



**IGES**<sup>®</sup>

Intermountain GeoEnvironmental Services, Inc.  
12429 South 300 East, Suite 100, Draper, Utah 84020  
T: (801) 748-4044 ~ F: (801) 748-4045

4153 South Commerce Drive, SLC, UT 84107  
T: (801) 270-9400 ~ F: (801) 270-9401

May 9, 2017

Summit Mountain Holding Group  
c/o Mr. Rick Everson  
3632 North Wolf Creek Drive  
Eden, Utah 84310

IGES Project No. 01628-010

Subject: Grading Plan and Drainage Review  
Copper Crest – East Townhomes (Ninebark)  
Summit Powder Mountain  
Weber County, Utah

References: IGES, 2016, Geotechnical & Geologic Hazard Investigation (Rev. 1), Copper Crest – East, Powder Mountain Resort, Weber County, Utah, Project No. 01628-010, dated July 15, 2016.

As requested, IGES is providing the following grading plan and drainage review for the Copper Crest – East project; the purpose of our review is to assess the grading plan with respect to the geotechnical recommendations presented in the referenced geotechnical report (IGES, 2016) and to assess the impact of the drainage design to the stability of slopes below the project area (per Engineering Review 1 dated April 14, 2017, Weber County Engineering Division). The subject of our review is the plan set titled “Ninebark Construction Drawings” prepared by Studio MA (architect) and Talisman (civil), dated January 26, 2017 (permit set).

### **Review**

Based on our review of Sheet C1.03, *Overall Grading & Drainage Plan*, and Sheet C1.02, *Overall Site & Utility Plan*, roof drains are tied into a 12” storm drain, which terminates at a 6-foot storm drain sump, located at the southern end of the building. Sheet C5.00, *Misc. Details*, provides details for the storm drain sump. The plans illustrate a ‘flared end’, which is an outlet for the sump in the case where the inflow exceeds the capacity of the sump to absorb water. The sump is located within proximity to the downstream end of a culvert passing under Spring Park Road. Any water over-flow emanating from the storm drain sump would likely take the same course as water passing through the culvert.

The plans indicate the area below Copper Crest East is a modest slope, approximately 7H:1V. The area immediately below the development is open space; below the open space, surface drainage would be along the road embankment for Spring Park Road (this will also accommodate any water coming through the culvert). There is a residential lot about 130 feet west of Copper Crest East; the plans for this lot are unknown. The slope throughout this area is fairly modest, ranging from about 6H:1V or flatter.

**Conclusions and Recommendations**

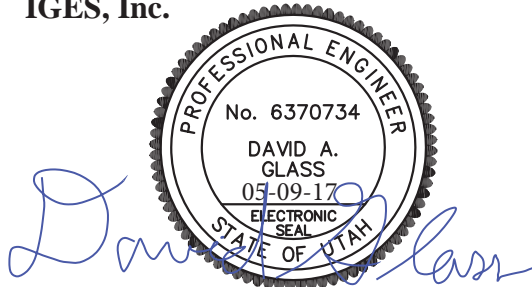
Based upon our review, the grading plan conforms to the requirements of the referenced geotechnical report. Furthermore, the planned storm drain sump is not expected to impact slope stability below the planned Copper Crest East development.

It should be noted that during spring snow melt, the ground may be largely saturated, which may compromise the ability of the sump to absorb water; in this case, effluent from the sump should reasonably be able to flow into the natural water course intended for the nearby culvert. Some localized erosion may occur, which would require maintenance; however, once this area becomes vegetated, erosion should be minimal or negligible. In any event, effluent from the storm drain sump is not expected to impact slope stability.

**Closure**

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

**Respectfully Submitted,  
IGES, Inc.**



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