

Date: December 9, 2016  
Project No.: 230-1-6

Prepared For: Mr. Jack and Noel Chamberlain  
**TICONDEROGA PARTNERS, LLC**  
655 Skyway, Suite 230  
San Carlos, California 94070

Re: Response to County of San Mateo  
Geotechnical Review Comments  
San Mateo Highlands (Lots 9 to 11)  
APN No. 041-101-370  
2184 and 2185 Cobblehill Place and 88 Cowpens Way  
San Mateo, California

Dear Mr. Chamberlain:

As requested, this letter presents the our response to the County of San Mateo, Planning and Building Department comments for the above referenced project, dated April 6, 2016. Our services were performed in accordance with our proposal and agreement, dated April 20, 2016. As you know, our firm prepared a report for this project, titled "Updated Geotechnical Investigation, Highland Estates Lots 5 through 11, Ticonderoga Drive/Cobblehill Place/Cowpens Way, San Mateo, California" dated October 30, 2015.

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### Response to Comments

**Comment #1:** *As requested by the Environmental Health Department, please submit a copy of the Geotechnical drilling permit or the annual Geotechnical notification form for this site.*

**Response:** A copy of the permit is attached to this letter.

**Comment #2:** *There was fill on some of these lots prior to grading. Was all of this material removed or reworked as engineered fill, as recommended in the report? Please discuss.*

**Response:** As discussed in the report, grading was performed for the Highland Estates subdivision in 1956. The grading on Lots 9, 10, and 11 was performed decades ago before The Chamberlain Group had purchased the property, presumably as part of the subdivision work in the mid to late 1950's. No recent grading has been performed on the project site. Any fills that are encountered in the development area will need to either be removed by cut or over-excavated and re-compacted as engineered fill as recommended in the design-level geotechnical investigation report. A representative of Cornerstone Earth Group will be on-site during construction to verify the fill removal and/or re-compaction.

**Comment #3:** *Please provide a detailed drainage plan for each of these seven lots. Adjacent lots should be shown on a single plan so that the relative placement of drains and outfalls is apparent. These plans should include roof gutters, downspouts, surface and subsurface drains, including those associated with foundations and retaining walls, and the location and design of outfalls.*

**Response:** We have included the Grading Plans from BKF dated November 29, 2016 showing the present and post-grading topography. We have attached these plans to the end of this letter.

**Comment #4:** *The plans show the proposed use of flow-through planters in place of traditional dry wells or other types of outfalls. Some of these structures are shown to be placed close to the residences and/or retaining walls. Please review the locations of these outfalls and provide a discussion of the suitability of this type of outfall in this situation.*

**Response:** Based on our review of the Grading Plans from BKF, it appears that all flow-through planters are situated downslope in relation to the proposed homes; therefore, we take no exception to the location of these planters.

**Comment #5:** *The consultant must provide data to show that the introduction of water into the areas identified for drain outfalls will not cause accelerated erosion or slope failure there or downslope.*

**Response:** This issue was addressed in the geotechnical report and the project civil plans which are attached to this letter. The rainfall water will be collected from the roofs and piped to a line flow through planter where the water will be filtered. Then the water will be conveyed through a solid pipe to a dissipater/spreader outlet structure. The project civil engineer estimates that the velocity of the water discharged from the dissipater/spreader will be about 0.2 feet/sec (very low). For the soil types at the site, a maximum permissible velocity of 2 to 4 feet/sec is considered by the Corps of Engineers as a velocity that will not cause significant erosion. Therefore, the anticipated velocity is not expected to cause erosion of the soils below the dissipater/spreader structure.

The water will be discharged on an existing 2:1 to 3:1 slope that is not impacted by slope stability issues. For the infinite slope case with saturation, we estimate the factor of safety to range from 2 to 3. Therefore, slope stability issues are not anticipated for the soils below the rip-rap structure consistent with the observations of the current slope performance in this area.

**Comment #6:** *The submitted plans shown piers of 7, 10, and 20 foot depths. The report recommends that all piers be at least 10 feet deep, with some extending down to at least 27 feet. Please discuss and provide revisions as necessary.*

**Response:** The project foundation plans for each lot are attached to this letter. The piers schedule table shows the minimum depth that each type of pier needs to be embedded into the bedrock to achieve the required skin friction. The "Piers" note below the table indicates that each pier should be at least 10 feet in length where the depth into bedrock is included in the total length. This is consistent with our recommendations in Section 7.3 of our design-level geotechnical investigation report for the project. No revisions of the foundation plans are needed.

**Closure**

We hope this provides the information you need at this time. Recommendations presented in this letter have been prepared for the sole use of Ticonderoga Partners, LLC specifically for the properties at 2184 and 2185 Cobblehill Place (Lots 9 and 10) and 88 Cowpens Way (Lot 11) in San Mateo, California. Our professional services were performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices at this time and location. No warranties are either expressed or implied.

If you have any questions or need any additional information from us, please call and we will be glad to discuss them with you.

Sincerely,

**Cornerstone Earth Group, Inc.**



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

SEF:maa

Attachments: San Mateo County Environmental Health Department Annual Drilling Permit/Notification Form  
Grading and Utility Plans for Lots 9, 10, and 11 by BKF dated November 29, 2016.  
Foundations Plans for Lots 9, 10, and 11 by ESI/FME, Inc., as dated.

Addressee (1 by email)

Copies: Addressee (1 by email)