



December 11, 2015
Job No. 0582-24N-15

Mr. Ray Bowden
C/O: Great Basin Engineering, Inc.
5746 South 1475 East Street
Ogden, Utah 84403

Attn: Mr. Mark E. Babbitt, PE PLS

Re: Summary Letter
Geotechnical Consultation
Proposed Via Cortina Access Roadway Extension
The Summit at Ski Lake Phase 13
Weber County, Utah

As requested by Mr. Mark Babbitt of Great Basin Engineering, this letter is being provided to summarize the geotechnical recommendations for the remediation of the landslide and slump materials within the right of way for the Via Cortina access roadway extension within the Summit at Ski Lake Phase 13 development in Weber County, Utah. A geological study¹ was previously prepared for the property by GSH Geotechnical, Inc. (GSH).

Summary

Recently GSH provided a geological study for the proposed Via Cortina access roadway extension project with the proposed Summit at Ski Lake Phase 13 development. The scope of the study was to define and evaluate the geologic conditions across the site as well as to evaluate the potential geologic hazards that may impact the proposed development. As part of these evaluations, GSH delineated a potential landslide and slump deposit with the proposed right of way. GSH recommended that the landslide and slump deposit be mitigated through the removal of the affected materials in the right of way and the replacement of these materials with compacted structural fill. The depth of removal within the right of way is likely to vary from less than 1 foot up to about 15 feet. GSH must observe the removal of the landslide and slump materials to verify that suitable subgrade conditions are encountered.

¹ "Report, Geological Study, Proposed Via Cortina Access Roadway Extension, The Summit at Ski Lake Phase 13, Weber County, Utah," GSH Geotechnical, Inc., GSH Job No. 0582-24N-15, December 11, 2015.

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Generally, we recommend that all imported granular structural fill consist of a well-graded mixture of sands and gravels with no more than 20 percent fines (material passing the No. 200 sieve) and no more than 30 percent retained on the three-quarter-inch sieve.

All structural fill shall be placed in lifts not exceeding 8 inches in loose thickness. Structural fills shall be compacted to a minimum of 96 percent of the maximum dry density as determined by the AASHTO² T-180 (ASTM³ D-1557). Structural fill should be placed on relatively horizontal surfaces, therefore the excavation must be benched with minimum bench widths of 4 feet.

To reduce potential infiltration of surface water and groundwater into the subsurface soils at the site, a cutoff drain should be installed near the crest of the lower slope. The drain should consist of a perforated 4-inch minimum diameter pipe wrapped in fabric and placed near the bottom of a minimum 24 inch wide trench excavated to a depth of at least 10 feet below existing grade and lined in filter fabric. The pipe should daylight at one or both ends of the drain and discharge to an appropriate drainage device or area. Clean gravel up to 2 inches in maximum size, with less than 10 percent passing the No. 4 sieve and less than 5 percent passing the No. 200 sieve, should be placed around the drain pipe. A fabric, such as Mirafi 140N or equivalent, should be placed between the clean gravel and the adjacent soils. A zone of clean gravel and fabric at least 24 inches wide should also extend above the drain, to within 2 feet of the ground surface, with fabric placed over the gravel. The upper 2 feet of soils should consist of a compacted clayey cap to reduce surface water infiltration into the drain.

Closure

If you have any questions or would like to discuss these items further, please feel free to contact us at (801) 393-2012.

Respectfully submitted,

GSH Geotechnical, Inc.



Andrew M. Harris, P.E.
State of Utah No. 740456
Senior Geotechnical Engineer



Reviewed by:



Michael S. Huber, P.E.
State of Utah No. 343650
Vice President/Senior Geotechnical Engineer

AMH/MSH:mmh

Addressee (email)

² American Association of State Highway and Transportation Officials

³ American Society for Testing and Materials