exp. 6-30-21
CIVIL
STATE OF CALIFORNIA

Date:

November, 2019

TABLE OF CONTENTS

I. PROJECT DATA

The Stormwater Control Plan (SCP) has been prepared in support of the proposed development of the residential property at Canyon Road, in the Town of Fairfax, Marin County, California, APN: 003-032-16.
Parcel's longitude and latitude: 37°58'34" North, and 122°36'33" West.

Project Name/Number	Iojica Residence
Application Submittal Date	April, 2019
Project Location	Canyon Rd., Fairfax, California
Name of Owner	Vlad and Paula Iojica
Project Type and Description	Construction of a new single family residence, driveway and site patio
Total Parcel Area	0.1229 Acres (5,353 sq.ft.)
Total New and Replaced Impervious Surface Area	0.0469 Acres (2,042 sq.ft.)
Total Pre-Project Impervious Surface Area	0.000 Acres (0.000 sq.ft.)
Total Post-Project Impervious Surface Area	0.0469 Acres (2,042 sq.ft.)
Runoff Reduction Measures Selected	☐ 1. Disperse runoff to vegetated area ☐ 2. Pervious Pavement ☒ 3. Cisterns or Rain Barrels ☐ 4. Bio-Retention Facility or Planter Box

II. SETTING

II.A PROJECT LOCATION AND DESCRIPTION

As shown on the Vicinity Map (Fig.1) the project site is located on a hillside parcel, uphill from the alignment of Canyon Road, a local road. The parcel under conditions is un-developed and only includes a sanitary sewer service lateral, connected to the main sanitary sewer pipe on Canyon Rd. Stormwater tributary areas to the parcel are located along the southwest. Exhibit SD.1 depicts off-site tributary areas.

- The current zoning designation: Residential
- No construction phasing applicable to this project,

- Number of residential units: 1,
- Site percent slope: 50.3%

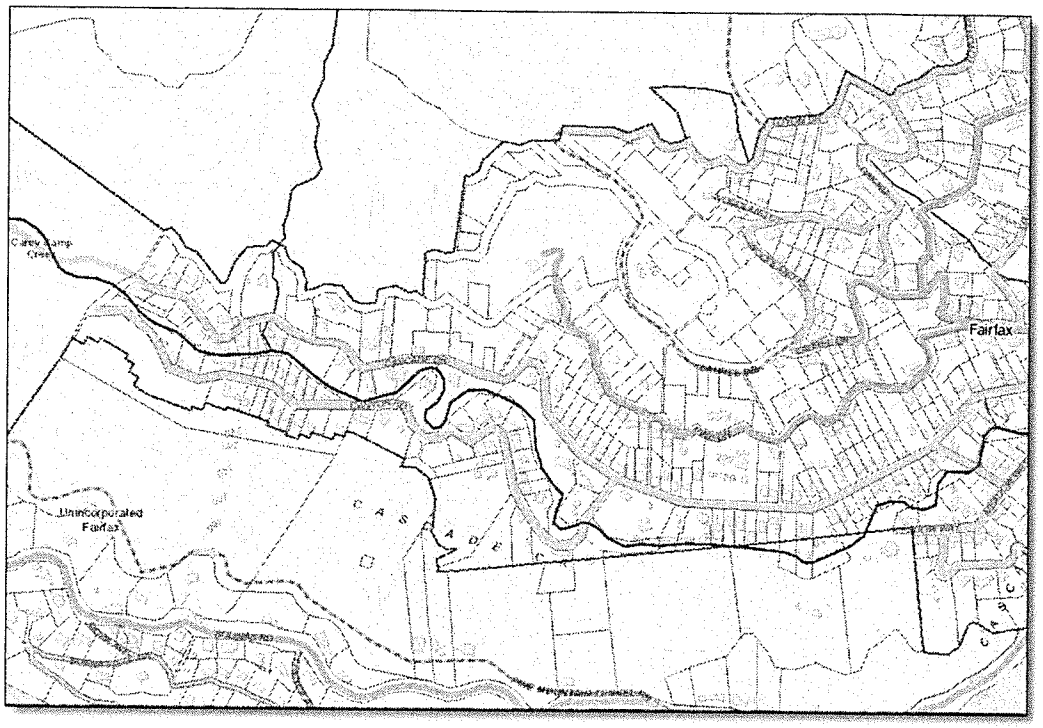


FIGURE 1 LOCATION MAP (GIS MARIN COUNTY)

II.B EXISTING SITE FEATURES AND CONDITIONS

Under the current conditions the parcel features a sanitary sewer connection and a storm drain conveyance way along the westerly boundary line. No other improvements are present on the site.

II.C. OPPORTUNITIES AND CONSTRAINTS FOR STORM WATER CONTROL

Proposed for landscaping areas surrounding the new single family house pad will provide an opportunity to partially filtrate and retain storm water runoff within the site.

One bio-retention planter it is proposed to be installed in to provide on-site stormwater runoff filtration/treatment and retention and compensate for the replaced and new impervious areas that cannot be retained and filtrated otherwise, in accordance with applicable criteria per 2019 BASMAA Post Construction Manual.

III. Low Impact Development Design Strategies

In the design process the following strategies have been taken into consideration:

- Limit disturbance to the area and incorporating natural features. Maintain existing drainage patterns.
- Minimize the compaction of permeable soils for the potions of the lot not proposed for development.
- Maintain existing vegetation to the possible extent.
- Concentrating development areas.

IV. Documentation of Drainage Design

A. Description of Drainage Management Areas

DMA Name	Surface Type	Area
#1	New Roof	648 sq.ft.
#2	New Patio	514 sq.ft.
#3	New Paved Surface (Driveway, Carport)	880 sq.ft.

DMA #1 The project's scope of work includes installation of a new roof with roof downspouts that will discharge the stormwater runoff to be conveyed to the proposed detention tank to be located in a vault beneath the surface of the driveway.

DMA #2 The new patio located along the south elevation of the house will also be drained to the proposed detention tank to be located in a vault beneath the surface of the driveway.

DMA #3 the new driveway, access staircase and parking area will be drained to the sub-surface detention tank.

B. Tabulation and Sizing Calculations

Areas Draining to the Runoff Detention Tank

DMA Name	Surface Type	Area
#1	New Roof	648 sq.ft.
#2	New Patio	514 sq.ft.
#3	New Paved Surface (Driveway, Carport)	880 sq.ft.

Note: the required capacity for the stormwater runoff detention tank will be determined by comparing the pre- vs post-development net runoff discharges from the site, using the triangular hydrograph method. The detention tank will ensure that under the post-

development conditions, the maximum discharge from the site will not exceed the discharge of storm water runoff under the current conditions.

V. HYDROLOGY CALCULATIONS

V.1 EXISTING CONDITIONS

Time of Concentration:	Tc = 5.0 min.
Runoff (weighted) coefficient:	C = 0.32
Area of the drainage basin:	A = 0.1229 Ac.
Intensity value interpolated for "Tc" from the NOAA table attached:	I_{100} = 5.56 in/hr
Design discharge using the Rational Method:	**Q = 0.22 cfs**

V.2 PROPOSED CONDITIONS

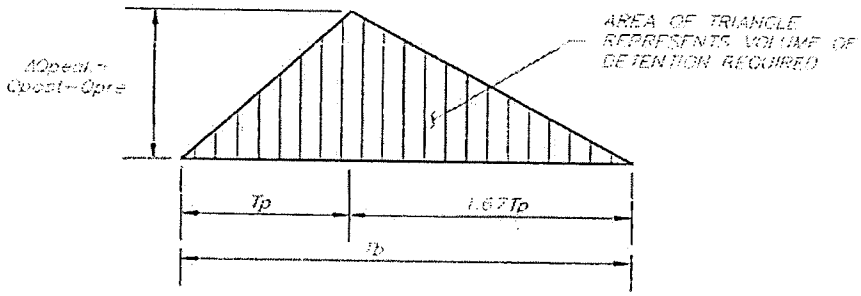
Time of Concentration:	Tc = 6.25 min.
Runoff (weighted) coefficient:	C = 0.74
Drainage area:	A = 0.1229 Ac.
Intensity NOAA table attached *(interpolated)*:	I_{100} = 5.165 in/hr
Design discharge using the Rational Method:	**Q = 0.47 cfs**

V.3 STORAGE REQUIREMENTS

To determine the required detention capacity for the excess runoff:

Detain: 0.22 cfs – 0.47 cfs = 0.25 cfs (ΔQ)

Triangular Hydrograph Method:



Tc=Tp: 6.25 min. = 375 sec

Tb= 2.67 x Tp: 2.67 x 375 = 1,001 sec

V = 0.5 x ΔQ x Tb = 125.16 cu.ft. (cu.ft.)

NOAA Atlas 14, Volume 6, Version 2
Location name: Fairfax, California, USA*
Latitude: 37.9764°, Longitude: -122.6097°
Elevation: 220.15 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	1.92 (1.72-2.18)	2.36 (2.10-2.68)	2.98 (2.64-3.38)	3.50 (3.07-4.03)	4.26 (3.59-5.11)	4.88 (4.02-6.01)	5.56 (4.44-7.03)	6.29 (4.85-8.22)	7.33 (5.39-10.1)	8.18 (5.77-11.7)
10-min	1.38 (1.23-1.56)	1.69 (1.51-1.92)	2.13 (1.89-2.43)	2.51 (2.20-2.89)	3.05 (2.57-3.66)	3.50 (2.88-4.31)	3.98 (3.18-5.04)	4.50 (3.47-5.89)	5.25 (3.86-7.22)	5.87 (4.14-8.41)
15-min	1.11 (0.988-1.26)	1.36 (1.21-1.55)	1.72 (1.52-1.96)	2.02 (1.78-2.33)	2.46 (2.08-2.95)	2.82 (2.32-3.47)	3.21 (2.56-4.06)	3.63 (2.80-4.75)	4.24 (3.11-5.82)	4.73 (3.34-6.78)
30-min	0.876 (0.780-0.992)	1.08 (0.956-1.22)	1.35 (1.20-1.54)	1.59 (1.40-1.83)	1.94 (1.64-2.33)	2.23 (1.83-2.74)	2.53 (2.02-3.20)	2.86 (2.21-3.75)	3.34 (2.45-4.59)	3.73 (2.63-5.34)
60-min	0.633 (0.564-0.718)	0.777 (0.692-0.883)	0.979 (0.868-1.12)	1.15 (1.01-1.33)	1.40 (1.18-1.68)	1.61 (1.32-1.98)	1.83 (1.46-2.32)	2.07 (1.60-2.71)	2.41 (1.77-3.32)	2.69 (1.90-3.86)
2-hr	0.470 (0.420-0.534)	0.578 (0.514-0.656)	0.726 (0.644-0.828)	0.852 (0.748-0.980)	1.03 (0.870-1.24)	1.18 (0.969-1.45)	1.34 (1.07-1.69)	1.50 (1.16-1.97)	1.74 (1.28-2.39)	1.94 (1.37-2.77)
3-hr	0.406 (0.361-0.460)	0.498 (0.443-0.565)	0.624 (0.553-0.711)	0.731 (0.642-0.841)	0.884 (0.746-1.06)	1.01 (0.828-1.24)	1.14 (0.908-1.44)	1.28 (0.986-1.67)	1.48 (1.08-2.03)	1.64 (1.15-2.34)
6-hr	0.305 (0.272-0.346)	0.376 (0.334-0.427)	0.471 (0.418-0.537)	0.551 (0.484-0.634)	0.663 (0.559-0.794)	0.752 (0.618-0.924)	0.844 (0.674-1.07)	0.942 (0.727-1.23)	1.08 (0.792-1.48)	1.19 (0.838-1.70)
12-hr	0.214 (0.190-0.242)	0.267 (0.238-0.303)	0.339 (0.300-0.386)	0.397 (0.349-0.457)	0.478 (0.403-0.573)	0.541 (0.445-0.665)	0.606 (0.484-0.767)	0.673 (0.520-0.881)	0.766 (0.563-1.05)	0.839 (0.591-1.20)
24-hr	0.153 (0.138-0.173)	0.194 (0.175-0.220)	0.249 (0.223-0.283)	0.293 (0.261-0.336)	0.354 (0.306-0.418)	0.400 (0.339-0.482)	0.448 (0.371-0.552)	0.497 (0.402-0.628)	0.564 (0.439-0.741)	0.616 (0.464-0.835)
2-day	0.099 (0.090-0.113)	0.126 (0.113-0.143)	0.160 (0.144-0.182)	0.189 (0.168-0.216)	0.227 (0.196-0.268)	0.257 (0.218-0.309)	0.287 (0.238-0.353)	0.318 (0.257-0.402)	0.360 (0.280-0.473)	0.393 (0.296-0.532)
3-day	0.077 (0.069-0.087)	0.096 (0.087-0.109)	0.123 (0.110-0.139)	0.144 (0.128-0.165)	0.173 (0.149-0.204)	0.195 (0.165-0.235)	0.218 (0.180-0.268)	0.241 (0.194-0.304)	0.272 (0.211-0.357)	0.296 (0.223-0.402)
4-day	0.064 (0.057-0.072)	0.080 (0.072-0.091)	0.102 (0.091-0.116)	0.119 (0.106-0.137)	0.143 (0.123-0.169)	0.161 (0.136-0.193)	0.179 (0.148-0.220)	0.197 (0.159-0.249)	0.222 (0.173-0.292)	0.241 (0.182-0.327)
7-day	0.044 (0.040-0.050)	0.056 (0.050-0.064)	0.071 (0.064-0.081)	0.083 (0.074-0.095)	0.099 (0.085-0.116)	0.110 (0.093-0.133)	0.122 (0.101-0.150)	0.133 (0.108-0.169)	0.149 (0.116-0.195)	0.160 (0.121-0.217)
10-day	0.036 (0.033-0.041)	0.046 (0.041-0.052)	0.058 (0.052-0.066)	0.068 (0.061-0.078)	0.081 (0.070-0.095)	0.090 (0.076-0.108)	0.099 (0.082-0.122)	0.108 (0.087-0.136)	0.119 (0.093-0.157)	0.128 (0.096-0.174)
20-day	0.024 (0.022-0.027)	0.031 (0.028-0.035)	0.039 (0.035-0.044)	0.045 (0.040-0.052)	0.053 (0.046-0.063)	0.059 (0.050-0.071)	0.064 (0.053-0.079)	0.070 (0.056-0.088)	0.076 (0.059-0.100)	0.081 (0.061-0.110)
30-day	0.020 (0.018-0.022)	0.025 (0.023-0.028)	0.032 (0.029-0.036)	0.037 (0.033-0.042)	0.043 (0.037-0.051)	0.048 (0.040-0.057)	0.052 (0.043-0.064)	0.056 (0.045-0.071)	0.061 (0.047-0.080)	0.064 (0.049-0.087)
45-day	0.016 (0.014-0.018)	0.021 (0.018-0.023)	0.026 (0.023-0.030)	0.030 (0.027-0.034)	0.035 (0.030-0.041)	0.038 (0.033-0.046)	0.042 (0.035-0.051)	0.045 (0.036-0.057)	0.048 (0.038-0.064)	0.051 (0.038-0.069)
60-day	0.014 (0.013-0.016)	0.018 (0.016-0.021)	0.023 (0.021-0.026)	0.027 (0.024-0.030)	0.031 (0.027-0.036)	0.034 (0.029-0.041)	0.036 (0.030-0.045)	0.039 (0.031-0.049)	0.042 (0.033-0.055)	0.044 (0.033-0.060)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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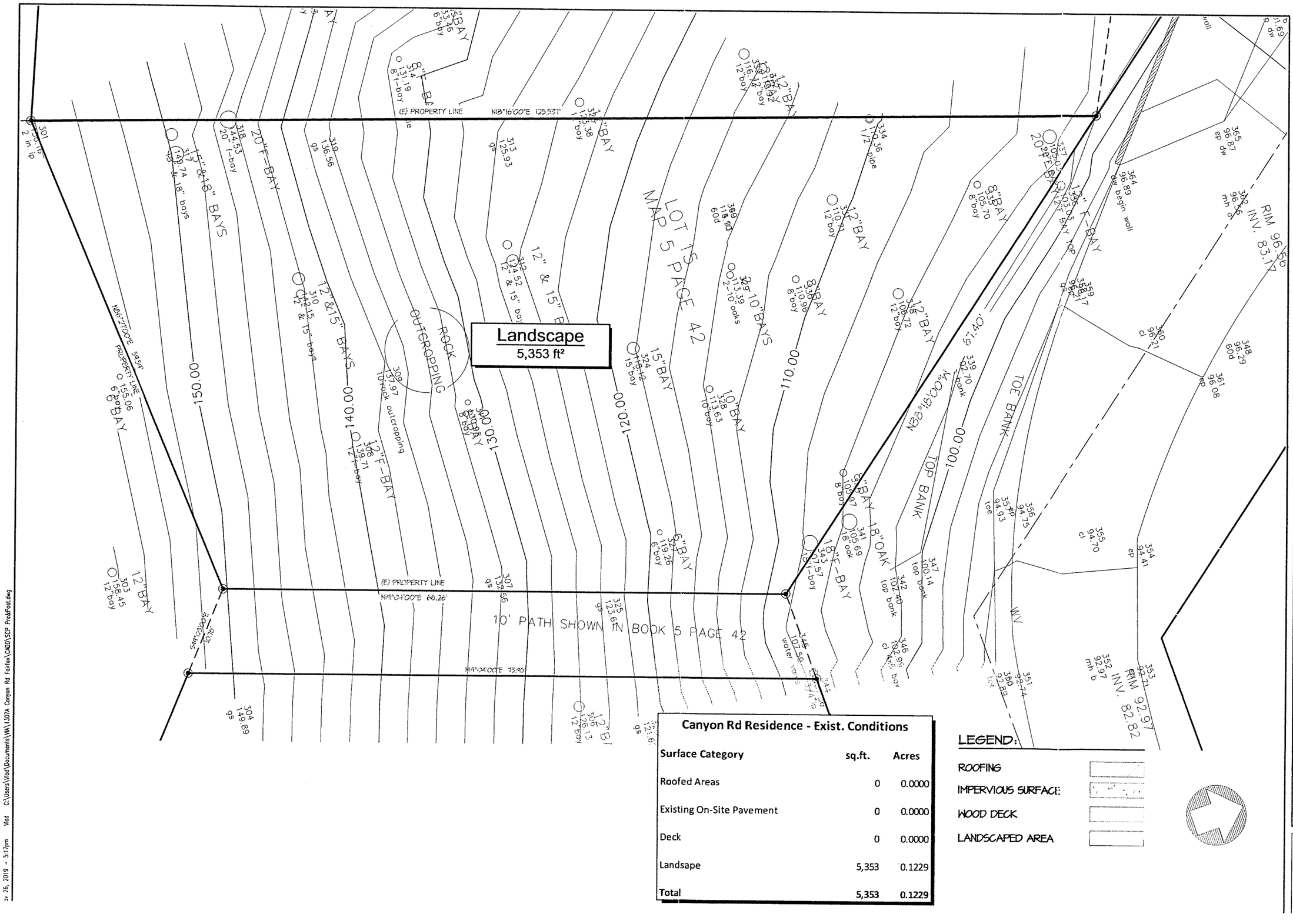
APPENDIXES

A CURRENT CONDITIONS MAP



Canyon Rd Residence - Exist. Conditions

Surface Category	sq.ft.	Acres
Roofed Areas	0	0.0000
Existing On-Site Pavement	0	0.0000
Deck	0	0.0000
Landsape	5,353	0.1229
Total	5,353	0.1229

LEGEND:

- ROOFING
- IMPERVIOUS SURFACE
- WOOD DECK
- LANDSCAPED AREA

ISSUE DATE: 3/29/19
DRAWN BY: V.I.
REVIEWED BY: V.I.
REFERENCE: -
SHEET NO.: SCP-1
SEE SHEET NO.

SHEET NAME: Current Site Conditions

PROJECT: IOJICA RESIDENCE

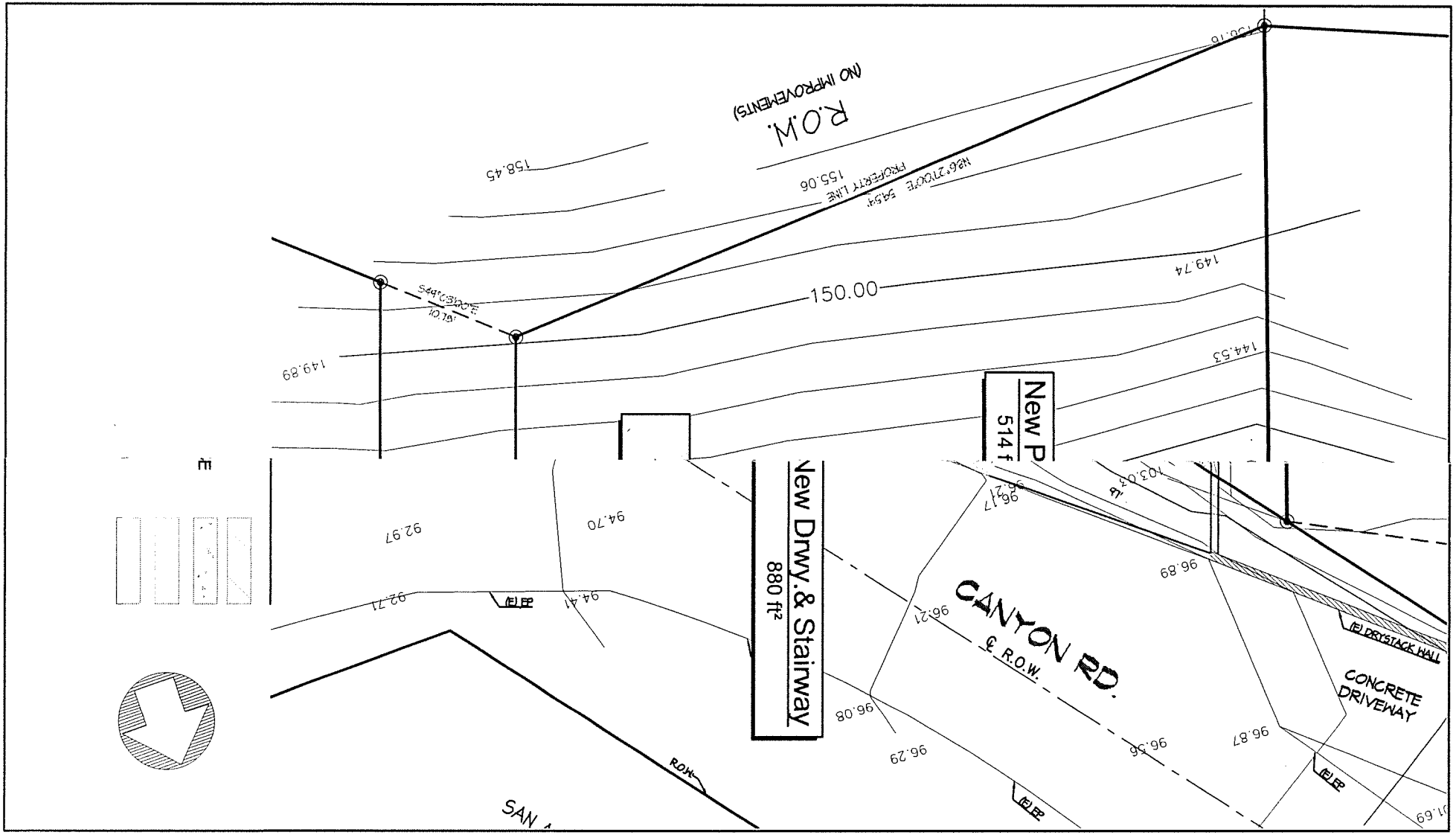
9 Brookside Court
San Anselmo
CA 94960
T: 415-714-6716
E: office@via-eng.com
WWW.via-eng.com

VIA
Atelier

B. DEVELOPED CONDITIONS MAP

C. DRAINAGE TRIBUTARY AREA

Nov 26, 2019 - 5:28pm Vlad C:\Users\Vlad\Documents\VIA\1307A Canyon Rd Fairfax\CADD\SCP Pre&Post.dwg



VIA Atelier
9 Brookside Court
San Anselmo
CA 94960
T: 415-714-6716
E: office@via-eng.com
www.via-eng.com

SHEET NAME: Proposed Site Conditions

PROJECT: IOJICA RESIDENCE
CANYON ROAD , FAIRFAX, CA (APN: 03-032-16)

ISSUE DATE: 3/29/19	REFERENCE: -
DRAWN BY: V.I.	SHEET NO.: SCP-2
REVIEWED BY: V.I.	
PROJECT NO. 1307.A	REF. SHEET: -

NOTE:

BACKGROUND TOPOGRAPHIC AND PARCEL INFORMATION ON THIS MAP HAVE BEEN OBTAINED VIA GIS FILES AVAILABLE MARIN MAP.

ISSUE DATE:	REFERENCE:
DRAWN BY:	SHEET NO.: SD.1
REVIEWED BY:	
PROJECT NO.	REF. SHEET:

SHEET NAME: OF-SITE DRAINAGE TRIBUTARY AREA

PROJECT: CANYON ROAD, CA 94930 (APN:003-032-16)

1620 Sir Francis Drake Blvd.
Fairfax, CA 94930
T: 415-714-6776
E: office@via-eng.com
www.via-eng.com

ViA Atelier

TOWN OF FAIRFAX
142 BOLINAS ROAD, FAIRFAX, CALIFORNIA 94930
(415) 453-1584/FAX (415) 453-1618

Date: February 27, 2020 Permit 20-T-12

NOTICE OF TREE COMMITTEE ACTION

This action may be appealed to the Fairfax Town Council within 10 days of the Tree Committee decision. This permit is not in effect until the 10 day appeal period is over.

Request for a tree permit to remove: (4) Oak
(11) CA Bay

Address of Tree(s) to be removed: APN 003-032-16/Canyon Road

Applicant's Phone: Vlad Iojica (415) 774-6776

On February 24, 2020 the Fairfax Tree Committee took the following action on the above referenced tree permit application:

FOR RECOMMENDATION ONLY TO PLANNING COMMISSION –
Applicant present.
The Committee discussed the small lot size and potential future landscape design. The Committee also considered a letter from a neighbor listing their concerns.
Pugh made a motion to recommend that the project proceed per plan. No exceptions taken. The motion was seconded by Romaidis and voted on.
Vote:
Benson- Aye
Flores- Aye
Pugh- Aye
Richardson Mack- Aye
Romaidis- Aye Item #6 Vote: Ayes- 5, Noes- 0

_____ APPROVED
REMINDER: PLEASE KEEP PERMIT NOTICE UP DURING THE 10 DAY WAITING PERIOD
_____ CONTINUED

_____ DENIED
CONDITIONS OF APPROVAL:

THIS APPROVED APPLICATION IS YOUR PERMIT-KEEP IT ON THE JOB SITE. FAILURE TO HAVE THE PERMIT ON THE SITE WHILE THE TREE WORK IS IN PROGRESS MAY RESULT IN THE WORK BEING HALTED UNTIL YOU SHOW PROOF OF APPROVAL.
Please verify that the tree company performing the work has a current Fairfax Business license and worker's compensation coverage.
THIS TREE PERMIT EXPIRES IN SIX MONTHS. If necessary, you may apply for an extension in writing prior to the expiration date.

ATTACHMENT D

"1 OR RECOMMENDATION ONLY"
(NEW RESIDENCE CONSTRUCTION)

TOWN OF FAIRFAX
142 BOLINAS ROAD, FAIRFAX, CA 94930
(415) 453-1584 / FAX (415) 453-1618

FEB 10 2020

APPLICATION FOR TREE REMOVAL OR ALTERATION

A permit is required to remove or alter one or more trees on any parcel in the Town of Fairfax. All trees for which a permit is requested shall be tagged with an orange ribbon, a minimum of 10 days prior to the Tree Advisory Committee meeting date. Applicants must also post a notice of intent to alter or remove the marked Tree(s) in a prominent location visible along the frontage of the affected property.

APPLICANT INFORMATION

OWNER (APPLICATIONS MUST BE FILED BY PROPERTY OWNER): VLAD ICOJICA	DATE OF APPLICATION: 2/4/2020
JOB ADDRESS/ASSESSOR'S PARCEL NO. IF SITE IS VACANT 03-032-16 / CANYON RD	PHONE NUMBER: 415-774-6776
EMAIL ADDRESS: Vladicojica@gmail.com	FAX NUMBER: N/A
PROPERTY OWNER'S ADDRESS IF DIFFERENT FROM ABOVE 9 BROOKSIDE CT., SAN ANSELMO, CA 94960	ALTERNATE PHONE NUMBER: 415-889-9424

TREE INFORMATION

SPECIES AND DESIGNATION OF HERITAGE/SPECIMEN/UNDESIRABLE TREE: QUERCUS LOBATA (OAK)	CIRCUMFERENCE BREAST HEIGHT: 15"
	REASON FOR REMOVAL/ALTERATION: PRUNING FOR CLEARANCE
SPECIES AND DESIGNATION OF HERITAGE/SPECIMEN/UNDESIRABLE TREE: QUERCUS LOBATA (OAK)	CIRCUMFERENCE BREAST HEIGHT: 18", 12", 12"
	REASON FOR REMOVAL/ALTERATION: POOR CONDITION; LOC. WITHIN BLDG. PAD
SPECIES AND DESIGNATION OF HERITAGE/SPECIMEN/UNDESIRABLE TREE: UMBELLULARIA CALIFORNICA BAY	CIRCUMFERENCE BREAST HEIGHT: 5", 6", 5" 14", 8", 15", 15"
	REASON FOR REMOVAL/ALTERATION: POOR CONDITION; LOC. WITHIN BLDG. PAD
SPECIES AND DESIGNATION OF HERITAGE/SPECIMEN/UNDESIRABLE TREE: UMBELLULARIA CALIFORNICA BAY	CIRCUMFERENCE BREAST HEIGHT: 20", 6", 6", 12"
	REASON FOR REMOVAL/ALTERATION: FIRE DEPARTMENT RECOM.

Please attached a site plan to this application showing the location and species of all trees with a diameter of 4 inches (circumference of 12 inches or more), measured 4.5feet above grade at tree base, property boundaries and easements, location of structures, foundation lines of neighboring structures and paved areas including driveways, .

AGENDA ITEM #6

BAY REMOVE.

(2) x 5"
(4) x 6"
(1) x 8"
(1) x 4"
(3) x 15"
(1) x 14"
(1) x 20"

TOT. 13 TREES.

OAK - REMOVE.

(1) x 8"
(1) x 10"
(2) x 12"
(1) x 18"

TOT: 5 TREES.

OAK - ALTER.

(2) - 12"
(1) - 14"
(3) - 15"
(1) - 18"

TOT: 7 trees.

Table 1 Tree Condition Summary						
Tree #	Species	Ht. in ft.	Crown Spread in ft.	Circumference in.	Current Condition/ Age	Notes
50	*Umbellularia californico* Ca Bay	20	8	6	Good, Young	Vigor good, good structure, young tree with no observable defects – **Recommend TPZ**
51	*Umbellularia californica* Ca Bay	40	15	5	Good, Young	Vigor Good, tree is growing within inches of Tree #52, located next to proposed retaining wall – **Recommend Removal**
52	*Quercus lobata*	20	10	18	Good, Mature	Good Vigor, lean to the east, located next to proposed retaining wall – **Recommend Removal**
53	*Umbellularia californica* Ca Bay	20	10	6	Fair, Young	Fair vigor, poor taper, located next to proposed retaining wall, **Recommend Removal**
54	*Umbellularia californica* Ca Bay	20	10	5	Poor, young	Poor vigor exposed roots due to bank erosion with lean over road, located next to proposed bldg. footprint, **Recommend Removal**
55	*Quercus lobata*	40	15	12	Poor, Mature	Significant trunk decay and senescent crown, located within proposed bldg. footprint – **Recommend Removal**
56	*Quercus lobata*	15	10	12	Good, Mature	Good vigor and fair structure, included bark within major scaffold branches, bank erosion with lean over road, located next to proposed retaining wall – **Recommend Removal**
57	*Umbellularia californica* Ca Bay	15	10	15	Good, Mature	Vigor good, good structure, included trunk, some erosion of root crown on roadway bank– **Recommend TPZ**

Table 1 Tree Condition Summary cont'd						
Tree #	**Species**	**Ht. in ft.**	**Crown Spread in ft.**	**Circumference in.**	**Current Condition/ Age**	**Notes**
58	*Umbellularia californica* Ca Bay	35	15	14	Fair, Mature	Fair Vigor, poor trunk taper, located within proposed bldg. footprint, – **Recommend Removal**
59	*Umbellularia californica* Ca Bay	25	15	8	Fair, Mature	Fair Vigor, lean to the SW, poor crown attachment, located within proposed bldg. footprint, – **Recommend Removal**
60	*Quercus lobata*	40	20	10, 8	Poor, Mature	Fair Vigor, lean to the E, poor taper, poor live crown ratio, located within proposed bldg. footprint, – **Recommend Removal**
61	*Umbellularia californica* Ca Bay	35	20	15	Fair, Mature	Fair Vigor, co-dominant stems, poor taper, poor live crown ratio, located within proposed bldg. footprint, – **Recommend Removal**
62	*Umbellularia californica* Ca Bay	35	15	15	Fair, Mature	Fair Vigor, co-dominant stems one recently removed, species will not heal trunk wound, – **Recommend Removal**
63	*Quercus lobata*	35	35	15	Fair, Mature	Fair Vigor, severe lean to the W, poor live crown, - **Recommend Pruning for Clearance and TPZ**
64	*Umbellularia californica* Ca Bay	6	10	4	Good, Young	**Removal** recommended by Ross Valley Fire Department
65	*Quercus Lobata*	33	25	12, 15	Fair, Mature	**Pruning/Alteration** for min. clearance recommended by Ross Valley Fire Department
66	*Umbellularia californica* Ca Bay	31	22	20	Fair, Mature	**Removal** recommended by Ross Valley Fire Department
67	*Quercus Lobata*	30	24	15, 18	Fair, Mature	**Pruning/Alteration** for min. clearance recommended by Ross Valley Fire Department
68	*Umbellularia californica* Ca Bay	7	8	6	Good, Young	**Removal** recommended by Ross Valley Fire Department
69	*Umbellularia californica* Ca Bay	12	18	6	Good, Young	**Removal** recommended by Ross Valley Fire Department
70	*Quercus Lobata*	22	22	12, 14	Fair, Mature	**Pruning/Alteration** for min. clearance recommended by Ross Valley Fire Department

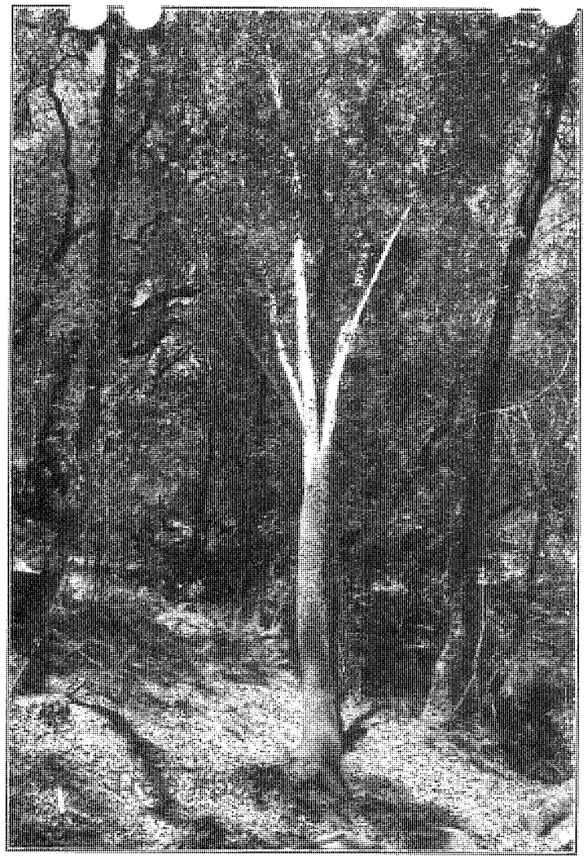


FIGURE 1

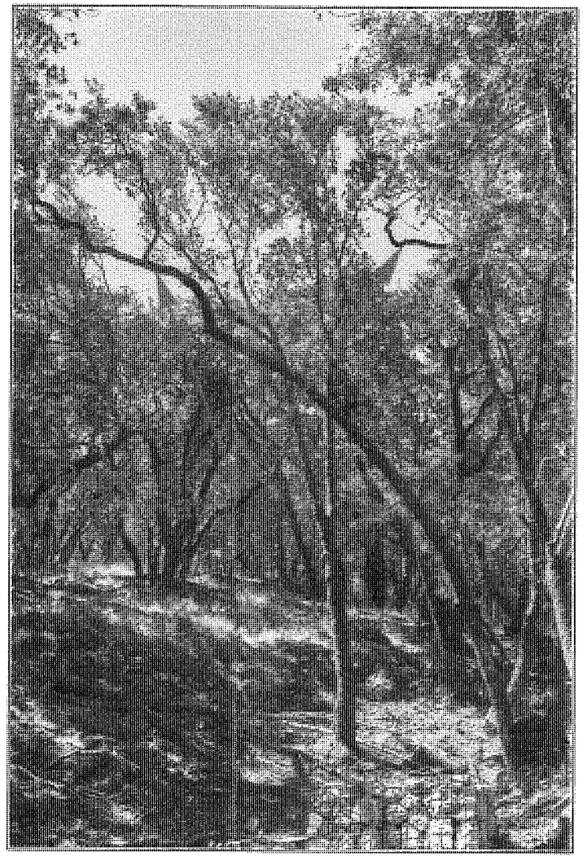


FIGURE 2

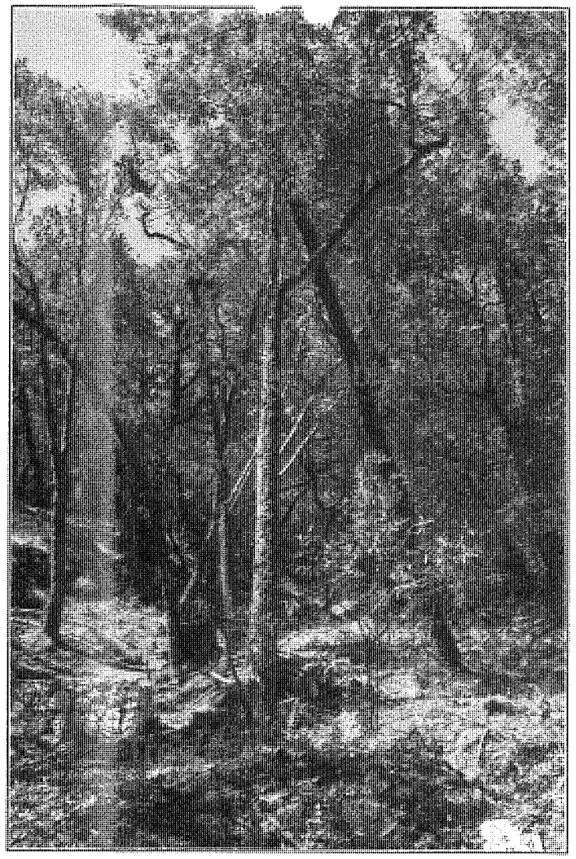
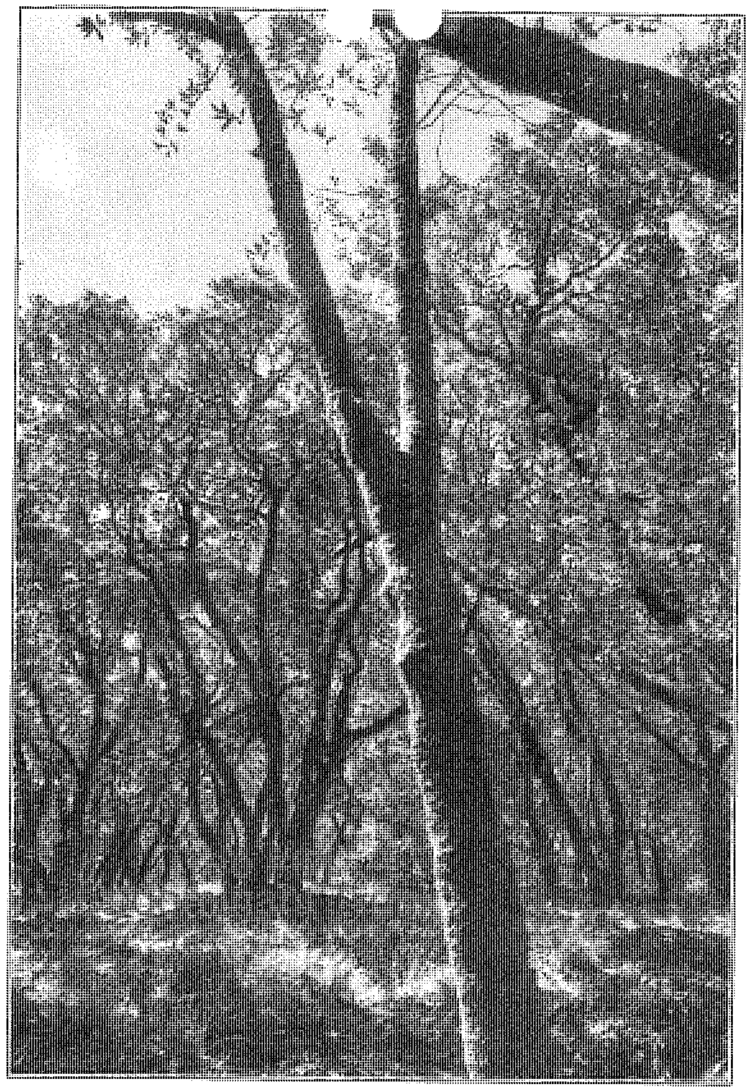


FIGURE 3

FIGURE 4

FIGURE 5

TR.1



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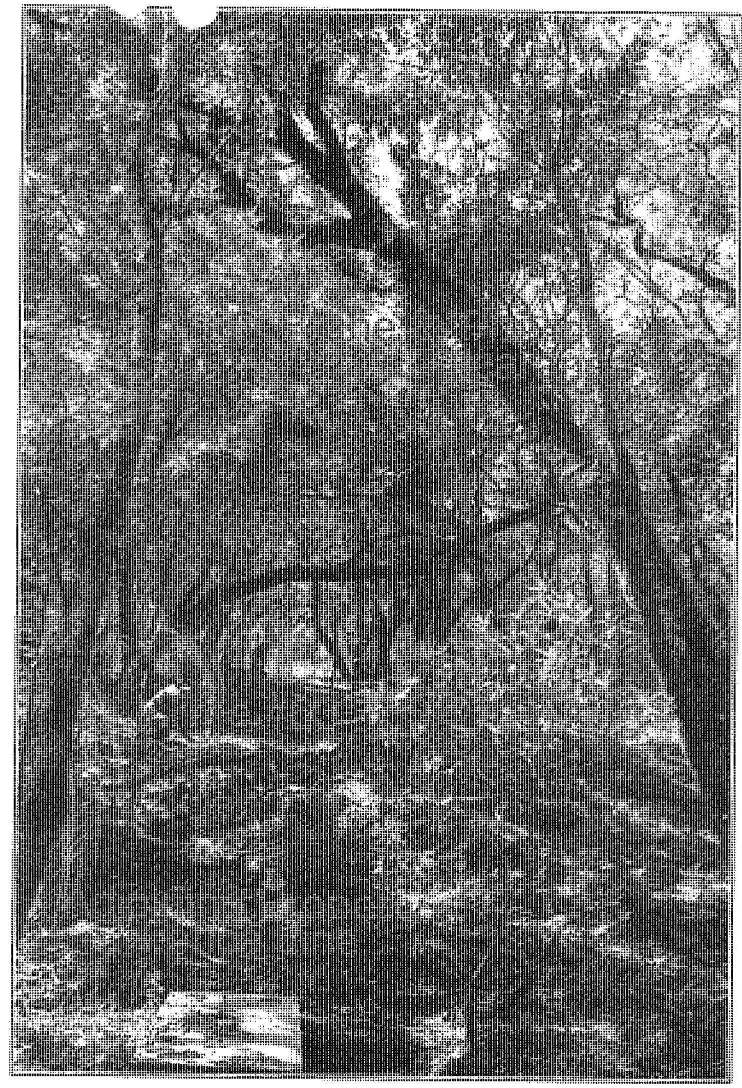

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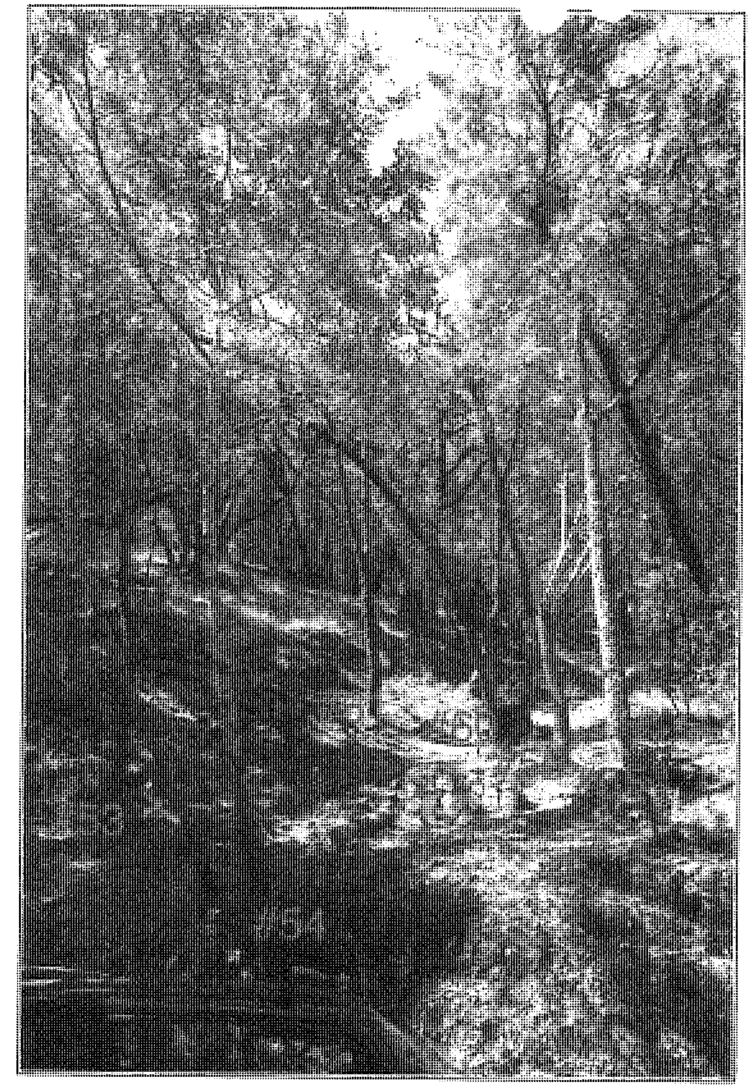


FIGURE 8

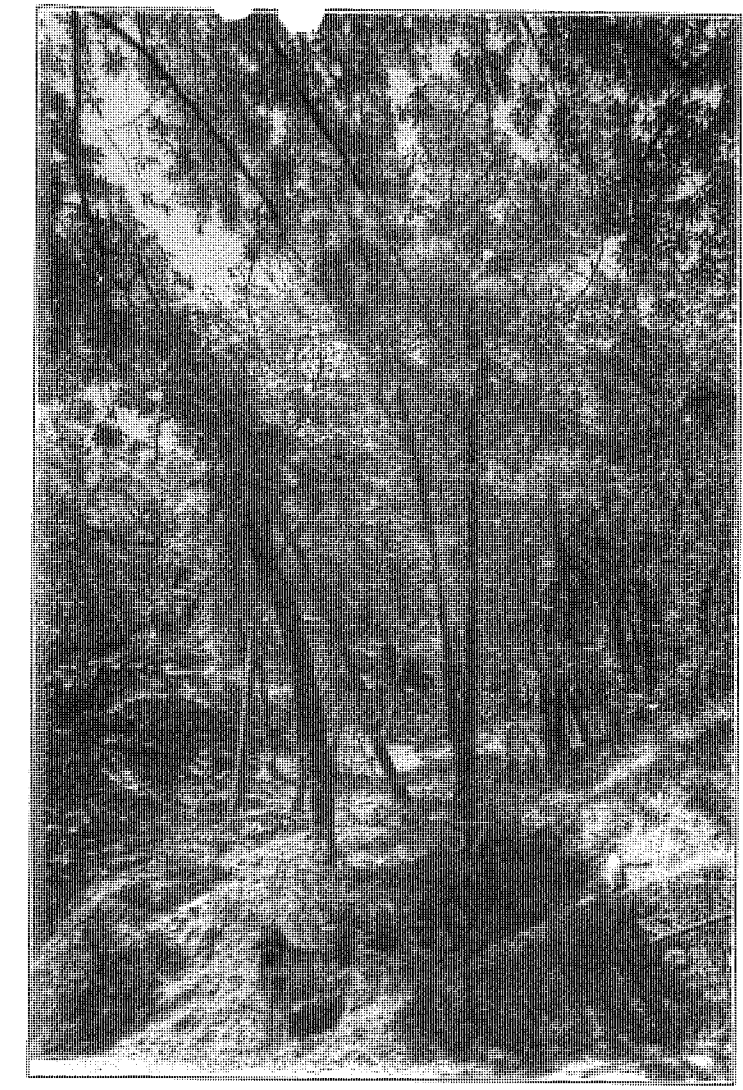


FIGURE 9

FIGURE 10

ViA Atelier

DEC 16 2019

Project Site Pictures

Canyon Road Project Site

APN: 03-032-16

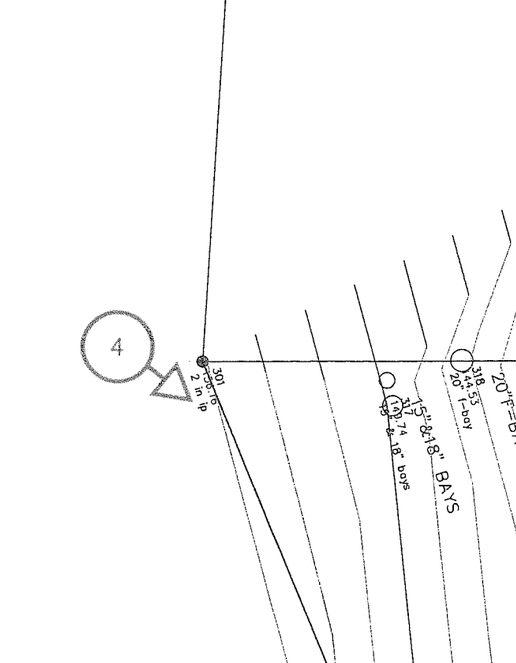


Image 1: taken from the NW site corner

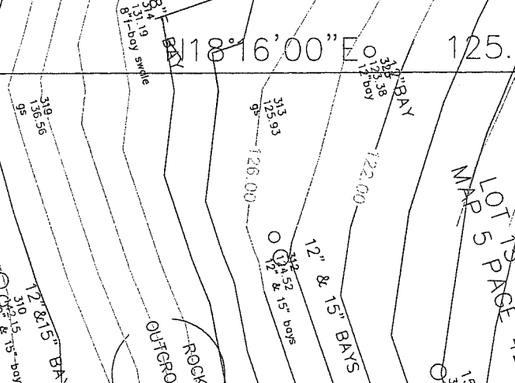


Image 2: taken from the NE site corner

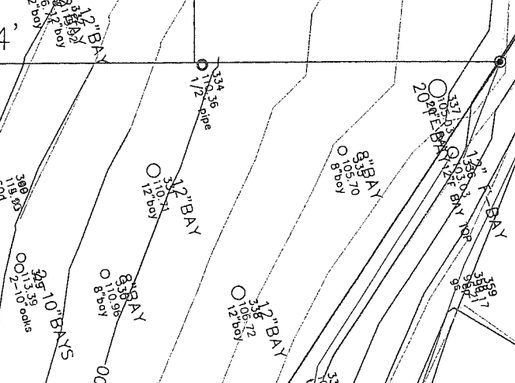


Image 3: taken from the SE site corner

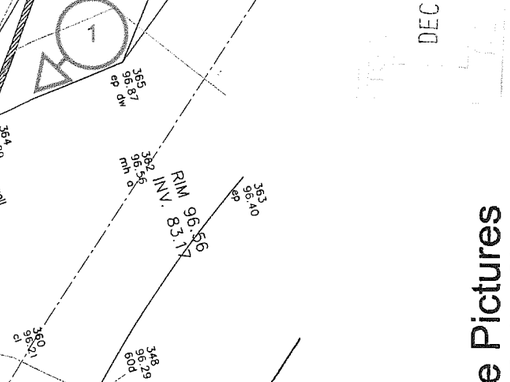
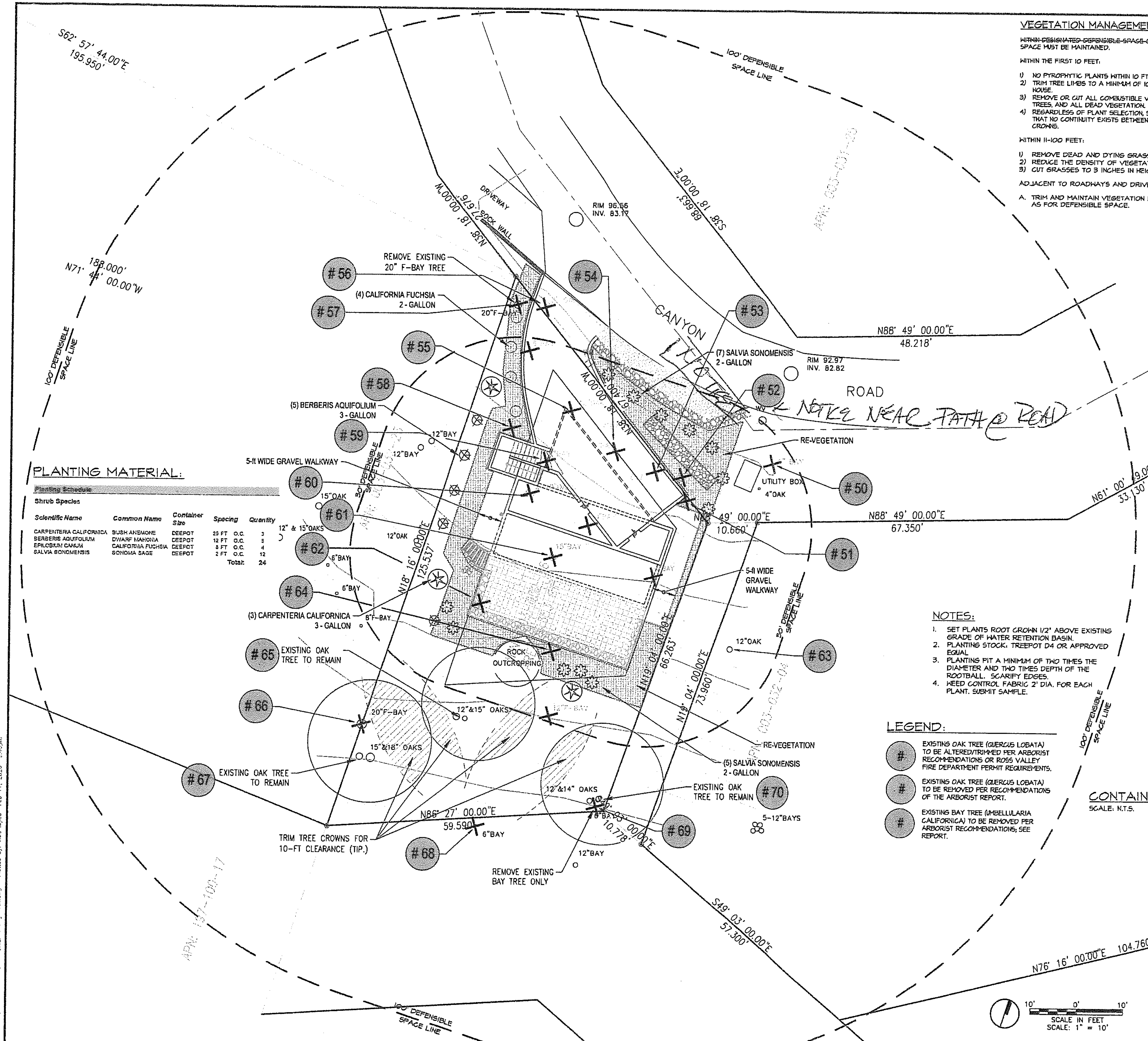


Image 4: taken from the SW site corner

Date: December 2019



VEGETATION MANAGEMENT PLAN

SCALE: 1" = 10'

PLANTING MATERIAL:

Planting Schedule

Shrub Species

Scientific Name	*Common Name*	*Container Size*	*Spacing*	*Quantity*
CARPENTERIA CALIFORNICA	BUSH ANEMONE	DEEPOT	25 FT O.C.	3
BERBERIS AQUIFOLIUM	DWARF MAHONIA	DEEPOT	12 FT O.C.	5
EPILOBIUM CANUM	CALIFORNIA FUCHSIA	DEEPOT	8 FT O.C.	4
SALVIA SONOMENSIS	SONOMA SAGE	DEEPOT	2 FT O.C.	12
			Total:	24

VEGETATION MANAGEMENT REQUIREMENTS:

~~WITHIN DESIGNATED DEFENSIBLE SPACE OF ALL STRUCTURES DEFENSIBLE~~ SPACE MUST BE MAINTAINED.

WITHIN THE FIRST 10 FEET:

1) NO PYROPHYTIC PLANTS WITHIN 10 FT. OF THE HOUSE.
2) TRIM TREE LIMBS TO A MINIMUM OF 10 FEET AWAY FROM THE ROOF OF HOUSE.
3) REMOVE OR CUT ALL COMBUSTIBLE VEGETATION SUCH AS, DEAD TREES, AND ALL DEAD VEGETATION.
4) REGARDLESS OF PLANT SELECTION, SHRUBS SHOULD BE SPACED SO THAT NO CONTINUITY EXISTS BETWEEN THE GROUND FUELS AND TREE CROWNS.

WITHIN 11-100 FEET:

1) REMOVE DEAD AND DYING GRASS, SHRUBS, AND TREES.
2) REDUCE THE DENSITY OF VEGETATION AND LADDER FUELS.
3) CUT GRASSES TO 3 INCHES IN HEIGHT ABOVE THE GROUND.

ADJACENT TO ROADWAYS AND DRIVEWAYS:

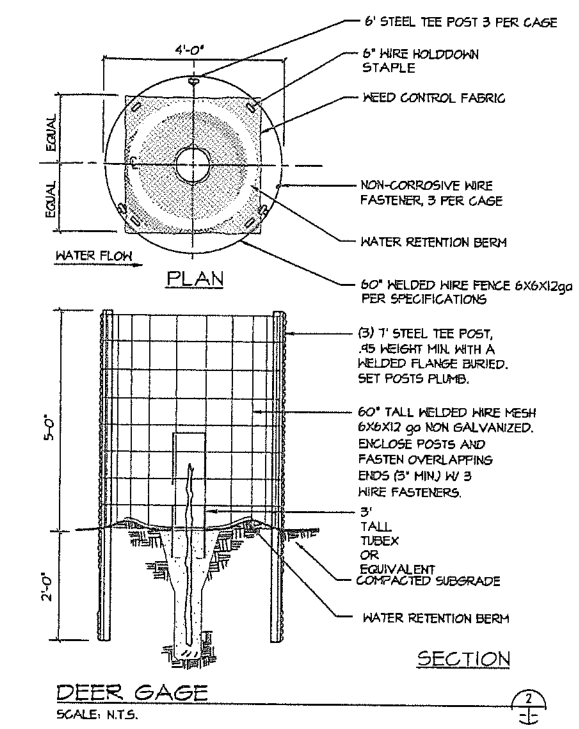
A. TRIM AND MAINTAIN VEGETATION WITHIN 10 FEET OF ROADWAYS AS FOR DEFENSIBLE SPACE.
B. TRIM TREES SO THEY DO NOT HANG LOWER THAN 15-FT. ABOVE THE ROADWAY.

PLANT SPACING AND CROWN SEPARATION

A. REGARDLESS OF PLANT SELECTION, SHRUBS SHOULD BE SPACED SO THAT NO CONTINUITY EXISTS BETWEEN THE GROUND FUELS AND TREE CROWNS, SUCH THAT A GROUND FIRE WILL NOT EXTEND INTO THE TREE CANOPY.
B. TREES SHOULD BE PLANTED SUCH THAT WHEN MATURE, THEIR CROWNS WILL BE SEPARATED BY AT LEAST 10 FEET. ADD AN ADDITIONAL FIVE FEET FOR EVERY TEN (10%) PERCENT INCREASES IN SLOPE. EXISTING TREES MAY BE REQUIRED TO BE THINNED AND/OR REMOVED DEPENDING ON THEIR CONFIGURATION AND DISTANCE FROM THE STRUCTURE(S).
C. SEPARATE INDIVIDUAL SHRUB CROWNS BY AT LEAST TWO TIMES THE HEIGHT OR CLUMP SHRUBS INTO ISLANDS OF NO GREATER THAN 18-FT. DIAMETER. SEPARATE THE ISLANDS BY A DISTANCE OF NO LESS THAN TWO TIMES THE CANOPY HEIGHT.

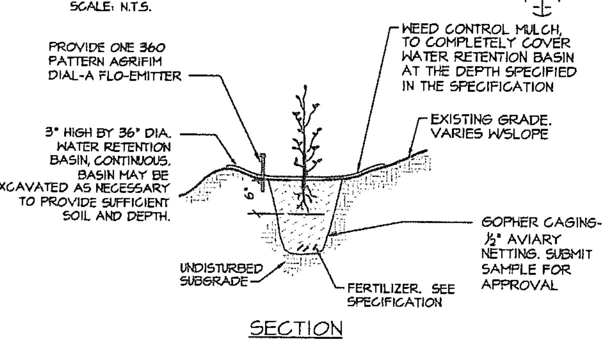
NOTE:

ALL NEW SHRUBS & GRASSES WITHIN 30' OF HOUSE SHALL BE DRIP IRRIGATED WITH DRIP TYPE 1 OR 2, PER IRRIGATION PLAN



DEER CAGE

SCALE: N.T.S.



CONTAINER STOCK PLANTING

SCALE: N.T.S.

NOTES:

1. SET PLANTS ROOT CROWN 1/2" ABOVE EXISTING GRADE OF WATER RETENTION BASIN.
2. PLANTING STOCK: TREEPOT D4 OR APPROVED EQUAL
3. PLANTING PIT A MINIMUM OF TWO TIMES THE DIAMETER AND TWO TIMES DEPTH OF THE ROOTBALL. SCARIFY EDGES.
4. WEED CONTROL FABRIC 2' DIA. FOR EACH PLANT. SUBMIT SAMPLE.

LEGEND:

- (#) EXISTING OAK TREE (QUERCUS LOBATA) TO BE ALTERED/TRIMMED PER ARBORIST RECOMMENDATIONS OR ROSS VALLEY FIRE DEPARTMENT PERMIT REQUIREMENTS.
- (#) EXISTING OAK TREE (QUERCUS LOBATA) TO BE REMOVED PER RECOMMENDATIONS OF THE ARBORIST REPORT.
- (#) EXISTING BAY TREE (UMBELLULARIA CALIFORNICA) TO BE REMOVED PER ARBORIST RECOMMENDATIONS; SEE REPORT.

RE-VEGETATION PLANTING NOTES:

1 PROVIDE EROSION CONTROL FOR AREA THAT HAVE BEEN DISTURBED DUE TO SITE DEVELOPMENT AND CONSTRUCTION. CONTRACTOR TO FOLLOW REQUIREMENTS OF BMP.

2 PROTECT IN PLACE EXISTING SHRUBS AND TREES UNLESS OTHERWISE NOTED ON PLANS.

3. RIPARIAN PLANTS AND UPLAND PLANTS TO BE PLANTED IN THE HATCHED AREAS AS SHOWN ON SHEET L-1.

4. THE LIMITS OF THE REVEGETATION AREAS SHOWN ARE APPROXIMATE. THE LOCATION OF THE LIMITS OF THE REVEGETATION AREA AND THE PLANTING AREAS AS SHOWN ON THESE PLANS SHALL BE LAID OUT AND MARKED BY THE CONTRACTOR. THE LANDSCAPE ARCHITECT WILL THEN DIRECT THE CONTRACTOR TO MAKE ADJUSTMENTS AS DEEMED NECESSARY PRIOR TO APPROVAL OF THE LAYOUT.

5. CONTRACTOR TO PROVIDE DRIP IRRIGATION TO EACH PLANT. SEE IRRIGATION PLANS FOR VALVE LOCATIONS

6. REVEGETATION AREA TO BE WEED FREE BEFORE PLANTING BEGINS. SEE REVEGETATION SPECIFICATIONS FOR WEED REMOVAL REQUIREMENTS.

7. REMOVE OR CUT ALL FRENCH BROOM WITHIN THE LIMITS OF CONSTRUCTION.

FEB 10 2020

ViA Atelier

Revisions: | Date: | By:

Sheet Title: VEGETATION MANAGEMENT & PLANTING PLAN

Project: SINGLE FAMILY RESIDENCE

Address: CANYON ROAD, TOWN OF FAIRFAX, CA 94 - APN: 03-032-16

REGISTERED PROFESSIONAL ENGINEER, VLADO G. TOLJCA, C 73861, Exp. 6-30-21, CIVIL, STATE OF CALIFORNIA

Plans Prepared By: ViA Atelier, Inc. Engineering Consultants 1620 Sir Francis Drake Blvd., Fairfax, CA 94930 Ph:(415) 774-6776 E:office@via-eng.com

Job No: 1307.A

Date: 11.27.2019

Drawn by: V.J.

Sheet:

L2.0

10 OF 10

TOWN OF FAIRFAX

142 BOLINAS ROAD, FAIRFAX, CALIFORNIA 94930
(415) 453-1584/FAX (415) 453-1618

Date: July 26, 2017

Permit: 17-T-130

NOTICE OF TREE COMMITTEE ACTION

This action may be appealed to the Fairfax Town Council within 10 days of the Tree Committee decision. This permit is not in effect until the 10 day appeal period is over.

Request for a tree permit to remove: (7) Bay Laurel
(4) Valley Oak

Address of Tree(s) to be removed: APN#003-032-16 (Canyon Road/between 121 & 151 Canyon Rd)

Applicant's Phone: Vlad Iojica (415) 774-6776

On July 24, 2017 the Fairfax Tree Committee took the following action on the above referenced tree permit application:

_____X_____APPROVED - The applicant and property owner, Vlad Iojica, appeared at the Tree Committee meeting with family members and associates. He brought photographs and diagrams of the proposed trees to be removed or altered due to proposed construction at the site. The Tree Committee voted unanimously to approve removal or alteration of the seven bay trees and four valley oak trees on the property contingent upon the applicant receiving an approved building permit. The Tree Committee informed the applicant there is a possibility he may need to re-apply for additional tree removals or alterations based upon fire department or building department requirements.
Ayes: Ardito, Brandborg, Kehrlein.

REMINDER: PLEASE KEEP PERMIT NOTICE UP DURING THE 10 DAY WAITING PERIOD

_____ CONTINUED

_____ DENIED

CONDITIONS OF APPROVAL:
THIS APPROVED APPLICATION IS YOUR PERMIT-KEEP IT ON THE JOB SITE. FAILURE TO HAVE THE PERMIT ON THE SITE WHILE THE TREE WORK IS IN PROGRESS MAY RESULT IN THE WORK BEING HALTED UNTIL YOU SHOW PROOF OF APPROVAL.

Please verify that the tree company performing the work has a current Fairfax Business license and worker's compensation coverage.

THIS TREE PERMIT EXPIRES IN SIX (6) MONTHS. If necessary, you may apply for an extension in writing prior to the expiration date.

TOWN OF FAIRFAX

JUL 12 2017

RECEIVED

TOWN OF FAIRFAX
142 BOLINAS ROAD, FAIRFAX, CA 94930
(415) 453-1584 / FAX (415) 453-1618

APPLICATION FOR TREE REMOVAL OR ALTERATION

A permit is required to remove or alter one or more trees on any parcel in the Town of Fairfax. All trees for which a permit is requested shall be tagged with an orange ribbon, a minimum of 10 days prior to the Tree Advisory Committee meeting date. Applicants must also post a notice of intent to alter or remove the marked Tree(s) in a prominent location visible along the frontage of the affected property.

APPLICANT INFORMATION

OWNER (APPLICATIONS MUST BE FILED BY PROPERTY OWNER): Vlad Iojica.	DATE OF APPLICATION: 7/12/17.
JOB ADDRESS/ASSESSOR'S PARCEL NO. IF SITE IS VACANT Canyon Rd. A.P. # 3-032-16.	PHONE NUMBER: (415) 774-6776 (between 121 + 151 Canyon Rd)
EMAIL ADDRESS: Office@via-engr.com.	FAX NUMBER: —
PROPERTY OWNER'S ADDRESS IF DIFFERENT FROM ABOVE 9 Brookside Ct. San Anselmo 94960	ALTERNATE PHONE NUMBER: (415) 457-2802, ext 205 (Attn: Rich Rushton, Architect)

TREE INFORMATION (See attached pages 3+4 TREE CONDITION Summary)

	Circumfrance - Reason for Removal
Tree #51 Umbellularia californica CA BAY	15" - Construction
Tree #52 Quercus lobata - Heritage VALLEY OAK	56" - Construction
Tree #53 Umbellularia californica CA BAY	19" - Construction
Tree #54 Umbellularia californica CA BAY	15" - Construction
Tree #55 Quercus lobata - Heritage VALLEY OAK	38" - Construction
Tree #56 Quercus lobata - Heritage VALLEY OAK	38" - Construction
Tree #58 Umbellularia californica CA BAY	44" - Construction
Tree #59 Umbellularia californica CA BAY	25" Construction
Tree #60 Quercus lobata - Heritage VALLEY OAK	56" - Construction
Tree #61 Umbellularia californica CA BAY	47" - Construction
Tree #61 Umbellularia californica CA BAY	47" - Construction

Please attached a site plan to this application showing the location and species of all trees with a diameter of 4 inches (circumference of 12 inches or more), measured 4.5feet above grade at tree base, property boundaries and easements, location of structures, foundation lines of neighboring structures and paved areas including driveways, .

AGENDA ITEM # 1

Any tree company used for the removal or alteration must have a current and valid Fairfax Business license. Please include the name, address, and phone number of the person or company doing the above listed work:

NAME: Vlad Iojica	PHONE NUMBER: 415-774-6776
ADDRESS: 9 Brookside Ct., San Anselmo, CA	CONTRACTOR BUSINESS LICENSE NUMBER property owner

Please note the Tree Advisory Committee may require applicants to submit their application to a Qualified Arborist for a report or recommendation at the expense of the applicant. A Qualified Arborist is defined as a Certified Arborist, A Certified Urban Forester, a Registered Consulting Arborist, or a Registered Professional Forester.

OWNER'S STATEMENT

I understand that in order to properly process and evaluate this application, it may be necessary for Town personnel to inspect the property, which is the subject of the application. I also understand that due to time constraints it may not always be possible for Town personnel to provide advanced notice of such inspections. Therefore, this application will be deemed to constitute my authorization to enter upon the property for the purpose of inspecting the same, provided that Town personnel shall not enter any building on the property except in my presence or the presence of any other rightful occupant of such building. I understand that my refusal to permit reasonable inspection of any portion of the property by town personnel may result in a denial of this application due to the lack of adequate information regarding the property.

Vlad Iojica

Signature of Property Owner

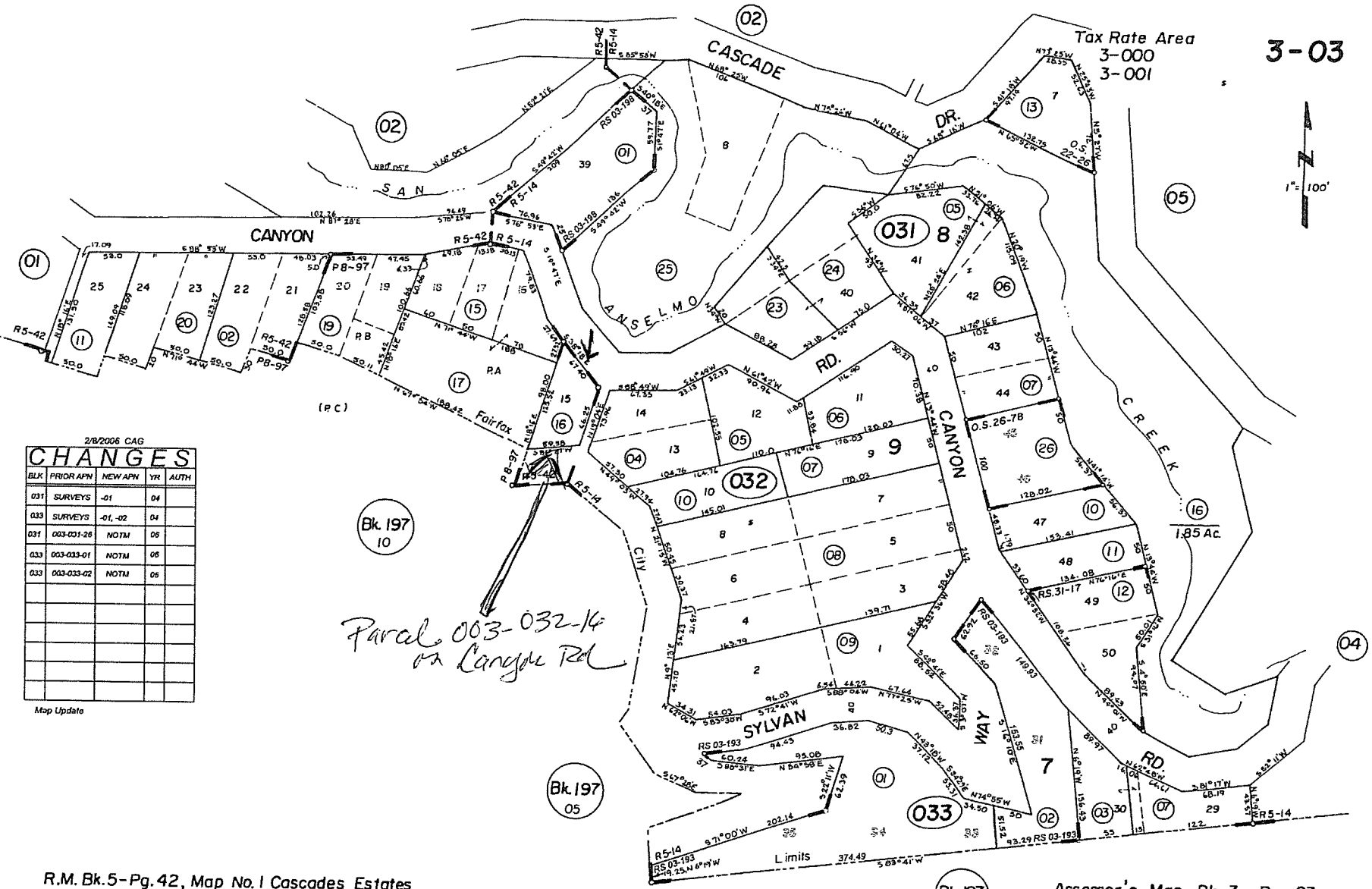
07/12/2017

Date

[AREA BELOW FOR STAFF USE ONLY]

Permit Number: 17-T-130	
Date Received: 7-12-17	Received by: S. Watson
Conditions of Approval:	
Tree Committee Action:	Date:

Tree Committee Actions can be appealed to the Town Council within 10 days of the Tree Committee Action. Contact Town Hall for more information.



2/8/2006 CAG

CHANGES

BLK	PRIOR APN	NEW APN	YR	AUTH
031	SURVEYS	-01	04	
033	SURVEYS	-01, -02	04	
031	003-031-26	NOTM	06	
033	003-033-01	NOTM	06	
033	003-033-02	NOTM	06	

Map Update

R.M. Bk.5-Pg.42, Map No.1 Cascades Estates
R.M. Bk.5-Pg.14, Map No.2 Cascades, Amended

NOTE- Assessors Block Numbers Shown in Ellipses
Assessors Parcel Numbers Shown in Circles

Assessor's Map Bk. 3 -Pg. 03
County of Marin, Calif.

Tree-Report
Arboricultural Consultations
c/o Dan McKenna
P.O. Box 814
Forest Knolls, CA 94933
415 602-1621 (cell)
dan@tree-report.com

Canyon Rd – Fairfax, CA 94930
Tree Protection Plan

Prepared for

Vlad Iojica

by

Dan McKenna

Registered Consulting Arborist, ASCA RCA #445

Certified Arborist, ISA WE 0356A

July 12, 2017

PURPOSE

This Tree Protection Plan has been drafted with the sole purpose of protecting three trees during a construction project on Canyon Rd. in Fairfax, CA., while removing 10 trees as part of the development of this parcel. This plan includes scaled Tree Protection Zones (TPZ) on the site plan, a description of the trees and their current condition in the form of a detailed Level 1 ISA Tree Risk Assessment, tree specific specifications for work within a TPZ, actions to protect the trees during construction and post construction best practices.

This report is limited to creating a Tree Protection Plan and provides a Limited Risk Assessment. It is recommended that a post construction Risk Assessment be made for all trees that are the subject of this report prior to occupying the residence.

Existing Conditions

The property has steep slopes to the south rising from the roadway. The lot has limited southern exposure with a mix of native woody and herbaceous perennials. Thirteen trees are the subject of this report. Understory vegetation and several trees have been removed in the recent past, thereby creating a non-continuous altered tree canopy. Although wind patterns do not seem to be affected by the subject trees and adjoining tree stands are independent of the subject trees due to breaks in the existing forest canopy. The subject trees due contribute to slope stabilization. The subject trees are California natives (California Bay *Umbellularia californica* & Valley Oak *Quercus lobata*).

The site plan found in this Plan identifies all trees impacted by the proposed construction. Photos #1 through #3 depict the overall site and Photos #4 through #9 depict specific tree defects. The majority of Bay Trees are either exhibiting poor vigor or have unsound structure. The Valley Oaks are showing the effects of the area's prolonged drought. Table 1 as well as the Risk Assessment Sheets found in Appendix C provide more details on trees proposed for removal. The Conservation Suitability Worksheet found in Appendix A provides an evaluative tool to rate the tree's overall current condition, proximity to below ground construction and potential long-term survivability. As the Worksheet indicates all of the trees will need to be monitored post construction and additional measures may need to be undertaken to ensure their long-term vigor. Note, that the Tree Risk Assessment Sheets rate the Risk based upon the current condition of the subject tree and the current use of the property, which has limited use.

Risk Assessments are developed based upon the use and occupancy of a particular site, and in this case, infrequent use was a rating factor in determining a particular tree's risk rating. If the land use changes and occupancy increases then the associated risk rating would increase in most cases.

The following Table details the Subject Trees' vital statistics, their general condition, and recommendations. See Appendix C Tree Risk Assessment Worksheets for more details.

Table 1 Tree Condition Summary

Tree #	Species	Ht. in ft.	Crown Spread in ft.	dbh	Current Condition/ Age	Notes
50	*Umbellularia californica* Ca Bay	20	8	6	Good, Young	Vigor good, good structure, young tree with no observable defects – **Recommend TPZ**
51	*Umbellularia californica* Ca Bay	40	15	5	Good, Young	Vigor Good, tree is growing within inches of Tree #52, located next to proposed retaining wall – **Recommend Removal**
52	*Quercus lobata*	20	10	18	Good, Mature	Good Vigor, lean to the east, located next to proposed retaining wall – **Recommend Removal**
53	*Umbellularia californica* Ca Bay	20	10	6	Fair, Young	Fair vigor, poor taper, located next to proposed retaining wall, **Recommend Removal**
54	*Umbellularia californica* Ca Bay	20	10	5	Poor, young	Poor vigor exposed roots due to bank erosion with lean over road, located next to proposed bldg. footprint, **Recommend Removal**
55	*Quercus lobata*	40	15	12	Poor, Mature	Significant trunk decay and senescent crown, located within proposed bldg. footprint – **Recommend Removal**
56	*Quercus lobata*	15	10	12	Good, Mature	Good vigor and fair structure, included bark within major scaffold branches, bank erosion with lean over road, located next to proposed retaining wall – **Recommend Removal**
57	*Umbellularia californica* Ca Bay	15	10	15	Good, Mature	Vigor good, good structure, included trunk, some erosion of root crown on roadway bank– **Recommend TPZ**

Table 1 Tree Condition Summary cont'd						
Tree #	**Species**	**Ht. in ft.**	**Crown Spread in ft.**	**Circumference in.**	**Current Condition/ Age**	**Notes**
58	*Umbellularia californica* Ca Bay	35	15	14	Fair, Mature	Fair Vigor, poor trunk taper, located within proposed bldg. footprint, – **Recommend Removal**
59	*Umbellularia californica* Ca Bay	25	15	8	Fair, Mature	Fair Vigor, lean to the SW, poor crown attachment, located within proposed bldg. footprint, – **Recommend Removal**
60	*Quercus lobata*	40	20	10, 8	Poor, Mature	Fair Vigor, lean to the E, poor taper, poor live crown ratio, located within proposed bldg. footprint, – **Recommend Removal**
61	*Umbellularia californica* Ca Bay	35	20	15	Fair, Mature	Fair Vigor, co-dominant stems, poor taper, poor live crown ratio, located within proposed bldg. footprint, – **Recommend Removal**
62	*Umbellularia californica* Ca Bay	35	15	15	Fair, Mature	Fair Vigor, co-dominant stems one recently removed, species will not heal trunk wound, – **Recommend Removal**
63	*Quercus lobata*	35	35	15	Fair, Mature	Fair Vigor, severe lean to the W, poor live crown, - **Recommend Pruning for Clearance and TPZ**

The Proposed Project and Impacts

As depicted on the site plan, ideal Tree Protection Zones (TPZ) have been calculated and drawn onto the site plan for those trees closest to the construction area. The TPZ is calculated by the species' tolerance to below ground construction, age, and size. As the site plan indicates the TPZs for #50 & #57 are near the construction project and a portion of the ideal TPZ for #63 extends into the construction zone. Specific specifications are listed below for these trees prior to and during construction.

In summary, ten trees are proposed for removal, with Trees #51, #52 and #56 rated in good condition without obvious defects. One tree, #57, will have special specifications to protect its zones during construction because its TPZ extends into the work zone.

Preservation Recommendations

Preserving trees during construction and development, employs the principle of establishing tree protection zones (TPZ). Within these zones, all activities related to construction are regulated and/or prohibited. In addition, storage of materials, moving equipment through the zone, excavating, changing grades or allowing construction wastes (including effluent such as cement waste water) from entering the soil area is also regulated.

The size of a TPZ is determined by the tolerance of the tree species to disruption, the age of the tree, and the size of the tree. Matheny and Clark (1998) have assigned tolerances to individual species. In this case, all the species within the project area are classified as having a high tolerance to construction. The Matheny and Clark guideline also uses the tree's age within the context of the species normal longevity to determine the size of the TPZ. As an example, a 10 in. Coast Redwood, the TPZ would extend 5 feet in all directions in all directions.

At a minimum, the TPZ should be delineated through the installation of temporary fencing, stout enough to last during the construction project. The fencing should be at least 4 feet in height. Leaning equipment and supplies against the fencing should also be prohibited to maintain the integrity of the TPZ boundary. In this case, creating a TPZ fencing system for each tree is not practical. Separating the construction zone from the area the 28 trees are growing in is a more practical and conservative means to protect the Subject Trees rooting areas. Compaction of the TPZ soils should be protected using mulch topped with plywood, and the trunks of the trees should be armored to prevent bark damage.

Minimizing root loss is a critical element of any Tree Protection Plan strategy. Hamilton (1988) details several requirements that should be observed when cutting the roots of established trees. They include:

- Do not damage or remove **buttress roots**
- Maintain adequate soil moisture after trees have been root pruned
- Do not remove roots during the growing season

In addition, any wounded roots will develop **callous** tissue if properly pruned. They will develop less decay if they are cut using standard pruning equipment (saws and loppers), rather than broken by excavating equipment.

Tunneling under roots is also encouraged when routing utility lines through the TPZ. In all cases, hand excavations and the prohibition of heavy equipment within the TPZ is always encouraged.

When work must be performed within the TPZ, the Project Arborist shall review and approve a work plan that minimizes the impact upon soils and roots. Upon the completion of work within the TPZ, fencing and mulching is restored for the duration of the project.

Goals, General Conditions, & Specifications

Goals:

1. Maintain or improve soil structure and porosity within the subject tree's TPZ
2. Prohibit any physical above ground damage to trunks and branches
3. Prohibit the addition of any construction wastes or spoils into the trees' TPZ
4. Maintain or minimize the alteration of existing soil grades around the subject trees' TPZ.

General Conditions:

a. All building foundations shall be posts with on-grade beams. This is intended to minimize soil excavations within the subject trees' TPZ. The posts shall be positioned and installed under the direct supervision of the Project Arborist. Auguring equipment and the manner in which the post holes are excavated shall be approved by the Project Arborist.
b. Roots greater than 2" in dia. shall be preserved and only removed with the direct permission of the Project Arborist.
c. Roots authorized for removal by the Project Arborist shall be severed utilizing a sawzall or carbide chain saw, resulting in clean cuts. Under no circumstances shall roots be severed utilizing excavation equipment, axes, or other such equipment that results in jagged cuts to the roots.
d. No excavation equipment shall be allowed within the tree TPZs. All excavation exceeding 12" below native grade shall be first approved by the Project Arborist and secondly conducted utilizing hand tools.
e. Soil compaction within all TPZs for walkways, driveways, stairways, patios, and other landscape improvements shall be limited to 85%. Permeable materials shall be utilized to maintain uniform soil moisture throughout the trees' root zones.
f. No spoils of any kind are permitted within the TPZ
g. Do not stack, lean, or place within any equipment, materials, or supplies within the TPZ

h. Repair TPZ fencing as needed during the duration of the project.
i. Maintain existing soil grades

Specifications:

TPP.1. The Project Arborist shall work with the project sponsor's design team to minimize work within the TPZ for Tree #57, by relocating the retaining wall.

TPP.2. The Project Arborist shall conduct a pre-construction meeting with the general contractor and all relevant sub-contractors to discuss the Plan's Goals and Specifications. This meeting scheduled prior to the start of any construction activity, shall layout the TPZs, and the fencing material proposed, and fencing configuration, as prescribed on the Site Plan found in Appendix B of this Tree Protection Plan. The Site Plan has identified approximate locations for extra TPZ protection measures. The Project Superintendent in conjunction with the Project Arborist shall specifically demarcate those specific areas where construction activities shall occur within each Tree's TPZ.

TPP.3. Install Trunk protection measures, which at a minimum shall include the installation of ½ in. closed cell foam padding around the truck of each tree from soil grade to a height of 6 ft. above grade. 2" x 4" x 6' wood planks shall be installed on top of the padding and secured with metal straps in at least two locations. No fasteners or other invasive hardware shall be driven into the subject trees.

TPP.4. Secure/delineate TPZs utilizing construction fencing 4' in height. The fencing shall be constructed in such a manner as to provide a durable and lasting perimeter intended to function for the duration of the project. In those cases, where work will occur within the TPZ, a functional gate shall be included in the perimeter fencing. The Project Arborist shall approve the manner in which the fencing has been constructed.

TPP.5. Bilingual (English/Spanish) signage with a contact phone number shall be attached to the fencing in multiple locations with the following language:

Tree Preservation Area
Entry Prohibited without Authorization
by
Construction Superintendent or Project Arborist

Post Construction Plan

Any reforestation requirements as a condition of the project approval should not be conducted until the construction has been completed. Trees planted as required should be sound nursery stock and species should be appropriate for the location.

Irrigation and drainage improvements should attempt to maintain existing soil moisture levels.

Any damage to the canopy of the trees during construction should be mitigated post construction utilizing ANSI 300a Pruning Specifications and employed by a Certified Arborist.

A post project Risk Assessment is recommended by a Qualified and Certified Arborist.

I believe these measures should protect the trees during construction and post construction. If you should have questions related to this report please contact me at your convenience.

Glossary of Terms

Buttress Roots: Roots at the trunk base that help support the tree and equalize mechanical stress; trunk flare

Callusing: Plant tissue that forms at the site of a wound and protects tissues from infection

Canopy & Crown: Refers to the portion of a tree comprising the branches, twigs, and leaves/needles

dbh: Acronym for diameter at standard height; diameter of a tree measured at 4.5 feet above ground

Exotic: Species not native to the region; may be invasive

Tree Protection Zone: Defined area within which certain activities are prohibited or restricted to prevent or minimize potential injury to designated trees, especially during construction or development

References Cited

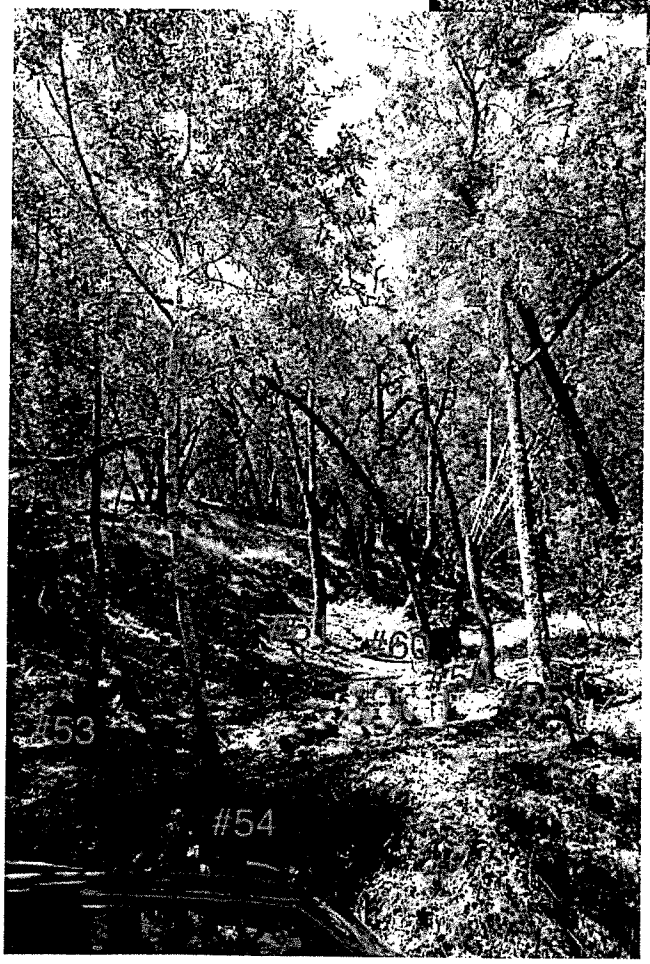
Glossary of Arboricultural Terms. 2015 International Society of Arboriculture. 106 pp

Hamilton, D. 1988. *Significance of Root Severance on Performance of Established Trees*. Journal of Arboriculture. 14(12): 288-292.

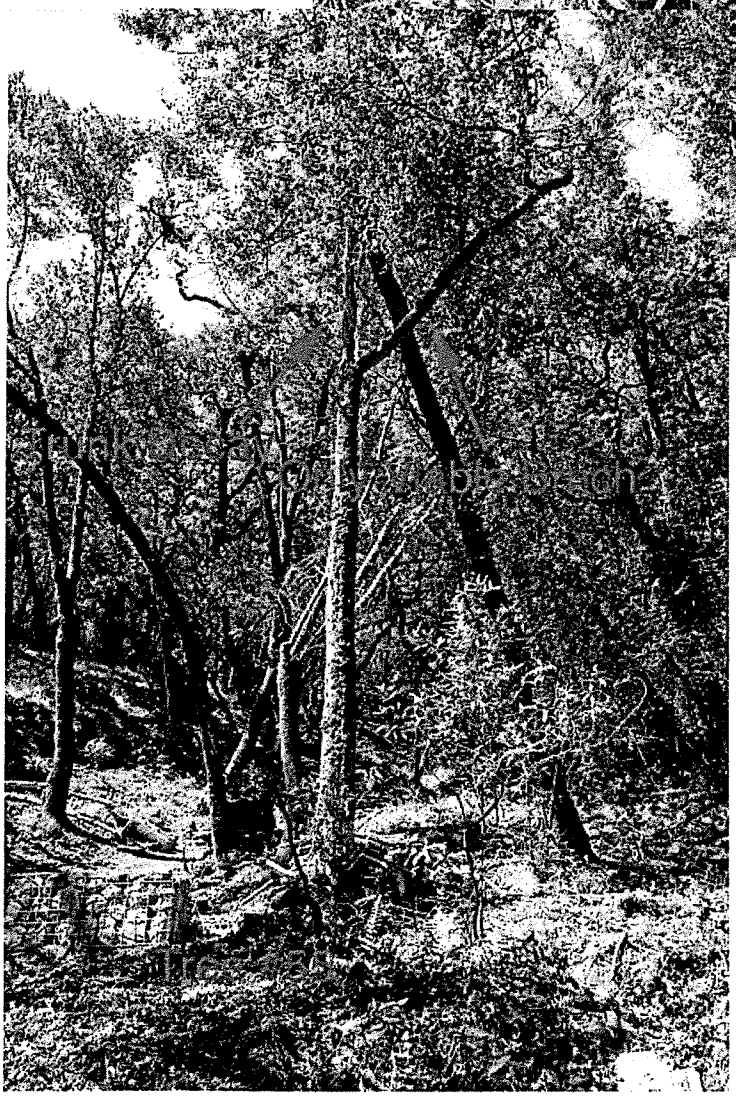
Matheny & Clark. 1998. Trees and Development, A Technical Guide to Preservation of Trees During Land Development. International Society of Arboriculture. 183 pp

Kelby Fite, Ph.D & E. Thomas Smiley, Ph.D. Best Management Practices. Managing Trees During Construction 2nd Edition 2016. ISA Companion publication to the ANSI A300 Part 5: Tree, Shrub, and Other Woody Plant Maintenance – Standard Practices (Management of Trees and Shrubs During Site Planning, Site Development, and Construction)

Photos 1- 3 Site Overview



Photos #4 – 8 Depicting defects in trees recommended for removal



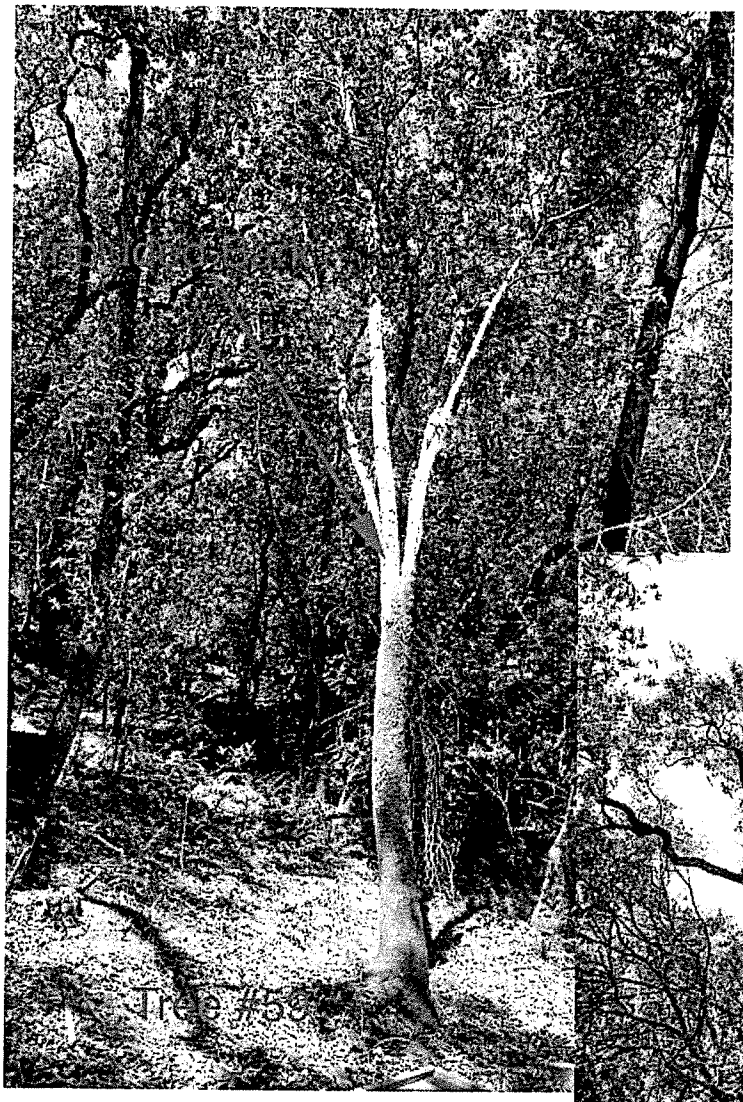


Photo #9 Clearance Restriction from Tree on Adjoining Property

Assumptions and Limiting Conditions

1. Any legal descriptions provided to the author by others are assumed to be correct.

2. Loss or alteration of any part of this report invalidates the entire report.

3. Unless expressed otherwise: 1) information contained in this report covers only those items that were examined, and reflects the condition of those items at the time of inspection; and 2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the plans or property in question may not arise in the future.

Certification of Performance

I, Dan McKenna, CERTIFY to the best of my knowledge and belief:

1. That the statements of fact contained in this report are true and correct and I have personally inspected the subject area in question.

2. That the valuation, evaluation, analysis, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and that they are my personal, unbiased professional analysis, opinion, and conclusions.

3. That I have no present or prospective interest in the plant that is the subject of this report, and that I have no personal interest or bias with respect to the parties involved.

4. That my compensation is not contingent upon a predetermined value or direction in value that favors the cause of the client, the amount of the value estimate, the attainment of a stipulated result, or the occurrence of a subsequent event.

I am a Registered Consulting Arborist in good standing with the American Society of Consulting Arborists and a member and Certified Arborist with the International Society of Arboriculture. I have been involved in the field of arboriculture for thirty years.

Respectfully submitted,

Dan McKenna

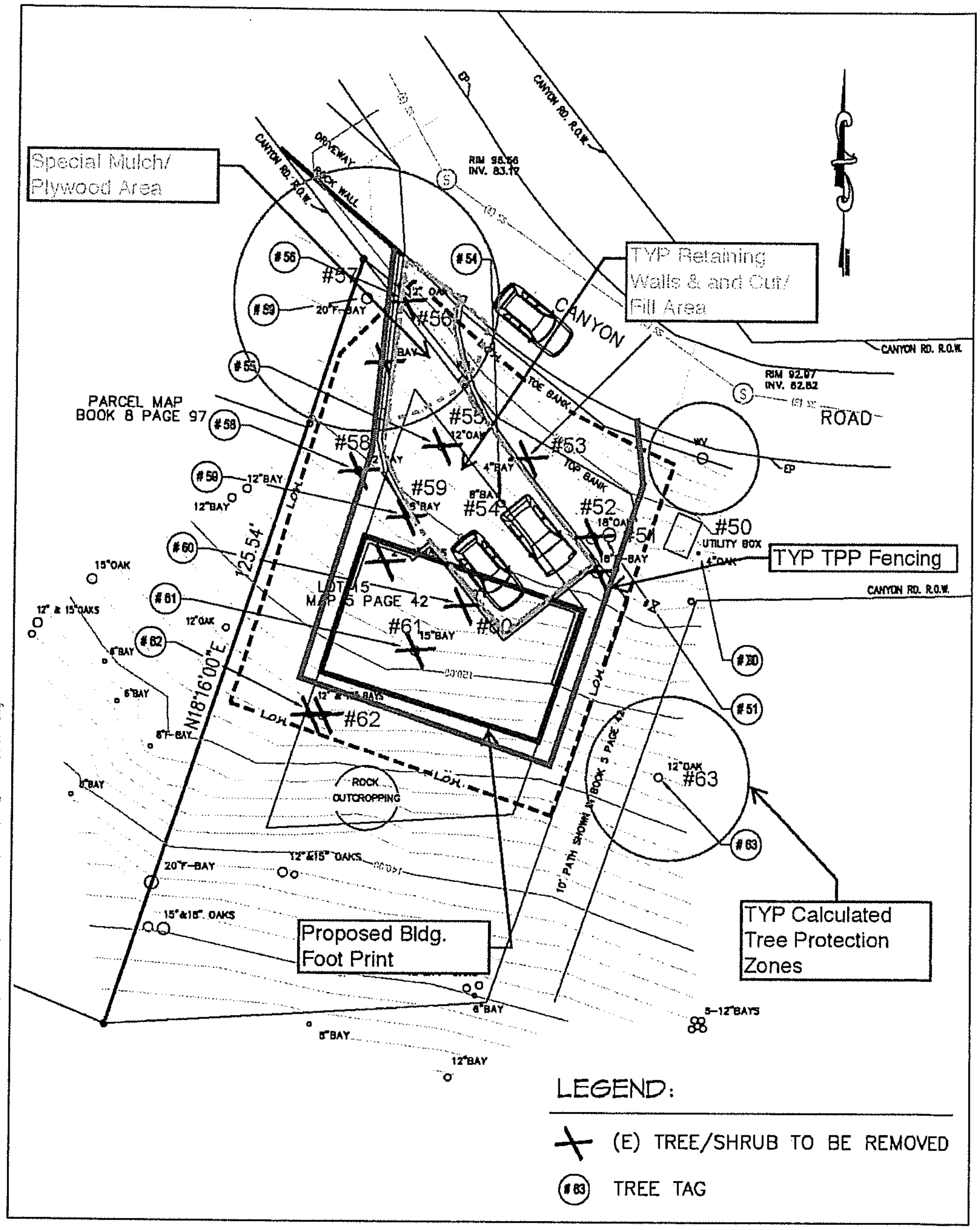
Dan McKenna,
ASCA RCA #445
ISA WE0356A
ISA Tree Risk Assessment Qualified

Appendix A Conservation Suitability Worksheet

Tree #	50	51	52	53	54	55	56	57	58	59	60	61	62	63
Tree Health (1-15 Pts)	12	10	12	7	9	4	7	12	7	7	8	8	7	7
Root Cut/Fill Distance From Trunk (1-15 Pts) (<6" per 1" dbh = 1 to 1.5' per 1" dbh = 15)	12	2	2	2	2	2	2	10	2	2	2	2	8	10
Structural Defects: Many = 1, Some = 5, Few = 10, None = 15	10	7	10	8	8	2	7	10	10	8	8	8	8	4
Construction Tolerance of Species (Matheney and Clark) (1-15 Pts)	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Age (relative to typical species lifespan) (1-10 Pts)	5	8	5	8	8	3	5	6	5	6	7	8	7	5
Location of Construction Activity within 3x dbh (1-10 Pts) (> 2x dripline = 15)	8	1	5	5	5	5	10	7	10	5	1	1	7	10
Soil Quality/Characterisctics (1-10 Pts)	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Species Desirability (1-10 Pts)	7	7	10	7	7	10	10	7	7	7	10	7	7	10
Total Points (Possible 100)	72	53	62	55	57	44	59	70	59	53	54	52	62	64
Notes:														

> 80 = Good: High Potential for longevity on the site after construction.
60-79 = Moderate: May require more in depth management and monitoring, before, during and after
< 59 = Poor: These trees can be expected to decline during or after construction regardless of management.

Appendix B - Site Plan



ViA Atelier 1620 Sir Francis Drake Blvd. Fairfax, CA 94930 T: 415-714-6716 E: office@via-eng.com www.via-eng.com	EXHIBIT: TREE REMOVAL PLAN	ISSUE DATE: 06.28.17	SCALE: 1" = 20'
		DRAWN BY: V.Iojica	SHEET NO.: TR.1
	PROJECT: IOJICA RESIDENCE	REVIEWED BY:	
		PROJECT NO.: 1307.A	REF. SHEET:

APPENDIX C

BASIC TREE RISK ASSESSMENT

Tree #: 50 Date: July 8, 2018 Assessor: D. McKenna Time Frame: One Time

Tree Location: Canyon Rd. Iojica Project Tools: Basic Visual Level 1

TREE CHARACTERISTICS

Species: CA Bay **DSH:** 6 **Height:**20 **Crown spread:** 10

Crown class: Dom co-dom intermediate **x suppressed** **Live Crown Ratio:** 50 **Cable/brace/prop/guy:** N

Form: sym **x asym** - stump sprout dead top **Lean:** N ____ deg. from vert. __ natural __ self-corrected

TREE HEALTH

Vigor class: excellent **x average** fair poor **Shoot growth:** excellent **x average** fair poor

Foliage color: **x normal** chlorotic necrotic **Foliage density:** **x normal** sparse: _____% **Leaf size:** **x normal** small: _____%

Epicormics: N S M L **Dieback:** N dieback _____% **Woundwood growth:** __ excellent **x average** poor none

Significant insects/pests/diseases: ___ Roots ___ Root crown ___Trunk ___ Scaffold branches Conks / Mushrooms / Canker: N

ID **insects/pests/diseases:**

SITE CONDITIONS

Recent site disturbance: N __ construction __ grade change __ tree removal __ trench: _____ trunk dist. _____ % CRZ removed

Dripline Paved - Fill Soil - Grade Lowered: N 10-25% 25-50% 50-75% 75-100% **Pavement lifted:** Y N S M L

Soil defects: N __ poor drainage __ shallow __ compacted __ small volume __ other: _____

Exposure to wind: **Low** __ recent __ windward edge **Wind Protection:** **Y 50 % ID: West and North**

ROOT DEFECTS

Root rot: N **Girdling:** N S M L **Exposed/Undermined roots:** N **Soil lifting:** N **Soil cracking:** N

Restricted root area: N _____ dist. from trunk CRZ affected: _____ % **Potential for root failure:** L

TREE DEFECTS

ABOVE GROUND DEFECTS: Presence of defects and severity (s = severe, m = moderate, l = low N/A = insignificant)

Defect	Root Crown	Trunk	Scaffold Limbs	Branches
Poor Taper		L		XXXXXXXXXXXX
Multiple attachments	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	
Cracks/Splits	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Wounds/Seams	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Dead/Loose/Cracked Bark				XXXXXXXXXXXX
Decay	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Cavity	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Nesting Hole/Bees				XXXXXXXXXXXX
Decay/Cavity - plane of lean	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Borers/Termites/Ants				XXXXXXXXXXXX
Bleeding/Sap Flow				XXXXXXXXXXXX
Codominant stems	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Included Bark	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Cankers/Galls/Burls	Response	Response	Response	XXXXXXXXXXXX

	Growth: Y N	Growth: Y N	Growth: Y N	
Previous Failure	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Epiphytes/Invasive plants/vine/mistletoe				XXXXXXXXXXXX
Bow/Sweep	XXXXXXXXXXXXXX	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Major Crossing branches	XXXXXXXXXXXXXX	Response Growth: Y N	Response Growth: Y N	
Excessive End Weight	XXXXXXXXXXXXXX	XXXXXXXXXXXXX	**L Response Growth: Y**	
Hangers	XXXXXXXXXXXXXX	XXXXXXXXXXXXX		
Large Dead branches	XXXXXXXXXXXXXX	XXXXXXXXXXXXX		

Notes:

Target number	Target description	Target zone			Occupancy rate 1–rare 2 – occasional 3 – frequent 4 – constant
		W/n Dripline	1X Ht	1.5X Ht.	
1	Road	x	x	x	2
2	Bldg. Site	x	x	x	1
3					
4					

Occupancy: R = very brief on few instance; O = 1-4 hr/day; F = >4-12 hr, C = >12 hr

Roots Main concern(s): Soil Movement and crown failure

Load on defect: N/A Minor **x Moderate** Significant **Likelihood of failure:** Improbable - **x Possible** Probable Imminent

Trunk Main concern(s):_____

Load on defect: N/A **x Minor** Moderate Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Branches/crown Main concern(s):_____

Load on defect: N/A **x Minor** Moderate Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Cond #	Concerns	Tree Part	Target #	Part Size	Fall Distance	Target Protection	Likelihood												Consequences				Risk Rating
							Failure				Impact				Failure & Impact (Matrix 1)								
							Improbable	Possible	Probable	Imminent	Very Low	Low	Medium	High	Unlikely	Somewhat	Likely	Very likely	Negligible	Minor	Significant	Severe	
1	Tree Failure	Trunk	1	5	6	n		x			x				x					x			Low
			2	5		n		x			x				x						x		Low
2																							
3																							
4																							

Table 1. Guide to estimating the likelihood of failure and impact.

Likelihood of Failure	Likelihood of Impacting Target			
	Very Low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Table 2. Guide to estimating level of risk.

Likelihood of Failure & Impact	Consequences of the Tree Failure			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

RISK REDUCTION MEASURES

Risk Reduction Required: N **Monitor:** Y N Frequency: _____ **Restrict access:** Y N **Move Target:** Y N **Cable/Brace/Guy/Prop:** Y N

Prune: Y N ___ CC x CR: _____% **Remove tree:** No Adjacent tree exposure: Y N **Re-Inspect:** Y N Timing: _____

Tree Risk Rating : Low x Mod High Extreme **Residual Risk:** Low x Mod ___ High ___ Extreme ___

Data: Final __ Preliminary __ **Advanced assessment required:** N Type/Reason: _____

Inspection limitations: None x Visibility Access Vines/epiphytes Root collar buried Describe

Notes: Tree Protection Zone Proposed

BASIC TREE RISK ASSESSMENT

Tree #: 51 Date: July 8, 2018 Assessor: D. McKenna Time Frame: One Time

Tree Location: Canyon Rd. Iojica Project Tools: Basic Visual Level 1

TREE CHARACTERISTICS

Species: CA Bay **DSH:** 6 **Height:**20 **Crown spread:** 10

Crown class: __ Dom co-dom __ intermediate x suppressed **Live Crown Ratio:** 50 **Cable/brace/prop/guy:** N

Form: sym x asym - stump sprout dead top **Lean:** N ____ deg. from vert. __ natural __ self-corrected

TREE HEALTH

Vigor class: __ excellent x average fair poor **Shoot growth:** __ excellent x average fair poor

Foliage color: x normal chlorotic necrotic **Foliage density:** x normal sparse: _____% **Leaf size:** x normal __ small: _____%

Epicormics: N S M L **Dieback:** No dieback _____% **Woundwood growth:** __ excellent x average poor none

Significant insects/pests/diseases: ___ Roots ___ Root crown ___Trunk ___ Scaffold branches Conks / Mushrooms / Canker: N

ID **insects/pests/diseases:**

SITE CONDITIONS

Recent site disturbance: N __ construction __ grade change __ tree removal __ trench: _____ trunk dist. _____% CRZ removed

Dripline Paved - Fill Soil - Grade Lowered: N 10-25% 25-50% 50-75% 75-100% **Pavement lifted:** Y N S M L

Soil defects: N __ poor drainage __ shallow __ compacted __ small volume __ other: Growing within inches of #52

Exposure to wind: Low __ recent __ windward edge **Wind Protection:** Y 50 % ID: West and North

ROOT DEFECTS

Root rot: N **Girdling:** N S M L **Exposed/Undermined roots:** N **Soil lifting:** N **Soil cracking:** N

Restricted root area: N _____ dist. from trunk CRZ affected: _____% **Potential for root failure:** L

TREE DEFECTS

ABOVE GROUND DEFECTS: Presence of defects and severity (s = severe, m = moderate, l = low N/A = insignificant)

Defect	Root Crown	Trunk	Scaffold Limbs	Branches
Poor Taper		L		XXXXXXXXXXXX
Multiple attachments	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	
Cracks/Splits	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Wounds/Seams	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Dead/Loose/Cracked Bark				XXXXXXXXXXXX
Decay	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Cavity	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Nesting Hole/Bees				XXXXXXXXXXXX
Decay/Cavity - plane of lean	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Borers/Termites/Ants				XXXXXXXXXXXX
Bleeding/Sap Flow				XXXXXXXXXXXX
Codominant stems	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Included Bark	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Cankers/Galls/Burls	Response	Response	Response	XXXXXXXXXXXX

	Growth: Y N	Growth: Y N	Growth: Y N	
Previous Failure	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Epiphytes/Invasive plants/vine/mistletoe				XXXXXXXXXXXX
Bow/Sweep	XXXXXXXXXXXXX	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Major Crossing branches	XXXXXXXXXXXXX	Response Growth: Y N	Response Growth: Y N	
Excessive End Weight	XXXXXXXXXXXXX	XXXXXXXXXXXXX	**L Response Growth: Y**	
Hangers	XXXXXXXXXXXXX	XXXXXXXXXXXXX		
Large Dead branches	XXXXXXXXXXXXX	XXXXXXXXXXXXX		

Notes:

Target number	Target description	Target zone			Occupancy rate
		W/n Dripline	1X Ht	1.5X Ht.	1–rare 2 – occasional 3 – frequent 4 – constant
1	Road	x	x	x	2
2	Bldg. Site	x	x	x	1
3					
4					

Occupancy: R = very brief on few instance; O = 1-4 hr/day; F = >4-12 hr, C = >12 hr

Roots Main concern(s): Soil Movement and Crown Failure

Load on defect: N/A **x Minor** Moderate Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Trunk Main concern(s):

Load on defect: N/A **x Minor** Moderate Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Branches/crown Main concern(s):

Load on defect: N/A **x Minor** Moderate Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Cond #	Concerns	Tree Part	Target #	Part Size	Fall Distance	Target Protection	Likelihood												Consequences				Risk Rating
							Failure				Impact				Failure & Impact (Matrix 1)								
							Improbable	Possible	Probable	Imminent	Very Low	Low	Medium	High	Unlikely	Somewhat	Likely	Very likely	Negligible	Minor	Significant	Severe	
1	Tree Failure	Trunk	1	5	6	n		x			x				x					x			Low
			2	5		n		x			x				x						x		Low
2																							
3																							
4																							

Table 1. Guide to estimating the likelihood of failure and impact.

Likelihood of Failure	Likelihood of Impacting Target			
	Very Low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Table 2. Guide to estimating level of risk.

Likelihood of Failure & Impact	Consequences of the Tree Failure			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

RISK REDUCTION MEASURES

Risk Reduction Required: N **Monitor:** Y N Frequency: _____ **Restrict access:** Y N **Move Target:** Y N **Cable/Brace/Guy/Prop:** Y N

Prune: Y N ___ CC x CR: _____% **Remove tree:** Yes Adjacent tree exposure: No **Re-Inspect:** Y N Timing: _____

Tree Risk Rating : **Low x** Mod High Extreme

Data: Final __ Preliminary __ **Advanced assessment required:** N Type/Reason: _____

Inspection limitations: **None x** Visibility Access Vines/epiphytes Root collar buried Describe

Notes: Within retaining wall footprint, within inches of #52

BASIC TREE RISK ASSESSMENT

Tree #: 52 Date: July 8, 2018 Assessor: D. McKenna Time Frame: One Time

Tree Location: Canyon Rd. Iojica Project Tools: Basic Visual Level 1

TREE CHARACTERISTICS

Species: Valley Oak **DSH**: 18 **Height**:40 **Crown spread**: 20

Crown class: x Dom co-dom __ intermediate suppressed **Live Crown Ratio:** 50 **Cable/brace/prop/guy:** N

Form: sym x asym - stump sprout dead top **Lean:** N 10 deg. from vert. x natural no self-corrected

TREE HEALTH

Vigor class: __ excellent x average fair poor **Shoot growth:** __ excellent x average fair poor

Foliage color: x normal __ chlorotic __ necrotic **Foliage density:** x normal __ sparse: _____% **Leaf size:** x normal __ small: _____%

Epicormics: N S M L **Dieback:** N dieback _____% **Woundwood growth:** __ excellent x average poor __ none

Significant insects/pests/diseases: ___ Roots ___ Root crown ___Trunk ___ Scaffold branches Conks / Mushrooms / Canker: N

ID **insects/pests/diseases:**

SITE CONDITIONS

Recent site disturbance: N __ construction __ grade change __ tree removal __ trench: _____ trunk dist. _____ % CRZ removed

Dripline Paved - Fill Soil - Grade Lowered: N 10-25% 25-50% 50-75% 75-100% **Pavement lifted:** Y N S M L

Soil defects: N __ poor drainage __ shallow __ compacted __ small volume __ other: _____

Exposure to wind: Low __ recent __ windward edge **Wind Protection:** Y 50 % ID: West and North

ROOT DEFECTS

Root rot: N **Girdling:** N S M L **Exposed/Undermined roots**: N **Soil lifting**: N **Soil cracking**: N

Restricted root area: N _____ dist. from trunk CRZ affected: _____ % **Potential for root failure**: L

TREE DEFECTS

ABOVE GROUND DEFECTS: Presence of defects and severity (s = severe, m = moderate, l = low N/A = insignificant)

Defect	Root Crown	Trunk	Scaffold Limbs	Branches
Poor Taper		L		XXXXXXXXXXXX
Multiple attachments	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	
Cracks/Splits	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Wounds/Seams	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Dead/Loose/Cracked Bark				XXXXXXXXXXXX
Decay	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Cavity	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Nesting Hole/Bees				XXXXXXXXXXXX
Decay/Cavity - plane of lean	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Borers/Termites/Ants				XXXXXXXXXXXX
Bleeding/Sap Flow				XXXXXXXXXXXX
Codominant stems	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Included Bark	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Cankers/Galls/Burls	Response	Response	Response	XXXXXXXXXXXX

	Growth: Y N	Growth: Y N	Growth: Y N	
Previous Failure	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Epiphytes/Invasive plants/vine/mistletoe				XXXXXXXXXXXX
Bow/Sweep	XXXXXXXXXXXXXX	**M Response Growth: N**	Response Growth: Y N	XXXXXXXXXXXX
Major Crossing branches	XXXXXXXXXXXXXX	Response Growth: Y N	Response Growth: Y N	
Excessive End Weight	XXXXXXXXXXXXXX	XXXXXXXXXXXXX	**M Response Growth: Y**	
Hangers	XXXXXXXXXXXXXX	XXXXXXXXXXXXX		
Large Dead branches	XXXXXXXXXXXXXX	XXXXXXXXXXXXX	x	

Notes:

Target number	Target description	Target zone			Occupancy rate
		W/n Dripline	1X Ht	1.5X Ht.	1–rare 2 – occasional 3 – frequent 4 – constant
1	Road	x	x	x	2
2	Bldg. Site	x	x	x	1
3					
4					

Occupancy: R = very brief on few instance; O = 1-4 hr/day; F = >4-12 hr, C = >12 hr

Roots Main concern(s): Soil movement and crown failure

Load on defect: N/A __ Minor Moderate **x Significant** **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Trunk Main concern(s: Lean predisposes trunk failure if decay is present

Load on defect: N/A Minor **x Moderate** Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Branches/crown Main concern(s):

Load on defect: N/A **x Minor** Moderate Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Cond #	Concerns	Tree Part	Target #	Part Size	Fall Distance	Target Protection	Likelihood												Consequences				Risk Rating
							Failure				Impact				Failure & Impact (Matrix 1)								
							Improbable	Possible	Probable	Imminent	Very Low	Low	Medium	High	Unlikely	Somewhat	Likely	Very likely	Negligible	Minor	Significant	Severe	
1	Tree Failure	RC	1	5	6	n		x			x				x					x			Low
			2	10		n		x			x				x						x		Low
2																							
3																							
4																							

Table 1. Guide to estimating the likelihood of failure and impact.

Likelihood of Failure	Likelihood of Impacting Target			
	Very Low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Table 2. Guide to estimating level of risk.

Likelihood of Failure & Impact	Consequences of the Tree Failure			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

RISK REDUCTION MEASURES

Risk Reduction Required: N/A **Monitor:** Y N Frequency: _____ **Restrict access:** Y N **Move Target:** Y N **Cable/Brace/Guy/Prop:** Y N

Prune: N ___ CC x CR: _____% **Remove tree:** Yes **Adjacent tree exposure: N** **Re-Inspect:** Y N Timing: _____

Tree Risk Rating : **Low x** Mod ___ High ___ Extreme ___

Data: Final __ Preliminary __ **Advanced assessment required:** N Type/Reason: _____

Inspection limitations: **None x** Visibility Access Vines/epiphytes Root collar buried Describe:

Notes: Within retaining wall footprint

BASIC TREE RISK ASSESSMENT

Tree #: 53 Date: July 8, 2018 Assessor: D. McKenna Time Frame: One Time

Tree Location: Canyon Rd. lojica Project Tools: Basic Visual Level 1

TREE CHARACTERISTICS

Species: CA Bay **DSH**: 6 **Height**:20 **Crown spread**: 10

Crown class: __ Dom co-dom __ intermediate x **suppressed** **Live Crown Ratio**: 50 **Cable/brace/prop/guy**: N

Form: sym **x asym** - stump sprout dead top **Lean**: N ____ deg. from vert. __ natural __ self-corrected

TREE HEALTH

Vigor class: excellent average fair **x poor** **Shoot growth**: excellent average fair **x poor**

Foliage color: **x normal** chlorotic necrotic **Foliage density**: normal **x sparse: 40%** **Leaf size: x normal** small: _____%

Epicormics: N S M L **Dieback**: N dieback _____% **Woundwood growth**: excellent **x average** __ poor none

Significant insects/pests/diseases: ___ Roots ___ Root crown ___Trunk ___ Scaffold branches Conks / Mushrooms / Canker: N

ID **insects/pests/diseases**:

SITE CONDITIONS

Recent site disturbance: N __ construction __ grade change __ tree removal __ trench: _____ trunk dist. _____% CRZ removed

Dripline Paved - Fill Soil - Grade Lowered: N 10-25% 25-50% 50-75% 75-100% **Pavement lifted**: Y N S M L

Soil defects: N __ poor drainage __ shallow __ compacted __ small volume __ other: _____

Exposure to wind: **Low** __ recent __ windward edge **Wind Protection**: **Y 50 % ID: West and North**

ROOT DEFECTS

Root rot: N **Girdling**: N S M L **Exposed/Undermined roots**: N **Soil lifting**: N **Soil cracking**: N

Restricted root area: N _____ dist. from trunk CRZ affected: _____% **Potential for root failure**: L

TREE DEFECTS

ABOVE GROUND DEFECTS: Presence of defects and severity (s = severe, m = moderate, l = low N/A = insignificant)

Defect	Root Crown	Trunk	Scaffold Limbs	Branches
Poor Taper		L	L	XXXXXXXXXXXX
Multiple attachments	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	
Cracks/Splits	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Wounds/Seams	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Dead/Loose/Cracked Bark				XXXXXXXXXXXX
Decay	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Cavity	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Nesting Hole/Bees				XXXXXXXXXXXX
Decay/Cavity - plane of lean	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Borers/Termites/Ants				XXXXXXXXXXXX
Bleeding/Sap Flow				XXXXXXXXXXXX
Codominant stems	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Included Bark	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Cankers/Galls/Burls	Response	Response	Response	XXXXXXXXXXXX

	Growth: Y N	Growth: Y N	Growth: Y N	
Previous Failure	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Epiphytes/Invasive plants/vine/mistletoe				XXXXXXXXXXXX
Bow/Sweep	XXXXXXXXXXXXXX	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Major Crossing branches	XXXXXXXXXXXXXX	Response Growth: Y N	Response Growth: Y N	
Excessive End Weight	XXXXXXXXXXXXXX	XXXXXXXXXXXXX	**M Response Growth: N**	
Hangers	XXXXXXXXXXXXXX	XXXXXXXXXXXXX		
Large Dead branches	XXXXXXXXXXXXXX	XXXXXXXXXXXXX		

Notes:

Target number	Target description	Target zone			Occupancy rate
		W/n Dripline	1X Ht	1.5X Ht.	1–rare 2 – occasional 3 – frequent 4 – constant
1	Road	x	x	x	2
2	Bldg. Site	x	x	x	1
3					
4					

Occupancy: R = very brief on few instance; O = 1-4 hr/day; F = >4-12 hr, C = >12 hr

Roots Main concern(s): Soil Movement and Crown Failure

Load on defect: N/A Minor **x Moderate** Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Trunk Main concern(s):

Load on defect: N/A **x Minor** Moderate Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Branches/crown Main concern(s):

Load on defect: N/A **x Minor** Moderate Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Cond #	Concerns	Tree Part	Target #	Part Size	Fall Distance	Target Protection	Likelihood												Consequences				Risk Rating
							Failure				Impact				Failure & Impact (Matrix 1)								
							Improbable	Possible	Probable	Imminent	Very Low	Low	Medium	High	Unlikely	Somewhat	Likely	Very likely	Negligible	Minor	Significant	Severe	
1	Tree Failure	Trunk	1	5	6	n		x			x				x					x			Low
			2	5		n		x			x				x						x		Low
2																							
3																							
4																							

Table 1. Guide to estimating the likelihood of failure and impact.

Likelihood of Failure	Likelihood of Impacting Target			
	Very Low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Table 2. Guide to estimating level of risk.

Likelihood of Failure & Impact	Consequences of the Tree Failure			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

RISK REDUCTION MEASURES

Risk Reduction Required: N **Monitor:** Y N Frequency: _____ **Restrict access:** Y N **Move Target:** Y N **Cable/Brace/Guy/Prop:** Y N

Prune: Y N ___ CC x CR: _____% **Remove tree:** Yes Adjacent tree exposure: N **Re-Inspect:** Y N Timing: _____

Tree Risk Rating : Low x Mod High Extreme

Data: Final __ Preliminary __ **Advanced assessment required:** N Type/Reason: _____

Inspection limitations: None x Visibility Access Vines/epiphytes Root collar buried Describe:

Notes: Within retaining wall footprint

BASIC TREE RISK ASSESSMENT

Tree #: 54 Date: July 8, 2018 Assessor: D. McKenna Time Frame: One Time

Tree Location: Canyon Rd. Iojica Project Tools: Basic Visual Level 1

TREE CHARACTERISTICS

Species: CA Bay **DSH**: 5 **Height**:20 **Crown spread**: 10

Crown class: Dom co-dom intermediate **x suppressed** **Live Crown Ratio:** 50 **Cable/brace/prop/guy:** N

Form: sym **x asym** - stump sprout dead top **Lean: Yes 10 deg. from vert. Yes natural No self-corrected**

TREE HEALTH

Vigor class: __ excellent average fair **x poor** **Shoot growth:** __ excellent average __ fair **x poor**

Foliage color: **x normal** chlorotic necrotic **Foliage density**: normal **x sparse: 40%** **Leaf size: x normal** __ small: _____%

Epicormics: N S M L **Dieback:** N dieback _____% **Woundwood growth:** __ excellent **x average** poor none

Significant insects/pests/diseases: ___ Roots ___ Root crown ___Trunk ___ Scaffold branches Conks / Mushrooms / Canker: N

ID **insects/pests/diseases**:

SITE CONDITIONS

Recent site disturbance: N __ construction __ grade change __ tree removal __ trench: _____ trunk dist. _____ % CRZ removed

Dripline Paved - Fill Soil - Grade Lowered: N 10-25% 25-50% 50-75% 75-100% **Pavement lifted:** Y N S M L

Soil defects: N __ poor drainage __ shallow __ compacted __ small volume __ other: **Exposed roots on down hill bank**

Exposure to wind: Low __ recent __ windward edge **Wind Protection: Y 50 % ID: West and North**

ROOT DEFECTS

Root rot: N **Girdling:** N S M L **Exposed/Undermined roots**: Yes **Soil lifting**: N **Soil cracking**: N

Restricted root area: Yes 2' dist. from trunk CRZ affected: 50 % **Potential for root failure**: High

TREE DEFECTS

ABOVE GROUND DEFECTS: Presence of defects and severity (s = severe, m = moderate, l = low N/A = insignificant)

Defect	Root Crown	Trunk	Scaffold Limbs	Branches
Poor Taper		L	L	XXXXXXXXXXXX
Multiple attachments	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	
Cracks/Splits	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Wounds/Seams	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Dead/Loose/Cracked Bark	L			XXXXXXXXXXXX
Decay	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Cavity	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Nesting Hole/Bees				XXXXXXXXXXXX
Decay/Cavity - plane of lean	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Borers/Termites/Ants				XXXXXXXXXXXX
Bleeding/Sap Flow				XXXXXXXXXXXX
Codominant stems	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Included Bark	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX

Cankers/Galls/Burls	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Previous Failure	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Epiphytes/Invasive plants/vine/mistletoe				XXXXXXXXXXXX
Bow/Sweep	XXXXXXXXXXXXXX	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Major Crossing branches	XXXXXXXXXXXXXX	Response Growth: Y N	Response Growth: Y N	
Excessive End Weight	XXXXXXXXXXXXXX	XXXXXXXXXXXXX	**L Response Growth: N**	
Hangers	XXXXXXXXXXXXXX	XXXXXXXXXXXXX		
Large Dead branches	XXXXXXXXXXXXXX	XXXXXXXXXXXXX		

Notes:

Target number	Target description	Target zone			Occupancy rate
		W/n Dripline	1X Ht	1.5X Ht.	1–rare 2 – occasional 3 – frequent 4 – constant
1	Road	x	x	x	2
2	Bldg. Site	x	x	x	1
3					
4					

Occupancy: R = very brief on few instance; O = 1-4 hr/day; F = >4-12 hr, C = >12 hr

Roots Main concern(s): Soil Movement and Crown failure

Load on defect: N/A Minor Moderate **x Significant** **Likelihood of failure:** Improbable Possible **x Probable** Imminent

Trunk Main concern(s):

Load on defect: N/A **x Minor** Moderate Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Branches/crown Main concern(s):

Load on defect: N/A **x Minor** Moderate Significant **Likelihood of failure:** Improbable Possible **x Probable** Imminent

BASIC TREE RISK ASSESSMENT

Tree #: 55 Date: July 8, 2018 Assessor: D. McKenna Time Frame: One Time

Tree Location: Canyon Rd. Iojica Project Tools: Basic Visual Level 1

TREE CHARACTERISTICS

Species: Valley Oak **DSH**: 18 **Height**:40 **Crown spread**: 20

Crown class: x Dom co-dom intermediate suppressed **Live Crown Ratio**: 20 **Cable/brace/prop/guy**: N

Form: sym x asym - stump sprout x dead top **Lean**: N 10 deg. from vert. x natural no self-corrected

TREE HEALTH

Vigor class: __ excellent average fair x poor **Shoot growth**: __ excellent average x fair poor

Foliage color: x normal chlorotic necrotic **Foliage density**: x normal __ sparse: _____% **Leaf size**: x normal small: _____%

Epicormics: N S M L **Dieback**: Yes dieback 60% **Woundwood growth**: __ excellent average x poor __ none

Significant insects/pests/diseases: ___ Roots ___ Root crown ___Trunk ___ Scaffold branches Conks / Mushrooms / Canker: N

ID **insects/pests/diseases**:

SITE CONDITIONS

Recent site disturbance: N __ construction __ grade change __ tree removal __ trench: _____ trunk dist. _____% CRZ removed

Dripline Paved - Fill Soil - Grade Lowered: N 10-25% 25-50% 50-75% 75-100% **Pavement lifted**: Y N S M L

Soil defects: N __ poor drainage __ shallow __ compacted __ small volume __ other: _____

Exposure to wind: Low __ recent __ windward edge **Wind Protection**: Y 50 % ID: West and North

ROOT DEFECTS

Root rot: N **Girdling**: N S M L **Exposed/Undermined roots**: N **Soil lifting**: N **Soil cracking**: N

Restricted root area: N _____ dist. from trunk CRZ affected: _____ % **Potential for root failure**: L

TREE DEFECTS

ABOVE GROUND DEFECTS: Presence of defects and severity (s = severe, m = moderate, l = low N/A = insignificant)

Defect	Root Crown	Trunk	Scaffold Limbs	Branches
Poor Taper				XXXXXXXXXXX
Multiple attachments	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	
Cracks/Splits	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXX
Wounds/Seams	Response Growth: Y N	S Response Growth: Y	Response Growth: Y N	XXXXXXXXXXX
Dead/Loose/Cracked Bark		S		XXXXXXXXXXX
Decay	Response Growth: Y N	S Response Growth: Y	Response Growth: Y N	XXXXXXXXXXX
Cavity	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXX
Nesting Hole/Bees				XXXXXXXXXXX
Decay/Cavity - plane of lean	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXX
Borers/Termites/Ants				XXXXXXXXXXX
Bleeding/Sap Flow				XXXXXXXXXXX
Codominant stems	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXX
Included Bark	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXX

Cond #	Concerns	Tree Part	Target #	Part Size	Fall Distance	Target Protection	Likelihood												Consequences				Risk Rating
							Failure				Impact				Failure & Impact (Matrix 1)								
							Improbable	Possible	Probable	Imminent	Very Low	Low	Medium	High	Unlikely	Somewhat	Likely	Very likely	Negligible	Minor	Significant	Severe	
1	Tree Failure	Trunk	1	5	6	n		x			x				x					x			Low
			2	5		n		x			x				x						x		Low
2																							
3																							
4																							

Table 1. Guide to estimating the likelihood of failure and impact.

Likelihood of Failure	Likelihood of Impacting Target			
	Very Low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Table 2. Guide to estimating level of risk.

Likelihood of Failure & Impact	Consequences of the Tree Failure			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

RISK REDUCTION MEASURES

Risk Reduction Required: N **Monitor:** Y N Frequency: _____ **Restrict access:** Y N **Move Target:** Y N **Cable/Brace/Guy/Prop:** Y N

Prune: Y N ___ CC x CR: _____% **Remove tree:** Yes Adjacent tree exposure: N **Re-Inspect:** Y N Timing: _____

Tree Risk Rating : **Low x** Mod High Extreme

Data: Final __ Preliminary __ **Advanced assessment required:** N Type/Reason: _____

Inspection limitations: None x Visibility __ Access __ Vines/epiphytes __ Root collar buried __ Describe:

Notes: Within retaining wall footprint

Cankers/Galls/Burls	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Previous Failure	Response Growth: Y N	S Response Growth: Y	S Response Growth: N	XXXXXXXXXXXX
Epiphytes/Invasive plants/vine/mistletoe				XXXXXXXXXXXX
Bow/Sweep	XXXXXXXXXXXXXX	S Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Major Crossing branches	XXXXXXXXXXXXXX	Response Growth: Y N	Response Growth: Y N	
Excessive End Weight	XXXXXXXXXXXXXX	XXXXXXXXXXXXX	S Response Growth: N	
Hangers	XXXXXXXXXXXXXX	XXXXXXXXXXXXX		
Large Dead branches	XXXXXXXXXXXXXX	XXXXXXXXXXXXX	S	

Notes:

Target number	Target description	Target zone			Occupancy rate
		W/n Dripline	1X Ht	1.5X Ht.	1–rare 2 – occasional 3 – frequent 4 – constant
1	Bldg. Site	X	X	X	2
2					
3					
4					

Occupancy: R = very brief on few instance; O = 1-4 hr/day; F = >4-12 hr, C = >12 hr

Roots Main concern(s):

Load on defect: N/A Minor Moderate **x Significant** **Likelihood of failure:** Improbable - Possible **x Probable** Imminent

Trunk Main concern(s: Decay present throughout trunk

Load on defect: N/A Minor Moderate **x Significant** **Likelihood of failure:** Improbable Possible **x Probable** Imminent

Branches/crown Main concern(s):

Load on defect: N/A Minor Moderate **x Significant** **Likelihood of failure:** Improbable Possible **x Probable** Imminent

Cond #	Concerns	Tree Part	Target #	Part Size	Fall Distance	Target Protection	Likelihood												Consequences				Risk Rating
							Failure				Impact				Failure & Impact (Matrix 1)								
							Improbable	Possible	Probable	Imminent	Very Low	Low	Medium	High	Unlikely	Somewhat	Likely	Very likely	Negligible	Minor	Significant	Severe	
1	Tree Failure	Trunk	1	5	6	n		x			x				x					x			Low
			2	10		n		x			x				x						x		Low
2																							
3																							
4																							

Table 1. Guide to estimating the likelihood of failure and impact.

Likelihood of Failure	Likelihood of Impacting Target			
	Very Low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Table 2. Guide to estimating level of risk.

Likelihood of Failure & Impact	Consequences of the Tree Failure			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

RISK REDUCTION MEASURES

Risk Reduction Required: N/A **Monitor:** Y N Frequency: _____ **Restrict access:** Y N **Move Target:** Y N **Cable/Brace/Guy/Prop:** Y N

Prune: N ___ CC x CR: _____% **Remove tree:** Yes Adjacent tree exposure: N **Re-Inspect:** Y N Timing: _____

Tree Risk Rating : **Low x** Mod High Extreme

Data: Final __ Preliminary __ **Advanced assessment required:** N Type/Reason: _____

Inspection limitations: **None x** Visibility Access Vines/epiphytes Root collar buried

Describe Notes: Within building footprint

BASIC TREE RISK ASSESSMENT

Tree #: 56 Date: July 8, 2018 Assessor: D. McKenna Time Frame: One Time

Tree Location: Canyon Rd. Iojica Project Tools: Basic Visual Level 1

TREE CHARACTERISTICS

Species: Valley Oak **DSH**: 12 **Height**:30 **Crown spread**: 15

Crown class: Dom x co-dom __ intermediate suppressed **Live Crown Ratio:** 50 **Cable/brace/prop/guy:** N

Form: sym x asym - __ stump sprout dead top **Lean:** N 5 deg. from vert. x natural no self-corrected

TREE HEALTH

Vigor class: __ excellent average x fair poor **Shoot growth:** __ excellent average x fair poor

Foliage color: x normal __ chlorotic __ necrotic **Foliage density**: x normal sparse: **Leaf size:** x normal __ small: _____%

Epicormics: N S M L **Dieback:** N dieback **Woundwood growth:** __ excellent x average poor __ none

Significant insects/pests/diseases: ___ Roots ___ Root crown Trunk ___ Scaffold branches Conks / Mushrooms / Canker: N

ID **insects/pests/diseases**:

SITE CONDITIONS

Recent site disturbance: N __ construction __ grade change __ tree removal __ trench: _____ trunk dist. _____% CRZ removed

Dripline Paved - Fill Soil - Grade Lowered: N 10-25% 25-50% 50-75% 75-100% **Pavement lifted:** Y N S M L

Soil defects: N __ poor drainage __ shallow __ compacted __ small volume __ other: **Exposed roots – excised bank eroded**

Exposure to wind: Low recent windward edge **Wind Protection**: **Y 50 % ID: West and North**

ROOT DEFECTS

Root rot: N **Girdling:** N S M L **Exposed/Undermined roots**: Yes **Soil lifting**: N **Soil cracking**: N

Restricted root area: N 2' dist. from trunk CRZ affected: 50 % **Potential for root failure**: **High**

TREE DEFECTS

ABOVE GROUND DEFECTS: Presence of defects and severity (s = severe, m = moderate, l = low N/A = insignificant)

Defect	Root Crown	Trunk	Scaffold Limbs	Branches
Poor Taper				XXXXXXXXXXXX
Multiple attachments	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	
Cracks/Splits	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Wounds/Seams	L **Response Growth: Y**	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Dead/Loose/Cracked Bark				XXXXXXXXXXXX
Decay	Response Growth: Y N	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Cavity	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Nesting Hole/Bees				XXXXXXXXXXXX
Decay/Cavity - plane of lean	Response Growth: Y N	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Borers/Termites/Ants				XXXXXXXXXXXX
Bleeding/Sap Flow				XXXXXXXXXXXX
Codominant stems	Response Growth: Y N	Response Growth: Y N	M **Response Growth: N**	XXXXXXXXXXXX
Included Bark	Response Growth: Y N	Response Growth: Y N	M **Response Growth: Y**	XXXXXXXXXXXX

Cankers/Galls/Burls	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Previous Failure	Response Growth: Y N	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Epiphytes/Invasive plants/vine/mistletoe				XXXXXXXXXXXX
Bow/Sweep	XXXXXXXXXXXXXX	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Major Crossing branches	XXXXXXXXXXXXXX	Response Growth: Y N	Response Growth: Y N	
Excessive End Weight	XXXXXXXXXXXXXX	XXXXXXXXXXXXX	L Response Growth: N	x
Hangers	XXXXXXXXXXXXXX	XXXXXXXXXXXXX		
Large Dead branches	XXXXXXXXXXXXXX	XXXXXXXXXXXXX		x

Notes:

Target number	Target description	Target zone			Occupancy rate
		W/n Dripline	1X Ht	1.5X Ht.	1–rare 2 – occasional 3 – frequent 4 – constant
1	Bldg. Site	x	x	x	1
2	Road	x	x	x	2
3					
4					

Occupancy: R = very brief on few instance; O = 1-4 hr/day; F = >4-12 hr, C = >12 hr

Roots Main concern(s): Soil Movement and Crown failure

Load on defect: N/A **x Minor** Moderate Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Trunk Main concern(s):

Load on defect: N/A Minor **x Moderate** Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Branches/crown Main concern(s):

Load on defect: N/A **x Minor** Moderate Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Cond #	Concerns	Tree Part	Target #	Part Size	Fall Distance	Target Protection	Likelihood												Consequences				Risk Rating
							Failure				Impact				Failure & Impact (Matrix 1)								
							Improbable	Possible	Probable	Imminent	Very Low	Low	Medium	High	Unlikely	Somewhat	Likely	Very likely	Negligible	Minor	Significant	Severe	
1	Tree Failure	Root Crown	1	5	6	n		x			x				x					x			Low
			2	10		n		x			x				x						x		Low
2																							
3																							
4																							

Table 1. Guide to estimating the likelihood of failure and impact.

Likelihood of Failure	Likelihood of Impacting Target			
	Very Low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Table 2. Guide to estimating level of risk.

Likelihood of Failure & Impact	Consequences of the Tree Failure			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

RISK REDUCTION MEASURES

Risk Reduction Required: N/A **Monitor:** Y N Frequency: _____ **Restrict access:** Y N **Move Target:** Y N **Cable/Brace/Guy/Prop:** Y N

Prune: N ___ CC x CR: _____% **Remove tree:** Yes Adjacent tree exposure: N **Re-Inspect:** Y N Timing: _____

Tree Risk Rating : Low x Mod High Extreme

Data: Final __ Preliminary __ **Advanced assessment required:** N Type/Reason: _____

Inspection limitations: None x Visibility Access Vines/epiphytes Root collar buried Describe:

Notes: Within building footprint

BASIC TREE RISK ASSESSMENT

Tree #: 57 Date: July 8, 2018 Assessor: D. McKenna Time Frame: One Time

Tree Location: Canyon Rd. Iojica Project Tools: Basic Visual Level 1

TREE CHARACTERISTICS

Species: CA Bay **DSH**: 15, 8 **Height**:40 **Crown spread**: 20

Crown class: Dom **x co-dom** __ intermediate suppressed **Live Crown Ratio:** 50 **Cable/brace/prop/guy:** N

Form: sym **x asym** - __ stump sprout dead top **Lean: N 5 deg. from vert. x natural no self-corrected**

TREE HEALTH

Vigor class: __ excellent **x average** fair poor **Shoot growth:** __ excellent average **x fair** poor

Foliage color: x normal __ chlorotic __ necrotic **Foliage density: x normal** sparse: **Leaf size: x normal** __ small: _____%

Epicormics: N S M L **Dieback:** N dieback **Woundwood growth:** __ excellent **x average** poor __ none

Significant insects/pests/diseases: ___ Roots ___ Root crown Trunk ___ Scaffold branches Conks / Mushrooms / Canker: N

ID **insects/pests/diseases**:

SITE CONDITIONS

Recent site disturbance: N __ construction __ grade change __ tree removal __ trench: _____ trunk dist. _____% CRZ removed

Dripline Paved - Fill Soil - Grade Lowered: N 10-25% 25-50% 50-75% 75-100% **Pavement lifted:** Y N S M L

Soil defects: N __ poor drainage __ shallow __ compacted __ small volume __ other: **Exposed roots –bank eroded**

Exposure to wind: Low recent windward edge **Wind Protection: Y 50 % ID: West and North**

ROOT DEFECTS

Root rot: N **Girdling:** N S M L **Exposed/Undermined roots**: Yes **Soil lifting**: N **Soil cracking**: N

Restricted root area: N 2' dist. from trunk CRZ affected: 50 % **Potential for root failure: Moderate**

TREE DEFECTS

ABOVE GROUND DEFECTS: Presence of defects and severity (s = severe, m = moderate, l = low N/A = insignificant)

Defect	Root Crown	Trunk	Scaffold Limbs	Branches
Poor Taper				XXXXXXXXXXXX
Multiple attachments	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	
Cracks/Splits	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Wounds/Seams	L **Response Growth: Y**	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Dead/Loose/Cracked Bark				XXXXXXXXXXXX
Decay	Response Growth: Y N	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Cavity	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Nesting Hole/Bees				XXXXXXXXXXXX
Decay/Cavity - plane of lean	Response Growth: Y N	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Borers/Termites/Ants				XXXXXXXXXXXX
Bleeding/Sap Flow				XXXXXXXXXXXX
Codominant stems	Response Growth: Y N	Response Growth: Y N	M **Response Growth: N**	XXXXXXXXXXXX
Included Bark	Response Growth: Y N	M **Response Growth: Y**	Response Growth: Y N	XXXXXXXXXXXX

Cankers/Galls/Burls	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Previous Failure	Response Growth: Y N	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Epiphytes/Invasive plants/vine/mistletoe				XXXXXXXXXXXX
Bow/Sweep	XXXXXXXXXXXXXX	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Major Crossing branches	XXXXXXXXXXXXXX	Response Growth: Y N	Response Growth: Y N	
Excessive End Weight	XXXXXXXXXXXXXX	XXXXXXXXXXXXX	**M Response Growth: N**	x
Hangers	XXXXXXXXXXXXXX	XXXXXXXXXXXXX		
Large Dead branches	XXXXXXXXXXXXXX	XXXXXXXXXXXXX		x

Notes:

Target number	Target description	Target zone			Occupancy rate
		W/n Dripline	1X Ht	1.5X Ht.	1–rare 2 – occasional 3 – frequent 4 – constant
1	Bldg. Site	x	x	x	1
2	Road	x	x	x	2
3					
4					

Occupancy: R = very brief on few instance; O = 1-4 hr/day; F = >4-12 hr, C = >12 hr

Roots Main concern(s): Soil Movement and Crown failure

Load on defect: N/A **x Minor** Moderate Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Trunk Main concern(s):

Load on defect: N/A Minor **x Moderate** Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Branches/crown Main concern(s):

Load on defect: N/A **x Minor** Moderate Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Cond #	Concerns	Tree Part	Target #	Part Size	Fall Distance	Target Protection	Likelihood												Consequences				Risk Rating
							Failure				Impact				Failure & Impact (Matrix 1)								
							Improbable	Possible	Probable	Imminent	Very Low	Low	Medium	High	Unlikely	Somewhat	Likely	Very likely	Negligible	Minor	Significant	Severe	
1	Tree Failure	Root Crown	1	5	6	n		x			x				x					x			Low
			2	10		n		x			x				x						x		Low
2																							
3																							
4																							

Table 1. Guide to estimating the likelihood of failure and impact.

Likelihood of Failure	Likelihood of Impacting Target			
	Very Low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Table 2. Guide to estimating level of risk.

Likelihood of Failure & Impact	Consequences of the Tree Failure			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

RISK REDUCTION MEASURES

Risk Reduction Required: N/A **Monitor:** Y N Frequency: _____ **Restrict access:** Y N **Move Target:** Y N **Cable/Brace/Guy/Prop:** Y N

Prune: N ___ CC x CR: _____% **Remove tree:** No

Tree Risk Rating : Low x Mod High Extreme

Data: Final __ Preliminary __ **Advanced assessment required:** N Type/Reason: _____

Inspection limitations: None x Visibility Access Vines/epiphytes Root collar buried Describe:

Notes: Tree Protection Plan Proposed

BASIC TREE RISK ASSESSMENT

Tree #: 58 Date: July 8, 2018 Assessor: D. McKenna Time Frame: One Time

Tree Location: Canyon Rd. Iojica Project Tools: Basic Visual Level 1

TREE CHARACTERISTICS

Species: CA Bay **DSH:** 14 **Height:**25 **Crown spread:** 15

Crown class: Dom **x co-dom** __ intermediate suppressed **Live Crown Ratio:** 30 **Cable/brace/prop/guy:** N

Form: sym **x asym** - __ stump sprout dead top **Lean:** **No**

TREE HEALTH

Vigor class: __ excellent average **x fair** poor **Shoot growth:** __ excellent average **x fair** poor

Foliage color: **x normal** __ chlorotic __ necrotic **Foliage density:** **x normal** sparse: **Leaf size:** **x normal** __ small: _____%

Epicormics: N S M L **Dieback:** **Y dieback** **Woundwood growth:** __ excellent average **x poor** __ none

Significant insects/pests/diseases: ___ Roots ___ Root crown Trunk ___ Scaffold branches Conks / Mushrooms / Canker: N

ID insects/pests/diseases:

SITE CONDITIONS

Recent site disturbance: N __ construction __ grade change __ tree removal __ trench: _____ trunk dist. _____ % CRZ removed

Dripline Paved - Fill Soil - Grade Lowered: N 10-25% 25-50% 50-75% 75-100% **Pavement lifted:** Y N S M L

Soil defects: N __ poor drainage __ shallow __ compacted __ small volume __ other:

Exposure to wind: **Low** recent windward edge **Wind Protection:** **Y 50 % ID: West and North**

ROOT DEFECTS

Root rot: N **Girdling:** N S M L **Exposed/Undermined roots:** No **Soil lifting:** N **Soil cracking:** N

Restricted root area: N 2' dist. from trunk CRZ affected: 50 % **Potential for root failure:**

TREE DEFECTS

ABOVE GROUND DEFECTS: Presence of defects and severity (s = severe, m = moderate, l = low N/A = insignificant)

Defect	Root Crown	Trunk	Scaffold Limbs	Branches
Poor Taper			M	XXXXXXXXXXXX
Multiple attachments	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	
Cracks/Splits	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Wounds/Seams	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Dead/Loose/Cracked Bark				XXXXXXXXXXXX
Decay	Response Growth: Y N	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Cavity	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Nesting Hole/Bees				XXXXXXXXXXXX
Decay/Cavity - plane of lean	Response Growth: Y N	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Borers/Termites/Ants				XXXXXXXXXXXX
Bleeding/Sap Flow				XXXXXXXXXXXX
Codominant stems	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Included Bark	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX

Cankers/Galls/Burls	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Previous Failure	Response Growth: Y N	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Epiphytes/Invasive plants/vine/mistletoe				XXXXXXXXXXXX
Bow/Sweep	XXXXXXXXXXXXX	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Major Crossing branches	XXXXXXXXXXXXX	Response Growth: Y N	Response Growth: Y N	
Excessive End Weight	XXXXXXXXXXXXX	XXXXXXXXXXXX	**M Response Growth: N**	x
Hangers	XXXXXXXXXXXXX	XXXXXXXXXXXX		
Large Dead branches	XXXXXXXXXXXXX	XXXXXXXXXXXX		x

Notes:

Target number	Target description	Target zone			Occupancy rate
		W/n Dripline	1X Ht	1.5X Ht.	1–rare 2 – occasional 3 – frequent 4 – constant
1	Bldg. Site	x	x	x	1
2					
3					
4					

Occupancy: R = very brief on few instance; O = 1-4 hr/day; F = >4-12 hr, C = >12 hr

Roots Main concern(s): Soil Movement and Crown failure

Load on defect: N/A **x Minor** Moderate Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Trunk Main concern(s):

Load on defect: N/A Minor **x Moderate** Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Branches/crown Main concern(s):

Load on defect: N/A **x Minor** Moderate Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Cond #	Concerns	Tree Part	Target #	Part Size	Fall Distance	Target Protection	Likelihood												Consequences				Risk Rating
							Failure				Impact				Failure & Impact (Matrix 1)								
							Improbable	Possible	Probable	Imminent	Very Low	Low	Medium	High	Unlikely	Somewhat	Likely	Very likely	Negligible	Minor	Significant	Severe	
1	Tree Failure	Root Crown	1	5	6	n		x			x				x					x			Low
			2	10		n		x			x				x						x		Low
2																							
3																							
4																							

Table 1. Guide to estimating the likelihood of failure and impact.

Likelihood of Failure	Likelihood of Impacting Target			
	Very Low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Table 2. Guide to estimating level of risk.

Likelihood of Failure & Impact	Consequences of the Tree Failure			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

RISK REDUCTION MEASURES

Risk Reduction Required: N/A **Monitor:** Y N Frequency: _____ **Restrict aceess:** Y N **Move Target:** Y N **Cable/Brace/Guy/Prop:** Y N

Prune: N ___ CC x CR: _____% **Remove tree:** **Yes** **Impact on Adjacent trees N**

Tree Risk Rating : **Low x** Mod High Extreme

Data: Final __ Preliminary __ **Advanced assessment required:** N Type/Reason: _____

Inspection limitations: **None x** Visibility Access Vines/epiphytes Root collar buried Describe:

Notes: Within Bldg. Footprint

BASIC TREE RISK ASSESSMENT

Tree #: 59 Date: July 8, 2018 Assessor: D. McKenna Time Frame: One Time

Tree Location: Canyon Rd. Iojica Project Tools: Basic Visual Level 1

TREE CHARACTERISTICS

Species: CA Bay **DSH:** 8 **Height:**25 **Crown spread:** 15

Crown class: Dom **x co-dom** __ intermediate suppressed **Live Crown Ratio:** 40 **Cable/brace/prop/guy:** N

Form: sym **x asym** - __ stump sprout dead top **Lean:** **Yes 10% to the SW**

TREE HEALTH

Vigor class: __ excellent average **x fair** poor **Shoot growth:** __ excellent average **x fair** poor

Foliage color: **x normal** __ chlorotic __ necrotic **Foliage density:** **x normal** sparse: **Leaf size:** **x normal** __ small: _____%

Epicormics: N S M L **Dieback:** **Y dieback** **Woundwood growth:** __ excellent average **x poor** __ none

Significant insects/pests/diseases: ___ Roots ___ Root crown Trunk ___ Scaffold branches Conks / Mushrooms / Canker: N

ID **insects/pests/diseases:**

SITE CONDITIONS

Recent site disturbance: N __ construction __ grade change __ tree removal __ trench: _____ trunk dist. _____% CRZ removed

Dripline Paved - Fill Soil - Grade Lowered: N 10-25% 25-50% 50-75% 75-100% **Pavement lifted:** Y N S M L

Soil defects: N __ poor drainage __ shallow __ compacted __ small volume __ other:

Exposure to wind: **Low** recent windward edge **Wind Protection:** **Y 50 % ID: West and North**

ROOT DEFECTS

Root rot: N **Girdling:** N S M L **Exposed/Undermined roots:** No **Soil lifting:** N **Soil cracking:** N

Restricted root area: N 2' dist. from trunk CRZ affected: 50 % **Potential for root failure:**

TREE DEFECTS

ABOVE GROUND DEFECTS: Presence of defects and severity (s = severe, m = moderate, l = low N/A = insignificant)

Defect	Root Crown	Trunk	Scaffold Limbs	Branches
Poor Taper			M	XXXXXXXXXXXX
Multiple attachments	Response Growth: Y N	Response Growth: Y N	M Response Growth: N	
Cracks/Splits	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Wounds/Seams	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Dead/Loose/Cracked Bark				XXXXXXXXXXXX
Decay	Response Growth: Y N	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Cavity	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Nesting Hole/Bees				XXXXXXXXXXXX
Decay/Cavity - plane of lean	Response Growth: Y N	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Borers/Termites/Ants				XXXXXXXXXXXX
Bleeding/Sap Flow				XXXXXXXXXXXX
Codominant stems	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Included Bark	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX

Cankers/Galls/Burls	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Previous Failure	Response Growth: Y N	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Epiphytes/Invasive plants/vine/mistletoe				XXXXXXXXXXXX
Bow/Sweep	XXXXXXXXXXXXX	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Major Crossing branches	XXXXXXXXXXXXX	Response Growth: Y N	Response Growth: Y N	
Excessive End Weight	XXXXXXXXXXXXX	XXXXXXXXXXXXX	**M Response Growth: N**	x
Hangers	XXXXXXXXXXXXX	XXXXXXXXXXXXX		
Large Dead branches	XXXXXXXXXXXXX	XXXXXXXXXXXXX		x

Notes:

Target number	Target description	Target zone			Occupancy rate
		W/n Dripline	1X Ht	1.5X Ht.	1–rare 2 – occasional 3 – frequent 4 – constant
1	Bldg. Site	x	x	x	1
2					
3					
4					

Occupancy: R = very brief on few instance; O = 1-4 hr/day; F = >4-12 hr, C = >12 hr

Roots Main concern(s): Soil Movement and Crown failure

Load on defect: N/A **x Minor** Moderate Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Trunk Main concern(s):

Load on defect: N/A Minor **x Moderate** Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Branches/crown Main concern(s):

Load on defect: N/A **x Minor** Moderate Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Cond #	Concerns	Tree Part	Target #	Part Size	Fail Distance	Target Protection	Likelihood												Consequences				Risk Rating
							Failure				Impact				Failure & Impact (Matrix 1)								
							Improbable	Possible	Probable	Imminent	Very Low	Low	Medium	High	Unlikely	Somewhat	Likely	Very likely	Negligible	Minor	Significant	Severe	
1	Tree Failure	Root Crown	1	5	6	n		x			x				x					x			Low
			2	10		n		x			x				x						x		Low
2																							
3																							
4																							

Table 1. Guide to estimating the likelihood of failure and impact.

Likelihood of Failure	Likelihood of Impacting Target			
	Very Low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Table 2. Guide to estimating level of risk.

Likelihood of Failure & Impact	Consequences of the Tree Failure			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

RISK REDUCTION MEASURES

Risk Reduction Required: N/A **Monitor:** Y N Frequency: _____ **Restrict access:** Y N **Move Target:** Y N **Cable/Brace/Guy/Prop:** Y N

Prune: N ___ CC x CR: _____% **Remove tree:** Yes **Impact on Adjacent trees N**

Tree Risk Rating : Low x Mod High Extreme

Data: Final __ Preliminary __ **Advanced assessment required:** N Type/Reason: _____

Inspection limitations: None x Visibility Access Vines/epiphytes Root collar buried Describe:

Notes: Within Bldg. Footprint

BASIC TREE RISK ASSESSMENT

Tree #: 60 Date: July 8, 2018 Assessor: D. McKenna Time Frame: One Time

Tree Location: Canyon Rd. Iojica Project Tools: Basic Visual Level 1

TREE CHARACTERISTICS

Species: Valley Oak **DSH**: 10, 8 **Height**:35 **Crown spread**: 20

Crown class: Dom x co-dom __ intermediate suppressed **Live Crown Ratio:** 25 **Cable/brace/prop/guy:** N

Form: sym x asym - __ stump sprout dead top **Lean**: Yes 10% to the E

TREE HEALTH

Vigor class: __ excellent average x fair poor **Shoot growth:** __ excellent average x fair poor

Foliage color: x normal __ chlorotic __ necrotic **Foliage density**: x normal sparse: **Leaf size:** x normal __ small: ____%

Epicormics: N S M L **Dieback:** Y dieback **Woundwood growth:** __ excellent average x poor __ none

Significant insects/pests/diseases: ___ Roots ___ Root crown Trunk ___ Scaffold branches Conks / Mushrooms / Canker: N

ID **insects/pests/diseases**:

SITE CONDITIONS

Recent site disturbance: N __ construction __ grade change __ tree removal __ trench: _____ trunk dist. _____ % CRZ removed

Dripline Paved - Fill Soil - Grade Lowered: N 10-25% 25-50% 50-75% 75-100% **Pavement lifted:** Y N S M L

Soil defects: N __ poor drainage __ shallow __ compacted __ small volume __ other:

Exposure to wind: Low recent windward edge **Wind Protection**: Y 50 % ID: West and North

ROOT DEFECTS

Root rot: N **Girdling:** N S M L **Exposed/Undermined roots**: No **Soil lifting**: N **Soil cracking**: N

Restricted root area: N 2' dist. from trunk CRZ affected: 50 % **Potential for root failure:**

TREE DEFECTS

ABOVE GROUND DEFECTS: Presence of defects and severity (s = severe, m = moderate, l = low N/A = insignificant)

Defect	Root Crown	Trunk	Scaffold Limbs	Branches
Poor Taper		M	M	XXXXXXXXXXXX
Multiple attachments	Response Growth: Y N	L **Response Growth:** N	Response Growth: Y N	
Cracks/Splits	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Wounds/Seams	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Dead/Loose/Cracked Bark				XXXXXXXXXXXX
Decay	Response Growth: Y N	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Cavity	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Nesting Hole/Bees				XXXXXXXXXXXX
Decay/Cavity - plane of lean	Response Growth: Y N	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Borers/Termites/Ants				XXXXXXXXXXXX
Bleeding/Sap Flow				XXXXXXXXXXXX
Codominant stems	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Included Bark	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX

Cankers/Galls/Burls	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Previous Failure	Response Growth: Y N	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Epiphytes/Invasive plants/vine/mistletoe				XXXXXXXXXXXX
Bow/Sweep	XXXXXXXXXXXXXX	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Major Crossing branches	XXXXXXXXXXXXXX	Response Growth: Y N	Response Growth: Y N	
Excessive End Weight	XXXXXXXXXXXXXX	XXXXXXXXXXXXX	**M Response Growth: N**	x
Hangers	XXXXXXXXXXXXXX	XXXXXXXXXXXXX		
Large Dead branches	XXXXXXXXXXXXXX	XXXXXXXXXXXXX		x

Notes:

Target number	Target description	Target zone			Occupancy rate
		W/n Dripline	1X Ht	1.5X Ht.	1–rare 2 – occasional 3 – frequent 4 – constant
1	Bldg. Site	x	x	x	1
2					
3					
4					

Occupancy: R = very brief on few instance; O = 1-4 hr/day; F = >4-12 hr, C = >12 hr

Roots Main concern(s): Soil Movement and Crown failure

Load on defect: N/A Minor **x Moderate** Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Trunk Main concern(s):

Load on defect: N/A Minor **x Moderate** Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Branches/crown Main concern(s):

Load on defect: N/A **x Minor** Moderate Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Cond #	Concerns	Tree Part	Target #	Part Size	Fall Distance	Target Protection	Likelihood												Consequences				Risk Rating
							Failure				Impact				Failure & Impact (Matrix 1)								
							Improbable	Possible	Probable	Imminent	Very Low	Low	Medium	High	Unlikely	Somewhat	Likely	Very likely	Negligible	Minor	Significant	Severe	
1	Tree Failure	Root Crown	1	5	6	n		x			x				x					x			Low
			2	10		n		x			x				x						x		Low
2																							
3																							
4																							

Table 1. Guide to estimating the likelihood of failure and impact.

Likelihood of Failure	Likelihood of Impacting Target			
	Very Low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Table 2. Guide to estimating level of risk.

Likelihood of Failure & Impact	Consequences of the Tree Failure			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

RISK REDUCTION MEASURES

Risk Reduction Required: N/A **Monitor:** Y N Frequency: _____ **Restrict access:** Y N **Move Target:** Y N **Cable/Brace/Guy/Prop:** Y N

Prune: N ___ CC x CR: _____% **Remove tree:** **Yes** **Impact on Adjacent trees N**

Tree Risk Rating : **Low x** Mod High Extreme

Data: Final __ Preliminary __ **Advanced assessment required:** N Type/Reason: _____

Inspection limitations: **None x** Visibility Access Vines/epiphytes Root collar buried Describe:

Notes: Within Bldg. Footprint

BASIC TREE RISK ASSESSMENT

Tree #: 61 Date: July 8, 2018 Assessor: D. McKenna Time Frame: One Time

Tree Location: Canyon Rd. Iojica Project Tools: Basic Visual Level 1

TREE CHARACTERISTICS

Species: CA Bay **DSH:** 15 **Height:**35 **Crown spread:** 20

Crown class: Dom **x co-dom** __ intermediate suppressed **Live Crown Ratio:** 40 **Cable/brace/prop/guy:** N

Form: sym **x asym** - __ stump sprout dead top **Lean:**

TREE HEALTH

Vigor class: __ excellent average **x fair** poor **Shoot growth:** __ excellent average **x fair** poor

Foliage color: **x normal** __ chlorotic __ necrotic **Foliage density:** **x normal** sparse: **Leaf size:** **x normal** __ small: _____%

Epicormics: N S M L **Dieback:** **Y dieback** **Woundwood growth:** __ excellent average **x poor** __ none

Significant insects/pests/diseases: ___ Roots ___ Root crown Trunk ___ Scaffold branches Conks / Mushrooms / Canker: N

ID **insects/pests/diseases:**

SITE CONDITIONS

Recent site disturbance: N __ construction __ grade change __ tree removal __ trench: _____ trunk dist. _____ % CRZ removed

Dripline Paved - Fill Soil - Grade Lowered: N 10-25% 25-50% 50-75% 75-100% **Pavement lifted:** Y N S M L

Soil defects: N __ poor drainage __ shallow __ compacted __ small volume __ other:

Exposure to wind: **Low** recent windward edge **Wind Protection:** **Y 50 % ID: West and North**

ROOT DEFECTS

Root rot: N **Girdling:** N S M L **Exposed/Undermined roots:** No **Soil lifting:** N **Soil cracking:** N

Restricted root area: N 2' dist. from trunk CRZ affected: 50 % **Potential for root failure:**

TREE DEFECTS

ABOVE GROUND DEFECTS: Presence of defects and severity (s = severe, m = moderate, l = low N/A = insignificant)

Defect	Root Crown	Trunk	Scaffold Limbs	Branches
Poor Taper		**M**	**M**	XXXXXXXXXXXX
Multiple attachments	Response Growth: Y N	**L Response Growth: N**	Response Growth: Y N	
Cracks/Splits	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Wounds/Seams	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Dead/Loose/Cracked Bark				XXXXXXXXXXXX
Decay	Response Growth: Y N	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Cavity	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Nesting Hole/Bees				XXXXXXXXXXXX
Decay/Cavity - plane of lean	Response Growth: Y N	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Borers/Termites/Ants				XXXXXXXXXXXX
Bleeding/Sap Flow				XXXXXXXXXXXX
Codominant stems	Response Growth: Y N	**M Response Growth: N**	Response Growth: Y N	XXXXXXXXXXXX
Included Bark	Response Growth: Y N	**M Response Growth: N**	Response Growth: Y N	XXXXXXXXXXXX

Cankers/Galls/Burls	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Previous Failure	Response Growth: Y N	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Epiphytes/Invasive plants/vine/mistletoe				XXXXXXXXXXXX
Bow/Sweep	XXXXXXXXXXXXXX	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Major Crossing branches	XXXXXXXXXXXXXX	Response Growth: Y N	Response Growth: Y N	
Excessive End Weight	XXXXXXXXXXXXXX	XXXXXXXXXXXXX	**M Response Growth: N**	x
Hangers	XXXXXXXXXXXXXX	XXXXXXXXXXXXX		
Large Dead branches	XXXXXXXXXXXXXX	XXXXXXXXXXXXX		x

Notes:

Target number	Target description	Target zone			Occupancy rate
		W/n Dripline	1X Ht	1.5X Ht.	1–rare 2 – occasional 3 – frequent 4 – constant
1	Bldg. Site	x	x	x	1
2					
3					
4					

Occupancy: R = very brief on few instance; O = 1-4 hr/day; F = >4-12 hr, C = >12 hr

Roots Main concern(s): Soil Movement and Crown failure

Load on defect: N/A Minor **x Moderate** Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Trunk Main concern(s):

Load on defect: N/A Minor **x Moderate** Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Branches/crown Main concern(s):

Load on defect: N/A **x Minor** Moderate Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Cond #	Concerns	Tree Part	Target #	Part Size	Fall Distance	Target Protection	Likelihood												Consequences				Risk Rating
							Failure				Impact				Failure & Impact (Matrix 1)								
							Improbable	Possible	Probable	Imminent	Very Low	Low	Medium	High	Unlikely	Somewhat	Likely	Very likely	Negligible	Minor	Significant	Severe	
1	Tree Failure	Root Crown	1	5	6	n		x			x				x					x			Low
			2	10		n		x			x				x						x		Low
2																							
3																							
4																							

Table 1. Guide to estimating the likelihood of failure and impact.

Likelihood of Failure	Likelihood of Impacting Target			
	Very Low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Table 2. Guide to estimating level of risk.

Likelihood of Failure & Impact	Consequences of the Tree Failure			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

RISK REDUCTION MEASURES

Risk Reduction Required: N/A **Monitor:** Y N Frequency: _____ **Restrict access:** Y N **Move Target:** Y N **Cable/Brace/Guy/Prop:** Y N

Prune: N ___ CC x CR: _____% **Remove tree:** Yes **Impact on Adjacent trees** N

Tree Risk Rating : Low x Mod High Extreme

Data: Final __ Preliminary __ **Advanced assessment required:** N Type/Reason: _____

Inspection limitations: None x Visibility Access Vines/epiphytes Root collar buried Describe:

Notes: Within Bldg. Footprint

BASIC TREE RISK ASSESSMENT

Tree #: 62 Date: July 8, 2018 Assessor: D. McKenna Time Frame: One Time

Tree Location: Canyon Rd. Iojica Project Tools: Basic Visual Level 1

TREE CHARACTERISTICS

Species: CA Bay **DSH:** 15 **Height:**35 **Crown spread:** 20

Crown class: Dom **x co-dom** __ intermediate suppressed **Live Crown Ratio:** 40 **Cable/brace/prop/guy:** N

Form: sym **x asym** - __ stump sprout dead top **Lean:** **Yes 5% to the W**

TREE HEALTH

Vigor class: __ excellent average **x fair** poor **Shoot growth:** __ excellent average **x fair** poor

Foliage color: **x normal** __ chlorotic __ necrotic **Foliage density:** **x normal** sparse: **Leaf size:** **x normal** __ small: _____%

Epicormics: N S M L **Dieback:** **Y dieback** **Woundwood growth:** __ excellent average **x poor** __ none

Significant insects/pests/diseases: ___ Roots ___ Root crown Trunk ___ Scaffold branches Conks / Mushrooms / Canker: N

ID **insects/pests/diseases:**

SITE CONDITIONS

Recent site disturbance: N __ construction __ grade change __ tree removal __ trench: _____ trunk dist. _____ % CRZ removed

Dripline Paved - Fill Soil - Grade Lowered: N 10-25% 25-50% 50-75% 75-100% **Pavement lifted:** Y N S M L

Soil defects: N __ poor drainage __ shallow __ compacted __ small volume __ other:

Exposure to wind: **Low** recent windward edge **Wind Protection:** **Y 50 % ID: West and North**

ROOT DEFECTS

Root rot: N **Girdling:** N S M L **Exposed/Undermined roots:** No **Soil lifting:** N **Soil cracking:** N

Restricted root area: N 2' dist. from trunk CRZ affected: 50 % **Potential for root failure:**

TREE DEFECTS

ABOVE GROUND DEFECTS: Presence of defects and severity (s = severe, m = moderate, l = low N/A = insignificant)

Defect	Root Crown	Trunk	Scaffold Limbs	Branches
Poor Taper		**M**	**M**	XXXXXXXXXXXX
Multiple attachments	Response Growth: Y N	**L Response Growth: N**	Response Growth: Y N	
Cracks/Splits	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Wounds/Seams	Response Growth: Y N	**S Response Growth: N**	Response Growth: Y N	XXXXXXXXXXXX
Dead/Loose/Cracked Bark				XXXXXXXXXXXX
Decay	Response Growth: Y N	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Cavity	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Nesting Hole/Bees				XXXXXXXXXXXX
Decay/Cavity - plane of lean	Response Growth: Y N	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Borers/Termites/Ants				XXXXXXXXXXXX
Bleeding/Sap Flow				XXXXXXXXXXXX
Codominant stems	Response Growth: Y N	**M Response Growth: N**	Response Growth: Y N	XXXXXXXXXXXX
Included Bark	Response Growth: Y N	**M Response Growth: N**	Response Growth: Y N	XXXXXXXXXXXX

Cankers/Galls/Burls	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Previous Failure	Response Growth: Y N	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Epiphytes/Invasive plants/vine/mistletoe				XXXXXXXXXXXX
Bow/Sweep	XXXXXXXXXXXXXX	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Major Crossing branches	XXXXXXXXXXXXXX	Response Growth: Y N	Response Growth: Y N	
Excessive End Weight	XXXXXXXXXXXXXX	XXXXXXXXXXXXX	**M Response Growth: N**	x
Hangers	XXXXXXXXXXXXXX	XXXXXXXXXXXXX		
Large Dead branches	XXXXXXXXXXXXXX	XXXXXXXXXXXXX		x

Notes: One of two trunks recently removed, species does not compartmentalize very well and will lead to decayed root crown

Target number	Target description	Target zone			Occupancy rate 1–rare 2 – occasional 3 – frequent 4 – constant
		W/n Dripline	1X Ht	1.5X Ht.	
1	Bldg. Site	x	x	x	1
2					
3					
4					

Occupancy: R = very brief on few instance; O = 1-4 hr/day; F = >4-12 hr, C = >12 hr

Roots Main concern(s): Soil Movement and Crown failure

Load on defect: N/A Minor **x Moderate** Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Trunk Main concern(s):_____

Load on defect: N/A Minor **x Moderate** Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Branches/crown Main concern(s):_____

Load on defect: N/A **x Minor** Moderate Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Cond #	Concerns	Tree Part	Target #	Part Size	Fall Distance	Target Protection	Likelihood												Consequences				Risk Rating
							Failure				Impact				Failure & Impact (Matrix 1)								
							Improbable	Possible	Probable	Imminent	Very Low	Low	Medium	High	Unlikely	Somewhat	Likely	Very likely	Negligible	Minor	Significant	Severe	
1	Tree Failure	Root Crown	1	5	6	n		x			x				x					x			Low
			2	10		n		x			x				x						x		Low
2																							
3																							
4																							

Table 1. Guide to estimating the likelihood of failure and impact.

Likelihood of Failure	Likelihood of Impacting Target			
	Very Low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Table 2. Guide to estimating level of risk.

Likelihood of Failure & Impact	Consequences of the Tree Failure			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

RISK REDUCTION MEASURES

Risk Reduction Required: N/A **Monitor:** Y N Frequency: _____ **Restrict access:** Y N **Move Target:** Y N **Cable/Brace/Guy/Prop:** Y N

Prune: N ___ CC x CR: _____% **Remove tree:** **Yes** **Impact on Adjacent trees N**

Tree Risk Rating : **Low x** Mod High Extreme

Data: Final __ Preliminary __ **Advanced assessment required:** N Type/Reason: _____

Inspection limitations: **None x** Visibility Access Vines/epiphytes Root collar buried Describe:

Notes: Adjacent to proposed bldg.

BASIC TREE RISK ASSESSMENT

Tree #: 63 Date: July 8, 2018 Assessor: D. McKenna Time Frame: One Time

Tree Location: Canyon Rd. Iojica Project (Adjacent Property) Tools: Basic Visual Level 1

TREE CHARACTERISTICS

Species: Valley Oak **DSH**: 15 **Height**:35 **Crown spread**: 35

Crown class: Dom x co-dom __ intermediate **x suppressed** **Live Crown Ratio:** 30 **Cable/brace/prop/guy:** N

Form: sym **x asym** - __ stump sprout dead top **Lean**: **Yes 45% to the W**

TREE HEALTH

Vigor class: __ excellent average **x fair** poor **Shoot growth:** __ excellent average **x fair** poor

Foliage color: **x normal** __ chlorotic __ necrotic **Foliage density**: **x normal** sparse: **Leaf size: x normal** __ small: _____%

Epicormics: N S M L **Dieback: Y dieback** **Woundwood growth:** __ excellent average **x poor** __ none

Significant insects/pests/diseases: ___ Roots ___ Root crown Trunk ___ Scaffold branches Conks / Mushrooms / Canker: N

ID **insects/pests/diseases**:

SITE CONDITIONS

Recent site disturbance: N __ construction __ grade change __ tree removal __ trench: _____ trunk dist. _____% CRZ removed

Dripline Paved - Fill Soil - Grade Lowered: N 10-25% 25-50% 50-75% 75-100% **Pavement lifted:** Y N S M L

Soil defects: N __ poor drainage __ shallow __ compacted __ small volume __ other:

Exposure to wind: **Low** recent windward edge **Wind Protection**: **Y 50 % ID: West and North**

ROOT DEFECTS

Root rot: N **Girdling:** N S M L **Exposed/Undermined roots**: No **Soil lifting**: N **Soil cracking**: N

Restricted root area: N 2' dist. from trunk CRZ affected: 50 % **Potential for root failure:**

TREE DEFECTS

ABOVE GROUND DEFECTS: Presence of defects and severity (s = severe, m = moderate, l = low N/A = insignificant)

Defect	Root Crown	Trunk	Scaffold Limbs	Branches
Poor Taper		M	M	XXXXXXXXXXX
Multiple attachments	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	
Cracks/Splits	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXX
Wounds/Seams	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXX
Dead/Loose/Cracked Bark		Response Growth: Y N		XXXXXXXXXXX
Decay	Response Growth: Y N	Response Growth: N	Response Growth: Y N	XXXXXXXXXXX
Cavity	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXX
Nesting Hole/Bees				XXXXXXXXXXX
Decay/Cavity - plane of lean	Response Growth: Y N	Response Growth: N	Response Growth: Y N	XXXXXXXXXXX
Borers/Termites/Ants				XXXXXXXXXXX
Bleeding/Sap Flow				XXXXXXXXXXX
Codominant stems	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXX

Included Bark	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Cankers/Galls/Burls	Response Growth: Y N	Response Growth: Y N	Response Growth: Y N	XXXXXXXXXXXX
Previous Failure	Response Growth: Y N	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Epiphytes/Invasive plants/vine/mistletoe				XXXXXXXXXXXX
Bow/Sweep	XXXXXXXXXXXXXX	Response Growth: N	Response Growth: Y N	XXXXXXXXXXXX
Major Crossing branches	XXXXXXXXXXXXXX	Response Growth: Y N	Response Growth: Y N	
Excessive End Weight	XXXXXXXXXXXXXX	XXXXXXXXXXXXX	**S Response Growth: N**	x
Hangers	XXXXXXXXXXXXXX	XXXXXXXXXXXXX		
Large Dead branches	XXXXXXXXXXXXXX	XXXXXXXXXXXXX	**M**	x

Notes: One of two trunks recently removed, species does not compartmentalize very well and will lead to decayed root crown

Target number	Target description	Target zone			Occupancy rate
		W/n Dripline	1X Ht	1.5X Ht.	1–rare 2 – occasional 3 – frequent 4 – constant
1	Bldg. Site	X	X	X	1
2					
3					
4					

Occupancy: R = very brief on few instance; O = 1-4 hr/day; F = >4-12 hr, C = >12 hr

Roots Main concern(s): Soil Movement and Crown failure

Load on defect: N/A Minor **x Moderate** Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Trunk Main concern(s):_____

Load on defect: N/A Minor **x Moderate** Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Branches/crown Main concern(s):_____

Load on defect: N/A **x Minor** Moderate Significant **Likelihood of failure:** Improbable **x Possible** Probable Imminent

Cond #	Concerns	Tree Part	Target #	Part Size	Fall Distance	Target Protection	Likelihood												Consequences				Risk Rating
							Failure				Impact				Failure & Impact (Matrix 1)								
							Improbable	Possible	Probable	Imminent	Very Low	Low	Medium	High	Unlikely	Somewhat	Likely	Very likely	Negligible	Minor	Significant	Severe	
1	Tree Failure	Root Crown	1	5	6	n		x			x				x					x			Low
			2	10		n		x			x				x						x		Low
2																							
3																							
4																							

Table 1. Guide to estimating the likelihood of failure and impact.

Likelihood of Failure	Likelihood of Impacting Target			
	Very Low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Table 2. Guide to estimating level of risk.

Likelihood of Failure & Impact	Consequences of the Tree Failure			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

RISK REDUCTION MEASURES

Risk Reduction Required: Prune to reduce end weights and provide clearance for new building **Monitor:** Y N Frequency: _____ **Restrict access:** Y N **Move Target:** Y N

Cable/Brace/Guy/Prop: Y N

Prune: N ___ CC x CR: _____% **Remove tree:** **No** **Impact on Adjacent trees N**

Tree Risk Rating : **Low x** Mod High Extreme

Data: Final __ Preliminary __ **Advanced assessment required:** N Type/Reason: _____

Inspection limitations: None x Visibility **Access x** Vines/epiphytes Root collar buried Describe:

Notes: Adjacent to proposed bldg. Need to prune to provide clearance and the tree has limited scaffold branches to achieve clearance

Linda Neal

From: Martha Ture <marthature@sbcglobal.net>
Sent: Wednesday, March 18, 2020 8:15 PM
To: Linda Neal
Subject: Canyon Road
Attachments: Canyon Road Photographs.zip

Martha E. Ture

186 Canyon Road

Fairfax CA 94930

415 453 8472 home

March 18, 2020

VIA EMAIL

Linda Neal

lneal@townoffairfax.org

Principal Planner

And

Fairfax Planning Commission

Fairfax Town Hall

142 Bolinas Road

Fairfax, CA 94930

Re: Condition of Canyon Road and
Proposed Project, Property Adjacent to 151 Canyon Road, Fairfax

Dear Linda Neal,

ATTACHMENT E

I am writing to bring to your attention and to the attention of the Fairfax Planning Commission the current deteriorating and hazardous conditions on Canyon Road, the potential effects of further deferred maintenance of Canyon Road without any additional projects being initiated, the potential impacts of currently unscheduled repairs, and the potential impacts of a proposed project at the property adjacent to 151 Canyon Road.

Project	Estimated Beginning	Estimated Conclusion
Canyon Road Bridge Pier Repair		
Canyon Road Bridge Resurfacing		
Canyon Road Fire Hydrant, road, and creek bank repair		
Canyon Road Retaining Wall Relacement in Cascade Creek		
Canyon Road Resurface at damaged areas		

I think that repairs to Canyon Road Bridge, Canyon Road, Canyon Road fire hydrant, and Canyon Road retaining wall in Cascade Creek must precede any new development proposal. I think that the timing of each repair must have as its highest priority the safety of the Canyon Road residents, all of whom can only exit this canyon via the Canyon Road Bridge. In case of fire or earthquake evacuation, the safety of the residents must be paramount. There are 39 houses on Canyon Road. Each house holds at least 1 person. I think that the narrowness of Canyon Road precludes entirely the closure of any part of Canyon Road during fire season for any reason, be it private for-profit construction or public benefit repair work.

I have enclosed herewith photographs of the current Canyon Road problems.

The first photograph shows the north Canyon Road bridge pier. As you can see, this pier consists of sandbags covered with cement. A large redwood tree grows above the pier. You will see a vertical crack in the eastern sandbags, and a bulge and hole in a west section of sandbags. Fairfax building official Mark Lockaby has told me that this pier needs to be replaced. To my knowledge, this work has not yet been scheduled.

The second photograph shows the surface of the Canyon Road bridge. I understand from Mr. Lockaby that the town has a project to resurface the bridge, again, date unknown.

Each of these projects will require turning the Canyon Road bridge into a one-lane, timed entrance and exit to Canyon Road. The families on Canyon Road have no way in or out except the Canyon Road bridge. I am raising this issue because of the obvious safety and convenience concerns. If we assume that the work on the bridge can not be done during the rainy season, then it will have to be scheduled during the dry season, which includes the dangerous fire season. As you know, all of Fairfax is in the Tier III fire hazard zone, the highest hazard designation. Any project that requires reducing residents' ability to leave the canyon, and increasing our mortality risk, is something our insurance companies will probably frown upon. The town of Fairfax can not ask us to take on this liability, without details as to time and duration. The only reason to take on this liability at all is because it is for the common good. If it were for a private individual's benefit at the increased risk of the rest of us it would be unacceptable.

The third photo shows the fire hydrant immediately past the Bridge, still surrounded by yellow bags and a warning cone. The hydrant and connecting pipe were left hanging in mid-air when severe floods and rain washed away the steep bank on which it sat. During a downpour, emergency rock was brought in to stabilize the creek bank. However, the bank stabilization and road repair were never completed.

The next four photos, #'s 4-7, show the deteriorating condition of Canyon Road in the vicinity of 145 Canyon Road. These photos show the long running cracks in the surface of the road and the slippage, crumbling, and cracking of the pavement. Photo #8 shows the 2.5" depth of the slump of the pavement and photo #9 shows the 9" depth of the hole in the pavement. The pavement crumbling and slipping and the holes in it are due to water running beneath the pavement from the hillside above the pavement to the immediate south of the road, and due to the original work. To the best of my knowledge, the town has no current plans to repair Canyon Road, and this pavement slipping, breaking, and undermining has been worsening for the past ten years. I have discussed this with Mark Lockaby over the years and the last information I have is that only a grant will enable the town to pay for the repair of the road, and that no grant has yet been gotten.

Clearly, the town of Fairfax is further troubling the safety of the residents of Canyon Road and there is nothing, apparently, that we can do about it. This kind of circumstance can only can more anxiety, ill will, bad faith, and increased insurance liability.

The next two photographs, #'s 10 and 11, show the condition of the retaining wall in the creek directly below the crumbling pavement and hole in the road. Again, this frighteningly deteriorated retaining wall is unsafe, and increases the risk of the residents of Canyon Road: the last information I had from the town was that there is no money to repair this wall and no plan to repair it. I don't even know if a grant has been requested for this work.

The last two photographs, numbers 12 and 13, show the blind curve, narrow road, and proposed project site for a private residential project on the lot next to 151 Canyon Road. Because of the unscheduled but necessary work to repair the bridge surface and piers, repair the road and retaining wall, and protect the Canyon Road residents, the idea of allowing a private individual's for-profit project that will further impede the entrance and exit of Canyon Road is 100% unacceptable. It is another hazard that does not benefit the public and indeed entrains even worse hazards for us.

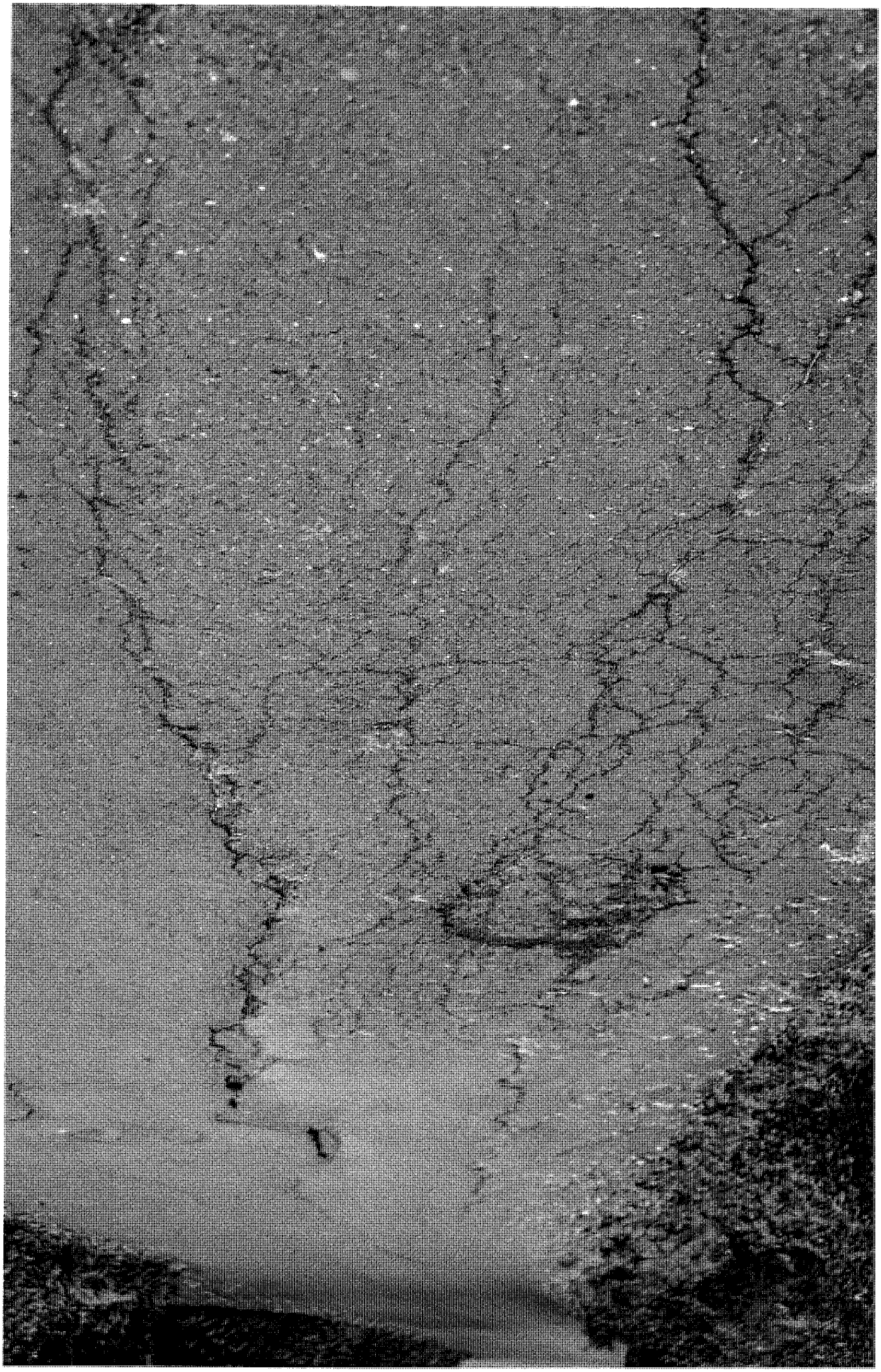
What I would like to see is a calendar of when the town intends to work on these necessary repair projects. After those are done, I would reconsider a private, for-profit project that will inevitably cause harm to the Canyon Road residents, by making a narrow road next to a sharp dropoff to the creek a one-lane for an indefinite time period, but will not benefit us.

Sincerely,

Martha E. Ture

186 Canyon Road
Mt. Tamalpais Photos
https://mttamalpaisphotos.com

Enclosures



Linda Neal

From: Linda Neal
Sent: Tuesday, February 18, 2020 8:45 AM
To: Martha Ture
Subject: RE: Correspondence For Tree Committee and Planning Commission

Will do Martha.

Linda Neal
Principal Planner

From: Martha Ture [mailto:marthature@sbcglobal.net]
Sent: Sunday, February 16, 2020 11:03 AM
To: Linda Neal <lneal@townoffairfax.org>
Subject: Correspondence For Tree Committee and Planning Commission

Hello, Linda,

Please convey the following to the Tree Committee and to the Planning Commission.

Thank you,

Martha Ture
186 Canyon Road
Fairfax CA

Dear Tree Committee and Planning Commission,

I am writing to register my concerns about proposed tree removal and construction at the property on Canyon Road which has no street address, but is immediately adjacent to 151 Canyon Road. The 6 trees flagged for removal are small bays and oaks, and according to the public posting, the circumferences are 6, 12, 20, 12, 15, and 18 inches. My concerns are as follows.

The public notice states that the trees are within the building pad. This indicates that someone intends to build a house on this property. This is a dangerous place to build any structure. The dangers are to the other people who live on Canyon Road, to Cascade Creek immediately adjacent to Canyon Road directly across the road from this property, to the deteriorating Canyon Road itself, and to traffic.

As you will see when you go to the lot adjacent to 151 Canyon Road, the road at this point is too narrow to allow the passage of two automobiles simultaneously going in and out of Canyon Road. Canyon Road at this point also does not allow for the parking of one automobile at this lot, as the road isn't wide enough to allow the legally required 12 feet from center of the road. In order to bring in the vehicles to remove trees and then build anything, it would be necessary to either find another place to park those vehicles or to remove a great deal of soil from the steep lot so as to put in a parking lot and a retaining wall. The inconvenience and hazards to the residents of Canyon Road make this an undesirable and even dangerous proposal. As you know, we are in a Tier III fire hazard

zone, Canyon Road is a narrow, dead end street, and any impediment to passage outward, such as tree removal trucks and construction trucks, is an unacceptable additional burden on the fire risk.

Canyon Road at this lot is bounded by the steep hillside on which the lot exists and the steep bank down to Cascade Creek. Cascade Creek is habitat for steelhead trout and coho salmon, an endangered species. Alice A. Rich (2000-11-10). Fishery Resources Conditions of the Corte Madera Creek Watershed, Marin County, California (PDF) (Report). Friends of Corte Madera Creek Watershed. Robert A. Leidy; Gordon Becker; Brett N. Harvey (2005). "Historical Status of Coho Salmon in Streams of the Urbanized San Francisco Estuary, California" (PDF). *California Fish and Game*.

Any removal of soil or ground cover, or any tree cut debris must be prevented from entering Cascade Creek; polluting the habitat of an endangered species is considered an unlawful taking under the under the federal Endangered Species Act.

In sum, as a Canyon Road resident and retired fisheries biologist, I must state my opposition to the proposed tree cutting and building on this lot as a hazard and an inconvenience to the Canyon Road residents, a potential increased fire and evacuation risk, and a potential unlawful taking of endangered species habitat.

Sincerely,

Martha E. Ture
186 Canyon Road
Fairfax, CA 94930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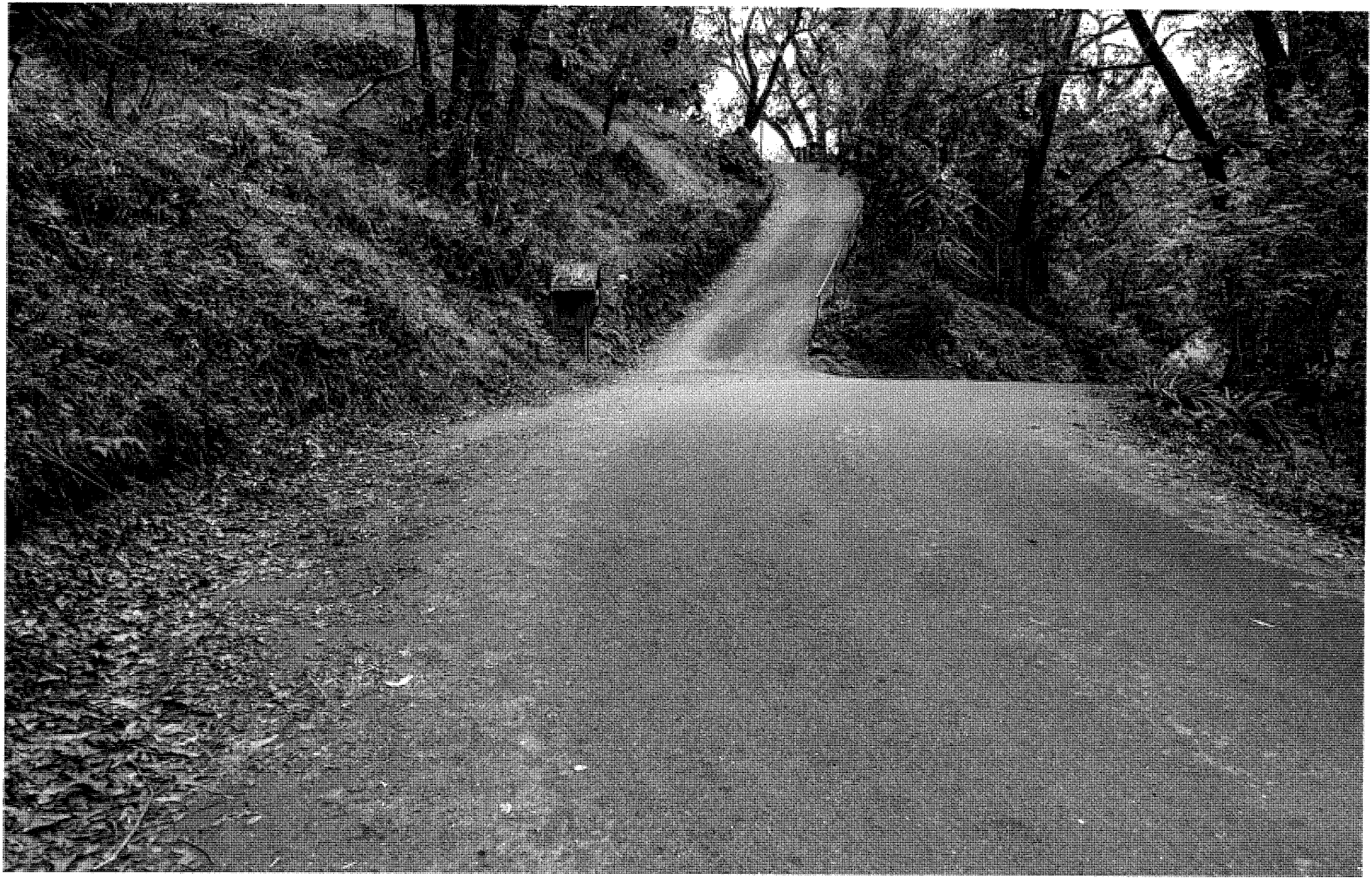


Linda Neal

From: Jean Irving <jairving@att.net>
Sent: Monday, July 06, 2020 9:17 PM
To: Linda Neal
Subject: Agenda Item 131 Canyon Road Application #20-7

Please consider the failing road with a cave in on the creek side near the bridge across from 35 Canyon and again at 155 Canyon. Heavy equipment required to excavate could easily collapse the road. Given the narrow road, the trucks would have to come down past 155 to turn around. If the road fails, the neighbors (36 homes) beyond the bridge are in jeopardy of being denied vehicle access. Mail delivery would be interrupted. The road has failed in the past directly in front of this proposed building site.

In addition, there is no room for street parking at that site. This may be a factor with crews arriving in multiple vehicles. Will the plan include specific rules on street parking during construction and afterward?

I request building be postponed until the road is repaired.

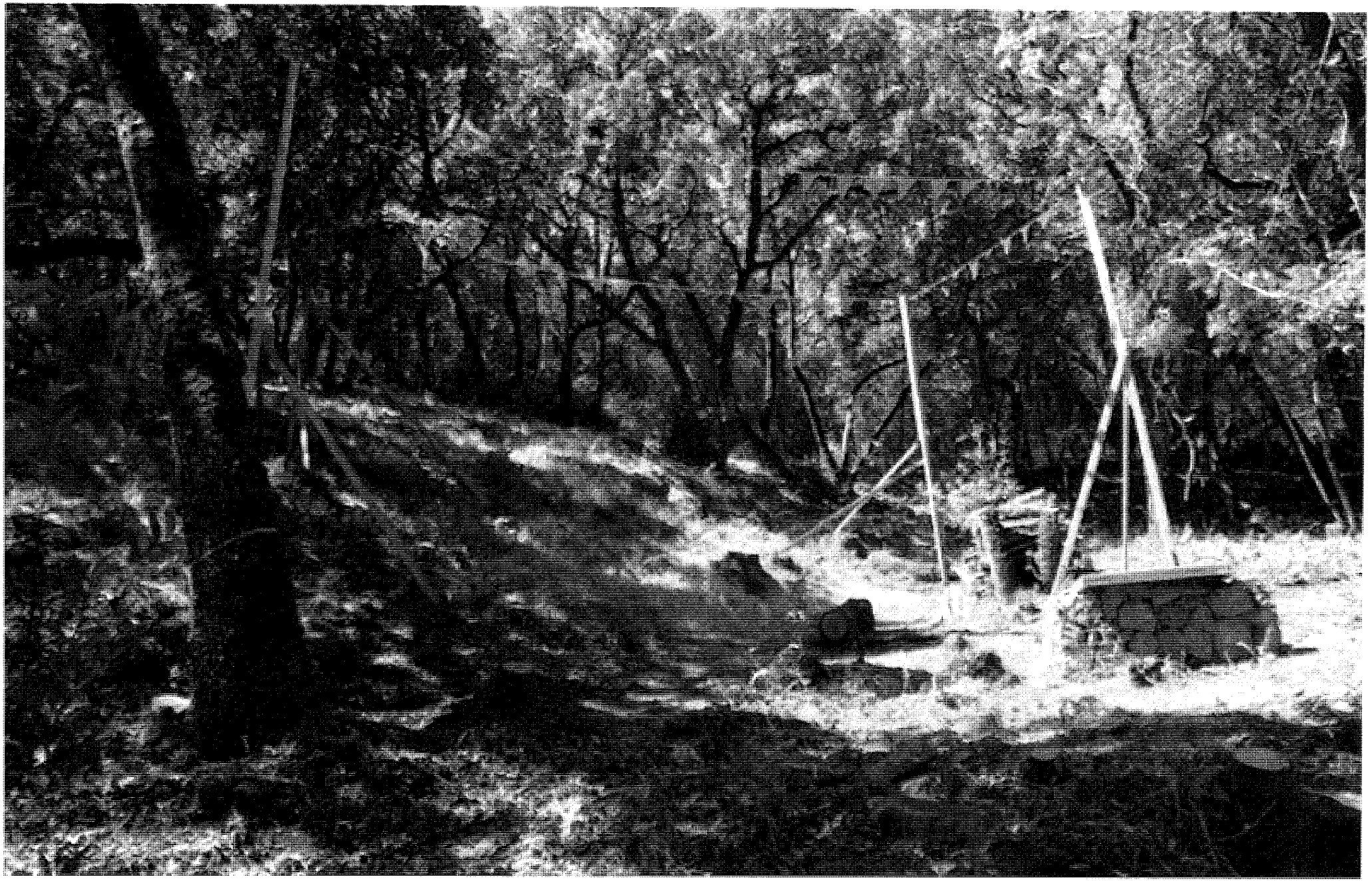
Jean Irving
164 Canyon RD
Fairfax
415-454-7333

Linda Neal

From: DEBORAH BENSON <debbens@comcast.net>
Sent: Tuesday, July 07, 2020 12:18 PM
To: Linda Neal
Subject: APN 002-174-05
Attachments: IMG_6463.jpg

Hello Linda,
The application for tree removal and replacement came before the Tree Committee on the February 24th 2020 meeting. It was 'For Recommendation Only'. to be next heard by the Planning Commission. As you can see in the photo, trees have already been cut. The project has not been heard by the Planning Commission. Is this how the process is supposed to work? If not, I would request that a $1000 fine be levied for each tree that has been cut. Thank you
Deborah Benson

ATTACHMENT F



Linda Neal

From: DEBORAH BENSON <debbens@comcast.net>
Sent: Thursday, July 09, 2020 11:56 AM
To: Linda Neal
Subject: Re: 2017 Tree permit for vacant lot on Canyon Road

Hello Linda,

On the 2/24/2020 Notice of Public Agenda the Owner is listed as Stacy Peoples. On the Application the Owner is listed as Vlad Iojica. Confusing.

On the 2017 VMP and permit application 11 trees were to be taken out. Some appear to be in the same placement and have the same numbers as in the 2020 VMP. Were all 11 trees cut in 2017? If not does anyone know which ones were cut?

On the 2020 VMP there are 15 trees slated for removal including the 4 Bays recommended by the Fire Dept. The members of the Tree Committee all walked that slope, VMP in hand. All trees were standing. If all 11 were cut in 2017 that would mean they are asking to cut (or have already in part) 26 trees from that steeply sloping lot.

Had the Tree Committee known the history of this project at the February 24th 2020 meeting our recommendation might have been different.

I did go up to the site yesterday and as I am sure you noticed there is a lot of Oak debris and fresh sawdust on the bank. Also some obviously freshly cut stumps. It appears that the Applicant got away with it once, in 2017 and figured, what the heck - I'll just do it again. He was obviously aware of the required protocol.

So, Linda, what are the next steps here? According to our Tree Ordinance he is liable for a fine of $1000 per tree cut. I want to see that fine levied, and very soon. Otherwise why have an ordinance if we don't enforce it? Let me know please. Thanks Linda.

Deborah

> On 07/08/2020 9:37 AM Linda Neal <lneal@townoffairfax.org> wrote:
>
>
> Here is the approved tree permit application from 2017.
>
> Linda
>
> -----Original Message-----
> From: copier@townoffairfax.org [mailto:copier@townoffairfax.org]
> Sent: Wednesday, July 08, 2020 9:35 AM
> To: Linda Neal <lneal@townoffairfax.org>
> Subject:
>
> ----------

Linda Neal

From: Vlad Iojica <viojica@via-eng.com>
Sent: Monday, July 06, 2020 8:13 AM
To: Linda Neal
Subject: Re: Still confused
Attachments: scann 070620.pdf

Hello Linda,

Following the Tree Committee meeting in 2017 I did not receive any letter from the Town but I have been let know at the conclusion of that meeting that I can move forward with the process. However, I have not taken any trees down following the meeting.

At the time when I submitted the application for the house back in December of 2019, Susan did let me know that the I need to go again through the Tree Commission, and following that meeting I received the enclosed, which states that it is a permit to remove the trees discussed in the meeting. It also requires the applicant to keep a copy on the site during the tree work and provides an expiration day.

Besides that, it would have been impossible to install the story poles while having the trees on the site.

Vlad Iojica, P.E., QSD
Registered Civil Engineer
ViA Atelier, Inc.
T: 415.774.6776
E: viojica@via-eng.com

On Monday, July 6, 2020, 07:28:24 AM PDT, Linda Neal <lneal@townoffairfax.org> wrote:

Dear Vlad,

I am still confused about the tree situation on the Canyon Road site. I know that you had approval from the tree committee to remove 7 bays and 4 oaks in July of 2017 before the Ordinance was changed to require only a recommendation by the Tree Committee and approval by the Planning Commission. You submitted another permit for just a recommendation from the Tree Committee in February of 2020 to remove 13 bays and 5 oaks and obtained a recommendation to allow the removal of the 18 trees. Have all the trees from 2017 been removed but the ones recommended to the Commission for removal in February of 2020 still there? The ones recommended for approval to the Commission should not have been removed yet. Are some of the tree approved in 2017 listed again in the 2020 application and if so which ones and how many?

Linda Neal

Principal Planner

(415) 453-1584

ATTACHMENT G

SINGLE FAMILY RESIDENCE

CANYON ROAD, FAIRFAX, CA 94903

A.P.N. No: 03-032-16

TOWN OF FAIRFAX
JUL 06 2020
RECEIVED

DESIGN TEAM:

ARCHITECT

RICHARD RUSHTON ARCHITECT
1620 SIR FRANCIS DRAKE BLVD.
FAIRFAX, CA 94903

T: (415)457-2878
E: rushtonchartock@gmail.com

CONTACT:
RICHARD RUSHTON

CIVIL ENGINEER:

VIA ATELIER, INC.

9 BROOKSIDE CT.
SAN ANSELMO, CA

T: (415) 774-6776
E: OFFICE@VIA-ENG.COM

CONTACT:
VLAD IOJICA

GEOTECHNICAL:

DENNIS FURBY
CONSULTING GEOTECHNICAL ENGINEER

30 VIA HORTON, No. 18
GREENBRAE, CA 94904

T: (415)306-7218
E: dennis@furbylogic.com

LAND SURVEYOR:

DAVID CRAMER, P.L.S.
LAND SURVEYOR

141 WESTRIDGE DRIVE
PETALUMA, CA 94458

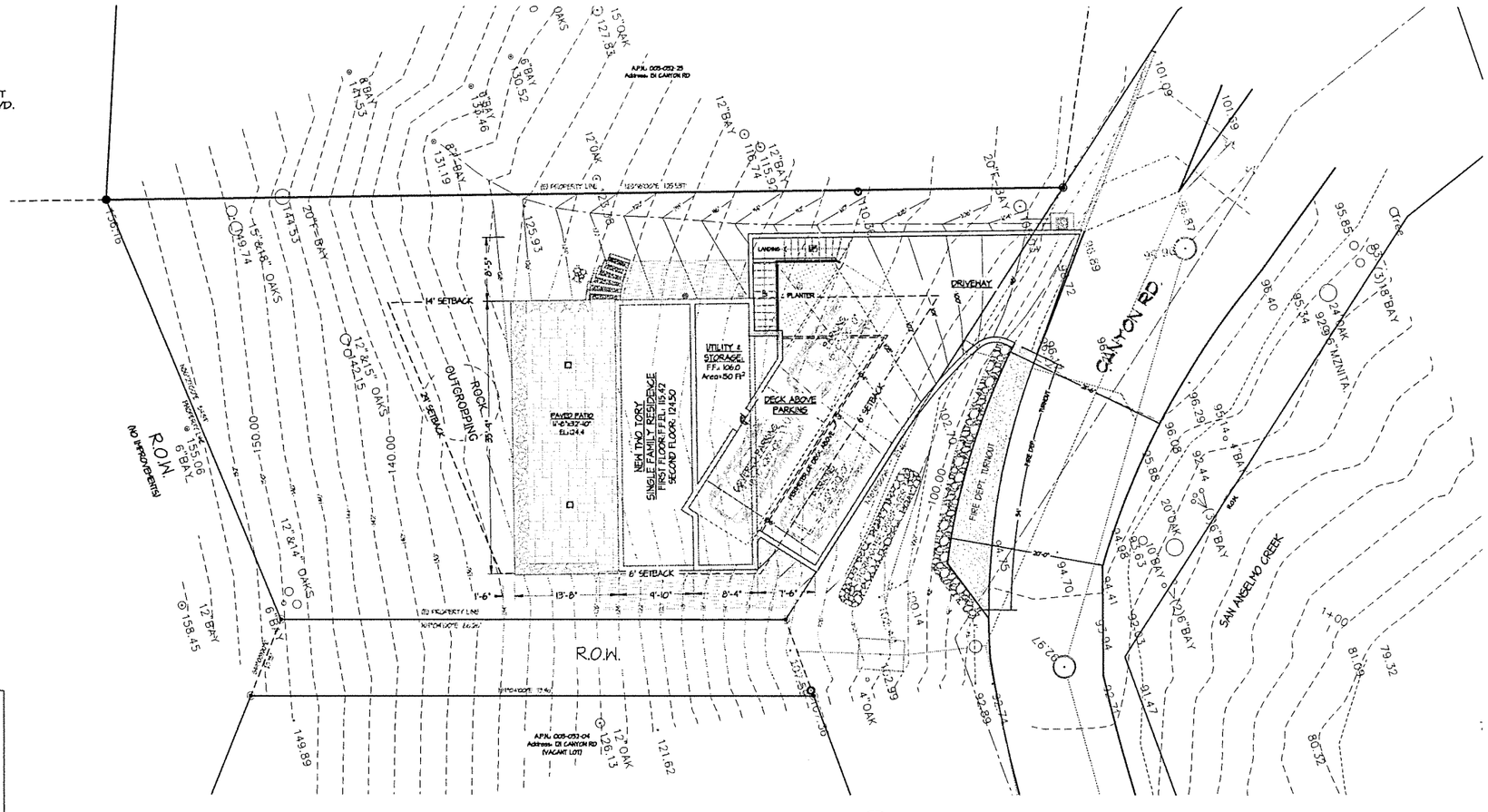
T: (707)679-6076
E: david.cramer@att.net

CONTACT:
DAVID CRAMER

PROJECT DATA SHEET

Lot Information	sq.ft.
Gross Lot Area	5,353
Net Lot Area	5,353
Proposed Lot Coverage	**sq.ft.**
Residence Footprint	643
Carport Footprint	434
Rear Patio	411
Entry Stair	87
Total Footprint:	1,575
Proposed Lot Coverage	**29.42%**
Proposed FAR	**sq.ft.**
Residence:	
1st floor	643
2nd floor	587
Utility / Storage	150
Carport	-
Gross Floor Area Total:	1,230
Proposed FAR	**22.98%**
Allowable FAR	2,141

D:\VIA\1307A Canyon Rd Fairfax\CADD\G1.0.dwg Plotted by: Vlad Iojica Jul 06, 2020 10:23am



SITE PLAN
SCALE: 1" = 8'

SCALE IN FEET
SCALE: 1" = 8'

PLAN INDEX:

GENERAL

G1.0	TITLE SHEET, SITE PLAN

ARCHITECTURAL

A1.1 PARCEL	TITLE, GENERAL CONTENTS, MAP, NOTES
A4.3	FLOOR PLANS, PARKING LEVEL, FIRST FLOOR, SECOND FLOOR
A6.1	SECTIONS
A7.1	EXTERIOR ELEVATIONS

CIVIL

C1.0	TITLE SHEET
C2.0	SITE TOPOGRAPHIC SURVEY
C2.0a	CREEK TOP OF BANK & SETBACK DELINEATION
C2.1	SITE PLAN & HORIZONTAL CONTROL
C3.0	EROSION CONTROL AND CONSTRUCTION MNGM. PLAN
C3.1	EROSION CONTROL DETAILS
C4.0	SITE UTILITIES PLAN
C4.1	GRADING AND DRAINAGE PLAN
C5.0	DETAILS
C5.1	DETAILS

LANDSCAPE:

L2.0	VEGETATION MANAGEMENT & CONCEPTUAL PLANTING

ViA Atelier

Revisions:	Date:	By:
1 REVISED IN RESPONSE TO REVIEW LETTER DATED 01.14.20	4/30/20	V.I.

Sheet Title: TITLE SHEET
Project: IOJICA RESIDENCE
Address: CANYON ROAD, TOWN OF FAIRFAX, CA 94 - APN: 03-032-16

VLAD G. IOJICA
C 73861
Exp. 6-30-21
CIVIL

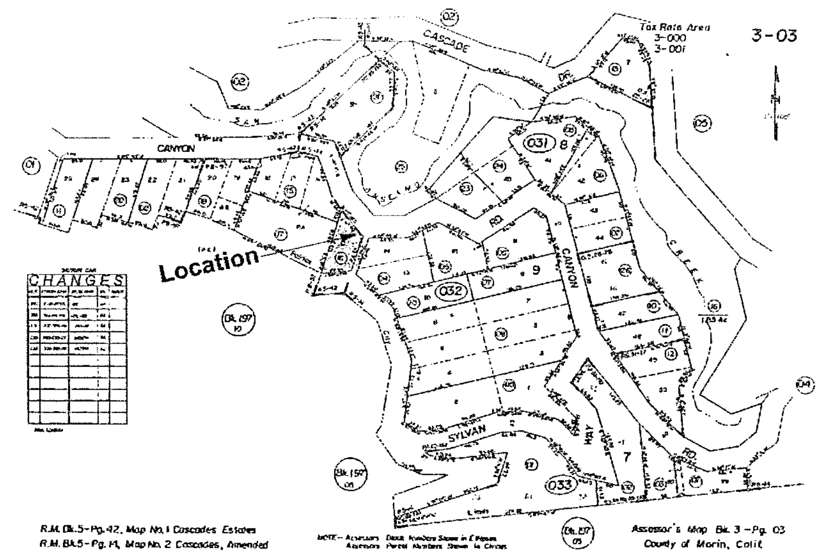
Plans Prepared By:
ViA Atelier, Inc.
Engineering Consultants
1620 Sir Francis Drake Blvd, Fairfax, CA 94930
Ph:(415) 774-6776 E:office@via-eng.com
Date:

Job No: 1307.A

Date: 4.30.2020

Drawn by: V.I.

Sheet:
G1.0



Parcel Map

NOTES

01000 GENERAL

1. The following code editions shall be used for the design of this project: 2013 C.B.C., 2013 C.R.C., 2013 C.M.C., 2013 C.P.C., 2013 C. Elect. C., 2013 C. Energy Code, 2013 C.F.C., and 2013 California Green Building Standards Code including those measures specified as mandatory.
2. TITLE 24: Applicable sections of the energy installation compliance for CF-6R must be provided to the Owner and the Town prior to a request for a final inspection.

02000 SITEWORK

1. SURVEY: Property lines must be surveyed and staked prior to start of construction. Setbacks are required to be measured at time of foundation inspection.
2. ROOF DOWNSPOUTS shall outlet into solid PVC piping and exited as shown to assure drainage away from the building.
3. CONSTRUCTION VEHICLES: Construction related vehicles including equipment delivery, cement trucks and construction materials shall be located off the travel lane of the adjacent public right(s)-of-way at all times.
4. PAVING:
   a. Driveway, parking and other site improvements shall be inspected by a Department of Public Works engineer.
   b. Any areas on the property used for driving or parking must be approved with asphalt or concrete or a material approved in advance by the Public Works Director. (Gravel is not allowed.)
5. EROSION CONTROL:
   a. If this project is to be performed between October 15 and April 15, submit & obtain approval of an EROSION CONTROL PLAN from the Town Engineer prior to start of work. Erosion control measures must be in place and maintained continuously during those periods. A signed copy of the Erosion Control Plan must be posted at the site, along with the Building Permit.
   b. Before a request for a final inspection, any area where soil is disturbed must be totally re-vegetated with a ground cover acceptable to the RVFD and Public Works Director or a permanent erosion control system such as an erosion-control blanket or mulch covered with a tackifier. There are no exceptions to this requirement and may require temporary plantings in order to comply. For information and details on permanent erosion control methods, refer to MCSTOPP.org. Treatment for stabilizing any bare soil must be clearly described on the drawings.

02230 WILDLAND-URBAN INTERFACE AREA

1. Prior to building permit final approval the property shall be in compliance with the vegetation clearance requirements prescribed in California Public Resources Code 4291 California Government Code Section 51182. CBC 701A.3.2.4.
2. Roofing assemblies shall be installed in accordance with their listings and manufacturer's installation instructions. 704A.1.1.
3. When provided, valley flashings shall be not less than 0.019" (No. 26 galvanized sheet gage) corrosion-resistant metal installed over a minimum 36" wide underlayment consisting of one layer of No. 72 ASTM cap sheet running the full length of the valley. 704A.1.3.
4. Roof gutters shall be provided with the means to prevent the accumulation of leaves and debris in the gutter. 704A.1.5.
5. Vent opening in exterior walls, where allowed, shall be designed to resist the intrusion of flame and embers into the structure, or shall be screened with corrosion-resistant, noncombustible wire mesh with ¼" openings or equivalent. 704A.3.2.1.
6. Exterior windows, window walls, glazed doors, and glazed openings in exterior doors shall be insulating glass units with a minimum of one tempered pane, or glass block units, or have a fire-resistance rating of not less than 20 minutes when tested according to ASTM E 2010, or conform to the performance requirements of SFM 12-7A-2. 704A.3.2.21.
7. Exterior door assemblies shall conform to the performance requirements of SFM12-7A-1 or shall be of approved noncombustible construction, or solid core wood having stiles and rails not less than 1 3/8" thick with interior panels no less than 1 ¼" thick, or shall have a fire-resistance rating not less than 20 minutes when tested according to ASTM E 2074. (Exception: noncombustible or exterior fire-retardant treated wood vehicle access doors.)

05515 EGRESS

1. EMERGENCY ESCAPE: Every sleeping room below the 4th floor shall have at least one operable window or exterior door approved for emergency egress or rescue. The units must be operable from the inside opening without the use of separate tools. Where windows are provided as a means of egress or rescue, the window opening shall be located no more than 44" above the floor. All egress or rescue windows from sleeping rooms must have a minimum net clear opening of five and seven tenth (5.7) square feet. The minimum net clear opening height dimension shall be 24 inches. The minimum net clear opening width dimension shall be 20 inches.
   a. Exception: Grade floor windows may have a minimum net clear opening of five (5) square feet.
2. STAIRWAY: Minimum width of stair treads shall not be less than 36". Maximum riser is 7.75"; minimum tread is 10", a ¾" nosing is required if treads are less than 11".
3. THRESHOLD HEIGHT: Landings or floors at the required egress doors shall not be more than 1.5" from the top of threshold. (Exception: the exterior landing or floor shall not be more than 7.75" below the top of threshold provided the door does not swing over the landing or floor) CRC R311.3.1.
4. BARS, GRILLES OR SCREENS placed over emergency escape windows shall be releasable or removable from the inside without the use of a key, tool or excessive force.
5. GUARDRAILS: All guardrails to be minimum of 42" in height with openings less than 4", around stair walls, decks and balconies. (Exceptions: At stair guard; at open sides of stairs guards shall not be less than 34" in height; openings less than 4.375" are allowed; at the triangle opening formed by riser, tread and bottom rail an opening less than 6" is allowed.) Provide a guardrail at any walking surface over 30" above grade within 36" horizontally of the open edge of the walkway or stair.
6. GUARDRAILS: shall be mounted so that the completed rail and supporting structure are capable of withstanding a load of at least 20 pounds per lineal foot applied horizontally at right angles to the top rail, and so that intermediate rails, panel fillers and their connections are capable of withstanding a load of a least 25 psf applied horizontally at right angles over the entire tributary area, including openings and spaces between rails.
7. HANDRAILS shall be 1-1/2" diameter wood dowel located continuously 34" to 38" above the tread nosing. Return both ends to wall. Space out from wall 1-1/2" minimum. Metal brackets as intermediate support at approximately 3 feet o.c. unless shown otherwise.

06101 FIRE BLOCKING

1. Fire blocks shall be provided in the following locations:
   a) In concealed spaces of stud walls and partitions, including furred spaces, at the ceiling and floor levels and at 10'-0" intervals both horizontal and vertical.
   b) At all interconnections between concealed vertical and horizontal spaces such as occur at soffits, drop ceilings and cove ceilings.
   c) In concealed spaces between stair stringers at the top and bottom of the run and between studs along and in line with the run of stairs if the walls under the stairs are unfinished.
   d) Use noncombustible materials in openings around vents, pipes, ducts, chimneys, fireplaces and similar openings at ceiling and floor levels.
   e) At openings between attic spaces and chimney chases for factory-built chimneys.

06102 ACCESS

1. Provide 18" x 24" underfloor access within 20 feet of each plumbing cleanout. All underfloor spaces must be accessible. Provide access openings as required.
2. Minimum crawlspace clearances: 12" to girders, 18" to joists.
3. Provide attic access, 22" x 30" minimum opening.

06103 BUILDING WRAP

1. Building paper and window flashing:
   a. Either of the following are acceptable:
      1) "Tyvek" housewrap by Dupont; polyethylene air infiltration barrier.
      2) Sisalkraft paper.
   b. Apply strictly according to manufacturer's recommendations.

06104 CRAWL SPACE VENTING

1. Provide screened foundation vents per CBC. Vents shall be evenly distributed over the crawl space area and shall equal one square foot of foundation vent for each 150 sq.ft. of crawlspace area.
2. Where new foundation vents are shown, vents shall be flame-resistant. Provide vents screened with a corrosion-resistant, non-combustible wire mesh with ¼ inch maximum openings or use Vulcan Vent, (www.vulcanvents.com), designed to meet the California Building code SFM 12-7A OF Calif. Wildland-Urban Interface fire code program. Accepted by California State Fire Marshall. Size as shown on Drawings.

07000 WATERPROOFING

1. Retaining wall backfill and drainage: Waterproofing shall be installed on the exterior surface of all walls enclosing habitable space, and at any other areas required by the Owner, Architect or Engineer. Unless noted otherwise, performance and serviceability of the waterproofing shall be the responsibility of the Contractor.

07111 LIQUID URETHANE MEMBRANE WATERPROOFING

1. Waterproof Membrane at Entry Deck: Liquid Urethane Rubber Membrane material. Products as manufactured or supplied by Gaco Western, Inc. Color as selected by Architect.
   a. Meet published properties.
   b. Meet applicable Air Pollution Control regulations. LM-60 is solvent free.
   c. Urethane Coatings: Gaco Western LM-60H for horizontal surfaces and LM-60V for vertical.
   d. Other materials required: Primer, thinner and cleaner, expansion joint covers, reinforcing materials, caulking and flashing compounds as supplied by Gaco. Protection board by others.
   e. Acceptable installers include: Division 7, Mack Construction, 46 Digital Dr., Suite 2, Novato 94949, 883-6548.
2. Apply waterproofing membrane in accordance with the manufacturer's recommendations.

07200 THERMAL INSULATION

1. Provide R-13 batt insulation in all exterior stud walls.
2. Provide R-19 insulation in all floors over unheated space.
3. R value shall be for insulation only, not installed.

07213 SPRAY POLYURETHANE FOAM INSULATION

1. SPF injected foam insulation: R30 at roof; Bear, Earthseal, Bayseal or equivalent.
2. Closed cell: R= 6.5/inch, 2P, 4 ½" to achieve R30
3. or Open cell: R – 3.6-3.9/inch; 7 ¾" to achieve R30.
4. No vapor retarder.

07300 ROOFING

1. Class A 25-year composition shingles (minimum). Fiberglass shingles, Pabco, Elk or equal. Color: Weathered Wood.

07461 SIDING

1. James Hardie, Hardi-Plank lap siding where shown. Meet WUI requirements.
2. Cement Plaster where shown. Color: White to match trim color.

08150 EXTERIOR FIBERGLAS DOORS

1. DOORS; either of the following are acceptable.
   a. Therma-Tru "Smooth-Star", flush-face fiberglass door; paint-grade for white finish.
   b. Equivalent by PlastPro.

08630 WINDOWS

1. Mil-gard vinyl, double-glazed, Low E glass, white finish. Tempered to meet WUI requirements. Complete with screens where operable. SDL where muntins are shown. See Title 24 calcs for U-factor and SHGC.

08800 GLAZING

1. Window glazing at exterior walls shall be double-glazed through-out.
2. Safety glazing shall be installed in hazardous locations as defined in CBC and shall be identified by a label.
3. Tempered glass is required at the following locations:
   a) Glazing in ingress and egress doors.
   b) Glazing in fixed and sliding panels of sliding door assemblies and panels in swinging doors.
   c) Glazing in doors and enclosures for bathtubs and showers. Glazing in walls within these enclosures with edge less than 60" above a walking surface and drain inlet.
   d) Glazing within a 24" arc of either vertical edge of a door (in the closed position) and is less than 60" above the floor. (Except when there is an intervening wall of permanent barrier or leaded, faceted and carved glass used for decoration.)
   e) Glazing: where the area of pane is greater than 9 sq. ft.; and the window bottom is less than 18" above the floor; and the top is more than 36" above the floor; and the walking surface is within 36" horizontally.
   f) Glazing with bottom edge less than 60" above the walking surface in walls enclosing landings or within 5'-0" of the top and bottom stairways.
4. Glazing at tubs/ showers: Shower and tub enclosures shall be of shatterproof materials and/or tempered glass. Walls at shower locations shall be ceramic tile or integral fiberglass tub surround. Shower surround height shall be a minimum of 70" above the drain inlet and as shown on Drawings where shown. Shower doors shall maintain a min. 22" unobstructed opening for egress.
5. Frameless glass shower enclosures require structural design or use brackets as shown on Drawings. Silicone caulking and/or sealant are not an acceptable means of securing glass to the building framing unless the manufacturer's structural data is submitted and approved.
   a) Glass panels and hinged doors of a tub and/or shower enclosure shall be supported by brackets and/or channels with at least ½" grip firmly affixed to the building framing and the edges of the glass. Notched tile ½" in depth shall be acceptable in place of brackets or channels. The glass shall be firmly secured on at least two sides with brackets and/or channels. The supports should be on opposing edges of the glass where possible. Intersections of glazing must be secured by either a bracket or a channel.
   b) Brackets: A minimum of two brackets shall be installed on each vertical edge of glass panels up to eight fee in height. Panels over 8' in height require at least three brackets. If no brackets are installed on the opposing vertical edge, at least one bracket is required on a horizontal edge.
   c) Channels: If the top edge of the glass is supported by a channel, the channel must be stiff enough to restrain deflection. If attached to the building framing only at the ends of the channels, the top channel must be one continuous section from one wall to another or have rigid splices.

09100 FIRE RATING

1. Interior wood paneling less than ¼" thick shall be applied over ½" gypsum board or have a flame spread of class 3 or better.
2. Provide one-hour fire protection at the underside of the stair.
3. Provide one-hour fire resistive separation between carport and dwelling; provide 1-3/8" solid core self-closing door at Storage Room.
4. Carport and parking deck surfaces, including ramps, shall be non-combustible materials. (Concrete).
5. All walls, beams, posts and ceilings supporting a horizontal occupancy separation shall be 1-hour resistive.

09250 GYPSUM WALLBOARD

1. The following are based upon U.S. Gypsum materials. Contractor may substitute equal materials.
   a. Interior Gypsum Wallboard: ½" tapered edge, 48" wide and in lengths to produce the fewest joints. At roof rafters where spacing is 24" o.c., use 5/8" sheetrock or ½" Domtar Gypsum controlled density CD ceiling board.
   b. Use 5/8" Type "X" gypsum wallboard at the following locations:
      1) At the enclosed side of walls and soffit at the enclosed space under stairs.
      2) At walls between carport and residence.
      3) At ceiling of carport where it projects under living space.
   c. At carport ceiling, at one-hour fire assembly, where TJI's are used for the floor framing above, use 2 layers of 5/8" Type "X" gypsum wallboard.
   d. Metal Accessories: Use cornerbeads at all outside corners and edge trim at all exposed edges and where gypsum wallboard meets another material.
   e. Joint Treatment: Perf-A-Bead, USG joint compound taping, and USG joint compound-topping, or Ready-Mixed products by USG.

09310 TILEWORK

1. All shower and tub/shower walls to be finished with a smooth, hard, non-absorbent surface (e.g. ceramic tile) over a cement board moisture resistant underlayment to a minimum height of 70 inches above the drain inlet. (Gypsum board, including greenboard, is not allowed as backing).
2. Custom site-built showers:
   a. Showers are to be provided with a water dam a min. 2" high point of shower drain to retain water to drain.
   b. Finish floor in shower to have min. ¼" and max. ½" pitch to drain per foot.
   c. Waterproof membrane to extend a minimum 3" above top of finish dam at back and sides.
   d. Locate the shower head & controls per code requirements.
   e. The base for wall tile in tub and shower areas and wall and ceiling panels in shower areas shall be cement, fiber-cement or glass mat gypsum backers.

09900 PAINTING

1. GREEN POINTS:
   a. Use low/no-VOC and formaldehyde-free paint.
   b. Use low VOC, water-based wood finishes.
   c. Use solvent-free adhesives.
   d. Seal all exposed particleboard or MDF.
   e. Use FSC certified trim material.
   f. Air out project with natural ventilation for ast least one week between end of construction and occupancy.

10302 GAS STOVE

1. Free-standing Gas Stove, Jotul "The Lillehammer DV" direct vent gas stove, flat black finish, cast iron, 82% thermal efficiency, 73% A.F.U.E. Available at Shamrock, San Rafael. Include wall thermostat; location as directed by Architect. Verify required clearance for termination cap, collars & flue through wall before ordering.

15330 RESIDENTIAL FIRE SPRINKLER SYSTEM

1. DESCRIPTION
   Work Included: Designing, furnishing and installing a hydraulically calculated fire sprinkler system, complete with low-profile heads, for the Building.
2. CODES AND STANDARDS
   A. Uniform Fire Code
   B. National Fire Protection Association
3. DESIGN
   C. Before proceeding with the work, prepare Shop Drawings of the sprinkler system and obtain written approval from the Architect. Obtain approval of the governing Fire Rating Bureau and the local Fire Department. Shop Drawings must be submitted to all authorities having jurisdiction and must be stamped and approved before submittal to the Architect.
   D. Make all arrangements with utility company for water service including required payment for piping services, connection charges and for materials furnished and installed by them. Work and materials shall be in strict accordance with the rules of the utility company.
   E. Contractor for the Fire sprinkler installation shall thoroughly familiarize himself with the Architectural, Structural, Plumbing, Electrical and Heating Drawings and shall adjust his work to conform to the conditions shown thereon to provide the best possible assembly of the combined work.
   F. Layout of equipment, accessories and piping system is generally diagrammatic, unless specifically dimensioned. Check Drawings for interferences as governed by the structural, lighting or other details before installing the work.
4. FIRE DEPARTMENT TESTING AND APPROVAL
   A. The completed and installed fire sprinkler system shall be tested and approved in writing by the local Fire Department having jurisdiction.
   B. It is the responsibility of the Contractor to schedule the Ross Valley Fire Department Final inspection before the Building Dept. Final Inspection. To schedule an inspection, call at least 72 hours before desired inspection date.

CONTENTS

PROJECT

IOJICA RESIDENCE

Canyon Road, Fairfax

Job No. 15117

SCOPE OF WORK

New Residence with driveway approach & Fire Dept. turn-out.

DESCRIPTION:

Zone:	RS6
Building Occupancy Group:	R-3/U
Type of Construction:	V-N
WUI: Located in a designated Wildland-Urban Interface area.	
Stories:	Three
Automatic Sprinklers:	Yes

OWNER

Vlad & Paula Iojica
9 Brookside Ct., San Anselmo CA
vlad@via-eng.com

ARCHITECT

RUSHTON-CHARTOCK ARCHITECTS
1620 Sir Francis Drake Blvd.
P.O. Box 173, Fairfax CA 94978-0173
(415) 457-2802 Fax: (415) 457-2873 Email: rushtonchartock@gmail.com
Web site: www.rushtonchartock.net
Project Architect: Richard Rushton

CIVIL ENGINEER

Vlad Iojica P.E., QSD/P
VIA Atelier Inc.
9 Brookside Ct., San Anselmo, CA 94960
(415) 774-6776
vlad@via-eng.com

SOIL ENGINEER

DENNIS H. FURBY, P.E.
P.O. Box 659, Fairfax CA 94978
(415) 453-0832

ENERGY CONSULTANT

ENERGY CALC CO.
45 Mitchell Blvd. #16, San Rafael CA 94903
457-0990, fax: 457-1986

DRAWINGS

END OF CONTENTS

PROJECT DATA SHEET

Lot Information	sq.ft.
Gross Lot Area	5,353
Net Lot Area	5,353
Proposed Lot Coverage	**sq.ft.**
Residence Footprint	643
Carport Footprint	434
Rear Patio	411
Entry Stair	87
Total Footprint:	1,575
Proposed Lot Coverage	**29.42%**
Proposed FAR	**sq.ft.**
Residence:	
1st floor	643
2nd floor	587
Utility / Storage	150
Carport	-
Gross Floor Area Total:	1,230
Proposed FAR	**22.98%**
Allowable FAR	2,141

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Project
IOJICA RESIDENCE
New Residence for Vlad Iojica
(415) 774-6776
Canyon Road, Fairfax CA
A.P. No. 3-032-16

Project No. 15117
Project Architect: Richard Rushton
Date: 11/2/17
Revisions: 3/5/20 planning submittal

TITLE SHEET / PARCEL MAP

A1.1

Plotted On: 3/5/2020

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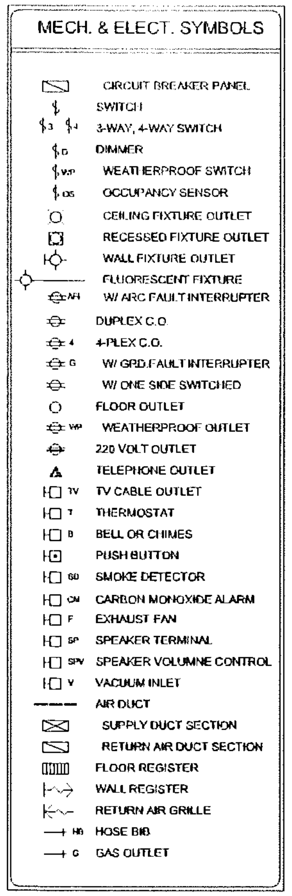


Notes

15400 PLUMBING

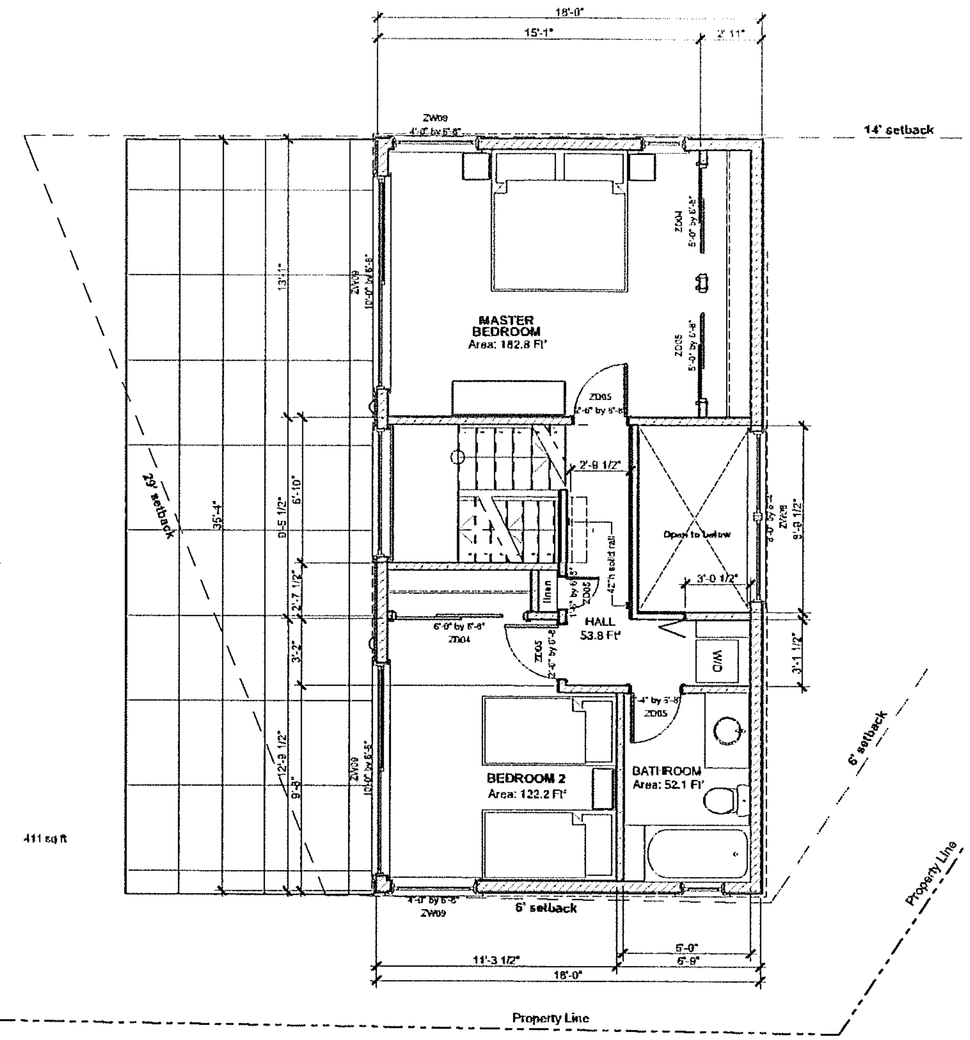
1. Plumbing equipment and materials shall comply with and be installed in accordance with the local plumbing code and CPC. Plumbing fixtures to be in compliance with Title 24.
2. Work shall be in compliance with Marin Municipal Water District Ordinance #421: all plumbing fixtures that are replaced, removed or added shall be high-efficiency fixtures and shall meet the following minimum plumbing efficiency standards (notify Architect if fixtures specified below do not meet these criteria):
   a. High-efficiency kitchen and lavatory faucets: The maximum flow rate shall not exceed 1.5 gallons of water per minute at a pressure of 60 psi at the inlet, when water is flowing. (Kitchen faucets in San Anselmo may be 1.8 gpm max.)
   b. High-efficiency Shower Head: The manufacturer shall specify a maximum flow rate equal to or less than 2.0 gallons per minute (gpm), at a pressure of 60 pounds per square inch (psi) at the inlet, when water is flowing.
   c. High-efficiency Toilet: Any WaterSense listed toilet rated at an effective flush volume of no greater than 1.28 gallons.
   d. Bar & Utility sinks: faucets shall deliver 2.2 gpm or less.
3. CALGREEN REQUIREMENTS: All newly constructed residential buildings shall be designed to include the green building measures specified as mandatory in the CalGreen State code and detailed in the application checklists found in Section A4.602. Voluntary green building measures are also included in these application checklists and may be included in the design and construction of structures covered in this code, but are not required by statute.
4. GREEN POINTS: Install flow reducers in faucets and showerheads.
5. GREEN POINTS: Insulate hot water pipes.
6. MIXING VALVE CONTROLS: All shower and tub/shower combination valves must be temperature balancing or thermostatic mixing. Valves shall be adjusted per the manufacturer's instructions to deliver a maximum of 120 degrees F.
7. AIR GAP: No domestic dishwashing machine shall be directly connected to a drainage system or food waste disposer without the use of an approved dishwasher air gap fitting on the discharge side of the dishwasher machine.
8. Protect fixtures against use & damage during construction.
9. Provide cleanouts at bends and angles. Extend to make flush installation with floor, wall or finish grade.
10. Install each fixture with trap, easily removable for servicing and cleaning. At completion thoroughly clean plumbing fixtures and equipment.
11. An approved BACKFLOW PREVENTION DEVICE is required for each water service.
12. Provide a non-removable backflow prevention device on all exterior hose bibs, and lawn sprinkler/irrigation systems.
13. WATER HEATER: 50-gallon or less water heater shall have a minimum Energy Factor of 0.62. Where backflow prevention devices are installed, an approved expansion tank shall be installed at the water heater.
14. All WATER HEATERS shall be anchored or strapped to resist horizontal displacement; strapping shall be at points within the upper one-third and lower one third of its vertical dimensions, with lower strap at least 4" above controls.
15. WATER HEATERS installed in areas where they may be subjected to mechanical damage shall be suitably guarded against such damage. Provide adequate barriers.
16. Appliances shall be accessible for inspection, service, repair, & replacement without removing permanent construction. A platform or slab-on-grade shall be provided in front of appliances, with minimum 30" in depth, width & height of appliances.
17. PRESSURE TESTS: The Contractor shall subject all supply and waster piping to pressure tests as prescribed by the local plumbing code and to assure proper operation.
18. All GAS PIPING shall be tested in accordance with the requirements of the local gas company.
19. GAS PIPING: Provide automatic natural gas shut-off device as per local requirements. Provide approved seismic or excess flow gas shut-off device per Marin County Code Sec. 19.04.090 concerning new buildings, additions, and alterations containing gas piping. The building and safety division of the community development agency maintains a list of approved devices.
20. GAS SHUT-OFF must be located within 6' of appliance and must be accessible and shall not be located behind appliance.

15870 VENTILATION

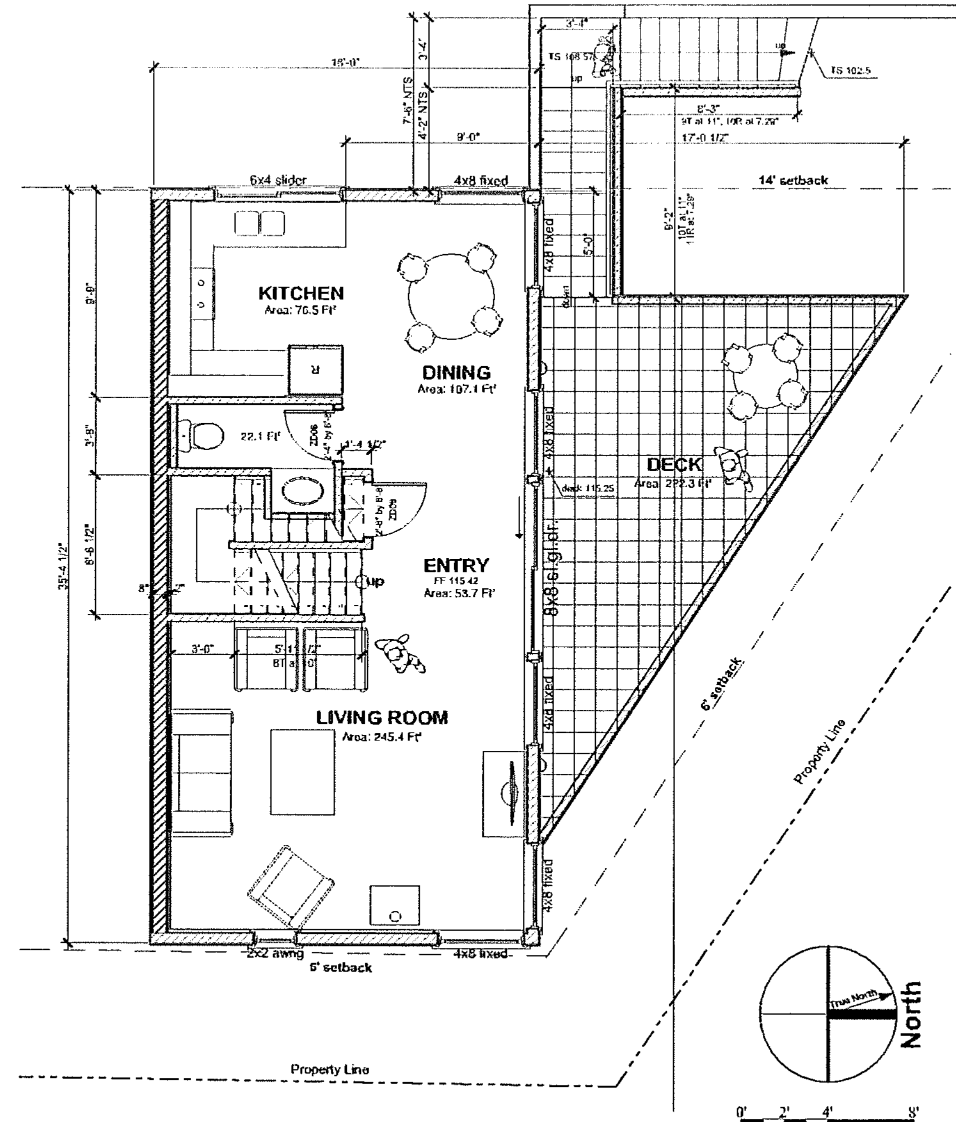
1. Mechanical exhaust fans in bathrooms shall be ENERGY STAR compliant and be ducted to terminate outside the building. Unless functioning as a component of a whole house ventilation system, fans must be controlled by a humidistat which shall be readily accessible. Humidistat controls shall be capable of adjustment between a relative humidity range of 50 to 80%. Fixture C as specified on the Light Fixture Schedule, Sheet A4.1, is 80 CFM, with 4" diameter, smooth, metal duct with a maximum run of 14'.
2. Ductwork from bathroom fans shall be 4" min. diameter, smooth interior surface, with a maximum length of run not to exceed 20', per Table 4-9 of C.E.C.

16050 ELECTRICAL

1. LIGHTING:
   a. Luminaire Efficacy: All installed luminaires shall be high-efficacy in accordance with Table 150.0-A of 2016 California Energy Code.
   b. Recessed downlight luminaires in Ceiling: shall meet all of the requirements of Section 150.0(K)-1C of 2016 California Energy Code.
   c. Under-cabinet Lighting: shall be switched separately from other lighting systems.
   d. Vacancy Sensor: At least one luminaire in bathrooms, Laundry rooms, Utility rooms and Garage shall be controlled by a vacancy sensor.
   e. All hardwired lighting in all rooms, except closets less than 70 s.f. in area, must be high efficiency and controlled by a manual-on occupant sensor or a dimmer.
   f. Outdoor Lighting attached to building: must be high efficiency and controlled by both a motion sensor and photo-control.
   g. Cans for all recessed lights must be IC/AT rated.
   h. Light fixtures in tub or shower enclosures or other wet-damp locations shall be labeled "suitable for damp locations". CEC 410.4(a).
   i. Lights in clothes closets must maintain a minimum of 6" horizontal clearance from the edge of shelves for fluorescent fixtures and recessed fixtures, and 12" for incandescent fixtures.
   j. High efficacy luminaire is one that contains only high efficacy lamps and must not contain a conventional (medium) screw-based socket.
2. SWITCHES & OUTLETS:
   a. Flush mount all switches and receptacles.
   b. Receptacle outlets shall be installed at each wall space 2' or wider. Receptacles shall be installed so that no point along the wall line is more than 6', measured horizontally, from a receptacle outlet in that space. Hallways longer than 10' require a minimum of one receptacle.
   c. Typical mounting heights from the floor to centerline shall be for wall switches, 46 inches; wall receptacles, 12 inches. Other conditions may be shown otherwise on Drawings. Verify all special conditions with Architect before proceeding.
   d. Compliant Occupant Sensors: are those that do not allow the luminaire to be turned on automatically and do not have an override that allows it to remain on. Occupant sensors must be "manual-on", i.e., the sensors must not have the ability to turn the lights on automatically and must not have a setting that can leave the lights in a permanent-on position.
   (1) Sensors: Where a motion detector is required and dimmers are desired, such as in bathrooms, provide WattStopper Passive Infrared (PIR) Dimming Wall Switch Vacancy Sensor, white color.
   e. Dimmers shall be provided at all new interior lighting unless specifically shown as "switch only."
   f. All new and replaced receptacles (both regular and GFCI) in a dwelling unit must be tamper-resistant.
   g. The control switch for exhaust fans at bathrooms, for indoor air quality & mechanical ventilation, shall be operated separately from lighting switches.
3. GROUND-FAULT CIRCUIT-INTERRUPER: shall be installed at receptacles in bathrooms, kitchens to serve countertop surfaces, within 6' of all sinks, outdoors, garages and accessory buildings.
4. ARC FAULT PROTECTION: Listed combination type arc fault circuit interrupters shall protect all branch circuits serving family room, dining room, living room, dens, bedrooms, closet or halls.
5. OUTDOOR: Provide outdoor outlets (one at the front and one at the back within 6'-6" of grade level). All outdoor outlets shall be GFIC protected and shall have weather proof outlet covers
6. KITCHEN: counter outlets as follows:
   a. A minimum of 1 outlet per counter space 12" wide or more.
   b. A minimum of 1 outlet within 24" of each end of each counter.
   c. Additional outlets located not more than 48" apart measured along counter edges.
7. CIRCUITS:
   a. Provide at least two separate 20 amp circuits for small appliances in kitchen, pantry, dining room and similar areas, with no other outlets on the circuits. CEC 210.11(C)(1), 210.52(B).
   b. Provide at least one separate 20 amp circuit to laundry appliances with no other outlets on the circuit. 210.11(C)(2).
   c. Provide at least one 20 amp circuit for bathroom outlets with no other outlets on the circuit. 210.11(C)(3).
   d. All receptacles in dwelling units for 125-volt, 15 & 20 amp shall be listed tamper-resistant receptacles.
   e. At least one receptacle, in addition to any provided for laundry equipment, shall be installed in each basement & in each attached garage, and in each detached garage with electric power.
   f. Receptacles for fixed appliances shall be accessible, not behind appliance.
8. SMOKE DETECTORS AND CARBON MONOXIDE ALARMS: State law requires smoke alarms and carbon monoxide alarms be installed throughout the house, including areas not otherwise affected by the proposed work. To comply, the Contractor is to install or verify the existence of smoke detectors & carbon monoxide alarms outside each bedroom as well as one on every level. Smoke alarms shall also be provided in each bedroom. Power Source - in new construction & existing buildings where accessible, smoke alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source & shall be equipped with a battery backup. Alarms in existing areas where wiring is not accessible may be powered by a DC battery source.
   a. Install SMOKE DETECTORS in the following locations:
      1) Each level, including basements
      2) In all sleeping rooms
      3) Corridor or area giving access to sleeping areas
      4) Top of all stairways leading to sleeping areas
      5) In dwelling units where the ceiling height of a room open to the hallway serving the bedrooms exceeds that of the hallway by 24" or more, smoke detectors shall be installed in the hallway and in the adjacent room.
      6) Mount the smoke alarms high on ceilings or walls. Ceiling-mounted alarms should be installed at least 4" away from the nearest wall. Wall-mounted alarms should be installed 4 to 12" away from the ceiling. On vaulted ceilings, mount the alarm at the highest point of the ceiling.
9. PANEL: Electrical panel working space shall be in compliance with CEC. 10
10. GROUND: Provide minimum 20 feet number 4 AWG bare copper wire in the lower 2" of the footing for electrical ground.
11. Provide minimum 24" horizontal separation for electrical boxes located on opposite sides of firewall (garage to house) per CBC 709.7.
12. SERVICE: Electrical service to the house shall be under-grounded.
13. ADDRESS NUMBERS: Contractor shall install or verify the existence of address numbers at least 4" tall with a minimum 0.5" stroke on contrasting background, clearly visible from the street. Numbers shall be self-illuminated. Self-illuminated numbers are on all night and meet the energy code for providing for a low energy draw.



2 SECOND FLOOR
SCALE: 1/4" = 1'-0"



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

Total Area: both floors = 1,230 s.f.

16051 LIGHT FIXTURE SCHEDULE

A. LED Recessed Downlights at 2nd Unit Ceiling: 4" Halo H4 LED Gen2 adjustable gimbal, ELG4069, white finish, 2700K (warm) temperature.
B. New Bedroom: Replace existing cans with 4" Halo H4 LED, white finish, 2700k (warm) temperature.
C. Shower Light: Halo SLD6 LED surface downlight, 6", white finish, wet location listed, 2700K color temperature.
D. Wall-mount LED bathroom lights: to be selected by Owner. Switched with occupancy sensor/ dimmer, WattStopper.
E. omit.
F. Bath Fan: Panasonic FV-05-11VKS1 "WhisperGreen Select" with speed control; set for continuous operation at 30 CFM and switched operation at 80 CFM.
G. Exterior wall-mount lights: Fluorescent or LED (high efficacy), "Dark Sky" compatible, controlled by photocell and motion sensor.
H. Address Light: Luxello LED backlit Modern "Neutra" House Numbers, brushed aluminum finish, white illumination, 8" tall at Entry Stairs. See Modern Lighting at "Surrounding" website. Connect directly to main panel (no switching).

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LICENSED ARCHITECT RICHARD E. RUSHTON C-5511 STATE OF CALIFORNIA

Project
IOJICA RESIDENCE
New Residence for Vlad Iojica
(415) 774-6776
Canyon Road, Fairfax CA
A.P. No. 3-032-16

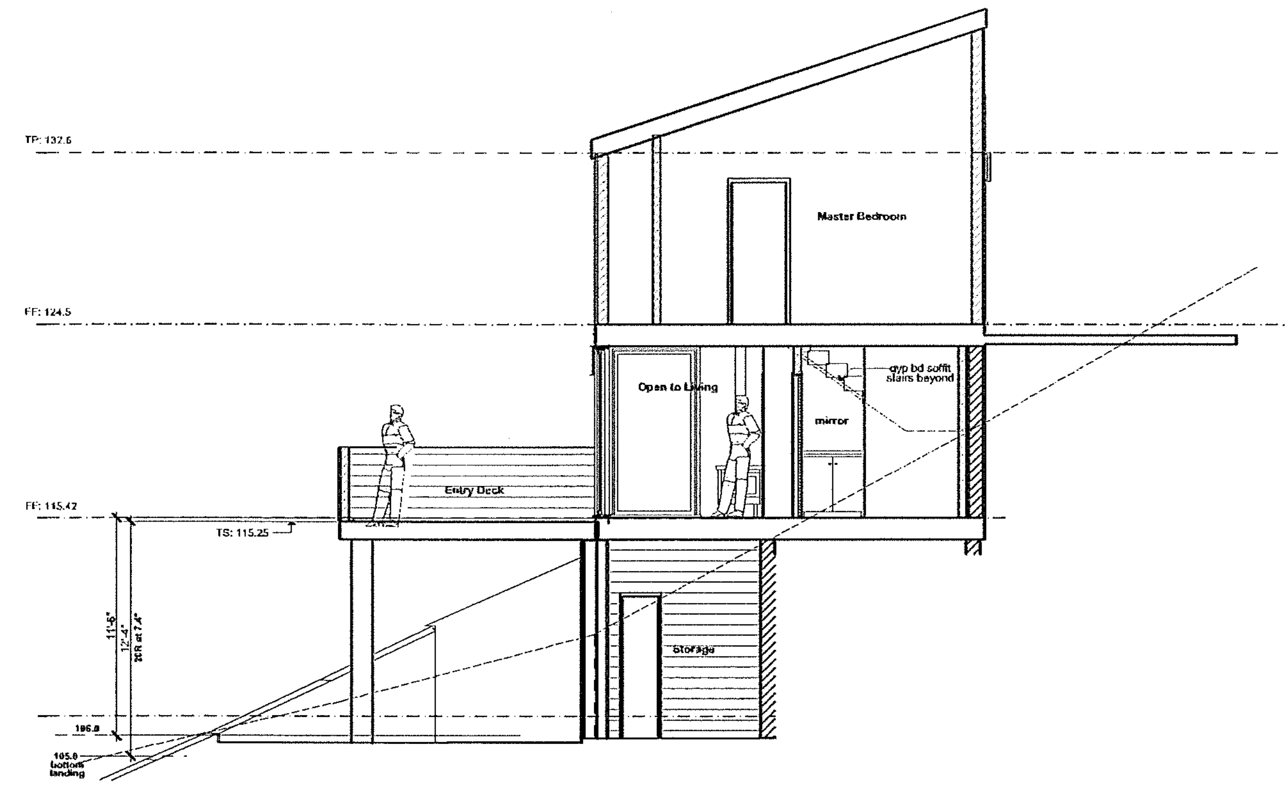
Project No. 15117
Project Architect: Richard Rushton
Date: 11/2/17
Revisions: 3/5/20 planning submittal

IF THE ABOVE DIMENSION DOES NOT MEASURE ONE INCH (1") EXACTLY THIS DRAWING WILL HAVE BEEN ENLARGED OR REDUCED, AFFECTING ALL LABELED SCALES.

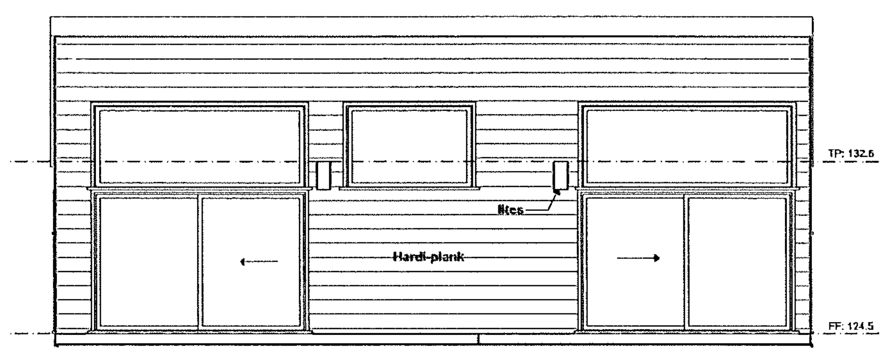
FLOOR PLANS

A4.3

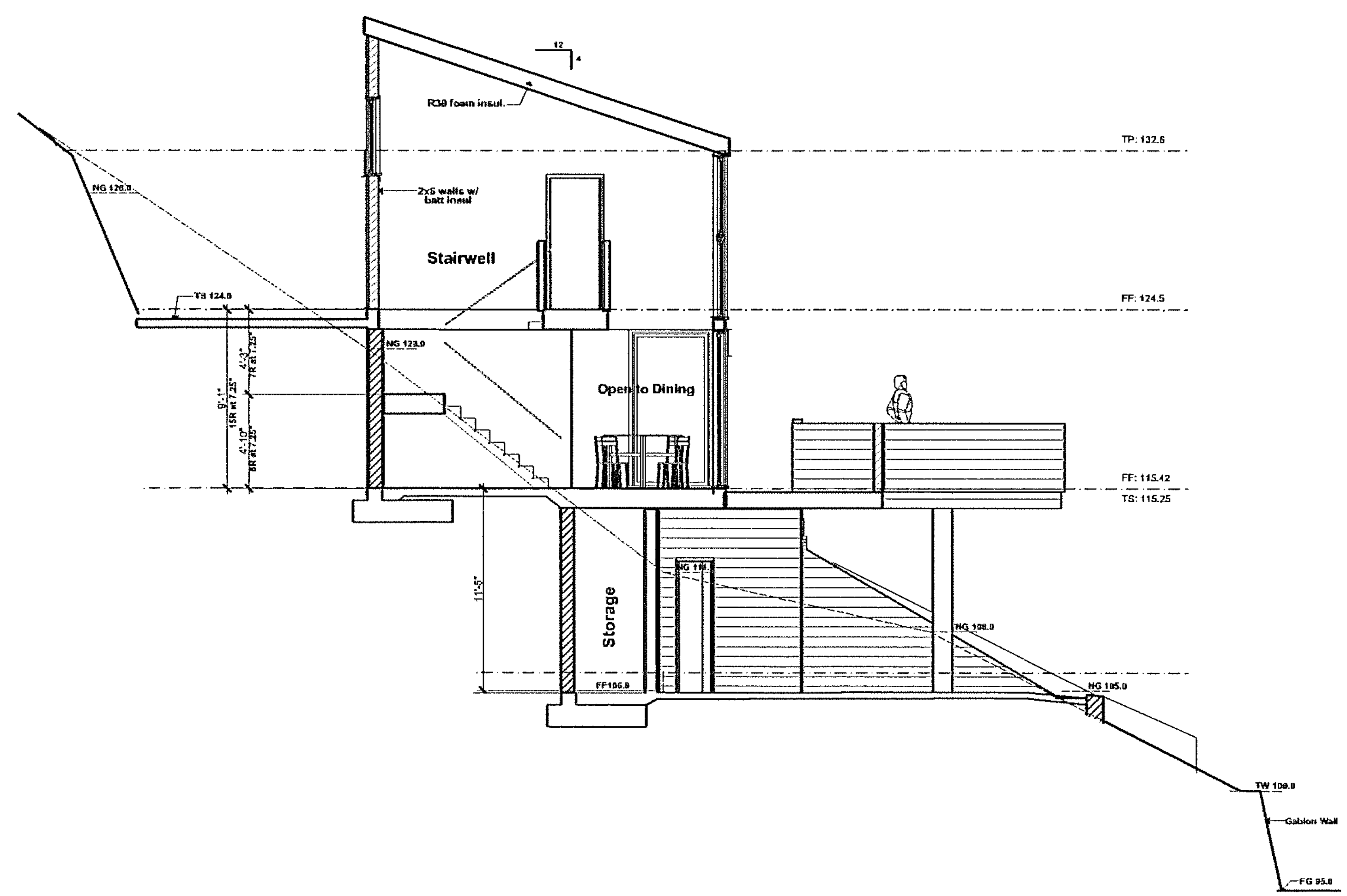
Plotted On: 3/3/2020



1 Transverse Section looking East
SCALE: 1/4" = 1'-0"



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



3 Transverse Section looking West
SCALE: 1/4" = 1'-0"

Rushton-Chartock Architects
1620 Sir Francis Drake Blvd.
P.O. Box 173 Fairfax CA 94978-0173
(415) 457-2802 Fax: 457-2873
Email: rushtonchartock@comcast.net
Website: www.rushtonchartock.net

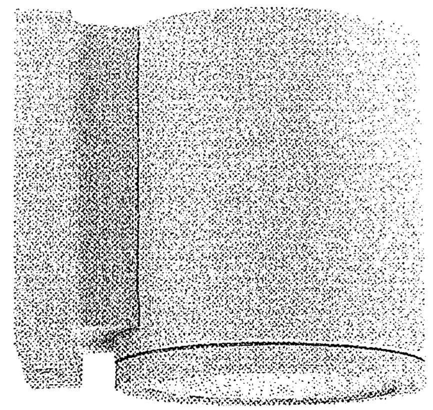
Project
IOJICA RESIDENCE
New Residence for Vlad Iojica
(415) 774-6776
Canyon Road, Fairfax CA
A.P. No. 3-032-16

Project No. 15117
Project Architect: Richard Rushton
Date: 11/2/17
Revisions: 3/5/20 planning submittal

SECTIONS

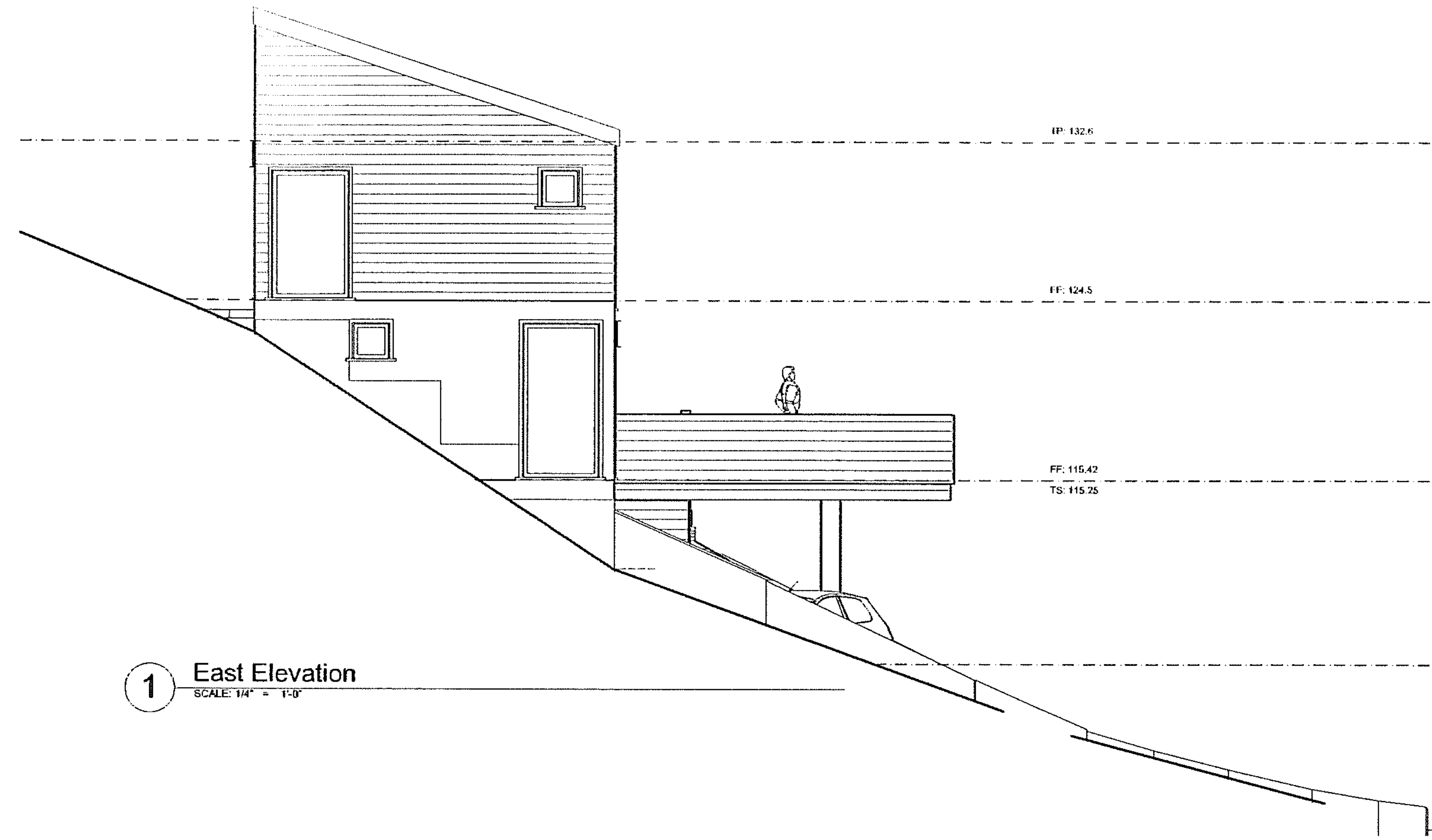
A6.1

Plotted On: 3/5/2020



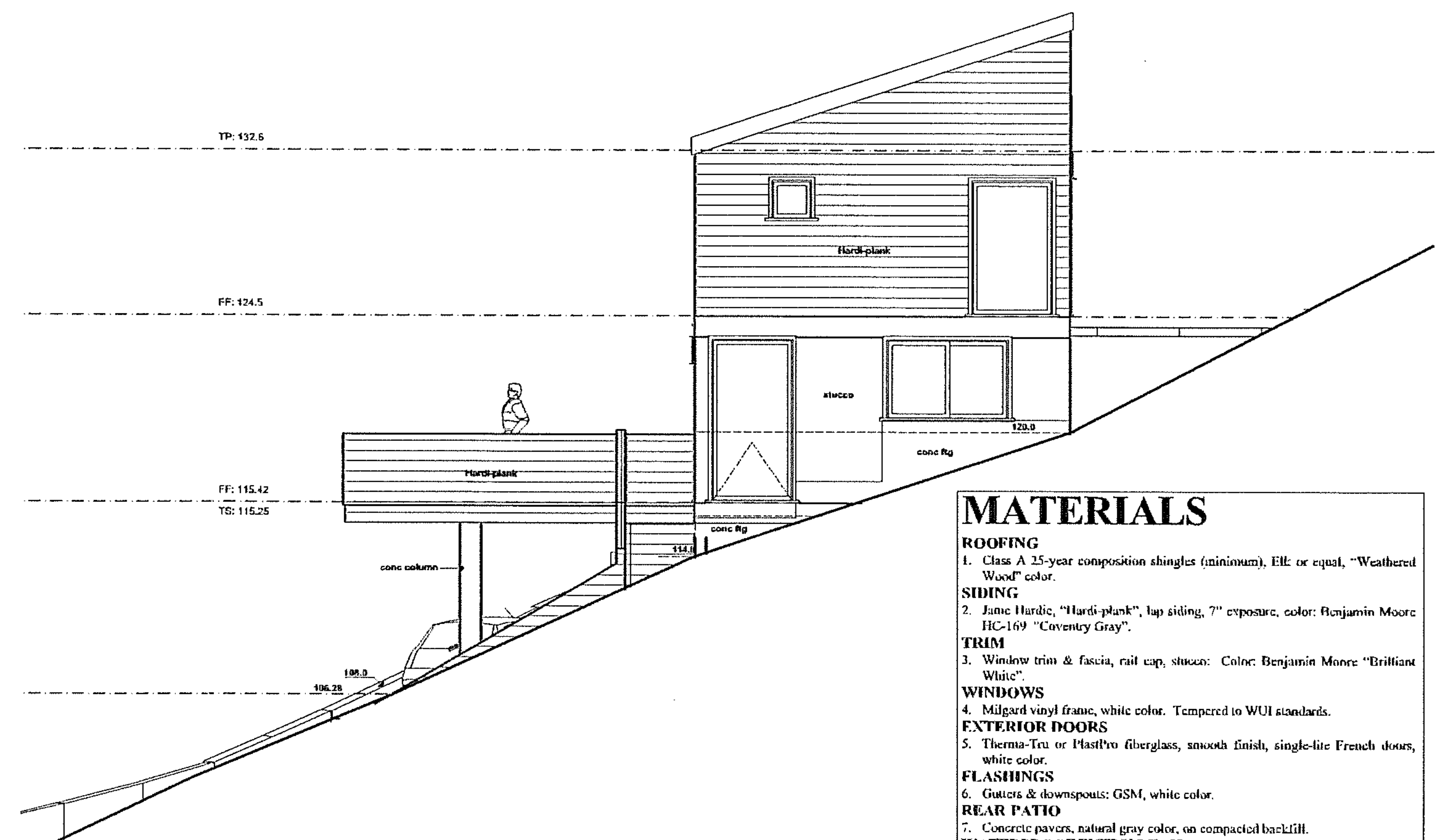
EXTERIOR LIGHT FIXTURE

Exterior wall-mount fixtures shall be WAC Lighting, Tube 6" high, white, LED outdoor wall lights. 1002 lumens, "Dark Sky" compatible. Available at Lamps Plus.



(1) East Elevation
SCALE: 1/4" = 1'-0"

(3) North Elevation
SCALE: 1/4" = 1'-0"



(2) West Elevation
SCALE: 1/4" = 1'-0"

MATERIALS

ROOFING

1. Class A 25-year composition shingles (minimum), Elk or equal, "Weathered Wood" color.

SIDING

2. Jame Hardie, "Hardi-plank", lap siding, 7" exposure, color: Benjamin Moore HC-169 "Coventry Gray".

TRIM

3. Window trim & fascia, rail cap, stucco: Color: Benjamin Moore "Brilliant White".

WINDOWS

4. Milgard vinyl frame, white color. Tempered to WUI standards.

EXTERIOR DOORS

5. Therma-Tru or PlastPro fiberglass, smooth finish, single-lite French doors, white color.

FLASHINGS

6. Gutters & downspouts: GSM, white color.

REAR PATIO

7. Concrete pavers, natural gray color, on compacted backfill.

WATERPROOF ENTRY DECK

8. Gaco Western, GacoFlex elastomeric membrane, #16 "Shale" color.

Rushton-Chartock Architects
1620 Sir Francis Drake Blvd.
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(415) 457-2802 Fax: 457-2873
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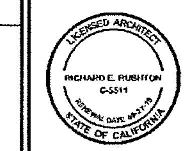
Website: www.rushtonchartock.net



Project
IOJICA RESIDENCE
New Residence for Vlad Iojica
(415) 774-6776
Canyon Road, Fairfax CA
A.P. No. 3-032-16

Project No.	15117
Project Architect	Richard Rushton
Date	11/2/17
Revisions	3/5/20 planning submittal

EXTERIOR ELEVATIONS

IF THE ABOVE DIMENSION DOES NOT MEASURE ONE INCH (1") EXACTLY, THIS DRAWING WILL HAVE BEEN ENLARGED OR REDUCED, AFFECTING ALL LABELED SCALES.

A7.1

Plotted On: 3/5/2020

SINGLE FAMILY RESIDENCE

CANYON ROAD, FAIRFAX, CA 94903

A.P.N. No: 03-032-16

LEGEND:

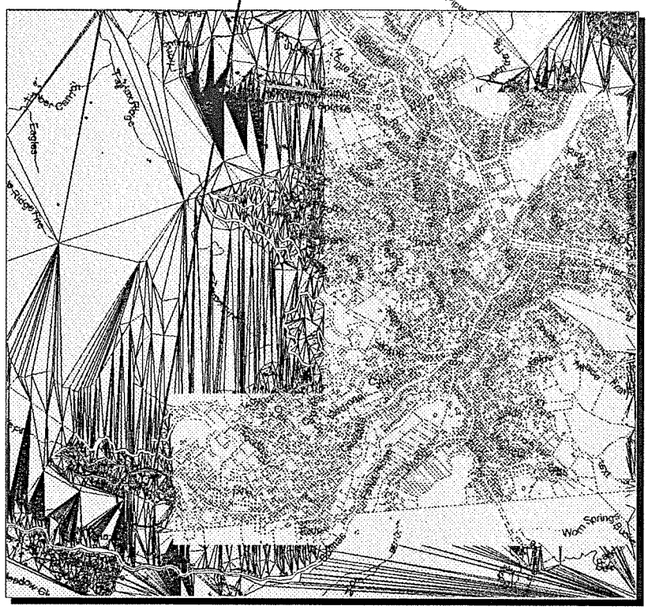
- SUBDIVISION BOUNDARY
- ROADWAY CENTERLINE
- RIGHT-OF-WAY
- EASEMENT AS NOTED
- SANITARY SEWER MAIN PIPE (PUBLIC)
- SANITARY SEWER MAIN PIPE (PRIVATE)
- SANITARY SEWER MANHOLE
- SANITARY SEWER MAIN PLUG
- SANITARY SEWER LATERAL
- WATER MAIN PIPE
- WATER FIRE HYDRANT
- WATER VALVE
- WATER REDUCER
- WATER MAIN PLUG
- WATER AIR RELEASE VALVE
- WATER BLOW-OFF
- WATER SERVICE AND METER
- ACCESS HATCH IN U/G STOPAGE TANK
- STORM DRAIN PIPE
- STORM DRAIN MANHOLE
- STORM DRAIN PIPE PLUG
- VERTICAL CURB AND GUTTER
- ROLL CURB AND GUTTER
- VERTICAL CURB/EXTRUDED CURB
- SIDEWALK
- LOT LINE
- 449 — LOT NUMBER
- RETAINING WALL
- TRW=20.67 / TF=17.33 — TOP OF RETAINING WALL ELEV / TOP OF FOOTING ELEV
- 1202.81 — EXISTING SPOT ELEVATION
- 1202.81 — PROPOSED SPOT ELEVATION
- PROPOSED CONTOUR (5' INTERVAL)
- PROPOSED CONTOUR (1' INTERVAL)
- 12+00 — ROAD STATION

GRADING QUANTITIES:

ESTIMATED UN-ADJUSTED VOLUMES:

GRADING IN CUT:	118 CU.YD.
GRADING IN FILL:	36 CU.YD.
TOTAL GRADING QUANTITIES:	154 CU.YD.
EXPORT MATERIAL:	82 CU.YD.

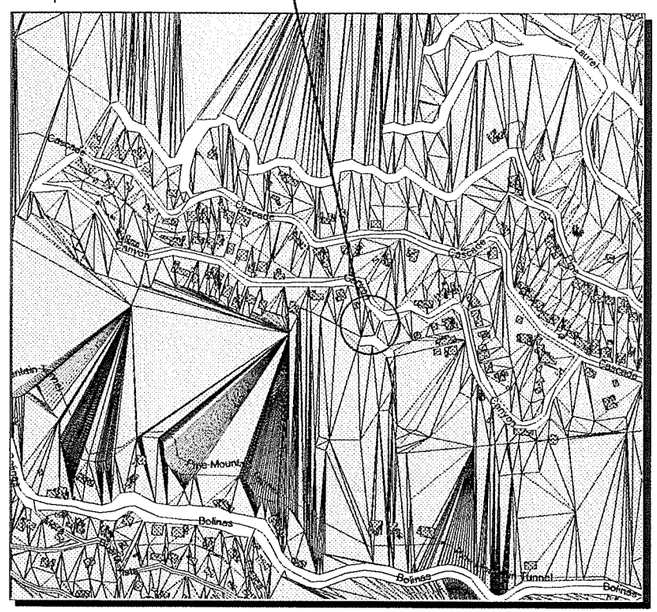
SITE LOCATION (SEE VICINITY MAP)



AREA MAP

SCALE: 1" = 700'

SITE LOCATION (apn:03-032-16)



VICINITY MAP

SCALE: 1" = 100'

DESIGN TEAM:

ARCHITECT
RICHARD RUSHTON
ARCHITECT
1620 SIR FRANCIS DRAKE BLVD.
FAIRFAX, CA 94903

T: (415)457-2878
E: rushtonharlock@gmail.com

CONTACT:
RICHARD RUSHTON

CIVIL ENGINEER:
VIA ATELIER, INC.

9 BROOKSIDE CT.
SAN ANSELMO, CA

T: (415) 774-6776
E: OFFICE@VIA-ENG.COM

CONTACT:
VLAD IOJICA

GEOTECHNICAL:
DENNIS FURBY
CONSULTING GEOTECHNICAL ENGINEER

30 VIA HORTON, No. 18
GREENBRAE, CA 94904

T: (415)308-7218
E: dennis@furbylogic.com

LAND SURVEYOR:
DAVID CRAMER, P.L.S.
LAND SURVEYOR

191 WESTRIDGE DRIVE
PETALUMA, CA 94953

T: (707)679-6076
E: david.cramer@att.net

CONTACT:
DAVID CRAMER

VERTICAL CONTROL:

BENCHMARK INFO ACCORDING TO THE TOPOGRAPHIC SURVEY PREPARED BY DAVID CRAMER PLS., THE MAPED ELEVATIONS ARE BASED ON MANHOLE RIMS SUPPLIED BY MARIN SANITARY DISTRICT ONE.

HORIZONTAL CONTROL:

BASIS OF BEARINGS: BETWEEN FOUND 3/8" REBAR TAGGED LS 2932 AND FOUND 3/8" REBAR, NO TAG; AS SHOWN IN BOOK P11 PAGE 97, N18°16'00"E, 125.52'. PER RECORD OF SURVEY PREPARED FOR PROPERTY IN QUESTION BY DAVID CRAMER, PLS, DATED OCTOBER 2014.

LEGEND (cont.):

- GRADE BREAK
- EXISTING ROADWAY CENTERLINE
- EXISTING RIGHT-OF-WAY
- EXISTING EASEMENT AS NOTED
- EXISTING SANITARY SEWER MAIN PIPE
- EXISTING SANITARY SEWER MANHOLE
- EXISTING SANITARY SEWER MAIN PLUG
- EXISTING WATER MAIN PIPE
- EXISTING WATER FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING WATER REDUCER
- EXISTING WATER MAIN PLUG
- EXISTING WATER AIR RELEASE VALVE
- EXISTING WATER BLOW-OFF
- EXISTING STORM DRAIN PIPE
- EXISTING STORM DRAIN MANHOLE
- EXISTING STORM DRAIN PIPE PLUG
- EXISTING VERTICAL CURB AND GUTTER
- EXISTING ROLL CURB AND GUTTER
- EXISTING VERTICAL CURB/EXTRUDED CURB
- EXISTING SIGN AS NOTED
- EXISTING CONTOUR (1' INTERVAL)
- FL= — FLOW LINE (GUTTER ELEVATION)
- TC= — TOP OF CURB ELEVATION
- P= — PAVEMENT ELEVATION
- HWE= — HIGH WATER ELEVATION
- FFE= — FINISH FLOOR ELEVATION
- PAD= — FINISH PAD ELEVATION
- POT= — POINT OF TANGENCY
- POC= — POINT OF CURVATURE
- PRC — POINT OF REVERSE CURVATURE
- BTM= — BASIN BOTTOM ELEVATION
- TL= — TRUE LENGTH
- SURVEY CONTROL POINT
- SLOPE INDICATOR
- 0.75% — ROAD SLOPE INDICATOR
- CMU= — CONCRETE MASONRY UNIT
- EXG= — EXISTING
- L/S= — LANDSCAPE
- STREET LIGHT

SHEET INDEX:

FLOODPLAIN INFO:

ACCORDING THE THE EFFECTIVE FEMA'S FLOOD INSURANCE RATE MAP No. 06041C0451E, DATED MARCH 17, 2014, THE PROJECT SITE IS LOCATED IN ZONE DESIGNATED AS "OTHER AREAS", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN..

ViA Atelier

Revisions:	Date:	By:
1 REVISED IN RESPONSE TO REVIEW LETTER DATED 04.20.20	4/30/20	V.I.

Sheet Title: TITLE SHEET

Project: SINGLE FAMILY RESIDENCE

Address: CANYON ROAD, TOWN OF FAIRFAX, CA 94 - APN: 03-032-16

Plans Prepared By:
ViA Atelier, Inc.
Engineering Consultants
1620 Sir Francis Drake Blvd, Fairfax, CA 94930
Ph:(415) 774-6776 Evoffice@via-eng.com

Date:

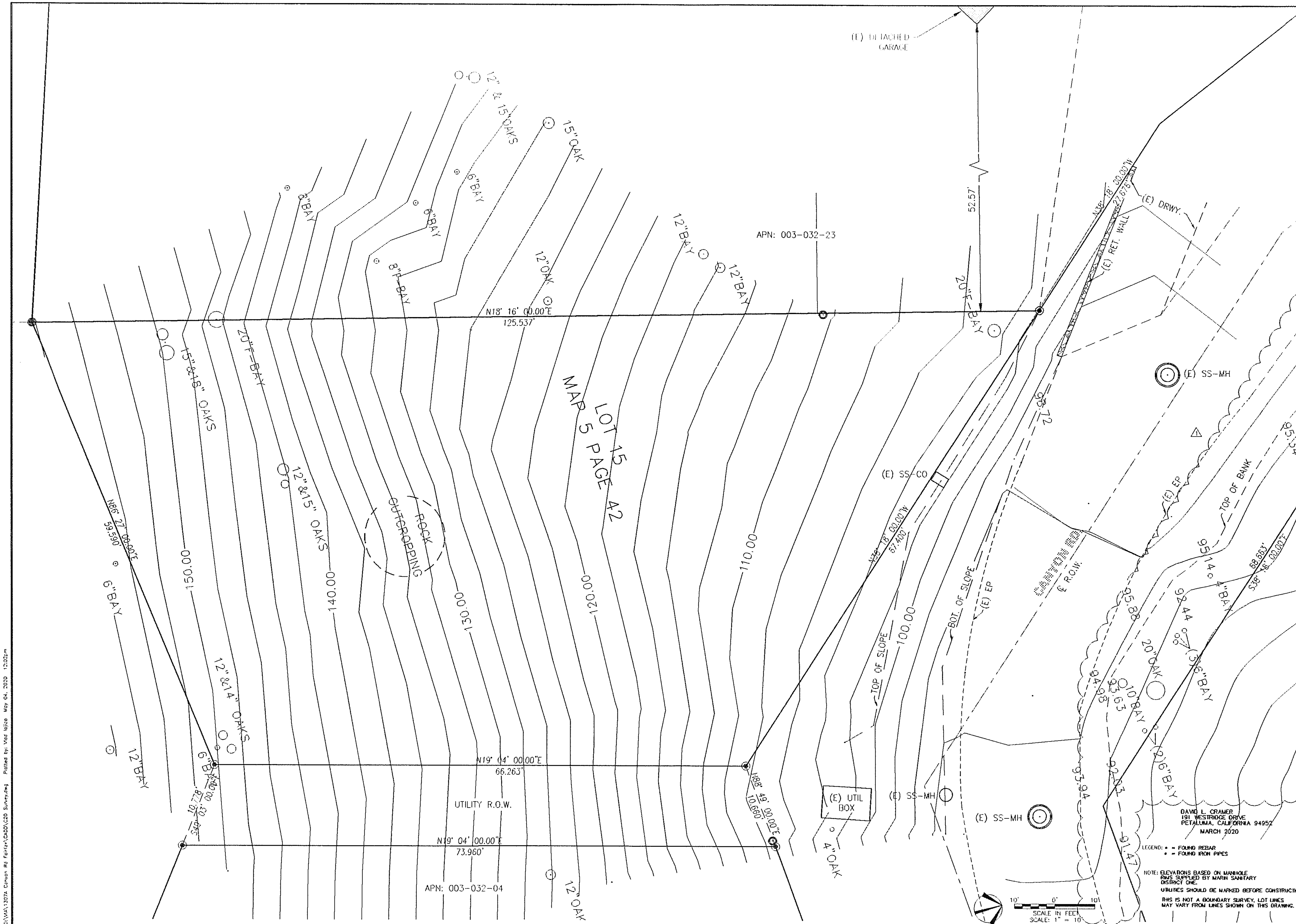
Job No: 1307.A

Date: 4.30.2020

Drawn by: V.I.

Sheet:
C1.0
1 OF 11

D:\ViA\1307A Canyon Rd Fairfax\CADD\C1.0.dwg Plotted by: Vlad Iojica May 04, 2020 11:58am



(E) DETACHED GARAGE
APN: 003-032-23
LOT 15
MAP 5 PAGE 42
N18° 16' 00.00"E
125.537'
52.57'
ROCK OUTCROPPING
150.00
140.00
130.00
120.00
110.00
100.00
TOP OF SLOPE
BOT. OF SLOPE
(E) EP
CANYON RD
R.O.W.
(E) SS-CO
(E) SS-MH
(E) DRWY.
(E) RET. WALL
TOP OF BANK
N19° 04' 00.00"E
66.263'
UTILITY R.O.W.
N19° 04' 00.00"E
73.960'
APN: 003-032-04
(E) UTIL BOX
15" OAK
12" & 15" OAKS
12" BAY
20" F-BAY
15" & 18" OAKS
12" & 15" OAKS
12" & 14" OAKS
6" BAY
12" OAK
4" OAK
20" OAK
DAVID L. CRAMER
191 WESTRIDGE DRIVE
PETALUMA, CALIFORNIA 94952
MARCH 2020
LEGEND: = FOUND REBAR
= FOUND IRON PIPES
NOTE: ELEVATIONS BASED ON MANHOLE RIMS SUPPLIED BY MARIN SANITARY DISTRICT ONE.
UTILITIES SHOULD BE MARKED BEFORE CONSTRUCTION.
THIS IS NOT A BOUNDARY SURVEY. LOT LINES MAY VARY FROM LINES SHOWN ON THIS DRAWING.
SCALE IN FEET
SCALE: 1" = 10'

ViA Atelier

Revisions: REVISED IN RESPONSE TO REVIEW LETTER DATED 01.14.20

Sheet Title: SITE TOPOGRAPHIC MAP

Project: SINGLE FAMILY RESIDENCE

Address: CANYON ROAD, TOWN OF FAIRFAX, CA 94 - APN: 03-032-16

Plans Prepared By: ViA Atelier, Inc. Engineering Consultants

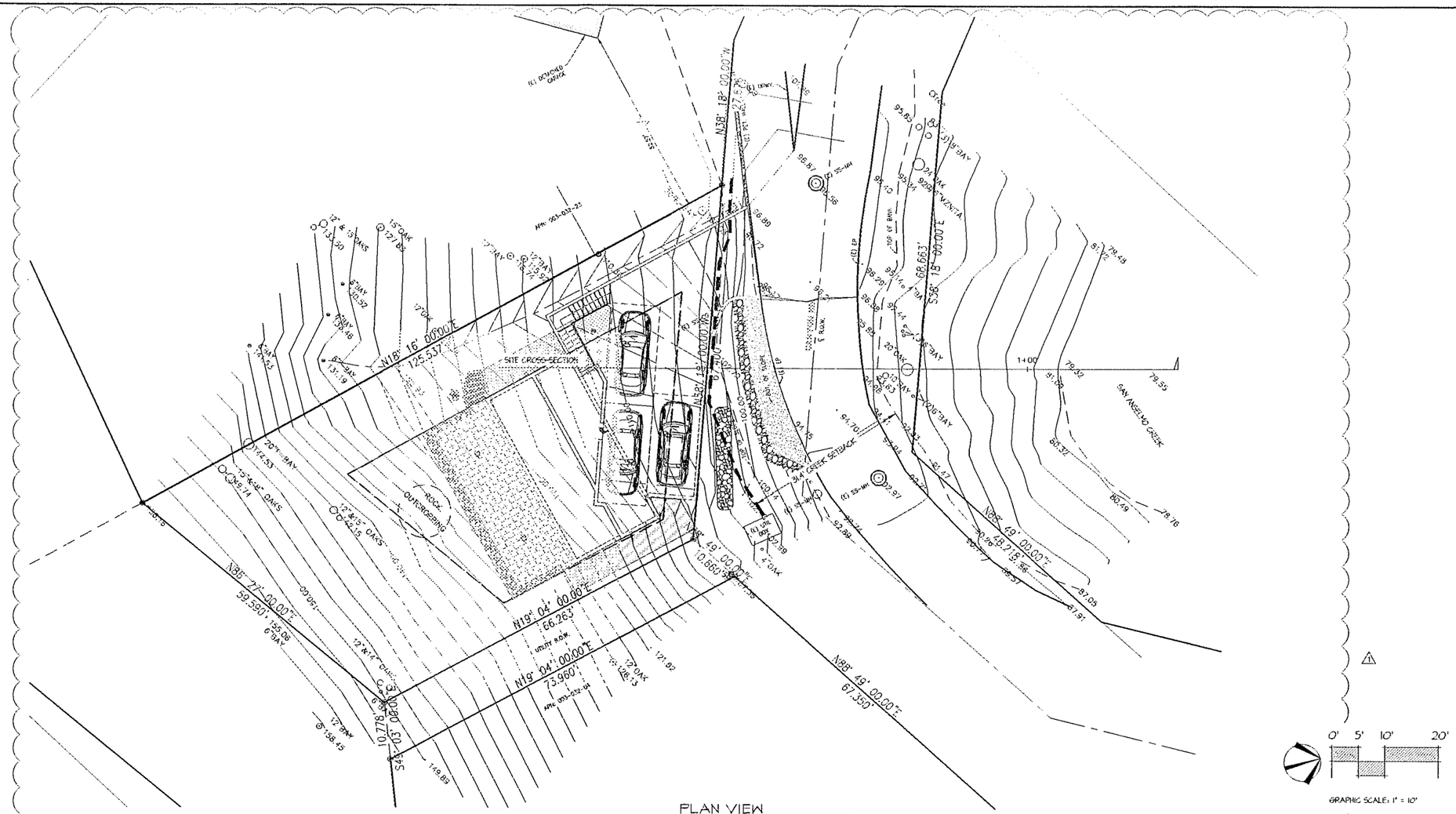
Job No: 1307.A

Date: 4.30.2020

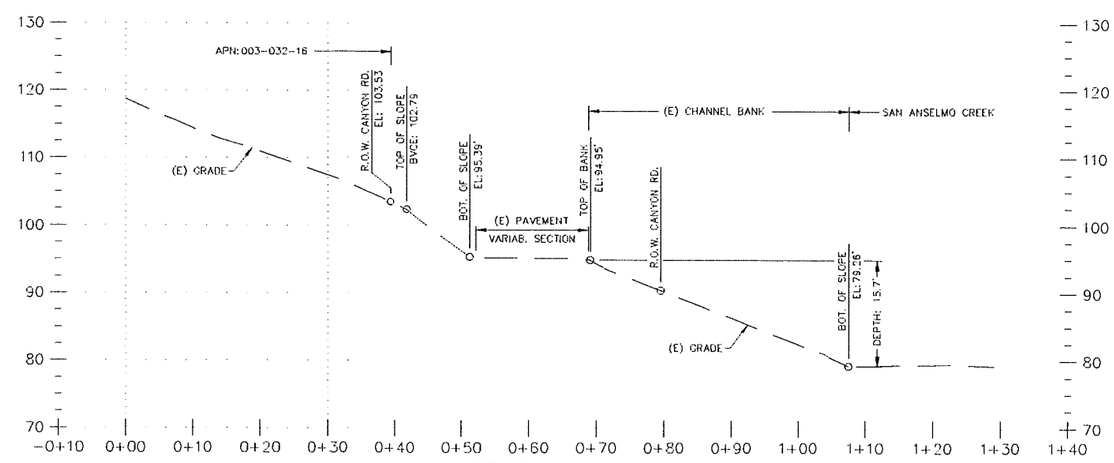
Drawn by: V.I.

Sheet: C2.0

2 OF 11



PLAN VIEW
SCALE 1" = 10'



PROFILE
SCALE 1" = 10' (VERT & HORIZ)

D:\VIA\1307A Canyon Rd Fairfax\CADD\c20a Bank Setback & Section.dwg Plotted by: Vlad Ivlick May 04, 2020 12:34pm

ViA Atelier

Revisions:	Date:	By:
1 REVISED IN RESPONSE TO REVIEW LETTER DATED 01.14.20	4/30/20	V.I.

Sheet Title: CREEK TOP OF BANK DELINEATION & SETBACK

Project: SINGLE FAMILY RESIDENCE

Address: CANYON ROAD, TOWN OF FAIRFAX, CA 94 - APN: 03-032-16

REGISTERED PROFESSIONAL ENGINEER — VLADIMIR IVANOV — No. 72861 — CIVIL — STATE OF CALIFORNIA — C 72861 Exp. 6-30-21

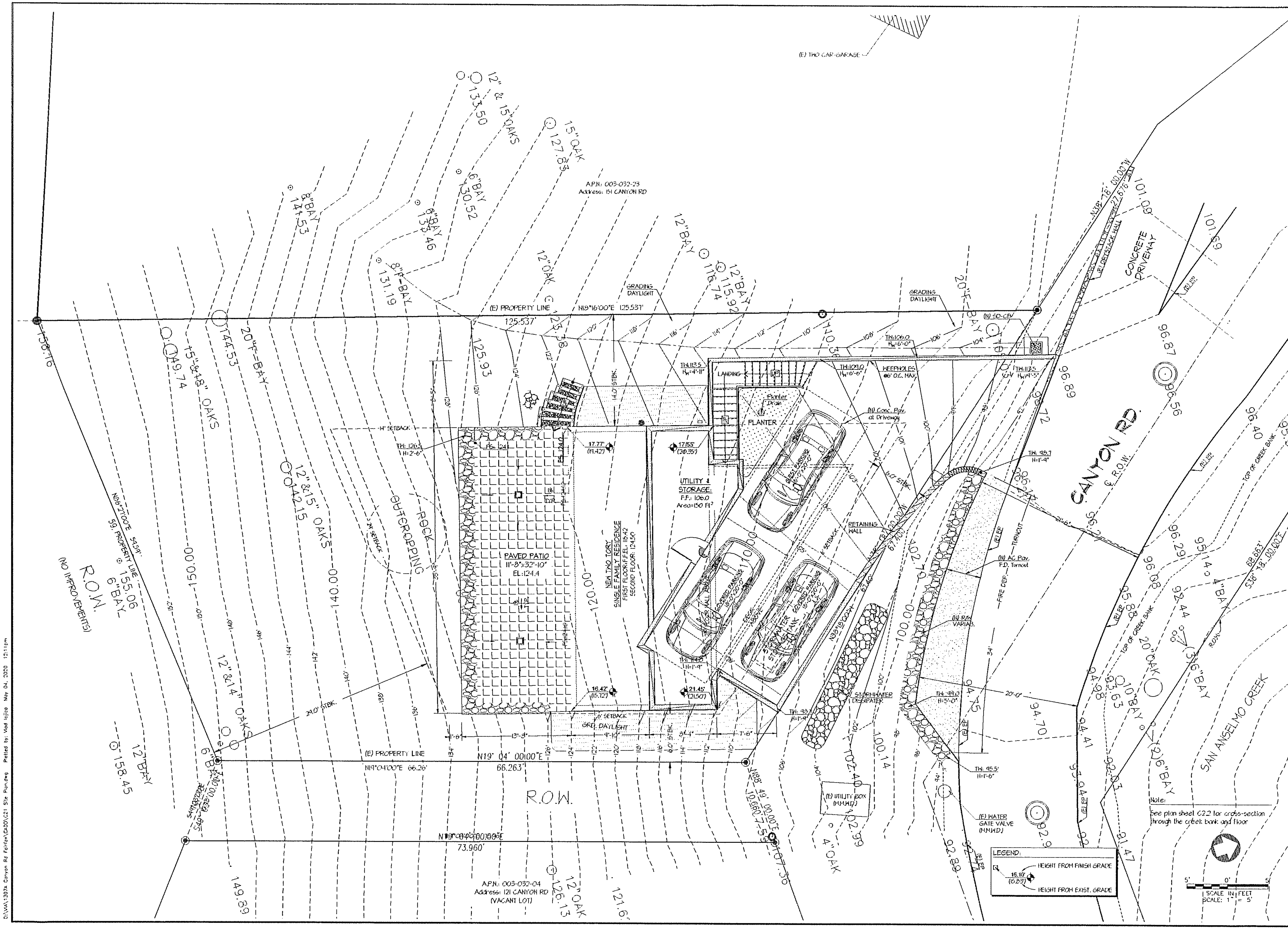
Plans Prepared By:
Date:
ViA Atelier, Inc.
Engineering Consultants
1620 5th Francis Drake Blvd, Fairfax, CA 94930
PH:(415) 754-6776 E:offices@via-eng.com

Job No: 1307.A

Date: 4.30.2020

Drawn by: V.I.

Sheet:
C2.0a
3 OF 11


(E) TWO CAR GARAGE
A.P.N.: 003-032-23
Address: 151 CANYON RD
(E) PROPERTY LINE N19°16'00"E 125.531'
GRADING DAYLIGHT
LANDING
PLANTER
UTILITY & STORAGE
PAVED PATIO 11'-8"x32'-10" EL:124.4
NEW TWO STORY SINGLE FAMILY RESIDENCE
RETAINING WALL
STORMWATER DISSIPATER
CANYON RD. C R.O.W.
CONCRETE DRIVEWAY
SAN ANSELMO CREEK
R.O.W.
R.O.W. (NO IMPROVEMENTS)
ROCK OUTCROPPING
(E) PROPERTY LINE N19°04'00"E 66.263'
(E) UTILITY BOX (MMWD)
(E) WATER GATE VALVE (MMWD)
A.P.N.: 003-032-04
Address: 121 CANYON RD
(VACANT LOT)
LEGEND:
HEIGHT FROM FINISH GRADE
HEIGHT FROM EXIST. GRADE
Note:
See plan sheet C2.2 for cross-section through the creek bank and floor
SCALE IN FEET
SCALE: 1" = 5'

ViA Atelier

Revisions: 1 REVISED IN RESPONSE TO REVIEW LETTER DATED 01.14.20 — Date: 4/30/20 — By: V.I.

Sheet Title: SITE PLAN, HORIZONTAL CONTROL & STORY POLES.

Project: SINGLE FAMILY RESIDENCE

Address: CANYON ROAD, TOWN OF FAIRFAX, CA 94 - APN: 03-032-16

REGISTERED PROFESSIONAL ENGINEER VLAD G. TOJICA C 73861 Exp. 6-30-21 CIVIL STATE OF CALIFORNIA

Plans Prepared By:
ViA Atelier, Inc.
Engineering Consultants
1620 Sir Francis Drake Blvd., Fairfax, CA 94930
Ph:(415) 774-6776 E:office@via-eng.com
Date:

Job No: 1307.A

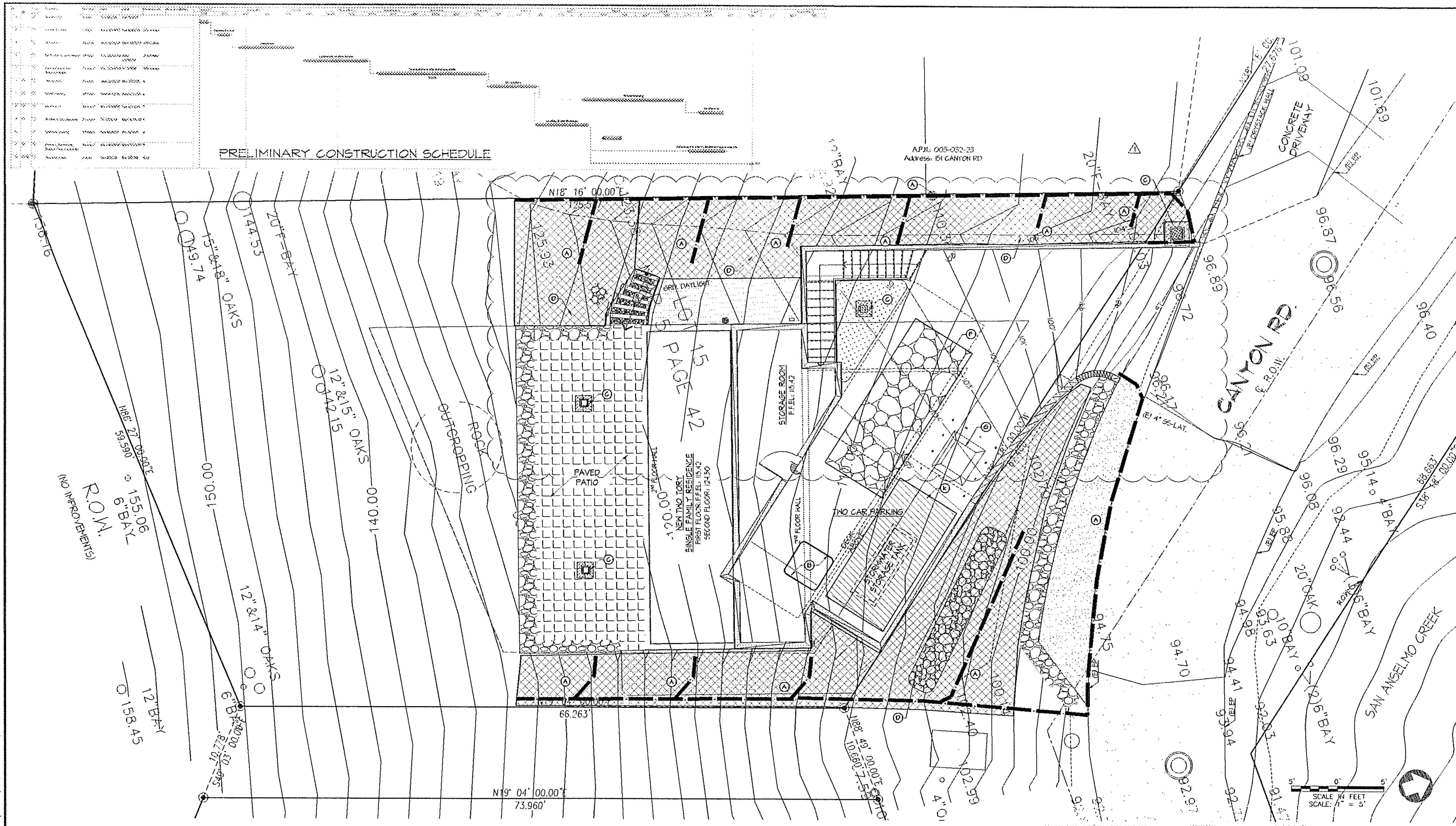
Date: 4.30.2020

Drawn by: V.I.

Sheet:

C2.1

3 OF 11

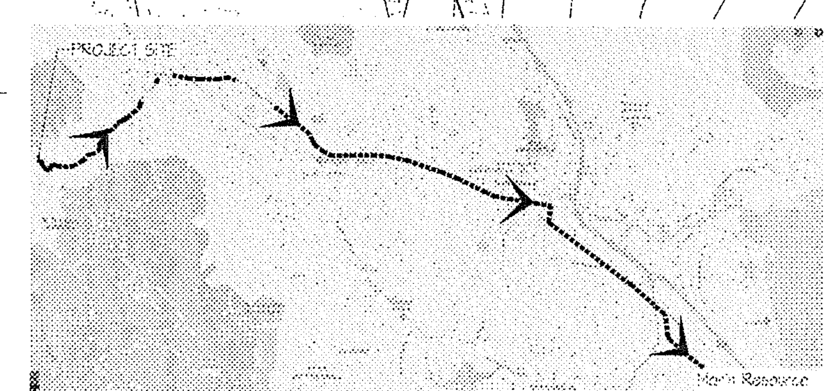


PLAN NOTES:

1. PARKING FOR THE CONSTRUCTION WORKERS WILL BE PROVIDED IN FRONT OF THE PROJECT'S PARCEL AND ADJACENT LOT WITH PERMISSION FROM THE PARCEL'S OWNER .
2. DURING CONSTRUCTION ACTIVITIES THE ELECTRIC POWER WILL BE SUPPLIED BY TEMPORARY SOURCE.
3. LOADING AND UNLOADING AREAS ON THE PARKING LOT.
4. MATERIAL STORAGE AREAS ON THE PARKING AREA.
5. TEMPORARY TOILET DURING CONSTRUCTION TO BE LOCATED ON THE PARKING AREA. SEE PLAN.
6. CONSTRUCTION VEHICLES HAVE THE SPACE TO TURN AROUND IN FRONT OF THE PROPERTY AND RETURN THE SAY WAY THEY COME.
7. NO ROAD CLOSURE DUE TO THIS PROJECT IS ANTICIPATED AS NECESSARY.
8. PROJECT'S START DATE: .... August 1, 2019
9. PROJECT'S END DATE: September15, 2020
10. TOTAL RE-VEGETATION (LANDSCAPING) WILL BE COMPLETED BEFORE THE REQUEST FOR THE FINAL INSPECTION.
11. INSTALL WIND EROSION CONTROL MEASURES ALONG THE PERIMETER OF THE CONSTRUCTION SITE IN ACCORDANCE WITH THE CASQA's SPEC. WE-1.

PLAN LEGEND:

- (A) INSTALL FIBER ROLLS PER CASQA SE-5 — 1/C5.1
- (B) INSTALL SANITARY WASTE MANAGEMENT (PORTABLE RESTROOM) PER CASQA WM-9
- (C) INSTALL STORM DRAIN INLET PROTECTION PER CASQA SE-10 — 3/C5.1
- (D) IMMEDIATELY REVEGETATE WITH LANDSCAPING OR UTILIZE GEOTEXTILE MATTING (PER CASQA EC-7) OF DISTURBED SOILS UNTIL LANDSCAPE IMPROVEMENTS ARE COMPLETED. APPROX. LIMITS SHOWN. — 4/C5.1
- (E) DUST CONTROL, TO IMPLEMENT THROUGHOUT THE CONSTRUCTION SITE DURING ALL PHASES OF CONSTRUCTION IN ACCORDANCE WITH BMP TABLE: — 5/C5.1
- (F) CONSTRUCTION ENTRANCE PER CASQA TC-1 — 6/C5.1
- (G) CONCRETE WASH AREA — 7/C5.1
- (H) TREE FENCE (Tree Protection Zone) — 8/C5.1
- (J) LIMITS AND DISTURBED AREA
- (K) CONSTRUCTION STORAGE AREAS PER CASQA WM-1



MATERIAL HAULING PLAN

ViA Atelier

Revisions: REVISED IN RESPONSE TO REVIEW LETTER DATED 01.14.20 | Date: 4/30/20 | By: V.I.

Sheet Title: EROSION CONTROL AND CONSTRUCTION MNGM.

Project: SINGLE FAMILY RESIDENCE

Address: CANYON ROAD, TOWN OF FAIRFAX, CA 94 - APN: 03-032-16

REGISTERED PROFESSIONAL ENGINEER VLAD G. IOJICA C 73861 Exp. 6-30-21 CIVIL STATE OF CALIFORNIA

Plans Prepared By: ViA Atelier, Inc. Engineering Consultants 1820 Sir Francis Drake Blvd, Fairfax, CA 94930 Ph:(415) 717-6776 E:office@via-eng.com

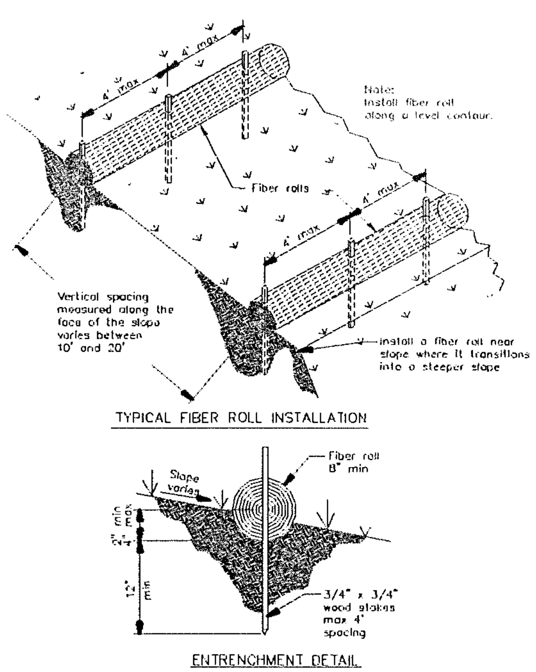
Date:

Job No: 1307.A

Date: 4.30.2020

Drawn by: V.I.

Sheet: C3.0



Purpose:

A fiber roll consists of straw, coir, or other biodegradable materials bound into a tight tubular roll wrapped by netting, which can be biodegradable or natural. Additionally, gravel core fiber rolls are available, which contain an imbedded ballast material such as gravel or sand for additional weight when staking the rolls are not feasible (such as use as inlet protection). When fiber rolls are placed at the toe and on the face of slopes along the contours, they intercept runoff, reduce its flow velocity, release the runoff as sheet flow, and provide removal of sediment from the runoff (through sedimentation). By interrupting the length of a slope, fiber rolls can also reduce sheet and rill erosion until vegetation is established.

Application:

- *Along the toe, top, face, and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow.*
- *At the end of a downward slope where it transitions to a steeper slope.*
- *Along the perimeter of a project.*
- *As check dams in unlined ditches with minimal grade.*
- *Down-slope of exposed soil areas.*
- *At operational storm drains as a form of inlet protection.*
- *Around temporary stockpiles.*

Installation:

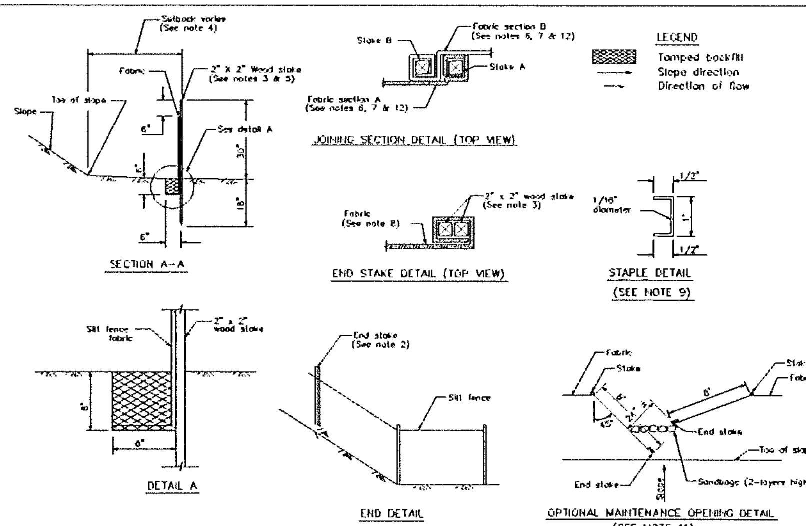
Follow manufacturer's recommendations for installation. In general, these will be as follows:
Locate fiber rolls on level contours spaced as follows:

- *Slope inclination of 4:1 (H:V) or flatter: Fiber rolls should be placed at a maximum interval of 20 ft.*
- *Slope inclination between 4:1 and 2:1 (H:V): Fiber Rolls should be placed at a maximum interval of 15 ft. (a closer spacing is more effective).*
- *Slope inclination 2:1 (H:V) or greater: Fiber Rolls should be placed at a maximum interval of 10 ft. (a closer spacing is more effective).*
- *Prepare the slope before beginning installation.*
- *Dig small trenches across the slope on the contour. The trench depth should be ¼ to 1/3 of the thickness of the roll, and the width should equal the roll diameter, in order to provide area to backfill the trench.*
- *It is critical that rolls are installed perpendicular to water movement, and parallel to the slope contour.*
- *Start building trenches and installing rolls from the bottom of the slope and work up.*
- *It is recommended that pilot holes be driven through the fiber roll. Use a straight bar to drive holes through the roll and into the soil for the wooden stakes.*
- *Turn the ends of the fiber roll up slope to prevent runoff from going around the roll.*
- *Stake fiber rolls into the trench.*
  - *Drive stakes at the end of each fiber roll and spaced 4 ft maximum on center.*
  - *Use wood stakes with a nominal classification of 0.75 by 0.75 in. and minimum length of 24 in.*
- *If more than one fiber roll is placed in a row, the rolls should be overlapped, not abutted.*

Inspection and maintenance:

- *BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.*
- *Repair or replace split, torn, unraveling, or slumping fiber rolls.*
- *If the fiber roll is used as a sediment capture device, or as an erosion control device to maintain sheet flows, sediment that accumulates in the BMP should be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when sediment accumulation reaches one-third the designated sediment storage depth.*
- *If fiber rolls are used for erosion control, such as in a check dam, sediment removal should not be required as long as the system continues to control the grade. Sediment control BMPs will likely be required in conjunction with this type of application.*
- *Repair any rills or gullies promptly.*

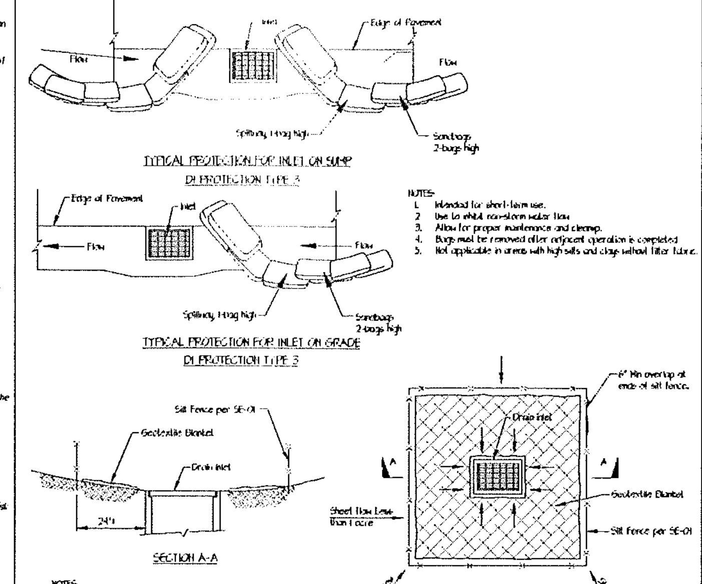
(1) FIBER ROLL
CASQA-BMP SE-5
SECTION
SCALE: NO SCALE



Notes:

1. *Construct the length of each reach so that change in base elevation along the reach does not exceed 1/3 the height of the linear barrier. In no case shall the reach length exceed 500'.*
2. *The last 8'-0" of fence shall be turned up slope.*
3. *Stake dimensions are nominal.*
4. *Dimensions may vary to fit field conditions.*
5. *Stakes shall be spaced at 8'-0" maximum and shall be positioned on downstream side of fence.*
6. *Stakes to overlap and fence fabric to fold around each stake one full turn. Secure fabric to stake with 4 staples.*
7. *Stakes shall be driven tightly together to prevent potential flow-through of sediment at joint. The tops of the stakes shall be secured with wire.*
8. *For end stake, fence fabric shall be folded around two stakes one full turn and secured with 4 staples.*
9. *Minimum 4 staples per stake. Dimensions shown are typical.*
10. *Cross barriers shall be a minimum of 1/3 and a maximum of 1/2 the height of the barrier.*
11. *Maintenance openings shall be constructed in a manner to ensure sediment remains behind silt fence.*
12. *Sandbag rows and layers shall be offset to eliminate gaps.*
13. *Add 3-4 bags to cross barrier on downgradient side of silt fence as needed to prevent bypass or undermining and as allowable based on site limits of disturbance.*

(2) SILT FENCE
CASQA-BMP SE-1
SECTION/ELEVATIONS
SCALE: NO SCALE



NOTES:

1. For use in areas where grading has been completed and final soil stabilization and seeding are pending.
2. Not applicable in paved areas.
3. Not applicable with concentrated flows.

DI PROTECTION TYPE 1

Purpose:

Storm drain inlet protection consists of a sediment filter or an impounding area in, around or upstream of a storm drain, drop inlet, or curb inlet. Storm drain inlet protection measures temporarily pond runoff before it enters the storm drain, allowing sediment to settle. Some filter configurations also remove sediment by filtering, but usually the ponding action results in the greatest sediment reduction. Temporary geotextile storm drain inserts attach underneath storm drain grates to capture and filter storm water.

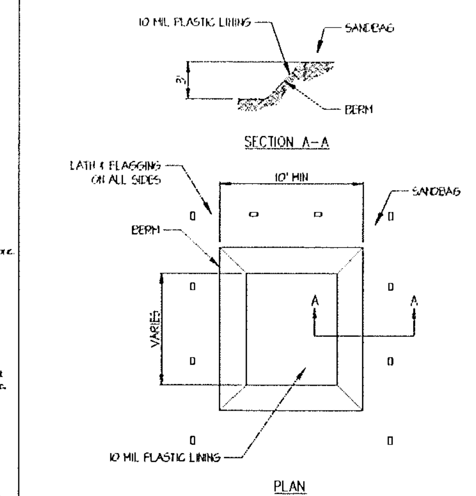
Application:

Every storm drain inlet receiving runoff from unstabilized or otherwise active work areas should be protected. Inlet protection should be used in conjunction with other erosion and sediment controls to prevent sediment-laden stormwater and non-stormwater discharges from entering the storm drain system.

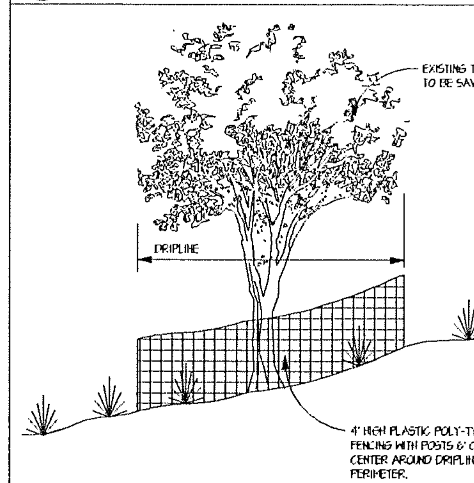
Inspection & Maintenance:

- *BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.*
- *Silt Fences. If the fabric becomes clogged, torn, or degrades, it should be replaced. Make sure the stakes are securely driven in the ground and are in good shape (i.e., not bent, cracked, or splintered, and are reasonably perpendicular to the ground). Replace damaged stakes. At a minimum, remove the sediment behind the fabric fence when accumulation reaches one-third the height of the fence or barrier height.*
- *Gravel Filters. If the gravel becomes clogged with sediment, it should be carefully removed from the inlet and either cleaned or replaced. Since cleaning gravel at a construction site may be difficult, consider using the sediment-laden stone as fill material and put fresh stone around the inlet. Inspect bags for holes, gashes, and snags, and replace bags as needed. Check gravel bags for proper arrangement and displacement.*
- *Sediment that accumulates in the BMP should be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the barrier height.*
- *Inspect and maintain temporary geotextile insert devices according to manufacturer's specifications.*
- *Remove storm drain inlet protection once the drainage area is stabilized.*
  - *Clean and regrade area around the inlet and clean the inside of the storm drain inlet, as it should be free of sediment and debris at the time of final inspection.*

(3) STORM DRAIN INLET PROTECTION
CASQA-BMP SE-10
SCALE: NO SCALE



(7) CONCRETE WASTE MANAGEMENT
PLAN/SECTION
SCALE: NO SCALE



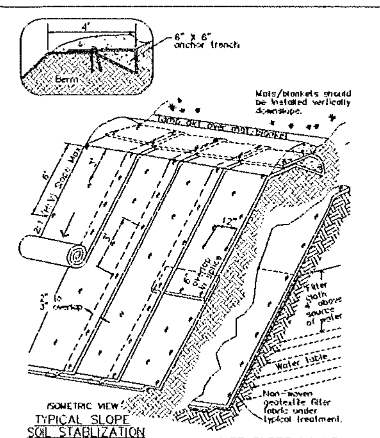
(8) TREE PROTECTION DETAIL
ELEVATION
SCALE: NO SCALE

URBAN RUNOFF POLLUTION NOTES

1. STABILIZE ALL DENUDED AREAS AND MAINTAIN EROSION CONTROL MEASURES CONTINUOUSLY BETWEEN OCTOBER 1 AND MAY 1. REMOVE OFF-HAUL MATERIALS PROMPTLY. STOCKPILED SOILS AND OTHER MATERIALS SHALL BE TARPED, AT THE REQUEST OF THE BUILDING DEPARTMENT OR PUBLIC WORKS.
2. STORE, HANDLE AND DISPOSE OF CONSTRUCTION MATERIALS AND WASTES SO AS TO PREVENT THEIR ENTRY TO THE STORM DRAIN SYSTEM. CONTRACTOR MUST NOT ALLOW CONCRETE, WASHWATERS, SLURRIES, PAINT OR OTHER MATERIALS TO ENTER CATCH BASINS, THE ONSITE STORM DRAIN SYSTEM, OR ONSITE OR OFFSITE SURFACE FLOW RUNOFF.
3. USE FILTRATION OR OTHER MEASURES TO REMOVE SEDIMENT FROM DEWATERING EFFLUENT.
4. NO CLEANING, FUELING OR MAINTAINING VEHICLES ON SITE SHALL BE PERMITTED IN ANY MANNER THAT ALLOWS DELETERIOUS MATERIALS FROM ENTERING CATCH BASINS OR TO ENTER SITE RUNOFF.
5. USE OF PESTICIDES AND/OR FERTILIZERS SHALL BE REDUCED AND SHALL BE CONTROLLED TO PREVENT POLLUTION RUNOFF.

EROSION & SEDIMENT CONTROL NOTES

1. EROSION, SEDIMENTATION AND POLLUTION CONTROLS SHALL BE PROVIDED IN ACCORDANCE WITH CASQA'S BEST MANAGEMENT PRACTICES, CURRENT EDITION AND WITH THE CA RWQCB'S EROSION AND SEDIMENT CONTROL FIELD MANUAL, CURRENT EDITION.
2. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO OCTOBER 15 AND SHALL BE MAINTAINED BY THE CONTRACTOR IN PROPER WORKING ORDER THROUGHOUT THE FIRST WINTER. THIS PROTECTION SHALL CONSIST OF APPROPRIATE FILTER FENCES, DIVERSION BERMS, STRAW BALE DIKES, ETC. THESE DEVICES SHALL BE PLACED IN ORDER TO MINIMIZE EROSION AND TO COLLECT SEDIMENT GENERATED BY THE CONSTRUCTION OF THIS PROJECT. EXCEPT FOR PAVED AND LANDSCAPED AREAS ALREADY COMPLETED, ALL GRADED AREAS SHALL BE HYDROSEEDED IN ORDER TO PREVENT EROSION OF BARE EARTH. THE CONTRACTOR IS RESPONSIBLE FOR EROSION & SEDIMENT CONTROL ALL YEAR LONG DURING ALL SITE WORK.
3. ALL BANKS AND ALL GRADED AREAS SHALL BE HYDROSEEDED TO CONTROL EROSION OR THE APPROVED GROUNDCOVER INSTALLED BY OCTOBER 15.
4. THE CONTRACTOR SHALL MAINTAIN A CLEAN SITE AT ALL TIMES WHICH IS FREE OF DEBRIS, HAZARDOUS WASTES, OR STOCKPILED MATERIAL UNLESS APPROVED BY THE PROJECT ENGINEER. ALL APPROVED STOCKPILES SHALL BE COVERED AND PROTECTED TO PREVENT STORM WATER POLLUTION.
5. STABILIZE ALL DENUDED AREAS AND MAINTAIN EROSION CONTROL MEASURES CONTINUOUSLY BETWEEN OCTOBER 1 AND APRIL 15.
6. REMOVE SPOILS PROMPTLY, AND AVOID STOCKPILING OF FILL MATERIALS WHEN RAIN IS FORECAST. IF RAIN THREATENS, STOCKPILED SOILS AND OTHER MATERIALS SHOULD BE TARPED, AT THE REQUEST OF THE CITY ENGINEER.
7. STORE, HANDLE AND DISPOSE OF CONSTRUCTION MATERIALS AND WASTES SO AS TO AVOID THEIR ENTRY TO THE STORM SYSTEM. CONTRACTOR MUST NOT ALLOW CONCRETE, WASHWATERS, SLURRIES, PAINT OR OTHER MATERIALS TO ENTER CATCH BASINS OR TO ENTER SITE RUNOFF.
8. USE FILTRATION OR OTHER MEASURES TO REMOVE SEDIMENT FROM DEWATERING EFFLUENT.
9. INSTALL FILTER FABRIC BAGS INSIDE ALL CATCH BASINS AND MAINTAIN DURING WINTER STORMS.
10. NO CLEANING, FUELING, OR MAINTAINING VEHICLES ON-SITE, EXCEPT IN AN AREA DESIGNED TO CONTAIN AND TREAT RUNOFF.
11. USE OF PESTICIDES AND/OR FERTILIZERS, WHEN APPLIED, SHALL BE CONTROLLED TO PREVENT POLLUTION RUNOFF.
12. ALL AREAS OF CUT, FILL AND UNGRADED AREAS DISTURBED BY THE GRADING OPERATION SHALL BE HYDROMULCHED OR AND APPROVED LANDSCAPING GROUNDCOVER PLANTED AFTER ALL WORK HAS BEEN COMPLETED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING LABOR AND MATERIAL TO ACCOMPLISH A DENSE PLANT COVER FOR EROSION CONTROL.
13. DEWATER BASEMENT AND EXCAVATIONS WITH TANK AND FILTRATION DEVICE PRIOR TO DISCHARGE INTO SD SYSTEM. PROVIDE EFFLUENT SAMPLES FOR TESTING HOURLY PER REGIONAL WATER STANDARDS.
14. PER THE FEDERAL AND STATE WATER QUALITY ACTS, THE OWNER IS SOLELY RESPONSIBLE FOR CONTROLLING CONSTRUCTION WATER DISCHARGE.
15. PROJECT IS SUBJECT TO THE REQUIREMENTS OF THE WINTER GRADING MORATORIUM AS PER THE CITY OF SAUSALITO ORDINANCES.



NOTES:

1. Slope surface shall be free of rocks, clods, sticks and grass. Mats/blankets shall have good soil contact.
2. Lay blankets loosely and stake or staple to maintain direct contact with the soil. Do not stretch.
3. Install per manufacturer's recommendations

TYPICAL INSTALLATION DETAIL

Purpose:

Mattings, or Rolled Erosion Control Products (RECPs), can be made of natural or synthetic materials or a combination of the two. RECPs are used to cover the soil surface to reduce erosion from rainfall impact, hold soil in place, and absorb and hold moisture near the soil surface. Additionally, RECPs may be used to stabilize soils until vegetation is established or to reinforce non-woody surface vegetation.

Application:

RECPs are typically applied on slopes where erosion hazard is high and vegetation will be slow to establish. Mattings are also used on stream banks, swales and other drainage channels where moving water at velocities between 3 ft/s and 6 ft/s are likely to cause scour and wash out new vegetation, and in areas where the soil surface is disturbed and where existing vegetation has been removed. RECPs may also be used when seeding cannot occur (e.g., late season construction and/or the arrival of an early rain season). RECPs should be considered when the soils are fine grained and potentially erosive. RECPs should be considered in the following situations.

- *Steep slopes, generally steeper than 3:1 (H:V)*
- *Slopes where the erosion potential is high*
- *Slopes and disturbed soils where mulch must be anchored*
- *Disturbed areas where plants are slow to develop*
- *Channels with flows exceeding 3.3 ft/s*
- *Channels to be vegetated*
- *Stockpiles*
- *Slopes adjacent to water bodies*

Installation:

Installation should be in accordance with the manufacturer's recommendations. In general, these will be as follows:

- *Begin at the top of the slope and anchor the blanket in a 6 in. deep by 6 in. wide trench. Backfill trench and tamp earth firmly.*
- *Unroll blanket down slope in the direction of water flow.*
- *Overlap the edges of adjacent parallel rolls 2 to 3 in. and staple every 3 ft (or greater, per manufacturer's specifications).*
- *When blankets must be spliced, place blankets end over end (shingle style) with 6 in. overlap. Staple through overlapped area, approximately 12 in. apart.*
- *Lay blankets loosely and maintain direct contact with the soil. Do not stretch.*
- *Staple blankets sufficiently to anchor blanket and maintain contact with the soil. Staples should be placed down the center and staggered with the staples placed along the edges. Steep slopes, 1:1 (H:V) to 2:1 (H:V), require a minimum of 2 staples/yds. Moderate slopes, 2:1 (H:V) to 3:1 (H:V), require a minimum of 1 ½ staples/yds. Check manufacturer's specifications to determine if a higher density staple pattern is required.*

Inspection & Maintenance:

- *RECPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.*
- *Areas where erosion is evident shall be repaired and BMPs reapplied as soon as possible. Care should be exercised to minimize the damage to protected areas while making repairs, as any area damaged will require reapplication of BMPs.*
- *If washout or breakage occurs, re-install the material after repairing the damage to the slope or channel.*
- *Make sure matting is uniformly in contact with the soil.*
- *Check that all the lap joints are secure.*
- *Check that staples are flush with the ground.*

(4) GEOTEXTILES & MATS
CASQA-BMP EC-7
PLAN
SCALE: NO SCALE

Implementation
Dust Control Practices

Dust control BMPs generally stabilize exposed surfaces and minimize activities that suspend or track dust particles. The following table presents dust control practices that can be applied to varying site conditions that could potentially cause dust. For heavily traveled and disturbed areas, wet suppression (watering), chemical dust suppression, gravel asphalt surfacing, temporary gravel construction entrances, equipment wash-out areas, and haul truck covers can be employed as dust control applications. Permanent or temporary vegetation and mulching can be employed for areas of occasional or no construction traffic. Preventive measures include minimizing surface areas to be disturbed, limiting onsite vehicle traffic to 15 mph or less, and controlling the number and activity of vehicles on a site at any given time.

[illegible]	Dust Control Practices							
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	x	x	x	x	x			x
[illegible]			x	x	x	x		x
[illegible]		x	x	x			x	x
[illegible]			x			x	x	
[illegible]			x	x				x
[illegible]			x	x	x	x	x	
[illegible]					x	x		

Chemical dust suppressants include: mulch and fiber based dust palliatives (e.g. paper mulch with gypsum binder), salts and brines (e.g. calcium chloride, magnesium chloride), non-petroleum based organics (e.g. vegetable oil, lignosulfonate), petroleum based organics (e.g. asphalt emulsion, dust oils, petroleum resins), synthetic polymers (e.g. polyvinyl acetate, vinyls, acrylic), clay additives (e.g. bentonite, montmorillonite) and electrochemical products (e.g. enzymes, ionic products).

Additional preventive measures include:

Schedule construction activities to minimize exposed area (see EC-1, Scheduling).

Quickly treat exposed soils using water, mulching, chemical dust suppressants, or stone/gravel layering.

Identify and stabilize key access points prior to commencement of construction.

Minimize the impact of dust by anticipating the direction of prevailing winds.

Restrict construction traffic to stabilized roadways within the project site, as practicable.

Water should be applied by means of pressure-type distributors or pipelines equipped with a spray system or hoses and nozzles that will ensure even distribution.

All distribution equipment should be equipped with a positive means of shutoff.

Unless water is applied by means of pipelines, at least one mobile unit should be available at all times to apply water or dust palliative to the project.

If reclaimed waste water is used, the sources and discharge must meet California Department of Health Services water reclamation criteria and the Regional Water Quality

(5) DUST CONTROL
CASQA-BMP WE-1
SCALE: NO SCALE

Revisions: △ REVISED IN RESPONSE TO REVIEW LETTER DATED 01.14.20 | Date: 4/30/20 | By: V.I.

Sheet Title: EROSION CONTROL & CONSTR. MNGM. DETAILS

Project: SINGLE FAMILY RESIDENCE

Address: CANYON ROAD, TOWN OF FAIRFAX, CA 94 - APN: 03-032-16

Plans Prepared By: ViA Atelier, Inc.
Engineering Consultants
1620 Sir Francis Drake Blvd, Fairfax, CA 94930
Ph:(415) 774-6776 E:office@via-eng.com

REGISTERED PROFESSIONAL ENGINEER · VLAD G. IOZZI-CA · C 73861 · Exp. 6-30-21 · CIVIL · STATE OF CALIFORNIA

Job No: 1307.A

Date: 4.30.2020

Drawn by: V.I.

Sheet: C3.1

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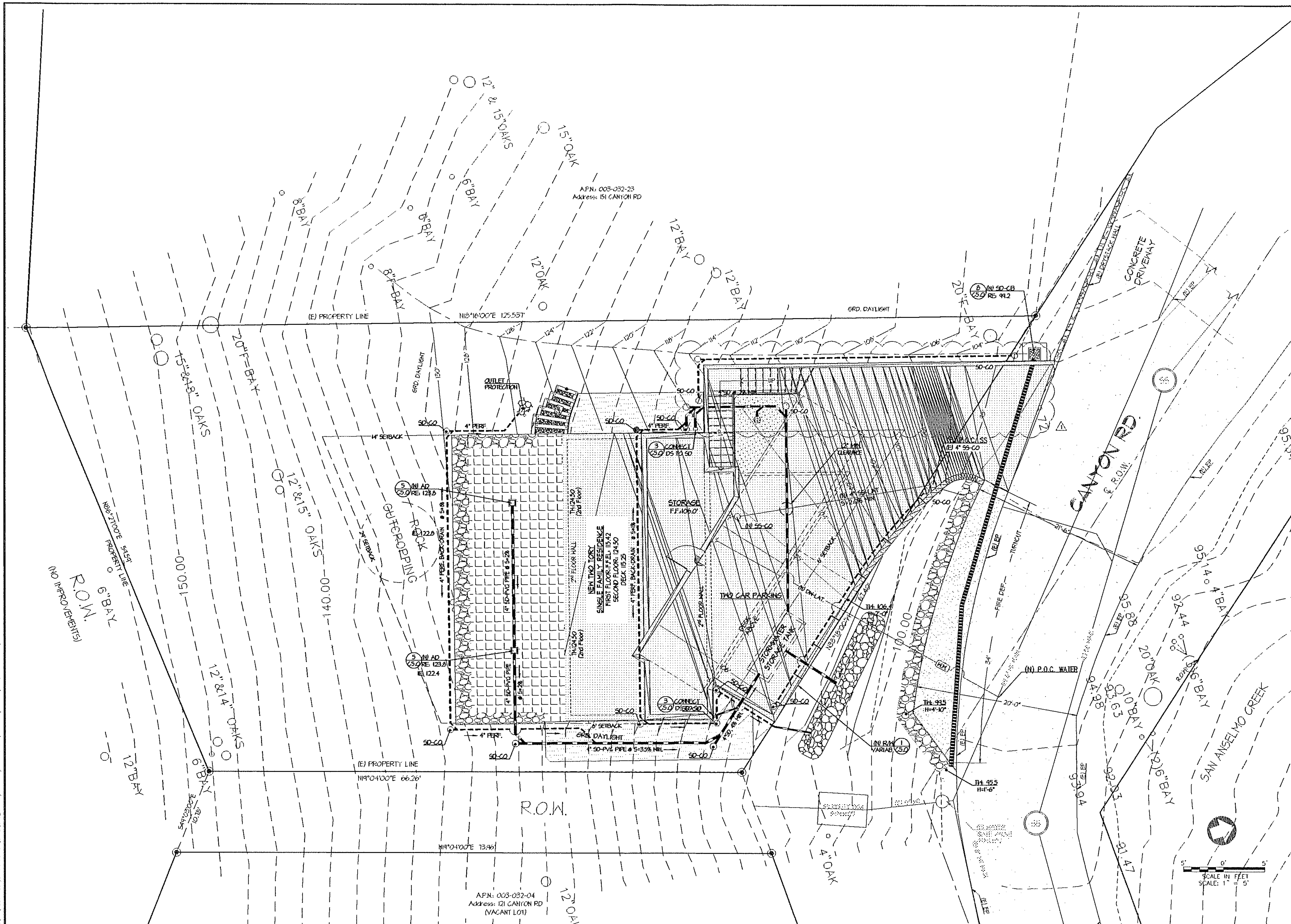

Sheet Title: CONCEPTUAL SITE UTILITY PLAN

Project: SINGLE FAMILY RESIDENCE

Address: CANYON ROAD, TOWN OF FAIRFAX, CA 94 - APN: 03-032-16

Revisions:	Date:	By:
1 REVISED IN RESPONSE TO REVIEW LETTER DATED 01.14.20	4/30/20	V.I.

REGISTERED PROFESSIONAL ENGINEER VLAD G. IOJICA C 73861 Exp. 6-30-21 CIVIL STATE OF CALIFORNIA

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Job No: 1307.A

Date: 4.30.2020

Drawn by: V.I.

Sheet: C4.0

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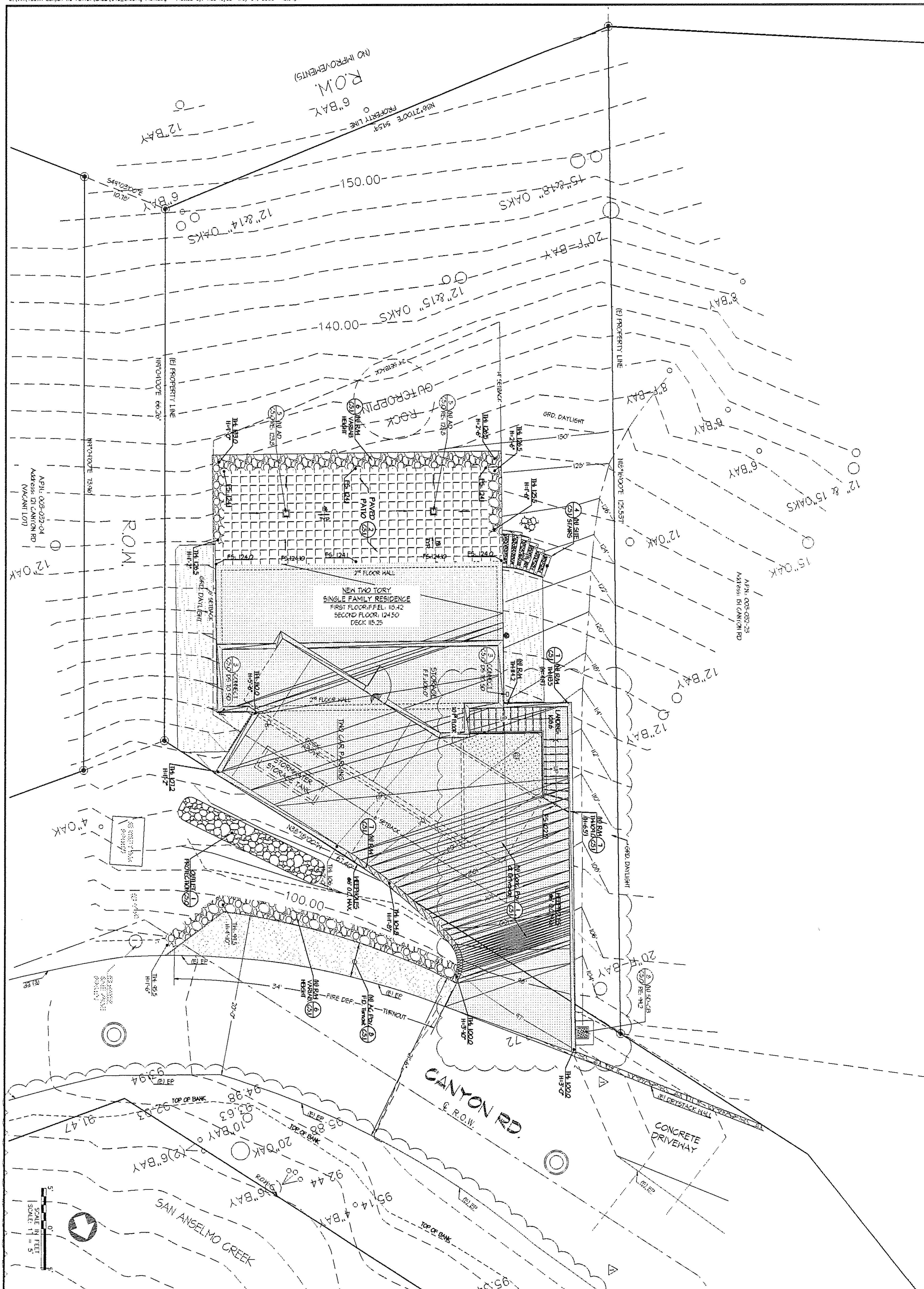

Sheet: **C4.1** 8 OF 11	Drawn by: V.I.	Date: 4.30.2020
Job No. 1307.A		

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REGISTERED PROFESSIONAL ENGINEER VLAD G. IOJICA C 73861 Exp. 6-30-21 CIVIL STATE OF CALIFORNIA

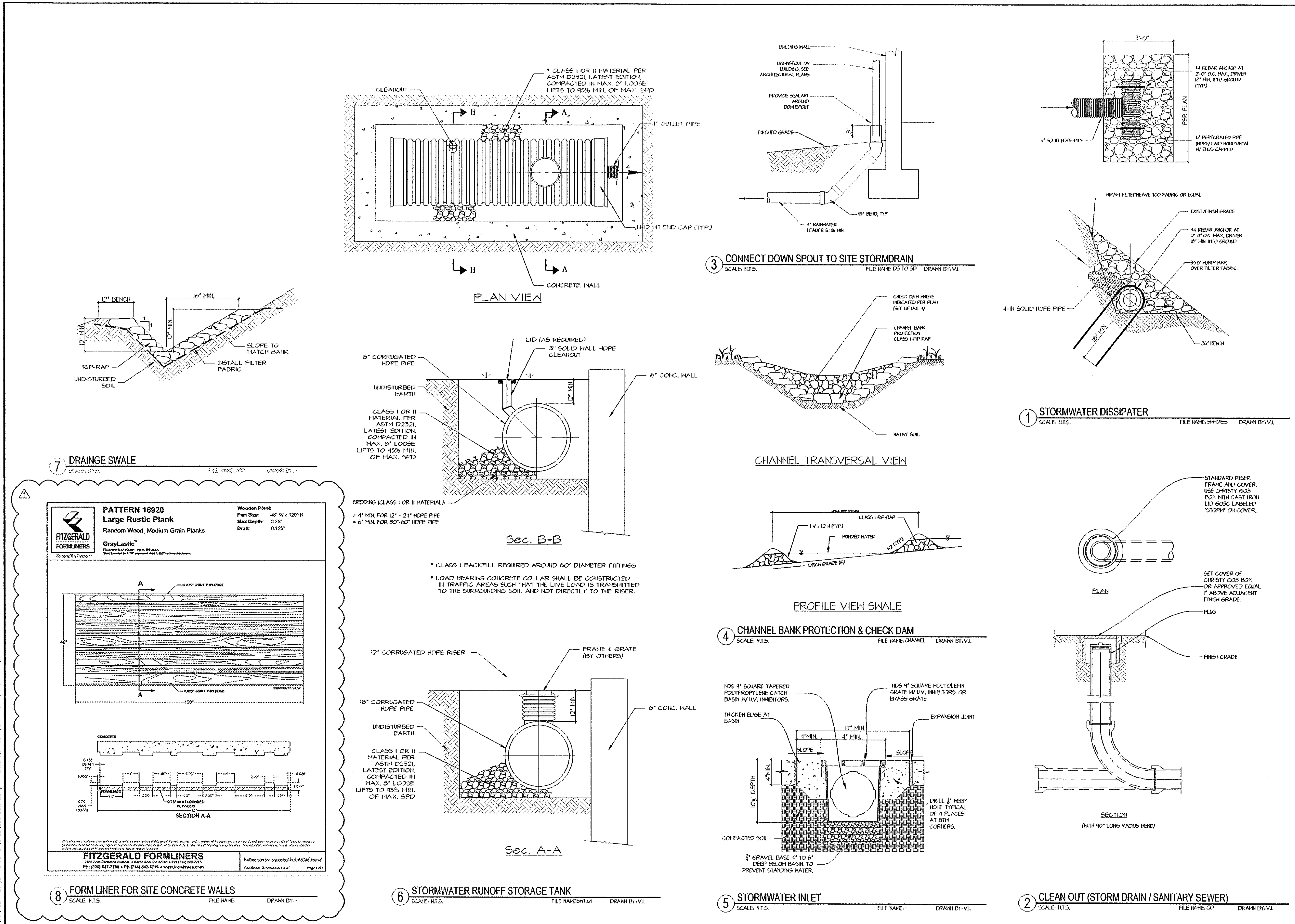
Sheet Title: CONCEPTUAL GRADING AND DRAINAGE PLAN

Project: SINGLE FAMILY RESIDENCE

Address: CANYON ROAD, TOWN OF FAIRFAX, CA 94 - APN: 03-032-16

Revisions:	Date:	By:
1 REVISED IN RESPONSE TO REVIEW LETTER DATED 01.14.20	4/30/20	V.I.

ViA Atelier


PLAN VIEW
CLEANOUT
* CLASS I OR II MATERIAL PER ASTM D2321, LATEST EDITION, COMPACTED IN MAX. 8" LOOSE LIFTS TO 95% MIN. OF MAX. SPD
4" OUTLET PIPE
N-12 HT END CAP (TYP.)
CONCRETE WALL
Sec. B-B
LID (AS REQUIRED)
3" SOLID WALL HDPE CLEANOUT
18" CORRUGATED HDPE PIPE
UNDISTURBED EARTH
CLASS I OR II MATERIAL PER ASTM D2321, LATEST EDITION, COMPACTED IN MAX. 8" LOOSE LIFTS TO 95% MIN. OF MAX. SPD
6" CONC. WALL
12" MIN.
BEDDING (CLASS I OR II MATERIAL):
= 4" MIN. FOR 12" - 24" HDPE PIPE
= 6" MIN. FOR 30"-60" HDPE PIPE
* CLASS I BACKFILL REQUIRED AROUND 60" DIAMETER FITTINGS
* LOAD BEARING CONCRETE COLLAR SHALL BE CONSTRUCTED IN TRAFFIC AREAS SUCH THAT THE LIVE LOAD IS TRANSMITTED TO THE SURROUNDING SOIL AND NOT DIRECTLY TO THE RISER.
Sec. A-A
12" CORRUGATED HDPE RISER
FRAME & GRATE (BY OTHERS)
18" CORRUGATED HDPE PIPE
6) STORMWATER RUNOFF STORAGE TANK
SCALE: N.T.S.
7) DRAINGE SWALE
12" BENCH
16" MIN.
12" MIN.
SLOPE TO MATCH BANK
INSTALL FILTER FABRIC
RIP-RAP
UNDISTURBED SOIL
PATTERN 16920
Large Rustic Plank
Random Wood, Medium Grain Planks
GrayLastic
FITZGERALD FORMLINERS
SECTION A-A
8) FORM LINER FOR SITE CONCRETE WALLS
SCALE: N.T.S.
FILE NAME:
DRAWN BY: -
3) CONNECT DOWN SPOUT TO SITE STORMDRAIN
SCALE: N.T.S.
FILE NAME DS TO SD
DRAWN BY: VJ.
BUILDING WALL
DOWNSPOUT ON BUILDING, SEE ARCHITECTURAL PLANS
PROVIDE SEALANT AROUND DOWNSPOUT
FINISHED GRADE
45° BEND, TYP
4" RAINWATER LEADER S=1% MIN.
CHECK DAM WHERE INDICATED PER PLAN (SEE DETAIL 4)
CHANNEL BANK PROTECTION CLASS I RIP-RAP
NATIVE SOIL
CHANNEL TRANSVERSAL VIEW
CLASS I RIP-RAP
PONDED WATER
DITCH GRADE
PROFILE VIEW SWALE
4) CHANNEL BANK PROTECTION & CHECK DAM
SCALE: N.T.S.
FILE NAME: CHANNEL
DRAWN BY: VJ.
NDS 4" SQUARE TAPERED POLYPROPYLENE CATCH BASIN W/ U.V. INHIBITORS.
NDS 4" SQUARE POLYOLEFIN GRATE W/ U.V. INHIBITORS, OR BRASS GRATE
THICKEN EDGE AT BASIN
EXPANSION JOINT
17" MIN.
4" MIN.
SLOPE
10 1/2" DEPTH
DRILL 3/8" WEEP HOLE TYPICAL OF 4 PLACES AT BTM CORNERS.
COMPACTED SOIL
3/4" GRAVEL BASE 4" TO 6" DEEP BELOW BASIN TO PREVENT STANDING WATER.
5) STORMWATER INLET
SCALE: N.T.S.
FILE NAME: -
DRAWN BY: VJ.
3'-0"
#4 REBAR ANCHOR AT 2'-0" O.C. MAX, DRIVEN 18" MIN. INTO GROUND (TYP)
PER PLAN
6" PERFORATED PIPE (HDPE) LAID HORIZONTAL W/ ENDS CAPPED
6" SOLID HDPE PIPE
MIRAFI FILTERWEAVE 100 FABRIC OR EQUAL
EXIST/FINISH GRADE
#4 REBAR ANCHOR AT 2'-0" O.C. MAX, DRIVEN 18" MIN. INTO GROUND
3"x6" RIP-RAP, OVER FILTER FABRIC
4-IN SOLID HDPE PIPE
30" BENCH
1) STORMWATER DISSIPATER
SCALE: N.T.S.
FILE NAME: SH-DISS
DRAWN BY: VJ.
STANDARD RISER FRAME AND COVER. USE CHRISTY G05 BOX WITH CAST IRON LID G05C LABELED "STORM" ON COVER.
PLAN
SET COVER OF CHRISTY G05 BOX OR APPROVED EQUAL 1" ABOVE ADJACENT FINISH GRADE.
PLUG
FINISH GRADE
SECTION
(WITH 90° LONG RADIUS BEND)
2) CLEAN OUT (STORM DRAIN / SANITARY SEWER)
SCALE: N.T.S.
FILE NAME: CO
DRAWN BY: VJ.

ViA Atelier

Revisions:
⚠ REVISED IN RESPONSE TO REVIEW LETTER DATED 01.14.20 — Date: 4/30/20 — By: VJ

Sheet Title: DETAILS

Project: SINGLE FAMILY RESIDENCE

Address: CANYON ROAD, TOWN OF FAIRFAX, CA 94 - APN: 03-032-16

REGISTERED PROFESSIONAL ENGINEER — VLAD G. IULIAN — C 73861 — Exp. 6-30-21 — CIVIL — STATE OF CALIFORNIA

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Job No: 1307.A

Date: 4.30.2020

Drawn by: VJ.

Sheet: C5.0

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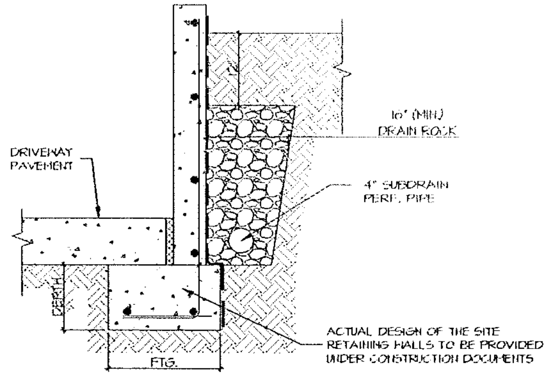
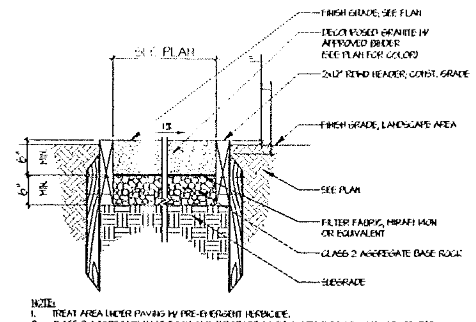
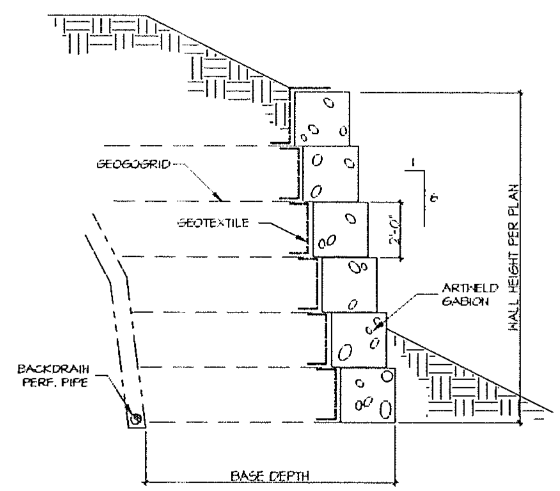


7 BACKDRAIN AT SITE RETAINING
SCALE: N.T.S. FILE NAME: - DRAWN BY: V.J.

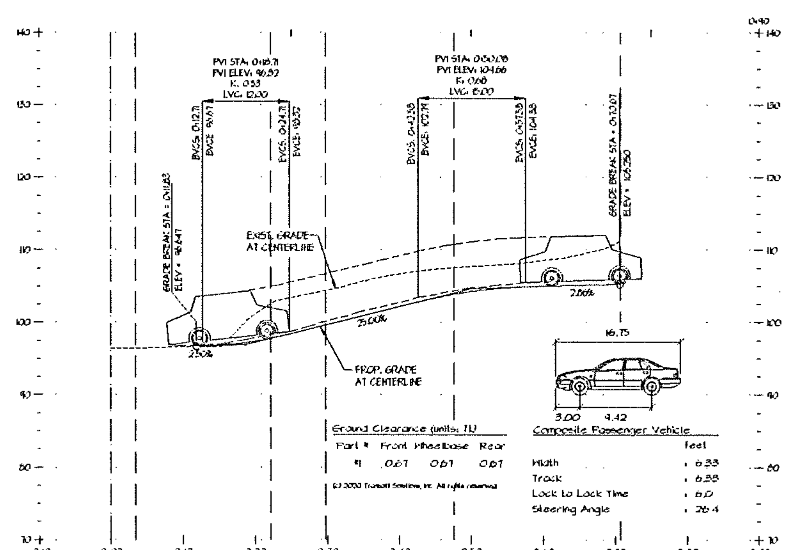


NOTE:
1. TREAT AREA UNDER PAVING W/ PRE-EMERGENT HERBICIDE.
2. CLASS 2 AGGREGATE BASE ROCK AND SUBGRADE TO BE COMPACTED TO A MIN. OF 95% PER ASTM TEST D1557 AND FIELD TESTED BY THE GEOTECHNICAL ENGINEER.

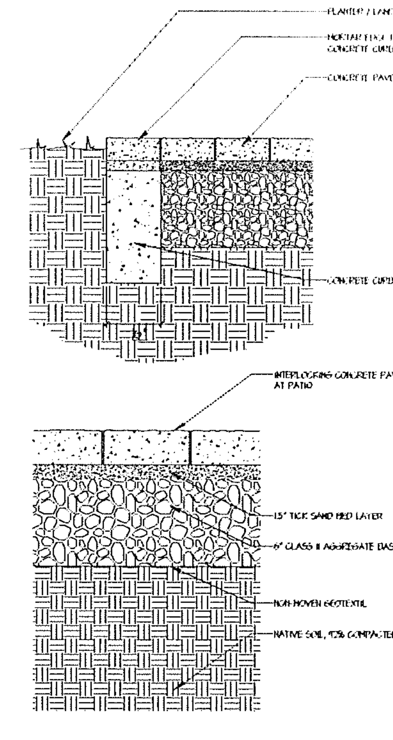
5 DECOMPOSED GRANITE WALKWAY
SCALE: N.T.S. FILE NAME: PAV. DG.01 DRAWN BY: V.J.



6 GABION RETAINING WALL
SCALE: N.T.S. FILE NAME: RET.03 DRAWN BY: V.J.



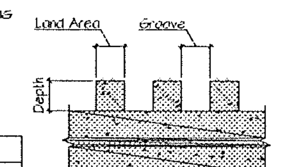
3 DRIVEWAY PROFILE ALONG THE CENTERLINE
scale: 1" = 5' (Vert & Horz.) FILE NAME: - DRAWN BY: V.J.



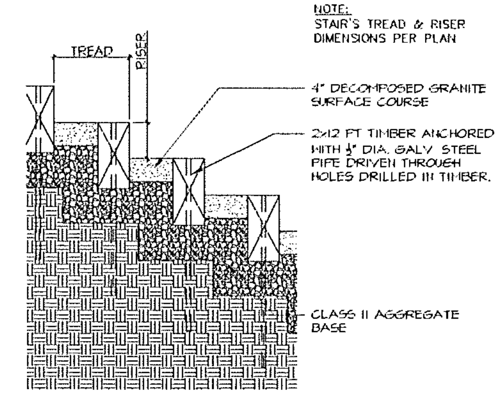
2 PERMEABLE PAVEMENT AT PATIO
SCALE: N.T.S. FILE NAME: PAV.08 DRAWN BY: V.J.

NOTE:
TO IMPROVE THE TRACTION FOR THE WHEELS OF THE VEHICLE ACCESSING THE DRIVEWAY, A DIAMOND GROOVING TREATMENT WILL BE APPLIED TO THE SURFACE ON THE DIRECTION PERPENDICULAR TO THE CENTERLINE OF THE DRIVEWAY, WHERE GRADES OF THE PAVEMENT EXCEED 15%

Parameter	Value
Groove	0.08-0.12 in
Depth	0.06-0.08 in
Number of Grooves	55 to 60 / LF



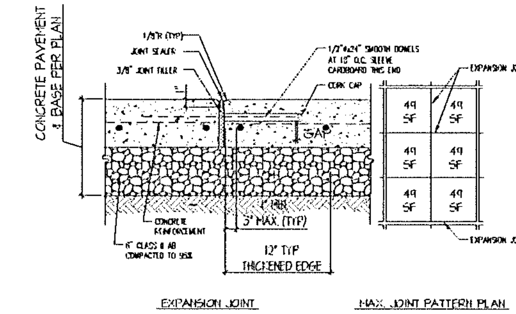
3 RIBBED/GROOVED CONCRETE SURFACE
SCALE: N.T.S. FILE NAME: RIBB.CONC. DRAWN BY: THE MASTER

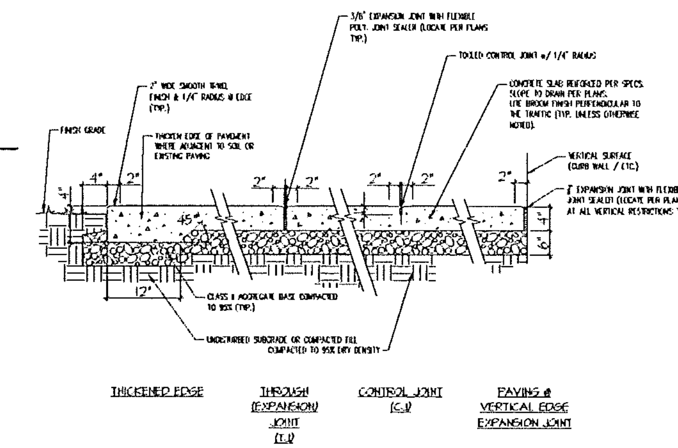


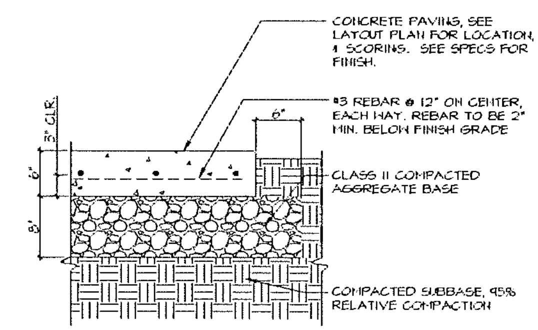
4 SITE STAIRS
SCALE: N.T.S. FILE NAME: STAIR.12 DRAWN BY: V.J.

NOTES:
1. AT CONTRACTOR'S OPTION USE EITHER TROWELED ROUND EDGE OR PLASTIC STRIP CONTROL JOINTS.
2. CONTROL JOINTS SHALL BE TROWELED ROUND EDGES. SEE DRAWING BY OTHERS FOR SPECIFIC PATTERN. PROVIDE A JOINT AT 7'-0" O.C. MAX. NON.

CONTROL JOINT







VEHICULAR CONCRETE PAVEMENT SECTION
(ACCESSIBLE PARKING STALL & WALKWAY)

1 CONCRETE PAVEMENT FOR VEHICULAR USE
SCALE: N.T.S. FILE NAME: CONC. PAV. DRAWN BY: V.J.

ViA Atelier

Revisions: 1 REVISED IN RESPONSE TO REVIEW LETTER DATED 01.14.20 | Date: 4/30/20 | By: V.J.

Sheet Title: DETAILS

Project: SINGLE FAMILY RESIDENCE

Address: CANYON ROAD, TOWN OF FAIRFAX, CA 94 - APN: 03-032-16

REGISTERED PROFESSIONAL ENGINEER VLAD G. IOVLEV C 73861 Exp. 6-30-21 CIVIL STATE OF CALIFORNIA

Plans Prepared By:
ViA Atelier, Inc.
Engineering Consultants
1620 Sir Francis Drake Blvd, Fairfax, CA 94930
Ph:(415) 774-6770 E:office@via-eng.com

Date:

Job No: 1307.A

Date: 4.30.2020

Drawn by: V.J.

Sheet: C5.0

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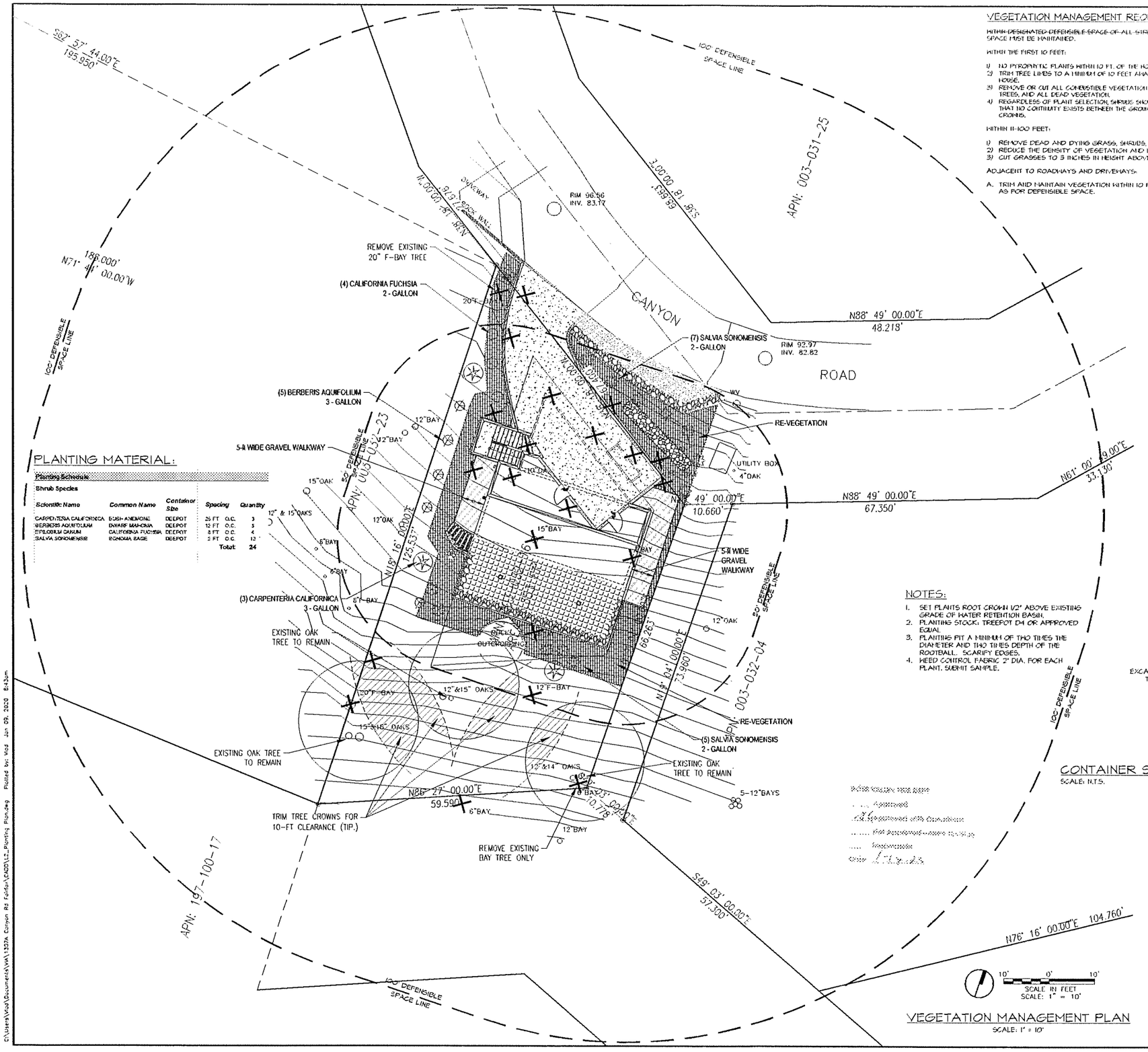


VEGETATION MANAGEMENT REQUIREMENTS:

~~WITHIN DESIGNATED DEFENSIBLE SPACE OF ALL STRUCTURES DEFENSIBLE SPACE MUST BE MAINTAINED.~~

WITHIN THE FIRST 10 FEET:

1) NO PYROPHYTIC PLANTS WITHIN 10 FT. OF THE HOUSE.
2) TRIM TREE LIMBS TO A MINIMUM OF 10 FEET AWAY FROM THE ROOF OF HOUSE.
3) REMOVE OR CUT ALL COMBUSTIBLE VEGETATION SUCH AS DEAD TREES, AND ALL DEAD VEGETATION.
4) REGARDLESS OF PLANT SELECTION, SHRUBS SHOULD BE SPACED SO THAT NO CONTINUITY EXISTS BETWEEN THE GROUND FUELS AND TREE CROWNS.

WITHIN 11-100 FEET:

1) REMOVE DEAD AND DYING GRASS, SHRUBS, AND TREES.
2) REDUCE THE DENSITY OF VEGETATION AND LADDER FUELS.
3) CUT GRASSES TO 3 INCHES IN HEIGHT ABOVE THE GROUND.

ADJACENT TO ROADWAYS AND DRIVEWAYS:

A. TRIM AND MAINTAIN VEGETATION WITHIN 10 FEET OF ROADWAYS AS FOR DEFENSIBLE SPACE.
B. TRIM TREES SO THEY DO NOT HANG LOWER THAN 15-FT. ABOVE THE ROADWAY.

PLANT SPACING AND CROWN SEPARATION

A. REGARDLESS OF PLANT SELECTION, SHRUBS SHOULD BE SPACED SO THAT NO CONTINUITY EXISTS BETWEEN THE GROUND FUELS AND TREE CROWNS, SUCH THAT A GROUND FIRE WILL NOT EXTEND INTO THE TREE CANOPY.
B. TREES SHOULD BE PLANTED SUCH THAT WHEN MATURE, THEIR CROWNS WILL BE SEPARATED BY AT LEAST 10 FEET. ADD AN ADDITIONAL FIVE FEET FOR EVERY TEN (10%) PERCENT INCREASES IN SLOPE. EXISTING TREES THAT BE REQUIRED TO BE THINNED AND/OR REMOVED DEPENDING ON THEIR CONFIGURATION AND DISTANCE FROM THE STRUCTURE(S).
C. SEPARATE INDIVIDUAL SHRUB CROWNS BY AT LEAST TWO TIMES THE HEIGHT OR CLUMP SHRUBS INTO ISLANDS OF NO GREATER THAN 15-FT. DIAMETER. SEPARATE THE ISLANDS BY A DISTANCE OF NO LESS THAN TWO TIMES THE CANOPY HEIGHT.

NOTE:

ALL NEW SHRUBS & GRASSES WITHIN 30' OF HOUSE SHALL BE DRIP IRRIGATED WITH DRIP TYPE 1 OR 2, PER IRRIGATION PLAN

PLANTING MATERIAL:

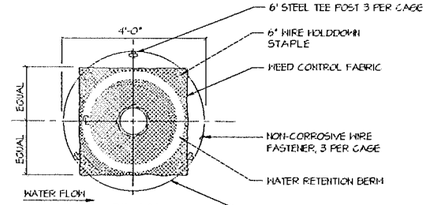
Planting Schedule

Shrub Species

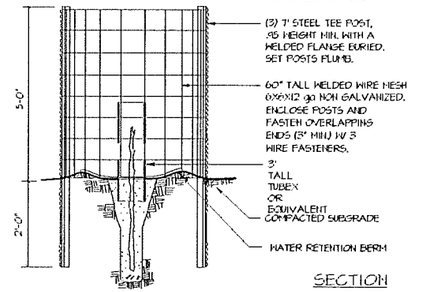
Scientific Name	Common Name	Container Size	Spacing	Quantity
CARPENTERIA CALIFORNICA	BUSH ANEMONE	DEEPOT	25 FT O.C.	3
BERBERIS AQUIFOLIUM	DWARF MAHONIA	DEEPOT	12 FT O.C.	5
EPILOBIUM CANUM	CALIFORNIA FUCHSIA	DEEPOT	8 FT O.C.	4
SALVIA SONOMENSIS	SONOMA SAGE	DEEPOT	2 FT O.C.	12
			Total:	24

NOTES:

1. SET PLANTS ROOT CROWN 1/2" ABOVE EXISTING GRADE OF WATER RETENTION BASIN.
2. PLANTING STOCK: TREEPOT DM OR APPROVED EQUAL
3. PLANTING PIT A MINIMUM OF TWO TIMES THE DIAMETER AND TWO TIMES DEPTH OF THE ROOTBALL. SCARIFY EDGES.
4. WEED CONTROL FABRIC 2" DIA. FOR EACH PLANT. SUBMIT SAMPLE.



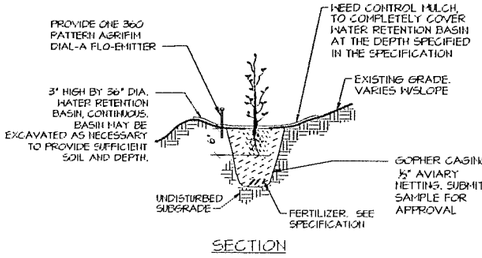
PLAN



SECTION

DEER GAGE

SCALE: N.T.S.



SECTION

CONTAINER STOCK PLANTING

SCALE: N.T.S.

VEGETATION MANAGEMENT PLAN

SCALE: 1" = 10'

RE-VEGETATION PLANTING NOTES:

1. PROVIDE EROSION CONTROL FOR AREA THAT HAVE BEEN DISTURBED DUE TO SITE DEVELOPMENT AND CONSTRUCTION. CONTRACTOR TO FOLLOW REQUIREMENTS OF BMP.
2. PROTECT IN PLACE EXISTING SHRUBS AND TREES UNLESS OTHERWISE NOTED ON PLANS.
3. RIPARIAN PLANTS AND UPLAND PLANTS TO BE PLANTED IN THE HATCHED AREAS AS SHOWN ON SHEET L-1.
4. THE LIMITS OF THE REVEGETATION AREAS SHOWN ARE APPROXIMATE. THE LOCATION OF THE LIMITS OF THE REVEGETATION AREA AND THE PLANTING AREAS AS SHOWN ON THESE PLANS SHALL BE LAID OUT AND MARKED BY THE CONTRACTOR. THE LANDSCAPE ARCHITECT WILL THEN DIRECT THE CONTRACTOR TO MAKE ADJUSTMENTS AS DEEMED NECESSARY PRIOR TO APPROVAL OF THE LAYOUT.
5. CONTRACTOR TO PROVIDE DRIP IRRIGATION TO EACH PLANT. SEE IRRIGATION PLANS FOR VALVE LOCATIONS
6. REVEGETATION AREA TO BE WEED FREE BEFORE PLANTING BEGINS. SEE REVEGETATION SPECIFICATIONS FOR WEED REMOVAL REQUIREMENTS.
7. REMOVE OR CUT ALL FRENCH BROOM WITHIN THE LIMITS OF CONSTRUCTION.

VIA Atelier

By	Date	Revisions

Sheet Title: VEGETATION MANAGEMENT & PLANTING PLAN

Project: SINGLE FAMILY RESIDENCE

Address: CANYON ROAD, TOWN OF FAIRFAX, CA 94 - APN: 05-052-16

REGISTERED LANDSCAPE ARCHITECT C 73561 Exp. 6-30-21 CIVIL STATE OF CALIFORNIA

Plans Prepared By:

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Engineering Consultants
1620 Sir Francis Drake Blvd. Fairfax, CA 94930
Phn(415) 754-6776 E-mail@via-eng.com

Date:

Job No: 1307.A

Date: 11.27.2019

Drawn by: V.I.

Sheet:

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