

***Regular Meeting of the
Abatement Appeals Board***

March 18, 2026

Agenda Item D1

Public Comment

Statement to the San Francisco Abatement Appeals Board Regarding

NOV202424763 at 4757 19th Street

Scott Guerin, 46 Eagle Street

The large vertical crack in rear yard retaining walls that led to NOV202424763 at 4757 19th St. (and NOV 202172279 at 46 Eagle St.) involve rear yard retaining walls adjoining 5 properties: 4757 19th St. (2711/035), 4741 19th St. (2711/036), 30-32 Eagle St. (2711/040-041), 46 Eagle St. (2711/012; see EXHIBIT 1 for a recorded survey showing the 5 properties and the retaining walls in question). There is a longstanding dispute, preceding my purchase of the home, over whose property the crack is located on and who should pay for and be responsible for the repairs. There are several different walls, all apparently quite old, and of different construction methods or compositions, most of which appear to have been constructed for the benefit of the downhill property owners, to give them flat rear yards on land that is a naturally sloping hillside. The large vertical crack of concern to the SFDBI is on only one of those walls, at 4757 19th Street. The NOV was brought against 4757 19th St by DBI during review of this case for the San Francisco Board of Appeals hearing held on June 12, 2024. 4757 19th St. has taken no action whatsoever to repair these walls. Therefore, the order of abatement should stand.

Surveys show that the large vertical crack is located at 4757 19th St

All surveys recorded with the city show that the large vertical crack is located at 4757 19th St. at the wall's eastern buttress. The surveys clearly show that the large vertical crack does not abut 46 Eagle Street, but is on 4757's 19th Street's property and

threatens 4757 19th St., on the L shaped extension of the wall that abuts 4741 19th St. The surveys show that the buttresses on the downhill side of the walls extend well into 4757 19th Street's property, as much as a foot or more, even though the top of the wall extends smaller amounts.

- Exhibit 1 shows a survey commissioned by the previous owner of 46 Eagle St.
- Exhibit 2 shows a survey commissioned by the previous owner of 4741 19th St.
- Exhibit 3 shows a survey commissioned by the current owner of 4757 19th st.

The wall along the rear of lot 4757 19th St. is primarily along the 4757 19th St. property line and has three buttresses that extend well into the 4757 property, are part of the wall, and support the wall (see Exhibit 5 for photos of the eastern and center buttresses). Thus, it appears that the wall was entirely constructed from on the 4757 19th St. property, by the owners 4757 19th St., at the time of the wall's construction.

Different construction indicates multiple walls built by downhill properties for their benefit

There is an abrupt change in the age and composition of the building materials at each of the two downhill property lines. Importantly, neither of these property lines involve 46 Eagle St.

Exhibit 4 shows photographs of the property line between 30-32 Eagle St. and 4741 19th St. There is an abrupt change in the age and composition of the building materials at the property line. Importantly, this property line does not involve 46 Eagle St.

There is also an abrupt change in the composition and configuration of the materials between 4757 19th St. and 4741 19th St. ([Exhibit 5](#))

These observations are a clear indication that there are several retaining walls built to benefit the downhill properties. The walls stop at the downhill property lines that do not involve 46 Eagle. If walls had been built to only benefit 46 Eagle St., they likely would have been made with the same construction method, with common age and composition of materials. The fact that the construction method is very different across numerous walls demonstrates that these walls were not built to primarily benefit 46 Eagle St.

4757 19th St. was built 16 years before 46 Eagle Street

Address	Year Built
30 & 32 Eagle St	1900
4757 19th St	1910
46 Eagle St	1926
50 Eagle St	1940
4741 19th St	1947

([Based on San Francisco Property Information Map Assessor Summary](#))

The fact that 4757 19th St. was built long before 46 Eagle St. makes it likely that the wall was built to benefit their lot and new home.

Historical photos show that all homes in question were built on a naturally sloping hillside

Exhibit 6 shows a photo of Eagle St. prior to the construction of 46 Eagle and 50 Eagle (30-32 Eagle can be seen). Exhibit 7 shows a photo of Yukon and 19th Street prior to the construction of 46 Eagle and 50 Eagle (30-32 Eagle can be seen). Both photos indicate that the entire area is a naturally sloping hillside without naturally flat land.

A 25-30 foot elevation difference between Eagle and 19th Streets indicates that 4757 19th St. is not naturally flat

There is a significant elevation difference between Eagle and 19th streets, which means that but for the building of these retaining walls and excavation of their rear yards, the rear yards at 19th St. would not have been flat and usable. Exhibit 8 shows elevations obtained from Google Earth for each property on 19th St and Eagle St. There is a 25-30 foot elevation drop from Eagle St. to 19th St.

Downhill properties have built multiple retaining walls with other neighbors

Because each of the houses is built on naturally sloping land, each of the downhill properties have installed numerous retaining walls to create flat, usable areas in their yards after cutting into the hillside. Many of the walls adjoin other properties and some walls are contained entirely within the downhill properties.

Exhibit 9 shows a retaining wall adjoining 4741 19th St and 4757 19th Street and also shows retaining walls built entirely within 4741 19th St. The style of the walls match the wall with the large vertical crack.

Exhibit 10 shows a retaining wall adjoining 4741 19th St and 30 Eagle St and also shows retaining walls built entirely within 4741 19th St.

Exhibit 11 shows retaining walls adjoining 4757 19th St and 50 Eagle St and also shows retaining walls built entirely within 4757 19th St.

Soil engineer indicates that downhill neighbors cut into the hillside; removing the walls would require restoring slopes in their yards.

The conclusions of the soil engineering report have been misstated. The report does not indicate that 46 Eagle was the only property to alter the land. Exhibit 12 is a letter from the engineer that wrote the report (Exhibit 13 is the full report). The letter states that:

It is Peters & Ross opinion that both properties were cut into the northeast facing slope. If the current wall is demolished and not replaced, the yard at 46 Eagle Street will slough down into the yard below at 4757 19th Street. From a geotechnical perspective, if the common wall were removed and replaced with a 2.5:1 (horizontal to vertical) slope, about 30 percent of each backyard would be lost. Therefore, Peters & Ross recommends that the wall be replaced with a new pier supported wall.

Soil borings are consistent with leveling of downhill lots

The soil borings show that the top few feet are mixed rubble, which is consistent with the soil coming from the adjacent properties as debris left over when they leveled out their yards. The soil borings show the top layer of soil has concrete pieces and other debris in it, which may be an indication that this is the only fill that was added, likely from when the downhill neighbors excavated to level their yards around the times when their homes were constructed. The levels of soil beneath the top level are likely natural existing soil, at the depth or elevation where they were originally. Thus, if the walls were removed, the soil should be returned to this level, which means 4757 would not have a flat rear yard.

Fixing all the walls abutting 46 Eagle St. would not fix the large vertical crack

The large vertical crack is at 4757 19th St. by more than a foot. The crack cannot be fixed without working on 4757 19th Street's property, where the wall with the crack is located, as well as on 4741 19th Street's property. Fixing walls abutting 46 Eagle St. would not fix the crack that is not located at 46 Eagle St.

The building code is part of state law

The State Building Code is updated by the State every three years, and is mandatory. State Law allows a local City to adopt standards that are more strict than the State Building Code. "(b) Neither the State Building Standards Law contained in this part, nor the application of building standards contained in this section, shall limit the authority of a city, county, or city and county to establish more restrictive building standards" Health & Saf. Code, § 18941.5

Ongoing dispute with neighbors over construction access and responsibility for repairs

Based on the findings of the surveys and the evidence of multiple walls built by the downhill neighbors for their benefit, it is not the primary responsibility of 46 Eagle to repair these walls. Therefore, I am asking the downhill neighbors to at least make an equitable contribution to the cost of construction, in addition to providing the necessary access.

The order of abatement should stand

The NOV was brought against 4757 19th St by DBI during review of this issue for the San Francisco Board of Appeals hearing held on June 12, 2024. 4757 19th St. has taken no action whatsoever to repair these walls. Therefore, the order of abatement should stand.

SUMMARY OF EXHIBITS

Exhibit 1: A recorded survey showing the 5 properties involved in the dispute and the retaining walls in question. Survey commissioned by the previous owner of 46 Eagle St.

Exhibit 2: A survey commissioned by the previous owner of 4741 19th St.

Exhibit 3: A survey commissioned by the owner of 4757 19th St.

Exhibit 4: Photographs of the property line between 30-32 Eagle St. and 4741 19th St., showing an abrupt change in the age and composition of building materials.

Exhibit 5: Photographs showing an abrupt change in the composition and configuration of materials between 4757 19th St. and 4741 19th St. Photos show the eastern (middle picture) and central (right picture) buttresses on the 4757 19th St. property. The western buttress is also 4757 19th St. property but is obscured by ivy.

Exhibit 6: A photo of Eagle St. prior to the construction of 46 Eagle St. and 50 Eagle St.

Exhibit 7: A photo of Yukon and 19th Street prior to the construction of 46 Eagle St. and 50 Eagle St.

Exhibit 8: Elevations obtained from Google Earth for properties on 19th St. and Eagle St., illustrating the 25-30 foot elevation drop.

Exhibit 9: Photograph taken in rear yard of 4741 19th St. showing a retaining wall adjoining 4741 19th St. and 4757 19th St., and also retaining walls built entirely within 4741 19th St.

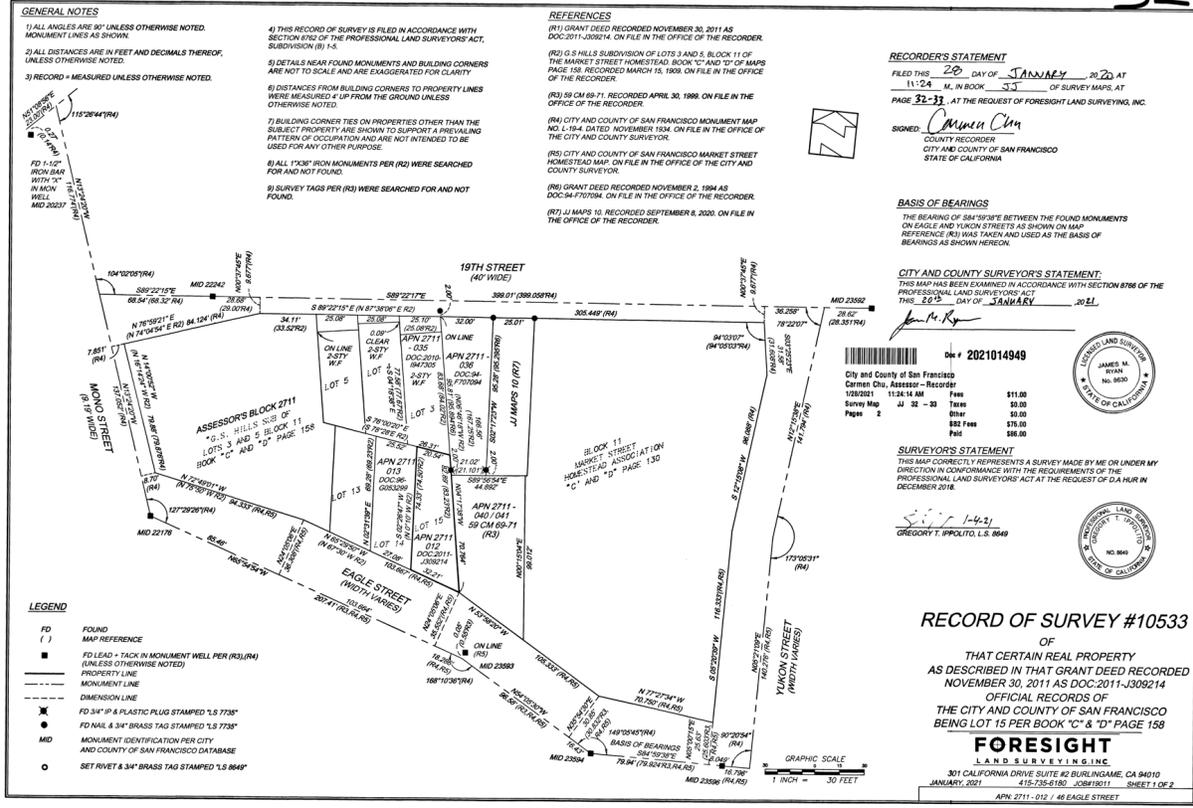
Exhibit 10: : Photograph taken in rear yard of 4741 19th St. showing a retaining wall adjoining 4741 19th St. and 30 Eagle St., and also retaining walls built entirely within 4741 19th St.

Exhibit 11: Photographs of rear yard of 4757 19th St. showing retaining walls adjoining 4757 19th St. and 50 Eagle St., and also retaining walls built entirely within 4757 19th St.

Exhibit 12: A letter from the soil engineer who wrote the report.

Exhibit 13: The full soil engineering report.

Exhibit 1: A recorded survey showing the 5 properties involved in the dispute and the retaining walls in question. Commissioned by the previous owner of 46 Eagle St.



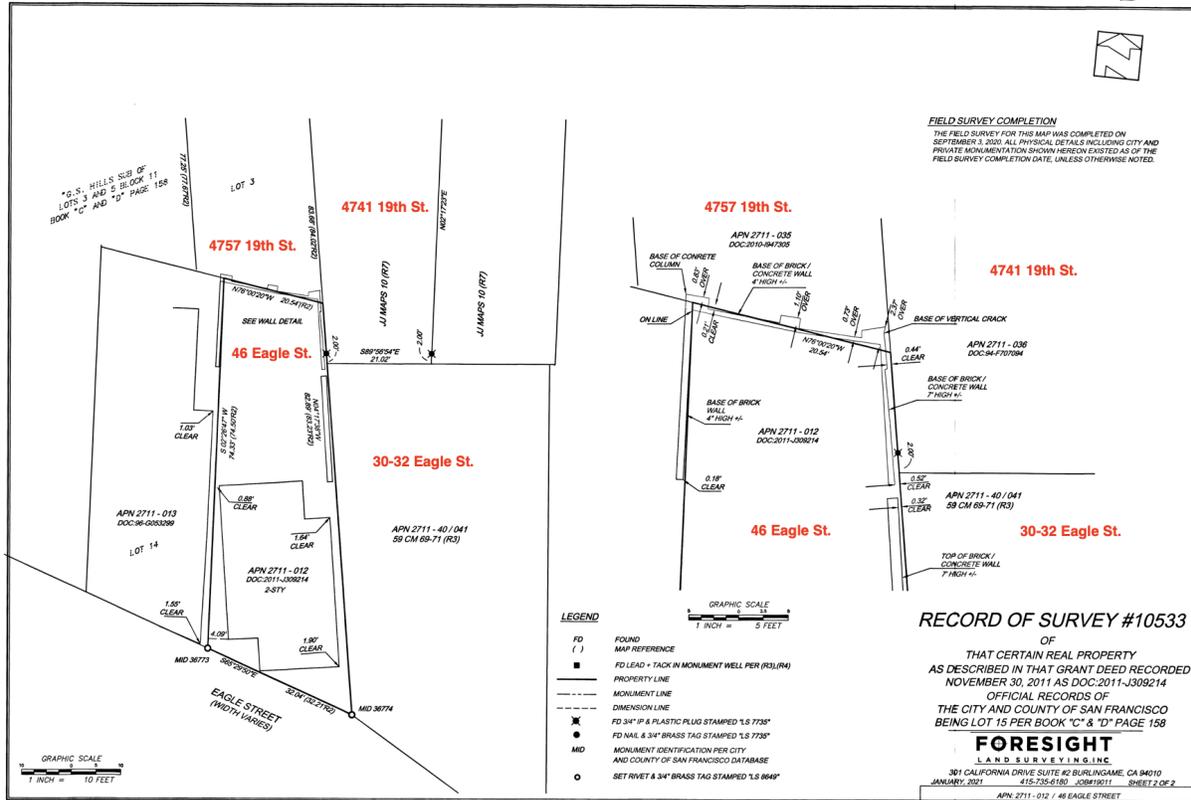


Exhibit 3: A survey commissioned by the current owner of 4757 19th St.

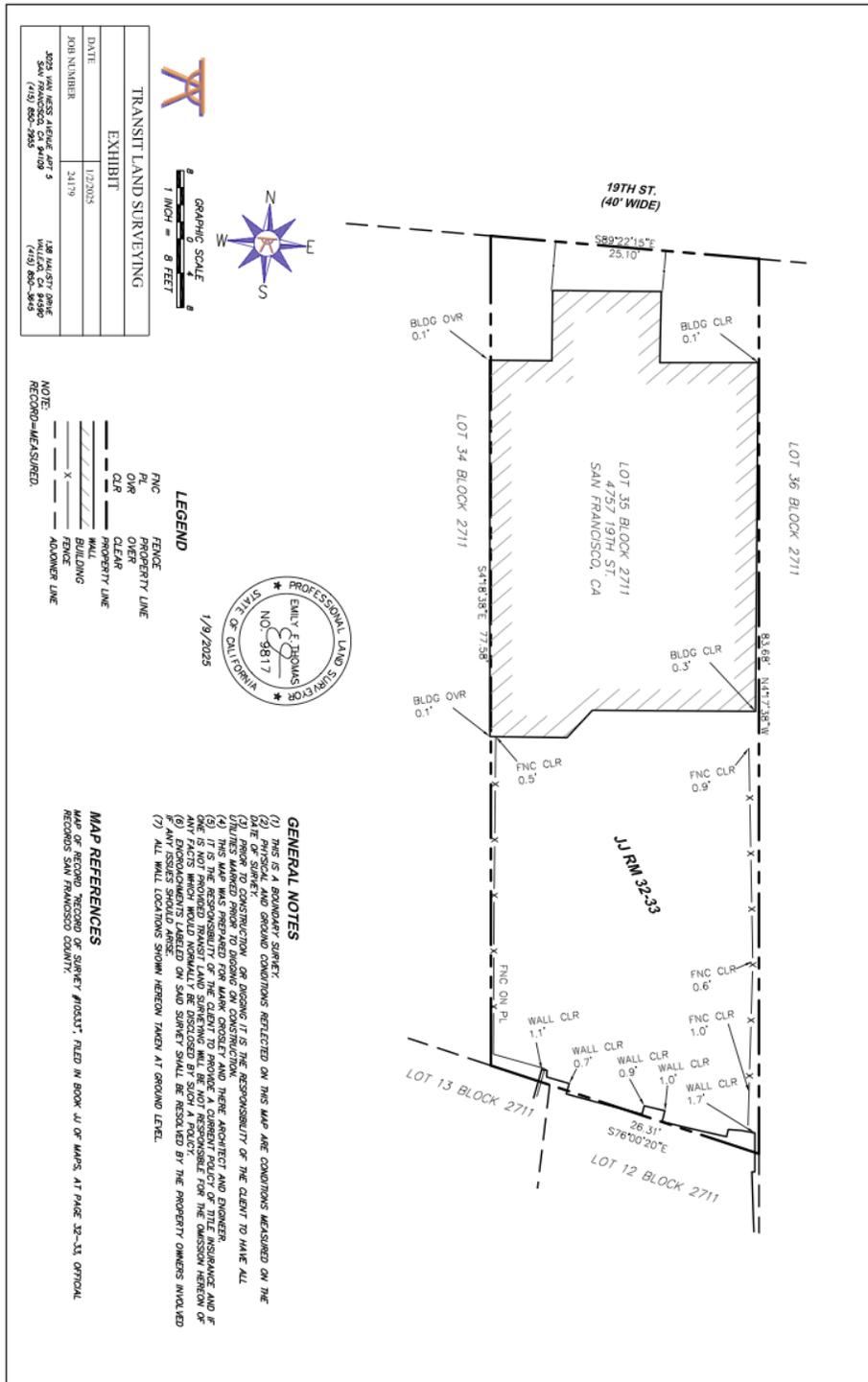


Exhibit 4: Photographs of the property line between 30-32 Eagle St. and 4741 19th St., showing an abrupt change in the age and composition of building materials.



30-32 Eagle Facing North Towards 4741 19th



4741 19th Facing South Towards 30-32 Eagle

Still frames from videos recorded March 8, 2024

Exhibit 5: Photographs showing an abrupt change in the composition and configuration of materials between 4757 19th St. and 4741 19th St. Photos show the eastern (middle picture) and central (right picture) buttresses on the 4757 19th St. property. The western buttress is also 4757 19th St. property but is obscured by ivy.



4741 19th Street facing west towards
4757 19th Street.
Photo taken 2/5/23



4757 19th Street facing east towards
4741 19th Street.
Photo taken 1/25/25



4757 19th Street facing south towards
46 Eagle Street.
Photo taken 1/25/25

Exhibit 6: A photo of Eagle St. prior to the construction of 46 Eagle St. and 50 Eagle St.



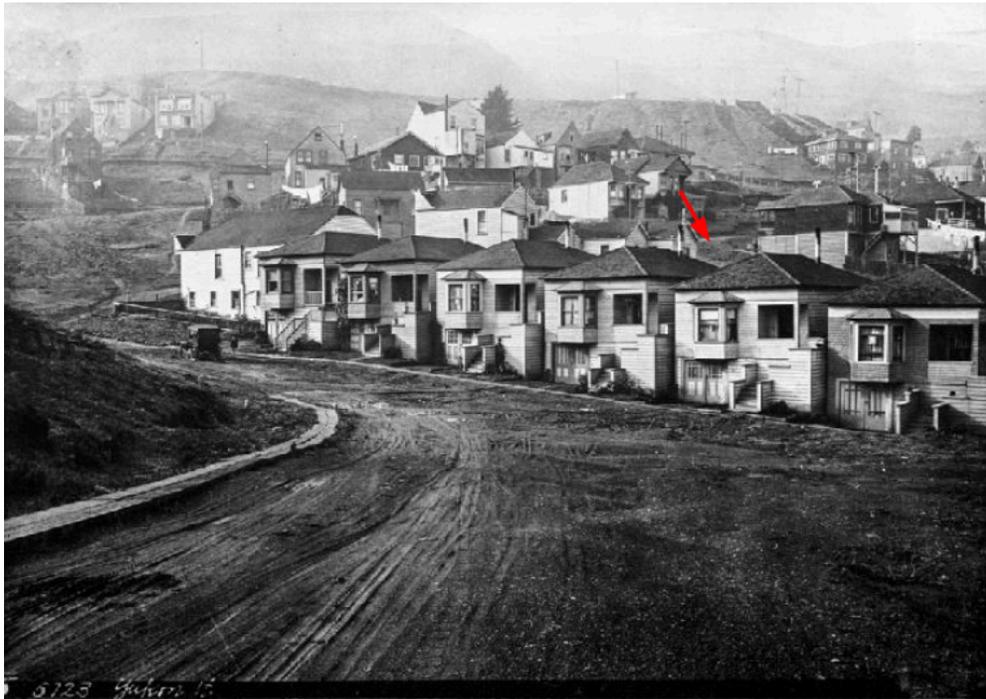
The red arrow indicates approximately where 46 Eagle stands today.

Source:

<https://vanguardproperties.com/properties/18-eagle-street-san-francisco-ca-94114-4215>

92642

Exhibit 7: A photo of Yukon and 19th Street prior to the construction of 46 Eagle St. and 50 Eagle St.

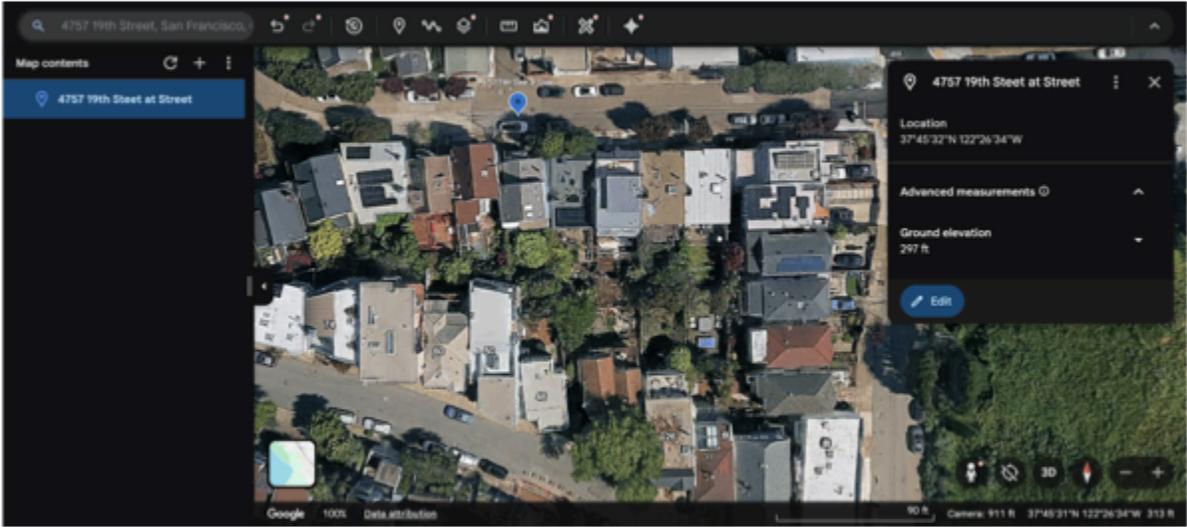


The red arrow indicates approximately where 46 Eagle St. stands today. Photo taken 1919.

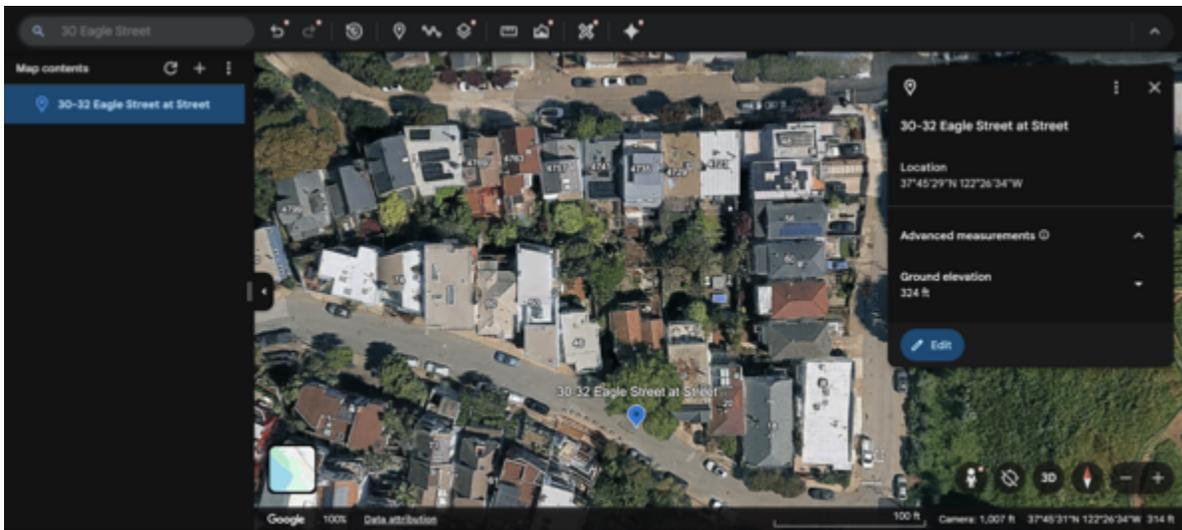
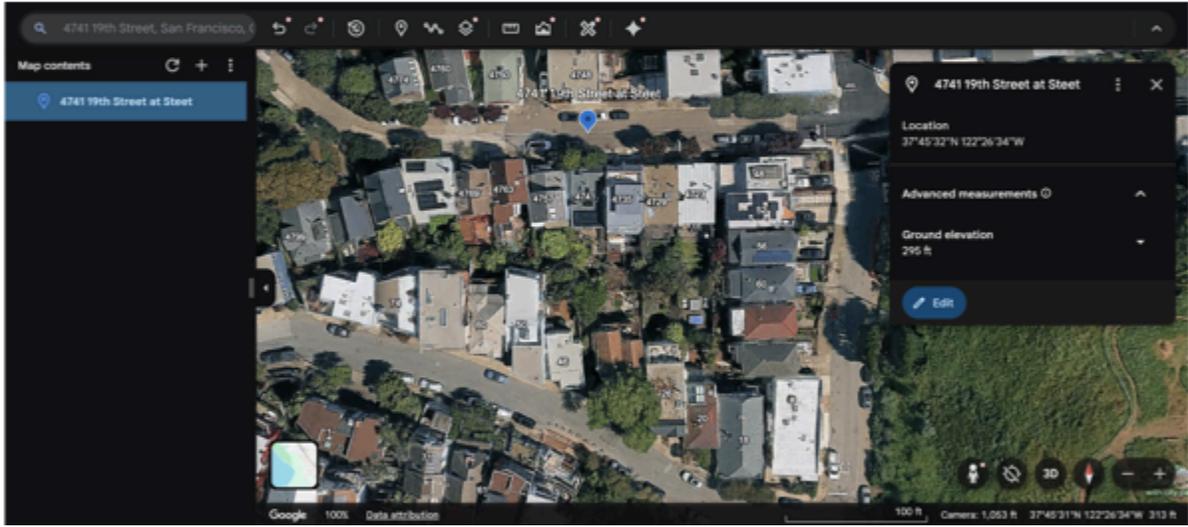
Source: <https://opensfhistory.org/Display/wnp36.01967.jpg>

Exhibit 8: Elevations obtained from Google Earth for properties on 19th St. and Eagle St., illustrating the 25-30 foot elevation drop.

Address	Elevation (ft.)
4757 19th St	297
4741 19th St	295
30 & 32 Eagle St	324
46 Eagle St	325



(Exhibit 8 cont.)



(Exhibit 8 cont.)

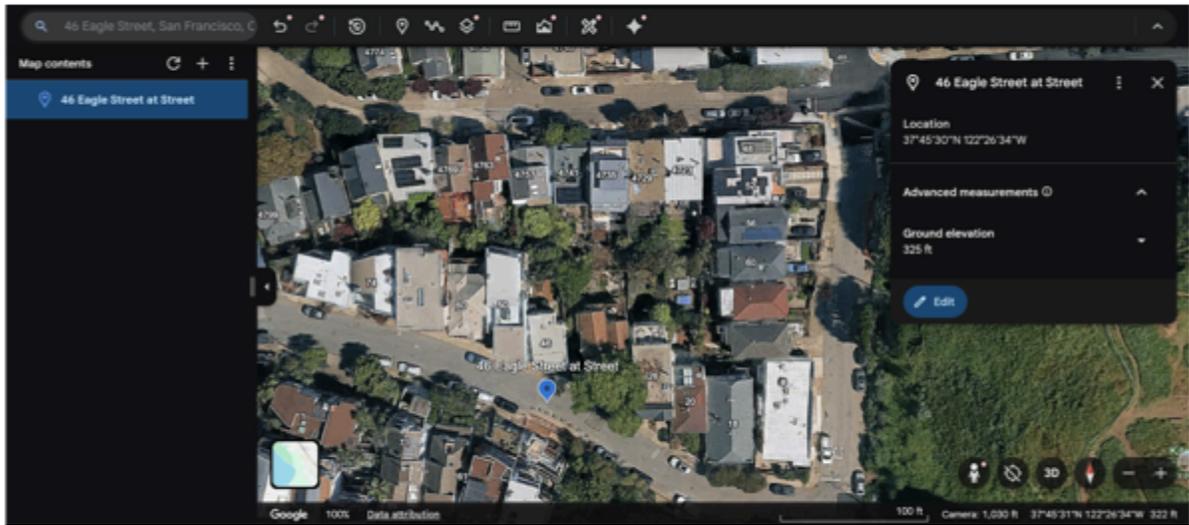


Exhibit 9: Photograph taken in rear yard of 4741 19th St. showing a retaining wall adjoining 4741 19th St. and 4757 19th St. (red arrows), and also retaining walls built entirely within 4741 19th St. (yellow arrows).



Photos taken 2/5/23

Exhibit 10: : Photograph taken in rear yard of 4741 19th St. showing a retaining wall adjoining 4741 19th St. and 30 Eagle St. (red arrows), and also retaining walls built entirely within 4741 19th St (yellow arrows).



Still frames from video recorded 3/8/24

Exhibit 11: Photographs of the rear yard of 4757 19th St. showing retaining walls adjoining 50 Eagle St. (red arrows), and also retaining walls built entirely within 4757 19th St (yellow arrows).



Photos taken 2/7/23

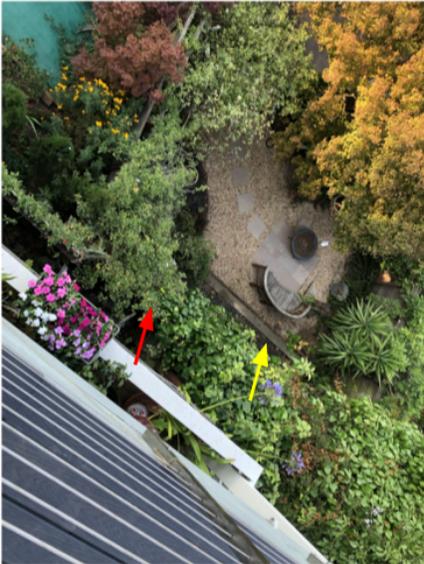


Photo taken from rear deck of 50 Eagle on 8/27/21

Exhibit 12: A letter from the soil engineer who wrote the report.

Peters & Ross
*Geotechnical & Geoenvironmental
Consultants*

April 14, 2025
Project No. 22111.001

Mr. Scott Guerin
46 Eagle Street
San Francisco, CA 94114

RE: Geotechnical Consultation – Wall between 46 Eagle Street and 4757 19th Street

Dear Mr. Guerin:

At your request Peters & Ross has evaluated the common portion of the proposed replacement wall between 46 Eagle Street and the lower neighbor at 4757 19th Street. We have not received a topographic map for either property, so we are unable to determine existing wall heights and locations. The structural plans prepared by Altos Structural Engineering show a proposed common wall between 4757 19th Street and 46 Eagle Street that will be approximately 12 feet high.

Peters & Ross drilled two exploratory test borings along the common portion of the wall in the backyard of 46 Eagle Street. We encountered 2 feet of fill materials in the boring located at the northwest corner of 46 Eagle Street. We encountered 5 feet of fill materials in the boring which was drilled in the northeast corner of the property. It is Peters & Ross opinion that both properties were cut into the northeast facing slope.

If the current wall is demolished and not replaced, the yard at 46 Eagle Street will slough down into the yard below at 4757 19th Street. From a geotechnical perspective, if the common wall were removed and replaced with a 2.5:1 (horizontal to vertical) slope, about 30 percent of each backyard would be lost. Therefore, Peters & Ross recommends that the wall be replaced with a new pier supported wall.

We appreciate the opportunity to provide geotechnical engineering services to you. If you have any questions, please call.

Very truly yours,
PETERS & ROSS


Peter K. Mundy, P.E., G.E.
Geotechnical Engineer 2217

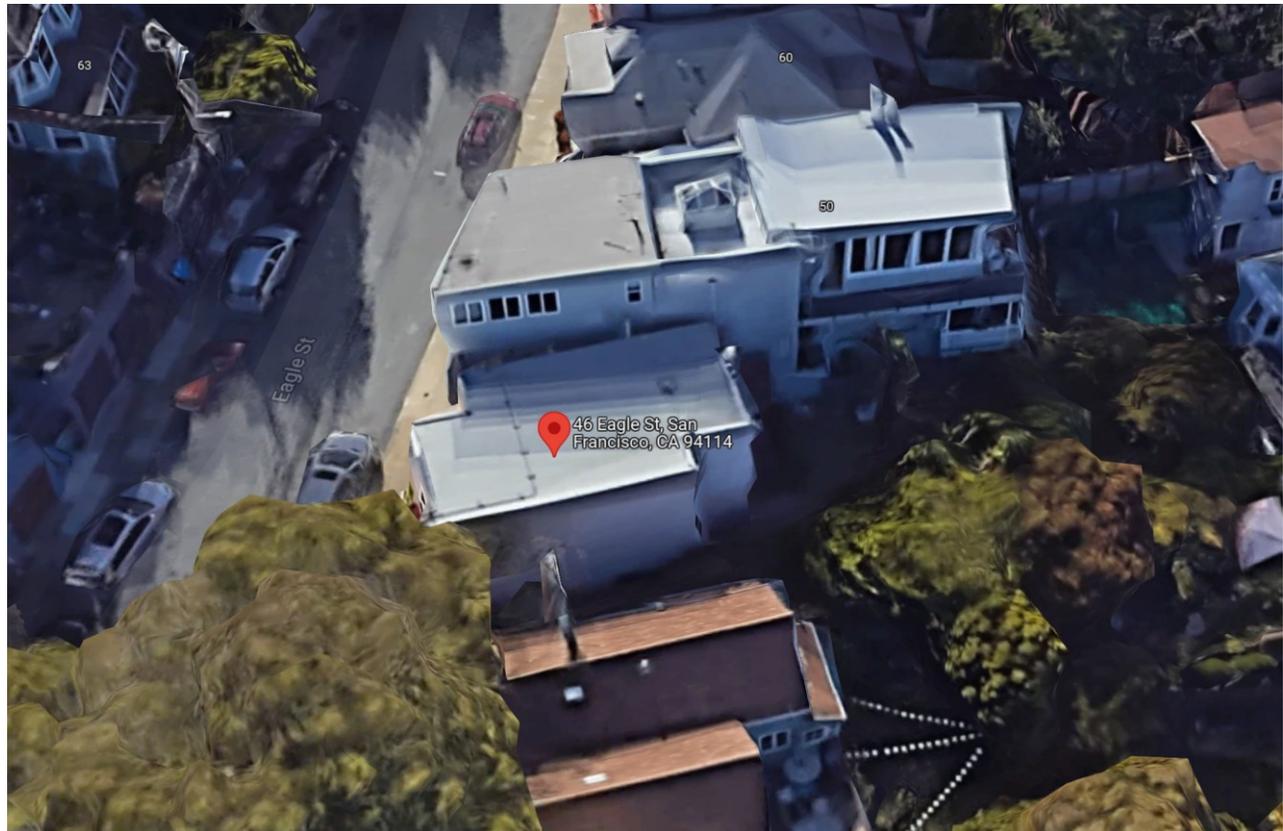


Exhibit 13: The full original soil engineering report (starts on next page).

Peters & Ross

Geotechnical & Geoenvironmental Consultants

Geotechnical Investigation Guerin Residence Wall



46 Eagle Street, San Francisco, California

Project No. 22111.001

April 2022

Peters & Ross
Geotechnical & Geoenvironmental
Consultants

April 6, 2022
Project No. 22111.001

Mr. Farzad Torabian
SFT Construction
322 6th Street, Suite 4
San Francisco, CA 94103

RE: Geotechnical Investigation – 46 Eagle Street, San Francisco, CA

Dear Mr. Torabian:

In accordance with your authorization, Peters & Ross has completed a geotechnical investigation for the above referenced project. The accompanying report presents the results of our field investigation and engineering analyses. Based on this information, it is Peters & Ross' opinion that the site is suitable for the planned back replacement retaining wall and future house addition.

Peters & Ross should be retained:

- to review geotechnical aspects of project plans and specifications,
- to provide supplemental recommendations should significant changes in the planned replacement retaining wall and addition be made, and
- to provide geotechnical engineering observation and testing services during construction, in order to check that the recommendations presented in this report are properly implemented into the completed project.

We appreciate the opportunity to provide geotechnical engineering services to you. If you have any questions, please call.

Very truly yours,
PETERS & ROSS



Peter K. Mundy, P.E., G.E.
Geotechnical Engineer 2217



INTRODUCTION

This report presents the results of a geotechnical investigation performed by Peters & Ross for the proposed replacement rear retaining wall and future back addition at 46 Eagle Street in San Francisco, California. The location of the site is shown on the Site Vicinity Map (Figure 1). The ground surface topography near the site is shown on Figure 2.

Project Description

The site consists of a developed downslope 0.043-acre lot, located on the north side of Eagle Street. A two-story wood-frame house built in 1926 occupies the central portion of the lot. Current plans are to replace the back retaining wall. Future plans may include building a back addition.

Scope of Services

Peters & Ross scope of services for the project was presented in our proposal dated January 31, 2022. Our services on the project were limited to the following:

- Drilling three exploratory test borings
- Logging and obtaining samples of the materials encountered in the test borings
- Performing laboratory tests on selected samples
- Performing engineering analyses sufficient to develop conclusions and recommendations regarding:
 1. Site geology and seismicity
 2. Soil and groundwater conditions
 3. Site preparation, excavation, and grading
 4. The most appropriate foundation type(s) for the replacement retaining wall and possible addition
 5. Geotechnical design parameters for the recommended foundation type(s)
 6. Lateral earth pressures for retaining wall design
 7. Subgrade preparation for concrete slabs-on-grade
 8. Geotechnical aspects of site drainage
 9. Construction considerations
- Preparing this report.

FIELD EXPLORATION AND LABORATORY TESTING

Subsurface conditions were explored by drilling two exploratory test borings and one hand auger to a maximum depth of 11 feet using a portable hydraulic auger operated by DeNovo Drilling of Richmond, California on February 22, 2022. The locations of the test borings and hand auger are shown on the Site Plan (Figure 3). Samples of the materials

encountered in the borings were obtained at frequent depth intervals, for field classification and laboratory testing. A description of the drilling and sampling equipment used and other details of the subsurface exploration, as well as a log of the test borings, are presented in Appendix A. The laboratory tests performed are discussed in Appendix B.

SITE CONDITIONS

Site Geology and Seismicity

The site is located within the California Coast Ranges geomorphic province, which is dominated by northwest-trending faults and folds. Geologic mapping by the U.S. Geological Survey (Schlocker 1974) shows that the site is underlain by Quaternary age undivided surficial deposits consisting of poorly graded sand, clayey sand, and silty sand. Preliminary photointerpretive landslide maps by Schlocker (1974) and the State of California SHZR 43 (2000) show no landslides on the property.

Seismologists and geologists recognize the San Francisco Bay Area as an area of high seismic activity. Several major active fault systems are located near the site. These include the San Andreas Fault about 9 km to the southwest and the Hayward Fault about 21 km to the northeast. It is reasonable to assume that the site will be subjected to at least one moderate to severe earthquake that will cause strong groundshaking. Strong ground shaking from a major earthquake is a hazard that cannot be eliminated but the effects can be reduced by the observation of sound construction practices using the current seismic design codes.

Subsurface Conditions

Generally, 2 to 5.5 feet of clayey sand with concrete and masonry debris fill materials were encountered. In Borings B-1 and HA-1, 2.5 to 4.5 feet of dark brown sandy lean clay were encountered underneath the fill materials. A washed sieve test in Boring B-1 at a depth of 7.5 feet showed that the sandy lean clay had 59 percent passing the number 200 sieve. In Boring B-2 the dark brown sandy lean clay was not encountered. In both borings and the hand auger, 1 to 2.5 feet of reddish brown sandy lean clay (completely weathered bedrock) was encountered. Atterberg limits tests indicate that the reddish brown sandy lean clay in Boring B-2 at a depth of 7.5 feet has a liquid limit of 32 percent and a plasticity index of 15 percent with 67 percent passing the number 200 sieve which indicate a low expansion potential (expansive soils shrink and swell in response to moisture changes). The reddish brown sandy lean clay was underlain by chert bedrock which extended to the depths explored.

Groundwater

Groundwater was not encountered in any of the borings. The boreholes were backfilled with cuttings. It should be noted that fluctuations in the groundwater level may occur due

to variations in rainfall, temperature, and other factors not evident at the time the measurements were made.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the field investigation, laboratory testing, and engineering analyses, it is Peters & Ross' opinion that the site is suitable for the replacement site retaining wall and proposed addition from a geotechnical perspective. The primary geotechnical concern that needs to be addressed is the presence of existing fill. Specific recommendations for foundation design are presented below.

1. Presence of Existing Fill

Peters & Ross found little to no information about the 1920s grading operations associated with the subject property. Based on our observations it is likely that fill materials were not placed and compacted according to accepted modern standards. Improperly placed fill soils will settle and creep especially if loads are applied directly to them from shallow foundations (such as footings or slabs). Therefore, we recommend that the planned replacement wall be supported on drilled pier foundations that extend through the fill and are embedded into the underlying chert bedrock.

2. Seismic Concerns

In accordance with Section 1613 of the 2019 California Building Code, Peters & Ross classifies the site as a C Site Class and a Seismic Design Category of D, with a latitude of 37.758 degrees and a longitude of -122.443 degrees. The CBC parameters presented in the following table should be used for seismic design.

SITE CLASS B - PERIOD (sec)	0.2	1.0
SPECTRAL RESPONSE S_s, S_1	1.500	0.605
SITE COEFFICIENT F_a, F_v (SITE CLASS C)	1.2	1.4
MAXIMUM SPECTRAL RESPONSE S_{MS}, S_{M1}	1.800	0.847
DESIGN SPECTRAL RESPONSE S_{DS}, S_{D1}	1.200	0.565
RISK COEFFICIENT C_{RS}, C_{R1}	0.912	0.894

The site is not within an Alquist-Priolo Earthquake Fault Zone, and therefore the risk of fault rupture at the site is remote. No loose, clean sands were observed in the exploratory test borings. Therefore, the risk of significant foundation settlement due to liquefaction or densification during a large magnitude earthquake is low.

3. Site Preparation, Excavation, and Grading

3.1 Clearing and Site Preparation

All structures, flatwork, foundations, and any trees or shrubs identified for demolition should be demolished and removed from the site. Holes resulting from the removal of

any obstructions that extend below the proposed finished grade should be cleared and backfilled with suitable material compacted to the requirements given below under Compaction. We recommend that the excavations to remove deleterious material be carried out under the observation of the soil engineer, so that these excavations will be properly backfilled.

3.2 Subgrade Preparation

After the site has been properly cleared and stripped and any necessary excavations made, the exposed soils which will receive structural fill or slabs-on-grade should be scarified to a depth of 6 inches, moisture conditioned to slightly above optimum water content and compacted to the requirements for structural fill.

3.3 Material for Fill

All on-site soils below the stripped layer having an organic content of less than 3 percent by volume are suitable for use as fill. Fill placed at the site, should not contain rocks or lumps larger than 6 inches in greatest dimension with not more than 15% larger than 2.5 inches. Import fill should be predominantly granular with a plasticity index of 12 or less.

3.4 Compaction

All structural fill less than 5 feet thick should be compacted to at least 90% relative compaction as determined by ASTM Test Designation D 1557-latest edition. Structural fill or wall backfill greater than 5 feet high should be compacted to at least 95% relative compaction. Fill material should be first moisture conditioned to 3 percent above optimum moisture, then spread and compacted in lifts not exceeding 8 inches in uncompacted thickness. We should note that if construction proceeds during or immediately after the wet winter months, it may require time to dry the on-site soils to be used as fill, since their moisture content will probably be appreciably above optimum.

3.5 Trench Backfill

Pipeline trenches should be backfilled with fill placed in lifts not exceeding 8 inches in uncompacted thickness. Backfill should be compacted to 90% relative compaction. If imported granular soil is used, sufficient water should be added during the trench backfilling operations to prevent the soil from "bulking" during compaction. All compaction operations should be performed by mechanical means only. We recommend against jetting unless the backfill material is granular (sand or gravel) and the water used in jetting is able to rapidly flow out of the trench.

3.6 Drainage

Positive surface drainage should be provided adjacent to the residence/addition, and site wall so as to direct surface water away from the foundations into closed pipes that discharge to an approved drainage facility. Flexible drainpipe (flexline), 2000-pound

crush pipe, leach field, and ASTM F810 pipe are not recommended for use in the surface water drainage system because of the likelihood of damage to the pipe during installation due to the weak strength of these pipes. In addition, these drainpipes are sometimes difficult to clean with mechanical equipment without damaging the pipe. We recommend the use of Schedule 40 PVC, SDR 35 PVC or ABS, Contech A-2000 PVC drainpipe, or equivalent for the drain system. Ponding of surface water should not be allowed in any areas adjacent to the residence/addition or site wall. Concentrated flows of water should not be allowed across any slopes as erosion or weakening of surface soils could occur.

We also recommend that rainwater collected on the roofs of the residence/addition and in landscaped areas be transported through gutters, downspouts, and closed pipes that connect to suitable discharge facilities. We should note that suitable discharge facilities do not include so called "dry wells" and these should be avoided.

Some nominal maintenance of the drainage facilities should be expected after the initial construction has been completed. Should ownership of this property change hands, the new owner should be informed of the existence of this report, not adversely change the grading or drainage facilities, and understand the importance of maintaining proper surface drainage.

4. Foundations

4.1 Drilled Pier and Grade Beam Foundation System

Peters & Ross recommends that the replacement rear wall and proposed addition be supported on drilled, cast-in-place, straight-shaft piers. Drilled piers should be designed to develop their load carrying capacity through friction between the sides of the piers and the surrounding subsurface materials. Friction piers should have a minimum diameter of 16 inches, and there should be a minimum center-to-center spacing of at least 3 pier diameters between adjacent piers.

The piers should generally extend to a minimum depth of 10 feet below the bottom of the grade beam with at least 8 feet of embedment into the chert bedrock. Since chert bedrock was encountered at depths of 7.5 to 10.0 feet, the piers should generally extend to a minimum depth of about 15.5 to 18.0 feet below the bottom of the grade beam. Peters & Ross should observe the drilling of the piers to ensure that minimum embedment is achieved in the field.

To determine whether these depths are adequate to carry the structural loads of the residence, the following allowable skin friction values should be used. Starting at a depth of 3 feet use an allowable friction value of 500 pounds per square foot for dead plus live loads and 650 pounds per square foot for all loads, including wind or seismic. In bedrock use an allowable friction value of 800 pounds per square foot for dead plus live loads and 1100 pounds per square foot for all loads, including wind or seismic. Up to 2/3 of the allowable dead plus live load capacity can be used to resist uplift forces.

Lateral loads on the piers may be resisted by passive pressures acting against the sides of the piers. We recommend an allowable passive pressure equal to an equivalent fluid weighing 400 pounds per square foot per foot of depth to a maximum value of 4000 pounds per square foot. This value can be assumed to be acting against 2.0 times the diameter of the individual pier shafts starting at a depth of 3 feet.

The bottom of pier excavations should be reasonably free of loose cuttings and soil fall-in prior to installing reinforcing steel and placing concrete. It is our recommendation that the contractor be made aware of the subsurface conditions outlined in this report and that he obtain construction equipment appropriately sized to perform the recommended work. In particular, the piers must extend a minimum of 15.5 to 18.0 feet below the existing ground surface into hard chert bedrock. Where hard layers of bedrock are encountered, the contractor should use appropriate drilling techniques such as a core barrel to achieve the required depths. Any accumulated water in pier excavations should be removed prior to placing reinforcing steel and concrete, or the concrete should be tremied from the bottom of the hole.

4.2 Future Performance of Possible Addition

Even well designed and constructed foundations typically experience small post-construction settlements. In a new structure, these small settlements usually do not cause noticeable building distress, such as sheetrock cracks, because adjacent portions of a new structure tend to settle relatively uniformly. When a new foundation is constructed adjacent to an older foundation, small settlements of the new foundation may cause some noticeable distress near the transition between the new and old foundations, since the older foundation does not experience significant new settlement. In some situations where the older foundations are experiencing ongoing movements due to expansive soils, fill settlement, and/or hillside creep and the new foundations are designed to resist these movements, building distress can occur at the transition between the older and newer portions of the structure due to ongoing movements of the older portion. The homeowner should anticipate some post-construction distress, particularly near these transition areas.

5. Replacement Retaining Wall

Retaining wall foundations should be designed in accordance with the recommendations of the previous subsections. Retaining walls should be designed using soil pressures corresponding to an equivalent fluid weight of 35 pcf for level backfill, 45 pcf for backfill sloped at 3:1, and 60 pcf for backfill sloped at 2:1. These fluid weights should be increased by 20 pcf for restrained walls. For surcharge loads increase design pressures behind the wall by an additional uniform pressure equivalent to one-half (for restrained condition) or one-third (for unrestrained condition) of the maximum anticipated surcharge load applied to the surface behind the wall. For walls exceeding 6 feet use a seismic force of $12H^2$ in pounds applied at $0.5H$.

The above pressures assume that sufficient drainage will be provided behind the walls to prevent the build-up of hydrostatic pressures from surface and subsurface water

infiltration. Adequate drainage may be provided by a subdrain system consisting of a 4-inch, rigid, perforated pipe, bedded in $\frac{3}{4}$ inch, clean, open graded rock. The recommended location of the subdrain pipe is behind the heel of the footing. Although we have observed that the subdrain pipe is often placed on top of the heel of the footing, it has been our experience that this may lead to moisture seeping through the wall resulting in dampness and staining on the opposite wall face despite the application of waterproofing. However, if such seepage or dampness is acceptable (in front of landscape walls, for example), then the subdrain pipe may be placed on top of the heel of the footing. To prevent ponding of water on top of the heel of the footing, we recommend that the top of the heel be sloped to drain away from the wall with a minimum positive gradient of 5 percent. The perforated drainpipe should slope to drain with a minimum positive gradient of 2 percent.

The entire rock/pipe unit should be wrapped in an approved, non-woven, polyester geotextile such as Mirafi 140N or 140NL, or a 4-ounce equivalent. The rock and fabric placed behind the wall should be at least one foot in width and should extend to within one foot of finished grade. The upper one foot of backfill (6 inches for walls less than 5 feet in height) should consist of on site, compacted, relatively impervious soils (an impermeable plug). Alternatively, the wrapped rock could be replaced with a MiraDrain system with appropriately selected waterproofing. The subdrain pipe should be connected to a system of closed pipes that lead to suitable discharge facilities.

We should note that flexible, perforated pipe (flexline), 2000 Pound Crush, Leachfield, and ASTM F810 pipe are not acceptable for use in the subdrain because of the likelihood of damage to the pipe during installation and the difficulty of future cleaning with mechanical equipment without damaging the pipe. We recommend the use of Schedule 40 PVC, SDR 35 PVC or ABS, Contech A-2000 PVC drainpipe, or equivalent for the drain system. The subdrain pipe should be connected to a system of closed pipes (non-perforated) that lead to suitable discharge facilities. At the location where the perforated subdrain pipe connects with the solid discharge drainpipe, drainrock backfill should be discontinued. A "clay plug" should be constructed out of relatively impervious soils to direct collected water into the perforated pipe and minimize the potential for water collecting around the solid drainpipe and saturating the adjacent soils. We recommend that waterproofing be applied to any proposed retaining walls where applicable. The specification of the type of waterproofing and the observation of its installation should be performed by the architect and/or structural engineer.

In addition, the "high" end and all 90 degree bends of the subdrain pipe should be connected to a riser which extends to the surface and acts as a cleanout. The number of cleanouts can be reduced by installing "sweep" 90-degree bends or pairs of 45-degree bends in succession instead of using "tight" 90-degree bends. "Sweep" 90-degree bends are similar to those used in sanitary sewer pipe connections.

6. Exterior Concrete Slabs-on-Grade

We recommend that any slabs-on-grade be supported on a minimum of 9 inches of imported, compacted, non-expansive fill. The subgrade should be recompacted to at least 90 percent relative compaction at a moisture content of 3 percent above optimum. The subgrade should be kept moist until the slab is poured. In any slab area where minor floor wetness would be undesirable, at least 4 inches of $\frac{3}{4}$ inch gravel should be placed over the prepared subgrade, to provide a capillary moisture break. A 10-mil thick vapor barrier blanketed with 2 inches of clean sand should be placed over the gravel. This can be used in lieu of the upper 6 inches of the non-expansive fill.

The slab should have a minimum thickness of 4-inches and should be reinforced with steel reinforcing bars rather than welded wire mesh. At a minimum, slab reinforcement should consist of No. 4 bars on 16-inch centers in both directions, placed at the center of the slab thickness. Spacers should be placed beneath the mesh of reinforcing bars, to maintain their positioning near the center of the slab during the concrete pour. Score joints should be provided at a maximum spacing of 10 feet in both directions. The slabs should be appropriately reinforced according to structural requirements; concentrated loads may require additional reinforcing.

Exterior slabs should be structurally independent from the perimeter grade beams or footings and be free floating. The use of free floating slabs for interior floors may result in damage to the proposed architectural finishes. Peters & Ross should be contacted if interior slabs are proposed.

7. Plan Review and Geotechnical Engineering Services during Construction

Peters & Ross should review project plans, to check that the geotechnical engineering recommendations contained in this report are properly incorporated. Peters & Ross should provide geotechnical observation and testing services during construction, to check that geotechnical aspects of the work are completed in accordance with the plans. These services should include observing site excavations and grading, testing the compaction of fill, observing pier drilling and measuring pier depths, observing drainage, and checking retaining wall back drains. In addition, Peters & Ross should provide consultation regarding geotechnical concerns that arise during construction. Peters & Ross cannot accept responsibility for geotechnical aspects of construction that are not observed by its staff.

We will make every reasonable effort to accommodate the contractor's work schedule during construction, so that necessary observations and tests can be performed in a timely manner to avoid construction delays. However, since our field services are often required on several projects concurrently, we request that 48 hours advance notice be given for site visits, in order to minimize scheduling conflicts.

LIMITATIONS

Peters & Ross services consist of professional opinions and recommendations that are made in accordance with generally accepted geotechnical engineering principles and practices. The opinions and recommendations presented in this report are based on a site reconnaissance, review of published and unpublished geologic maps, two exploratory test borings and one hand auger, laboratory testing, engineering analyses, and a preliminary layout of the replacement retaining wall and proposed addition provided by Mr. Scott Guerin, owner. This warranty is in lieu of all other warranties either expressed or implied.

Subsurface conditions commonly vary significantly from those encountered at the test boring locations. Unanticipated, adverse soil conditions encountered during construction often require additional expenditures to achieve a properly constructed project. It is advised that a contingency fund be established to accommodate possible consulting and construction cost increases due to unanticipated conditions.

LIST OF FIGURES

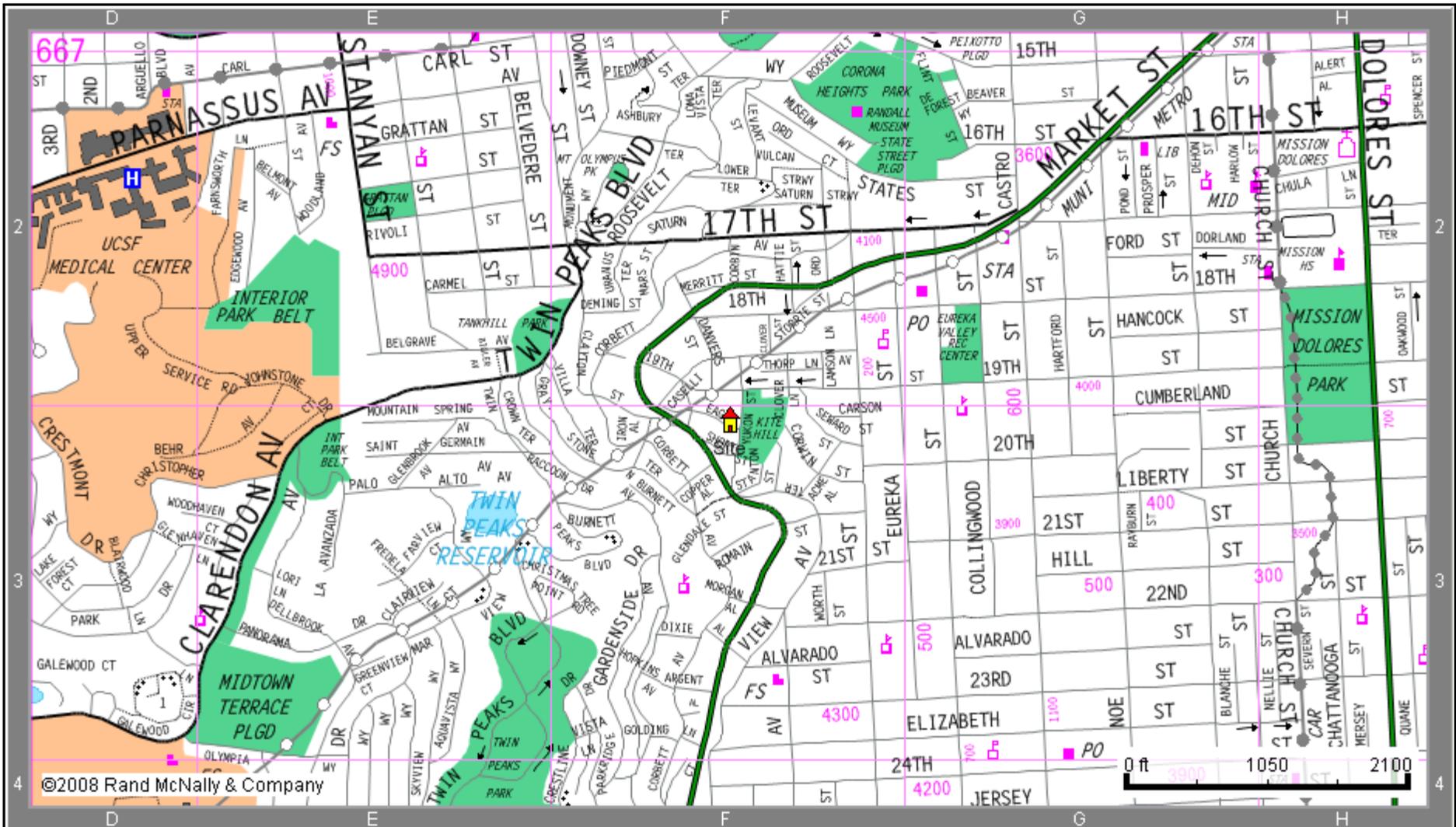
Figure 1	Site Vicinity Map
Figure 2	Topographic Map
Figure 3	Site Plan

APPENDICES

Appendix A	Field Investigation
Appendix B	Laboratory Testing

DISTRIBUTION

5 copies: Mr. Farzad Torabian
SFT Construction
322 6th Street, Suite 4
San Francisco, CA 94103



Peters & Ross

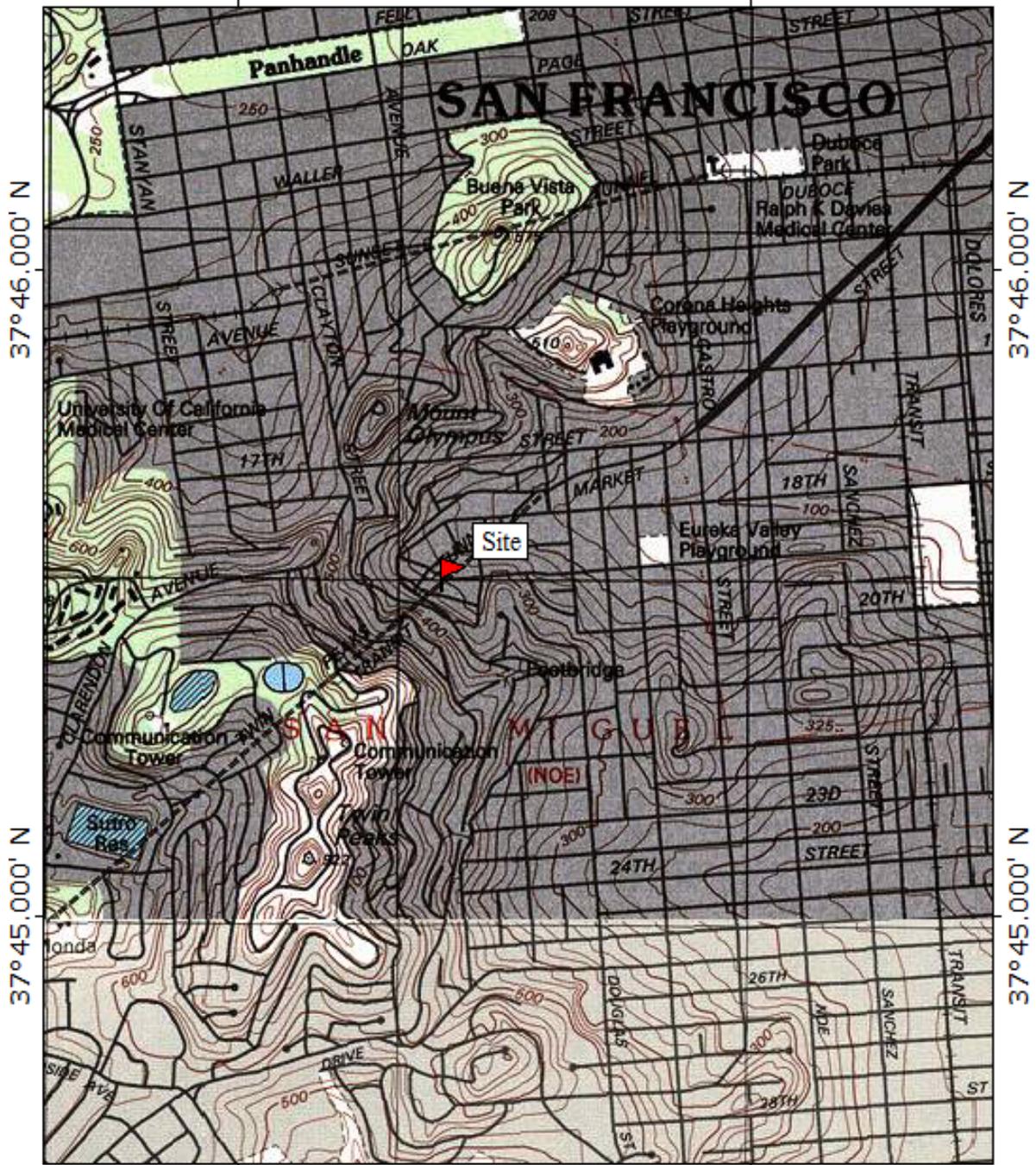
Geotechnical and
Geoenvironmental Consultants

114 Hopeco Road
Pleasant Hill, CA 94523
tel. (925) 942-3629
fax. (925) 665-1700
PetersRoss@aol.com

Figure 1 - Site Vicinity Map

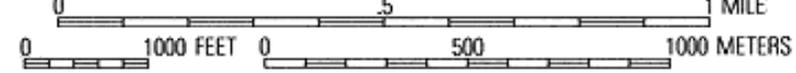
PROJECT No.	Guerin Residence Wall 46 Eagle Street San Francisco, California
22111.001	
DATE	
April 2022	

TOPO! map printed on 04/07/22 from "California.tpo" and "Untitled.tpg"
 122°27.000' W WGS84 122°26.000' W



122°27.000' W WGS84 122°26.000' W

TN★MN
 14½°



Printed from TOPO! ©2001 National Geographic Holdings (www.topo.com)

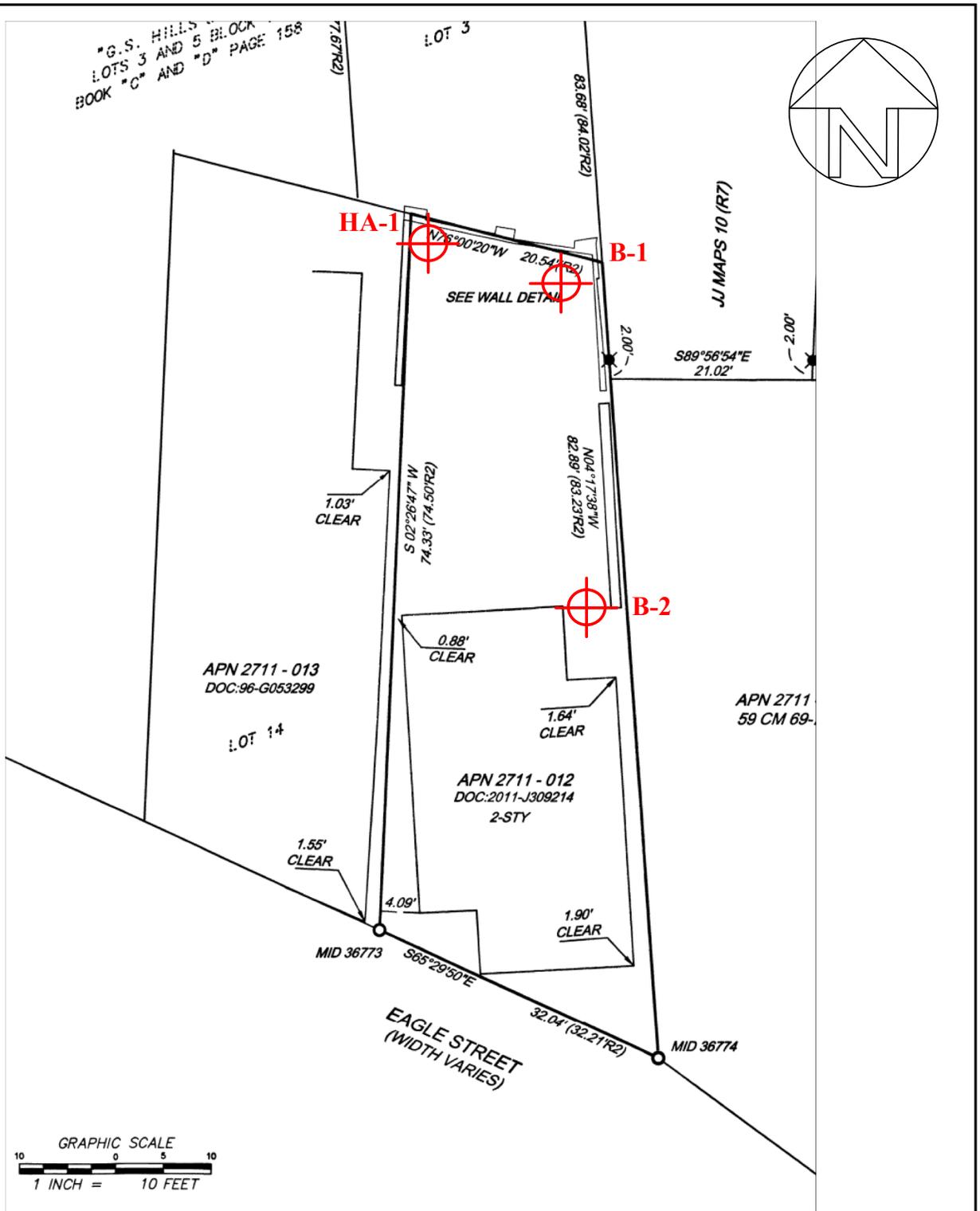
Figure 2 - Site Topography

Peters & Ross
 Geotechnical and
 Geoenvironmental Consultants

114 Hopeco Road
 Pleasant Hill, CA 94523
 tel. (925) 942-3629
 fax. (925) 665-1700
 PetersRoss@aol.com

PROJECT No.	22111.001
DATE	April 2022

Guerin Res. Wall
 46 Eagle Street
 San Francisco, CA



EXPLANATION:  B-1 Approximate Location of Exploratory Test Borings

Figure 3 - Site Plan

Peters & Ross

Geotechnical and
Geoenvironmental Consultants

114 Hopeco Road
Pleasant Hill, CA 94523
tel. (925) 942-3629
fax. (925) 665-1700
PetersRoss@aol.com

PROJECT No.

22111.001

DATE

April 2022

Guerin Res. Wall
46 Eagle Street
San Francisco, CA

APPENDIX A – FIELD INVESTIGATION

Peters & Ross explored subsurface conditions at the site by drilling two exploratory test borings and one hand auger to a maximum depth of 11 feet. The locations of the exploratory test borings are shown on the Site Plan.

The borings were drilled using a 3.5-inch-diameter portable hydraulic auger operated by DeNovo Drilling of Richmond, California. Our field engineer continuously logged the materials encountered. The boring logs show the materials encountered and are included in this Appendix. Soils are classified in accordance with the Unified Soil Classification System.

The boring logs indicates Peters & Ross interpretation of subsurface conditions encountered at the locations and times the borings were drilled and may not be representative of subsurface conditions at other locations and times. Stratification lines represent the approximate boundaries between soil and rock types. The transitions between soil and rock layers are often gradual.

Samples of the materials encountered were obtained at frequent depth intervals, for visual classification and laboratory testing. Samples were obtained using a Modified California sampler (outer diameter of 3.0 inches, inner diameter of 2.5 inches) with thin-wall brass sampler liners, and a Standard Penetration Test sampler (outer diameter of 2.0 inches, inner diameter of 1.375 inches). The samplers were driven using a 140-pound safety hammer lifted and dropped 30 inches using a rope and cathead system.

Peters & Ross Geotechnical Services

114 Hopeco Road, Pleasant Hill, CA 94523
 925-942-3629 PetersRoss@aol.com

BOREHOLE B-1

Project Name: Guerin Residence Wall

Project No.: 22111.001

Location: 46 Eagle St., San Francisco, CA

Client: SFT Construction

Drilling Method: Portable Hydraulic Auger w/ 3.5" SFA

Date Drilled: 2/22/2022

Elevation: 0

Water Level: Not Encountered

Remarks: Samplers driven with 140 lb. safety hammer lifted and dropped 30 inches using a rope and cathead system.

ELEVATION	DESCRIPTION	SYMBOL	DEPTH (ft)	SAMPLE TYPE	BLOWS/FT.	MOISTURE (%)	DRY DENSITY (pcf)	UNCONFINED STRENGTH (tsf)	REMARKS
	Ground Surface		0						
	Sandy Lean CLAY (CL-FILL) brown, moist to wet, soft, some concrete and masonry debris, roots		0 1 2 3						
			4	SS	5	9			
	Sandy Lean CLAY (CL) dark brown, soft to stiff, roots, wet		5 6 7						
			7	SS	3	17			-200 = 59 percent
	Sandy Lean CLAY (CL) reddish brown, some rock fragments, wet, stiff, (completely weathered chert bedrock)		8 9						
			9	SS	50	15			
	Chert (Bedrock) reddish brown, fractured, weathered, moderate to hard hardness		10		3"				
	End of Log		11 12 13						Drilling Refusal
<p>Notes:</p> <ol style="list-style-type: none"> 1. Penetration resistance values are not standard N values, they are the raw values measured in the field. 2. Stratification lines represent the approximate boundaries between material types, the transitions may be gradual. 3. Groundwater was not encountered during drilling and the boring was backfilled with cuttings. 4. SS = 2 inch OD Standard Penetration Test sampler without liners. 									
			15						

Peters & Ross Geotechnical Services

114 Hopeco Road, Pleasant Hill, CA 94523
 925-942-3629 PetersRoss@aol.com

BOREHOLE B-2

Project Name: Guerin Residence Wall

Project No.: 22111.001

Location: 46 Eagle St., San Francisco, CA

Client: SFT Construction

Drilling Method: Portable Hydraulic Auger w/ 3.5" SFA

Date Drilled: 2/22/2022

Elevation: 0

Water Level: Not Encountered

Remarks: Samplers driven with 140 lb. safety hammer lifted and dropped 30 inches using a rope and cathead system.

ELEVATION	DESCRIPTION	SYMBOL	DEPTH (ft)	SAMPLE TYPE	BLOWS/FT.	MOISTURE (%)	DRY DENSITY (pcf)	UNCONFINED STRENGTH (tsf)	REMARKS
	Ground Surface		0						
	Sandy Lean CLAY (CL-FILL) brown, moist to wet, soft, some concrete and masonry debris, roots		0 1 2 3						
			4	SS	2	9			
			5						
	Sandy Lean CLAY (CL) reddish brown, some rock fragments, wet, stiff, (completely weathered chert bedrock)		6 7						
			8	SS	16	17			LL=32%, PI=15% -200 = 59 percent
			9						
	Chert (Bedrock) reddish brown, fractured, weathered, moderate to hard hardness		8 9						
			10	SS	50	15			
			11		6"				
	End of Log		12 13						
<p>Notes:</p> <ol style="list-style-type: none"> 1. Penetration resistance values are not standard N values, they are the raw values measured in the field. 2. Stratification lines represent the approximate boundaries between material types, the transitions may be gradual. 3. Groundwater was not encountered during drilling and the boring was backfilled with cuttings. 4. SS = 2 inch OD Standard Penetration Test sampler without liners. 									
			15						

Peters & Ross Geotechnical Services

114 Hopeco Road, Pleasant Hill, CA 94523
 925-942-3629 PetersRoss@aol.com

BOREHOLE HA-1

Project Name: Guerin Residence Wall

Project No.: 22111.001

Location: 46 Eagle St., San Francisco, CA

Client: SFT Construction

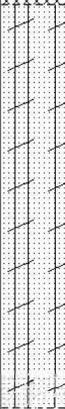
Drilling Method: Portable Hydraulic Auger w/ 3.5" SFA

Date Drilled: 2/22/2022

Elevation: 0

Water Level: Not Encountered

Remarks: Grab samples classified from the 3.5 inch diameter hand auger.

ELEVATION	DESCRIPTION	SYMBOL	DEPTH (ft)	SAMPLE TYPE	BLOWS/FT.	MOISTURE (%)	DRY DENSITY (pcf)	UNCONFINED STRENGTH (tsf)	REMARKS
	Ground Surface		0						
	Sandy Lean CLAY (CL-FILL) brown, moist to wet, soft, some concrete and masonry debris, roots		0 1						
	Sandy Lean CLAY (CL) dark brown, soft to stiff, roots, wet		2 3 4 5 6						
	Sandy Lean CLAY (CL) reddish brown, some rock fragments, wet, stiff, (completely weathered chert bedrock)		7						
	Chert (Bedrock) reddish brown, fractured, weathered, moderate to hard hardness		8						Drilling Refusal
	End of Log		9						
			10						
			11						
			12						
			13						
<p>Notes:</p> <ol style="list-style-type: none"> Stratification lines represent the approximate boundaries between material types, the transitions may be gradual. Groundwater was not encountered during drilling and the boring was backfilled with cuttings. 									
			15						

APPENDIX B - LABORATORY TESTING

Laboratory tests were performed on representative samples of the materials encountered in the test borings, to achieve a quantitative and qualitative evaluation of the physical and mechanical properties of the materials that underlie the site. The tests were performed in B. Hillebrandt Soils Testing, Inc. lab located in Alamo, California. The tests included moisture content determinations and #200 washed sieve tests. The test results are presented on the boring logs in Appendix A. Test reports provided by the testing laboratory are included in this Appendix. Brief descriptions of the tests performed follow.

Moisture Content/Dry Density (ASTM 2937): Performed on undisturbed samples to determine the moisture content (the ratio of the weight of water to the weight of solids in the field sample, expressed as a percentage) and dry density (the ratio of the weight of solids in the field sample to its volume, expressed in pounds per cubic foot).

#200 Washed Sieve Test (ASTM D-1140): Performed on undisturbed or disturbed samples to determine the fine-grained (silt and clay) fraction of the materials. The fine-grained fraction is used to classify the soils according to the Unified Soils Classification System.

Atterberg Limits Test (ASTM D-4318): Performed on undisturbed or disturbed samples to determine the liquid limit (LL) and plastic limit (PL) of the samples. These limits are used to classify fine-grained soils and to evaluate the plasticity index (PI), the moisture content range over which the material exhibits plasticity. Atterberg limits correlations also provide an indication of the compressibility and expansion potential of the sample.

B. HILLEBRANDT SOILS TESTING, INC.

29 Sugarloaf Terrace, Alamo, CA 94507 - Tel: (510) 409-2916 - Fax: (925) 891-9267 - Email: soiltesting@aol.com

MOISTURE CONTENT WORKSHEET

Job #: 22111.001+
 Job Name: 46 Eagle Street, San Francisco
 Date: 2/25/22
 Tested by: B. Hillebrandt

Additional Tests:		-200			PI, -200				
Boring #:	B-1	B-1	B-1	B-2	B-2	B-2	HA-1	HA-1	HA-1
Depth:	4.5	7.5	10.5	4.5	7.5	9.5	2.0	3.0	4.0
Sample Description:	Dark brown clayey SAND	Dark brown sandy CLAY	Dark yellowish brown sandy CLAY	Dark brown sandy CLAY	Dark yellowish brown sandy lean CLAY	Dark brown well graded SAND with silt	Dark brown silty SAND with gravel	Dark brown silty SAND with gravel	Dark brown sandy CLAY with gravel
Can #:	360	311	422	418	423	406	116	400	385
Wet Sample + can	182.5	232.2	209.6	193.3	180.8	245.0	328.9	270.4	232.4
Dry Sample + can	170.3	204.2	186.8	166.3	158.9	237.5	309.3	254.4	209.7
Weight can	32.7	39.5	32.6	33.0	32.7	33.0	34.6	32.8	32.8
Weight water	12.2	28	22.8	27	21.9	7.5	19.6	16	22.7
Weight Dry Sample	137.6	164.7	154.2	133.3	126.2	204.5	274.7	221.6	176.9
<u>WATER CONTENT (%)</u>	8.9%	17.0%	14.8%	20.3%	17.4%	3.7%	7.1%	7.2%	12.8%

B. HILLEBRANDT SOILS TESTING, INC.

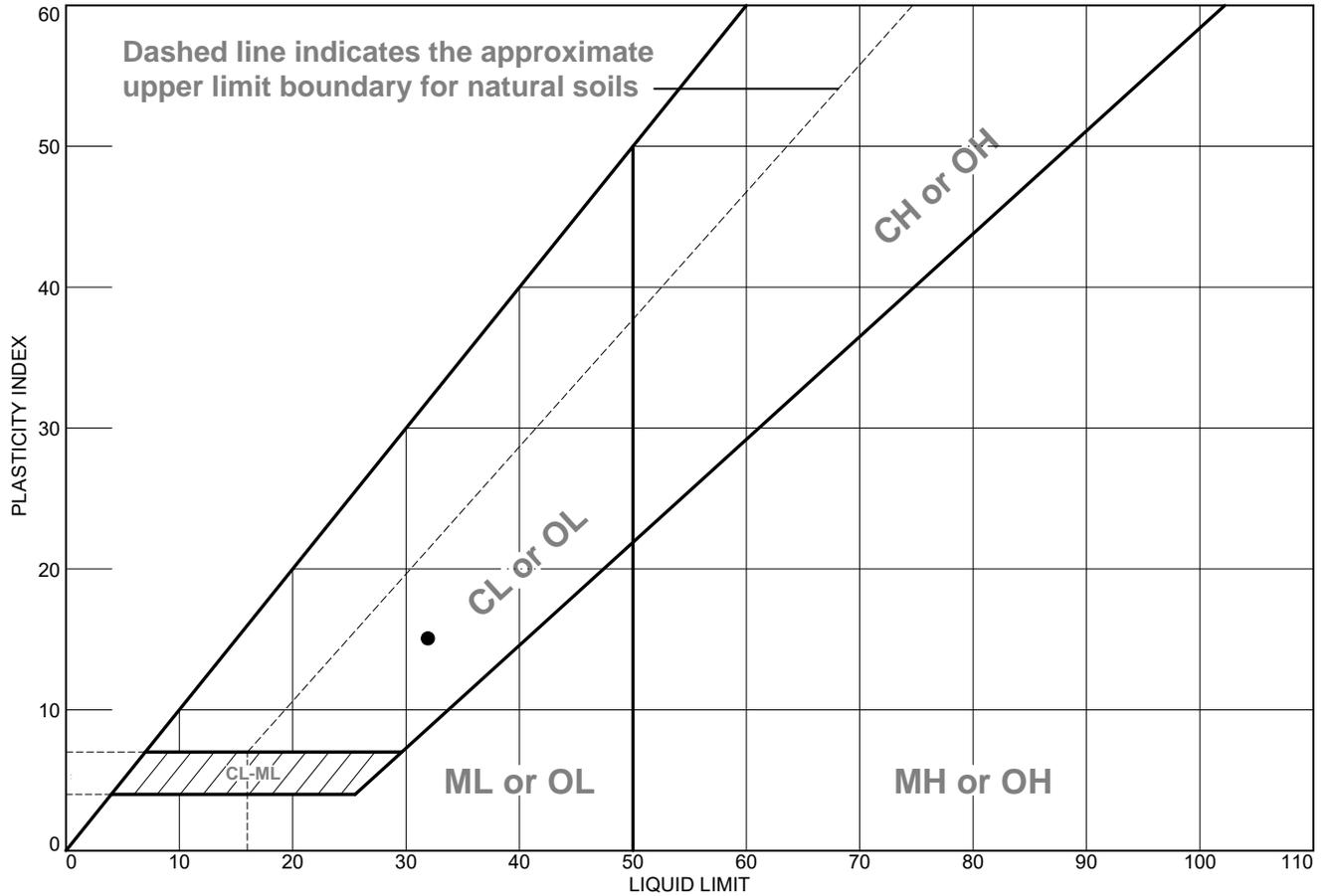
29 Sugarloaf Terrace, Alamo, CA 94507 - Tel: (510) 409-2916 - Fax: (925) 891-9267 - Email: soiltesting@aol.com

MOISTURE CONTENT WORKSHEET

Job #: 22111.001+
 Job Name: 46 Eagle Street, San Francisco
 Date: 2/25/22
 Tested by: B. Hillebrandt

Additional Tests:									
Boring #:	HA-1	HA-1							
Depth:	5.0	6.0							
Sample Description:	Reddish brown sandy CLAY	Dark brown sandy CLAY							
Can #:	357	394							
Wet Sample + can	223.8	202.0							
Dry Sample + can	202.5	180.4							
Weight can	32.5	32.7							
Weight water	21.3	21.6							
Weight Dry Sample	170	147.7							
WATER CONTENT (%)	12.5%	14.6%							

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Dark yellowish brown sandy lean CLAY	32	17	15	81.9	66.6	CL

<p>Project No. 22111.001 Client: Peters & Ross</p> <p>Project: 46 Eagle Street, San Francisco</p> <p>● Source of Sample: B-2 Depth: 7.5'</p>	<p>Remarks:</p>
<p>B. HILLEBRANDT SOILS TESTING, INC. +1 510-409-2816 SoilTesting@aol.com</p>	

Figure

Tested By: BH

LIQUID AND PLASTIC LIMIT TEST DATA

4/1/2022

Client: Peters & Ross

Project: 46 Eagle Street, San Francisco

Project Number: 22111.001

Location: B-2

Depth: 7.5'

Material Description: Dark yellowish brown sandy lean CLAY

%<#40: 81.9

%<#200: 66.6

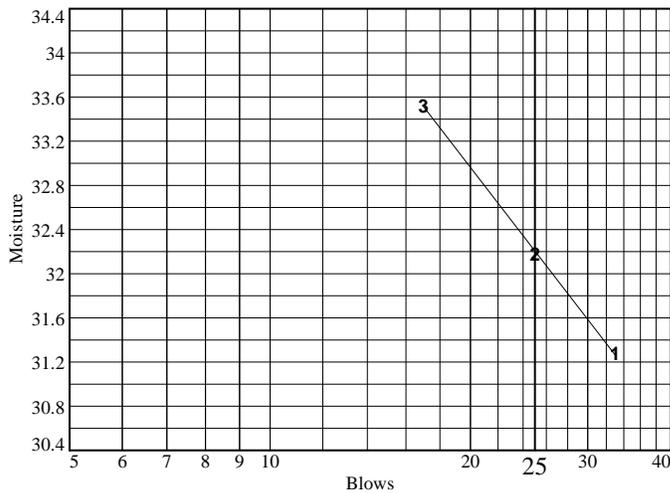
USCS: CL

AASHTO: A-6(8)

Tested by: BH

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	28.07	30.07	27.41			
Dry+Tare	24.01	25.51	23.33			
Tare	11.03	11.34	11.16			
# Blows	33	25	17			
Moisture	31.3	32.2	33.5			



Liquid Limit=	32
Plastic Limit=	17
Plasticity Index=	15
Natural Moisture=	17.4
Liquidity Index=	0.0

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	19.75	18.56		
Dry+Tare	18.53	17.51		
Tare	11.23	11.30		
Moisture	16.7	16.9		

GRAIN SIZE DISTRIBUTION TEST DATA

4/1/2022

Client: Peters & Ross

Project: 46 Eagle Street, San Francisco

Project Number: 22111.001

Location: B-1

Depth: 7.5'

Material Description: Dark brown sandy CLAY

USCS: CL

Tested by: BH

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
204.20	39.50	0.00	3"	0.00	100.0
			#4	18.65	88.7
			#40	33.51	79.7
			#200	67.28	59.1

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	6.5	4.8	11.3	1.9	7.1	20.6	29.6			59.1

D ₅	D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₄₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
							0.0798	0.4437	1.0922	7.5025	26.5443

Fineness Modulus
1.31

GRAIN SIZE DISTRIBUTION TEST DATA

4/1/2022

Client: Peters & Ross

Project: 46 Eagle Street, San Francisco

Project Number: 22111.001

Location: B-2

Depth: 7.5'

Material Description: Dark yellowish brown sandy lean CLAY

USCS: CL

Tested by: BH

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
158.90	32.70	0.00	3"	0.00	100.0
			#4	9.42	92.5
			#40	22.90	81.9
			#200	42.16	66.6

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	3.6	3.9	7.5	2.8	7.8	15.3	25.9			66.6

D ₅	D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₄₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
								0.3306	0.7004	2.1459	11.2988

Fineness Modulus
1.04