



August 24, 2015

Summit Mountain Holding Group
c/o Ms. Andrea Milner
3632 North Wolf Creek Drive
Eden, Utah 84310

IGES Project No. 01628-005

Subject: Fire truck access
on unpaved Summit Pass Road
Powder Mountain Resort
Weber County, Utah

References: IGES, 2012a, Preliminary Geotechnical Investigation, Powder Mountain Resort, Weber County, Utah, Project No. 01628-001, dated July 26, 2012.

IGES, 2012b, Design Geotechnical Investigation, Powder Mountain Resort, Weber County, Utah, Project No. 01628-001, dated November 9, 2012.

Ms. Milner:

As requested, IGES is providing the following letter addressing the concerns of the Weber County engineering/planning departments regarding suitability of unpaved roads for a 75,000 lb fire truck. In order to access residential lots scheduled for construction in the near future, a fire truck would need to travel on Summit Pass Road. At present Summit Pass Road is paved to just east of Skier Bridge #1, approximately 260 feet west of the intersection with Heartwood Drive. Roadbase, geotextile and granular borrow have been placed and compacted further east on the roadway this year. Summit Pass Road is under construction and asphalt paving is scheduled for placement starting September 21, 2015. Granular borrow, geotextile and roadbase has been placed to approximately 4,500 ft from the existing end of pavement. The pavement section for the road consists of 4-in. Asphalt, 6-in roadbase, reinforcing geotextile and 10-in. granular borrow. Roadbase and granular borrow are being derived from excavations within the project area.

Previous Investigation

IGES completed preliminary and design geotechnical/geologic reconnaissance of the development in 2012. Subsequent investigations have been performed in specific areas as development plans have been further refined. Those investigations indicated that the majority of the subsurface in under Summit Pass Road is comprised of bedrock with portions of colluvial deposits comprised of sand and silt with boulders. Subsurface soils encountered in our investigations were sampled and tested in our laboratory to determine considered to capable of providing poor to fair pavement support along the Summit Pass Road alignment. The design pavement section was based on the relatively low soil strength properties. Where encountered,

exposed rock (sandstone, siltstone and dolomite) will provide better pavement support than site soils.

Observations

Roadbase is currently in place on the majority of Summit Pass Road to just beyond Bridge #2. This unpaved portion of the road has been traversed by heavy equipment throughout the 2015 construction season. Loaded haul trucks (Volvo A40F) have traversed the road repeatedly and the roadbase has not rutted under the heavy loads. When loaded the gross weight of these trucks can exceed 150,000 lbs, The geotextile used on Summit Pass Road is expected to minimize rutting in the area.

Granular borrow has been placed and compacted during the 2015 construction season and was nearing “The Village” portion of the development during our most recent site visit. Based on our discussions with Geneva, current plans call for geotextile and roadbase to be placed this far within the next month. Utility installation and weather may delay progress of road construction.

Drainage Considerations

At the time of our recent observations the site was relatively dry and there had been no precipitation for several days prior. A ditch has been excavated on the uphill side of Summit Pass Road where it is at the base of natural or cut slopes. Runoff from these uphill slopes will largely be diverted through ditches eastward, along the roadway towards The Village with occasional drop structures and culverts in relatively flat areas where water will be diverted across the road, allowing for discharge of surface runoff and cut seepage on the south facing slopes below the road.

Drainage ditches and culverts are being installed concurrently with road construction. When completed, these areas should drain fairly quickly, limiting the potential for saturation of the road subgrade from precipitation and snowmelt.

At a few locations there is seepage coming through the cut slopes uphill of the road. A gravel drain has also been installed below the run-off ditches to capture and transport potential seepage which could saturate areas beneath the road bed, these drains are also connected to run-off discharge piping. Water from these areas has saturated road subgrade and under the heavy construction loads rutting has been observed in granular borrow, or subgrade soils prior to placement of granular borrow. Geneva has worked to stabilize problematic areas prior to construction of the road section. Where sgeotextile and roadbase have been placed, rutting has not been observed and surface water typically flows into completed ditches, and away from seeping slopes as designed.

Conclusions and Recommendations

Excess moisture typically has an adverse impact on unpaved roads. However, through the construction season this year, unpaved portions of Summit Pass Road where roadbase and geotextile were placed last year (and this year) have been very resistant to rutting under heavy construction traffic even on rainy days. The regular construction loading that the unpaved road

*Powder Mountain Resort, Weber County, Utah
Fire truck access to the Ridge Nests Development
on unpaved roads (Summit Pass and Heartwood Drive)*

sections have already held up under is in excess (heavier trucks, more frequent trips) than those that would be applied by a 75,000 lb fire truck that would come only in an emergency situation.

Based on the progress of construction and the location lots that will be developed in the near future, it is likely that these areas will be among the first that are paved should asphalt placement begin as planned on September 21, 2015. At worst these road sections will all have compacted granular borrow, geotextile and roadbase within the next few weeks. IGES does not have any concerns with the suitability of unpaved portions of Summit Pass Road to support emergency vehicle traffic even if weather or other delays prevent them from being paved as planned.

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.

Jared A. Hawes, P.E.
Project Manager

