Intermountain GeoEnvironmental Services, Inc.
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January 18, 2016

Summit, LLC
c/o Mr. Rick Everson, P.E.
1335 North 5900 East
Eden, Utah 84310

IGES Project No. 01628-011

Subject: Rockery Construction for Wet Conditions
Phase 1E, 1F, and 1G
Summit at Powder Mountain Resort
Weber County, Utah

References: IGES, Inc., 2013, Rockery Construction Guidelines, Powder Mountain Resort, Weber County, Utah, Project No. 01628-005, dated May 8, 2013

IGES, Inc., 2015a, Geotechnical Investigation, Summit Eden Phases 1E, 1F, and 1G, Summit at Powder Mountain Resort, Weber County, Utah, Project No. 01628-011, dated September 30, 2015.

IGES, Inc., 2015b, Rockery Design Package, Phase 1E, 1F, and 1G – Summit Powder Mountain, Weber County, Utah, Project No. 01628-011, dated October 1, 2015.

Mr. Everson:

As requested, IGES has prepared the following letter addressing rockery construction in the case where wet conditions may occur within the Phase 1E, 1F, and 1G project areas of the Summit at Powder Mountain Resort. Of particular interest are sections of the proposed rockeries constructed below the main roadway where storm drain outlets may cause concentrated water to sheet flow over the road and then flow over the top of the lower rockeries. The purpose of this letter is to provide recommendations and guidance for rockery construction where these concentrated flows may occur.

**Recommendations**

The primary concern for excessive water flowing over the top of rockeries is erosion of soils from behind the rockery, or erosion of soils from areas adjacent to the rockery. Therefore, for areas where excessive water may be present due to drainage constraints, additional measures to stabilize and protect exposed soil should be implemented.

- Along the back of the rockery/soil cut, prior to placing/stacking rock, the exposed soil cut should be covered with a geosynthetic filter fabric. The fabric should consist of a 6-oz non-woven geotextile, such as Mirafi 160N, or an engineer-approved equivalent. This is conceptually illustrated on Figure 1, attached.

- A *permanent* erosion control fabric, such as Propex Landlok 300 turf reinforcement mat (TRM) or an engineer-approved equivalent, should be placed above, below, and in-between rockeries. The TRM should be secured in place in accordance with the manufacture's recommendations. At the top of the rockery, the TRM should extend from the edge of the asphalt to the back of the top tier of rocks. Where a bench is present between two rockery tiers, the TRM should cover the entire exposed bench. At the toe of the lowest tier, the TRM should extend approximately 6 feet beyond the toe. This is illustrated on Figure 1, attached.

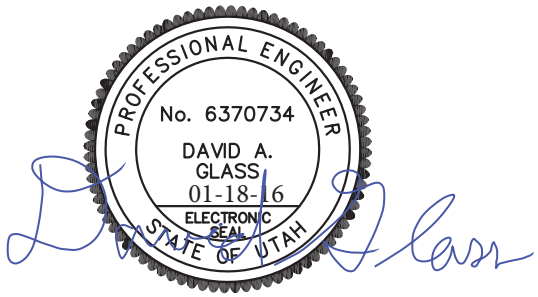
- The TRM must be designed such that vegetation can establish though the mat. Hydroseeding concurrent with construction in accordance with the TRM manufacture's recommendations is encouraged.

Figure 1 provides a conceptual illustration of the placement of the filter fabric between the stacked rocks and the soil cut, and placement of the TRM at specified locations around, and between rockeries. All other recommendations presented in our original rockery design package (IGES, 2015b) remain valid and should be followed except where superseded herein.

**Closure**

We appreciate the opportunity to provide you with our services. If you have any questions please contact the undersigned at your convenience (801) 748-4044.

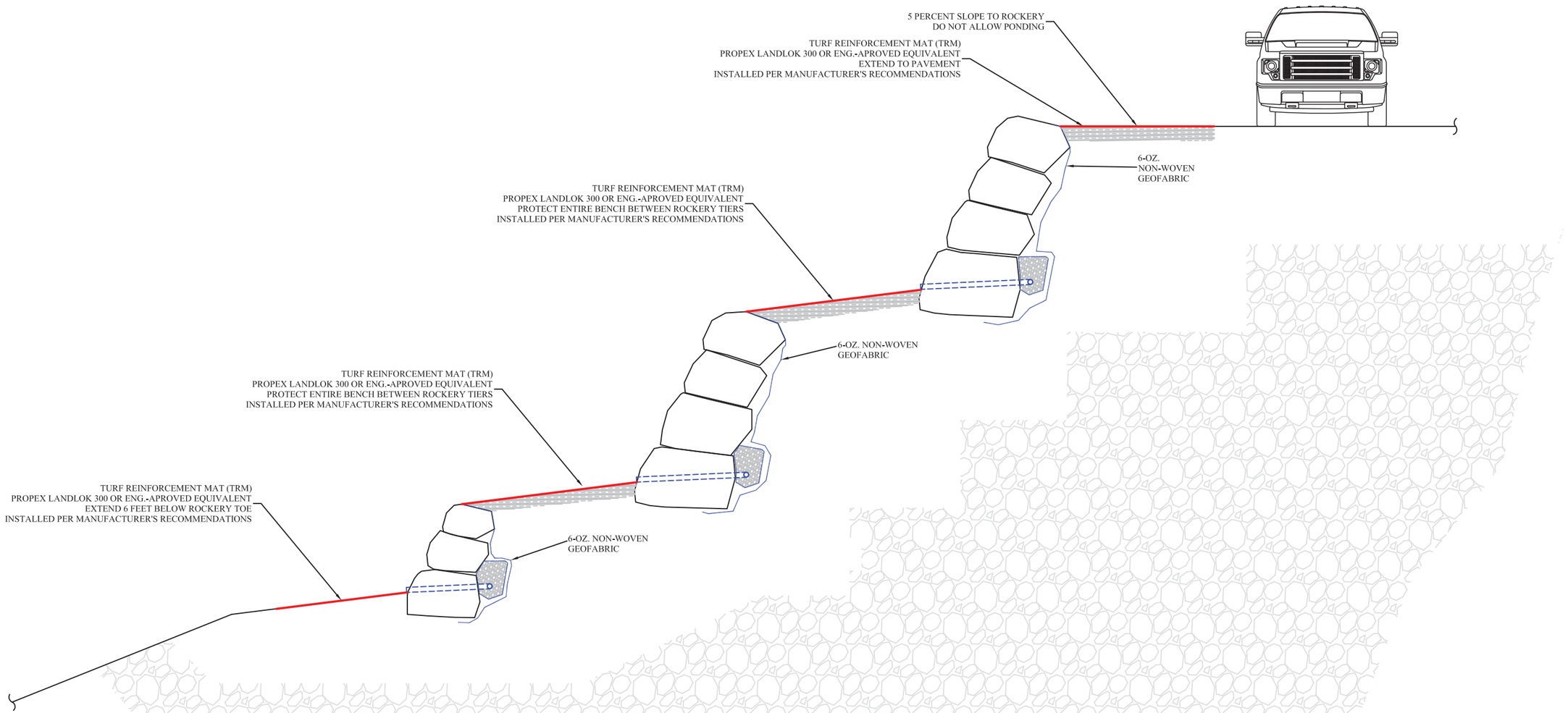
Respectfully Submitted,
IGES, Inc.




David A. Glass, P.E.
Senior Geotechnical Engineer

Attachments:

Figure 1 – Conceptual Section View




CONCEPTUAL CROSS-SECTION
ILLUSTRATING EROSION PROTECTION

APPROXIMATE SCALE: 1"=5' (11X17 ONLY)

| REV | | DATE | BY | CHK |
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REVISIONS

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ROCKERY CONSTRUCTION FOR WET CONDITIONS
PHASE 1E, 1F, AND 1G - SUMMIT POWDER MOUNTAIN
WEBER COUNTY, UTAH
CONCEPTUAL SECTION VIEW

| | | | |
|---|---|---|---|
| DESIGNED BY: | DAG JAN 18, 2016 | PLOT SCALE | |
| DRAWN BY: | DAG JAN 18, 2016 | 1=1 | |
| CHECKED BY: | DAG JAN 18, 2016 | DWG SCALE | |
| APPROVED BY: | DAG JAN 18, 2016 | 1"=5' | |
| IGES PROJECT NO. 01628-011 | FIGURE NO. 1 | REV. N/A | |