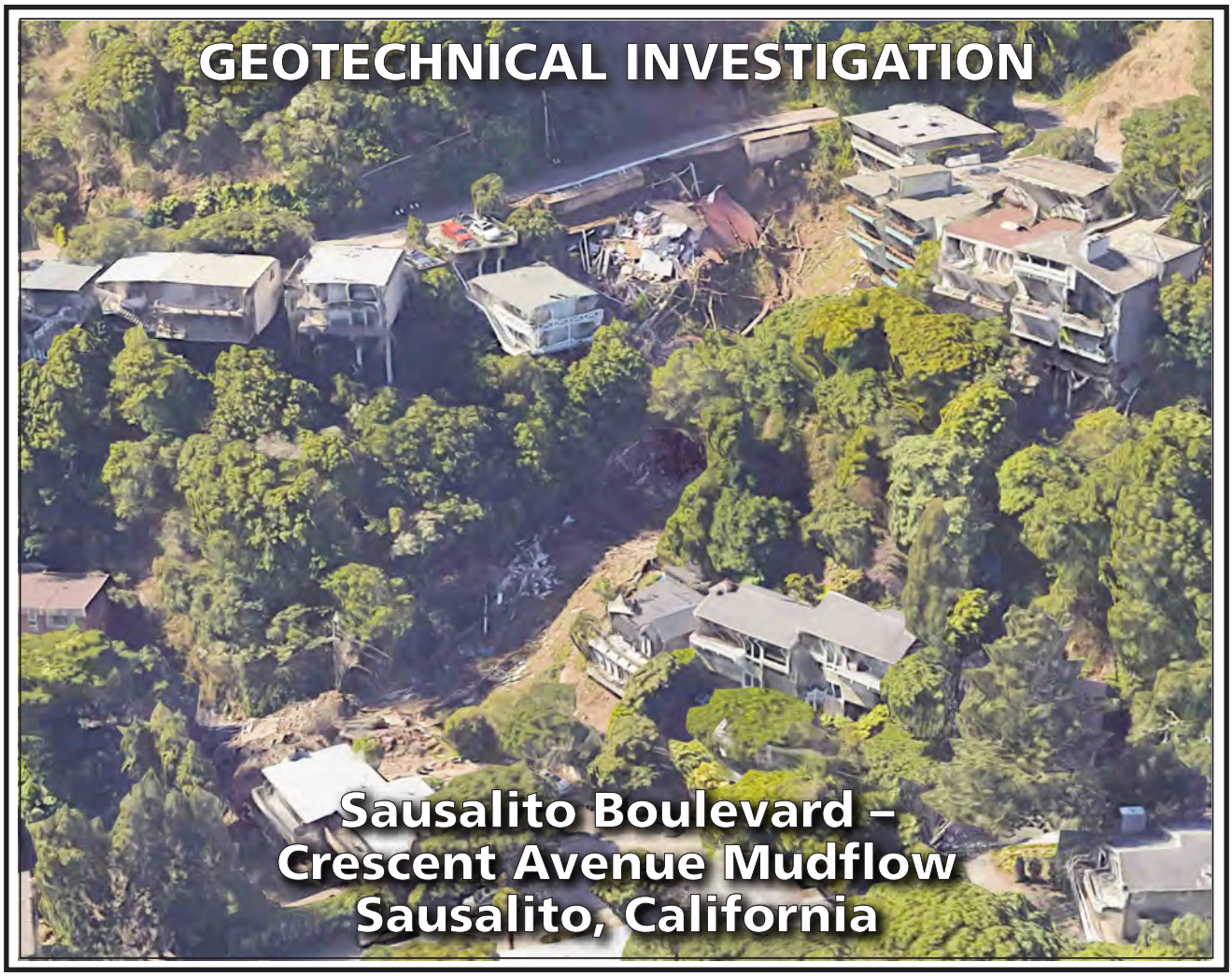
APPENDIX A

Geotechnical Investigation for

Sausalito Boulevard – Crescent Avenue Mudflow

Sausalito, California

GEOTECHNICAL INVESTIGATION



Sausalito Boulevard – Crescent Avenue Mudflow Sausalito, California

PREPARED FOR:

HARRIS & ASSOCIATES
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GEOCON

GEOCON PROJECT NO. E9167-04-01

JUNE 2020

GEOCON
CONSULTANTS, INC.
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS

Project No. E9167-04-01
June 25, 2020

Harris & Associates
1401 Willow Pass Road, Suite 500
Concord, California 94520

Attention: Mr. Eric Vaughan

Subject: SAUSALITO BOULEVARD – CRESCENT AVENUE MUDFLOW
SAUSALITO, CALIFORNIA
GEOTECHNICAL INVESTIGATION

Dear Mr. Vaughan:

In accordance with the authorization of our proposal dated October 8, 2019, we have performed a geotechnical investigation for the subject disaster recovery project in Sausalito, California. Our investigation was performed to observe the prevailing soil and geologic conditions within the limits of the mudflow and provide geotechnical recommendations for slope stabilization and infrastructure reconstruction. In addition, information obtained during the initial stages of our investigation was used to provide input regarding the stability of the debris materials during the removal operation, and the stability of areas immediately adjacent to the mudflow and associated clean-up. The accompanying report presents the results of our investigation and conceptual repair recommendations. This report has been revised from previous draft versions to reflect updated project details provided by Harris & Associates.

If you have any questions regarding this report, or if we may be of further service, please contact the undersigned at your convenience.

Sincerely,

GEOCON CONSULTANTS, INC.

Shane Rodacker, GE
Senior Engineer

REGISTERED PROFESSIONAL ENGINEER
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(1/e-mail) Addressee

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GEOTECHNICAL INVESTIGATION

1. PURPOSE AND SCOPE

This report presents the results of a geotechnical investigation for the City of Sausalito's recovery and cleanup following a landslide that occurred in February 2019 in Sausalito, California (see Vicinity Map, Figure 1). The purpose of this investigation was to evaluate the soil and geologic conditions within the limits of the mudflow that resulted from the landslide and provide geotechnical recommendations for slope stabilization and infrastructure restoration, based on the conditions encountered during our study.

The scope of this investigation included various site reconnaissance, field exploration, laboratory testing, engineering analysis, and the preparation of this report. Our initial subsurface exploration was performed on October 31 and November 1, 2019 and included the drilling of 6 exploratory borings to depths of 22 feet or less, and one relatively shallow hand auger boring. We subsequently performed eight shallow hand auger borings along the alignment of a proposed storm drain on March 27, 2020. The locations of our initial soil borings are depicted on the Site Plan, Figure 2. The locations of our March 27th hand auger borings are shown on the Storm Drain Restoration Plan, Figure 3. A detailed discussion of our drilling program and soil boring logs are presented in Appendix A.

Laboratory tests were performed on selected soil samples obtained during the investigation to evaluate pertinent geotechnical parameters. Appendix B presents the laboratory test results in tabular format and graphical format.

The opinions expressed herein are based on analysis of the data obtained during the investigation and our experience with similar soil and geologic conditions. References reviewed to prepare this report are provided in the *List of References* section.

If project details vary significantly from those described herein, Geocon should be contacted to determine the necessity for review and possible revision of this report.

2. SITE CONDITIONS AND PROJECT DESCRIPTION

The landslide and mudflow occurred in the early morning hours of February 14, 2019. The slide originated on National Park Service property upslope from Sausalito Boulevard and the resulting mudflow generally extended across Sausalito Boulevard downslope through a natural canyon drainage to the eastern side of Crescent Avenue (see Figure 2, Site Plan). The mudflow path is relatively narrow, apparently confined by site topography – generally a natural canyon drainage that flows eastward toward downtown Sausalito and the San Francisco Bay. Based on topographic information provided by Harris and Associates, the canyon drainage ranges in elevation from approximately 310 feet MSL at Sausalito Boulevard to 190 feet MSL at Crescent Avenue. A steep northwest-facing slope up to approximately 1.3:1 (horizontal: vertical) descends from Sausalito Boulevard at 406/408 Sausalito Boulevard and transitions to a relatively narrow throat that trends downhill and eastward to Crescent Avenue. The mudflow apparently severed a storm drain line that carried flows from a down-pipe on the eastern side of Sausalito Boulevard to/through the canyon drainage.

There were no casualties in the disaster but property damage was significant. The mudflow destroyed a duplex residence at 406/408 Sausalito Boulevard and a single-family residence at 57 Crescent Avenue. The garage at 412/414 Sausalito Boulevard was also lost. Resultant debris accumulation extended from below the destroyed residences on Sausalito Boulevard to a Marin Municipal Water Department (MMWD) pump house on the eastern side of Crescent Avenue. The debris mass was strewn with remnants of the residences including numerous automobiles, household items and building materials. Hazardous materials (asbestos, lead and mercury) were reportedly present with the mudflow and required consideration during the clean-up process.

The disaster recovery process was split into two phases – a first phase to remove debris and winterize the canyon drainage within the mudflow limits, and a second phase to restore infrastructure and install permanent slope

stabilization measures. The winterization measures were completed in late 2019. The recommendations herein are focused on the second phase of the recovery.

The permanent restoration plans provided by Harris & Associates indicate a new 16-inch HDPE storm drain is planned between Sausalito Boulevard and Crescent Avenue. The storm drain will be generally aligned in the bottom of the canyon drainage and will pipe storm water from an existing 12-inch corrugated metal pipe (CMP) storm drain below Sausalito Boulevard to a new storm drain catch basin on the west side of Crescent Avenue. Most of the new HDPE storm drain will be installed above grade with earth anchors. The lower approximately 25 feet of the new storm drain will be buried to facilitate connection to the new catch basin, and to the existing storm drain catch basin in Crescent Avenue. The restoration will also include new curb and gutter along the downslope (east) side of Crescent Avenue. An asphalt overlay and dig-out repairs are planned along the portion of Crescent Avenue within the former mudflow limits and sections of Crescent Avenue affected by construction activities.

3. GEOLOGIC SETTING

The subject area of Marin County is located within the Coast Ranges Geomorphic Province of California, which is characterized by a series of northwest trending mountains and valleys along the north and central coast of California. Topography is controlled by the predominant geological structural trends within the Coast Range that generally consist of northwest trending synclines, anticlines and faulted blocks. The dominant structure is a result of both active northwest trending strike-slip faulting associated with the San Andreas Fault (SAF) system, and east-west compression within the province.

The SAF is a major right-lateral strike-slip fault that extends from the Gulf of California in Mexico to Cape Mendocino in northern California. The SAF forms a portion of the boundary between two tectonic plates on the surface of the earth. To the west of the SAF is the Pacific Plate, which moves north relative to the North American Plate, located east of the fault. In the San Francisco Bay Area, movement across this plate boundary is concentrated on the SAF but also distributed, to a lesser extent, across several other faults including the Hayward-Rodgers Creek and Calaveras faults, among others. Together, these faults are referred to as the SAF system.

Basement rock west of the SAF is generally granitic, while to the east it consists of a chaotic mixture of highly deformed marine sedimentary, submarine volcanic and metamorphic rocks of the Franciscan Complex. Both are typically Jurassic to Cretaceous in age (205 to 65 million years old). Overlying the basement rocks are Cretaceous (about 140 to 65 million years old) marine, as well as Tertiary (about 65 to 1.6 million years old) marine and non-marine sedimentary rocks with some continental volcanic rock. These Cretaceous and Tertiary rocks have typically been extensively folded and faulted largely because of movement along the SAF system, which has been ongoing for about the last 25 million years, and regional compression during the last about 4 million years. The inland valleys, as well as the structural depression within which San Francisco Bay is located, are filled with unconsolidated to semi-consolidated deposits of Quaternary age (about the last 1.6 million years). Continental deposits (alluvium) consist of unconsolidated to semi-consolidated sand, silt, clay and gravel, while the bay deposits typically consist of soft organic-rich silt and clay (bay mud) or sand.

Regional geologic mapping by the United States Geological Survey (USGS) indicates the site and surrounding vicinity is underlain by Early Cretaceous to Late Jurassic age Franciscan Complex chert. Older, but more detailed, USGS geologic mapping shows slope debris/ravine fill within canyon drainage between Crescent Avenue and Sausalito Boulevard, and Franciscan Complex chert to the north and south of the east-draining canyon. Artificial fills and a residual soil unit were also encountered in our investigation as discussed herein.

4. SOIL AND GROUNDWATER CONDITIONS

4.1 Artificial Fill

Our Borings B2 and B5 encountered undocumented fill materials presumably placed during original roadway grading for Sausalito Boulevard and Crescent Avenue. We observed fills from below the existing pavement section

to a depth of approximately 5 feet in Boring B2, and to a depth of approximately 2 ½ feet in Boring B5. The source of the fills is not confirmed but we anticipate the materials were derived from onsite or nearby cuts in native soils or formational materials. As observed in our soil borings, the fill materials consisted of loose silty sand with gravel and sandy clay with gravel. Other areas of suspected fill materials exist with the project limits. For example, the materials retained by the driveway retaining walls that remain at 406/408 Sausalito Boulevard and 412/414 Sausalito Boulevard are believed to be artificial fill (wall backfill) of unknown composition. In addition, the steep northwest facing slope between 402/404 Sausalito Boulevard and 412/414 Sausalito Boulevard is mantled by a layer of undifferentiated slide debris and artificial fill.

4.2 Landslide Debris

Our Boring HA1 encountered approximately 5 feet of loose silty gravelly sand observed as slide debris or artificial fill. It is unknown if these materials were deposited by the subject mudflow, or are associated with original grading for Sausalito Boulevard or the former residence at 406/408 Sausalito Boulevard. However, the materials are susceptible to future surficial slides and sloughing based on in-place relative density and slope inclination.

4.3 Colluvium

Our Borings B4 through B6 and HA3 through HA8 encountered colluvial deposits that consisted of loose to medium dense sandy gravel with minor amounts of clay, medium stiff to stiff gravelly clays and silts, and loose to medium dense gravelly sands. Colluvium was encountered to depths of approximately 5 to 5 ½ feet in Borings B5 and B6. Colluvium was observed to a depth of approximately 20 ½ feet in Boring B4, where Franciscan Complex chert was encountered. Most of the hand auger borings along the planned storm drain alignment (HA3 through HA8) encountered colluvium over very dense gravelly material interpreted as Franciscan Complex chert. Some geologic references refer to the colluvium as slope debris, ravine fill or slope wash.

4.4 Residual Soil

Residual soils weathered from the underlying formational materials were encountered in our Borings B2 and HA1. The residual soils in Boring B2 were observed immediately atop bedrock from approximately 5 to 6 ½ feet below street grade on Sausalito Boulevard. The soils were generally dense clayey sands with gravel. Similar residual soils were encountered at a depth of approximately 4 ½ feet in our hand auger boring (Boring HA1) in the slope below the former residence at 406/408 Sausalito Boulevard.

4.5 Franciscan Complex Chert

The entire site is underlain by Early Cretaceous to Late Jurassic age chert of the Franciscan Complex. The formational material is mantled by one or more of the preceding soil types in portions of the site and exposed at grade in others. As encountered in our borings and observed in exposures at or near the site, the chert is strong to very strong and generally stable when present in natural slopes. Franciscan Complex chert was observed at grade in outcrops just above and below Sausalito Boulevard, at the toe of the natural slope south of former 57 Crescent Avenue, and in isolated areas within the debris removal limits.

4.6 Groundwater

Although not encountered in our soil borings, groundwater may be encountered perched in colluvial deposits or within fractures in the underlying formational materials. We understand that minor seepage has been observed in the canyon drainage, just west of Crescent Avenue since site winterization. Actual groundwater levels will fluctuate seasonally and with variations in rainfall, temperature and other factors and may be higher or lower than observed during our study.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 General

5.1.1 Based on the soil and geologic conditions encountered in our investigation, it is our opinion that the slopes within the limits of mudflow cleanup are generally stable against deep-seated landslides. However, there are specific areas that are susceptible to surficial sliding and sloughing. Those areas are discussed in detail below in Section 5.3.

5.1.2 All references to relative compaction and optimum moisture content in this report are based on ASTM D 1557 (latest edition).

5.1.3 A key component of site stabilization will be the mitigation of erosion potential in the canyon drainage. Given the large steep slope face that directs runoff to the canyon bottom, high runoff volume and energy is anticipated. We anticipate that channel armament such as large riprap may be required to dissipate erosional forces.

5.1.4 We recommend the site be regularly monitored after permanent stabilization measures and infrastructure restoration are complete. In particular, the site should be monitored before, during and after major rain events. Any indications of slope instability or significant erosion should be reviewed by Geocon.

5.2 Adjacent Property Considerations

5.2.1 We observed improvements within or just beyond the mudflow perimeter that should be independently reviewed from a geotechnical standpoint. Historic geotechnical information obtained from the City was limited and conclusions could not be drawn regarding the adequacy of building and retaining wall foundation systems. Particular improvements that should be reviewed include the following:

<u>402/404 Sausalito Boulevard</u>

The limits of the mudflow did not encroach upon the foundations for the tall columns that support the northern wall of the duplex residence. However, the mudflow cleanup operation removed mature trees that were present just downslope of the foundations. The removal of mature trees generally reduces resistance to surficial sloughing. It is unknown if the piers have sufficient lateral or axial capacity as would be expected if they were socketed into bedrock. Information regarding foundations at 402/404 Sausalito Boulevard was not on file with the City.

<u>412/414 Sausalito Boulevard</u>

We understand this structure has been red-tagged by the City. No input is provided.

<u>428/430 Sausalito Boulevard</u>

At the time of our October 2019 site visits, indications of erosion and sloughing were observed in close proximity to the southeastern pier footing that supports the residence. It is unknown if the pier has sufficient lateral capacity as would be expected if the pier was socketed into bedrock. Information provided by the City only indicates the piers for the residence were “bottomed” into chert (bedrock).

5.3 Slope Stability

5.3.1 Based on the presence of shallow bedrock in the steep approximately 1.3:1 slope that descends from Sausalito Boulevard, it is our opinion the slope possesses adequate factor of safety against global (i.e. deep-seated) instability. Localized sliding could occur where fills are present along the eastern margin of the roadway. The driveway retaining walls and associated backfill materials at 406/408 and 412/414 Sausalito Boulevard should be assumed susceptible to sliding downhill until or unless specific evaluations are performed.

5.3.2 Most of the 1.3:1 slope is mantled by approximately 2 to 4 feet of remaining slide debris and/or artificial fills from previous episodes of site development or possibly roadway grading for Sausalito Boulevard. Based on slope inclination and the relatively loose nature of the surficial soils, this slope is highly susceptible to erosion and/or future shallow landslides that could generate significant volumes of debris that would be deposited in the downslope canyon, and possibly to/across Crescent Avenue. Mitigation of the potential for erosion and shallow slides on this slope face should be considered when selecting slope stabilization measures.

5.3.3 Based on the soil and geologic conditions encountered in our Borings B4 through B6 and the inclination of the slope that descends from the eastern margin of Crescent Avenue, we opine that the section of Crescent Avenue within the limits of the mudflow cleanup is generally stable in terms of deep-seated landslides. Potential shallow fills along the eastern margin of Crescent Avenue and soils on the descending slope face may be susceptible to sloughing/sliding and should be protected from erosion.

5.4 Slope Stabilization

5.4.1 The existing slopes within the project limits are susceptible to shallow sloughing and erosion. The 1.3:1 slope below Sausalito Boulevard is particularly susceptible due to the presence of landslide debris and/or artificial fills on the slope face.

5.4.2 We recommend that erosion control matting such as GREENAX® (or similar) be installed on the project slopes as a stabilization measure. GREENAX® is a product that integrates a polypropylene erosion control mat with high-tensile steel wire mesh that is mechanically anchored to the slope. We understand the anchoring system can be installed several feet in to the slope face. The mesh and anchoring system provide physical restraint against shallow sloughing and erosion while most conventional erosion control products are surface treatments with minimal anchorage. The polypropylene mat would help retain hydroseeding and/or vegetation planted on the slope face. As a possible alternative to GREENAX®, supplemental field exploration may be performed to evaluate the feasibility of removing the loose soil that mantles the large slope below Sausalito Boulevard, which may reduce the potential for shallow sloughing and erosion.

5.4.3 More conventional slope treatments like jute erosion control matting or GEOWEB® may be suitable in flatter slope areas or areas with minimal soil mantle over the underlying bedrock. All slope treatments should be reviewed by Geocon and installed in accordance with manufacturer specifications.

5.4.4 All structural fill and backfill should be placed in layers no thicker than will allow for adequate bonding and compaction (typically 8 to 12 inches). Fill soils should be placed and compacted to at least 90% relative compaction at least 2% above optimum moisture content (near optimum moisture where fill materials are predominantly sandy). Fill areas with in-place density tests showing moisture contents less than those recommended will require additional moisture conditioning prior to placing additional fill.

5.5 Pipe Restraint and Anchorage

5.5.1 Most of the new 16-inch HDPE storm drain will be constructed above-grade on steep terrain. The storm drain should include proper joint restraint and earth anchorage mechanisms to mitigate the potential for damage due to erosion or earth movement.

5.5.2 The project plans indicate that Caltrans standard pipe anchorage will be used along the above-grade portion of the HDPE storm drain. Caltrans standard anchors for down-drain pipes are 6-foot-long, 1 ½ inch diameter pipe stakes that are driven into the earth. The presence of shallow formational material will likely preclude anchor driving in some or all locations. The plans indicate the contractor is responsible for submitting a plan for alternative anchorage prior to installation. Alternative anchorage plans should be reviewed by Geocon.

5.6 Underground Utilities

5.6.1 Underground utility trenches should be backfilled with properly compacted material. The material excavated from the trenches should be adequate for use as backfill provided it does not contain deleterious matter, vegetation or rock larger than six inches in maximum dimension. Trench backfill should be placed in loose lifts not exceeding eight inches and should be compacted to at least 90% relative compaction at least 2% above optimum moisture content (near optimum where backfill materials are predominantly sands and gravels).

5.6.2 Bedding and pipe zone backfill typically extends from the bottom of the trench excavations to a minimum of 6 inches above the crown of the pipe. Pipe bedding material should consist of crushed aggregate, clean sand or similar open-graded material. Proposed bedding and pipe zone materials should be reviewed by Geocon prior to construction; open-graded materials such as ¾ inch drain rock may require wrapping with filter fabric to mitigate the potential for piping. Bedding and backfill should also conform to the requirements of the governing utility agency.

5.7 Materials for Fill

5.7.1 Soils generated from cut operations at the site are suitable for use as engineered fill provided they do not contain deleterious matter, organic material, or cementations larger than 6 inches in maximum dimension.

5.7.2 Import fill material should be primarily granular with a “low” expansion potential (Expansion Index less than 50), a Plasticity Index less than 15, be free of organic material and construction debris, and not contain rock larger than 6 inches in greatest dimension.

5.7.3 Environmental characteristics and corrosion potential of import soil materials may also be considered. Proposed import material should be sampled, tested, and approved by Geocon prior to its transportation to the site.

5.7.4 All structural fill and backfill should be placed in layers no thicker than will allow for adequate bonding and compaction (typically 8 to 12 inches). Fill soils should be placed and compacted to at least 90% relative compaction at least 2% above optimum moisture content (near optimum moisture where fill materials are predominantly sandy). Fill areas with in-place density tests showing moisture contents less than those recommended will require additional moisture conditioning prior to placing additional fill.

5.8 Surface Drainage

5.8.1 Proper surface drainage is critical to the future performance of the project. Uncontrolled infiltration of irrigation excess and storm runoff into the soils can adversely affect the performance of the planned improvements or existing or proposed slopes. Saturation of a soil can cause it to lose internal shear strength and increase its compressibility, resulting in a change to important engineering properties. Proper drainage should be maintained at all times.

5.8.2 Drainage should not be allowed to flow uncontrolled over any descending slope. Positive site drainage should be provided away from pavement and the tops of slopes to swales or other controlled drainage structures.

6. FURTHER GEOTECHNICAL SERVICES

6.1 Testing and Observation Services

6.1.1 The recommendations provided in this report are based on the assumption that we will continue as Geotechnical Engineer of Record throughout the construction phase and provide compaction testing and geotechnical observation services throughout the project. It is important to maintain continuity of geotechnical interpretation and confirm that field conditions encountered are similar to those anticipated during design. If we are not retained for these services, we cannot assume any responsibility for other's interpretation of our recommendations, and therefore the future performance of the project.

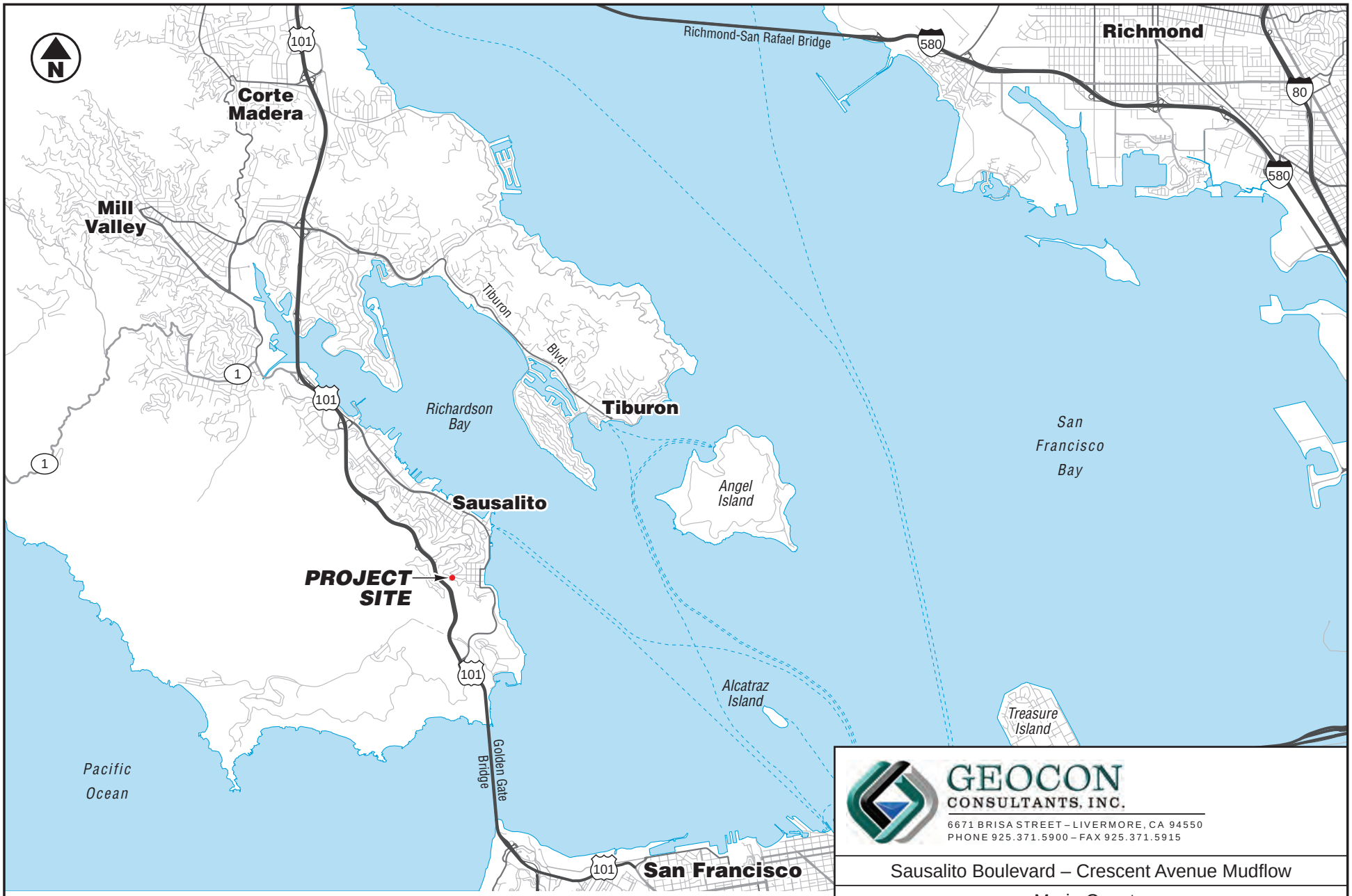
LIMITATIONS AND UNIFORMITY OF CONDITIONS

The recommendations of this report pertain only to the site investigated and are based upon the assumption that the soil conditions do not deviate from those disclosed in the investigation. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that anticipated herein, Geocon Consultants, Inc. should be notified so that supplemental recommendations can be given. The evaluation or identification of the potential presence of hazardous or corrosive materials was not part of the geotechnical scope of services provided by Geocon Consultants, Inc.

This report is issued with the understanding that it is the responsibility of the owner, or of his representative, to ensure that the information and recommendations contained herein are brought to the attention of the architect and engineer for the project and incorporated into the plans, and the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years.

Our professional services were performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices used in the site area at this time. No warranty is provided, express or implied.



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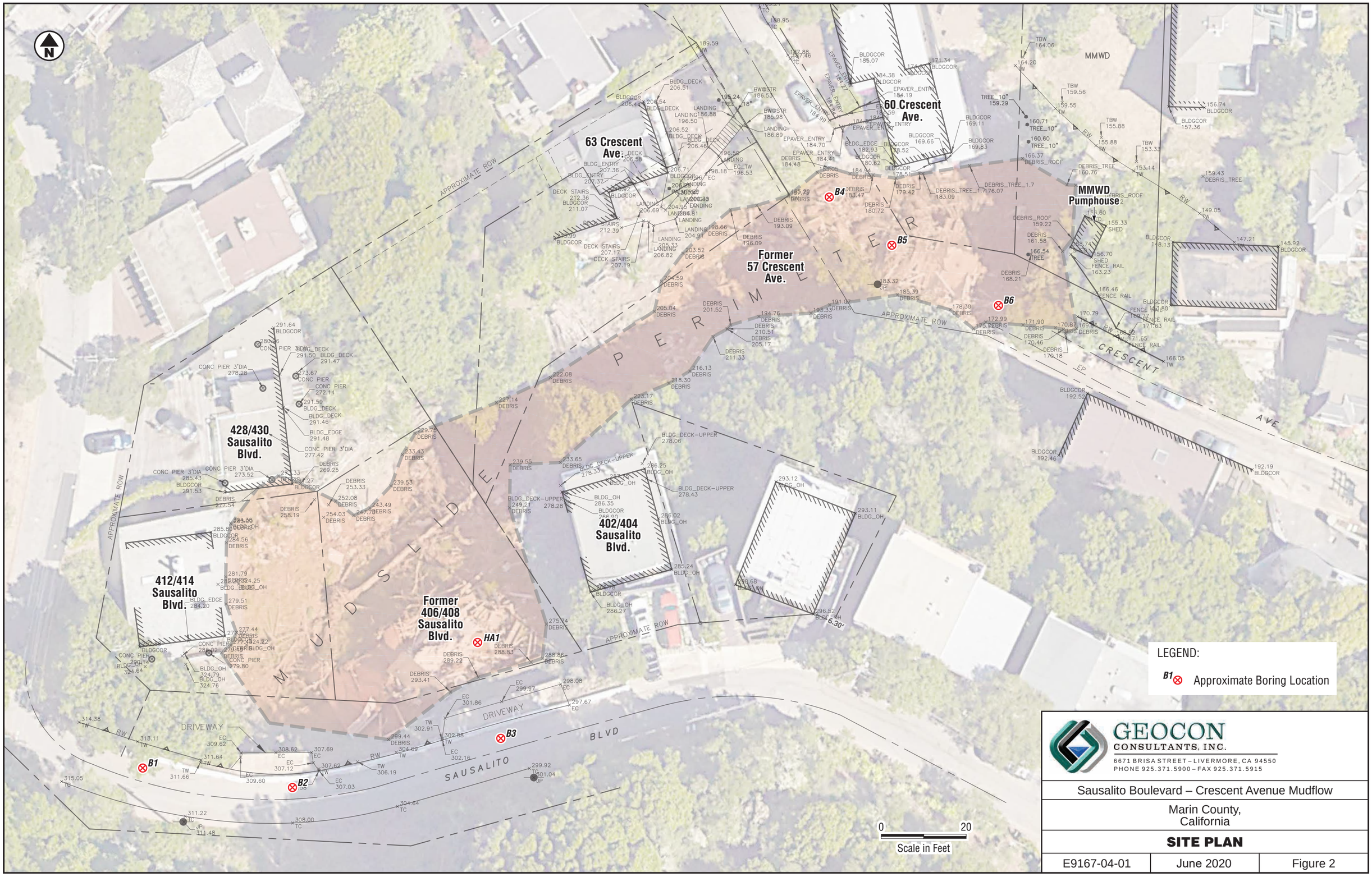
Sausalito Boulevard – Crescent Avenue Mudflow

Marin County, California

VICINITY MAP

E9167-04-01	June 2020	Figure 1



LEGEND:

B1 ⊗ Approximate Boring Location

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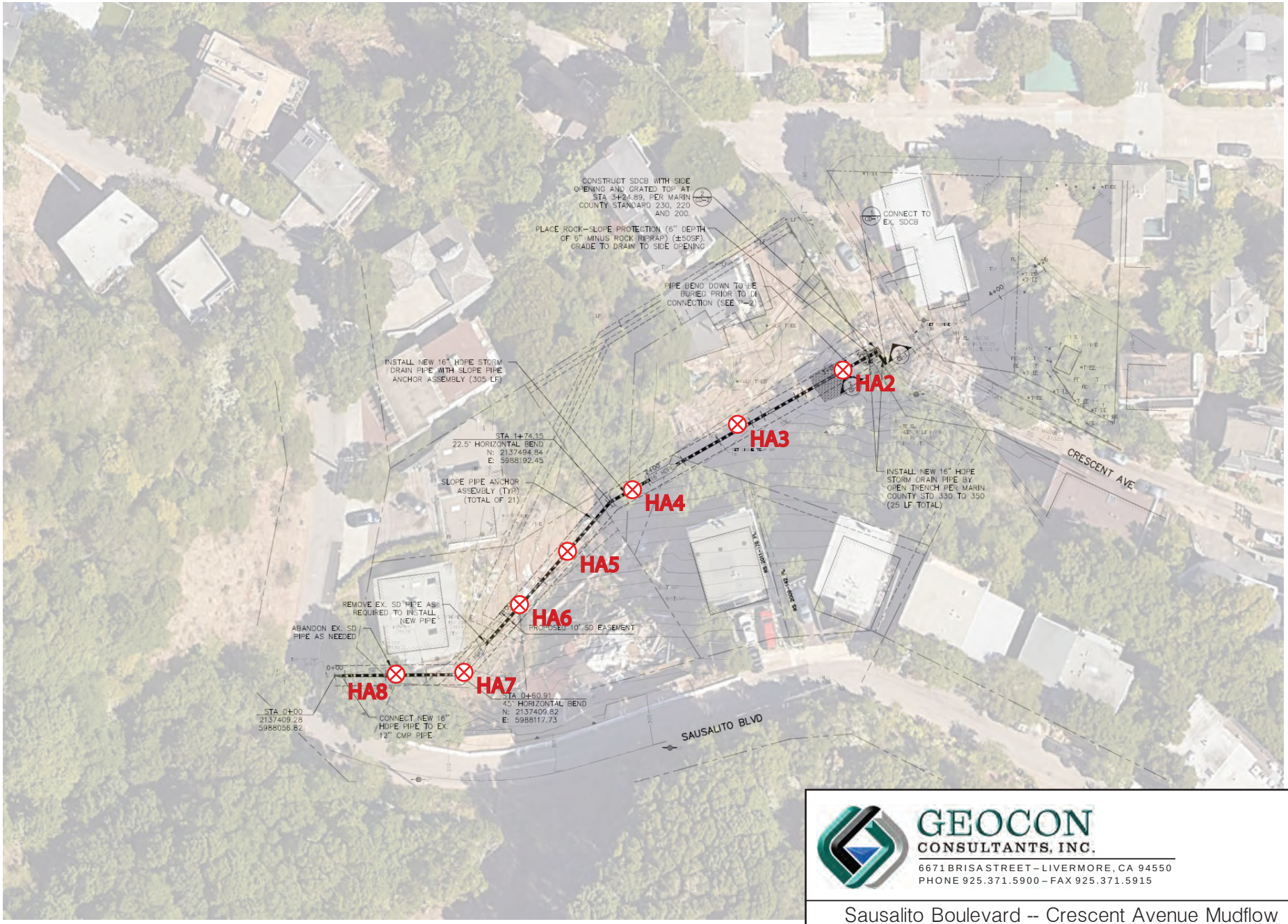
Sausalito Boulevard – Crescent Avenue Mudflow

Marin County, California

SITE PLAN

E9167-04-01	June 2020	Figure 2



Legend:

HA5 ⊗ = Approximate Hand Auger Location

0 50
Scale in Feet

N

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Sausalito Boulevard -- Crescent Avenue Mudflow

Marin County, California

STORM DRAIN RESTORATION PLAN

E9167-04-01	June 2020	Figure 3

APPENDIX A

APPENDIX A
FIELD EXPLORATION

Fieldwork for our investigation included site visits, subsurface exploration, and soil sampling. The locations of our borings are shown on the Site Plan, Figure 2. Soil boring logs are presented as figures following the text in this appendix. The borings were located by pacing from existing reference points. Therefore, the exploration locations shown on Figure 2 are approximate.

Our subsurface exploration was performed on October 31 and November 1, 2020. The exploration included the drilling and sampling of existing soils with a truck-mounted DR-10K1 drill rig equipped with 6-inch solid flight augers. Sampling in the borings was accomplished using a 140-pound automatic hammer with a 30-inch drop. Samples were obtained with a 3-inch outside-diameter (OD), split spoon (California Modified) sampler and a 2-inch OD, Standard Penetration Test (SPT) sampler. The number of blows required to drive the sampler the last 12 inches (or fraction thereof) of the 18-inch sampling interval were recorded on the boring logs. The blow counts shown on the boring logs should not be interpreted as standard SPT "N" values; corrections have not been applied. We also performed seven shallow hand auger borings on March 27, 2020 to maximum depths of approximately 2 feet below grade. Samples were collected at appropriate intervals, classified by our field engineer, retained in moisture-tight containers, and transported to the laboratory for testing and further classification. The applicable type of each sampling interval is noted on the exploratory boring logs.

Subsurface conditions encountered in the exploratory boring were visually examined, classified and logged in general accordance with the American Society for Testing and Materials (ASTM) Practice for Description and Identification of Soils (Visual-Manual Procedure D2488). This system uses the Unified Soil Classification System (USCS) for soil designations. The log depicts soil and geologic conditions encountered and depths at which samples were obtained. The log also includes our interpretation of the conditions between sampling intervals. Therefore, the logs contain both observed and interpreted data. We determined the lines designating the interface between soil materials on the logs using visual observations, drill rig penetration rates, excavation characteristics and other factors. The transition between materials may be abrupt or gradual. Where applicable, the field logs were revised based on subsequent laboratory testing.

Upon completion, our borings were backfilled per Marin County Environmental Health Services permit requirements. Hand auger borings were backfilled with compacted soil cuttings.

UNIFIED SOIL CLASSIFICATION

MAJOR DIVISIONS					TYPICAL NAMES
COARSE-GRAINED SOILS, MORE THAN HALF IS COARSER THAN NO. 200 SIEVE	GRAVELS, MORE THAN HALF COARSE FRACTION IS LARGER THAN NO.4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		WELL GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
			GP		POORLY GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
		GRAVELS WITH OVER 12% FINES	GM		SILTY GRAVELS, SILTY GRAVELS WITH SAND
			GC		CLAYEY GRAVELS, CLAYEY GRAVELS WITH SAND
	SANDS, MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO.4 SIEVE SIZE	CLEAN SANDS WITH LITTLE OR NO FINES	SW		WELL GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
			SP		POORLY GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
		SANDS WITH OVER 12% FINES	SM		SILTY SANDS WITH OR WITHOUT GRAVEL
			SC		CLAYEY SANDS WITH OR WITHOUT GRAVEL
FINE-GRAINED SOILS, MORE THAN HALF IS FINER THAN NO. 200 SIEVE	SILTS AND CLAYS, LIQUID LIMIT 50% OR LESS		ML		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTS WITH SANDS AND GRAVELS
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, CLAYS WITH SANDS AND GRAVELS, LEAN CLAYS
			OL		ORGANIC SILTS OR CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS, LIQUID LIMIT GREATER THAN 50%		MH		INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS, FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH		ORGANIC CLAYS OR CLAYS OF MEDIUM TO HIGH PLASTICITY
	HIGHLY ORGANIC SOILS		PT		PEAT AND OTHER HIGHLY ORGANIC SOILS

BORING/TRENCH LOG LEGEND

- No Recovery
- Shelby Tube Sample
- Bulk Sample
- SPT Sample
- Modified California Sample
- Groundwater Level (At Completion)
- Groundwater Level (Seepage)

PENETRATION RESISTANCE

SAND AND GRAVEL			SILT AND CLAY			
RELATIVE DENSITY	BLOWS PER FOOT (SPT)*	BLOWS PER FOOT (MOD-CAL)*	CONSISTENCY	BLOWS PER FOOT (SPT)*	BLOWS PER FOOT (MOD-CAL)*	COMPRESSIVE STRENGTH (tsf)
VERY LOOSE	0 - 4	0 - 6	VERY SOFT	0 - 2	0 - 3	0 - 0.25
LOOSE	5 - 10	7 - 16	SOFT	3 - 4	4 - 6	0.25 - 0.50
MEDIUM DENSE	11 - 30	17 - 48	MEDIUM STIFF	5 - 8	7 - 13	0.50 - 1.0
DENSE	31 - 50	49 - 79	STIFF	9 - 15	14 - 24	1.0 - 2.0
VERY DENSE	OVER 50	OVER 79	VERY STIFF	16 - 30	25 - 48	2.0 - 4.0
			HARD	OVER 30	OVER 48	OVER 4.0

*NUMBER OF BLOWS OF 140 LB HAMMER FALLING 30 INCHES TO DRIVE LAST 12 INCHES OF AN 18-INCH DRIVE

MOISTURE DESCRIPTIONS

FIELD TEST	APPROX. DEGREE OF SATURATION, S (%)	DESCRIPTION
NO INDICATION OF MOISTURE; DRY TO THE TOUCH	S<25	DRY
SLIGHT INDICATION OF MOISTURE	25≤S<50	DAMP
INDICATION OF MOISTURE; NO VISIBLE WATER	50≤S<75	MOIST
MINOR VISIBLE FREE WATER	75≤S<100	WET
VISIBLE FREE WATER	100	SATURATED

QUANTITY DESCRIPTIONS

APPROX. ESTIMATED PERCENT	DESCRIPTION
<5%	TRACE
5 - 10%	FEW
11 - 25%	LITTLE
26 - 50%	SOME
>50%	MOSTLY

GRAVEL/COBBLE/BOULDER DESCRIPTIONS

CRITERIA	DESCRIPTION
PASS THROUGH A 3-INCH SIEVE AND BE RETAINED ON A NO. 4 SIEVE (#4 TO 3")	GRAVEL
PASS A 12-INCH SQUARE OPENING AND BE RETAINED ON A 3-INCH SIEVE (3"-12")	COBBLE
WILL NOT PASS A 12-INCH SQUARE OPENING (>12")	BOULDER

BEDDING SPACING DESCRIPTIONS

THICKNESS/SPACING	DESCRIPTOR
GREATER THAN 10 FEET	MASSIVE
3 TO 10 FEET	VERY THICKLY BEDDED
1 TO 3 FEET	THICKLY BEDDED
3 $\frac{3}{8}$-INCH TO 1 FOOT	MODERATELY BEDDED
1 $\frac{1}{4}$-INCH TO 3 $\frac{3}{8}$-INCH	THINLY BEDDED
$\frac{3}{8}$-INCH TO 1 $\frac{1}{4}$-INCH	VERY THINLY BEDDED
LESS THAN $\frac{3}{8}$-INCH	LAMINATED

STRUCTURE DESCRIPTIONS

CRITERIA	DESCRIPTION
ALTERNATING LAYERS OF VARYING MATERIAL OR COLOR WITH LAYERS AT LEAST $\frac{1}{4}$-INCH THICK	STRATIFIED
ALTERNATING LAYERS OF VARYING MATERIAL OR COLOR WITH LAYERS LESS THAN $\frac{1}{4}$-INCH THICK	LAMINATED
BREAKS ALONG DEFINITE PLANES OF FRACTURE WITH LITTLE RESISTANCE TO FRACTURING	FISSURED
FRACTURE PLANES APPEAR POLISHED OR GLOSSY, SOMETIMES STRIATED	SLICKENSIDED
COHESIVE SOIL THAT CAN BE BROKEN DOWN INTO SMALLER ANGULAR LUMPS WHICH RESIST FURTHER BREAKDOWN	BLOCKY
INCLUSION OF SMALL POCKETS OF DIFFERENT SOIL, SUCH AS SMALL LENSES OF SAND SCATTERED THROUGH A MASS OF CLAY	LENSED
SAME COLOR AND MATERIAL THROUGHOUT	HOMOGENOUS

CEMENTATION/INDURATION DESCRIPTIONS

FIELD TEST	DESCRIPTION
CRUMBLES OR BREAKS WITH HANDLING OR LITTLE FINGER PRESSURE	WEAKLY CEMENTED/INDURATED
CRUMBLES OR BREAKS WITH CONSIDERABLE FINGER PRESSURE	MODERATELY CEMENTED/INDURATED
WILL NOT CRUMBLE OR BREAK WITH FINGER PRESSURE	STRONGLY CEMENTED/INDURATED

IGNEOUS/METAMORPHIC ROCK STRENGTH DESCRIPTIONS

FIELD TEST	DESCRIPTION
MATERIAL CRUMBLES WITH BARE HAND	WEAK
MATERIAL CRUMBLES UNDER BLOWS FROM GEOLOGY HAMMER	MODERATELY WEAK
$\frac{1}{8}$-INCH INDENTATIONS WITH SHARP END FROM GEOLOGY HAMMER	MODERATELY STRONG
HAND-HELD SPECIMEN CAN BE BROKEN WITH **ONE** BLOW FROM GEOLOGY HAMMER	STRONG
HAND-HELD SPECIMEN CAN BE BROKEN WITH **COUPLE** BLOWS FROM GEOLOGY HAMMER	VERY STRONG
HAND-HELD SPECIMEN CAN BE BROKEN WITH **MANY** BLOWS FROM GEOLOGY HAMMER	EXTREMELY STRONG

IGNEOUS/METAMORPHIC ROCK WEATHERING DESCRIPTIONS

DEGREE OF DECOMPOSITION	FIELD RECOGNITION	ENGINEERING PROPERTIES
SOIL	DISCOLORED, CHANGED TO SOIL, FABRIC DESTROYED	EASY TO DIG
COMPLETELY WEATHERED	DISCOLORED, CHANGED TO SOIL, FABRIC MAINLY PRESERVED	EXCAVATED BY HAND OR RIPPING (Saprolite)
HIGHLY WEATHERED	DISCOLORED, HIGHLY FRACTURED, FABRIC ALTERED AROUND FRACTURES	EXCAVATED BY HAND OR RIPPING, WITH SLIGHT DIFFICULTY
MODERATELY WEATHERED	DISCOLORED, FRACTURES, INTACT ROCK-NOTICEABLY WEAKER THAN FRESH ROCK	EXCAVATED WITH DIFFICULTY WITHOUT EXPLOSIVES
SLIGHTLY WEATHERED	MAY BE DISCOLORED, SOME FRACTURES, INTACT ROCK-NOT NOTICEABLY WEAKER THAN FRESH ROCK	REQUIRES EXPLOSIVES FOR EXCAVATION, WITH PERMEABLE JOINTS AND FRACTURES
FRESH	NO DISCOLORATION, OR LOSS OF STRENGTH	REQUIRES EXPLOSIVES

IGNEOUS/METAMORPHIC ROCK JOINT/FRACTURE DESCRIPTIONS

FIELD TEST	DESCRIPTION
NO OBSERVED FRACTURES	UNFRACTURED/UNJOINTED
MAJORITY OF JOINTS/FRACTURES SPACED AT 1 TO 3 FOOT INTERVALS	SLIGHTLY FRACTURED/JOINTED
MAJORITY OF JOINTS/FRACTURES SPACED AT 4-INCH TO 1 FOOT INTERVALS	MODERATELY FRACTURED/JOINTED
MAJORITY OF JOINTS/FRACTURES SPACED AT 1-INCH TO 4-INCH INTERVALS WITH SCATTERED FRAGMENTED INTERVALS	INTENSELY FRACTURED/JOINTED
MAJORITY OF JOINTS/FRACTURES SPACED AT LESS THAN 1-INCH INTERVALS; MOSTLY RECOVERED AS CHIPS AND FRAGMENTS	VERY INTENSELY FRACTURED/JOINTED

GEOCON
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KEY TO LOGS

PROJECT NO. **E9167-04-01** PROJECT NAME: **Sausalito-Crescent Mudflow**

BORING B1

ELEV. (MSL.) _____ DATE COMPLETED **10/31/2019**

ENG./GEO. **SR** DRILLER **Clear Heart**

EQUIPMENT **Mobile DR10K1** HAMMER TYPE **Auto**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					3" AC over light brown aggregate base			
1					FRANCISCAN COMPLEX Black and rust colored, very strong chert			
2	B1-2					50/5"		
3								
4								
5	B1-5					50/3"		
					END OF BORING AT APPROXIMATELY 5¼ FEET DUE TO PRACTICAL REFUSAL NO FREE WATER ENCOUNTERED BACKFILLED WITH LEAN CEMENT GROUT AND CAPPED WITH CONCRETE DYED BLACK			

Figure A2, Log of Boring B1, Page 1 of 1

GEOCON BORING LOG E9167-04-01 BORING LOGS.GPJ 02/12/20

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E9167-04-01** PROJECT NAME: **Sausalito-Crescent Mudflow**

BORING B2

ELEV. (MSL.) _____ DATE COMPLETED **10/31/2019**

ENG./GEO. **SR** DRILLER **Clear Heart**

EQUIPMENT **Mobile DR10K1** HAMMER TYPE **Auto**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					3½" AC over light brown aggregate base			
1				SM	ARTIFICIAL FILL Loose moist reddish brown Silty (f-c) SAND w/ chunks of in-tact chert fragments			
2								
3	B2-2.5 B2-3					15		
4								
5				SC	RESIDUAL SOIL Dense, moist, light-brown mottled dark-brown Clayey (f-c) SAND w/ gravel			
6	B2-5.5 B2-6					57		
7	B2-6.5-7				FRANCISCAN COMPLEX Reddish-brown chert	56/6"		

END OF BORING AT APPROXIMATELY 7 FEET DUE TO PRACTICAL REFUSAL
NO FREE WATER ENCOUNTERED
BACKFILLED WITH LEAN CEMENT GROUT AND CAPPED WITH CONCRETE DYED BLACK

Figure A3, Log of Boring B2, Page 1 of 1

GEOCON BORING LOG E9167-04-01 BORING LOGS.GPJ 02/12/20

GEOCON

SAMPLE SYMBOLS
- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◥ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E9167-04-01** PROJECT NAME: **Sausalito-Crescent Mudflow**

BORING B3

ELEV. (MSL.) _____ DATE COMPLETED **10/31/2019**

ENG./GEO. **SR** DRILLER **Clear Heart**

EQUIPMENT **Mobile DR10K1** HAMMER TYPE **Auto**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					AC over light brown aggregate base			
1	B3-1-1.5				FRANCISCAN COMPLEX Reddish-brown chert -sampler obliterates material to silty (f-c) sand with fine gravel	56/6"		
2								
3								
4								
5	B3-4.5 B3-5-5.5					58/6"		
					END OF BORING AT APPROXIMATELY 5½ FEET DUE TO PRACTICAL REFUSAL NO FREE WATER ENCOUNTERED BACKFILLED WITH LEAN CEMENT GROUT AND CAPPED WITH CONCRETE DYED BLACK			

Figure A4, Log of Boring B3, Page 1 of 1

GEOCON BORING LOG E9167-04-01 BORING LOGS.GPJ 02/12/20

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

▨ ... DISTURBED OR BAG SAMPLE ◪ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E9167-04-01** PROJECT NAME: **Sausalito-Crescent Mudflow**

BORING HA1

ELEV. (MSL.) _____ DATE COMPLETED **10/31/2019**

ENG./GEO. **SR** DRILLER **Geocon**

EQUIPMENT **Hand Auger** HAMMER TYPE _____

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	ARTIFICIAL FILL / LANDSLIDE DEBRIS Loose, damp to moist, reddish-brown Silty Gravelly SAND			
1								
2								
3								
4				SC	RESIDUAL SOIL Dense, moist, dark brown Clayey (f-c) SAND w/ gravel			
5					FRANCISCAN COMPLEX Chert			
					END OF BORING AT APPROXIMATELY 5 FEET NO FREE WATER ENCOUNTERED BACKFILLED WITH COMPACTED CUTTINGS			

Figure A5, Log of Boring HA1, Page 1 of 1

GEOCON BORING LOG E9167-04-01 BORING LOGS.GPJ 02/12/20

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E9167-04-01** PROJECT NAME: **Sausalito-Crescent Mudflow**

BORING B4

ELEV. (MSL.) _____ DATE COMPLETED **11/1/2019**

ENG./GEO. **FG** DRILLER **Clear Heart**

EQUIPMENT **Mobile DR10K1** HAMMER TYPE **Auto**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					6" AC over light brown aggregate base			
1				GC	COLLUVIUM Loose, damp, red-brown, Sandy (f) GRAVEL w/ clay			
2								
3	B4-2.5 B4-3					13		
4								
5					-darker brown, moist (f-c) gravel			
6	B4-5.5 B4-6					13		
7								
8								
9								
10					-medium dense, red-brown mottled orange			
11	B4-10.5 B4-11					45		
12								
13								
14								
15								
16	B4-15.5 B4-16					47		
17								
18								
19								
20	B4-20					58/6"		
21	B4-20.5 B4-21-22				FRANCISCAN COMPLEX Very strong chert	54/6"		
22					END OF BORING AT APPROXIMATELY 22 FEET DUE TO PRACTICAL REFUSAL NO FREE WATER ENCOUNTERED BACKFILLED WITH LEAN CEMENT GROUT AND CAPPED WITH CONCRETE DYED BLACK			

Figure A6, Log of Boring B4, Page 1 of 1

GEOCON BORING LOG E9167-04-01 BORING LOGS.GPJ 02/12/20

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E9167-04-01** PROJECT NAME: **Sausalito-Crescent Mudflow**

BORING B5

ELEV. (MSL.) _____ DATE COMPLETED **11/1/2019**

ENG./GEO. **FG** DRILLER **Clear Heart**

EQUIPMENT **Mobile DR10K1** HAMMER TYPE **Auto**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					4" AC over light brown aggregate base			
1				CL	ARTIFICIAL FILL Medium stiff, damp, red-brown Sandy CLAY w/ gravel			
2								
3	B5-2.5 B5-3			GP	COLLUVIUM Loose, damp, red-orange brown GRAVEL w/ sand and trace clay	14		
4								
5	B5-5				-medium dense, red-brown mottled orange	54/6"		
6	B5-5.5				FRANCISCAN COMPLEX Chert			
7	B5-6.5-7.5					89		

END OF BORING AT APPROXIMATELY 7½ FEET DUE TO PRACTICAL REFUSAL
NO FREE WATER ENCOUNTERED
BACKFILLED WITH LEAN CEMENT GROUT AND CAPPED WITH CONCRETE DYED BLACK

Figure A7, Log of Boring B5, Page 1 of 1

GEOCON BORING LOG E9167-04-01 BORING LOGS.GPJ 02/12/20

GEOCON

SAMPLE SYMBOLS
- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◥ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E9167-04-01** PROJECT NAME: **Sausalito-Crescent Mudflow**

BORING B6

ELEV. (MSL.) _____ DATE COMPLETED **11/1/2019**

ENG./GEO. **FG** DRILLER **Clear Heart**

EQUIPMENT **Mobile DR10K1** HAMMER TYPE **Auto**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
				GC	4" AC over light brown aggregate base			
1					COLLUVIUM Medium dense, damp, red-brown, Sandy GRAVEL w/ few clay			
2								
3	B6-2.5 B6-3					26		
4								
5	B6-5				FRANCISCAN COMPLEX Chert	50/5"		
6	B6-5.5-6					50/4"		
					END OF BORING AT APPROXIMATELY 6 FEET DUE TO PRACTICAL REFUSAL NO FREE WATER ENCOUNTERED BACKFILLED WITH LEAN CEMENT GROUT AND CAPPED WITH CONCRETE DYED BLACK			

Figure A8, Log of Boring B6, Page 1 of 1

GEOCON BORING LOG E9167-04-01 BORING LOGS.GPJ 02/12/20

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

▨ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E9167-04-01** PROJECT NAME: **Sausalito-Crescent Mudflow**

BORING HA2

ELEV. (MSL.) _____ DATE COMPLETED **3/27/2020**

ENG./GEO. **JBM** DRILLER **Geocon**

EQUIPMENT **Hand Auger** HAMMER TYPE _____

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0			▼	GC	FRANCISCAN COMPLEX Very dense, wet, dark brown, (f-c) GRAVEL with little (f-c) sand and cobbles and few clays			
1					END OF BORING AT APPROXIMATELY 1 FOOT DUE TO PRACTICAL REFUSAL GROUNDWATER ENCOUNTERED AT SURFACE BACKFILLED WITH COMPACTED CUTTINGS			

Figure A6, Log of Boring HA2, Page 1 of 1

GEOCON BORING LOG E9167-04-01 BORING LOGS.GPJ 03/30/20

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

▨ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E9167-04-01** PROJECT NAME: **Sausalito-Crescent Mudflow**

BORING HA3

ELEV. (MSL.) _____ DATE COMPLETED **3/27/2020**

ENG./GEO. **JBM** DRILLER **Geocon**

EQUIPMENT **Hand Auger** HAMMER TYPE _____

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				CL	COLLUVIUM Medium stiff to stiff, moist, brown, (f-c) Gravelly CLAY with little silt and (f-c) sand			
1								
				ML	Medium stiff to stiff, moist, dark brown, (f-c) Gravelly SILT with little clay and (f-c) sand			
2				GW	FRANCISCAN COMPLEX Very dense, wet, dark brown, (f-c) GRAVEL with little cobbles and few (f-c) sands			
					END OF BORING AT APPROXIMATELY 2 ½ FEET DUE TO PRACTICAL REFUSAL NO GROUNDWATER ENCOUNTERED BACKFILLED WITH COMPACTED CUTTINGS			

Figure A8, Log of Boring HA3, Page 1 of 1

GEOCON BORING LOG E9167-04-01 BORING LOGS.GPJ 03/30/20

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

▨ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E9167-04-01** PROJECT NAME: **Sausalito-Crescent Mudflow**

BORING HA4

ELEV. (MSL.) _____ DATE COMPLETED **3/27/2020**

ENG./GEO. **JBM** DRILLER **Geocon**

EQUIPMENT **Hand Auger** HAMMER TYPE _____

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				CL	COLLUVIUM Medium stiff to stiff, moist, brown, (f-c) Gravelly CLAY with little silt and (f-c) sand			
1				SC	Loose to medium dense, moist to wet, brown, (f-c) Gravelly (f-c) SAND with little clay			
				GW	FRANCISCAN COMPLEX Very dense, wet, dark brown, (f-c) GRAVEL with little cobbles and few (f-c) sands			
					END OF BORING AT APPROXIMATELY 1 ¾ FEET DUE TO PRACTICAL REFUSAL NO GROUNDWATER ENCOUNTERED BACKFILLED WITH COMPACTED CUTTINGS			

Figure A9, Log of Boring HA4, Page 1 of 1

GEOCON BORING LOG E9167-04-01 BORING LOGS.GPJ 03/30/20

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E9167-04-01** PROJECT NAME: **Sausalito-Crescent Mudflow**

BORING HA5

ELEV. (MSL.) _____ DATE COMPLETED **3/27/2020**

ENG./GEO. **JBM** DRILLER **Geocon**

EQUIPMENT **Hand Auger** HAMMER TYPE _____

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				CL	COLLUVIUM Medium stiff to stiff, moist, brown, (f-c) Gravelly CLAY with little silt and (f-c) sand			
1				GW	FRANCISCAN COMPLEX Very dense, wet, dark brown, (f-c) GRAVEL with little cobbles and few (f-c) sands			
					END OF BORING AT APPROXIMATELY 1 ¼ FEET DUE TO PRACTICAL REFUSAL NO GROUNDWATER ENCOUNTERED BACKFILLED WITH COMPACTED CUTTINGS			

Figure A10, Log of Boring HA5, Page 1 of 1

GEOCON BORING LOG E9167-04-01 BORING LOGS.GPJ 03/30/20

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E9167-04-01** PROJECT NAME: **Sausalito-Crescent Mudflow**

BORING HA6

ELEV. (MSL.) _____ DATE COMPLETED **3/27/2020**

ENG./GEO. **JBM** DRILLER **Geocon**

EQUIPMENT **Hand Auger** HAMMER TYPE _____

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
				CL	COLLUVIUM Medium stiff to stiff, moist, brown, (f-c) Gravelly CLAY with little silt and (f-c) sand			
1								
				GW	FRANCISCAN COMPLEX Very dense, wet, dark brown, (f-c) GRAVEL with little cobbles and few (f-c) sands			
					END OF BORING AT APPROXIMATELY 1 ¾ FEET DUE TO PRACTICAL REFUSAL NO GROUNDWATER ENCOUNTERED BACKFILLED WITH COMPACTED CUTTINGS			

Figure A11, Log of Boring HA6, Page 1 of 1

GEOCON BORING LOG E9167-04-01 BORING LOGS.GPJ 03/30/20

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

▨ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E9167-04-01** PROJECT NAME: **Sausalito-Crescent Mudflow**

BORING HA7

ELEV. (MSL.) _____ DATE COMPLETED **3/27/2020**

ENG./GEO. **JBM** DRILLER **Geocon**

EQUIPMENT **Hand Auger** HAMMER TYPE _____

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
				CL	COLLUVIUM Medium stiff to stiff, moist, brown, (f-c) Gravelly CLAY with little silt and (f-c) sand			
1								
				GW	FRANCISCAN COMPLEX Very dense, wet, dark brown, (f-c) GRAVEL with little cobbles and few (f-c) sands			
					END OF BORING AT APPROXIMATELY 1 ¾ FEET DUE TO PRACTICAL REFUSAL NO GROUNDWATER ENCOUNTERED BACKFILLED WITH COMPACTED CUTTINGS			

Figure A12, Log of Boring HA7, Page 1 of 1

GEOCON BORING LOG E9167-04-01 BORING LOGS.GPJ 03/30/20

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E9167-04-01** PROJECT NAME: **Sausalito-Crescent Mudflow**

BORING HA8

ELEV. (MSL.) _____ DATE COMPLETED **3/27/2020**

ENG./GEO. **JBM** DRILLER **Geocon**

EQUIPMENT **Hand Auger** HAMMER TYPE _____

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				CL	COLLUVIUM Medium stiff to stiff, moist, brown, (f-c) Gravelly CLAY with little silt and (f-c) sand			
1								
2				GW	FRANCISCAN COMPLEX Very dense, wet, dark brown, (f-c) GRAVEL with little cobbles and few (f-c) sands			
					END OF BORING AT APPROXIMATELY 2 ¼ FEET DUE TO PRACTICAL REFUSAL NO GROUNDWATER ENCOUNTERED BACKFILLED WITH COMPACTED CUTTINGS			

Figure A13, Log of Boring HA8, Page 1 of 1

GEOCON BORING LOG E9167-04-01 BORING LOGS.GPJ 03/30/20

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

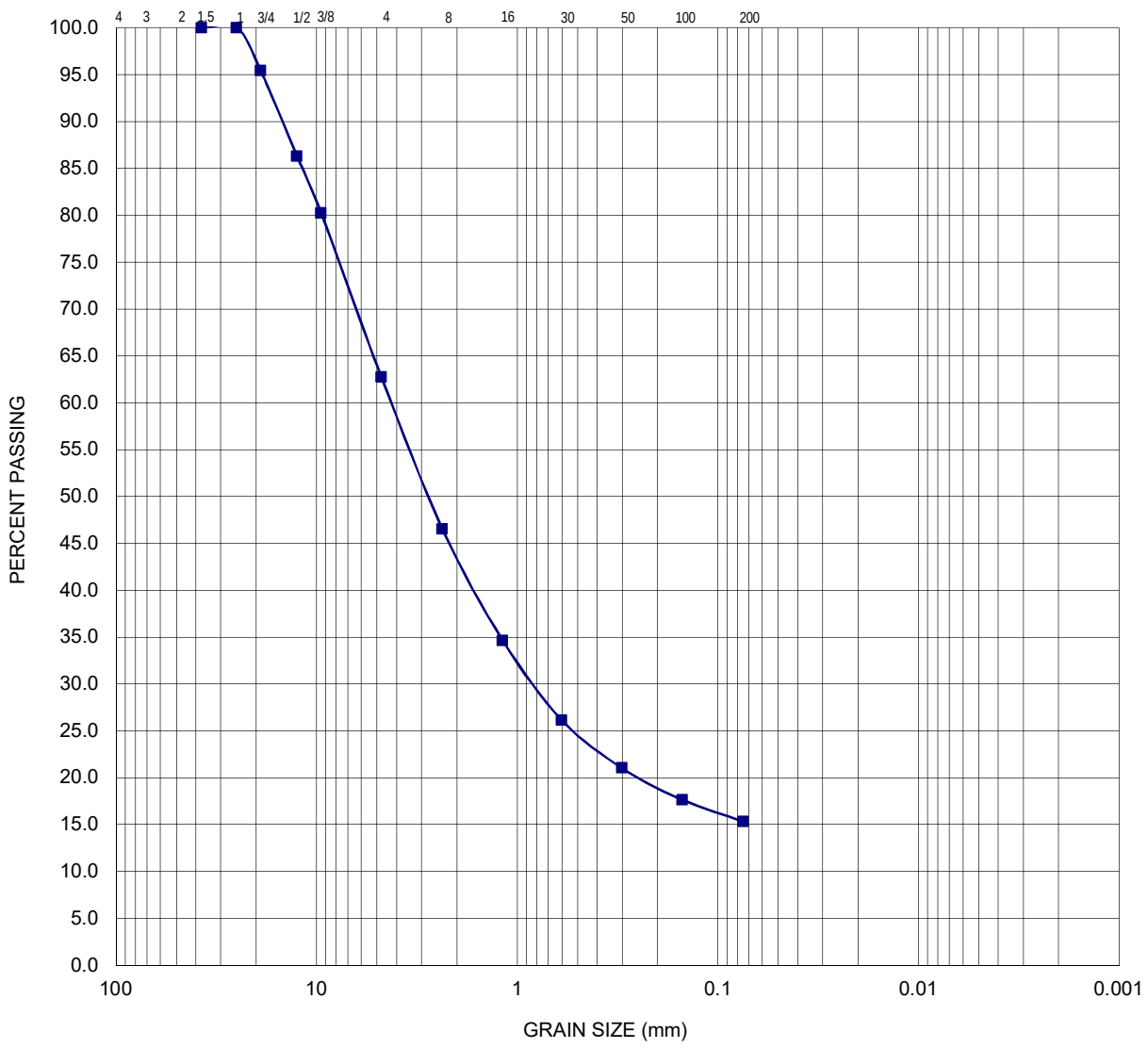
APPENDIX B

APPENDIX B
LABORATORY TESTING

Laboratory tests were performed in accordance with generally accepted test methods of the American Society for Testing and Materials (ASTM) or other suggested procedures. Selected samples were tested for grain size distribution, Atterberg Limits and in-situ dry density and/or moisture content. The results of our testing are summarized in tabular format below and in the following figures. In-situ dry density and moisture content test results are included on the boring logs in Appendix A.

TABLE B-I
SUMMARY OF LABORATORY ATTERBERG LIMITS TEST RESULTS
ASTM D 4318

Sample No.	Liquid Limit	Plastic Limit	Plasticity Index
B5-2.5	46	24	22



Boring: B2

Depth To Sample: 2.5'

Sieve Date: 11/20/19

Tested and Computed by: AC

Test Data

Sieve Number	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#16	#30	#50	#100	#200
% Passing	100	100	95.4	86.3	80.3	62.7	46.5	34.6	26.1	21.0	17.6	15.3

Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Telephone: (925) 371-5900
Fax: (925) 371-5915

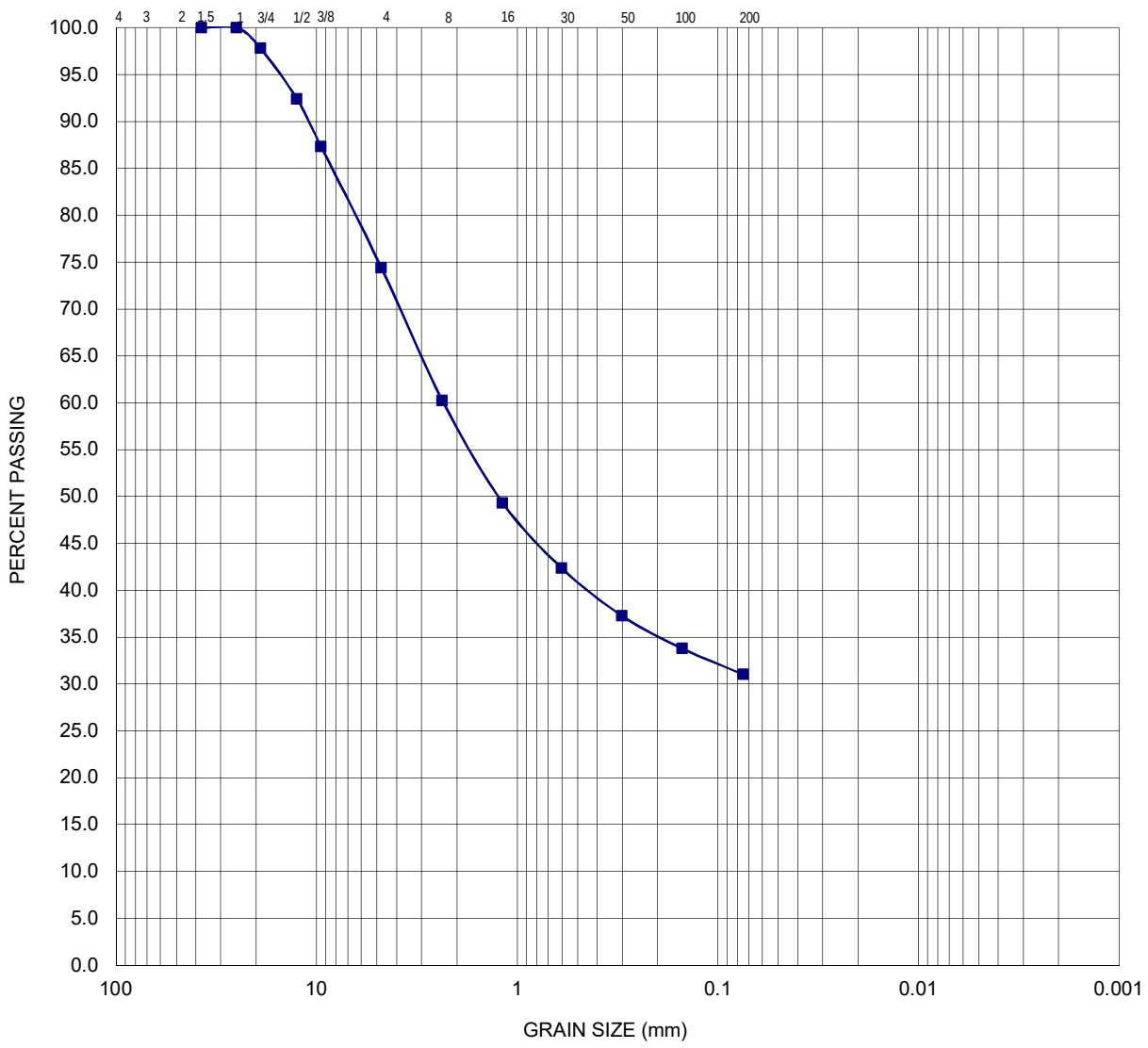
Particle Size Analysis - ASTM D422

Project: Sausalito - Crescent Mudflow

Location: Sausalito, CA

Project No.: E9167-04-01

Figure B1



Boring: B2

Depth To Sample: 6'

Sieve Date: 11/20/19

Tested and Computed by: AC

Test Data

Sieve Number	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#16	#30	#50	#100	#200
% Passing	100	100	97.8	92.4	87.3	74.4	60.2	49.3	42.4	37.3	33.8	31.0

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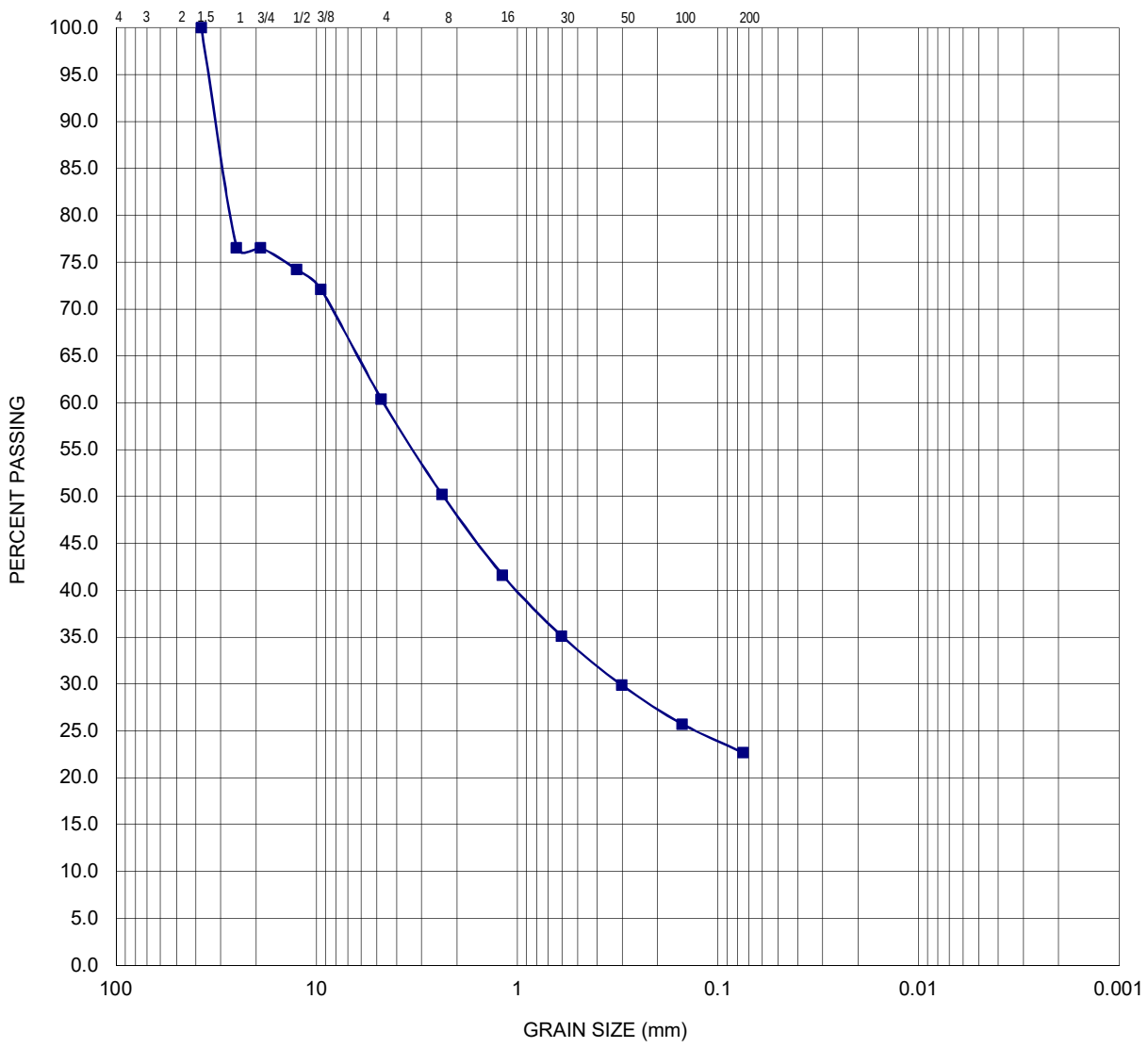
Particle Size Analysis - ASTM D422

Project: Sausalito - Crescent Mudflow

Location: Sausalito, CA

Project No.: E9167-04-01

Figure B2



Boring: B4

Depth To Sample: 2.5'

Sieve Date: 11/20/19

Tested and Computed by: AC

Test Data

Sieve Number	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#16	#30	#50	#100	#200
% Passing	100	76.5	76.5	74.2	72.1	60.4	50.2	41.6	35.1	29.9	25.7	22.7

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6671 Brisa Street
Livermore, CA 94550
Telephone: (925) 371-5900
Fax: (925) 371-5915

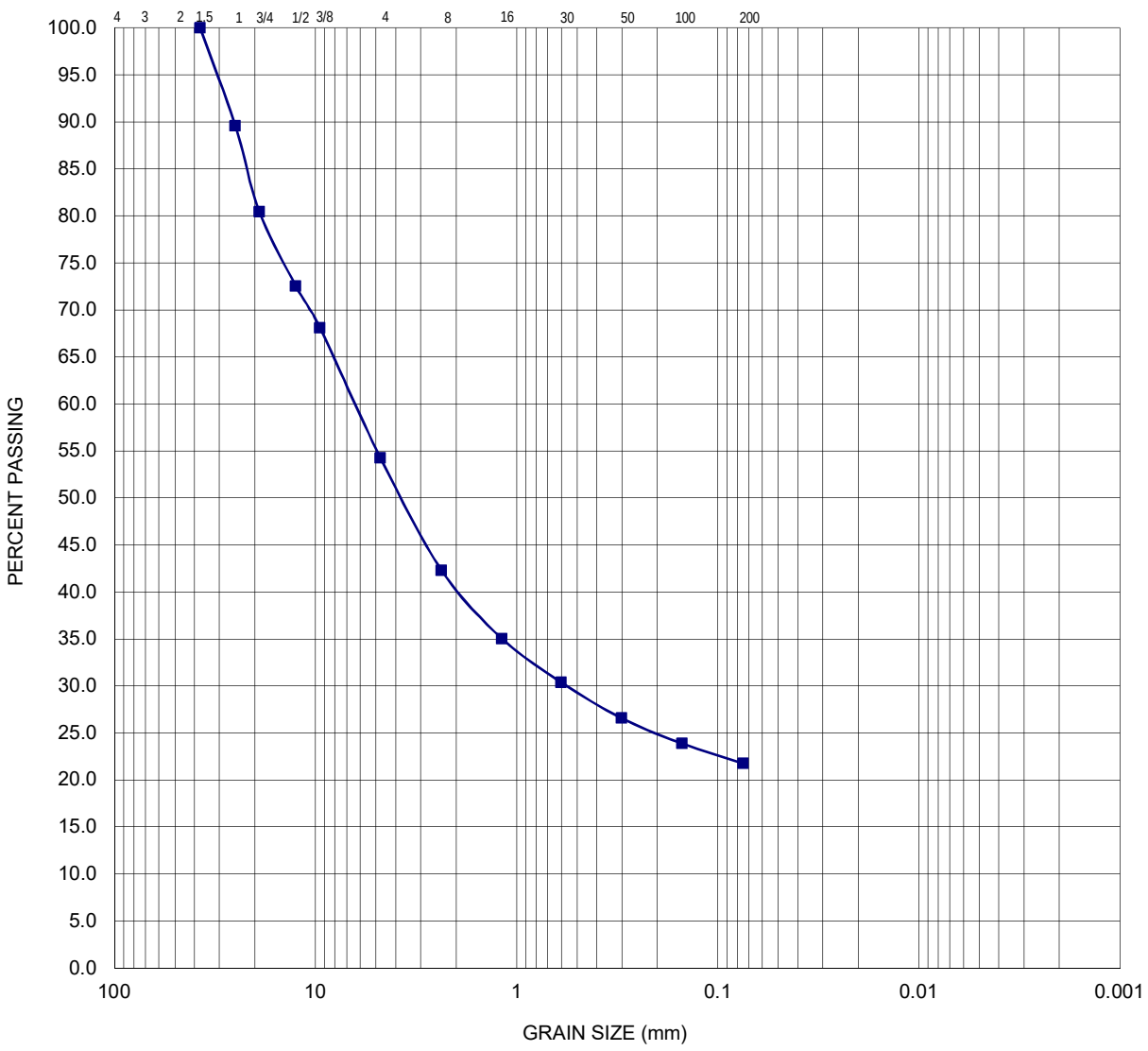
Particle Size Analysis - ASTM D422

Project: Sausalito - Crescent Mudflow

Location: Sausalito, CA

Project No.: E9167-04-01

Figure B3



Boring: B4

Depth To Sample: 5.5'

Sieve Date: 11/20/19

Tested and Computed by: AC

Test Data

Sieve Number	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#16	#30	#50	#100	#200
% Passing	100	89.6	80.4	72.5	68.1	54.3	42.3	35.0	30.4	26.6	23.9	21.8

Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Telephone: (925) 371-5900
Fax: (925) 371-5915

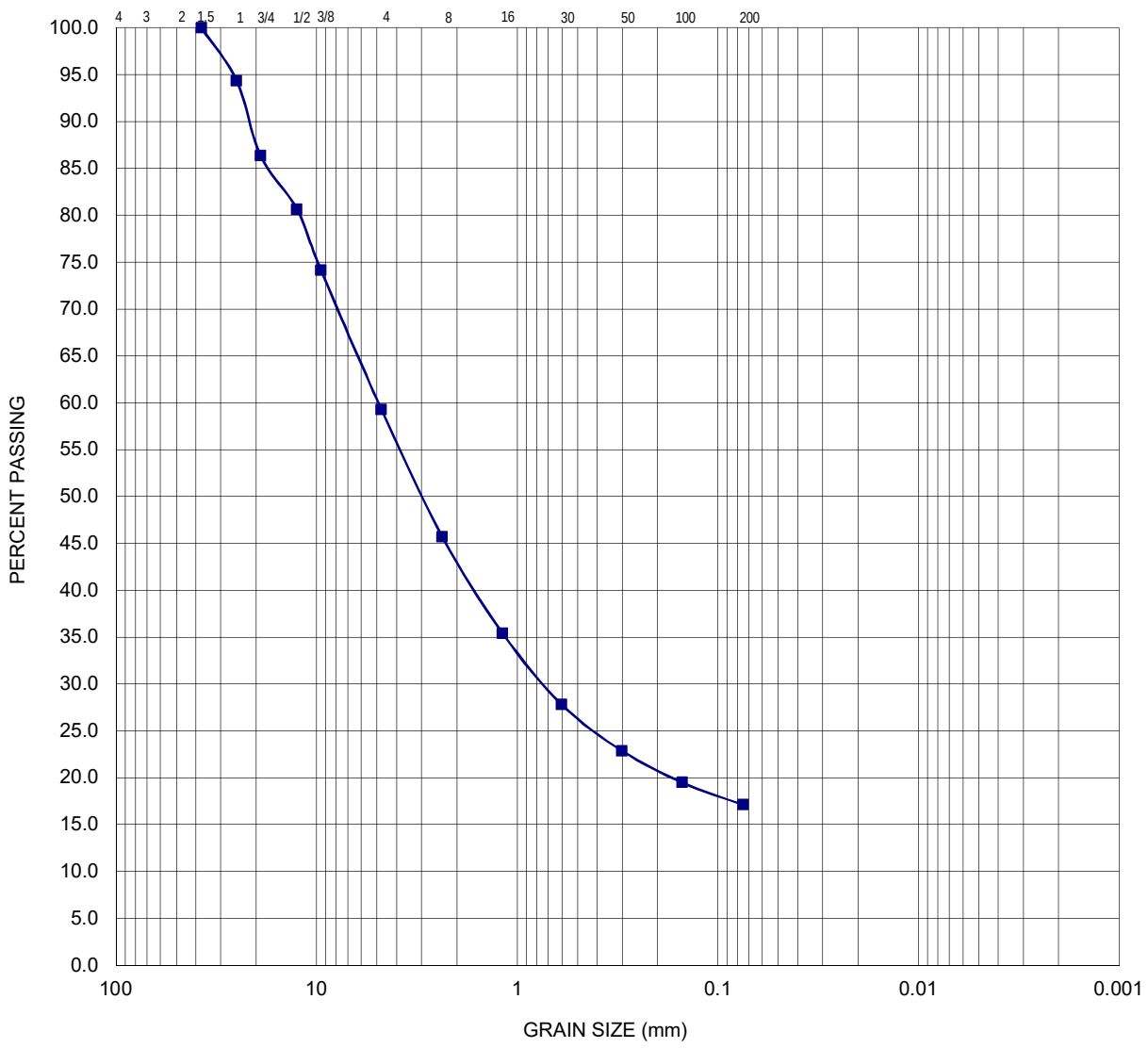
Particle Size Analysis - ASTM D422

Project: Sausalito - Crescent Mudflow

Location: Sausalito, CA

Project No.: E9167-04-01

Figure B4



Boring: B4

Depth To Sample: 10.5'

Sieve Date: 11/20/19

Tested and Computed by: AC

Test Data

Sieve Number	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#16	#30	#50	#100	#200
% Passing	100	94.3	86.3	80.6	74.1	59.3	45.7	35.4	27.8	22.9	19.5	17.1

Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Telephone: (925) 371-5900
Fax: (925) 371-5915

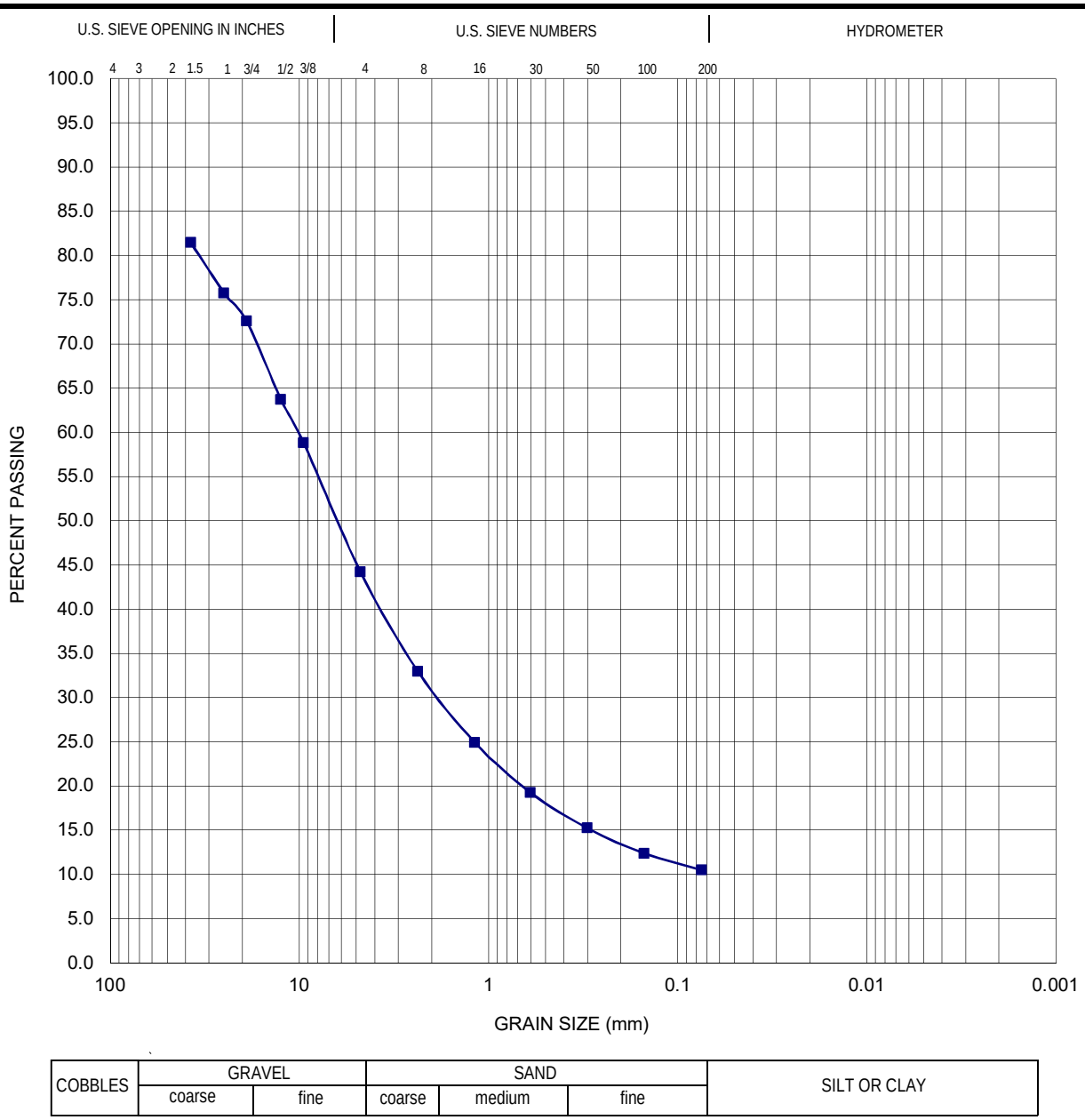
Particle Size Analysis - ASTM D422

Project: Sausalito - Crescent Mudflow

Location: Sausalito, CA

Project No.: E9167-04-01

Figure B5



Boring: B4

Depth To Sample: 15.5'

Sieve Date: 11/19/19

Tested and Computed by: AC

Test Data

Sieve Number	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#16	#30	#50	#100	#200
% Passing	81.4	75.8	72.6	63.7	58.8	44.2	32.9	24.9	19.2	15.2	12.4	10.5

Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Telephone: (925) 371-5900
Fax: (925) 371-5915

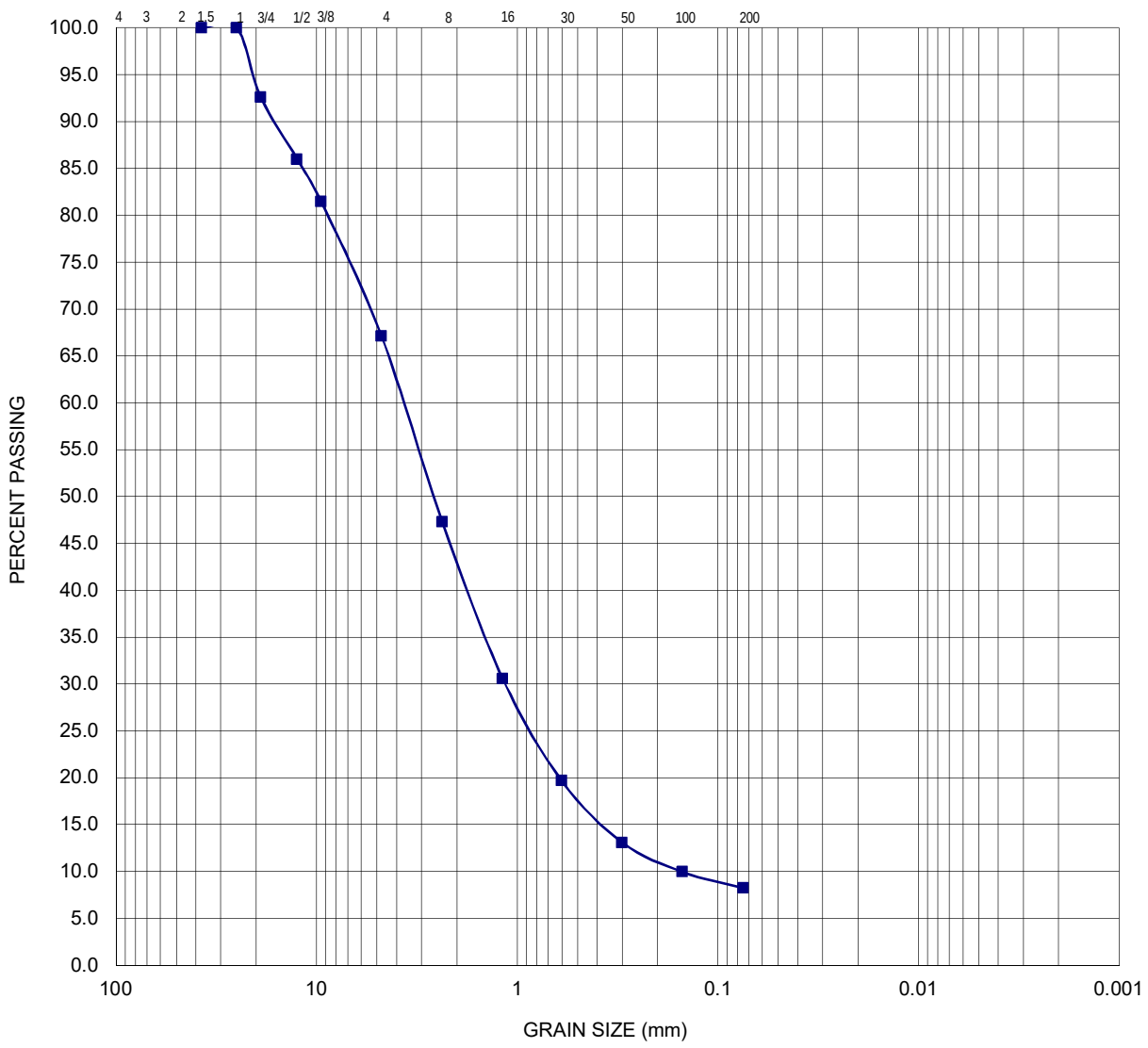
Particle Size Analysis - ASTM D422

Project: Sausalito - Crescent Mudflow

Location: Sausalito, CA

Project No.: E9167-04-01

Figure B6



Boring: B6

Depth To Sample: 2.5'

Sieve Date: 11/20/19

Tested and Computed by: AC

Test Data

Sieve Number	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#16	#30	#50	#100	#200
% Passing	100	100	92.6	86.0	81.5	67.1	47.3	30.5	19.7	13.1	10.0	8.2

Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Telephone: (925) 371-5900
Fax: (925) 371-5915

Particle Size Analysis - ASTM D422

Project: Sausalito - Crescent Mudflow

Location: Sausalito, CA

Project No.: E9167-04-01

Figure B7

LIST OF REFERENCES

California Department of Transportation, *Standard Plans,* 2018.

Cochrane, G.R. et al, *California State Waters Map Series – Offshore of San Francisco, California,* USGS OFR-2015-1068, 2015.

Graymer, R.W. et al, *Geologic Map of the San Francisco Bay Region*, USGS Scientific Investigations Map 2918, 2006.

Schlocker, Julius, *Geologic Map of the San Francisco North Quadrangle, San Francisco and Marin Counties, California*, USGS Professional Paper PP-782, 1958.

APPENDIX B

Standard Conditions for

Encroachment Permit

☐ City of Belvedere
☐ City of Larkspur
☐ City of Mill Valley
☐ City of Novato
☐ City of San Rafael *
☑ City of Sausalito

☐ Town of Ross
☐ Town of Fairfax
☐ Town of Corte Madera
☐ Town of San Anselmo
☐ Town of Tiburon
☐ County of Marin

EP No: _____
A / B

DRAFT
ENCROACHMENT
PERMIT

UNIFIED APPLICATION FOR ENCROACHMENT PERMIT

APPLICATION DATE: _____ APN: _____ - _____ - _____

LOCATION OF WORK OR ENCROACHMENT: Between Sausalito Blvd. and Crescent Ave
No. Street City/Township

CROSS STREET: _____ ESTIMATED COST: $ _____

STARTING DATE: _____ COMPLETION DATE: _____

PROPERTY OWNER'S NAME AND ADDRESS (If Different from Applicant):

THE UNDERSIGNED HEREBY APPLIES FOR PERMISSION TO PERFORM THE FOLLOWING DESCRIBED WORK AND/OR OTHERWISE ENCROACH ON A LOCAL AGENCY RIGHT-OF-WAY (ROW):

DESCRIPTION OF WORK OR ENCROACHMENT (Include plans or sketch):

Check all that apply to the project and provide a written description:

☐ Driveway Approach	☐ Sidewalk	☐ Accessible Ramp	☐ Debris Box
☑ Curb & Gutter	☐ Water Service	☑ New Utilities	☐ Special Event
☐ Sewer Improvement	☑ Excavation	☐ Landscaping	☑ Other (Describe)

Describe: 2019 Disaster - Sausalito Blvd to Crescent Ave Permanent Restoration per plans and specifications

Road Surface Type: ☑ Asphalt ☐ Concrete ☐ Other: _____

Trenching Work: ☑ Yes ☐ No Linear Feet: Per Plan Surface Thickness: Per Plan

Traffic Control Plan: ☑ Yes ☐ No

Applicant agrees that all work will be performed in accordance with the rules, regulations and standards of the Local Agency Department of Public Works and any Local Municipal Code. All work shall be subject to inspection and approval by the Department of Public Works. Applicant shall indemnify, defend and hold the Local Agency, its officers, agents and employees harmless from any and all claims, suits or liability, including, but not limited to, litigation costs and attorney's fees which the Local Agency may incur as the result of any and all claims and suits for personal injury, property damage or inverse condemnation by reason of applicants placement of/or maintenance of encroachments authorized by this permit. No work shall commence until permit is issued.

APPLICANT'S NAME / COMPANY (PLEASE PRINT): _____

CONTRACTOR'S NAME: _____ Contractor License No: _____

APPLICANT'S MAILING ADDRESS: _____

AGENCY: _____

CONTACT NUMBERS: _____
Daytime Phone Fax Email

APPLICANT'S SIGNATURE: _____

For Agency Use Only

Accepted By: _____

Insurance on file? ❒ Yes ❒ No Final Insp. Cleared: ❒

Road Moratorium? ❒ Yes ❒ No Receipt #: Journal Entry

Fees:
Application: _____
Plan Review & Inspection: _____
Total: No Fee

*** Contact City of San Rafael Public Works for Specific Encroachment Permit Application**

Revised May 20

DRAFT
ENCROACHMENT
PERMIT

Encroachment Permit Conditions

- ❒ Construction Standard(s): _____
- ❒ General Conditions: _____
- ❒ Comprehensive General Liability insurance in amounts not less than $1,000,000 combined single limit applying to bodily injury, personal injury and property damage are required.
- x Additional Insured Endorsement: The local agency must be named as an additionally insured on a separate endorsement sheet that modifies the general liability policy.
- x Contact local Police Department, Fire Department, and Parking Services prior to start of work. 415-499-7234
- x The Contractor shall ~~maintain local access and~~ provide emergency vehicle access at all times.
- ❒ Compaction test is required and shall be submitted to local Public Works Department.
- x Provide a traffic control plan per the Manual on Uniform Traffic Control Devices (MUTCD).
- ❒ Provide safe pedestrian and wheelchair access, per ADA and State requirements, during construction.
- ❒ All work shall be performed between the hours of 8AM and 6PM.
- ❒ Please contact _____ prior to start of work and for final inspection.
- ❒ Planning review required: YES / (NO)
- ❒ Special Conditions: _____

Encroachment Permit Approval

Approved By: _____ Date: _____

Inspected By: _____ Date: _____

For additional requirements refer to 2019 Disaster - Sausalito Blvd to Crescent Ave Permanent Restoration Plans and Specifications.

DRAFT
ENCROACHMENT
PERMIT

CITY OF SAUSALITO

STANDARD CONDITIONS FOR ENCROACHMENT PERMIT NO. ____
DESCRIPTION:_____ _____
Condition Marked X Apply to this Project

THIS ENCROACHMENT PERMIT IS GOOD FOR ☐ 6 MONTHS __ X ONE YEAR __ ☐ 18 MONTHS__ ☐ AS NOTED ON THE E.P.APPLICATION____

X 1. This permit, or a complete copy, shall be kept at the work site at all times while work is being performed.

X 2. Notify Engineering Division staff at least 24 hours in advance of beginning work. Senior Engineer at (415) 289-4180 ext. 111 and/or _____Sewer Systems Coordinator at (415) 289-4192.

X 3. Contractor is to comply with all requirement of Ordinance No. 1048 (Noise Ordinance) including limiting hours of work in residential areas between 8:00AM and 6 00PM, Monday through Friday, between 9:00AM and 5:00PM, Saturdays, ~~and between 9:00AM and 7:00PM, on City Holidays~~. No work is permitted on Sunday, except by owner occupant between 9:00AM and 7:00PM. or City Holidays

X 4. Permittee shall comply with all Federal State and local laws regulation and statutes applicable to the work being performed under this permit. This also includes compliance with the requirements and permit conditions of the State of California Division of Industrial Safety.

X 5. The Permittee shall repair or replace at the discretion of the City Engineer, any and all public facilities damaged as a result of Permittee's actions in connection with this permit, and shall guarantee repairs or replacements to all work done under this permit, as deemed necessary by the City Engineer for a period of one year after completion of said work.

X 6. All traffic control shall be performed in accordance with the requirements of the current edition of Caltrans publication, "California Manual on Uniform Traffic Devices, Part 6- Temporary Traffic Control" including all specified advance construction signs and channelization devices. Construction warning signs and channelization devices are to be sufficient to adequately inform and protect vehicles, bicycle and pedestrian traffic. Permittee shall have available a copy of the Manual for workers at the construction site at all times during the progress of the work.

☐ 7. Where excavations have been permitted in paved streets, Permittee shall place temporary informational signs at each end of the work in addition to those signs required by the "California Manual on Uniform Traffic Devices, Part 6- Temporary Traffic Control." Such informational signs shall be a minimum of 18 x 24 inches, clearly identify the owner of the facility for which the work is being done, and shall show a telephone number of the owner where the public may obtain information relative to the work being done.

X 8. Traffic shall be permitted to pass through the work area at all times unless otherwise permitted in writing by the City Engineer. Any street closures shall be approved in advance by the City Engineer.

X 9. If the City Engineer determines that public convenience or safety is being jeopardized by Permittee's actions or inactions, the City Engineer may order the condition remedied by either verbal or written communication to the Permittee. If Permittee fails to remedy the condition within eight hours of such notice, the City Engineer may, at his or her discretion, either remedy the condition or contract to remedy the condition, and the cost thereof, including administrative expenses shall be charged to the Permittee.

X 10. If any work is performed in the location of an existing pedestrian path of travel, the Contractor shall restore the path of travel compliant with all ADA accessibility standards.

X 11. Any pavement marking and/or legends which are damaged or removed shall be replaced in kind by the Contractor at his/her expense. The repainting of any street markings or legends shall be performed using City stencils:

X 12. Wherever new work crosses any existing City utilities, the Contractor shall pothole the existing City utilities and determine their actual depth so as to avoid hitting these facilities during excavation.

X 13. All AC or PCC to be removed is to be sawcut at the edges.

☐ 14. All new AC street trench resurfacing is to be placed in maximum lifts of 3 inches and the final surface is to be fog sealed (unless a sand or slurry seal is called for on. the plans).

CITY OF SAUSALITO

STANDARD CONDITIONS FOR ENCROACHMENT PERMIT NO. _____

DRAFT ENCROACHMENT PERMIT

X 15. All sections of curb, gutter and sidewalk to be replaced, shall have 12 inch long dowels (#4 reinforcing bars) inserted 6" into the existing concrete. A minimum of 2 dowels shall be placed into the curb and gutter. A minimum of 2 dowels shall be placed into sidewalk. Sidewalk dowel spacing shall be 24 inches on center.

X 16. Portions of existing sidewalk or curb and gutter to be removed shall be removed to the nearest expansion joint or sawcut at an existing score mark. Sawcuts must be at least 1-1/2 inches deep.

X 17. Concrete curbs, gutters and sidewalk shall consist of five sacks of cement per cubic yard with 3/8" maximum aggregate. ~~Two pounds of lampblack shall be added per cubic yard~~. Slump shall not exceed 4 inches.

X 18. Special care shall be taken to match the existing finish, color, texture and score joining during replacement of the sidewalk.

☐ 19. Curb, gutter and sidewalk surfaces shall be broom finished unless otherwise approved by the City Engineer.

☐ 20. New sidewalk thickness shall be 4 inches minimum and driveway thickness shall be 6'" minimum.

X 21. All excavations shall be backfilled and paved either temporarily or permanently at the end of each work day or covered with steel traffic plates held securely in place.

X 22. All backfill placement shall be approved by the City Engineer prior to permanent pavement replacement.

☐ 23. Tree roots shall not be cut or in any way damaged by Permittee.

X 24. Trench backfill shall be ~~either concrete slurry containing one sack of cement per cubic yard with ¾ inch Maximum aggregate size, or~~ Class 2 Aggregate Base compacted to 95% relative compaction as determined by California Test Method No. 216. All other trench details shall conform with Uniform Standard Drawing No. 330, 340 and 350 except as modified herein.

X 25. Permittee shall bear the entire cost of restoring the street or other property of the City, to the satisfaction of the City Engineer.

X 26. Excavated materials, equipment, construction materials or other debris shall not be stored or stockpiled on public streets

☐ 27. The top six inches of subgrade shall be compacted to at least 95% relative Compaction in accordance with California Test Method No. 236 and shall be dampened before placing concrete.

X 28. Where unsuitable subgrade material is encountered, the City Engineer may require remedial work to be done, including, but not limited to, placing a layer of crushed rock under the concrete 'section.

X 29. Undercut subgrade for gutter or sidewalk shall be filled with Class 2 Aggregate Base.

☐ 30. Where trench excavation is longitudinal with the traffic lane and extends 100 feet or more, a 2" minimum thickness of asphalt concrete paving with pavement reinforcing fabric shall be placed across the entire width of the affected traffic lane upon completion of trench work. Existing surfacing shall be removed as necessary to maintain satisfactory cross slopes.

☐ 31. One-half inch thick expansion joints shall be placed on both sides of driveway approaches, curb and sidewalk return points and at 4 feet on center. Weakened plane joints in sidewalk shall be at least 1-1/2 inch deep and placed at 16 feet on center.

X 32. All work shall be performed in accordance with the codes and ordinances of the City of Sausalito and the Uniform Construction Standards, Specifications of the Cities of Marin and County of Marin and Project plans and specifications

X 33. The Contractor is to provide a Erosion/Sedimentation Control Plan . City Approval must be obtained prior to commencing any work.

X 34. Underground Service Alert (USA) shall be notified at tel. (800) 642-2444, no later than 48 hours prior to excavation near utilities.

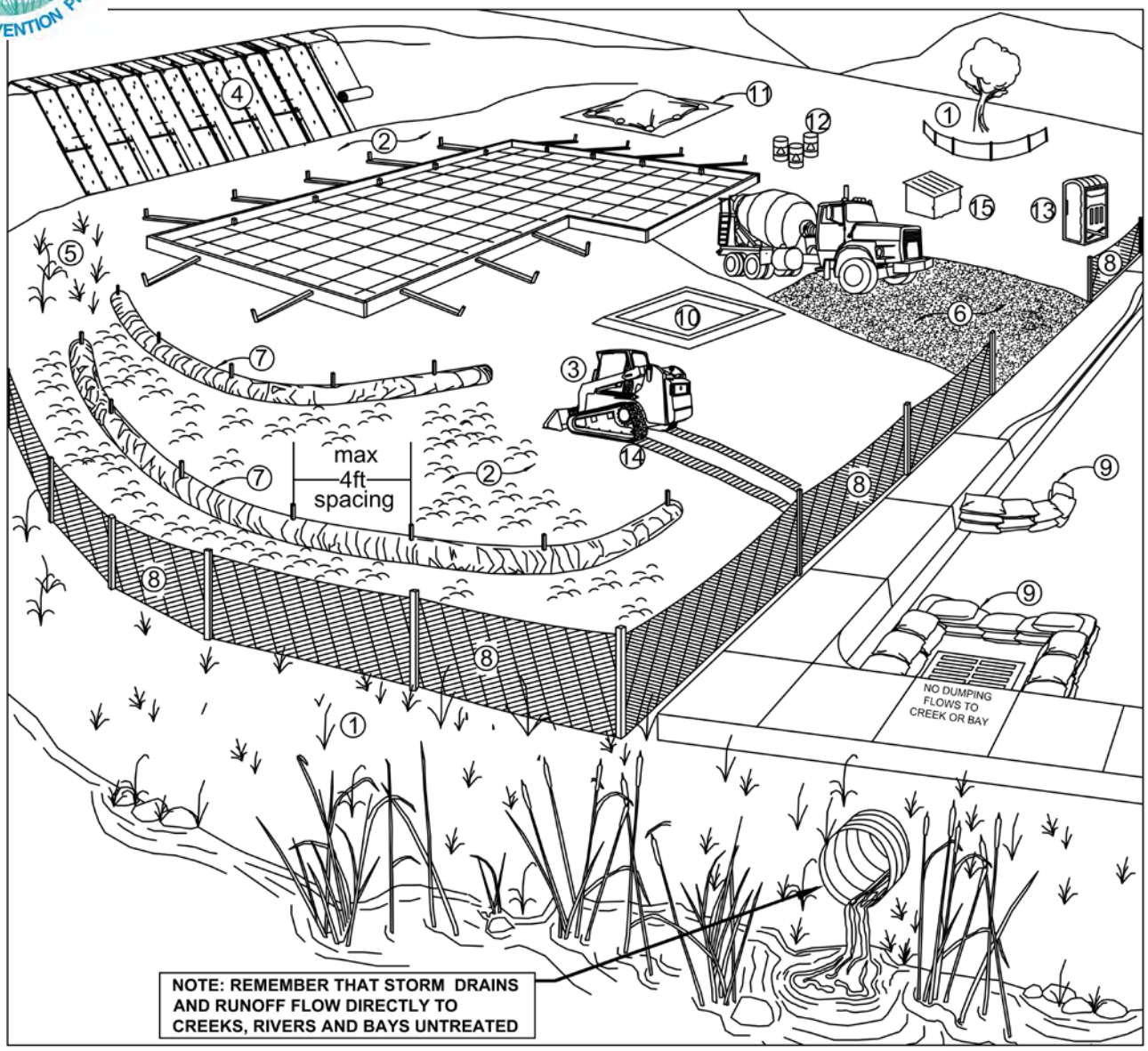
☐ 35. No new utility boxes or poles will be permitted in the sidewalk area without the written approval of the City Engineer.

	DRAFT Special Conditions
1	The Encroachment Permit is only applicable to the public right of way; contractor shall be responsible for ensuring that they have obtained permission from property owners prior to the use of their land.
2	No non-stormwater discharge shall enter the public storm drainage system or the Waters of The State. All Porta-Potties in the public Right of Way shall be equipped with a functional Secondary Containment Systems. The porta-potties shall be cleaned and maintained regularly throughout the project. The secondary containment shall be kept clear of trash, debris, and sewage. the secondary containment shall be properly cleaned or covered prior to any wet weather.
3	The public right of way shall be kept clean at all times. Spilled debris shall be cleaned promptly. No visible accumulation of sediment is permitted. No washing of sediment into drainage inlets is permitted. No materials associated with the work shall enter the waters of the State.
4	Prevent construction equipment/materials from entering stormdrains, sanitary sewers, ditches, creeks, or the bay.
5	Sweep streets and other paved areas daily. Never wash down streets or work areas with water.
6	Store any stockpiles of dirt, sand, asphalt, concrete, grout, or mortar under cover and away from drainage areas. These materials must never reach a storm drain, or other watercourse.
7	Contractor shall provide constant dust control.
8	Open Excavation(s) shall not be left unattended or uncovered.
9	Trench plates shall be non-skid and anchored with railroad spikes or better. Trench plates within the sidewalk shall have less than one half inch vertical difference between the existing sidewalkand top of trench plates. Any vertical difference greater than one quarter inch shall comply with the attached Figure 11B-303.2 & 11B-303.3 the 2016 California Building Code, Change in Level.
10	Contractor shall save and protect existing monuments. Any damaged monuments shall be reestablished along with the filing of all required documents including but not limited to Corner Record with Marin County Department of Public Works. Refer to Business & Professions code section 8771.
11	The surface course of trench restoration shall extend to the lip of gutter if the edge of trench is within 4’ of the lip of gutter, and to the edge of pavement if the edge of trench is within 4’ of an unpaved shoulder. Existing pavements shall be removed to clean straight lines parallel and perpendicular to the flow of traffic. Do not construct final restoration patches with angled sides or irregular shapes. The limits of the final pavement restoration shall terminate at one of the following locations: Center of the Lane, edge of the lane, edge of the bike lane, Island curb/gutter, edge of roadway curb/gutter. No paving joints shall be allowed in a vehicular wheel path.
12	Maintain access to adjacent driveways to maximum extent possible.

13	No parking signs shall be obtained from City of Sausalito Department of Public Works one week in advance. Vehicles shall be parked legally in the parking spaces. No parking signs shall be posted and verified by the County Dispatch 72 hours prior to becoming effective for enforcement. To verify the no parking signs, call County Dispatch 415-499-7234.
14	Project shall not increase emergency response time and shall allow emergency vehicles to pass without delay.
15	The pedestrian barricade shall be 34 to 38 inches high. Pedestrian barricade rail supports shall not extend into the pedestrian walkway more than 4 inches. The top edge of the bottom portion of the barricade shall be a minimum of 8 inches above the walkway. The bottom edge of the barricade may only be a maximum of 2 inches above the surface of the walkway. Joints between barricades shall interlock or be closed flush, so that small wheels and canes cannot get caught on edges.
16	Contractor shall notify County Dispatch 48 hours prior to any road closure: 415-499-7234. After calling County Dispatch, verify you call by emailing department of public works at ENGINEERING@SAUSALITO.GOV If the road closure will last longer than one day, are required to re-notify Count Dispatch each day. After calling County Dispatch, verify you call by emailing department of public works at ENGINEERING@SAUSALITO.GOV
17	Signs stating the date, time, location, contact name and phone number of responsible person in charge of the operation shall be posted, minimum one in each direction, at least 48 hours in advance of the closure. Signs shall consist of black letters on a white background, shall be at least two feet times four feet in size.
18	If a subcontractor is to be used to perform any part of the work, subcontractor shall name the City of Sausalito as an additionally insured on a separate endorsement sheet that modifies the general liability policy prior to start of work, a copy of which shall be provided to the City of Sausalito. The description in the certificate shall include the following language: "The City of Sausalito, its agents, officers, officials employees and volunteers as required by the permit are included as additionally insured.”

Marin County Stormwater Pollution Prevention Program

Minimum Control Measures
For Small Construction Projects



Erosion Controls	Sediment Controls	Good Housekeeping
NS Scheduling	6. Tracking Controls	10. Concrete Washout
1. Preserve Vegetation & Creek Set Backs	7. Fiber Rolls	11. Stockpile Management
2. Soil Cover	8. Silt Fence	12. Hazardous Material Management
3. Soil Preparation/ Roughening	9. Drain Inlet Protection	13. Sanitary Waste Management
4. Erosion Control Blankets	NS Trench Dewatering	14. Equipment and Vehicle Maintenance
5. Revegetation		15. Litter and Waste Management

NS=not shown on graphic

Note: Select an **effective combination of control measures from each category**, Erosion Control, Sediment Control, and Good Housekeeping. Control measures shall be **continually implemented and maintained throughout the project** until activities are complete, disturbed areas are stabilized with permanent erosion controls, and the local agency has signed off on permits that may have been required for the project. **Inspect and maintain the control measures** before and after rain events, and as required by the local agency or state permit.

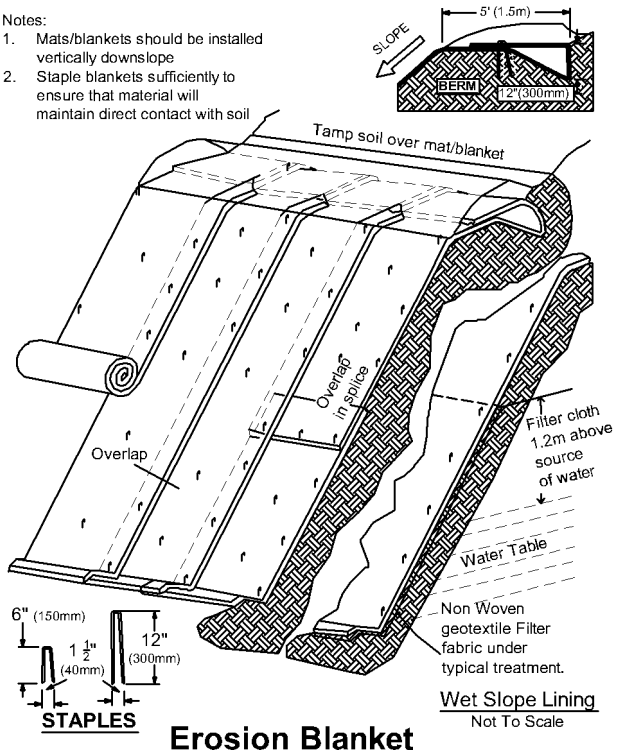
More detailed information on the BMPs can be found in the related California Stormwater Quality Association (CASQA) and California Department of Transportation (Caltrans) BMP Factsheets. CASQA factsheets are available by subscription in the *California Best Management Practices Handbook Portal: Construction* at http://www.casqa.org. Caltrans factsheets are available in the *Construction Site BMP Manual March 2003* at http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm.

Visit www.mcstoppp.org for more information on construction site management and Erosion and Sediment Control Plans.

If you require materials in alternative formats, please contact:
415-473-4381 voice/TTY or disabilityaccess@co.marin.ca.us

Control Measure		General Description
Erosion Control Best Management Practices		
N/A	Scheduling	Plan the project and develop a schedule showing each phase of construction. Schedule construction activities to reduce erosion potential, such as scheduling ground disturbing activities during the summer and phasing projects to minimize the amount of area disturbed. *For more info see the following factsheets: CASQA: EC-1; or Caltrans: SS-1*.
1	Preserve Existing Vegetation and Creek Setbacks	Preserve existing vegetation to the extent possible, especially along creek buffers. Show creek buffers on maps and identify areas to be preserved in the field with temporary fencing. Check with the local Planning and Public Works Departments for specific creek set back requirements. *For more info see the following factsheets: CASQA: EC-2; or Caltrans: SS-2.*
2	Soil Cover	Cover exposed soil with straw mulch and tackifier (or equivalent). *For more info see the following factsheets: CASQA: EC-3, EC-5, EC-6, EC-7, EC-8, EC-14, EC-16; or Caltrans: SS-2, SS-4, SS-5, SS-6, SS-7, SS-8.*
3	Soil Preparation/ Roughening	Soil preparation is essential to vegetation establishment and BMP installation. It includes soil testing and amendments to promote vegetation growth as well as roughening surface soils by mechanical methods (decompacting, scarifying, stair stepping, etc.). *For more info see the following factsheets: CASQA: EC-15.*
4	Erosion Control Blankets	Install erosion control blankets (or equivalent) on disturbed sites with 3:1 slopes or steeper. Use wildlife-friendly blankets made of biodegradable natural materials. Avoid using blankets made with plastic netting or fixed aperture netting. See: http://www.coastal.ca.gov/nps/Wildlife-Friendly_Products.pdf. *For more info see the following factsheets: CASQA: EC-7; or Caltrans: SS-7.*
5	Revegetation	Re-vegetate areas of disturbed soil or vegetation as soon as practical. *For more info see the following factsheets: CASQA: EC-4; or Caltrans: SS-4.*
Sediment Control Best Management Practices		
6	Tracking Controls	Stabilize site entrance to prevent tracking soil offsite. Inspect streets daily and sweep street as needed. Require vehicles and workers to use stabilized entrance. Place crushed rock 12-inches deep over a geotextile, using angular rock between 4 and 6-in. Make the entrance as long as can be accommodated on the site, ideally long enough for 2 revolutions of the maximum tire size (16-20 feet long for most light trucks). Make the entrance wide enough to accommodate the largest vehicle that will access the site, ideally 10 feet wide with sufficient radii for turning in and out of the site. Rumble pads or rumble racks can be used in lieu of or in conjunction with rock entrances. Wheel washes may be needed where space is limited or where the site entrance and sweeping is not effective. *For more info see the following factsheets: CASQA: TC-1; TC-3; or Caltrans: TC-1; TC-3.*
7	Fiber Rolls	Use fiber rolls as a perimeter control measure, along contours of slopes, and around soil stockpiles. On slopes space rolls 10 to 20 feet apart (using closer spacing on steeper slopes). Install parallel to contour. If more than one roll is used in a row overlap roll do not abut. J-hook end of roll upslope. Install rolls per either Type 1 (stake rolls into shallow trenches) or Type 2 (stake in front and behind roll and lash with rope). Use wildlife-friendly fiber rolls made of biodegradable natural materials. Avoid using fiber rolls made with plastic netting or fixed aperture netting. See: http://www.coastal.ca.gov/nps/Wildlife-Friendly_Products.pdf. Manufactured linear sediment control or compost socks can be used in lieu of fiber rolls. *For more info see the following factsheets: CASQA: SE-5 (Type 1); SE-12, SE-13; or Caltrans: SC-5 (Type 1 and Type 2).*
8	Silt Fence	Use silt fence as a perimeter control measure, and around soil stockpiles. Install silt fence along contours. Key silt fence into the soil and stake. Do not use silt fence for concentrated water flows. Install fence at least 3 feet back from the slope to allow for sediment storage. Wire backed fence can be used for extra strength. Avoid installing silt fence on slopes because they are hard to maintain. Manufactured linear sediment control can be used in lieu of silt fences. *For more info see the following factsheets: CASQA: SE-1; SE-12; or Caltrans: SC-1.*
9	Drain Inlet Protection	Use gravel bags, (or similar product) around drain inlets located both onsite and in gutter as a last line of defense. Bags should be made of a woven fabric resistant to photo-degradation filled with 0.5-1-in washed crushed rock. Do not use sand bags or silt fence fabric for drain inlet protection. *For more info see the following factsheets: CASQA: SE-10; or. Caltrans: SC-10.*
N/A	Trench Dewatering	Follow MCSTOPPP BMPs for trench dewatering. http://www.marincounty.org/depts/pw/divisions/mcstoppp/development/~/media/Files/Departments/PW/mcstoppp/development/TrenchingSWReqMCSTOPPPFinal6_09.pdf. *For more info see the following factsheets: CASQA: NS-2; or Caltrans: NS-2.*
Good Housekeeping Best Management Practices		
10	Concrete Washout	Construct a lined concrete washout site away from storm drains, waterbodies, or other drainages. Ideally, place adjacent to stabilized entrance. Clean as needed and remove at end of project. *For more info see the following factsheets: CASQA: WM-8; or .Caltrans: WM-8.*
11	Stockpile Management	Cover all stockpiles and landscape material and berm properly with fiber rolls or sand bags. Keep behind the site perimeter control and away from waterbodies. *For more info see the following factsheets: CASQA: WM-3 or Caltrans: WM-3.*
12	Hazardous Material Management	Hazardous materials must be kept in closed containers that are covered and within secondary containment; do not place containers directly on soil. *For more info see the following factsheets: CASQA: WM-6; or Caltrans: WM-6.*
13	Sanitary Waste Management	Place portable toilets near stabilized site entrance, behind the curb and away from gutters, storm drain inlets, and waterbodies. Tie or stake portable toilets to prevent tipping and equip units with overflow pan/tray (most vendors provide these). *For more info see the following factsheets: CASQA: WM-9; or Caltrans: WM-9.*
14	Equipment and Vehicle Maintenance	Prevent equipment fluid leaks onto ground by placing drip pans or plastic tarps under equipment. Immediately clean up any spills or drips. *For more info see the following factsheets: CASQA: NS-8, NS-9, and NS-10; or Caltrans: NS-8, NS-9, and NS-10.*
15	Litter and Waste Management	Designate waste collection areas on site. Use watertight dumpsters and trash cans; inspect for leaks. Cover at the end of each work day and when it is raining or windy. Arrange for regular waste collection. Pick up site litter daily. *For more info see the following factsheets: CASQA: WM-5; or Caltrans: WM-5.*

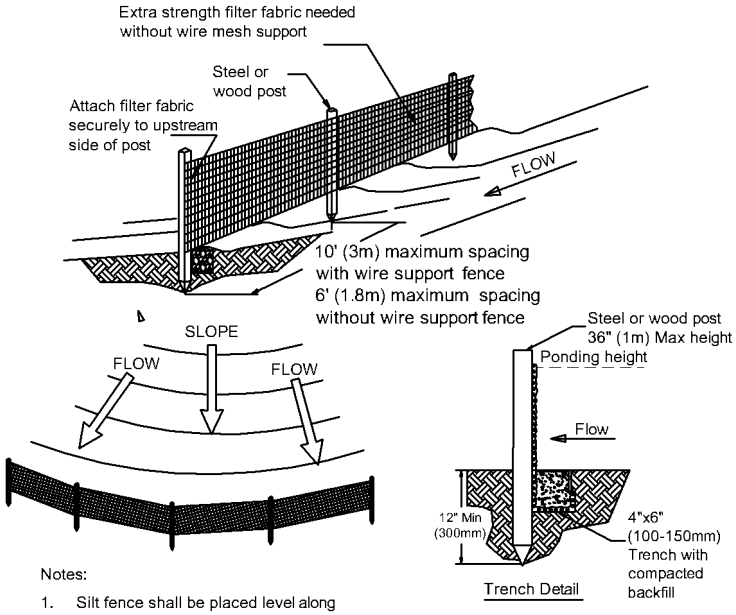
Notes:
1. Mats/blankets should be installed vertically downslope
2. Staple blankets sufficiently to ensure that material will maintain direct contact with soil



Wet Slope Lining
Not To Scale

Erosion Blanket

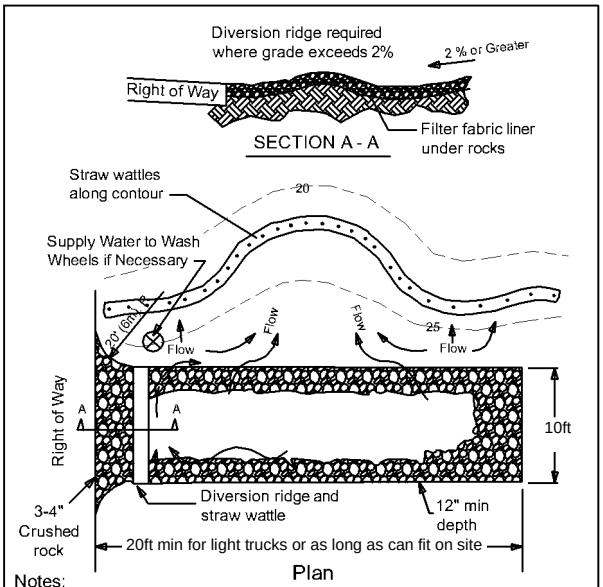
Note: Actual layout determined in the field.



Notes:
1. Silt fence shall be placed level along slope contours to maximize ponding efficiency with the ends curved uphill to improve ability to retain water.
2. Inspect and repair fence after each storm event and remove sediment when accumulation reaches 1/3 of the barrier height.
3. Removed sediment shall be deposited to an area that will not contribute sediment off-site and can be permanently stabilized

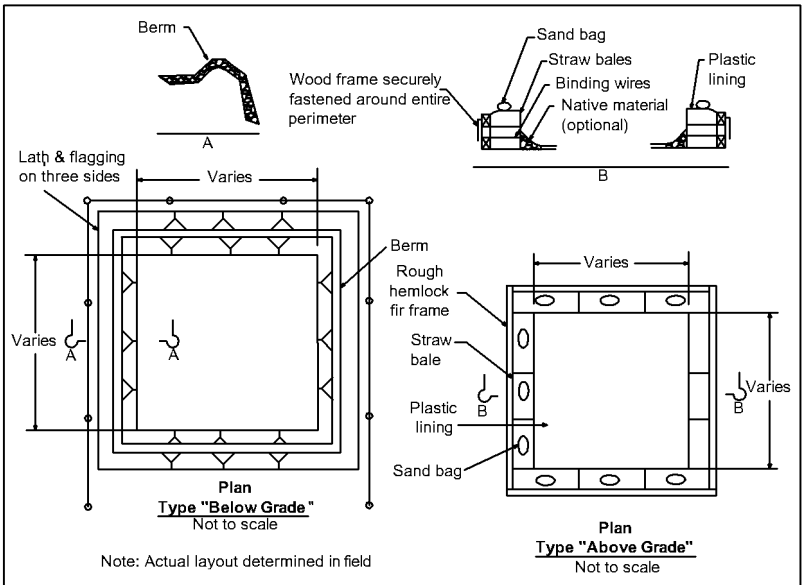
Silt Fence

NOT TO SCALE



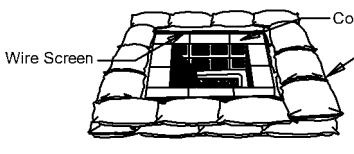
Notes:
1. The entrance shall be maintained to prevent sediment tracking or flowing onto public right-of-ways. This may require top dressing, repair and/or cleanout or other measures that trap sediment.
2. When necessary, wheels shall be cleaned prior to entering public right-of-way.
3. When washing is required, it shall be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin. Rumble plates or tire wash can be added.

Site Entrance



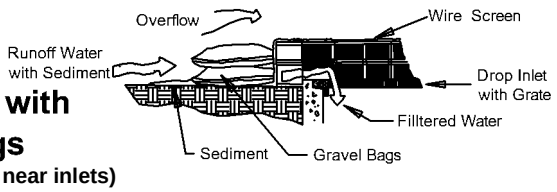
Note: Actual layout determined in field

Concrete Washout



Catch Basins with Gravel Bags

(Do not use sand bags near inlets)



In Marin, all storm drains go directly to local waterways!

POLLUTION PREVENTION

IT'S PART OF THE PLAN

MAKE SURE YOUR CREWS AND SUBS DO THE JOB RIGHT!

Runoff from streets and other paved areas is a major source of pollution in San Francisco Bay. Construction activities can directly affect the health of the Bay unless contractors and crews plan ahead to keep dirt, debris, and other construction waste away from storm drains and local creeks. Following these guidelines will ensure your compliance with local ordinance requirements. Contact your local stormwater coordinator (see reverse). Storm drain polluters may be liable for fines!

EARTHWORK & CONTAMINATED SOILS

- Avoid scheduling earth disturbing activities during the rainy season if possible. If grading activities during wet weather are allowed in your permit, be sure to implement all measures necessary to prevent erosion.
- Mature vegetation is the best form of erosion control. Minimize disturbance to existing vegetation whenever possible.
- If you disturb a slope during construction, prevent erosion by securing the soil with erosion control fabric, or seed with fast-growing grasses as soon as possible. Place a silt barrier downslope until soil is secure.
- Keep excavated soil on the site where it is least likely to collect in the street. Transfer to dump trucks should occur on the site, not in the street.
- Use sand bags, silt fences, hay bales, straw logs or other control measures to prevent the flow of silt off the site and into storm drains or creeks.

PAVING/ASPHALT WORK

- Do not pave during wet weather or when rain is forecast.
- Always cover storm drain inlets and manholes when paving or applying seal coat, tack coat, slurry seal, or fog seal.
- Do not sweep or wash down excess materials into storm drains, ditches or creeks. Collect these materials and return them to stockpiles, or dispose of as trash.
- Do not use water to wash down fresh asphalt or concrete pavement.

DEWATERING OPERATIONS

- Reuse water for dust control, irrigation, or another on-site purpose to the greatest extent possible.
- Be sure to call the local Stormwater Coordinator before discharging water to a street, storm drain, or creek. Filtration or diversion through a basin, tank, or sediment trap may be required.

MATERIALS STORAGE & WASTE DISPOSAL

- Sweep streets and other paved areas daily. Never wash down streets or work areas with water!
- Be sure to store any stockpiles of dirt, sand, asphalt, concrete, grout, or mortar under cover and away from drainage areas. These materials must never reach a storm drain, or other watercourse.
- Wash out concrete equipment trucks off-site, or designate an on-site area for washing where water will flow into a temporary pit in a dirt area. Let the water seep into the soil and dispose of hardened concrete with trash.
- Divert water from washing exposed aggregate concrete to a dirt area where it will not run into a gutter, street, or storm drain.
- If a suitable dirt area is not available, collect the wash water and remove it for appropriate disposal off site.

HAZARDOUS MATERIALS MANAGEMENT

- Label all hazardous materials/wastes (such as pesticides, paints, thinners, solvents, fuel, oil, and antifreeze) in accordance with city, state, and federal regulations.
- Store hazardous materials and wastes in secondary containment and cover them during wet weather.
- Follow manufacturer's application instructions for hazardous materials. Be careful not to use more than necessary.
- Do not apply chemicals outdoors when rain is forecast within 24 hours.
- Dispose of hazardous materials/waste at the Hazardous Waste Collection Facility. For more information:

  Novato businesses call 892-6395

  All other businesses in Marin call 485-5648

CONTINUED ON BACK

PAINTING

- Never rinse paint brushes or materials into a storm drain or on the street!
- Paint out excess water-based paint before rinsing brushes, rollers, or containers in a sink. If you can't use a sink, direct wash water to a dirt area, and spade it into the dirt with a shovel.
- Paint out excess oil-based paint before cleaning brushes in paint thinner.
- Filter paint thinners and solvents for reuse whenever possible. Dispose of oil-based paint sludge and unusable thinner at the hazardous waste collection facility. (See reverse for Hazardous Materials Management.)

LANDSCAPING

- Schedule grading and excavation projects for dry weather.
- Protect stockpiles and landscaping materials from wind and rain by storing them under tarps and secured plastic sheeting.
- Store pesticides, fertilizers, and other chemicals indoors or in a locked shed or storage cabinet.
- Make sure products are properly labeled and check inventory before buying additional products.
- Rinse containers and use rinse water as products before tossing out empty containers (5 gallons or less) in the trash.
- Get rid of unwanted products through the hazardous waste facility. (See reverse for Hazardous Materials Management.)
- Use temporary check dams or ditches to divert runoff away from storm drains.
- Protect storm drain inlets with berms, filter mats or other inlet protection measures.
- Revegetate the area. It's an excellent form of erosion control for any site.
- Collect lawn and garden clippings, pruning waste and tree trimmings. Chip, if necessary, and compost.
- Do not place yard waste in gutters. In communities with curbside yard waste recycling, leave clippings and pruning waste for pick-up in approved bags or containers or, take to a landfill that composts yard waste.
- Do not blow or rake leaves into the street.
- Call the County Stormwater Program at 499-6528 and ask for a copy of Bay- Friendly Landscape Guidelines for the Landscape Professional or visit www.bayfriendly.org

POOL/FOUNTAIN/SPA MAINTENANCE

- Never discharge pool or spa water (and/or backwash water) to a street or storm drain. Call the County at 499-6528 for a copy of "Here's What To Do with the Water" or look in "other businesses" under www.mcstoppp.org

VEHICLE & EQUIPMENT MAINTENANCE

- Frequently, inspect vehicles and equipment for leaks. Use drip pans to catch leaks until repairs are made; repair leaks promptly.
- Fuel and maintain vehicles on site only in a bermed area or over a drip pan that is big enough to prevent runoff.
- If you must clean vehicles or equipment on site, clean with water only - and in a bermed area that will not allow rinsewater to run into streets, stormdrains, ditches, or creeks.
- Do not clean vehicles or equipment on site using soaps, solvents, degreasers, steam cleaning equipment, etc.

SAW CUTTING

- Always completely cover or barricade storm drain inlets when saw cutting. Use filter fabric, sand bags, or fine gravel dams to keep slurry out of the storm drain system.If saw-cut slurry enters a stormdrain, clean up immediately.
- Shovel, absorb, or vaccuum saw-cut slurry and pick up all waste as soon as you are finished in one location and by the end of each work day.

STORMWATER COORDINATORS

(During Normal Business Hours)

Town of San Anselmo
Rabi Elias/Dave Craig
258-4616

City of Sausalito
Engineering
289-4191

Town of Corte Madera
Kevin Kramer
927-5057

City of San Rafael
Richard Landis
485-3355

City of Belvedere
Scott Derdenger
435-3838

County of Marin
Howard Bunce
499-3748

Town of Ross
Rob Maccario
453-8287 ext. 163

Town of Tiburon
Matt Swalberg
435-7354

Town of Fairfax
Kathy Wilkie
453-0291

City of Larkspur
Mike Myers
927-5017

City of Novato
Dave Harlan
899-8246

City of Mill Valley
Jill Barnes
388-4033 ext. 116

To report illegal discharges to local waterways occurring after normal business hours, call 911; or, the County Sheriff's non-emergency line at 499-7233.
To report oil and chemical spills occurring in "open waters" or "on land" call 1-800-OILS911.
To report fish kills or poaching, call the California Department of Fish and Game at 1-888-334-2258.

City of Sausalito
420 Litho Street
Sausalito, CA 94965
www.sausalito.gov
415-289-4106

New Marin County Construction Requirements Acknowledgement Form

On April 29, 2020 the Marin County Health Officer updated its shelter-in-place order. Effective May 4, 2020, construction activities are allowed provided such activities comply with specific Project Safety Protocols.

Attached below are the specific requirements, titled Appendix B-1 Small Construction Project Safety Protocol which are applicable to most construction projects within the City of Sausalito, as well as Appendix B-2 Large Construction Project Safety Protocol. Additionally, please find attached sample documents prepared by the City intended to help facilitate compliance with new job site requirements.

Please read this document carefully. These are not recommendations. These are requirements for the job site. Violation of or failure to comply is a misdemeanor punishable by fine, imprisonment, or both.

I acknowledge that I have read, understand, and will comply with all requirements of the Marin County Shelter in Place Order – Appendix B1. I understand that violation of or failure to comply with the Order is a misdemeanor punishable by fine, imprisonment, or both. (California Health and Safety Code § 120295, *et seq.*; Cal. Penal Code §§ 69, 148(a)(1), *et seq.*)

_____	_____	_____
Print/Type Name	**Signature**	**Date**
_____	_____	
Contractor Company	**CSLB License #**	
_____	_____	
Permit Number	**Job Site Address**	

Appendix B-1

Marin Health Order for April 29, 2020

Appendix B-1

Small Construction Project Safety Protocol

1. Any construction project meeting any of the following specifications is subject to this Small Construction Project Safety Protocol ("SCP Protocol"), including public works projects unless otherwise specified by the Health Officer:

   a. For residential projects, any single-family, multi-family, senior, student, or other residential construction, renovation, or remodel project consisting of 10 units or less. This SCP Protocol does not apply to construction projects where a person is performing construction on their current residence either alone or solely with members of their own household.

   b. For commercial projects, any construction, renovation, or tenant improvement project consisting of 20,000 square feet of floor area or less.

   c. For mixed-use projects, any project that meets both of the specifications in subsection 1.a and l.b.

   d. All other construction projects not subject to the Large Construction Project Safety Protocol set forth in Appendix B-2.

2. The following restrictions and requirements must be in place at all construction job sites subject to this SCP Protocol:

   a. Comply with all applicable and current laws and regulations including but not limited to OSHA and Cal-OSHA. If there is any conflict, difference, or discrepancy between or among applicable laws and regulations and/or this SCP Protocol, the stricter standard shall apply.

   b. Designate a site-specific COVID-19 supervisor or supervisors to enforce this guidance. A designated COVID-19 supervisor must be present on the construction site at all times during construction activities. A COVID-19 supervisor may be an on-site worker who is designated to serve in this role.

   c. The COVID-19 supervisor must review this SCP Protocol with all workers and visitors to the construction site.

   d. Establish a daily screening protocol for arriving staff to ensure that potentially infected staff do not enter the construction site. If workers leave the jobsite and return the same day, establish a cleaning and decontamination protocol prior to entry and exit of the jobsite.

Post the daily screening protocol at all entrances and exits to the jobsite. More information on screening can be found online at: https://www.cdc.gov/coronavirus/2019-ncov/community/index.html

e. Practice social distancing by maintaining a minimum six-foot distance between workers at all times, except as strictly necessary to carry out a task associated with the construction project.

f. Where construction work occurs within an occupied residential unit, separate work areas must be sealed off from the remainder of the unit with physical barriers such as plastic sheeting or closed doors sealed with tape to the extent feasible. If possible, workers must access the work area from an alternative entry/exit door to the entry/exit door used by residents. Available windows and exhaust fans must be used to ventilate the work area. If residents have access to the work area between workdays, the work area must be cleaned and sanitized at the beginning and at the end of workdays. Every effort must be taken to minimize contact between workers and residents, including maintaining a minimum of six feet of social distancing at all times.

g. Where construction work occurs within common areas of an occupied residential or commercial building or a mixed-use building in use by on-site employees or residents, separate work areas must be sealed off from the rest of the common areas with physical barriers such as plastic sheeting or closed doors sealed with tape to the extent feasible. If possible, workers must access the work area from an alternative building entry/exit door to the building entry/exit door used by residents or other users of the building. Every effort must be taken to minimize contact between worker and building residents and users, including maintaining a minimum of six feet of social distancing at all times.

h. Prohibit gatherings of any size on the jobsite, including gatherings for breaks or eating, except for meetings regarding compliance with this protocol or as strictly necessary to carry out a task associated with the construction project.

i. Cal-OSHA requires employers to provide water, which should be provided in single-serve containers. Sharing of any of any food or beverage is strictly prohibited and if sharing is observed, the worker must be sent home for the day.

j. Provide personal protective equipment (PPE) specifically for use in construction, including gloves, goggles, face shields, and face coverings as appropriate for the activity being performed. At no time may a contractor secure or use medical-grade PPE unless required due to the medical nature of a jobsite. Face coverings must be worn in compliance with the Health Officer Order Generally Requiring Members of the Public and Workers to Wear Face Coverings, dated April 17, 2020, or any subsequently issued or amended order.

k. Strictly control "choke points" and "high-risk areas" where workers are unable to maintain six-foot social distancing and prohibit or limit use to ensure that six-foot distance can easily be maintained between individuals.

l. Minimize interactions and maintain social distancing with all site visitors, including delivery workers, design professional and other project consultants, government agency representatives, including building and fire inspectors, and residents at residential construction sites.

m. Stagger trades as necessary to reduce density and allow for easy maintenance of minimum six-foot separation.

n. Discourage workers from using others' desks, work tools, and equipment. If more than one worker uses these items, the items must be cleaned and disinfected with disinfectants that are effective against COVID-19 in between use by each new worker. Prohibit sharing of PPE.

o. If hand washing facilities are not available at the jobsite, place portable wash stations or hand sanitizers that are effective against COVID-19 at entrances to the jobsite and in multiple locations dispersed throughout the jobsite as warranted.

p. Clean and sanitize any hand washing facilities, portable wash stations, jobsite restroom areas, or other enclosed spaces daily with disinfectants that are effective against COVID-19. Frequently clean and disinfect all high touch areas, including entry and exit areas, high traffic areas, rest rooms, hand washing areas, high touch surfaces, tools, and equipment.

q. Maintain a daily attendance log of all workers and visitors that includes contact information, including name, phone number, address, and email.

r. Post a notice in an area visible to all workers and visitors instructing workers and visitors to do the following:

   i. Do not touch your face with unwashed hands or with gloves.

   ii. Frequently wash your hands with soap and water for at least 20 seconds or use hand sanitizer with at least 60% alcohol.

   iii. Clean and disinfect frequently touched objects and surfaces such as work stations, keyboards, telephones, handrails, machines, shared tools, elevator control buttons, and doorknobs.

   iv. Cover your mouth and nose when coughing or sneezing, or cough or sneeze into the crook of your arm at your elbow/sleeve.

   v. Do not enter the jobsite if you have a fever, cough, or other COVID-19 symptoms. If you feel sick, or have been exposed to anyone who is sick, stay at home.

   vi. Constantly observe your work distances in relation to other staff. Maintain the recommended minimum six feet at all times when not wearing the necessary PPE for working in close proximity to another person.

   vii. Do not carpool to and from the jobsite with anyone except members of your own household unit, or as necessary for workers who have no alternative means of transportation.

   viii. Do not share phones or PPE.

Select Language

Appendix B-2 for Marin Health Order for April 29, 2020

Appendix B-2

Large Construction Project Safety Protocol

1. Any construction project meeting any of the following specifications is subject to this Large Construction Project Safety Protocol ("LCP Protocol"), including public works projects unless otherwise specified by the Health Officer:
    a. For residential construction projects, any single-family, multi-family, senior, student, or other residential construction, renovation, or remodel project consisting of more than 10 units.
    b. For commercial construction projects, any construction, renovation, or tenant improvement project consisting of more than 20,000 square feet of floor area.
    c. For construction of Essential Infrastructure, as defined in section 16.c of the Order, any project that requires five or more workers at the jobsite at any one time.
2. The following restrictions and requirements must be in place at all construction job sites subject to this LCP Protocol:
    a. Comply with all applicable and current laws and regulations including but not limited to OSHA and Cal-OSHA. If there is any conflict, difference or discrepancy between or among applicable laws and regulations and/or this LCP Protocol, the stricter standard will apply.
    b. Prepare a new or updated Site-Specific Health and Safety Plan to address COVID-19-related issues, post the Plan on-site at all entrances and exits, and produce a copy of the Plan to County governmental authorities upon request. The Plan must be translated as necessary to ensure that all non-English speaking workers are able to understand the Plan.
    c. Provide personal protective equipment (PPE) specifically for use in construction, including gloves, goggles, face shields, and face coverings as appropriate for the activity being performed. At no time may a contractor secure or use medical-grade PPE, unless required due to the medical nature of a job site. Face coverings must be worn in compliance with the Health Officer Order Generally Requiring Members of the Public and Workers to Wear Face Coverings, dated April 17, 2020, or any subsequently issued or amended order.
    d. Ensure that employees are trained in the use of PPE. Maintain and make available a log of all PPE training provided to employees and monitor all employees to ensure proper use of the PPE.
    e. Prohibit sharing of PPE.
    f. Implement social distancing requirements including, at minimum:

i. Stagger stop- and start-times for shift schedules to reduce the quantity of workers at the jobsite at any one time to the extent feasible.

ii. Stagger trade-specific work to minimize the quantity of workers at the jobsite at any one time.

iii. Require social distancing by maintaining a minimum six-foot distance between workers at all times, except as strictly necessary to carry out a task associated with the project.

iv. Prohibit gatherings of any size on the jobsite, except for safety meetings or as strictly necessary to carry out a task associated with the project.

v. Strictly control “choke points” and “high-risk areas” where workers are unable to maintain minimum six-foot social distancing and prohibit or limit use to ensure that minimum six-foot distancing can easily be maintained between workers.

vi. Minimize interactions and maintain social distancing with all site visitors, including delivery workers, design professional and other project consultants, government agency representatives, including building and fire inspectors, and residents at residential construction sites.

vii. Prohibit workers from using others’ phones or desks. Any work tools or equipment that must be used by more than one worker must be cleaned with disinfectants that are effective against COVID-19 before use by a new worker.

viii. Place wash stations or hand sanitizers that are effective against COVID-19 at entrances to the jobsite and in multiple locations dispersed throughout the jobsite as warranted.

ix. Maintain a daily attendance log of all workers and visitors that includes contact information, including name, address, phone number, and email.

x. Post a notice in an area visible to all workers and visitors instructing workers and visitors to do the following:

1. Do not touch your face with unwashed hands or with gloves.
2. Frequently wash your hands with soap and water for at least 20 seconds or use hand sanitizer with at least 60% alcohol.
3. Clean and disinfect frequently touched objects and surfaces such as workstations, keyboards, telephones, handrails, machines, shared tools, elevator control buttons, and doorknobs.
4. Cover your mouth and nose when coughing or sneezing or cough or sneeze into the crook of your arm at your elbow/sleeve.
5. Do not enter the jobsite if you have a fever, cough, or other COVID-19 symptoms. If you feel sick, or have been exposed to anyone who is sick, stay at home.
6. Constantly observe your work distances in relation to other staff. Maintain the recommended minimum six-feet distancing at all times when not wearing the necessary PPE for working in close proximity to another person.
7. Do not share phones or PPE.

xi. The notice in section 2.f.x must be translated as necessary to ensure that all non-English speaking workers are able to understand the notice.

g. Implement cleaning and sanitization practices in accordance with the following:

i. Frequently clean and sanitize, in accordance with CDC guidelines, all high-traffic and high-touch areas including, at a minimum: meeting areas, jobsite lunch and break areas, entrances and exits to the jobsite, jobsite trailers, hand-washing areas, tools, equipment, jobsite restroom areas, stairs, elevators, and lifts.

ii. Establish a cleaning and decontamination protocol prior to entry and exit of the jobsite and post the protocol at entrances and exits of jobsite.

iii. Supply all personnel performing cleaning and sanitization with proper PPE to prevent them from contracting COVID-19. Employees must not share PPE.

iv. Establish adequate time in the workday to allow for proper cleaning and decontamination including prior to starting at or leaving the jobsite for the day.

h. Implement a COVID-19 community spread reduction plan as part of the Site-Specific Health and Safety Plan that includes, at minimum, the following restrictions and requirements:

i. Prohibit all carpooling to and from the jobsite except by workers living within the same household unit, or as necessary for workers who have no alternative means of transportation.

ii. Cal-OSHA requires employers to provide water, which should be provided in single-serve containers. Prohibit any sharing of any food or beverage and if sharing is observed, the worker must be sent home for the day.

iii. Prohibit use of microwaves, water coolers, and other similar shared equipment.

i. Assign a COVID-19 Safety Compliance Officer (SCO) to the jobsite and ensure the SCO's name is posted on the Site-Specific Health and Safety Plan. The SCO must:

i. Ensure implementation of all recommended safety and sanitation requirements regarding the COVID-19 virus at the jobsite.

ii. Compile daily written verification that each jobsite is compliant with the components of this LCP Protocol. Each written verification form must be copied, stored, and made immediately available upon request by any County official.

iii. Establish a daily screening protocol for arriving staff, to ensure that potentially infected staff do not enter the construction site. If workers leave the jobsite and return the same day, establish a cleaning and decontamination protocol prior to entry and exit of the jobsite. Post the daily screening protocol at all entrances and exit to the jobsite. More information on screening can be found online at: https://www.cdc.gov/coronavirus/2019-ncov/community/index.html (https://www.cdc.gov/coronavirus/2019-ncov/community/index.html).

iv. Conduct daily briefings in person or by teleconference that must cover the following topics:

1. New jobsite rules and pre-job site travel restrictions for the prevention of COVID-19 community spread.

2. Review of sanitation and hygiene procedures.
3. Solicitation of worker feedback on improving safety and sanitation.
4. Coordination of construction site daily cleaning/sanitation requirements.
5. Conveying updated information regarding COVID-19.
6. Emergency protocols in the event of an exposure or suspected exposure to COVID-19.

v. Develop and ensure implementation of a remediation plan to address any non-compliance with this LCP Protocol and post remediation plan at entrance and exit of jobsite during remediation period. The remediation plan must be translated as necessary to ensure that all non-English speaking workers are able to understand the document.

vi. The SCO must not permit any construction activity to continue without bringing such activity into compliance with these requirements.

vii. Report repeated non-compliance with this LCP Protocol to the appropriate jobsite supervisors and a designated County official.

j. Assign a COVID-19 Third-Party Jobsite Safety Accountability Supervisor (JSAS) for the jobsite, who at a minimum holds an OSHA-30 certificate and first-aid training within the past two years, who must be trained in the protocols herein and verify compliance, including by visual inspection and random interviews with workers, with this LCP Protocol.

i. Within seven calendar days of each jobsite visit, the JSAS must complete a written assessment identifying any failure to comply with this LCP Protocol. The written assessment must be copied, stored, and, upon request by the County, sent to a designated County official.

ii. If the JSAS discovers that a jobsite is not in compliance with this LCP Protocol, the JSAS must work with the SCO to develop and implement a remediation plan.

iii. The JSAS must coordinate with the SCO to prohibit continuation of any work activity not in compliance with rules stated herein until addressed and the continuing work is compliant.

iv. The remediation plan must be sent to a designated County official within five calendar days of the JSAS's discovery of the failure to comply.

k. In the event of a confirmed case of COVID-19 at any jobsite, the following must take place:

i. Immediately remove the infected individual from the jobsite with directions to seek medical care.

ii. Each location the infected worker was at must be decontaminated and sanitized by an outside vendor certified in hazmat clean ups, and work in these locations must cease until decontamination and sanitization is complete.

iii. The County Public Health Department must be notified immediately and any additional requirements per the County health officials must be completed, including full compliance with any tracing efforts by the County.

l. Where construction work occurs within an occupied residential unit, any separate work area must be sealed off from the remainder of the unit with physical barriers such as plastic sheeting

or closed doors sealed with tape to the extent feasible. If possible, workers must access the work area from an alternative entry/exit door to the entry/exit door used by residents. Available windows and exhaust fans must be used to ventilate the work area. If residents have access to the work area between workdays, the work area must be cleaned and sanitized at the beginning and at the end of workdays. Every effort must be taken to minimize contact between workers and residents, including maintaining a minimum of six feet of social distancing at all times.

m. Where construction work occurs within common areas of an occupied residential or commercial building or a mixed-use building in use by on-site employees or residents, any separate work area must be sealed off from the rest of the common areas with physical barriers such as plastic sheeting or closed doors sealed with tape to the extent feasible. If possible, workers must access the work area from an alternative building entry/exit door to the building entry/exit door used by residents or other users of the building. Every effort must be taken to minimize contact between worker and building residents and users, including maintaining a minimum of six feet of social distancing at all times.

Sample Notice as required by (1)(r)(i) – (1)(r)(viii)

NOTICE

In accord with the Marin County Shelter in Place Order dated April 29, 2020 (effective May 4, 2020)

All workers and visitors to this job site must do the following:

1. Do not touch your face with unwashed hands or with gloves.

2. Frequently wash your hands with soap and water for at least 20 seconds or use hand sanitizer with at least 60% alcohol.

3. Clean and disinfect frequently touched objects and surfaces such as work stations, keyboards, telephones, handrails, machines, shared tools, elevator control buttons, and doorknobs.

4. Cover your mouth and nose when coughing or sneezing, or cough or sneeze into the crook of your arm at your elbow/sleeve.

5. Do not enter the jobsite if you have a fever, cough, or other COVID-19 symptoms. If you feel sick, or have been exposed to anyone who is sick, stay at home.

6. Constantly observe your work distances in relation to other staff. Maintain the recommended minimum six feet at all times when not wearing the necessary PPE for working in close proximity to another person.

7. Do not carpool to and from the jobsite with anyone except members of your own household unit, or as necessary for workers who have no alternative means of transportation.

8. Do not share phones or PPE.

Sample Attendance Log required by 1(q)

Daily Attendance Log

TODAY'S DATE: _____

Name	Phone number	Address	Email

APPENDIX C

Executive Order N-60-20

EXECUTIVE DEPARTMENT
STATE OF CALIFORNIA

EXECUTIVE ORDER N-60-20

WHEREAS on March 4, 2020, I proclaimed a State of Emergency to exist in California as a result of the threat of COVID-19; and

WHEREAS on March 19, 2020, I issued Executive Order N-33-20, which directed all California residents to immediately heed current State public health directives; and

WHEREAS State public health directives, available at https://covid19.ca.gov/stay-home-except-for-essential-needs/, have ordered all California residents stay home except for essential needs, as defined in State public health directives; and

WHEREAS COVID-19 continues to menace public health throughout California; and

WHEREAS the extent to which COVID-19 menaces public health throughout California is expected to continue to evolve, and may vary from place to place within the State; and

WHEREAS California law promotes the preservation of public health by providing for local health officers—appointed by county boards of supervisors and other local authorities—in addition to providing for statewide authority by a State Public Health Officer; and

WHEREAS these local health officers, working in consultation with county boards of supervisors and other local authorities, are well positioned to understand the local needs of their communities; and

WHEREAS local governments are encouraged to coordinate with federally recognized California tribes located within or immediately adjacent to the external geographical boundaries of such local government jurisdiction; and

WHEREAS the global COVID-19 pandemic threatens the entire State, and coordination between state and local public health officials is therefore, and will continue to be, necessary to curb the spread of COVID-19 throughout the State; and

WHEREAS State public health officials have worked, and will continue to work, in consultation with their federal, state, and tribal government partners; and

WHEREAS the State Public Health Officer has articulated a four-stage framework—which includes provisions for the reopening of lower-risk businesses and spaces ("Stage Two"), to be followed by the reopening of higher-risk businesses and spaces ("Stage Three")—to allow Californians to gradually resume various activities while continuing to preserve public health in the face of COVID-19; and

WHEREAS the threat posed by COVID-19 is dynamic and ever-changing, and the State's response to COVID-19 (including implementation of the four-stage framework) should likewise retain the ability to be dynamic and flexible; and

WHEREAS to preserve this flexibility, and under the provisions of Government Code section 8571, I find that strict compliance with the Administrative Procedure Act, Government Code section 11340 et seq., would prevent, hinder, or delay appropriate actions to prevent and mitigate the effects of the COVID-19 pandemic.

NOW, THEREFORE, I, GAVIN NEWSOM, Governor of the State of California, in accordance with the authority vested in me by the State Constitution and statutes of the State of California, and in particular, Government Code sections 8567, 8571, 8627, and 8665; and also in accordance with the authority vested in the State Public Health Officer by the laws of the State of California, including but not limited to Health and Safety Code sections 120125, 120130, 120135, 120140, 120145, 120150, 120175, and 131080; do hereby issue the following Order to become effective immediately:

IT IS HEREBY ORDERED THAT:

1) All residents are directed to continue to obey State public health directives, as made available at https://covid19.ca.gov/stay-home-except-for-essential-needs/ and elsewhere as the State Public Health Officer may provide.

2) As the State moves to allow reopening of lower-risk businesses and spaces ("Stage Two"), and then to allow reopening of higher-risk businesses and spaces ("Stage Three"), the State Public Health Officer is directed to establish criteria and procedures—as set forth in this Paragraph 2—to determine whether and how particular local jurisdictions may implement public health measures that depart from the statewide directives of the State Public Health Officer.

   In particular, the State Public Health Officer is directed to establish criteria to determine whether and how, in light of the extent to which the public health is menaced by COVID-19 from place to place within the State, local health officers may (during the relevant stages of reopening) issue directives to establish and implement public health measures less restrictive than any public health measures implemented on a statewide basis pursuant to the statewide directives of the State Public Health Officer.

   The State Public Health Officer is further directed to establish procedures through which local health officers may (during the relevant stages of reopening) certify that, if their respective jurisdictions are subject to proposed public health measures (which they shall specify to the extent such specification may be required by the State Public Health Officer) that are less restrictive than public health measures implemented on a statewide basis pursuant to the statewide directives of the State Public Health Officer, the public health will not be menaced. The State Public Health Officer shall additionally establish procedures to permit, in a manner consistent with public health and

safety, local health officers who submit such certifications to establish and implement such less restrictive public health measures within their respective jurisdictions.

The State Public Health Officer may, from time to time and as she deems necessary to respond to the dynamic threat posed by COVID-19, revise the criteria and procedures set forth in this Paragraph 2. Nothing related to the establishment or implementation of such criteria or procedures, or any other aspect of this Order, shall be subject to the Administrative Procedure Act, Government Code section 11340 et seq. Nothing in this Paragraph 2 shall limit the authority of the State Public Health Officer to take any action she deems necessary to protect public health in the face of the threat posed by COVID-19, including (but not limited to) any necessary revision to the four-stage framework previously articulated by the State Public Health Officer.

3) Nothing in this Order shall be construed to limit the existing authority of local health officers to establish and implement public health measures within their respective jurisdictions that are more restrictive than, or that otherwise exist in addition to, the public health measures imposed on a statewide basis pursuant to the statewide directives of the State Public Health Officer.

IT IS FURTHER ORDERED that as soon as hereafter possible, this Order be filed in the Office of the Secretary of State and that widespread publicity and notice be given of this Order.

This Order is not intended to, and does not, create any rights or benefits, substantive or procedural, enforceable at law or in equity, against the State of California, its agencies, departments, entities, officers, employees, or any other person.

IN WITNESS WHEREOF I have hereunto set my hand and caused the Great Seal of the State of California to be affixed this 4th day of May 2020.

GAVIN NEWSOM
Governor of California

ATTEST:

ALEX PADILLA
Secretary of State