PanGEO INCORPORATED
*Geotechnical & Earthquake Engineering Consultants*

March 28, 2022
File No. 19-062

Mr. Benjamin C. Altman, Exe.,
Estate of James Altman, Sr.
**Attn: George Steirer, Plan to Permit, LLC.**
10365 El Honcho Place
San Diego, CA 92124-1219

**Subject**: **Geotechnical Report Addendum, Soldier Pile Shoring**
**Center Lot -Parcel 3024059001**
**9191 SE 64th Street**
**Mercer Island, WA**

Dear Mr. Altman,

As requested, PanGEO prepared the following report addendum to provide geotechnical guidance for design and construction of a driveway to connect the proposed dwelling at 9191 SE 64th Street to SE 64th Street. Because of the steep side hill grade along the anticipated alignment of the driveway, permanent soldier pile walls will likely be required for the construction of the driveway. The anticipated locations of the soldier pile walls are shown in Figure 1 and slope profile and transvers sections are shown in Figures 2 and 3, respectively.

Based on the sections, it appears that the driveway will be placed on fill for at least the first 70 feet of alignment. From STN 0+70 to about STN 0+90 feet, the driveway appears to be a balanced cut/fill, while from STN 0+90 to 1+10 feet the alignment calls for a full bench cut into the colluvium. Walls may be required in this section as well, to support the potentially unstable cut. Design parameters for the walls are provided in Figure 4.

The walls should be designed by a structural engineering firm experienced in shoring design, such as CT Engineering (206-285-4512), Swenson Say Faget (SSF) (206-443-6212) or Quantum Engineers (206-957-3900).

3213 Eastlake Ave E Ste B
Seattle, WA 98102
Tel:(206) 262-0370
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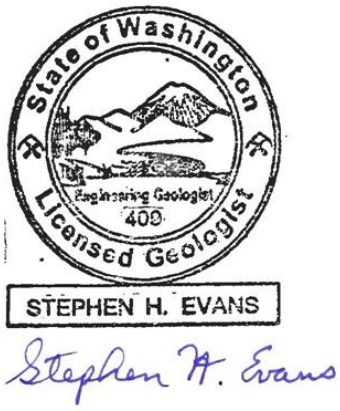
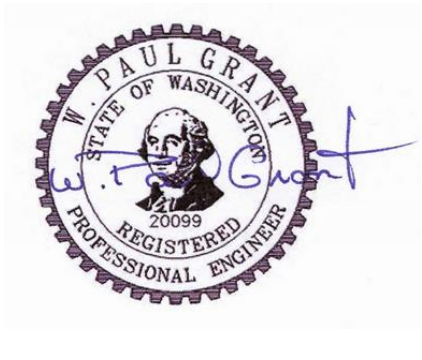
Because of the steepness of the slopes and the looseness of the surficial soils, we anticipate that construction access may be severely limited. Selection of the construction equipment may be driven by what equipment can safely access the site. We anticipate that only small equipment may be able to access the site, which may require the use of small beams and tiebacks.

We trust that the information outlined in this letter meets your needs. Please call if you have any questions.

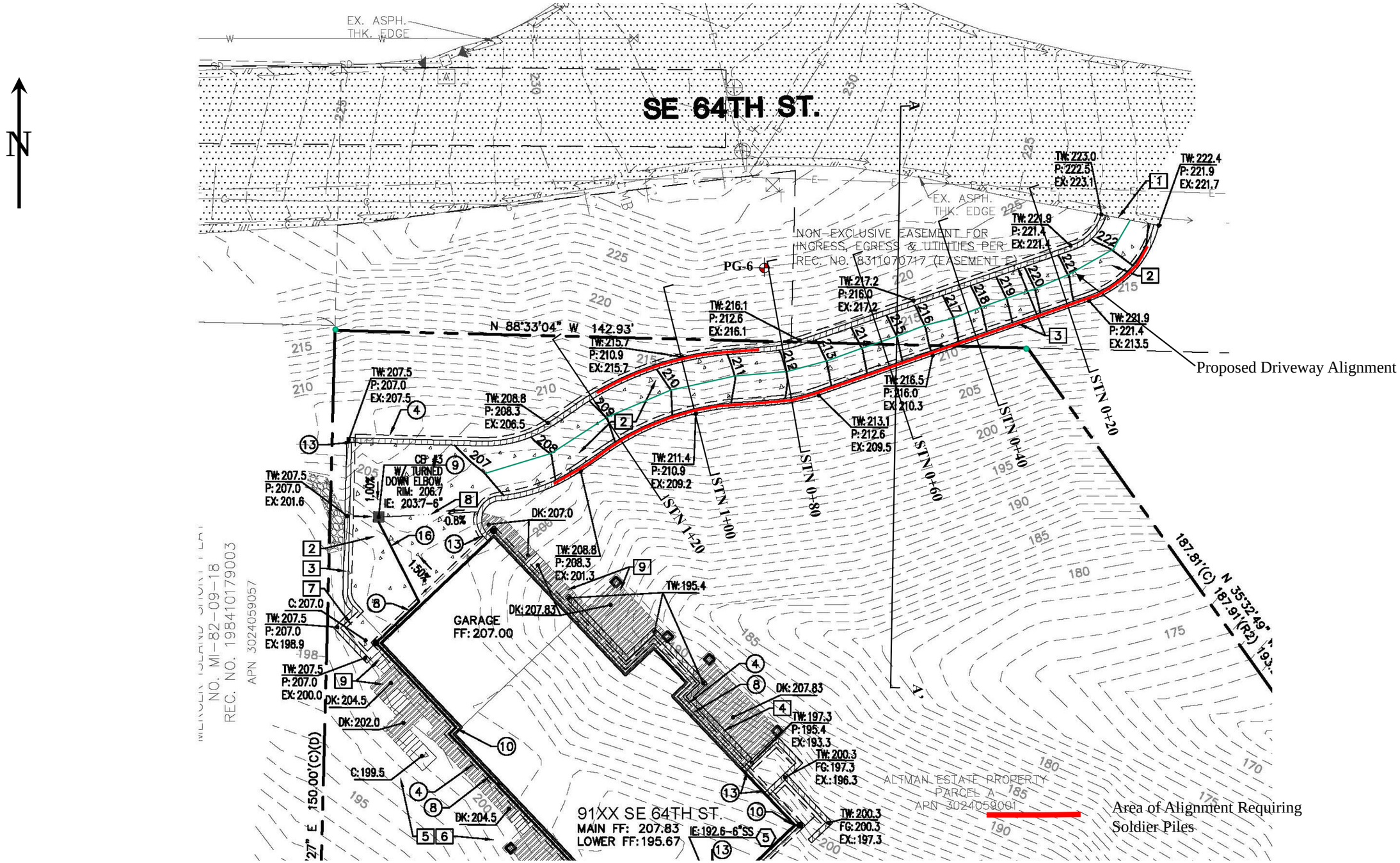



Stephen H. Evans, L.E.
Senior Engineering Geologist

W. Paul Grant, P.E.
Principal Geotechnical Engineer

Encl:
Fig. 1 Potential Areas Requiring Soldier Pile Support
Fig. 2 Schematic Profile A – A'
Fig. 3 Generalized Sections
Fig. 4 Shoring Design Parameters – Cantilever / Single Tieback




A ——— A'

Location of Profile

Approximate Scale 1":20'

| | | |
|---|---|---|
| PanGEO INCORPORATED | **Proposed Development**<br>**Lot 30240590001**<br>**9191 SE 64th Street**<br>**Mercer Island, Washington** | **DRIVEWAY ACCESS AND SOLDIER PILE WALL LOCATIONS**<br>Project No. 19-062 · Figure No. 1 |

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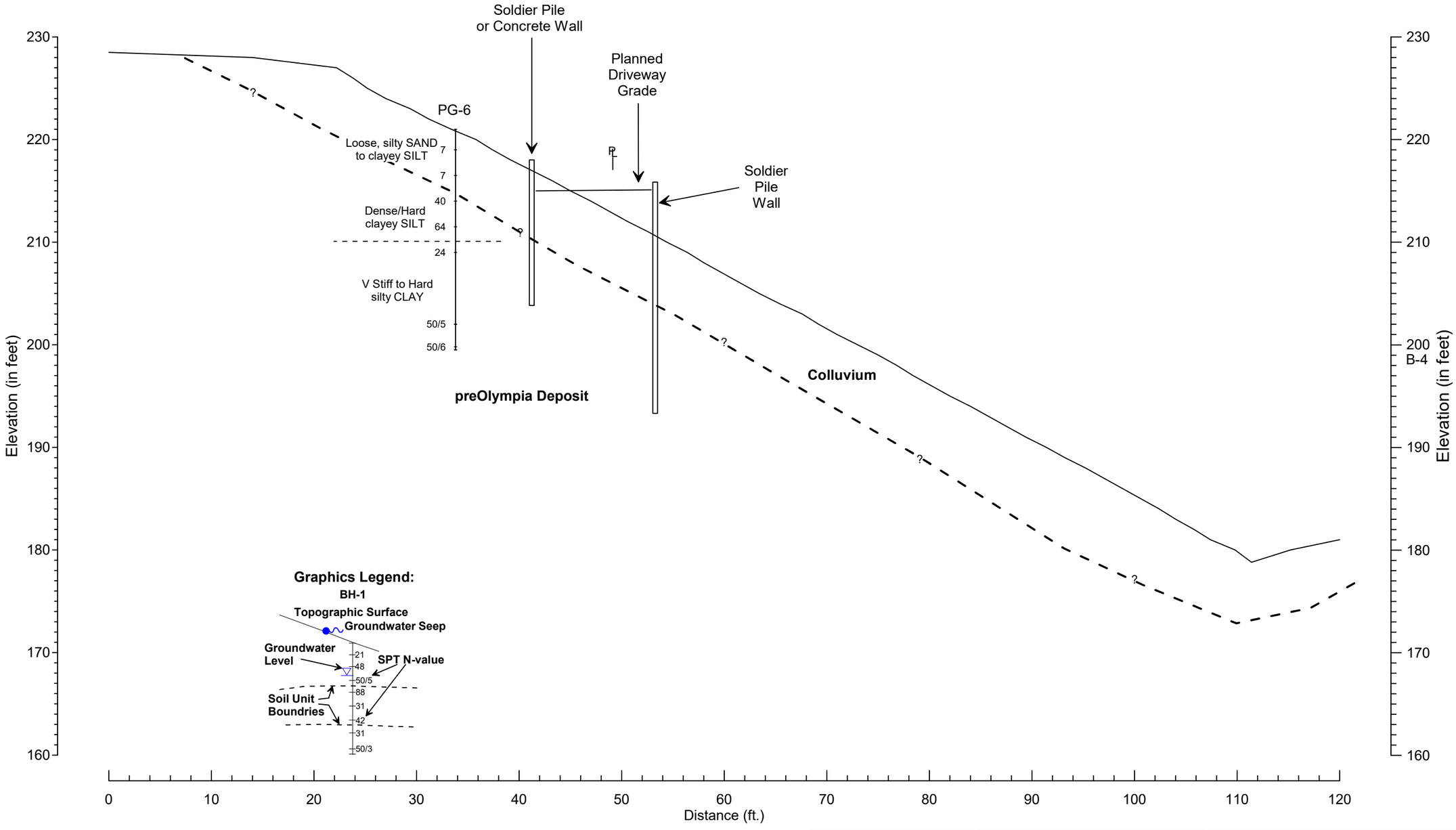
A

A'




**Notes:**
1.

Note: FF Elevations from Architectual
Plan Dated 4/8/20

PanGEO INCORPORATED

**Proposed Single
Family Residence
9191 SE 62nd Street
Mercer Island, Washington**

**GENERALIZED SUBSURFACE
PROFILE - DRIVEWAY
SECTION A-A'
CENTER PARCEL**

Project No. **19-062**

Figure No. **2**

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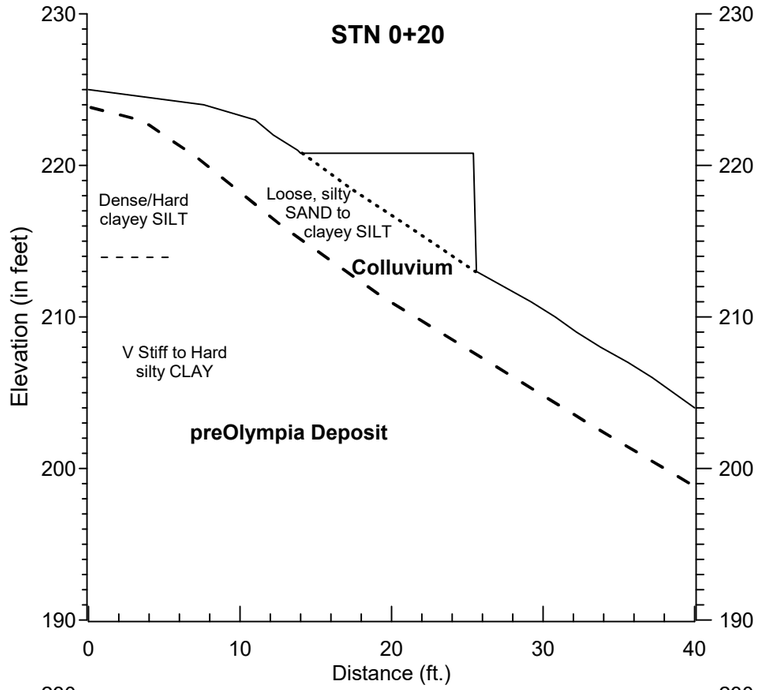


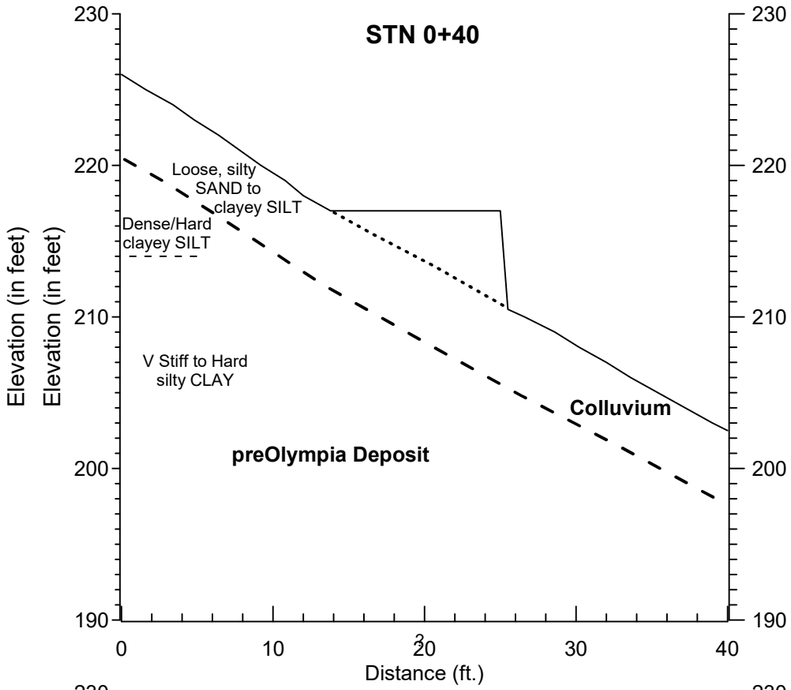


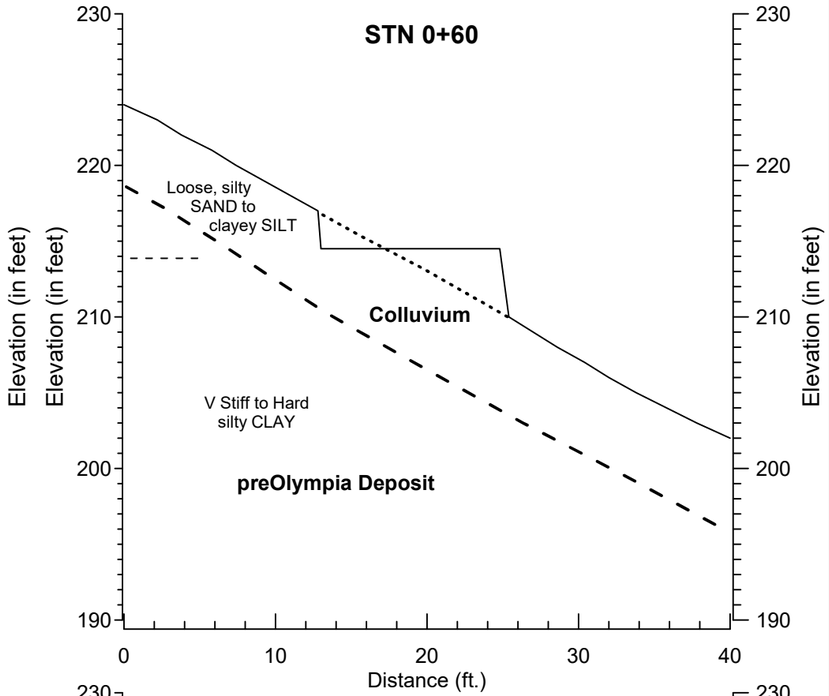


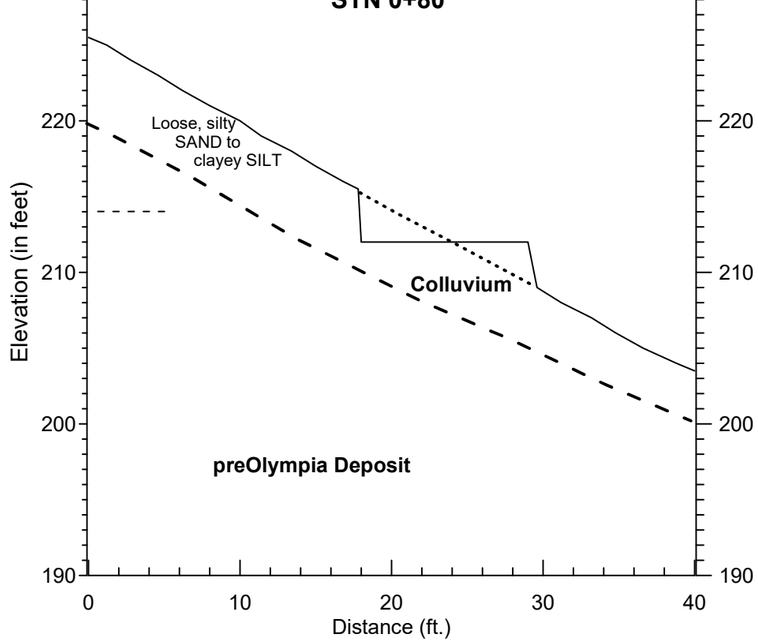


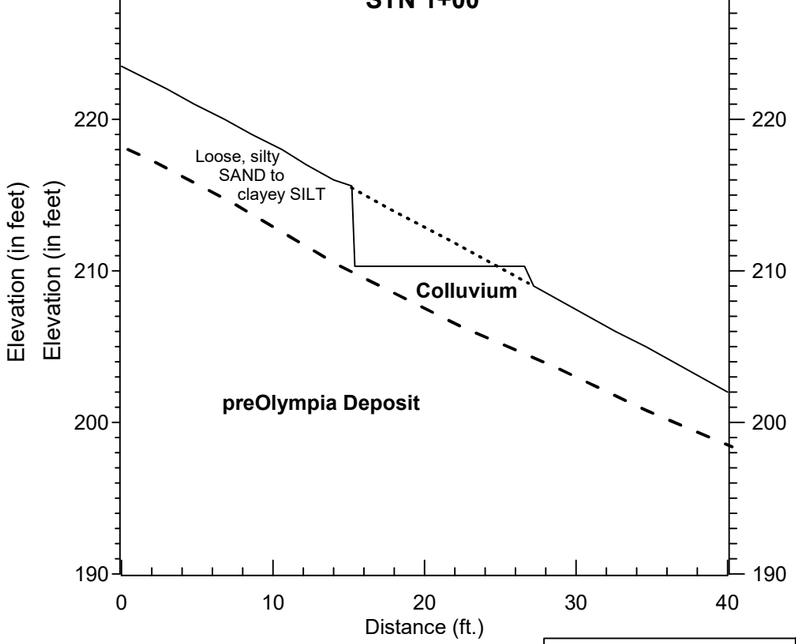


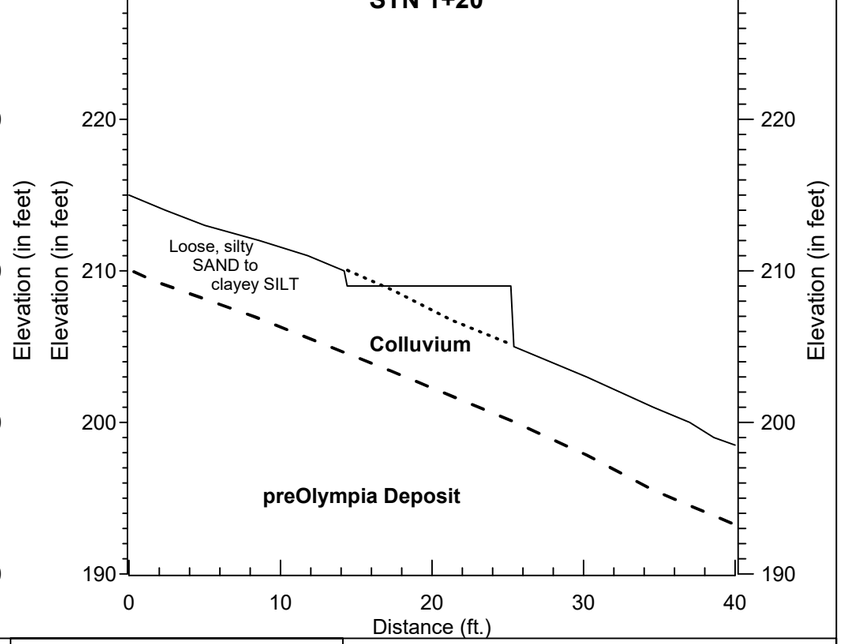


**Notes:**
1.

Note: FF Elevations from Architectual Plan Dated 4/8/20

PanGEO INCORPORATED

**Proposed Single Family Residence**
**9191 SE 62nd Street**
**Mercer Island, Washington**

**GENERALIZED SECTIONS**
**PROFILES - DRIVEWAY**
**CENTER PARCEL**

Project No. **19-062**

Figure No. **3**

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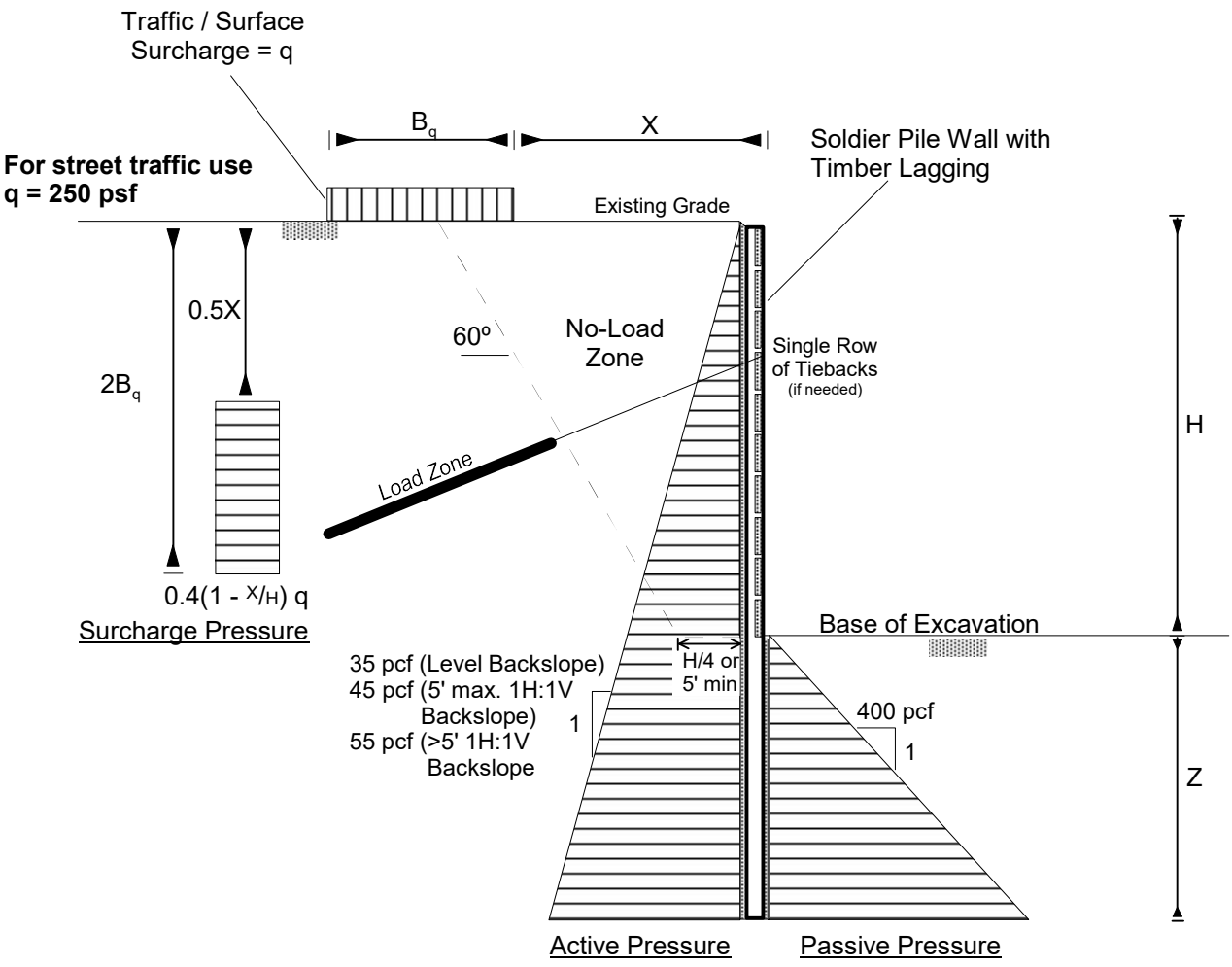


Notes:

1. Embedment (Z) should be determined by summation of moments at the bottom of the soldier piles or at ground anchor location if present. Minimum pile embedment shall be 10 feet.
2. A factor of safety of 1.5 has been applied to the recommended passive earth pressure value. No factor of safety has been applied to the recommended active earth pressure values.
3. Active and surcharge pressures should be applied over the full width of the pile spacing above the base of the excavation, and over one pile diameter below the base of the excavation.
4. Passive pressure should be applied to two times the diameter of the soldier piles.
5. Use uniform earth pressure of 200 psf and 250 psf for lagging design with soldier piles spaced at less than or equal to 8 feet and greater than 8 feet, respectively.
6. Refer to report text for additional discussions.