

Date: October 10, 2017
Proposal No.: P5873

Prepared For: Ms. Chiye Azuma
SAN FRANCISCO UNIFIED SCHOOL DISTRICT
135 Van Ness Avenue - Room 207a
San Francisco, California 94102

Re: Geotechnical Consultation
Robert Louis Stevenson ES Infiltration Testing
3051 34th Avenue
San Francisco, California

The Agreement

Thank you for requesting Cornerstone Earth Group to prepare and submit this agreement for geotechnical services. The following describes our understanding of the project and presents our proposed scope of work and our estimated cost and schedule for completing the work. This document will serve as our agreement to work together.

The Project

The project site is located at the Robert Louis Stevenson Elementary School campus at 3051 34th Avenue, San Francisco, California. Currently a modernization project is being completed. After construction is complete, additional infiltration systems may be installed as part of a joint demonstration project between the District and SFPUC. We have been asked to provide infiltration rates and evaluate the proposed infiltration system(s) and evaluate these system(s) and any potential negative effects it may have on the site improvements.

Geotechnical Services

Storm Water Infiltration Testing

To estimate the infiltration rates of the on-site soils, we will perform a total of four in-situ percolation tests using the “Deep-Quick” borehole test method and the Guelph permeameter method based on site access and existing ground surface conditions. Additional details for each test follows.

“Deep-Quick” Infiltration Test

Two “Deep-Quick” infiltration tests will be performed. If needed, we can perform infiltration tests using the “Deep-Quick” infiltration test method which consist of presoaking a gravel filled hole (drilled to a depth of 5 feet with a hand auger) and then running a falling head test for a period of up to two hours to estimate the in-situ infiltration rate. The results of our testing will be

summarized in our report. We will coordinate the test locations and anticipated depths (5 foot maximum) with the civil engineer before testing. If there is asphalt in the proposed test area, we will core through the asphalt.

Guelph Permeameter Test

In addition to the “Deep-Quick” borehole tests, two percolation tests will be performed near the base of the proposed infiltration system(s), within the anticipated zones of percolation soils, beginning at a depth of about 1 to 2 feet below the adjacent city sidewalk based on our conversation with the project Civil Engineer. Our tests will be performed within a shallow boring that will be excavated using hand auger equipment. Sidewalls of the test holes will be scarified prior to pre-saturating the hole for up to 24 hours, unless a shorter time is warranted based on the soil condition encountered. After the test holes are pre-saturated, the percolation tests will be performed the following day or as determined by the soil condition encountered. The duration of the percolation test will range from approximately 2 to 3 hours each, depending on the rate of percolation. Upon completion, the test holes will be backfilled in accordance with the water district requirements. The percolation test data will be evaluated and the percolation rate will be determined in inches per minute of percolation, or another convenience units.

We will coordinate the test locations and anticipated depths with the civil engineer before testing. We will summarize our test results and findings as part of the geotechnical report.

Utility Clearance

We will mark our infiltration test locations at least two working days prior to beginning our explorations as required by law, and notify the regional utility notification center – Underground Service Alert (USA), and you, so that public and private utilities can be identified and marked at the ground surface. Where practical, we will mark our locations in white paint, or otherwise designate our exploration locations, as requested by USA. Utility operators/owners are required to mark their utilities at the ground surface prior to the start of work. To reduce the risk of damaging unidentified underground utilities during drilling, we will also contract with a private utility locator. We are not responsible for damage to utilities that are not clearly identified. We also request that you forward a copy of utility location plans or drawings, if available, to aid in determining our exploration locations.

Permits and Site Access

As our test areas and excavations will be shallow, this scope of work will not be permitted through the City of San Francisco Environmental Health Department. We assume we will have clear access to the site and may perform our scope of work during regular weekday business hours.

Excess Soil Cutting Disposal

Excess soil cuttings will be used to backfill the holes, therefore off-site disposal is not anticipated.

Environmental Conditions

If environmental contamination or other specific conditions exist at the site, please notify us prior to exploration so that we can take the proper health and safety precautions during our exploration of the site. This proposal specifically excludes the assessment of environmental characteristics at the site, particularly those involving hazardous substances. If obviously impacted materials are encountered during our geotechnical exploration, we will discontinue our work and notify you of the condition encountered. We will proceed with our geotechnical scope of work, once we mutually agree to do so. Added costs incurred because of suspected hazardous substances will be charged on a time-and-expense basis over and above the established fees for the site investigation.

Laboratory Testing

To evaluate the index and engineering properties of site soils, the following laboratory tests are anticipated:

- In-situ Moisture/Density tests, American Society for Testing and Materials (ASTM) D2937 Test Procedure
- Grain Size Distribution tests, ASTM D1140 and D422
- Atterberg Limit tests, ASTM D4318, if needed

Engineering Analysis and Letter Preparation

The engineering analysis phase of work will focus on developing site infiltration rates and evaluating the impacts of the proposed infiltration system to the proposed site improvements. Following the completion of the engineering analysis, a letter will be prepared with our conclusions and recommendations. The letter will include the following items:

- Site plan showing infiltration test locations
- Site plan showing the boring locations, if performed
- Logs of the soil conditions at the test areas and boings, if performed
- Summary of lab testing data
- A detailed discussion of our findings and recommendations, including:
 - ✓ Site conditions
 - ✓ Subsurface conditions
 - ✓ Infiltration rates
 - ✓ Evaluation of potential effects of the proposed infiltration system to the proposed site improvements
 - ✓ Recommendations to mitigate or avoid potential negative impacts from the infiltration system

Schedule

We are prepared to begin scheduling our work upon receiving your written approval of this agreement.

Our approximate schedule is as follows:

- Week 1: Mark Infiltration Test Locations, USA Notification, permits (if needed)
- Week 2 to 3: Field Exploration, Engineering Analysis, Report Preparation
- Week 4: Report Preparation, Internal QA Review, Issue Report

Proposal Fees

We will perform our services for the fixed fee shown in Table 1. If unforeseen conditions are encountered, or if we experience delays or circumstances beyond our control, we will notify you immediately to discuss modifications to the scope of services and/or project fees. Payment for services shall be due upon receipt of Cornerstone Earth Group's Invoice. To be recognized, any dispute over charges must be claimed in writing within 30 days of the billing date. Disputes or questions about a statement shall not be cause for withholding payment for remaining portions due. Requested changes to this contract must be approved in writing before we proceed.

Additional services that are not outlined in this proposal shall be charged on a time-and-expense basis.

TABLE 1 – GEOTECHNICAL SERVICES

Task	Fee	Initial to Authorize
Infiltration Evaluation (Fixed Fee)	\$8,150	_____
Four In-situ Infiltration tests (see proposal for details)	\$4,000	
Laboratory Testing	\$700	
Engineering Analysis, Report Preparation (prepare report)	\$3,450	_____
Contract Document Coordination and Review (T&M, estimate)	\$1,500	_____
Coordination and Consultation with Design Team		
Plan Review Letters		
Meetings with SFUSD, Design Team		

Assumptions and Limitations

- The Client will coordinate site access/permission to enter.
- If available, site plans provided for our use will show the locations of all underground utility lines and structures. We will not be responsible for damage to any such lines or structures that are not shown accurately on the plans provided to us or properly marked by USA subscriber companies.
- Some disturbance to the ground surface and vegetation may occur as a result of accessing the desired locations of subsurface exploration. Although we will be careful to limit the extent of such occurrences, they cannot be avoided and this proposal does not include any costs to re-grade, re-vegetate, landscape or otherwise repair disturbed areas.
- We will patch any asphalt areas with quick setting concrete dyed black. This proposal does not include repaving the asphalt cut outs with hot mixed asphalt.
- Our scope of work does not include off-site disposal of soil cuttings.

Authorization

This work will be performed in accordance with our existing master services agreement. Please acknowledge your receipt of and agreement with the scope of work contained in this agreement by signing this agreement and returning one signed original to us or by forwarding a copy of the standard terms and conditions previously negotiated with our firm with this scope of work attached.

We thank you for this opportunity and look forward to working with you on this important project. Should you have any questions regarding this proposal, or if we may be of further service, please contact us at your convenience.

Sincerely,

Cornerstone Earth Group, Inc.

San Francisco Unified School District



Scott E. Fitinghoff, P.E., G.E.
Senior Principal Engineer

Name Date

Please Print Name and Title

SEF:sef

Copies: Addressee (1 by email)