REDMOND GEOTECHNICAL SERVICES

July 20, 2018

Mr. Daniel Dobson
Director of Business Development
Bonaventure
3425 Boone Road SE
Salem, Oregon 97317

Dear Mr. Dobson:

Re: Proposal, Geotechnical Investigation and Phase I Environmental Site Assessment Services, Proposed Residential Subdivision Development Site, Tax Lot No. 400, Orchard Heights Road NW and Doaks ferry Road NW, Salem (Polk County), Oregon

Introduction

At the request of Mr. Daniel Dobson of Bonaventure, Redmond Geotechnical Services, LLC is pleased to submit to you for your consideration our proposal to perform Geotechnical Investigation (Engineering) and Environmental Site Assessment (Phase I ESA) services at the above subject proposed new single-family residential subdivision development site. The proposed new residential development property reportedly consists of one (1) existing tax lot (TL 400) totaling approximately 36.74 acres and is located to the north of Orchard Heights Road NW and east of the intersection with Doaks Ferry Road NW in Salem (Polk County), Oregon.

Project Description

Although the project is still in the preliminary planning stages, we understand that present plans for the project will consist of the development of a new residential subdivision. Reportedly, the residential subdivision Concept Plan prepared by AKS Engineering & Forestry, LLC indicates that full development of the subject property could result in the construction of approximately one hundred and forty-three (143) new single-family residential home sites (lots). However, under the Neighborhood Commercial Mixed Use (NCMU) plan, we understand that the master plan for the subject property also allows for partial development across the southerly approximate 15 acre portion of the site with a wide range of commercial uses including some compact residential development (row houses and duplexes) as well as some retail and/or office use. Additionally, we understand that the southerly portion of the site could be developed with some assisted living and/or educational/medical services.

We envision that the new single-family residential homes will likely be two- and/or three-story wood-frame structures with raised wooden post and beam floors. However, development of the NCMU portion of the site could include single- and/or three-story wood-frame structures with concrete slab-on-grade floors. Support of the single-family residential and/or commercial structures is anticipated to consist of conventional shallow continuous (strip) and individual (spread) column-type footings. However, due to the sloping site grades and/or existing topography of the site, we envision that some of the new residential and/or commercial structures may also include partial and/or below grade levels. As such, the use of some below grade retaining walls is anticipated for the project. Structural loading information, although currently unavailable, is expected to be fairly typical for these types of single- and/or three-story wood-frame residential and/or commercial structures and should generally result in maximum dead plus live continuous (strip) and individual (spread) column-type footings loads on the order of about 2.0 to 3.5 kips per lineal foot (klf) and 10 to 50 kips, respectively.

Additionally, we understand that the project will also include new paved surfaces for new public street improvements as well as private vehicle access drive and parking areas. Further, we understand that development of the site will also include the collection of storm water from hard and/or impervious areas (i.e., roofs and pavements) for on-site treatment and possible disposal.

Earthwork and grading operations associated with bringing the property to finish design grades are unknown at this time. However, based on the existing site grades and/or topographic features, we generally anticipate the site grading for the project to result in both cuts and/or fills in the range of about five (5) to ten (10) feet .

The subject site is presently unimproved and void of existing buildings and/or structures. Topographically, the site is generally characterized as gently to moderately sloping terrain (i.e., 10 to 25 percent) descending downward towards the east/northeast with overall topographic relief estimated at about one hundred and thirty (130) feet. Additionally, we understand that the subject property contains an existing seasonal drainage basin and pond within the southeasterly portion of the site. Vegetation across the site generally consists of farm and/or agricultural use including hay production across the southerly portion of the site and orchard use across the northerly portion of the site. However, the easterly and portions of the northerly and westerly site boundaries include a relatively dense growth of ground cover and trees.

Qualifications

We believe that Redmond Geotechnical Services, LLC is well qualified to provide the requested Geotechnical Engineering and Environmental Consulting services for this project based on our extensive past experience with numerous other residential and/or commercial development projects throughout Oregon, Washington and California.

Our 39-years of consulting experience in the Geotechnical and Environmental services field on all aspects required for each project have resulted in the development of established and proven relationships for our clients.

Our project management approach is structured to achieve specific goals and to provide high quality consulting services in a timely and cost-effective manner. The company takes particular pride in the realistic and practical approach we bring to all of our geotechnical and environmental studies.

All geotechnical engineering and environmental services provided for this project, including project manager, designated investigation team, and quality control supervisor, will be performed by Daniel M. Redmond, P.E., G.E.

Mr. Redmond has over 39 years of geotechnical investigation and construction monitoring experience (see attached personal resume) in the Pacific Northwest and is extremely knowledgeable in the processes of the City of Salem and/or Polk County and throughout the State of Oregon.

Scope of Work

The subject property is consists of gently to moderately sloping terrain and is believed to be located with a potential Geologic Hazard area. Based on the above, we propose to perform the Geotechnical Investigation Study by means of a detailed site reconnaissance and geologic mapping of the property, review of available geologic maps and/or reports for the area as well as a review of available aerial photographs of the site. Additionally, the excavation of test pits will also be performed at various locations across the proposed improvement area(s). The results of our work will be presented in a formal written report summarizing our findings with regard to any known hazards or impacts as well as possible mitigation of the known hazards or impacts, if present. Specifically, we propose the following scope of work items:

1. Site reconnaissance and field exploration consisting of approximately fifteen (15) to twenty (20) exploratory test pits which will be excavated across the site in such a way as to develop the best overall characterization of the subsurface soil and groundwater conditions. The test pit explorations will generally be excavated to depths ranging from about eight (8) to ten (10) feet beneath existing site grades with track-mounted excavating equipment. Additionally, field infiltration will also be performed within four (4) or more of the test pits at the time of excavating in accordance with current EPA and/or the City of Salem Public Works Encased Falling Head test method(s). Further, representative samples of the subsurface soils encountered within the exploratory test pits will be collected at selected depths and/or intervals and returned to our laboratory for further examination and testing.

2. A laboratory testing program on representative soil samples obtained from the test pit explorations for use in classification of the subgrade soils and an evaluation of their engineering strength properties. We envision that the laboratory testing program will include tests to help evaluate the nature (field) moisture content and dry density characteristics, maximum dry density determinations, gradation analysis and/or Atterberg Limits determinations, unconfined compressive tests and/or consolidation tests as well as direct shear strength tests and "R"-value tests.

3. Engineering analyses and preparation of our final written report presenting the results of our investigation along with pertinent design and construction recommendations. Our report will address recommendations for site preparation and grading including any over-excavation of any unsuitable subgrade soils that may be revealed by the test pit explorations, placement and compaction of any required structural fill materials, and preparation of pavement, footing, and floor slab areas. Criteria for any import fill materials and an evaluation of the suitability of the existing on-site subgrade soils for use as structural fill will also be provided. Additionally, seismic design parameters will also be provided for the proposed new residential and/or commercial structures.

4. Recommendations regarding foundation design and support for the proposed new residential and/or commercial structures. Our recommendations will include allowable contact bearing pressures for proportioning footings, minimum footing width and embedment depths, estimated foundation settlements as well as lateral earth pressures for any below grade and/or retaining wall structures. Additionally, we will provide specific pavement design recommendations for private access drive and parking areas as well as new public street improvement areas associated with the proposed new residential and/or commercial development site.

Environmental

We will perform a Phase I Environmental Site Assessment (Phase I ESA) for the subject property to identify, to the extent feasible, the possible presence of hazardous materials (recognized environmental conditions), either on-site or off-site, which could affect the subject property. The Phase I ESA will be performed in accordance with the ASTM Standard Practice for Phase I Environmental Site Assessments Process E-1527-13. The results of the Phase I ESA will be presented in a formal written report (2) hard copies and 1 electronic copy) which will include our findings with regard to possible site impacts and/or whether any further (Phase II ESA) assessment is recommended.

Schedule and Fees

Presently, we can begin the scope of work outlined above within about five (5) working days following your authorization to proceed, depending on the availability of the excavating subcontractor and following any required utility location work. We expect that the test pit exploration and field infiltration testing portion of our work will take no longer than about one full day to complete. Within about five (5) to seven (7) days following the field work, we will be in a position to provide you with our verbal recommendations. Our final written report would document all verbal recommendations and would be available no later than about three (3) weeks following the field work.

Fees for our services have been prepared based on time and materials in accordance with our Fee Schedule. However, for the scope of work outlined above, we have estimated the following fees for the project:

Geotechnical Investigation	**$6,800.00**
Geologic Hazards Assessment	**$2,400.00**
Phase I Environmental Site Assessment	**$2,400.00**

The above estimated fees can be assumed as a Not-To-Exceed (NTE) estimate for the scope of work outlined above. Additionally, the above estimate includes the cost of the excavating subcontractor to assist with the exploratory test pit work.

In addition to the above, Redmond Geotechnical Services, LLC (RGS, LLC) provides a full range of construction inspection and materials testing related services which will be necessary and/or required during the construction phase for this project. Specifically, RGS, LLC is able to perform construction inspection and materials testing services during all aspects of the site grading and earthwork operations as well as preparation of the pavement grade and foundation bearing surfaces. Additionally, RGS, LLC can provide compaction testing of all structural fill materials placed for support of the planned new residential and/or commercial structures as well as any of the associated new on-site and/or off-site improvements.

We appreciate this opportunity to provide you with our proposal and estimated fees for this project and look forward to your favorable consideration of Redmond Geotechnical Services, LLC as your Geotechnical consultant. If you have any questions regarding this proposal or estimated fees, please do not hesitate to call.

Sincerely,

Daniel M. Redmond, P.E., G.E.
President/Principal Engineer

CONFIRMATION OF AUTHORIZATION

The scope of services and contractual conditions as described in this proposal are acceptable and Redmond Geotechnical Services, LLC is authorized to proceed. This proposal shall remain in effect for 90 days following the date of issuance.

_____
Date

_____
Client Name

_____
Authorization Signature

_____
Title

_____
P.O. (If you wish to use one)

Our terms are net 30 days after invoicing