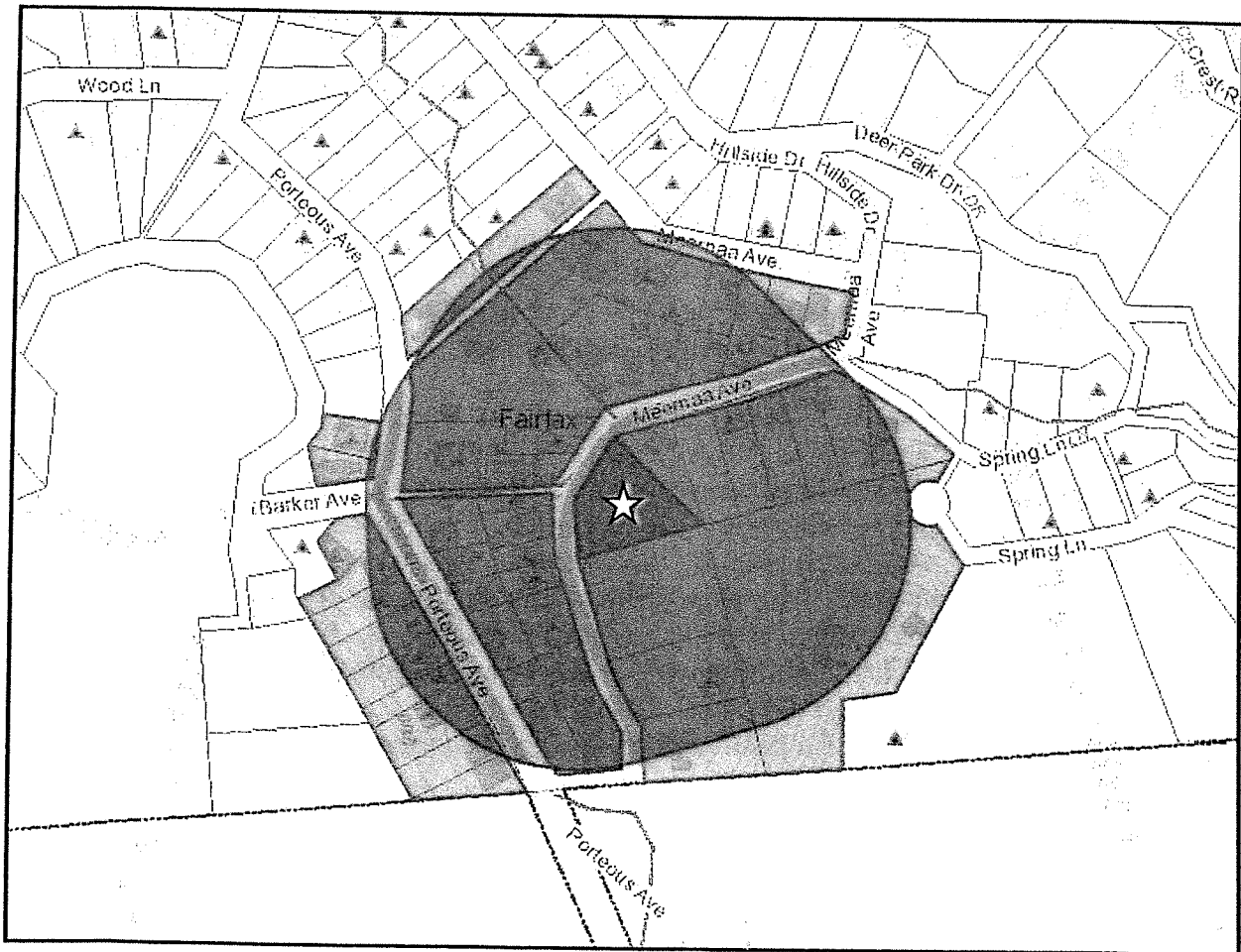


**TOWN OF FAIRFAX  
STAFF REPORT**  
Department of Planning and Building Services

**TO:** Fairfax Planning Commission  
**DATE:** April 16, 2020  
**FROM:** Kara Spencer, Assistant Planner  
**LOCATION:** 181 Meernaa Avenue; Assessor's Parcel No. 002-162-20  
**PROJECT:** Single-family residence addition and remodel  
**ACTION:** Conditional Use Permit and Excavation Permit; Application # 20-1  
**APPLICANT:** Stephen LaDyne, Architect  
**OWNERS:** Gerdes Family Trust  
**CEQA STATUS:** Categorically exempt, §15301(a) and (e)(1)



**181 MEERNAA AVENUE**

## **BACKGROUND**

The 17,121 square-foot site slopes up from Meerna Avenue at an average slope of approximately 34 percent and is triangular in shape. It is developed with a 1,455 square-foot, two-story, single-family dwelling originally constructed in 1924 that contains two bedrooms and two full bathrooms. A detached, 180 square-foot, one-car, legally non-conforming carport is located at the front of the property partially within the public right-of-way.

## **DISCUSSION**

The project proposes a 123 square-foot expansion and remodel of the 1,199 square-foot first floor of the existing single-family dwelling to create a 1,322 square foot primary residence. 260 square feet on the ground floor of the existing residence would be added to and converted to a 660 square-foot accessory dwelling unit (ADU). The ADU is exempt from Planning Commission review.

The residential addition would expand an existing bedroom. Interior remodeling would reconfigure the expanded bedroom and an adjacent bathroom to create a master bedroom with a full bathroom. In addition, a half bathroom and pantry would be created off the kitchen. The expanded and remodeled primary residence would be located above the proposed ADU.

A two-car carport is proposed under the ADU addition that would provide one required parking space for the ADU, as well as one additional space for primary residence. The second driveway approach is subject to approval of a variance from the Town Council. Parking space dimensions would be 19 feet by nine feet.

New concrete retaining walls, four feet or less in height, would be constructed along the property frontage and another would be constructed on the slope between the bedroom addition and ADU addition. An approximately 30 foot-long, five foot-high debris catchment wall consisting of steel piles and wood laggings is proposed on the slope behind the residence, extending towards the southern side property line from an existing wooden retaining wall. The debris catchment wall would protect the proposed addition from potential sloughing of the slope behind the house. A concrete V-ditch is proposed behind the debris catchment wall, and a new concrete diversion ditch is proposed further upslope. Approximately 154 cubic yards of excavation is required for the proposed improvements. All excavated soil would be hauled offsite.

Other proposed work to the primary residence includes rebuilding the existing concrete stairs in kind; reconfiguring the exterior stairs to the first floor; and the installation of new windows. Other ancillary improvements consist of a new electrical service drop, plus two meters, two new gas meters, and a new sewer lateral. No new exterior lighting is proposed.

Five California bay trees are proposed for removal. All the trees pose some sort of hazard due to either decay or their location within the defensible space of the home. Refer to attachments B1 and B2 for the Fairfax Tree Committee removal recommendation and arborist report.

The following table illustrates the project's compliance with the regulations of the RS-6 Single-family Residential Zone District where the property is located:

	Front Setback	Rear Setback	Combined Front/rear Setback	Side Setbacks	Combined Side Setbacks	FAR	Lot Coverage	Height
<b>Required/ Permitted</b>	6 feet	12 feet	35 feet	5 feet	20 feet	.40	.35	28.5 feet; 3 stories
<b>Existing</b>	0 feet	104 feet	104 feet	13' 15'-8"	28'-8"	.09	.11	18'-3"; 2 stories
<b>Proposed</b>	No change	No change	No change	13 feet 7 feet	20 feet	.12	.14	3 stories

### Required Discretionary Approvals

The project requires the approval of a Conditional Use Permit (CUP), an Excavation Permit, and Tree Removal Permit from the Planning Commission. The project also requires approval of a second driveway variance from the Town Council (per Town Code § 12.12.050. The ADU addition is exempt from any discretionary action per Fairfax Ordinance 844. Moreover, the project is exempt from the Hill Area Residential Development Permit because the proposed excavation is necessary to construct the parking required by the ADU addition and not for any aspects of the project that require discretionary approval from the Town.

The project does not constitute a 50% remodel so it does not require the approval of a design review permit or a Hill Area Residential Development Permit, nor is it located within a ridgeline scenic corridor where it would require the approval of a ridgeline scenic corridor permit [Town Code §§ 17.020.030(A) and 17.060.030(A)(2)].

### Conditional Use Permit (CUP)

Town Code § 17.080.050(C) requires a property in the RS-6 Single-family Residential Zone District with an average slope of 34 percent to be 26,000 square-feet in size. Any improvement of a property failing to meet the minimum site requirements requires a Conditional Use Permit (CUP). The project site is 17,121 square feet in size. Therefore, the project requires the approval of a CUP by the Planning Commission.

The purpose of the CUP is, "to allow the proper integration into Fairfax of uses which may be suitable only in certain locations in the town or in a zone or only if the uses are designed or laid out on the site in a particular manner" [Town Code §17.032.010(A)]. The code goes on to indicate that, "In consideration of an application for a conditional

use, the Planning Commission shall give due regard to the nature and condition of all adjacent uses and structures, to the physical environs of the proposed use and to all pertinent aspects of the public health, safety and general welfare” [Town Code §17.032.010(B)].

In order to approve a CUP for the project, the Commission must make the following findings (Town Code Section 17.032.060): (1) granting of the approval would not constitute a “special privilege” nor contravene the doctrines of equity and equal treatment; (2) the project would not create a public nuisance, cause excessive or unreasonable detriment to adjoining properties or premises, or cause adverse physical or economic effects or create undue or excessive burdens in the use or enjoyment of the property; (3) approval of the project is in keeping with the objectives, goals or standards set forth in the Town of Fairfax General Plan; and, (4) approval of the project would result in equal or better development of the premises than would otherwise be the case and the approval is in the public interest and for the protection and enhancement of the community.

As stated above, the applicant requests to add 123 square feet to the first floor of an existing 1,455 square foot single-family dwelling to create a 1,322 square foot primary residence. The existing 256 square foot ground floor of the single-family dwelling would be converted to a 660 square foot ADU. Total habitable area on the property would be 1,982 square feet and the floor area ratio (FAR) would increase from .09 to .12

The table below illustrates that single-family dwellings in the immediate neighborhood range in size from 848 square feet to 2,302 square feet (1,465 square feet on average) with an average floor area ratio of .24. As indicated in the table, the total square footage proposed primary residence at 181 Meernaa would be similar in size to most of the neighboring properties and the total living area of the property would have a FAR similar to 165/167 Meernaa and 157 Meernaa. In addition, as shown in the table, three other properties in the immediate neighborhood have two living units. Therefore, project implementation would result in 181 Meernaa maintaining a similar size and floor area ratio as other properties in the immediate neighborhood.

181 Meernaa Drive – Immediate Neighborhood Comparison						
APN #	ADDRESS	LOT SIZE	HOUSE SIZE	BEDROOMS	BATHS	Floor Area Ratio
002-162-21	187 Meernaa Ave	27,752 SF	2,302 SF	3	2	.08
002-162-08*	165/167 Meernaa Ave	6,279 SF	1,080 SF	2	2	.17
002-162-09	161 Meernaa Ave	7,650 SF	1,956 SF	3	2	.26
002-162-18	203 Meernaa Ave	15,522 SF	848 SF	1	2	.05
002-162-01	207 Meernaa Ave	17,304 SF	1,632 SF	2	1	.09
002-161-12	172 Meernaa Ave	6,490 SF	1,020 SF	2	1	.16
002-161-13	176 Meernaa Ave	5,635 SF	1,781 SF	3	2	.32
002-161-14	180 Meernaa Ave	2,376 SF	1,331 SF	2	2	.56
002-161-15	182 Meernaa Ave	4,800 SF	1,543 SF	3	2	.32
002-161-16*	186 Meernaa Ave	3,080 SF	1,560 SF	3	2	.51
002-162-10*	157 Meernaa Ave	7,695 SF	1,056 SF	2	2	.14

002-162-20	181 Meernaa Ave	17,121 SF	1,455 SF	2	2	.09
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\*Two living units on property

The proposed addition would not substantially expand the existing footprint of the single-family dwelling, nor would it encroach into the required setbacks. The lot coverage and floor area ratio would comply with the regulations set forth in the Residential Single-family RS-6 Zone District. The project would maintain the current height of the home at 18 feet, three inches, which is well below the maximum 28.5-foot height allowed in the RS-6 Zone District.

The project would maintain a similar size and floor area ratio as other properties in the immediate neighborhood; comply with the regulations set forth in the Residential Single-family RS-6 Zone District; remove hazardous bay trees; and construct new retaining walls to mitigate the risk from future sloughing. Therefore, the project would not create a public nuisance, or cause excessive or unreasonable detriment to adjoining properties or premises, and the project would result in better development of the site than would otherwise be the case. Therefore, staff recommends that the Planning Commission approve the CUP for the project.

The siding and windows would match the existing structure in materials and color. No new exterior lighting is proposed at this time and any future changes to the exterior lighting will have to comply with the following, which staff has included as a condition of the project approval:

An exterior lighting plan showing existing and proposed lighting locations and fixtures shall be submitted with the building permit application and any new external lighting shall use dark sky compliant fixtures and shall be approved by the Planning Director prior to issuance of the building permit. The plan shall limit light spillage beyond the areas necessary to light the entryways, travel paths, stairways, and parking lot and shall avoid direct offsite illumination.

### Excavation Permit

As stated previously, the project requires approximately 154 cubic yards of excavation. Pursuant to Town Code § 12.20.080(A) excavation of over 100 cubic yards requires the approval of the Planning Commission. Town Code § 12.20.080 (B) requires the Planning Commission to make certain findings before approving an Excavation Permit, including the following: the excavation will not adversely affect the health, welfare and safety of the public; adjacent properties are adequately protected from geologic hazards, drainage and erosion problems as a result of the work; the amount of excavation or fill is not more than is required to allow the property owner substantial use of his or her property; visual and scenic enjoyment of the area will not be adversely affected and natural landscaping will not be removed more than is necessary; and, construction will take place during the time of year that won't result in excessive siltation from storm runoff nor prolonged exposure of unstable excavated slopes.

New foundations for the addition and carport would be supported on either spread footings if situated in deep level cuts exposing bedrock, or drilled piers and grade beams if situated on or adjacent to sloping grades. Excavation shoring for the proposed carport would be addressed with a multi-step process to support the existing structure above and to meet OSHA requirements for excavation safety. An approximately 30 foot-long, five foot-high debris catchment wall is proposed in the area up slope of the proposed bedroom addition. The catchment wall would be a free-standing wall without backfill, designed to intercept any sloughing soil and rock before it hits the house. The wall would consist of steel I-beam posts set in ten-foot deep drilled piers spaced at six feet on center, lagged with 4x12 pressure treated planks (or with 6x12's spanning eight feet). In addition, a concrete drainage ditch is proposed behind the wall, as well as above the existing cut above, to divert runoff and further reduce hill stability risk.

The Town Engineers have reviewed the entire body of information provided by the applicant on the project, including the project engineering and architectural plans as well as the geotechnical response to comments (Attachments C1, C2, and C3). After completing their review and visiting the site, 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 the following conditions are met:

1. Detailed plans for temporary shoring, permanent retaining walls and associated improvements shall be reviewed and approved for building permits prior to issuance of an excavation permit.
2. A Grading and Drainage Plan shall be submitted at the building review level for the permanent improvements and be approved prior to issuance of an excavation permit.
3. Plans for temporary shoring and permanent improvements shall be reviewed and approved prior to issuance of an Excavation Permit.

The Town Engineer's review memoranda are included with this report as Attachments D1, D2, and D3.

The above conditions have been incorporated into the conditions of approval contained in the attached Resolution No. 2020-01.

#### Tree Removal Permit

As stated previously, five California bay trees are proposed for removal. All the trees pose some sort of hazard due to either decay or their location within the defensible space of the home. Chapter 8.36 of the Fairfax Municipal Code requires a tree removal permit for the removal of trees in Town. Section 8.36.030 requires that the Fairfax Tree Committee review all applications for tree removal and recommend approval or denial of the applications to the Planning Commission. The project applicant submitted a tree removal application, which was reviewed by the Fairfax Tree Committee, who

recommended removal of all five bay trees. Refer to attachments B1 and B2 for the Fairfax Tree Committee removal recommendation and arborist report.

### **Other Agency/Department Comments/Conditions**

#### **Ross Valley Fire Department (RVFD)**

The following summarizes RVFD requirements, which have been incorporated into conditions of approval in the attached resolution. Construction shall comply with the requirements of Chapter 7A of the 2019 California Building Code. A Class "A" roof assembly is required. All vegetation and construction materials are to be maintained away from the residence during construction. A fire sprinkler system shall be installed throughout the entire building. Smoke detectors shall be installed throughout the entire building and be provided with AC power and be interconnected for simultaneous alarm. Carbon monoxide alarms shall be provided outside each sleeping area in the immediate vicinity of the bedrooms. Address numbers at least 4 " tall are required and must visible from the street, controlled by a photocell and illuminated all night. A Vegetation Management Plan (VMP) is required for the project. RVFD approved the VMP for the project and the approved plan was submitted to the Town on February 13, 2020.

#### **Marin Municipal Water District (MMWD)**

Written requirements submitted by MMWD have been incorporated into conditions of approval in the attached resolution. The following summaries those comments. A water service application must be submitted to the District and a copy of the building permit must be provided to the District along with the required applications and fees. All indoor and outdoor requirements of District Code Title 13. Water Conservation must be complied with. Any landscaping plans must be reviewed and approved by the District. Backflow prevention requirements must be met. Comply with Ordinance No. 429 requiring the installation of grey water recycling system when practicable for existing structures undergoing a substantial remodel that necessitates enlarged water service. All the District's rules and regulations if effect at the time service is requested must be complied with.

#### **Ross Valley Sanitary District**

The project will require a connection permit from the District and a certificate of compliance for the lateral, the size of the sewer lateral will depend on the fixture count calculated during the permitting process. A sewer plan shall be prepared prior to the issuance of a building permit.

#### **Fairfax Police, Public Works and Building Departments**

The Fairfax Police, Public Works and Building Departments had no comments on or conditions for the project.

### **RECOMMENDATION**

1. Conduct the public hearing.
2. Move to approve application # 20-1 by adopting Resolution No. 2020-1 setting forth the findings and conditions for the project approval.

### **ATTACHMENTS**

Attachment A – Resolution No. 2020-1  
Attachment B1 – Fairfax Tree Committee Minutes  
Attachment B2 – Arborist Report  
Attachment C1 – Geotechnical Reconnaissance Report  
Attachment C2 – Preliminary retaining Wall and Shoring Schematics  
Attachment C3 – Conceptual Plan for Rear Debris Wall  
Attachment D1 – Town Engineer Comments 11-14-19  
Attachment D2 – Town Engineer Comments 1-7-20  
Attachment D3 – Town Engineer Comments 2-3-20  
Attachment E – Letters of support







**RESOLUTION NO. 2020-1**

**A Resolution of the Fairfax Planning Commission Approving Application No. 20-1  
for a Conditional Use Permit and Excavation Permit for a Minor Addition and  
Remodel at 181 Meernaa Avenue**

**WHEREAS**, the Town of Fairfax has received an application from the Gerdes Family Trust for a 123 square foot expansion and remodel of a 1,455 square-foot, two-story, single-family dwelling to create a 1,322 square foot primary residence with a separate 660 square foot Accessory Dwelling Unit (ADU) and two-car carport below on October 17, 2019; and

**WHEREAS**, the Planning Commission held a duly noticed Public Hearing on April 16, 2020 at which time all interested parties were given a full opportunity to be heard and to present evidence, and at which time the Planning Commission approved the Conditional Use Permit and Excavation Permit; 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 Project's requested discretionary Conditional Use Permit and Excavation Permit; and

**WHEREAS**, the Commission makes 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-7.2.3: Traffic and parking concerns related to new and renewed development shall be addressed in a manner that does not result in undue hardship or significant negative impacts on properties and infrastructure in the vicinity.

**Conditional Use Permit Findings**

1. The project complies with the required setback, floor area ratio, lot coverage, and height regulations of the RS-6 Zone and would result in a residence similar in size, scale, and character to the other residences in the Meernaa Avenue neighborhood where the project site is located. Consequently, approval of the Conditional Use Permit shall not constitute a grant of special privilege and shall not contravene the doctrines of equity and equal treatment if the conditions of approval that follow in this resolution are complied with.

2. The project complies with all the development standards of the RS-6 Zone. Therefore, the development and use of property as approved under the Conditional Use Permit shall 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 Conditional Use Permit.
3. Approval of the Conditional Use Permit is not contrary to those objectives, goals or standards pertinent to the particular case and contained or set forth in the 2010-2030 Fairfax General Plan and Title 17 of the Fairfax Town Code (Zoning Ordinance) or other plans or polies officially adopted by the Town.
4. Approval of the Conditional Use Permit will remove five hazardous bay trees, while maintaining the remainder of the site in its natural state requiring no significant excavation and/or removal of trees or vegetation and will provide the owners with additional living space that is not available on the remainder of the site with its 34% slope. Approval of the Conditional Use Permit will result in equal development of the premises than would otherwise be the case, and that said approval is in the public interest and for the protection or enhancement of the general health, safety or welfare of the community.

#### **Excavation Permit**

5. 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 LaDyne Design, pages AO, Survey 1, A1, A2.1, A2.2, A3.0 dated received 10/17/19, page A3.1 dated received 12/23/19, A3.2 dated received 1/21/20, A4.0 and A4.1 dated received 12/23/19, A5 and A6 dated received 1/21/20, and A7 dated received 12/23/19
  - b. Dave Olnes, P.E. (2019), "Geotechnical Reconnaissance Report, Proposed Residential Improvements, 181 Meernaa Avenue, Fairfax", dated October 11, 2019.
  - c. Dave Olnes, P.E. (2019), "Geotechnical Memorandum, Preliminary retaining Wall and Shoring Schematics, Proposed Residential Improvements, 181 Meernaa Avenue, Fairfax", dated December 17, 2019.
  - d. Ladyne Design (2019), "Revisions Response Letter, 181 Meernaa Ave, Fairfax, CA 94930", dated December 20, 2019.
  - e. Dave Olnes, P.E. (2019), "Conceptual Plan for Rear Debris Wall, 181 Meernaa Avenue, Fairfax", 2 pages, dated January 16, 2020.
6. Based on the Town Engineer's review and recommendation that the project can be safely constructed, the Planning Commission finds that:
  - a) The health safety and welfare of the public will not be adversely affected;

- b) Adjacent properties are adequately protected by project investigation and design from geologic hazards as a result of the work;
- c) Adjacent properties are adequately protected by project design from drainage and erosion problems as a result of the work;
- d) 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;
- e) The visual and scenic enjoyment of the area by others will not be adversely affected by the project more than is necessary;
- f) Natural landscaping will not be removed by the project more than is necessary; and
- g) Town code § 17.072.090(c)(4) prohibits grading of hillside properties from October 1<sup>st</sup> through April 1<sup>st</sup> 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.

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

- 7. The project is approved based on the following plans and reports:
  - a. Architectural plans by LaDyne Design, pages AO, Survey 1, A1, A2.1, A2.2, A3.0 dated received 10/17/19, page A3.1 dated received 12/23/19, A3.2 dated received 1/21/20, A4.0 and A4.1 dated received 12/23/19, A5 and A6 dated received 1/21/20, and A7 dated received 12/23/19
  - b. Dave Olnes, P.E. (2019), "Geotechnical Memorandum, Preliminary retaining Wall and Shoring Schematics, Proposed Residential Improvements, 181 Meernaa Avenue, Fairfax", dated December 17, 2019.
  - c. Dave Olnes, P.E. (2019), "Conceptual Plan for Rear Debris Wall, 181 Meernaa Avenue, Fairfax", 2 pages, dated January 16, 2020.
  - d. Vegetative Management Plan page A9, approved 2/12/20 by RVFD
- 8. An exterior lighting plan showing existing and proposed lighting locations and fixtures shall be submitted with the building permit application and any new external lighting shall be consistent with the architectural style of the house; use dark sky compliant fixtures that are directed downward; and, shall be approved by the Planning Director prior to issuance of the building permit. The plan shall limit light-spillage beyond the areas necessary to light the entryways, travel paths, stairways, and parking lot and shall avoid direct offsite illumination.

9. 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
  
17. 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).
  
18. 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.
  
19. 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.
  
20. 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.
  
21. 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.
  
22. During the construction process the following shall be required:
  - a. The geotechnical engineer shall be on-site during the grading process and shall submit written certification to Town Staff that the grading has been completed as recommended prior to installation of foundation and/or retaining forms and drainage improvements, and/or piers.
  
  - b. 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.
  
  - c. The Building Official shall field check the concrete forms prior to the pour.

- d. 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.
  - e. 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.
23. 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.
24. Excavation shall not occur between October 1st and April 1<sup>st</sup> of any year. The Town Engineer has the authority to waive this condition depending upon the weather.
25. The roadways shall be kept free of dust, gravel and other construction materials by sweeping them, daily, if necessary.
26. Any changes, modifications, additions or alterations made to the approved set of plans will require a modification of Application # 20-1. 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 20-1 will result in the job being immediately stopped and red tagged.
27. Any damages to the public portions of Meernaa Avenue, or other public roadway used to access the site resulting from construction-related activities shall be the responsibility of the property owner.
28. 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.

29. 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.
30. 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.
31. 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.
32. 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**

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



34. Project has been deemed a "substantial remodel" and as such requires installation of a fire sprinkler system that complies with the National Fire Protection Association regulation 13-D and local standards. The system will require a permit from the Fire Department and the submittal of plans and specifications for a system submitted by an individual or firm licensed to design and/or design-build sprinkler systems.
35. The property is located within the Wildland Urban Interface Area for Fairfax and the new construction must comply with Chapter 7A of the California Building Code or equivalent.
36. A Class A Roof Assembly is required.
37. All smoke detectors in the residence shall be provided with AC power and be interconnected for simultaneous alarm. Detectors shall be located in each sleeping room, outside of each sleeping room in a central location in the corridor and over the center of all stairways with a minimum of 1 detector on each story of the occupied portion of the residence.
38. Carbon monoxide alarms shall be provided in existing dwellings when a permit is required for alterations, repairs, or addition and the cost of the permit exceeds \$1,000.00. Carbon monoxide alarms shall be located outside of each sleeping area in the immediate vicinity of the bedrooms and on every level of the dwelling, including basements.
39. Address numbers at least 4 inches tall must be in place adjacent to the front door. If not clearly visible from the street, additional numbers must be placed in location that is visible from the street. The numbers must be internally illuminated or illuminated by and adjacent light controlled by a photocell that can be switched off only by a breaker so it will remain illuminated all night.
40. Alternative materials or methods may be proposed for any of the above conditions in accordance with Section 104.9 of the Fire Code.
41. All approved alternatives requests, and their supporting documentation, shall be included in the plan sets submitted for final approval by the Fire Department.
42. A Vegetative Management Plan designed in accordance with the Ross Valley Fire Standard # 220 is required to be approved prior to issuance of the building permit for the project. Ross Valley Fire District approved the Vegetative Management Plan on February 12, 2020.

**Marin Municipal Water District (MMWD)**

43. A copy of the building permit must be provided to the district along with the required applications and fees.

44. The foundation must be completed within 120 days of the date of application.
45. All indoor and outdoor requirements of District Code Title 13, Water Conservation must be complied with.
46. Any landscaping plans must be reviewed and approved by the District.
47. Backflow prevention requirements must be met.
48. Ordinance 429, requiring installation of grey water recycling system when practicable, must be incorporated into the project building permit plans or an exemption letter from the District must be provided to the Town.
49. All of the District's rules and regulations in effect at the time service is requested must be complied with.

#### **Ross Valley Sanitary District (RVSD)**

50. The project will require a connection permit from the District.
51. The size of the sewer lateral will depend on the fixture count calculated during the permitting process.
52. If the lateral meets the size requirement of the fixture count, the applicant has the option of installing a new lateral or, the old sewer lateral must be tested in the presence of a District Inspector and found to meet all current District Requirements.
53. A sewer plan shall be prepared prior to the issuance of a building permit.

#### **Town Engineer Conditions**

54. Detailed plans for temporary shoring, permanent retaining walls and associated improvements shall be designed by a structural engineer certified as such in the state of California. Plans shall be stamped and signed by the structural engineer and shall be reviewed and approved for building permits prior to issuance of an excavation permit by the Town Engineer.
55. A Grading and Drainage Plan shall be submitted at the building review level for the permanent improvements and be approved by the Town Engineer prior to issuance of an excavation permit.
56. Plans for temporary shoring and permanent improvements shall be reviewed and approved by the Town Engineer prior to issuance of an Excavation Permit.

**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 April 2020 by the following vote:

AYES:

NOES:

ABSTAIN:

\_\_\_\_\_  
Chair, Green

Attest:

\_\_\_\_\_  
Ben Berto, Director of Planning and Building Services







**TOWN OF FAIRFAX  
TREE COMMITTEE  
MINUTES OF THE MEETING  
February 24, 2020**

**\*\*\*DRAFT\*\*\***

**CALL TO ORDER/ROLL CALL**

Jane Richardson-Mack called the meeting to order at 7:00 p.m.  
The following Committee members were present: Deborah Benson, Kathy Flores, Ted Pugh, Jane Richardson-Mack, John Romaidis.

**AGENDA ITEMS**

- I. The Committee unanimously voted to approve the Tree Committee Meeting Minutes from January 27, 2020

Vote:

Benson- Aye

Flores- Aye

Pugh- Aye

Richardson-Mack- Aye

Romaidis- Aye

Vote: Ayes- 5, Noes- 0

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- II. Ross Valley Fire (RVF) Chief Jason Weber spoke to the Committee about Vegetative Management Program (VMP) requirements. Chief Weber indicated that VMP review is under RVF jurisdiction and that the fire department reviews plans as submitted for conformance with defensible space requirements. He also indicated that there are forthcoming guidelines and standards that should clarify defensible space requirements. Chief Weber spoke about the benefit of having the Town, Tree committee, and Fire Department enter into discussions about each departments separate requirements as it pertains to tree alterations and removal. The idea of a Tree Sub-committee was discussed. Rob and Scott, members of RVF, discussed space requirements for interruption of crown-to-crown fires between trees.

Town Manager Garrett Toy led a brief discussion about the Committees obligations under the Brown Act. Garrett clarified when and how the Committee may discuss agenda and non-agenda items as well as how the Committee may add items to the agenda. A single member may request an item be added to an agenda by directly addressing the Town or, the Committee could discuss future agenda items during Committee time and then submit a request to the Town.

**TOWN OF FAIRFAX  
TREE COMMITTEE**

**\*\*\*DRAFT\*\*\***

**MINUTES OF THE MEETING**

**February 24, 2020**

**III. New Business items:**

1. 189 Cascade Dr.  
Applicant not present.

Romaidis made a motion to approve the application with the condition that the applicant consider planting a replacement tree. The motion was seconded by Pugh and voted on.

Vote:

Benson- Aye

Flores- Aye

Pugh- Aye

Richardson-Mack- Aye

Romaidis- Aye

Item #1 Vote: Ayes- 5, Noes- 0

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2. 7 Olema Rd.  
Applicant not present.

Romaidis made a motion to deny the application based on not having access to the premises for an inspection per § 8.36.050 (B). The motion was seconded by Pugh and voted on.

Vote:

Benson- Aye

Flores- Aye

Pugh- Aye

Richardson Mack- Aye

Romaidis- Aye

Item #2 Vote: Ayes- 5 Noes- 0

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**TOWN OF FAIRFAX  
TREE COMMITTEE  
MINUTES OF THE MEETING  
February 24, 2020**

**\*\*\*DRAFT\*\*\***

3. APN 002-174-05  
Applicant present.

Romaidis made a motion to recommend that the species of tree T-6 on the VMP be verified due to the fact that it appeared to be misidentified. The Committee would like the non-diseased trees that are outside of the 100 feet of defensible space that are identified to be removed be replaced at a minimum 1:1 ratio. A landscape plan was provided and it appeared to satisfy the Committees desire for replanting. Additionally, the Committee recommends that the replanting be done prior to issuance of a Certificate of Occupancy (C of O). The motion was seconded by Richardson Mack and voted on.

Vote:

Benson- Aye  
Flores- Aye  
Pugh-Aye  
Richardson Mack- Aye  
Romaidis- Aye

Item #3 Vote: Ayes- 5 Noes- 0

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4. 67 Canyon Rd.  
Applicant present

Richardson Mack made a motion to approve the application. The motion was seconded by Pugh and voted on.

Vote:

Benson- Aye  
Flores- Aye  
Pugh- Aye  
Richardson Mack- Aye  
Romaidis- Aye

Item #4 Vote: Ayes- 5, Noes- 0

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**TOWN OF FAIRFAX  
TREE COMMITTEE**

**\*\*\*DRAFT\*\*\***

**MINUTES OF THE MEETING**

**February 24, 2020**

5. 6 Spruce Rd.  
Applicant present.

Benson made a motion to continue this item to the next meeting so that the applicant could provide the Committee with an arborist report that addresses and evaluates the safety and root system of the tree. The motion was seconded by Richardson Mack and voted on.

Vote:

Benson- Aye

Flores- Aye

Pugh- Aye

Richardson Mack- Aye

Romaidis- Aye

Item #5 Vote: Ayes- 5, Noes- 0

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6. APN 003-032-16  
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

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TOWN OF FAIRFAX  
TREE COMMITTEE  
MINUTES OF THE MEETING  
February 24, 2020

\*\*\*DRAFT\*\*\*

7. 181 Meerna Ave  
Applicant present.

Benson made a motion to recommend that the project proceed per plan. No exceptions taken. The motion was seconded by Richardson Mack and voted on.

Vote:

Benson- Aye

Flores- Aye

Pugh- Aye

Richardson Mack- Aye

Romaidis- Aye

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Item #7 Vote: Ayes- 5, Noes- 0

- IV. No public comment.
- V. Open time:
1. Romaidis stated he could not continue recording and sending the meeting minutes as they are interfering with his job, no volunteers offered to record minutes for future meetings. There was a consensus that the other Committee members would turn in a rotation for recording the minutes.
  2. Benson and Richardson Mack volunteered to be members of the yet to be formed Sub-Committee for discussions with RVF.
- VI. No items discussed for future agenda

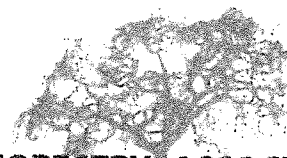






Client: Stephen LaDyne  
Project Location: 181 Meernaa Ave, Fairfax, CA  
Inspection Date: February 11, 2020  
Arborist: Ben Anderson

FEB 13 2020



## URBAN FORESTRY ASSOCIATES, INC.

### Assignment

Stephen LaDyne of LaDyne Design contacted Urban Forestry Associates to request a report on five (5) California bay (*Umbellularia californica*) trees around the home at 181 Meernaa Avenue. This report is to be submitted as part of a tree removal permit application to the Town of Fairfax.

### Observations

The subject property is located on a narrow street in the Wildland Urban Interface. The home is upslope from the road on a fairly steep lot. All five of the subject trees are located inside the defensible space zone of the existing home. The location of the subject trees can be seen in Figure 1 at the end of this report. The site is well-forested with mostly native oaks (*Quercus spp.*) and bays.

Tree 1 is a California bay with a trunk diameter of 25.2 inches. This tree was not initially in the scope of the assessment, but it is the first tree I encountered when I entered the site and was in such poor condition, I recommended it be included in my assessment. It appears the tree was topped at six feet above grade many years ago and sprouted several codominant leaders<sup>1</sup> from this old cut. One of these leaders subsequently failed or was removed many years ago and the wound is now severely decayed (Figure 3). The main trunk of the tree below the wound is also extremely decayed and hollow (Figure 2). I was able to insert a full-sized clip board into the large crack in the lower trunk. A necrotic<sup>2</sup> area of the main stem extends up from the large crack to the base of the tree. Utility lines are growing through the canopy of the tree. Stems from this tree target the service lines to the home, the entrance to the home, the garage, the road, and the utility lines in the street.

Tree 2 has three codominant trunks that arise from just above grade. These trunks measure 10.8, 9.8, & 8.5 in diameter. There is an opening to a decay cavity in the base of the tree (Figure 4). One stem targets the utility lines to the home, a second stem targets the home, and the third stem targets the garage.

Tree 3 measures 15.3, 15.2, 14.8, and 9.9 inches diameter. This is the largest of the trees in terms of canopy size. There is a large decay cavity in the common base of the four trunks from a past trunk removal/failure (Figure 5). Stems of this tree target the home, road, and utility lines.

Tree 4 is 10.3 inches in diameter and leans strongly downhill (Figure 6). The trunk rubs against one of the spars of Tree 3, creating a large wound on both trees.

Tree 5 has two codominant trunks that arise from grade. They measure 14.3 and 11.8 inches in diameter. The base of the tree is within a foot of the foundation of the home and the stems are in very close proximity to the eave (Figure 7).

### Discussion

FIRESafe MARIN lists California bay trees on its "Fire Prone Plants" list and recommends avoiding them in the

<sup>1</sup> **Codominant stem** - forked branches nearly the same size in diameter, arising from a common junction and lacking a normal branch union (ISA Dictionary Online).

<sup>2</sup> **Necrosis** - localized death of tissue in a living organism.

defensible space of a structure. FIRESafe MARIN also recommends having no combustibles within five feet of the perimeter of a home.

Wood decay reduces a tree's ability to carry load and increases the likelihood of failure. Most mature bay trees in Marin have some amount of decay in their base, most commonly Ganoderma (*Ganoderma applanatum* or *G. brownii*). While bay trees are sometimes able to stand with even a large amount of decay, failed bay trees are a common site on any walk through the woods and after storms.

### Conclusions

Tree 1 should be removed as the likelihood of failure within the next two years is probable<sup>3</sup> due to the advanced decay in the base. There is very little sound holding wood left in the trunk that has not been affected by the decay. Consequences of a failure could be severe and include fire ignition, severe property damage, and human injury. There is no reasonable way to mitigate the risk and maintain the health and aesthetics of the tree. This recommendation is not related to the proposed development of the site and is only motivated by the obvious danger posed by the tree. This tree qualifies as "heritage" per the Fairfax Municipal Code (Chapter 8 § 36).

Tree 2 is in the footprint of the proposed stairs and will need to be removed, but this tree is at an elevated likelihood of failure due to the decay in the base and is in violation of defensible space recommendation for both the home and the garage. It is located downslope of the home, between the home and the road. This is a crucial area for fire safety as wildfires are most likely to ignite close to roads and structures. This location is also crucial for Fire Department access to defend the home in the event of a fire and should be kept as fire safe as possible. This is not a heritage tree.

Tree 3 is in the footprint of the proposed deck and will need to be removed, but it too is at an elevated risk of failure from the extensively decayed base and would have severe consequences were it allowed to fail. This is not a heritage tree.

Tree 4 is in the footprint of the proposed addition and will need to be removed, but it too is at an elevated risk of failure from the large wound on the trunk from the contact with Tree 3. This is not a heritage tree.

Tree 5 is too close to the home foundation and should be removed regardless of the development project to protect the foundation of the home and mitigate fire risk. This is not a heritage tree.

If replacement trees are required, I recommend small understory plants like vine maple (*Acer circinatum*). It appears the portion of the lot not affected by the proposed work is already well-forested and additional plants could overcrowd the site.

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Benjamin Anderson, Urban Forester  
ISA Board Certified Master Arborist & TRAQ  
RCA #686, WE #10160B  
(415) 454-4212

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<sup>3</sup> Probable – failure may be expected under normal weather conditions within the specified time frame.



### **SCOPE OF WORK AND LIMITATIONS**

Urban Forestry Associates has no personal or monetary interest in the outcome of this investigation. All observations regarding trees in this report were made by UFA, independently, based on our education and experience. All determinations of health condition, structural condition, or hazard potential of a tree or trees at issue are based on our best professional judgment. The health and hazard assessments in this report are limited by the visual nature of the assessment. Defects may be obscured by soil, brush, vines, aerial foliage, branches, multiple trunks, other trees, etc. Even structurally sound, healthy trees can fail during severe storms. Consequently, even a low risk rating is not a guarantee of no risk, hazard, or sound health.



Figure 1. Map of tree locations. Indicated with blue dots and red numbers.

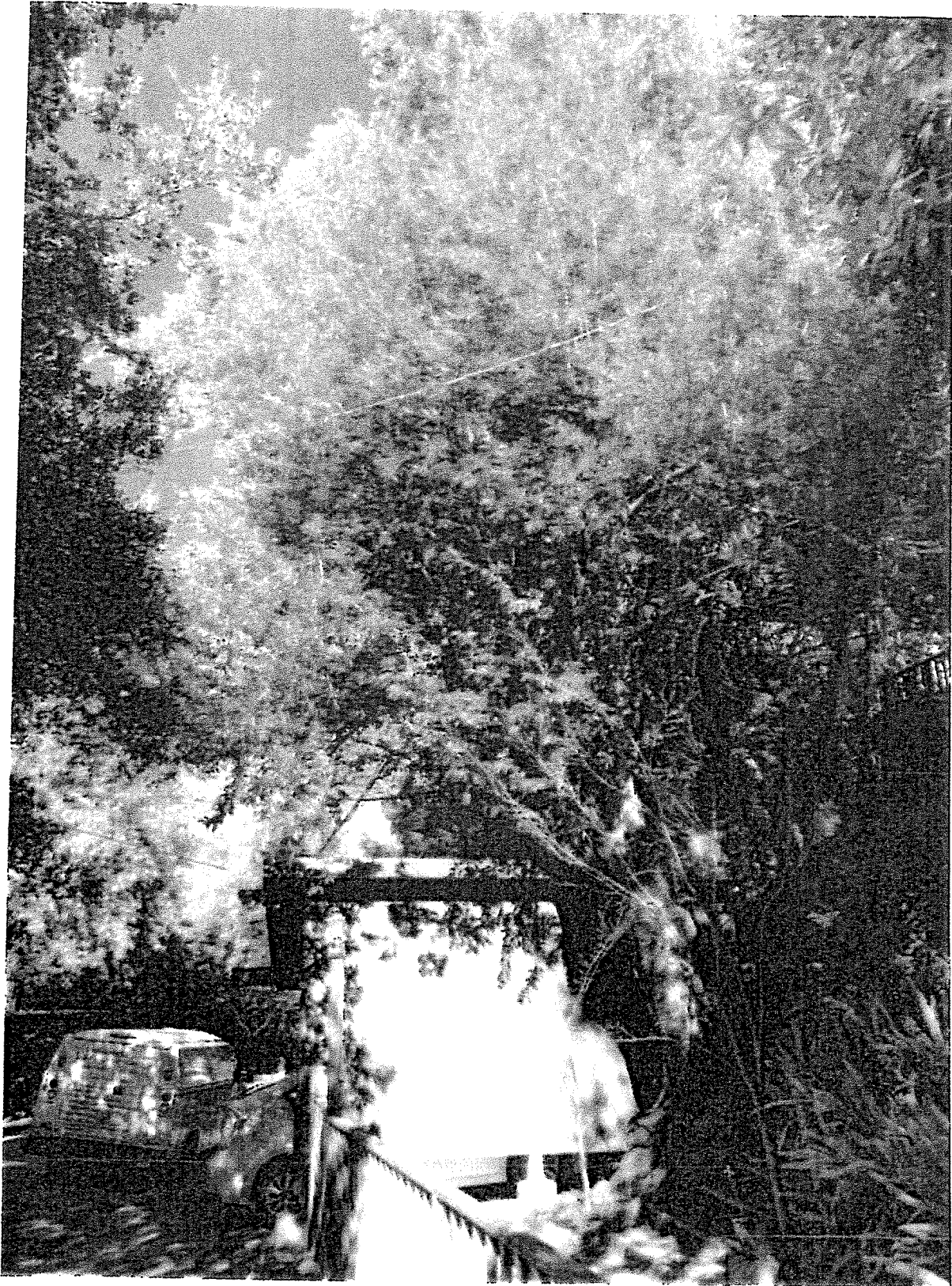


Figure 2. Tree 1 as viewed from the street.

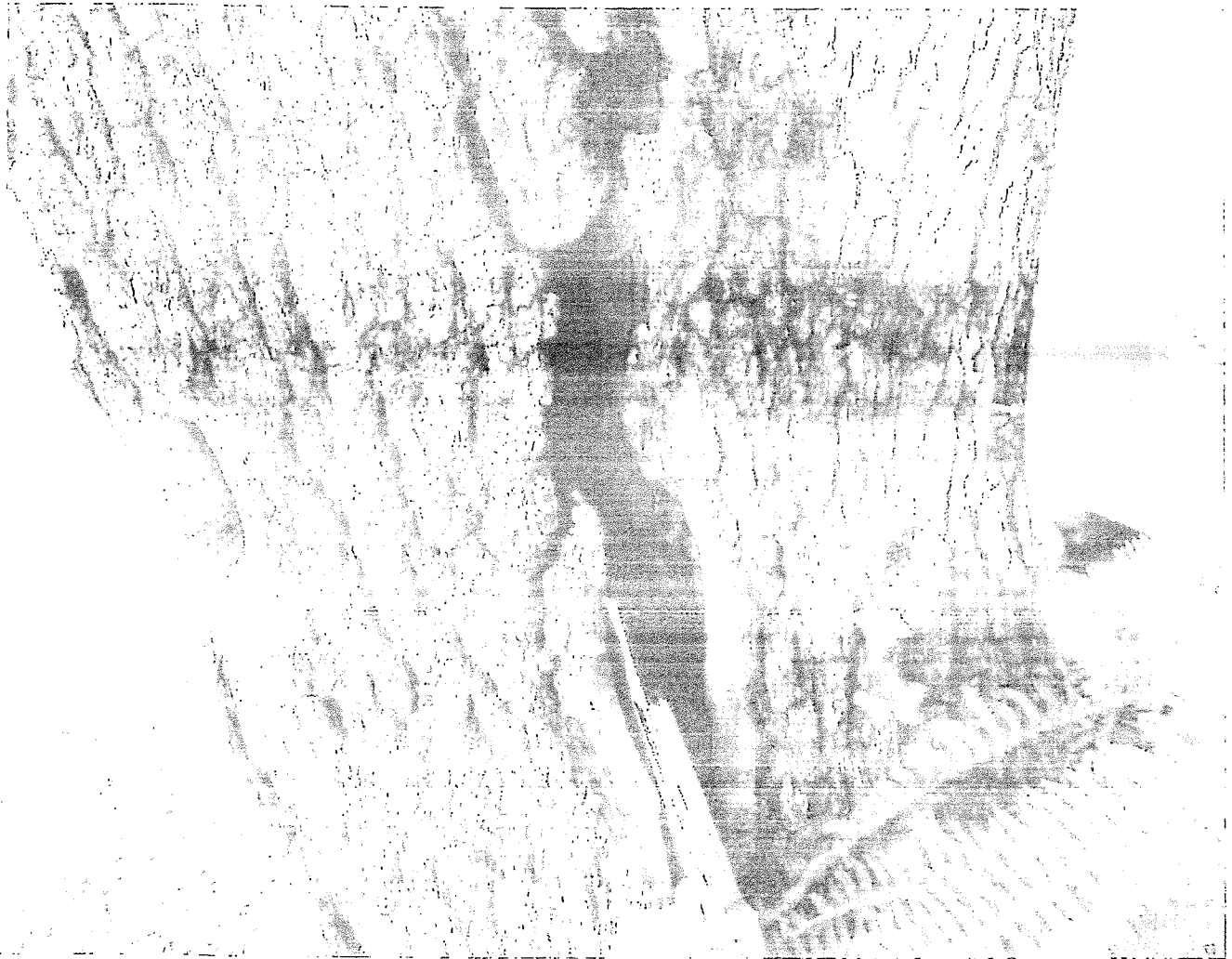


Figure 3. Clipboard inserted deep into the trunk of Tree 1.



Figure 4. Large decay cavity at the common attachment point of all the major spars in Tree 1

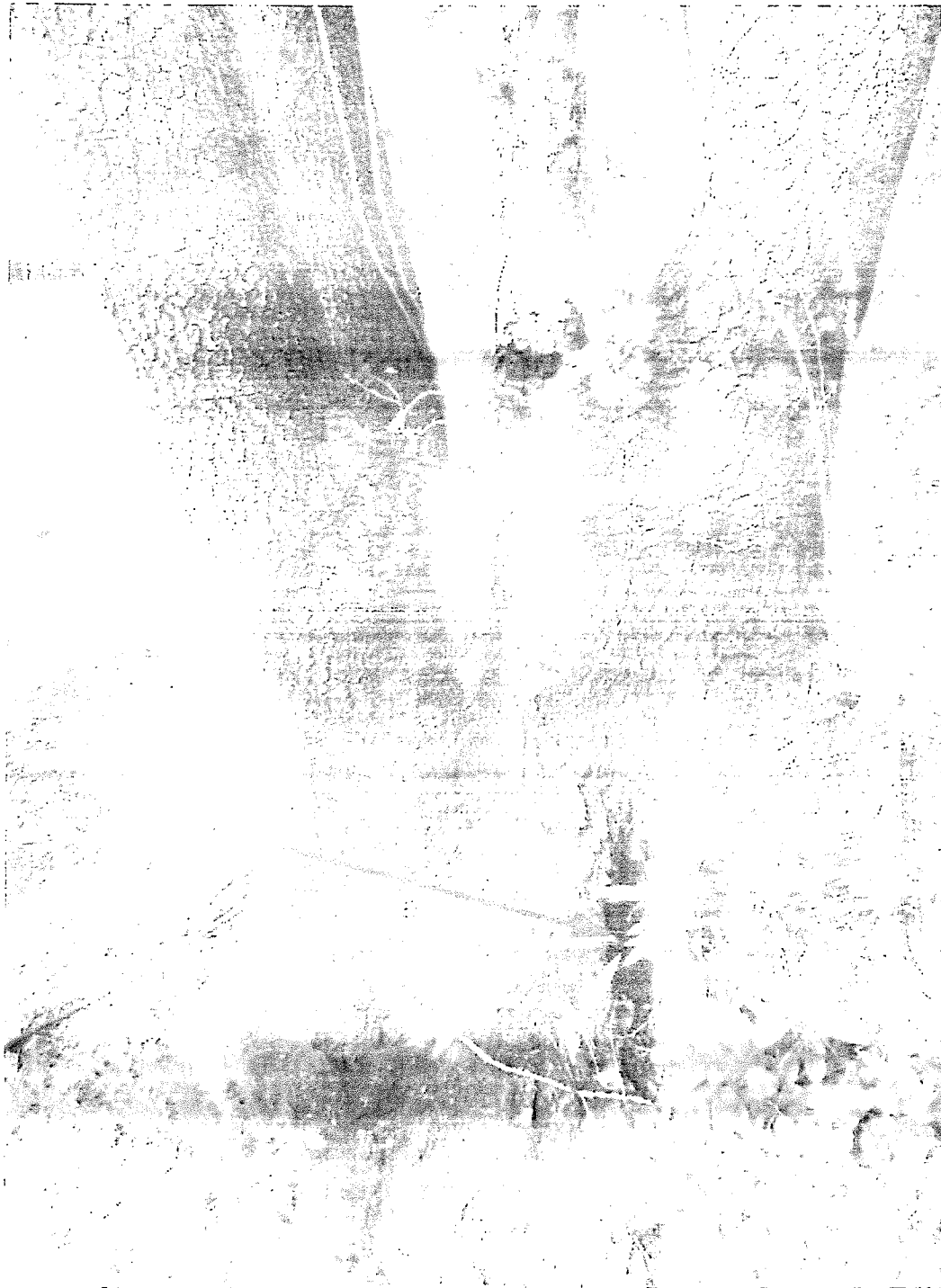


Figure 5. Decay cavity in the base of Tree 2 indicated with a red arrow.



Figure 6. Large decay cavity in the base of Tree 3 indicated with red circle.



Figure 7. Image of Tree 4.





Figure 8. Image of Tree 5.







RECEIVED & OPENED 10/15/19  
7915 CREST AVENUE, OAKLAND, CALIFORNIA 94605  
PHONE & FAX: (510) 565-2662 davednes@shoglobal.net

OCT 17 2019

October 11, 2019

O-4568

Dash Gerdes  
181 Meernaa Avenue  
Fairfax, CA 94930

RE: Geotechnical Reconnaissance Report  
Proposed Residential Improvements  
181 Meernaa Avenue, Fairfax

Dear Mr. Gerdes:

As requested, we have performed a Geotechnical Reconnaissance of your residential property, located at 181 Meernaa Avenue in Fairfax. The purpose of this reconnaissance was to provide foundation recommendations for proposed additions and improvements at the property.

The scope of this limited reconnaissance included a foundation evaluation of the existing structure, excavation of four hand-auger borings to verify the depth to bedrock, and review of geologic maps of the area. No deep drilled borings were performed in this limited reconnaissance.

**SITE DESCRIPTION AND PROPOSED CONSTRUCTION:** The subject property consists of a single story residence located on an up-sloping lot. The original house structure dates back to 1924. The back portion of the house is slab on grade, and occupies a level graded pad, formed by making a steep, unretained cut into the rear slope. There is an apparent addition wing off the left rear corner of the house. Forward of this addition there is a large concrete patio and a level deck.

At some point in the past a basement storage room was added beneath the front of the original house, by cutting into the crawlspace slope and constructing a foundation wall about 5 feet in height. Another large deck spans out over the front slope in front of the entry to the basement. There is a small carport structure at the street level below the house.

It is our understanding that you are planning to construct an accessory dwelling unit at the front of the house, expanding off the existing basement space, and occupying the area of the existing front deck. Additional off-street parking will be created by cutting into the front slope below the proposed ADU addition, and constructing a retaining wall up to 10 feet in height. The entry steps will be replaced, and new decks will be constructed at either side

ATTACHMENT C1

of the front addition. Another minor single-story addition will be constructed off the main floor of the house, at the right side. This addition will be perched on the slope.

**EVALUATION OF EXISTING HOUSE STRUCTURE:** Examination of the existing house structure revealed that much of the foundation was replaced within the past 40 years or so. The new foundations appear to consist of reinforced concrete spread footings. As stated, a foundation wall up to 5 feet in height was added to create the existing basement room. No significant distress was observed in the existing foundations.

A level survey performed on the main floor of the house found that it is within 2 inches of relative level. There is some indication that minor leveling may have been done in the past.

The front deck which exists in the vicinity of the proposed ADU addition is in poor condition. The outboard posts bear on or above a dilapidated retaining wall, and have visibly settled and shifted laterally. There is another wood retaining wall closer to the street, which is also significantly bowed. These walls will be obliterated by the proposed parking space excavation.

**GEOLOGY AND HAND-AUGER BORINGS:** The subject property lies off the axis of a spur ridge, which rises steeply to the east toward a large parcel (89 Spring Lane), and into the Sky Ranch Open Space. Review of a geological map of the area prepared by Strand, Rice and Smith (1976), indicates that the area is underlain by Franciscan Melange and Cretaceous Sandstone bedrock. Franciscan Melange typically consists of a random assortment of sheared shale, sandstone and serpentine, deformed by ancient tectonic activity. Highly fractured Sandstone is exposed in the steep cut bank behind the house.

During our site visit four borings were performed with a hand auger. Borings B1 and B2 were performed near the front corners of the original structure in the vicinity of the proposed ADU addition. Boring B3 was performed at the base of the slope north of the carport, to explore the possibility of excavating for parking in that location (not part of the present plan). The fourth boring was performed at the right rear corner of the house, where the minor addition is planned.

The three forward borings encountered approximately 2 feet of rocky fill soils (likely pushed over from the excavation at the rear), underlain by dark brown silty topsoil. The topsoil graded abruptly to fractured Sandstone bedrock at depths of 3 to 4 feet. The boring at the right rear corner, near the base of the old cut bank, encountered Sandstone bedrock at a depth of just 6 inches.

Strand, Rice and Smith have mapped much of the surrounding hillsides to the north and south of the site as a possible landslide areas (which is typical of most of the slopes in

Fairfax). However, no sliding is indicated along the ridge line where the property is located. The authors assign the immediate vicinity a stability number of 3 (moderate potential for instability), whereas the adjacent slopes are mapped as having a high potential for sliding (stability #4). We observed no indication of active landsliding on the site. Given the shallow depth to competent bedrock at this site, it is our opinion that there is little risk of deep-seated landsliding. However, the steep cut slope behind the house is likely to experience shallow sloughing and erosion over time.

**SITE DRAINAGE:** As stated, the site lies off the end of a spur ridge, the crest of which lies approximately 400 feet to the southeast. However, much of the runoff from the slope above is diverted off to either side of the ridge line. Thus the total potential watershed affecting the site is approximately 0.56 acres.

**SEISMICITY:** It should be common knowledge that the Bay Area is subject to strong ground shaking due to the regular occurrence of earthquakes. The subject property is located within 7 miles of the active San Andreas Fault. Other nearby faults include the Hayward Fault and the Healdsburg/Rodgers Creek Fault. Given the location of the site and the shallow bedrock nature, there is no risk of ground rupture or liquefaction.

The San Andreas and Hayward Faults are estimated to be capable of generating earthquakes of 8.1, and 7.3 moment magnitude, respectively. They are estimated to have a 22%, and 33% chance of generating earthquakes greater than 6.7 moment magnitude over the next 25 years, respectively. The Bay Area fault system as a whole, is estimated to have a 72% chance.

Design of improvements in accordance with the **2016 CBC** (pursuant to ASTM 7-10) should utilize the following factors.

<b>Site Class:</b>	B
<b>Mapped Short Period Spectral Acceleration, Ss:</b>	1.500
<b>Mapped 1-Second Spectral Acceleration, S1:</b>	0.639
<b>Short Period Site Coefficient, Fa:</b>	1.0
<b>1-Second Site Coefficient, Fv:</b>	1.0
<b>Modified Short Period Spectral Acceleration, Sms:</b>	1.500
<b>Modified 1-Second Spectral Acceleration, Sm1:</b>	0.639
<b>Design Short Period Spectral Acceleration, Sds:</b>	1.000
<b>Design 1-Second Spectral Acceleration, Sd1:</b>	0.426
<b>Design Category:</b>	D

Design of improvements in accordance with the **2019 CBC** (pursuant to ASTM 7-16) should utilize the following factors.

<b>Site Class:</b>	B
<b>Mapped Short Period Spectral Acceleration, Ss:</b>	1.50
<b>Mapped 1-Second Spectral Acceleration, S1:</b>	0.60
<b>Short Period Site Coefficient, Fa:</b>	0.9
<b>1-Second Site Coefficient, Fv:</b>	0.8
<b>Modified Short Period Spectral Acceleration, Sms:</b>	1.35
<b>Modified 1-Second Spectral Acceleration, Sm1:</b>	0.48
<b>Design Short Period Spectral Acceleration, Sds:</b>	0.90
<b>Design 1-Second Spectral Acceleration, Sd1:</b>	0.32
<b>Design Category:</b>	D

**COMMENTARY AND PRELIMINARY RECOMMENDATIONS:** Based on our findings, competent bedrock exists at a relatively shallow depth, within 3 to 4 feet of the surface at the front of the lot, and at the surface at the base of the rear cut slope. However, the distortions in the improvements on the front slope confirm that the surface soil cannot be relied upon for support. The proposed parking space will likely require a level cut extending deep into the slope. As this cut will likely expose bedrock, the wall may bear on a conventional L-footing. New foundations bearing on or near sloping grades should bear on 18-inch diameter piers drilled at least 6 feet into bedrock (total depths on the order of 10 feet are anticipated).

The steep cut behind the house is somewhat concerning, given the fractured nature of the exposed rock. There is some possibility this slope could slough against the back of the house. As a very conservative treatment, consideration should be given to constructing a stout wall at the base of the cut, and backfilling it with rip-rap to buttress the steep slope above. However, this would be a very major undertaking. Since the slope apparently has not had an incident to date (and has likely existed in this state since the site was originally developed in the 1920's), you may choose to continue monitoring it.

As an interim measure, you might construct a concrete V-ditch across the top of the cut, to divert surface runoff from the slope above off to the side. Drain lines may be dispersed at the base of the slope, at the right front corner of the lot.

In summary, it is our opinion that the site is suitable for the proposed construction, provided that the following recommendations are adhered to.

**REVIEW OF PRELIMINARY EXCAVATION CALCULATIONS:** As a registered Civil Engineer, I have reviewed the excavation calculations for the proposed addition construction, and I believe them to be reasonably accurate for initial planning purposes. It is likely that the Town will require a formal grading plan as part of the building submittal. We should review the drainage aspects of that plan.



## RECOMMENDATIONS:

1. **GRADING:** Grading for this project is expected to be limited largely to retained excavations for the proposed additions. These excavations are expected to extend into sandstone bedrock. No significant fills are anticipated. No soils shall be deposited on site slopes.
  - 1.1 **Site Preparation:** Areas to receive fill or flatwork shall be cleared of vegetation and stripped to a sufficient depth to remove major root systems. The stripped organic topsoil material may be stock piled for later use in landscaping areas.
  - 1.2 **Cut Grading:** Permanent cut slopes shall be at a maximum inclination of 2:1 (horizontal to vertical) or shall be retained by structural walls in accordance to the recommendations below. Temporary shoring may be required for vertical cut slopes, particularly if the excavations are required to stand through the rainy season (which is not advised).
  - 1.3 **Backfill of Utility Trenches:** Utility trench backfill shall be compacted to a relative density of 95% under pavement and foundation areas, and 90% elsewhere. Trenches shall be capped with at least 18 inches of relatively impermeable material (site soils are acceptable).
  - 1.4 **Erosion Control:** Due to their silty nature, the site soils are susceptible to erosion, particularly on the steeper graded slopes. Therefore it is recommended that no grading be performed during wet weather, and all denuded slopes shall be covered with appropriate erosion control fabric and seeded or landscaped prior to the onset of the rainy season.
2. **FOUNDATIONS:** All new foundation elements shall bear on weathered bedrock as determined by the undersigned Geotechnical engineer. New foundations situated in deep level cuts exposing bedrock may bear on spread footings, per Section 2.1. New foundations situated on or adjacent to sloping grades shall bear on 18-inch diameter drilled piers per Section 2.2.
  - 2.1 **Spread Footings:** Conventional spread footings shall bear on Sandstone or Shale bedrock. Footings shall be a minimum of 18 inches in width, and shall extend at least 12 inches into firm bedrock material as verified by the undersigned Geotechnical Engineer.
    - 2.1a **Design Values for Footings:** Footings constructed in accordance with Section 2.1 may be designed for a bearing pressure of 2500 psf. Lateral resistance may be obtained by assuming a friction value of 0.40 and a passive resistance of 450 pcf, beginning at the bedrock contact.

- 2.1b Minimal Footing Reinforcing:** All spread footings shall contain a minimum of one #5 bar top and bottom, with #3 shear ties at 18 inches on center.
- 2.2 Pier and Grade Beam Foundations:** Drilled piers used for the improvements bearing on or adjacent to sloping grades, should be a minimum of 18 inches in diameter. All piers should extend a minimum of 6 feet into bedrock as verified by the undersigned Geotechnical Engineers. Pier depths of 8 to 10 feet should be anticipated.
- 2.2a Design Values for Drilled Piers:** Piers constructed in accordance with Section 2.2 may be designed for a friction value of 750psf for the portion of pier extending into bedrock. Resistance to lateral loadings may assume a passive pressure of 450pcf, acting against 2 pier diameters, beginning at a depth of 3 feet, or at grade for retaining walls bearing in bedrock cuts. The passive resistance may be increased by one third for short-term seismic loads.
- 2.2b Minimal Pier Reinforcing:** Piers shall contain a minimum of six #5 bars enclosed by #3 ties at 12 inches on center.
- 2.2c Grade Beams:** The perimeter grade beams shall have minimum dimensions of 10"x18" and shall contain a minimum of two #5 bars top and bottom, with #3 closed ties at 18 inches on center. The grade beams shall be connected to the foundation piers with a minimum of four #5 angle dowels.
- 3. Floor Slabs on Grade:** Floor slabs shall be a minimum of 4 inches thick and shall be reinforced with #4 bars at 18 inches on center in each direction, and shall be epoxy doweled to the perimeter foundations. Floor slabs used as living space shall be poured over a capillary break consisting of 4 inches of pea gravel covered by a 10 mil vapor barrier.
- 4. RETAINING WALLS:** Retaining walls or foundation walls shall be designed for an active pressure of 45pcf assuming fully drained, level backfill. The active pressure should be increased to 55pcf for backfill sloping at a 2:1 gradient or steeper. Walls located on level cuts into bedrock may be founded on spread footings. Walls perched on sloping grades shall bear on spread footings.
- 4.1 Retaining Wall Drainage and Waterproofing:** Retaining walls and foundation walls shall be fully back drained with 3/4-inch drain rock wrapped in filter cloth. A 4-inch PVC pipe shall be installed along the base of the wall, at least 6 inches below the adjacent floor slab or crawlspace grade, and shall be continuously sloped at 1%

to outlet to a dissipater as discussed below. In addition, foundation walls shall incorporate waterproofing membranes (such as Paraseal), installed per manufacturer's recommendations.

5. **DRAINAGE:** Adequate drainage is important in order to minimize erosion and embankment stability problems, and to protect the crawlspace and basement areas from moisture intrusion.
  - 5.1 **Surface Drainage:** All roof downspouts shall be fitted with 4-inch solid PVC discharge pipes. Surrounding yard and patio areas shall utilize cast iron or brass catch basins tied to the roof downspout lines, or shall be graded to shed runoff away from the house in an unconcentrated manner.
  - 5.2 **Piping:** All piping shall be 4-inch SDR-35 PVC. All drain lines shall be continuously sloped at 1% minimum to dissipaters as discussed below.
  - 5.3 **Discharge of Storm Drainage:** It is recommended that the collected storm water be discharged to a rubble dispersal field near the right front corner of the lot. The final method and location and design of the dissipater should be reviewed and approved by the undersigned Geotechnical Engineer.
  - 5.4 **Maintenance:** Drainage systems require regular maintenance to ensure proper functioning. Catch basins and downspout pipes should be flushed regularly (dependant on the rate of falling leaf litter). It is critical that outlet dissipaters be inspected and flushed on a regular basis. It is recommended that an accurate as-built plan of the drainage systems be prepared, and that maintenance requirements be disclosed to all future buyers of the property.
6. **EXTERIOR FLATWORK:** Exterior flatwork, including driveways, walkways and patios may be constructed as 4-inch thick concrete slabs and should be reinforced with a minimum of #4 bars at 18-inch centers. However some distress can be expected due to minor subgrade fluctuations and/or concrete shrinkage.
7. **PLAN REVIEW AND CONSTRUCTION OBSERVATION:** The undersigned Geotechnical Engineer should review the final building plans for conformance with the above recommendations and should inspect all pier drilling, footing excavations and subdrain trenches in progress prior to placement of reinforcing steel, concrete or backfill. Allowances should be made for potential changes to the final design requirements in the event that actual construction conditions differ from the conditions assumed in this report.

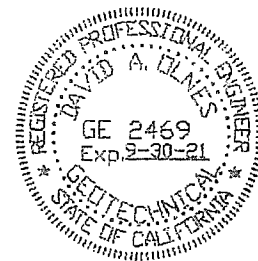
Geotechnical Reconnaissance  
181 Meernaa Avenue, Fairfax  
October 11, 2019  
Page 8

**LIMIT OF LIABILITY:** This report was prepared under written contractual agreement with the addressee (client) indicated above. The client has agreed to limit the liability of Dave Olnes P.E., Inc. to an amount not to exceed the fee for services indicated above, for any and all matters arising from this visual examination and report. The information provided herein is for the exclusive use of the specified client. Dave Olnes P.E., Inc. shall assume no liability for other parties who use the report without its express written consent. The recommendations contained in this report are valid for a period of two years, pending further review by the undersigned Geotechnical Engineer.

If you have any questions regarding this matter, please contact my office at (510)568-2162.

Sincerely,

David A. Olnes, GE  
Principal Engineer

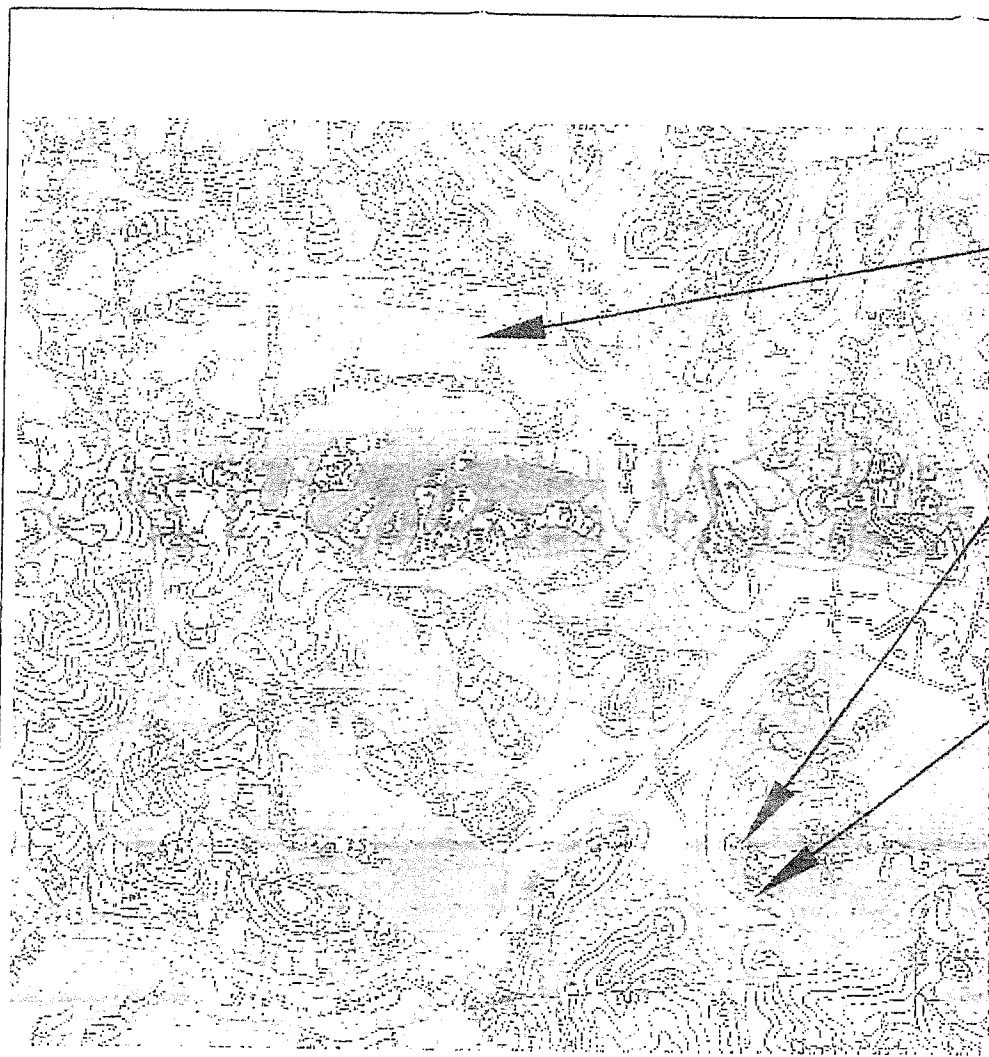


## REFERENCES

Knudsen, Keith L., Sowers, Janet M. Witter, Robert S., Wentworth, Carl M, Helley, Edward J., "Preliminary Maps of Quaternary Deposits and Liquefaction Susceptibility, Nine-County San Francisco Bay Region, California", USGS Open File Report 00-444, 2000.

Rice, Salem J.; Smith, Theodore C.; Strand, Rudolph G., State of California Division of Mines and Geology, Open File Report 76-2, "Geology for Planning: Central and Southwest Marin County, California", 1976.

State of California Division of Mines and Geology, "Maps of Known Active Fault Near-Source Zones in California and Adjacent portions of Nevada", 1998.



TYPICAL MAPPED  
LANDSLIDE ZONE  
(RED).

SITE, MAPPED  
AS FRANCISCAN  
MELANGE.

ALLUVIAL  
(GREEN) AND  
COLLUVIAL  
(YELLOW) SOILS  
MAPPED IN  
FLATTER AREAS  
BELOW.

SOURCE:  
STATE OF CALIFORNIA DEPT. OF MINING & GEOLOGY, OPEN FILE REPORT 76-2  
GEOLOGY FOR PLANNING: CENTRAL & SOUTHEAST MARIN COUNTY, CALIFORNIA,  
SALEM J. RICE, THEODORE C. SMITH & RUDOLPH G. STRAND, 1976.

<p><b>CIVIL &amp; SOIL ENGINEER</b> 7915 CREST AVENUE OAKLAND CALIF. 94605 PH &amp; FX: (510)568-2162 daveolnes@sbcglobal.net</p>	<p>SCALE: ~1"=2000' JOB #: 0-4568 DRAWN: DAO/MAF DATE: 10/11/19</p>	<p>GEOTECHNICAL RECONNAISSANCE 191 MEERNA A AVENUE FAIRFAX, CALIFORNIA</p>
---	---	--

FIGURE: 1

AS A MINIMAL  
CONSTRUCT A  
CONCRETE DIVERSION  
DITCH ABOVE EXISTING  
CRUMBLY BEDROCK  
CUT. CONSIDER A  
RETAINING WALL  
AND RIP-RAP  
BUTTRESS.

TYPICAL BORING  
LOCATION WITH  
DEPTHS TO BEDROCK.

EXISTING RESIDENCE.

NEW DECKS AND  
ENTRY STAIRS.

PROPOSED ADU  
ADDITION, DRIVEWAY  
AND PARKING SPACE.

PROPOSED RIGHT REAR  
ADDITION.



# SITE PLAN

SCALE: 1"=20'

MEERNAA

SHED

SHED

GRADED LEVEL BENCH

CARPORT

B3  
(4')

B2  
(3.5')

B4  
(6")

B1  
(3')

100'  
100'  
100'  
R05'  
R06'  
R10'

SCALE: 1"=20'

JOB #: 0-4568

DRAWN: DAO/MAF

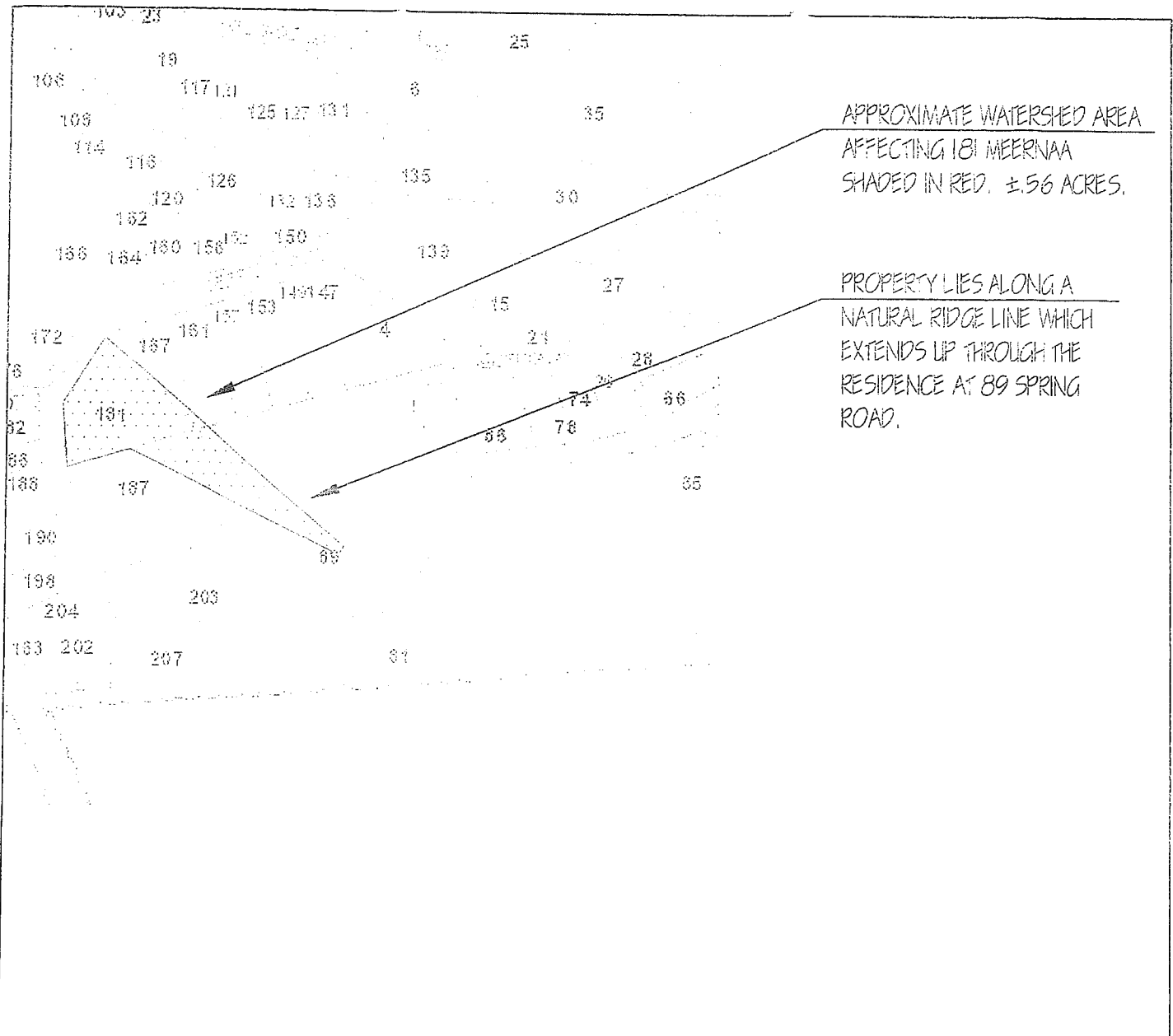
DATE: 10/11/19

GEOTECHNICAL RECONNAISSANCE  
181 MEERNAA AVENUE  
FAIRFAX, CALIFORNIA

CIVIL & SOIL ENGINEER

7915 CREST AVENUE OAKLAND CALIF. 94605  
PH & FX: (510)568-2162 daveolnes@sbcglobal.net

FIGURE: 2



SOURCE: MARIN COUNTY GIS MAPS

# WATERSHED MAP

SCALE: 1"=200'

**CIVIL & SOIL ENGINEER**  
 7915 CREST AVENUE OAKLAND CALIF. 94605  
 PH & FX: (510)568-2162 dave@lincs@sbcglobal.net

SCALE: 1"=200'  
 JOB #: 0-4568  
 DRAWN: DAO/MAF  
 DATE: 10/11/19

GEOTECHNICAL RECONNAISSANCE  
 181 MEERNAA AVENUE  
 FAIRFAX, CALIFORNIA

FIGURE: 3



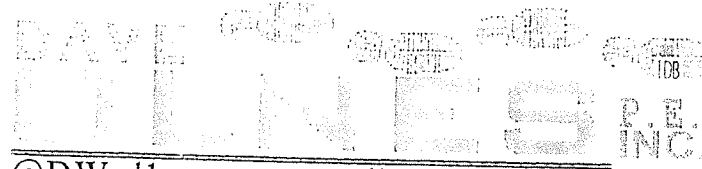
# HAND AUGER

Probe # : P1		Depth	Probe # : P2	
Location: FRONT LEFT CORNER OF ADU ADDITION			Location: FRONT RIGHT CORNER OF ADU ADDITION	
DESCRIPTION			DESCRIPTION	
dark brown Sandy Rocky SILT with Sandstone fragments (SM)	Fill		dark brown Sandy SILT (SM)	Topsoil/Fill
dark brown Sandy SILT (SM)	Original Topsoil			
tan decomposed SANDSTONE	Bedrock		tan weathered SANDSTONE	Bedrock
Probe Terminated @ 4'	Refusal	5	Probe Terminated @ 4'	Refusal
Probe # : P3		Depth	Probe # : P4	
Location: PROPOSED PARKING AREA			Location: RIGHT REAR CORNER OF EXISTING HOUSE	
DESCRIPTION			DESCRIPTION	
dark brown Sandy Rocky SILT (SM)	Topsoil/Fill		brown Sandy SILT (SM)	Topsoil
			tan weathered SANDSTONE	Bedrock
tan-yellow SANDSTONE	Bedrock	5	Probe Terminated @ 1'	Refusal
Probe Terminated @ 5.5'	Refusal			
CIVIL & SOIL ENGINEER 7915 CREST AVENUE OAKLAND, CA 94605 TELEPHONE & FAX (510) 568-2162		Project: Geotechnical Reconnaissance 181 Meernaa Avenue Fairfax, California Date: October 11, 2019 Figure: 4		









@DW□□11 — @□□1b [s.00.@□□00] [glfa]  
191?C5fAVf;NIE,omANO. If IA 946  
& f,AX: (0) 262 re,ff ol,a.

GEOTECHNICAL MEMORANDUM:

To: Dash Gerdes  
RE: Preliminary Retaining Wall and Shoring Schematics  
Proposed Residential Improvements  
181 Meernaa Avenue, Fairfax  
Date: December 17, 2019

TOWN OF FAIRFAX

DEC 13 2019

RECEIVED

As Geotechnical Engineers of Record, we have completed the schematic details for the embankment shoring at the proposed garage excavation, and for the suggested retaining wall and rip-rap treatment for the steep rear slope at your residential property, located at 181 Meernaa Avenue in Fairfax. These documents were requested by the City as part of their Planning review process.

**SHORING SCHEMATIC:** Excavation for the proposed garage will require a multi-step process, to support the existing structure above, and to meet OSHA requirements for excavation safety. As planned, the cut for the new garage will be up to 13 feet tall at the back, measuring from the existing slab level to the base of the proposed foundation wall footing. This is too tall for Soldier piers so we recommend the use of soil nails and shotcrete.

The first step would be to drill two vertical piers near the front corners of the existing structure, extending below the level of the proposed cut. These piers would support posts and a girder to hold the existing framing above so the front foundation can be removed. One of these piers may be incorporated into the forward side addition. The foundations for both of the side additions could also be constructed at this time.

The second step would be to remove the front foundation and make the first 5-foot cut below the existing slab level. Where necessary, the side slopes of this first cut could be laid back at 45 degrees. Then the first four soil nails would be drilled back under the slab. These nails would be 15 feet long, to get well beyond a 45 degree angle of repose from the ultimate cut. A 6-inch thick shotcrete facing would be cast against the back cut, locked off to the soil nails.

The third step would be to make the second 5-foot cut, which would require four more soil nails at the rear. These nails could be 10 feet long. This cut will also significantly involve the sides of the excavation, so we show two more soil nails on either side. Or you could lay the side slopes back at 45 degrees.

The final cut will be less than 5 feet tall, and should expose reasonably sound bedrock, so it should not require shoring (the undersigned Geotechnical Engineers will confirm the conditions at the time of excavation).

**REAR RETAINING WALL:** As discussed in our soils report for the project, there is a very steep cut slope behind the existing house structure. Although this cut largely revealed fractured Sandstone bedrock, it has been subject to sloughing. There is some possibility this slope could slough against the back of the house. We had suggested that as a *very conservative treatment*, consideration should be given to constructing a stout wall at the base of the cut, and backfilling it with rip-rap to buttress the steep slope above. The Town is apparently requiring some form of mitigation of this slope as a condition of approval for the

Schematic Shoring and Wall Plans  
181 Meernaa Avenue, Fairfax  
December 17, 2019  
Page 2

proposed improvements.

We have produced a schematic detail for the very conservative treatment. Scaling off the contours of the survey, it appears that the wall will have to be 9 feet tall in order to lay the rip-rap down at 1.5:1. This will be a massive wall, so we show drilled piers supplemented by horizontal tie backs. We positioned the wall about 6 feet off the house. It may be that with field measurements the location and height of the wall might vary. A concrete ditch would be constructed above the top of the cut, to divert surface runoff around the vulnerable area.

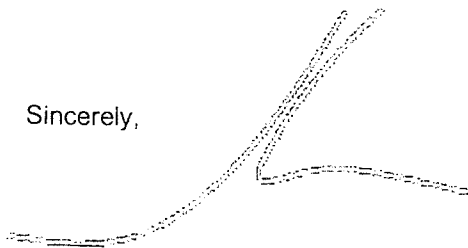
You have stated that if the Town is adamant about requiring the construction of this costly wall, you may not be able to go forward with the project. Your Architect has suggested that as a fall-back position, you might consider construction a "catchment wall" as opposed to a formal retaining wall. The catchment wall would be a free-standing wall, without backfill, designed to catch sloughing soil and rock before it hits the house. However, the relative stability of the steep slope above would not be altered.

One possibility would be to consider a phased approach, wherein you drill the piers and set the I-beams at an 8-foot spacing, as would be required for the formal wall. However, rather than installing the tie backs and reinforced concrete facing, the I-beams could be lagged with 6x12 pressure treated planks. The lower 4 feet of lagging could be backfilled to provide minimal retention. The upper 5 feet would be free-standing as a catchment wall, with the lagging gapped at 6 inches. This would allow you to see the accumulating sloughage, so it can be removed as it accumulates. In the event that a very major slope failure occurs, it is likely that the wall will protect the house (or at least significantly reduce the impact). However, without the tie backs, the fully-loaded wall will likely deflect. At any point in the future the catchment wall can be converted to a formal structural wall by adding the tie backs, the reinforced concrete facing and the rip-rap backfill.

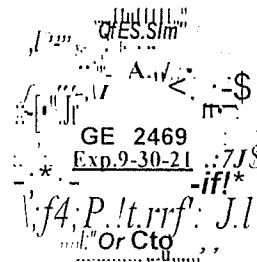
As we stated in our report, the cut behind the house has presumably been in place for 75 years or more, and it does not appear to have experienced any significant failures to date. Our purpose in pointing out the potential instability was to make you aware of the condition, so that you can make informed decisions relative your personal tolerance for risk. If the proposed improvements to the house will not alter the historic conditions at the base of the slope, you may choose to argue any mitigation you choose to implement should be "voluntary".

If there are further questions regarding this matter, please contact my office.

Sincerely,



Dave Olnes, CEQE



PRELIMINARY  
- NOT FOR  
CONSTRUCTION

STEP 1: DRILL TWO 18"Ø 15'-DEEP SHORING PIERS, INSTALL TWO 6x6 POSTS AND 6x12 GIRDER TO SUPPORT EXISTING FRAMING ABOVE. NOTE: FOUNDATIONS FOR SIDE ADDITION COULD ALSO BE CONSTRUCTED AT THIS POINT.

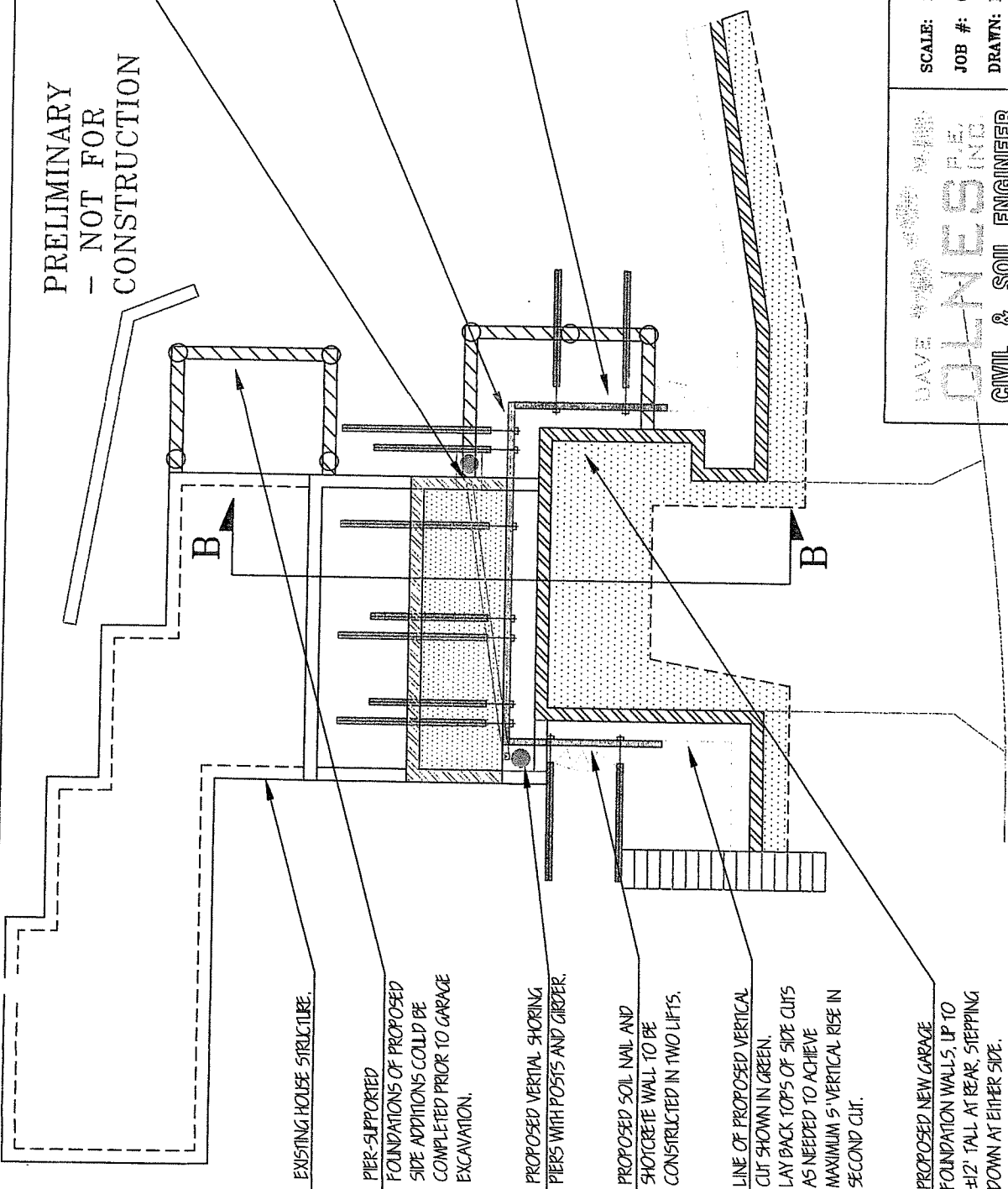
STEP 2: DEMOLISH EXISTING FRONT FOUNDATION AND MAKE INITIAL CUT TO 5' BELOW EXISTING SLAB LEVEL. DRILL AND SET FOUR UPPER SOIL NAILS TO A DEPTH OF 15 FEET AND APPLY UPPER LAYER SHOTCRETE FACING AT BACK CUT, 6" THICK.

STEP 3: MAKE SECOND 5' CUT. DRILL AND SET NEXT EIGHT SOIL NAILS TO A DEPTH OF 10 FEET AND APPLY LOWER LAYER SHOTCRETE FACING, 6" THICK.

STEP 4: MAKE FINAL VERTICAL CUT WITHOUT SHORING, ASSUMING ROCK IS COMPETENT. THIS BANK SHOULD BE LESS THAN 5' TALL, PER OSHA REQUIREMENTS.



**SITE PLAN**  
SCALE: 1"=8'



EXISTING HOUSE STRUCTURE.

PIER-SUPPORTED FOUNDATIONS OF PROPOSED SIDE ADDITIONS COULD BE COMPLETED PRIOR TO GARAGE EXCAVATION.

PROPOSED VERTICAL SHORING PIERS WITH POSTS AND GIRDER.

PROPOSED SOIL NAIL AND SHOTCRETE WALL TO BE CONSTRUCTED IN TWO LIFTS.

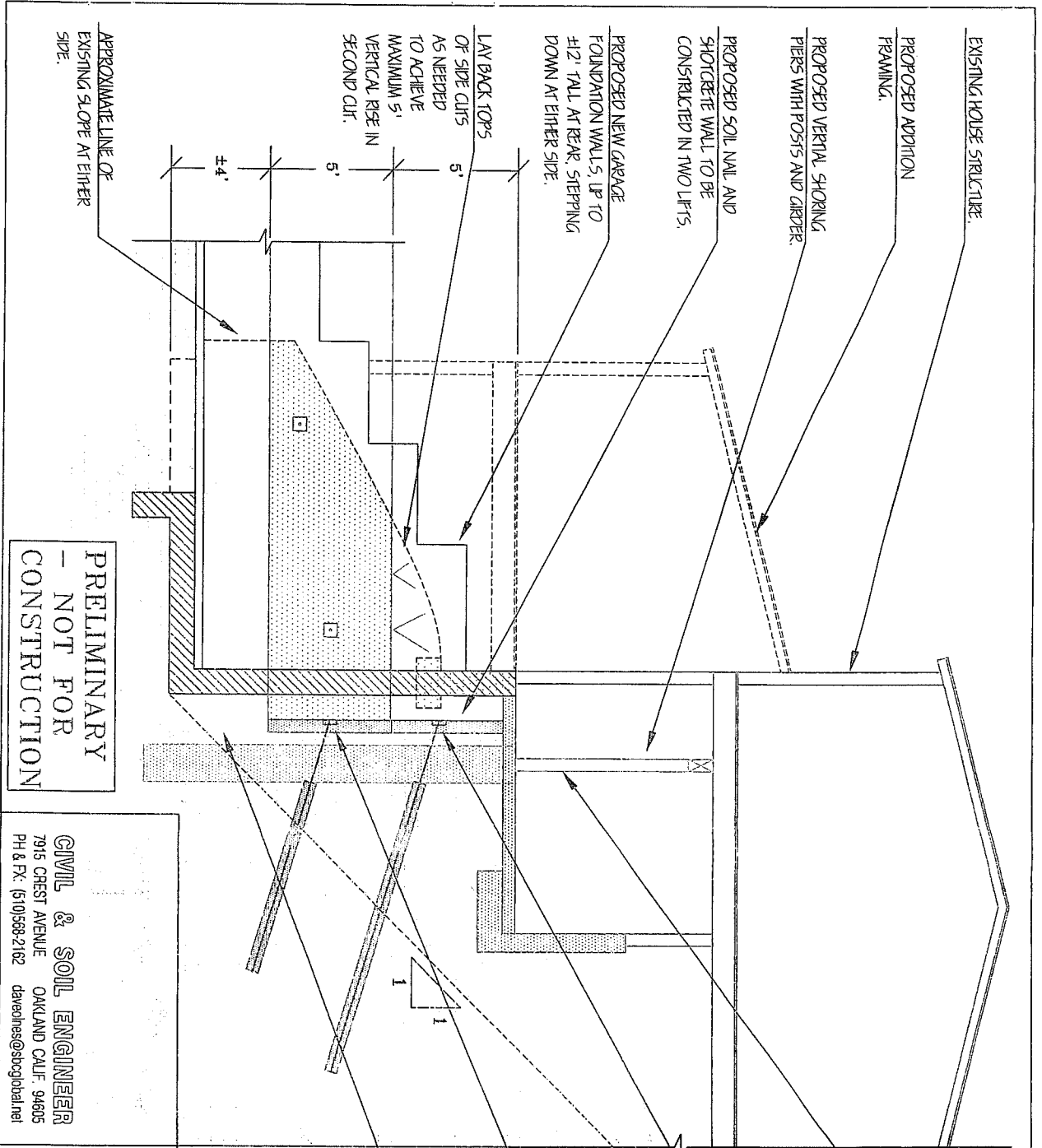
LINE OF PROPOSED VERTICAL CUT SHOWN IN GREEN. LAY BACK TOPS OF SIDE CUTS AS NEEDED TO ACHIEVE MAXIMUM 5' VERTICAL RISE IN SECOND CUT.

PROPOSED NEW GARAGE FOUNDATION WALLS, UP TO #12' TALL AT REAR, STEPPING DOWN AT EITHER SIDE.

DAVE COLNEN ENGINEERS  
CIVIL & SOIL ENGINEER  
7915 CREST AVENUE OAKLAND CALIF. 94605  
PH & FX: (510)568-2162 davecolnen@sbcglobal.net

SCALE: 1"=8'  
JOB #: 0-4568  
DRAWN: DAO/OSO  
DATE: 12/10/19

CONCEPTUAL SHORING PLAN  
181 MEERNA AVENUE  
FAIRFAX, CALIFORNIA



**PRELIMINARY  
- NOT FOR  
CONSTRUCTION**

**CIVIL & SOIL ENGINEER**  
7915 CREST AVENUE OAKLAND CALIF. 94605  
PH & FX: (510)588-2162 dave@ohes@stpcglabcal.net

SCALE: 1" = 4'  
JOB #: 0-4568  
DRAWN: DAO/050  
DATE: 12/10/19

CONCEPTUAL SHORING PLAN  
181 MEERNA AVENUE  
FAIRFAX, CALIFORNIA

PAGE: 2 OF 2

**SECTION B-B**  
SCALE: 1" = 4'

STEP 4: MAKE FINAL VERTICAL CUT WITHOUT SHORING, ASSUMING ROCK IS COMPETENT. THIS BANK SHOULD BE LESS THAN 5' TALL, PER OSHA REQUIREMENTS.

STEP 3: MAKE SECOND 5' CUT. DRILL AND SET NEXT EIGHT SOIL NAILS TO A DEPTH OF 10 FEET AND APPLY LOWER LAYER SHOTCRETE FACING, 6" THICK.

STEP 2: DEMOLISH EXISTING FRONT FOUNDATION AND MAKE INITIAL CUT TO 5' BELOW EXISTING SLAB LEVEL. DRILL AND SET FOUR UPPER SOIL NAILS TO A DEPTH OF 15 FEET AND APPLY UPPER LAYER SHOTCRETE FACING, 6" THICK.

STEP 1: DRILL TWO 18" Ø 15'-DEEP SHORING PIERS. INSTALL TWO 6x6 POSTS AND 6x12 GIRDER TO SUPPORT EXISTING FRAMING ABOVE. NOTE: FOUNDATIONS FOR SIDE ADDITION COULD ALSO BE CONSTRUCTED AT THIS POINT.

EXISTING HOUSE STRUCTURE.

PROPOSED ADDITION FRAMING.

PROPOSED VERTICAL SHORING PIERS WITH POSTS AND GIRDER.

PROPOSED SOIL NAIL AND SHOTCRETE WALL TO BE CONSTRUCTED IN TWO LIFTS.

PROPOSED NEW GARAGE FOUNDATION WALL 5.12' TALL AT REAR, STEPPING DOWN AT EITHER SIDE.

LAY BACK TOPS OF SIDE CUTS AS NEEDED TO ACHIEVE MAXIMUM 5' VERTICAL RISE IN SECOND LIFT.

APPROXIMATE LINE OF EXISTING SLOPE AT EITHER SIDE.



**PRELIMINARY  
- NOT FOR  
CONSTRUCTION**

PROVIDE A CONCRETE DITCH ABOVE EXISTING CLIFF WITH DISCHARGE LINE TO STREET.

OPTIONAL STRUCTURAL RETAINING WALL AND RIP-RAP SLOPE ARMOR TO STABILIZE CLIFF BANK ABOVE HOUSE. ±48 LINEAR FEET OF ±9'-TALL WALL WOULD BE NEEDED TO PROTECT THE RIGHT HALF OF HOUSE ONLY, OR 78 LINEAR FEET TO PROTECT ENTIRE STRUCTURE. SEE SECTION A-A. ASSUME 18"Ø, 10'-DEEP PIERS AND 6"Ø 20'-DEEP TIE BACKS AT 8' O.C.

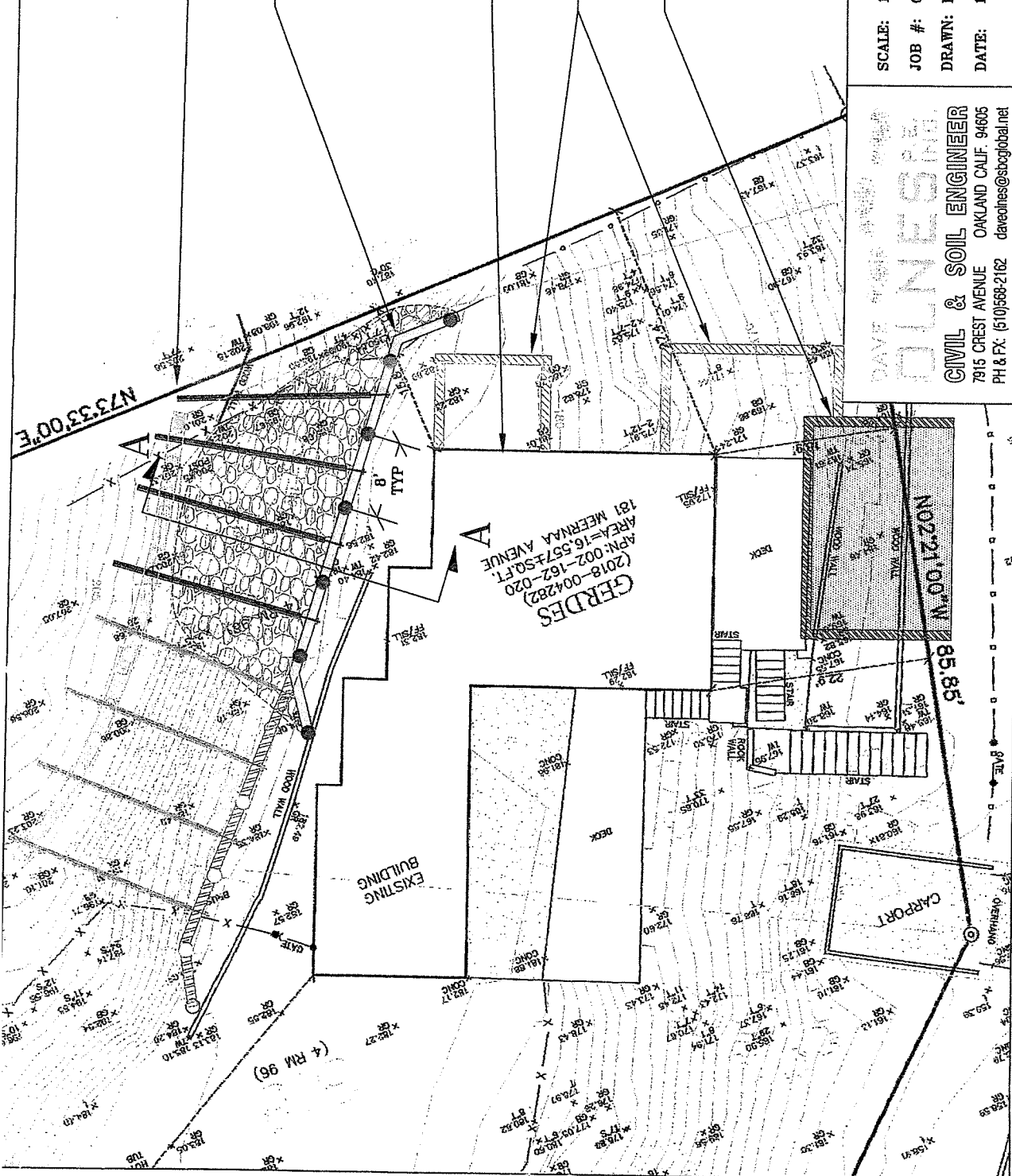
EXISTING RESIDENCE.

PROPOSED SIDE ADDITIONS TO HOUSE.

PROPOSED GARAGE ADDITION TO HOUSE. SEE SHORING PLAN.



**PLAN VIEW**  
SCALE: 1"=10'

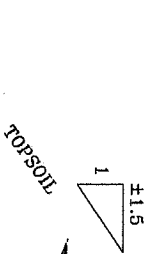
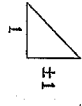
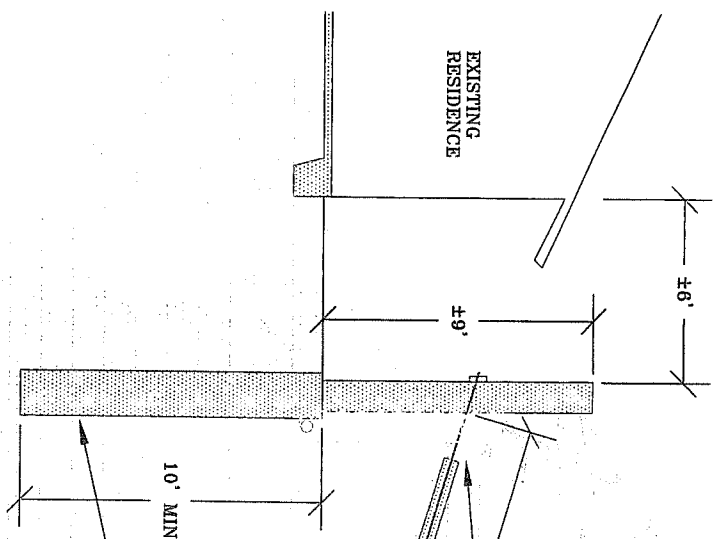


DAVE DOLNESKI  
**DOLNESKI**  
CIVIL & SOIL ENGINEER  
7915 CREST AVENUE OAKLAND CALIF. 94605  
PH & FX: (510)569-2162 davedolneski@sbcglobal.net

SCALE: 1"=10'  
JOB #: 0-4588  
DRAWN: DAO/OSO  
DATE: 12/16/19

CONCEPTUAL SCHEMATIC  
REAR RETAINING WALL  
181 MEERNA AVENUE  
FAIRFAX, CALIFORNIA

205'  
200'  
195'  
190'  
185'  
180'



PRACTURED SANDSTONE

NATURAL SLOPE ABOVE IS INCLINED AT 1:1.5.

RECOMMENDED CONCRETE DRAINAGE DITCH TO BE CONSTRUCTED ABOVE EXISTING DITCH.

PROPOSED RIP-RAP SLOPE ARMORING TO BE INCLINED AT 1:1.5:1

EXISTING DITCH BANK INCLINED AT 1:1 OR STEEPER.

PROPOSED TIED BACK CONCRETE WALL, ±9' TALL. FINAL HEIGHT AND POSITION OF WALL MAY VARY.

WALL TO BE LATERALLY RESTRAINED WITH 6" Ø TIE BARS DRILLED AND GROUTED 20' INTO BEDROCK.

WALL TO BEAR ON 18-INCH DIAMETER PERS SPACED AT ±8' O.C., DRILLED 10' MINIMUM INTO BEDROCK.

**SECTION A-A**

SCALE: 1"=4'

PRELIMINARY  
- NOT FOR  
CONSTRUCTION

CIVIL & SOIL ENGINEER  
7915 CREST AVENUE OAKLAND CALIF. 94605  
PH & FX: (510)568-2182 dave@hnes@stbcgdbdai.net

SCALE: 1"=4'  
JOB #: 0-4568  
DRAWN: DAO/OSO  
DATE: 12/16/19

CONCEPTUAL SCHEMATIC  
REAR RETAINING WALL  
181 MERRIMA AVENUE  
FAIRFAX, CALIFORNIA

DAVE DRES  
COLNESA INC.  
CIVIL & SOIL ENGINEER  
7915 CREST AVENUE, OAKLAND, CALIFORNIA 94605  
PHONE & FAX: (510) 568-2162 davedres@sbcglobal.net

JAN 21 2020

### GEOTECHNICAL MEMORANDUM:

**To:** Dash Gerdes  
**RE:** Revised Schematic Shoring and Retaining Wall Designs  
181 Meernaa Avenue, Fairfax  
**Date:** January 21, 2020

As requested, as Geotechnical Engineers of Record we have prepared the attached schematic plans depicting a possible approach for the excavation shoring for the proposed garage addition at the front of your property, and for the construction of a debris catchment wall at the base of the rear slope to protect the addition from future sloughing. These documents were requested by the City as part of their Planning review process.

**SHORING SCHEMATIC:** Excavation for the proposed garage will require a multi-step process, to support the existing structure above, and to meet OSHA requirements for excavation safety. As planned, the cut for the new garage will be up to 13 feet tall at the back, measuring from the existing slab level to the base of the proposed foundation wall footing. This is too tall for Soldier piers so we recommend the use of soil nails and shotcrete.

The first step would be to drill two vertical piers near the front corners of the existing structure, extending below the level of the proposed cut. These piers would support posts and a girder to hold the existing framing above so the front foundation can be removed. One of these piers may be incorporated into the forward side addition. The foundations for both of the side additions could also be constructed at this time.

The second step would be to remove the front foundation and make the first 5-foot cut below the existing slab level. Where necessary, the side slopes of this first cut could be laid back at 45 degrees. Then the first four soil nails would be drilled back under the slab. These nails would be 15 feet long, to get well beyond a 45 degree angle of repose from the ultimate cut. A 6-inch thick shotcrete facing would be cast against the back cut, locked off to the soil nails.

The third step would be to make the second 5-foot cut, which would require four more soil nails at the rear. These nails could be 10 feet long. This cut will also significantly involve the sides of the excavation, so we show two more soil nails on either side. Or you could lay the side slopes back at 45 degrees.

ATTACHMENT C3

Schematic Retaining Wall and Shoring Plans  
181 Meernaa Avenue, Fairfax  
January 21, 2020  
Page 2

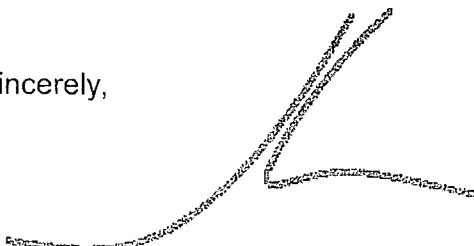
The final cut will be less than 5 feet tall, and should expose reasonably sound bedrock, so it should not require shoring (the undersigned Geotechnical Engineers will confirm the conditions at the time of excavation).

**REAR RETAINING WALL:** As discussed in our soils report for the project, there is a very steep cut slope behind the existing house structure. Although this cut largely revealed fractured Sandstone bedrock, it has been subject to sloughing and rock fall. There is some possibility this slope could slough against the back of the house. We discussed various treatments for this condition, including the most conservative approach, which would involve the construction of a stout wall at the base of the cut, and backfilling it with rip-rap to buttress the steep slope above. You have stated that the conservative treatment is beyond your present budget, although you may consider undertaking this approach at some point in the future, when additional funds are available. In the meantime you would like to consider construction of a modest "debris catchment" wall only in the area up-slope of the proposed additions, to provide a minimal level of protection against modest rock-fall events.

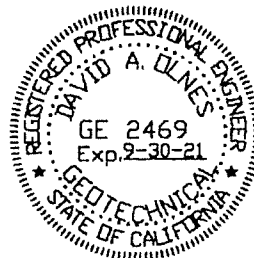
The catchment wall would be a free-standing wall, without backfill, designed to catch sloughing soil and rock before it hits the house. The wall would consist of steel I-beam posts set in 10-foot deep drilled piers spaced at 6 feet on center, lagged with 4x12 pressure treated planks (or with 6x12's spanning 8 feet). To avoid planning issues, the height of the wall will be limited to 5 feet. In order to remain functional, the wall should be cleared of debris on a regular basis. Casting a concrete ditch behind the wall will serve as a reminder to remove the debris, as well as diverting some of the runoff from the slope around the addition. Consideration could be given to adding a second ditch on the slope above the cut bank. The catchment wall concept is shown schematically on attached schematic plan

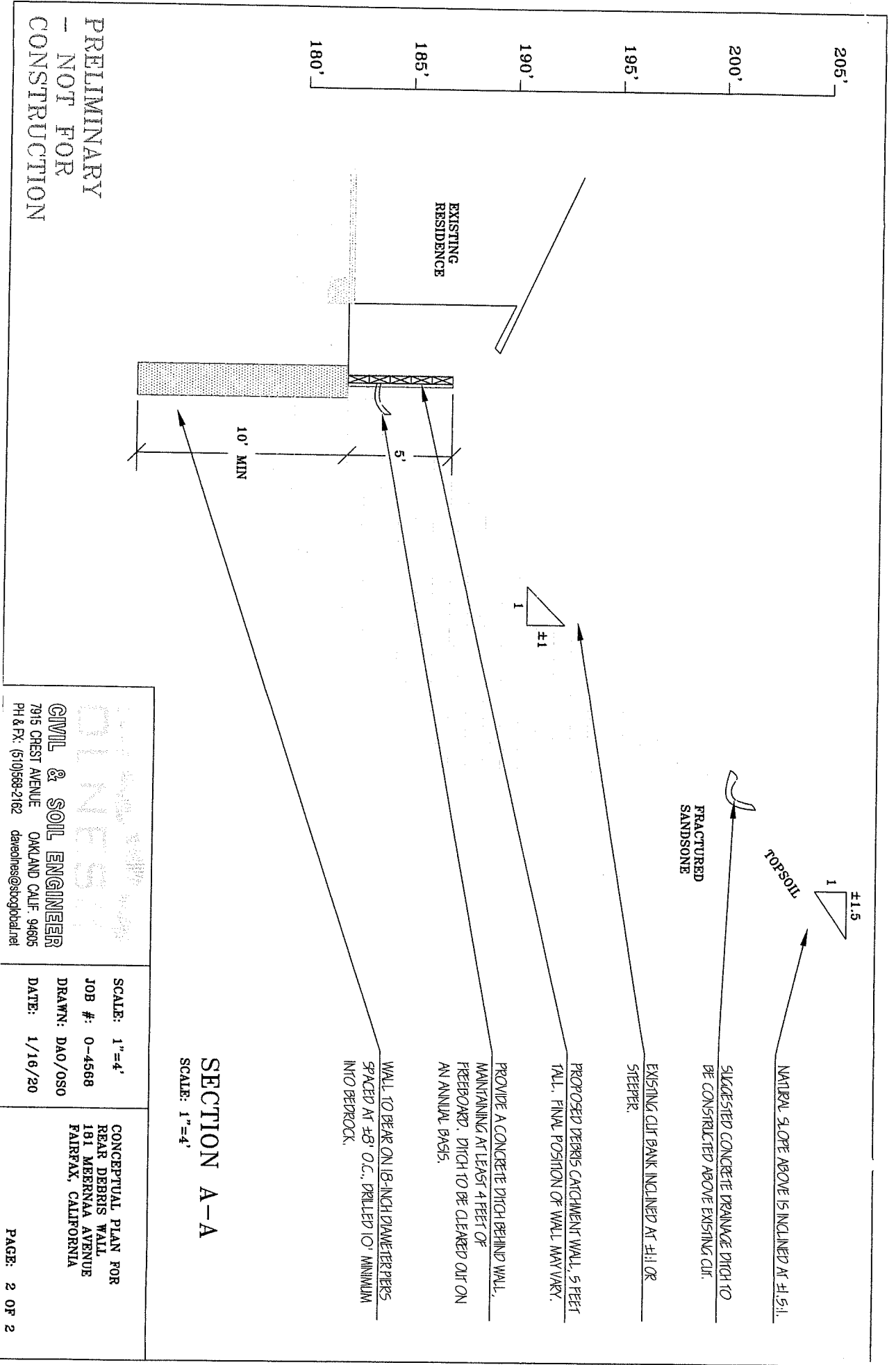
If there are further questions regarding this matter, or if you would like to formalize either of these plans, please contact my office.

Sincerely,



Dave Olnes, CEGE



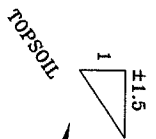


205'  
200'  
195'  
190'  
185'  
180'

EXISTING RESIDENCE

10' MIN

5'



FRACTURED SANDSTONE

TOP SOIL

NATURAL SLOPE ABOVE IS INCLINED AT 1:1.5.

SUGGESTED CONCRETE DRAINAGE DITCH TO BE CONSTRUCTED ABOVE EXISTING CLIP

EXISTING CLIP BANK INCLINED AT 1:1 OR STEEPER

PROPOSED DEBRIS CATCHMENT WALL, 5 FEET TALL. FINAL POSITION OF WALL MAY VARY.

PROVIDE A CONCRETE DITCH BEHIND WALL, MAINTAINING AT LEAST 4 FEET OF FREEBOARD. DITCH TO BE CLEARED ON AN ANNUAL BASIS.

WALL TO BEAR ON 18-INCH DIAMETER PERS SPACED AT 48" O.C., DRILLED 10" MINIMUM INTO BEDROCK.

**SECTION A-A**  
SCALE: 1"=4'

PRELIMINARY  
- NOT FOR  
CONSTRUCTION

<p><b>DAVID JONES</b> CIVIL &amp; SOIL ENGINEER 7915 CREST AVENUE OAKLAND CALIF. 94605 PH &amp; FX: (510) 588-2162 dave@djones.com</p>	<p>SCALE: 1"=4'</p>	<p>CONCEPTUAL PLAN FOR REAR DEBRIS WALL 181 MERRILL AVENUE FAIRFAX, CALIFORNIA</p>
	<p>JOB #: 0-4568 DRAWN: DAO/OSO DATE: 1/16/20</p>	
<p>PAGE: 2 OF 2</p>		

**PRELIMINARY  
- NOT FOR  
CONSTRUCTION**

CONSIDER CONSTRUCTING A SECOND CONCRETE  
DITCH ABOVE EXISTING CUT, WITH DISCHARGE LINE  
TO STREET.

AS A MINIMAL MEASURE TO PROTECT THE ADDITION  
FROM ROCK FALL, CONSTRUCT ±30 LINEAR FEET  
OF 5'-TALL CATCHMENT WALL AT BASE OF  
EXISTING CUT SLOPE. ASSUME W8x18 I-BEAMS  
SET IN 18"Ø, 10'-DEEP PIERS SPACED AT 6' O.C.  
WITH 4x12 PRESSURE-TREATED LAGGING, OR 6x12  
LAGGING AT AN 8-FOOT SPACING.

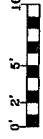
CONSTRUCT A CONCRETE V-PITCH IMMEDIATELY  
BEHIND THE CATCHMENT WALL. DITCH MUST BE  
CLEANED OUT ON AN ANNUAL BASIS.

EXISTING RESIDENCE.

PROPOSED SIDE ADDITIONS TO HOUSE.

PROPOSED GARAGE ADDITION TO HOUSE. SEE  
SHORING PLAN.

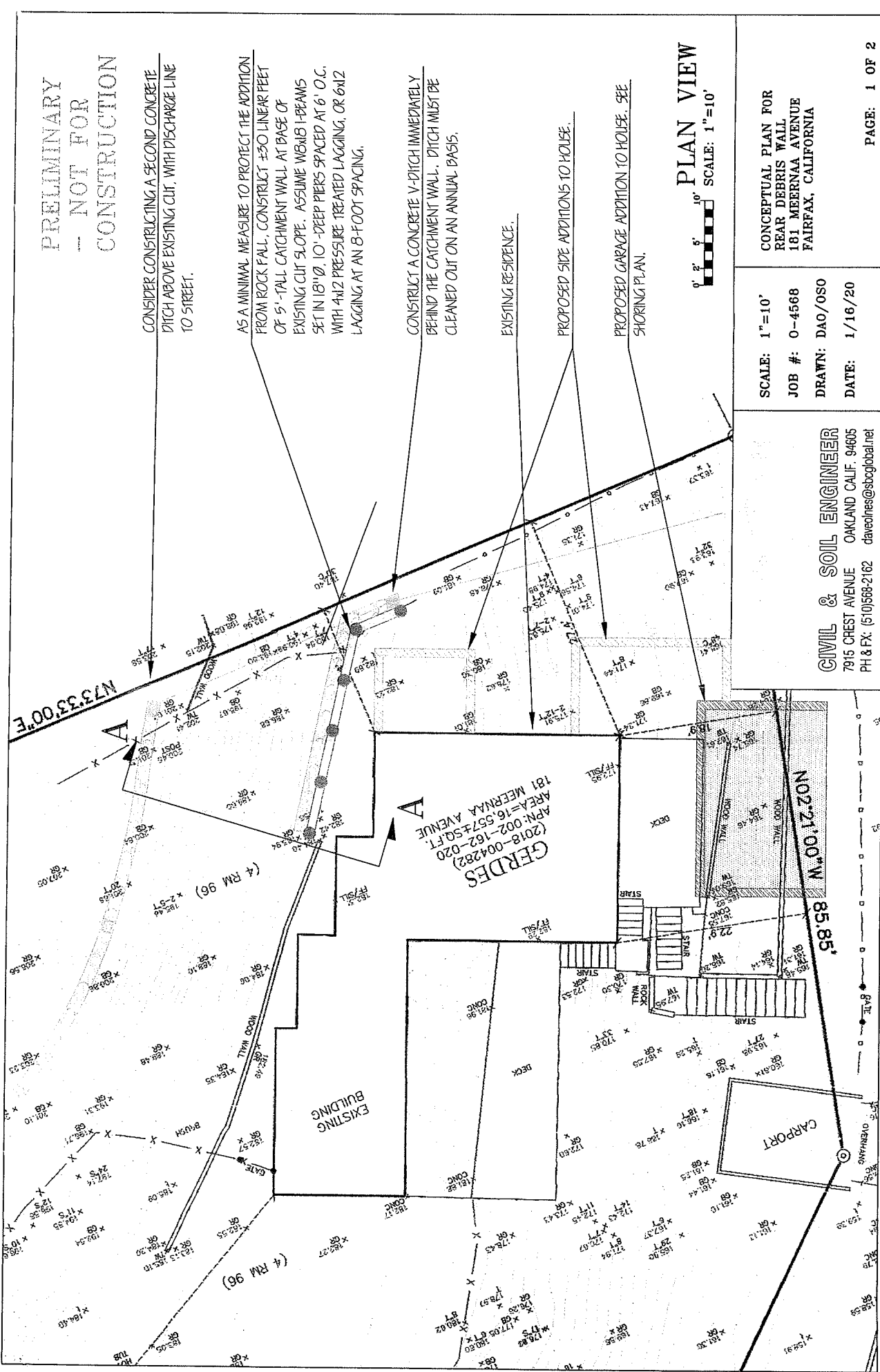
**PLAN VIEW**  
SCALE: 1" = 10'



CONCEPTUAL PLAN FOR  
REAR DEBRIS WALL  
181 MEERNA AVENUE  
FAIRFAX, CALIFORNIA

SCALE: 1" = 10'  
JOB #: 0-4568  
DRAWN: DAO/OSO  
DATE: 1/16/20

**CIVIL & SOIL ENGINEER**  
7915 CHEST AVENUE OAKLAND CALIF. 94605  
PH & FX: (510)568-2162 daveolnes@sbcglobal.net





November 14, 2019  
File: 201.185'altr.doc

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

Attn: Ms. Linda Neal, Principal Planner

Re: First Planning-Level Geologic, Geotechnical, and Civil Engineering Review  
Residential Remodel and New Accessory Dwelling Unit (ADU)  
181 Meernaa Avenue (APN 002-162-20)  
Fairfax, California

### Introduction

In response to your request and in accordance with our agreement dated March 20, 2018, we have reviewed project plans and supporting documentation for the proposed remodel of the existing single-family residence and construction of a new, attached Accessory Dwelling Unit (ADU) at 181 Meernaa Avenue (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 includes construction of 2 new off-street parking spaces, which will be accommodated by excavation into the slope below the existing 2-story residence. New retaining walls up to 10-foot high will support the upslope side of the parking area. A new 404 square-foot, lower-level addition will be constructed over the new parking spaces, and will be combined with an existing lower-level "bonus room" to create a new, 660 square-foot ADU. A 123 square-foot addition will be

constructed at the south end of the main floor to create an enlarged master bedroom as part of an interior remodel. The new upper-level addition will be accommodated by a new concrete retaining wall on the upslope side of the structure. Ancillary improvements will include new wood decks for the ADU and main floor, reconfigured entry stairs, new sewer and electrical connections, and other miscellaneous items.

### Project Review

We performed a brief site reconnaissance on November 12, 2019 to observe existing conditions at the site. Additionally, we have reviewed the following documents provided by the Town:

- Dave Olnes, P.E. (2019), "Geotechnical Reconnaissance Report, Proposed Residential Improvements, 181 Meernaa Avenue, Fairfax", dated October 11, 2019.
- Ladyne Design (2019), "181 Meernaa Ave, Fairfax, CA 94930" (Preliminary Architectural Plans), Sheets A0 through A7, dated October 16, 2019.
- Town of Fairfax application for Excavation Permit, dated October 17, 2019.

### Conclusions

Based on our site reconnaissance and document review, it is our opinion that the proposed work is in conflict with the following sections of the Fairfax Municipal Code:

#### **Fairfax Municipal Code of Ordinances – Chapter 12.20: Excavations Generally**

- Section 12.20.060 Investigation Criteria

**(B) The application shall be denied if it appears to the Superintendent of Streets from his or her Investigation that the excavation or fill would:**

**(2) Result in a dangerous topographic condition.**

The proposed project includes excavations up to 10-feet deep, which we judge may create a dangerous topographic condition (vertical unsupported cut) in the absence of temporary shoring or permanent retaining walls. Structural plans for shoring and walls were not provided for our review. The proposed grading and excavation appears reasonably-considered and is judged to be feasible. However, detailed plans for temporary shoring, permanent retaining walls and associated improvements should be reviewed and approved for building permits prior to issuance of an excavation permit.

**(4) Improperly divert the flow of drainage waters.**

No grading and drainage plan or Stormwater Pollution Prevention Plan (SWPPP) has been provided for review. No Construction Management Plan (CMP) showing proposed location of soil and material stockpiles, or indicating the proposed offhaul routes and schedules has been provided. We recommend that, at minimum, basic SWPPP and CMPs be provided for review prior to issuance of an excavation permit. A Grading and Drainage Plan should be submitted at the



November 14, 2019

building review level for the permanent improvements, and be approved prior to issuance of an excavation permit.

**(5) Create a Nuisance**

Although the proposed excavation and grading appears reasonable, we have not been provided structural plans for excavation shoring or permanent walls and related improvements, without which we judge the proposed grading and excavation will create a nuisance and, possibly, a hazard to building occupants and/or the general public. We recommend that plans for temporary shoring and permanent improvements be reviewed and approved prior to issuance of an Excavation Permit.

**(6) Otherwise in any manner endanger the health, safety, or property of any other person, despite all precautions which the applicant might be ready, willing and able to take.**

The project geotechnical report indicates the "steep cut behind the house is somewhat concerning, given the fractured nature of the exposed rock. There is some possibility this slope could slough against the back of the house". We acknowledge that the majority of the proposed grading and excavation will not affect the cut slope or the attendant risk of debris impact to the residence. However, we note a small section of new retaining wall is proposed to support the slope in the area of the new addition, which will require minor excavations into the toe of the slope, and the geotechnical report expresses significant safety concerns with the existing condition. Based on discussion with Planning staff regarding requirements for the proposed ADU site use, we recommend that plans be revised to incorporate some means of mitigation for the risk of debris impact to the structure. A retaining wall and rip-rap buttress is described as an option in the report, which we judge is generally appropriate. If other concepts are planned, the geotechnical engineer should provide brief commentary in regards to the suitability of the conceptual mitigation and criteria required for design and construction of the new improvements.

**Recommendations**

Based on our discussions with Planning staff regarding the ADU site use change, we recommend that project processing be delayed pending submittal of plans for proposed shoring and retaining walls. At the Planning level, we recommend that mitigation for the risk of debris impact to the structure be incorporated in the plans based on the recommendations of the geotechnical engineer.

Other items, including review of 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. As noted previously, we recommend that building permits be issued for permanent improvements prior to issuance of an excavation permit, in order to reduce the risk that design or permit approval delays following excavation commencement may result in a nuisance or unsafe condition.

# MILLER PACIFIC ENGINEERING GROUP

Town of Fairfax  
Page 4

November 14, 2019

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)



January 7, 2020  
File: 201.185bltr.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  
Residential Remodel and New Accessory Dwelling Unit (ADU)  
181 Meernaa Avenue (APN 002-162-20)  
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 remodel of the existing single-family residence and construction of a new, attached Accessory Dwelling Unit (ADU) at 181 Meernaa Avenue (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 Municipal Code of Ordinances, specifically Town Code Chapter 12.20
- 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 includes construction of 2 new off-street parking spaces, which will be accommodated by excavation into the slope below the existing 2-story residence. New retaining walls up to 10-foot high will support the upslope side of the parking area. A new 404 square-foot, lower-level addition will be constructed over the new parking spaces, and will be combined with an existing lower-level "bonus room" to create a new, 660 square-foot ADU. A 123 square-foot addition will be constructed at the south end of the main floor to create an enlarged master bedroom as part of an

January 7, 2020

interior remodel. The new upper-level addition will be accommodated by a new concrete retaining wall on the upslope side of the structure. Ancillary improvements will include new wood decks for the ADU and main floor, reconfigured entry stairs, new sewer and electrical connections, and other miscellaneous items.

#### Project Review

We performed a brief site reconnaissance on November 12, 2019 to observe existing conditions at the site. We previously reviewed the following documents provided by the Town, as summarized in our November 14, 2019 letter:

- Dave Olnes, P.E. (2019), "Geotechnical Reconnaissance Report, Proposed Residential Improvements, 181 Meernaa Avenue, Fairfax", dated October 11, 2019.
- Ladyne Design (2019), "181 Meernaa Ave, Fairfax, CA 94930" (Preliminary Architectural Plans), Sheets A0 through A7, dated October 16, 2019.
- Town of Fairfax application for Excavation Permit, dated October 17, 2019.

More recently, we reviewed additional documentation in response to our first review comments, including the following:

- Dave Olnes, P.E. (2019), "Geotechnical Memorandum, Preliminary retaining Wall and Shoring Schematics, Proposed Residential Improvements, 181 Meernaa Avenue, Fairfax", dated December 17, 2019.
- Ladyne Design (2019), "Revisions Response Letter, 181 Meernaa Ave, Fairfax, CA 94930", dated December 20, 2019.

#### Conclusions and Recommendations

Based on our review of the submitted materials, we judge that all of our planning-level engineering comments have been suitably addressed. We judge that review of 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.

As noted in our previous letter, we recommend that building permits be issued for permanent site walls prior to issuance of a grading/excavation permit, in order to reduce the risk that design or permit approval delays following excavation commencement may result in a nuisance or unsafe condition. Alternatively, excavation permit issuance could be contingent, at least, upon approval of shoring plans.

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.

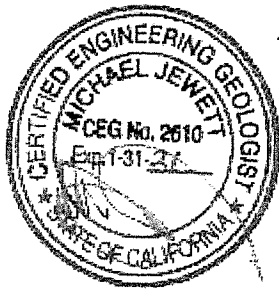
# MILLER PACIFIC ENGINEERING GROUP

Town of Fairfax  
Page 3

January 7, 2020

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)





February 3, 2020  
File: 201.185cltr.doc

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

Attn: Ms. Linda Neal, Principal Planner

Re: Third Planning-Level Geologic, Geotechnical, and Civil Engineering Review  
Residential Remodel and New Accessory Dwelling Unit (ADU)  
181 Meernaa Avenue (APN 002-162-20)  
Fairfax, California

### Introduction

In response to your request and in accordance with our agreement dated March 20, 2018, this letter summarizes our third review of project plans and supporting documentation for the proposed remodel of the existing single-family residence and construction of a new, attached Accessory Dwelling Unit (ADU) at 181 Meernaa Avenue (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 Municipal Code of Ordinances, specifically Town Code Chapter 12.20
- 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 includes construction of 2 new off-street parking spaces, which will be accommodated by excavation into the slope below the existing 2-story residence. New retaining walls up to 10-foot high will support the upslope side of the parking area. A new 404 square-foot, lower-level addition will be constructed over the new parking spaces, and will be combined with an existing lower-level "bonus room" to create a new, 660 square-foot ADU. A 123 square-foot addition will be constructed at the south end of the main floor to create an enlarged master bedroom as part of an

interior remodel. The new upper-level addition will be accommodated by a new concrete retaining wall on the upslope side of the structure. Ancillary improvements will include new wood decks for the ADU and main floor, reconfigured entry stairs, new sewer and electrical connections, and other miscellaneous items.

#### Project Review

We performed a brief site reconnaissance on November 12, 2019 to observe existing conditions at the site. We previously reviewed the following documents provided by the Town, as summarized in our November 14, 2019 letter:

- Dave Olnes, P.E. (2019), "Geotechnical Reconnaissance Report, Proposed Residential Improvements, 181 Meernaa Avenue, Fairfax", dated October 11, 2019.
- Ladyne Design (2019), "181 Meernaa Ave, Fairfax, CA 94930" (Preliminary Architectural Plans), Sheets A0 through A7, dated October 16, 2019.
- Town of Fairfax application for Excavation Permit, dated October 17, 2019.

More recently, we reviewed additional documentation in response to our first review comments, including the following:

- Dave Olnes, P.E. (2019), "Geotechnical Memorandum, Preliminary retaining Wall and Shoring Schematics, Proposed Residential Improvements, 181 Meernaa Avenue, Fairfax", dated December 17, 2019.
- Ladyne Design (2019), "Revisions Response Letter, 181 Meernaa Ave, Fairfax, CA 94930", dated December 20, 2019.

Finally, we reviewed the following in response to our second review comments:

- Dave Olnes, P.E. (2019), "Conceptual Plan for Rear Debris Wall, 181 Meernaa Avenue, Fairfax", 2 pages, dated January 16, 2020.

#### Conclusions and Recommendations

The latest concept submitted from the project Geotechnical Engineer of Record differs from that submitted for our Second Review only in terms of planned height. It is our opinion that the Geotechnical Engineer of Record is within the ordinary local standard of care in his professional judgment regarding catchment wall height.

As such, and based on our review of the submitted materials, we judge that all of our planning-level engineering comments have been suitably addressed. We judge that review of 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.

As noted in our previous letter, we recommend that building permits be issued for permanent site walls prior to issuance of a grading/excavation permit, in order to reduce the risk that design or



**MILLER PACIFIC  
ENGINEERING GROUP**

Town of Fairfax  
Page 3

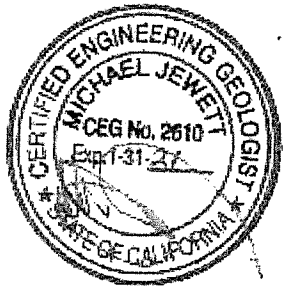
February 3, 2020

permit approval delays following excavation commencement may result in a nuisance or unsafe condition. Alternatively, excavation permit issuance could be contingent, at least, upon approval of shoring plans.

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:



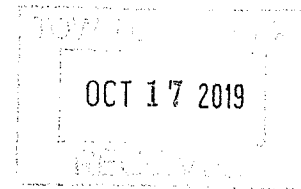
Mike Jewett  
Town of Fairfax Contract Geologist  
Engineering Geologist No. 2610  
(Expires 1/31/21)



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



October 15, 2019



Dear Town of Fairfax,

I am the owner of the property at 187 Meernaa Ave, Fairfax, adjacent to the Gerdes family at 181 Meernaa Avenue.

I understand the Gerdes' proposed addition project may involve the removal of a few trees immediately adjacent to our shared property line (as shown in their site plan), in order to construct a retaining wall for their proposed Master Bedroom addition at the Southeast corner of their residence.

I grant permission for the Gerdes family to perform the necessary tree removal on our property (at their expense) in the specific area described above.

Regards,

Joan and Dave Getz

187 Meernaa Ave

ATTACHMENT E

TO: Town of Fairfax  
RE: 181 Meernaa Ave – A.D.U. Project

OCT 17 2019

Dear Fairfax Town Council and Planning Commission,

We are residents of the Deer Park neighborhood and live nearby to Peg and Dave Gerdes. They have been good neighbors and residents of Fairfax for the 15 plus years we have been here. We always see Peg and Dave when we are all walking our dogs in the area.


Recent magazines have been featuring articles about two individual families that band together to live together. The costs of long-term care have risen to where one family alone cannot bear the cost of care alone. Peg and Dave (of 181 Meernaa Ave) are becoming early adaptors of this wave of living. To see this form multiple residence just look at Berkeley for example. When I see houses for sale there in the million dollar plus range, there have to be cheaper solutions as our population ages.


Lisa and I support Peg and Dave Gerdes' plan for multigenerational housing in Fairfax. I suspect this form of housing will grow by underground activity just as second units did. We commend Peg and Dave for seeking to do it legally correct and model the future of housing in Fairfax.

Specifically, the proposed addition has a smaller foot print than an additional separate unit. The new design does not appear to take up much more footprint. The overall view of the lot will not make much of an impact.

As you can tell from this letter, we totally and lovingly endorse this project. And we encourage and hope that the Town Council and Planning Commission will totally approve this project.

Sincerely,

  
Irv Busbee and Lisa Dickson  
156 Meernaa Ave.  
Fairfax, CA. 94930

  
Oct 13, '19

TO: Town of Fairfax

RE: 181 Meernaa Ave – A.D.U. project

Dear Fairfax Town Council & Planning Commission,

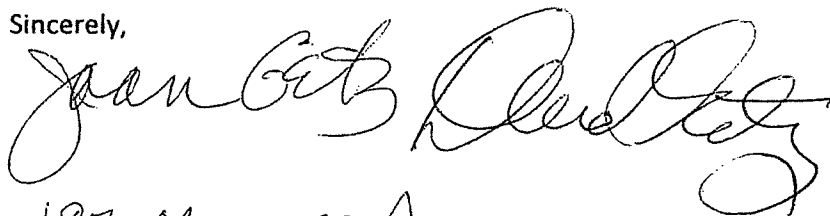
I am a resident of Meernaa Ave and live near Peg & Dave Gerdes. They have been good neighbors and residents of Fairfax for the past 16 years. Peg & Dave are often seen taking daily walks with their dogs throughout the neighborhood.

They shared their proposal to create an A.D.U. which allows them to stay here in our community after retirement, and enables their son Dash Gerdes' family and their 3 lovely young grandchildren to occupy the main house. This project seems consistent with the family values and character of Fairfax.

I understand the new A.D.U. will be constructed in the area where their lower front deck currently is, along with off-street parking underneath. I also understand that an additional curb cut will be required to access the new parking area. The plans appear to do a good job to fit in with the steep terrain and takes steps to reduce the overall on-street parking burden.

I support this type of project that helps bring multi-generational families together and creates affordable housing opportunities for our aging residents. I would encourage the Town Council & Planning Commission to approve this project.

Sincerely,

A handwritten signature in black ink, appearing to read "Joan Gatz". The signature is fluid and cursive, with a large initial "J" and "G".

187 Meernaa Ave

Sharon Rowbury  
167 Meernaa Ave  
Fairfax CA 94930

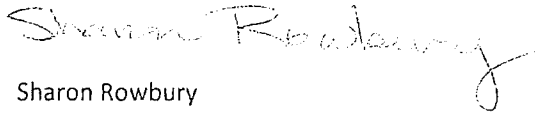
October 15, 2019

To Whom It May Concern:

I live next door to Dave and Peg Gerdes. They are great neighbors. I am very impressed with their design for the ADU. It's good looking and fits in nicely with the neighborhood. Also, I appreciate the fact that they've thought about extra parking to eliminate the need to use street parking.

I approve the proposed project.

Sincerely,

A handwritten signature in cursive script that reads "Sharon Rowbury".

Sharon Rowbury

TO: Town of Fairfax

RE: 181 Meernaa Ave – A.D.U. project

Dear Fairfax Town Council and Planning Commission,

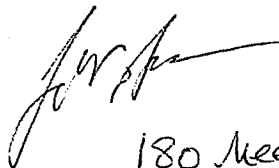
I am a resident of the Deer Park neighborhood and live nearby to Peg and Dave Gerdes. They have been good neighbors and residents of Fairfax for the past 16 years. Peg and Dave are often seen taking daily walks with their dogs in the area.

They shared their proposal to create an A.D.U. which allows them to stay here in our community after retirement, and enables their son Dash Gerdes' family and their 3 lovely young grandchildren to occupy the main house. This project seems consistent with the family values and character of Fairfax.

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I support this type of project that helps bring multi-generational families together and creates affordable housing opportunities for our aging residents. I would encourage the Town Council and Planning Commission to approve this project.

Sincerely,



180 Meernaa Ave

TO: Town of Fairfax

RE: 181 Meernaa Ave – A.D.U. project

Dear Fairfax Town Council and Planning Commission,

I am a resident of the Deer Park neighborhood and live nearby to Peg and Dave Gerdes. They have been good neighbors and residents of Fairfax for the past 16 years. Peg and Dave are often seen taking daily walks with their dogs in the area.

They shared their proposal to create an A.D.U. which allows them to stay here in our community after retirement, and enables their son Dash Gerdes' family and their 3 lovely young grandchildren to occupy the main house. This project seems consistent with the family values and character of Fairfax.

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I support this type of project that helps bring multi-generational families together and creates affordable housing opportunities for our aging residents. I would encourage the Town Council and Planning Commission to approve this project.

Sincerely,

 and 

Carolyn and P.K. Hart  
182 Meernaa Avenue



TO: Town of Fairfax

RE: 181 Meernaa Ave – A.D.U. project

Dear Fairfax Town Council and Planning Commission,

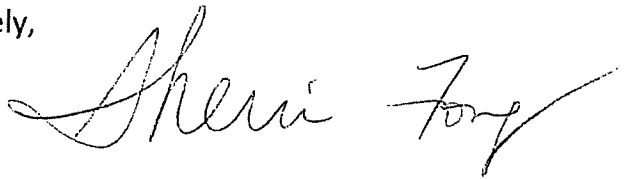
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I support this type of project that helps bring multi-generational families together and creates affordable housing opportunities for our aging residents. I would encourage the Town Council and Planning Commission to approve this project.

Sincerely,



Fong Family 176 Meernaa Ave  
Fairfax, CA 94930

SFong2000@gmail.com

TO: Town of Fairfax

RE: 181 Meernaa Ave – A.D.U. project


Dear Fairfax Town Council and Planning Commission,

I am a resident of the Deer Park neighborhood and live nearby to Peg and Dave Gerdes. They have been good neighbors and residents of Fairfax for the past 16 years. Peg and Dave are often seen taking daily walks with their dogs in the area.

They shared their proposal to create an A.D.U. which allows them to stay here in our community after retirement, and enables their son Dash Gerdes' family and their 3 lovely young grandchildren to occupy the main house. This project seems consistent with the family values and character of Fairfax.

I understand the new A.D.U. will be constructed in the area where their lower front deck currently is, along with off-street parking underneath. I also understand that an additional curb cut will be required to access the new parking area. The plans appear to do a good job to fit in with the steep terrain and take steps to reduce the overall on-street parking burden.

I support this type of project that helps bring multi-generational families together and creates affordable housing opportunities for our aging residents. I would encourage the Town Council and Planning Commission to approve this project.

Sincerely, 

4 Banker Avenue