



August 30, 2016

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

IGES Project No. 01628-013

Subject: Recommendations for Rockery Construction – Driveway to Lodge Parking Area
Horizon Neighbourhood Development
Summit 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., 2016a, Rockery Construction for Wet Conditions, Phase 1E, 1F, and 1G, Summit at Powder Mountain Resort, Weber County, Utah, Project No. 01628-011, dated January 18, 2016.

IGES, Inc., 2016b, Geotechnical & Geologic Hazard Investigation, Horizon Neighbourhood Development, Summit Powder Mountain Resort, Weber County, Utah, Project No. 01628-013, dated September 30, 2015.

Mr. Everson:

As requested, IGES has prepared the following letter addressing rockery construction below the driveway leading to the parking area for the Horizon Neighbourhood lodge. We understand this driveway has not been designed with curb-and-gutter or a swale to direct water away from the top of the rockery, which could conceivably result in water sheet-flowing over the road and then flowing over the top of the rockeries below, thus causing erosion and instability. The purpose of this letter is to address the issue of sheet flow over the rockery and to provide recommendations as necessary.

Assessment of Proposed Driveway

The driveway and associated rockery and topography has been assessed with respect to the Erosion Control Plan, Sheet 4.00, prepared by NV5, dated August 22, 2016. The driveway is 20 feet wide and approximately 200 feet long. The driveway runs approximately east-west, perpendicular to the direction of slope. Below the driveway, a rockery is planned; this rockery varies in height to a maximum height of 13 feet. The driveway does not appear to have a 'crown', and no drainage swale or curb-and-gutter is indicated. Accordingly, during periods of heavy rainfall or spring run-off, water could sheet-flow over the driveway and then over the top of the rockery below.

Considering that the driveway is relatively narrow and not very long, erosion arising from sheet flow over the rockery can be reasonably mitigated with erosion control measures. A swale or curb/gutter directing the water away from the top of the rockery is a better solution, but considering the length and width of the driveway, an erosion control approach is reasonable provided the Owner accepts that some maintenance could be needed during the life of the project (once the area becomes vegetated, the potential for maintenance would likely be greatly reduced but not necessarily eliminated).

Recommendations

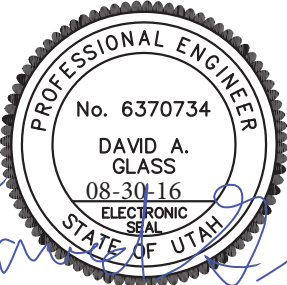
For design of the rockery below the driveway, IGES recommends following the guidelines presented in previous submittals (IGES, 2013 “Rockery Construction Guidelines”, and IGES, 2016a “Rockery Construction for Wet Conditions”).

Furthermore, the rockery below the driveway should not be designed as a single tier, as the 13-foot height is too tall for a single tier. IGES recommends designing the rockery below the driveway as a two-tier system except where a single-tier of 8 feet or less is deemed sufficient. IGES understands that NV5 is aware of this issue and is currently re-designing the rockery as a two-tier system.

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