December 14, 2022

RB&G ENGINEERING, INC.

Norm Beagley, P.E.
Santaquin City Engineer
275 West Main Street
Santaquin, Utah 84655
nbeagley@santaquin.org

Re: Geotechnical Investigation – Summit Ridge Development

Dear Mr. Beagley:

In accordance with your request, we are outlining below our proposal to perform a geotechnical investigation for about 58 acres of land (including 6 parcels ranging from 2 to 16 acres) on either side of Summit Ridge Parkway just south of Highway 6 in Santaquin, Utah. The primary purpose of the geotechnical investigation will be to evaluate the existing Summit Ridge Parkway pavement section, provide pavement design recommendations for new roadways to be constructed within the development area, provide foundation recommendations for an additional drainage crossing under Summit Ridge Parkway, and provide preliminary foundation design recommendations for future development within the area. Additional investigation will be necessary for final structure foundation design when building locations and sizes are known.

RB&G Engineering performed a geotechnical investigation for a portion of the area for this study in 2015. The 2015 investigation included several borings ranging from 15 to 60 feet deep and several test pits ranging from 10 to 14 feet below the surface. The borings and test pits from the 2015 investigation will be used in the analysis for this study. In addition to the previous investigation, we propose to drill an additional 16 borings with depths ranging from 10 to 60 feet as outlined in the table below.

Location	Acres	No. of Borings				Previous Investigation	
		10 ft	15 ft	30 ft	60 ft	Borings	Test Pits
Drainage Crossing (borings on each end of proposed culvert)	-	0	0	2	0	0	0
Summit Ridge Parkway (borings at about 500 ft spacing along road)	-	6	0	0	0	0	5
Parcel 32:009:0096	15	0	2	0	1	0	0
Parcel 32:009:0097 & 0098	30	0	2	1	0	2	5
Parcel 32:009:0099	2	0	0	0	0	1	1
Parcel 32:009:0100	6	0	0	1	0	0	2
Parcel 32:009086 (West end)	5	0	0	1	0	0	6
Total	58	6	4	5	1	3	19

Based upon the results of the field investigations and appropriate laboratory tests, our preliminary geotechnical findings will be presented and summarized for consideration in site development, including foundation types, estimated site class for seismic design, geologic hazards, pavement design recommendations, and potential for problem soils. Our proposal to perform the geotechnical investigation for based on the above scope of work is described below.

1. SUBSURFACE INVESTIGATION

We propose to furnish all labor, materials, and equipment to perform the work indicated above. During the subsurface investigation, sampling will be performed at about three-foot intervals within the upper 15 feet, and at five-foot intervals at greater depths. For the borings along Summit Ridge Parkway sampling will be performed continuously to about 6 feet below the existing top of pavement, with a final sample taken at a depth of 8.5 feet. Standard penetration values will be recorded at each sampling interval. Where cohesive materials are encountered, undisturbed samples will be obtained for appropriate laboratory testing. Each boring will be logged in the field and each sample will be classified visually according to the Unified Soil Classification System. The depth to groundwater (if encountered) will be noted on the boring logs. Our costs for performing this phase of the work is as follows:

A. Drill Rig Plus Crew	54	hr	$ 220.00	/hr	$	11,880.00
B. Geologist/Engineer	58	hr	$ 125.00	/hr	$	7,250.00
C. Technician (bluestakes)	5	hr	$ 60.00	/hr	$	300.00
D. Support Truck and Trailer	6	day	$ 110.00	/day	$	660.00
E. Engineer / Technician Mileage	400	mi	$ 0.625	mile	$	250.00
F. Traffic Control			Cost + 10%, est.		$	2,000.00
				Subtotal	**$**	**22,340.00**

2. LABORATORY TESTING

The exact type and number of laboratory tests cannot be completely defined until the field investigations have been completed. It is anticipated, however, that the following testing program will likely be required to define the strength and compressibility characteristics of the subsurface material:

A. Classification (Plasticity or Gradation)	33	test	$ 80.00	/test	$	2,640.00
B. Unconfined Compression	8	test	$ 80.00	/test	$	640.00
C. Consolidation	8	test	$ 110.00	/test	$	880.00
D. Electro-Chemical	3	sets	$ 160.00	/set	$	480.00
				Subtotal	**$**	**4,640.00**

The estimated testing above has been defined in terms of the number, type, and unit cost so that modifications can be made to the total cost for the laboratory testing, depending upon the soil material types encountered and the actual tests performed. No testing in excess of the subtotal cost listed above will be performed without your authorization. Soil samples remaining after completion of testing will be stored for 60 days following delivery of the geotechnical report, after which they will be discarded unless arrangements are made for longer-term sample storage.

3. ANALYSIS AND REPORT

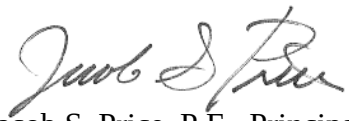
The results of the field and laboratory tests will be analyzed and summarized in a written report and submitted to you in electronic format. Up to three hard copies will be provided upon request. The information contained in the report will include the following: (1) Geological and Existing Site Conditions, (2) Subsurface Soil and Water Conditions, (3) Preliminary Foundation Considerations and Recommendations, (4) Geotechnical Site Suitability and Preparation Considerations, (5) Pavement Design Considerations, and (6) The Results of Field and Laboratory Tests. Our cost for performing this work will be $3,000.00.

Based upon the subdivision of costs indicated above, the total cost for performing this investigation will be **$29,980.00**. This cost assumes access to the drill sites will be available for a drill rig mounted on a 2-ton truck. We are prepared to begin the field work within six weeks following notice to proceed, and to submit the report and recommendations within two weeks of completing the field work.

We appreciate the opportunity to submit this proposal to you and hope we can be of service to you on this project.

Sincerely,

RB&G ENGINEERING, INC.



Jacob S. Price, P.E., Principal