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Office Locations: Parker, Glenwood Springs, and Silverthorne, Colorado

December 6, 2018

Branden Cohen  
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Project No. 17-7-676

Subject: Comments Regarding Debris Flow Mitigation Design, Proposed Haymeadow Development - Filing 1, Brush Creek Road, Eagle, Colorado

Dear Mr. Cohen:

As requested by Gary Brooks, we are providing comments regarding the debris flow mitigation design of the proposed project at the subject site. Our comments are provided below. The services are supplemental to our proposal for professional services to Branden Cohen dated September 7, 2017.

H-P/Kumar recently prepared a supplemental subsoil study for site grading and pavement section design for proposed Phase I of the Haymeadow Development and submitted our findings in a report dated March 21, 2018, Project No. 17-7-676. Hepworth-Pawlak Geotechnical (now H-P/ Kumar) previously performed preliminary geotechnical and geologic studies for all or part of the Haymeadow site between 1998 and 2013. These studies are listed in our recent 2018 report.

The portion of the planned development adjacent the hillside terrain along the northeast side of property is subjected to potential debris flow hazard. Hepworth-Pawlak Geotechnical prepared a debris flow and flood review for the Haymeadow Property in a report dated June 12, 2013, Job No. 113 097A. That report provided debris flow characteristics for the individual basins from the hillside terrain. Additionally, design level recommendations for the potential debris flows and floods from the Phase A1 (Filing 1) debris flow basins were provided in a report dated July 11, 2013, Job No. 113 097A. These design recommendations were incorporated into Alpine Engineering's civil design for the Filing 1 development dated September 2018.

The debris flow mitigation for the Filing 1 (Phase A1) development consists of a fill berm, below the hillside terrain and above the proposed subdivision development, on which a pedestrian path will be constructed. Basin storage behind the berm and the fill berm height were designed for a 100 year design storm with a berm height free board of 1½ feet. In our opinion, the previous design recommendations by Hepworth-Pawlak Geotechnical for the debris flow basins and containment berm remain applicable.

Branden Cohen  
December 6, 2018  
Page 2

The preparation of the subgrade for the fill berm construction and placement and compaction of the fill for the berm should be per the design specifications.

Sincerely,

**H-P ≈ KUMAR**

David A. Young, P.E.

Rev. by: SLP

DAY/kac

cc: Alpine Engineering – Gary Brooks ([brooks@alpinecivil.com](mailto:brooks@alpinecivil.com))

