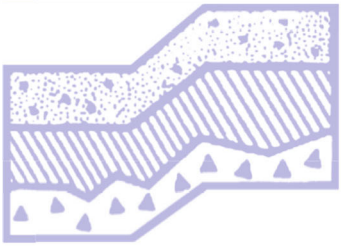
GEOTECHNICAL REPORT

Founder's Ridge
2300 Golf House Road
DuPont, Washington

Project No. T-8399



Terra Associates, Inc.

Prepared for:

NorthPoint Development
Riverside, Missouri

May 21, 2021

TERRA ASSOCIATES, Inc.
Consultants in Geotechnical Engineering, Geology
and
Environmental Earth Sciences

May 21, 2021
Project No. T-8399

Mr. Josh Wills
NorthPoint Development
4825 NW 41st Street, Suite 500
Riverside, Missouri 64150

Subject: Geotechnical Report
Founder's Ridge
2300 Golf House Road
DuPont, Washington

Dear Mr. Wills:

As requested, we conducted a geotechnical engineering study for the subject project. The attached report presents our findings and recommendations for the geotechnical aspects of project design and construction.

The site soils generally consist of approximately 3 to 12 inches of organic, gravelly topsoil overlying outwash deposits composed of medium dense to dense sands, gravels, and cobbles with minor amounts of silt to the termination of the test pits and test borings. The exception to this was observed in Test Pits TP-9, TP-22 through TP-24, TP-40, TP-43, TP-55 through TP-58, TP-60, TP-61, TP-63, TP-66, TP-67, and TP-69, where we observed one to eight feet of fill and possible fill material overlying the native outwash soils. The fill material generally consisted of a sandy silt to silty sand material and was in a medium dense condition with little to no organic content. Groundwater was observed in one Test Boring, B-2 at approximately 19.5 feet below current site grades.

In our opinion, there are no geotechnical conditions that would preclude the planned development. The building can be supported on conventional spread footings bearing on competent, inorganic native soils, or on structural fill placed on competent native soils. Floor slabs and pavements can be similarly supported.

We trust the information presented is sufficient for your current needs. If you have any questions or require additional information, please call.

Sincerely yours,
TERRA ASSOCIATES, INC.

Stephanie L. King, E.I.T.
Staff Engineer

Carolyn S. Decker, P.E.
Project Engineer

5-21-2021

12220 113th Avenue NE, Ste. 130, Kirkland, Washington 98034
Phone (425) 821-7777 • Fax (425) 821-4334

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1.0 PROJECT DESCRIPTION

The project consists of developing the site with four buildings, five stormwater ponds, and associated access, roadways, and utility improvements. Based on the preliminary site plan, the buildings will be approximately 200,000 square feet with dock high loading on one or two sides. Based on the grading plans prepared by Barghausen Consulting Engineers dated May 5, 2021 grading to achieve building lot and roadway elevations will consist of cuts and fills from one to ten feet. Grade transitions will be supported using slopes.

Site stormwater will be collected and directed to one of five infiltration ponds located around the development. Pond #1 has a bottom elevation of 206.26 feet with a top of berm elevation of 213.26 feet. Pond #2 has a bottom elevation of 214 feet with a top of berm elevation of elevation 221 feet. Pond #3 has a bottom elevation of 220.42 feet with a top of berm elevation of elevation 227.42 feet. Pond #4 has a bottom elevation of 216 feet with a top of berm elevation of elevation 224 feet. Pond #5 has a bottom elevation of 210 feet with a top of berm elevation of elevation 217 feet. The ponds will be formed by a combination of excavation below grade and minor fills to construct pond berms. All five ponds will utilize infiltration as the method for managing stormwater.

We would expect the buildings will be constructed using precast concrete tilt-up wall panels, with interior isolated columns supporting a wood or steel roof framing system. The floor slab will be constructed at grade with dock high loading. Structural loading is expected to be light to moderate with isolated building columns carrying 100 to 150 kips and continuous bearing walls carrying 4 to 6 kips per foot. Product loading on the floor slab is not expected to exceed 350 pounds per square foot.

The recommendations in the following sections of this report are based on our understanding of the preceding design features. We should review design drawings as they become available to verify that our recommendations have been properly interpreted and to supplement them, if required.

2.0 SCOPE OF WORK

Our scope of work was completed in accordance with our authorized proposal, dated August 3, 2020. Accordingly, on September 14, 2020 through September 17, 2020, we observed and sampled soils at 74 test pits excavated to depths of approximately 7 feet to 15 feet below existing site grades. On September 24, 25, and 28, 2020, we drilled 10 test borings to depths of 21.5 feet below existing grade. The test borings were converted into monitoring wells. Using the information obtained from our subsurface exploration and the results of our laboratory testing, we performed analyses to develop geotechnical recommendations for project design and construction.

Specifically, this report addresses the following:

- Soil and groundwater conditions.
- Geologic Hazards per the City of DuPont Municipal Code.
- Seismic design parameters per the 2018 International Building Code (IBC).

- Site preparation and grading.
- Excavations
- Foundations
- Floor slabs.
- Stormwater facilities.
- Infiltration feasibility.
- Drainage
- Utilities
- Pavements

It should be noted, the recommendations outlined in this report regarding drainage are associated with soil strength, erosion, and stability. Design and performance issues with respect to moisture as it relates to the structure environment are beyond Terra Associates' Inc. purview. A building envelope specialist or contractor should be consulted to address these issues, as needed.

3.0 SITE CONDITIONS

3.1 Surface

The project site consists of a single tax parcel, totaling approximately 271 acres, located at 2300 Golf House Road in DuPont, Washington. The focus of this study is the approximately 101 acres of undeveloped land located east of Old Fort Lake which is in the approximate center of the 271 acres. The approximate site location is shown on the attached Vicinity Map, Figure 1.

The 101 acres are the focus of this study are undeveloped and covered with moderate vegetation growth or young pine trees. The majority of the site has been cleared and graded in the past. The southeastern portion of the site has not been cleared and is covered with a moderate forest and associated understory. Site topography is generally flat with some undulating hills.

3.2 Soils

Soil conditions observed in the test pits and test borings consisted of approximately 3 to 12 inches of organic, gravelly topsoil overlying outwash deposits composed of medium dense to dense sands, gravels, and cobbles with minor amounts of silt to the termination of the test pits and test borings. The exception to this was observed in Test Pits TP-9, TP-22 through TP-24, TP-40, TP-43, TP-55 through TP-58, TP-60, TP-61, TP-63, TP-66, TP-67, and TP-69 where we observed one to eight feet of fill and possible fill material overlying the native outwash soils. The fill material generally consisted of a sandy silt to silty sand material and was in a medium dense condition with little to no organic content.

The *Geologic Map of the Nisqually 7.5-minute Quadrangle, Thurston and Pierce Counties, Washington*, by Timothy J. Walsh, Robert L. Logan, Michael Polenz, and Henry W. Schasse, dated 2003, shows the site soils mapped as Qgog, Vashon recessional outwash gravel (Steilacoom Gravel). The soils observed in the test pits and test borings are generally consistent with this mapping.

The preceding discussion is intended to be a brief review of the soil conditions observed at the site. More detailed descriptions of the subsurface conditions we observed are summarized on the Test Pit and Test Boring Logs attached in Appendix A. The approximate locations of the test pits and test borings are shown on Figure 2.

3.3 Groundwater

Groundwater was observed in one Test Boring B-2 at approximately 19.5 feet below current site grades. No other groundwater seepage was observed during the subsurface explorations. However, the soils near the bottom of the test pits were noticeably wet.

We expect the groundwater levels observed during our investigation are near the seasonal low levels for the region. Groundwater levels would be expected to be higher during the late fall to early spring (November through April).

On November 1, 2020 we began monitoring the groundwater in seven wells installed throughout the site. These wells are designated at B-1, B-4, B-5, B-6, B-7, B-8, and B-9 in this report and were installed 20 feet below current site grades. We stopped monitoring on March 31, 2021. The results of our seasonal monitoring are in the table below.

Boring Number	Approximate Ground Elevation at Boring	Seasonal High Groundwater (Depth below Grade feet)	Seasonal High Groundwater (Elevation feet)
1	216	21.31	194.69
4	227	19.31	207.69
5	227	18.87	208.13
6	216	19.63	196.37
7	216	19.36	196.64
8	229	18.67	210.33
9	230	19.33	210.67

Based on the results of our study, the groundwater generally flows from the south to the north. We would note the groundwater wells were not surveyed and therefore the elevations are approximate.

3.4 Geologically Hazardous Areas

We evaluated site conditions for the presence of geologic hazards in accordance with Section 25.105.030.155 of the DuPont Municipal Code (DMC) which states geologically hazard areas "are susceptible to erosion, sliding, or other potentially hazardous geological events. They pose a threat to the health and safety of citizens when used as sites for incompatible development. Geologically hazardous areas include erosion hazard areas, landslide hazard, areas, steep slopes, and seismic hazard areas."

3.4.1 Landslide Hazard Areas

Section 25.105.050.3.A.i of the DMC defines a Landslide Hazard Areas as "areas shall include areas potentially susceptible to landslides based on a combination of geologic, topographic, and hydrologic factors. They include any areas susceptible to mass movement due to any combination of bedrock, soil, slope (gradient), slope aspect, slope form (concave, convex, planar), geological structure, surface, and subsurface hydrology, or other factors. Landslide hazard areas shall also include areas along which landslide material may be routed or which may be subject to deposition of landslide delivered material. Landslide hazard areas include but are not limited to the following areas:

(A) Areas designated as quaternary slumps, earth-flows, mudflows, or landslides on maps published by the U.S. Geological Survey, Washington State Department of Natural Resources, or other reputable sources.

(B) Areas with all three of the following characteristics:

(I) Slopes steeper than 15 percent.

(II) Hillsides intersecting geologic contacts with a relatively permeable sediment overlying a relatively impermeable sediment or bedrock.

(III) Springs or ground water seepage.

(C) Areas that have shown movement and/or are underlain or covered by mass wastage debris.

(D) Potentially unstable slopes resulting from river or stream erosion or undercutting by wave erosion.

(E) Areas that show past sloughing or calving of sediment or rocks resulting in a steep slope that is poorly vegetated.

(F) Slopes that are parallel or sub-parallel to planes of weakness (which may include but not be limited to bedding planes, soft clay layers, joint systems, and fault planes) in subsurface materials.

(G) Any area with a slope of 40 percent or steeper and with a vertical relief of 10 or more feet except areas composed of competent bedrock or a properly engineered slope designed and approved by a geotechnical engineer licensed in the state of Washington and experienced with the site.

(H) Areas within which land use activities could affect the slope stability, including but not limited to areas with subsurface hydrologic flow, ground water recharge areas and surface water flow.

(I) Areas of historical landslide movement including coastal shoreline areas mapped by the Department of Ecology Coastal Zone Atlas or the Department of Natural Resources slope stability mapping as unstable ("U" or Class 3), unstable old slides ("UOS" or Class 4), or unstable recent slides ("URS" or Class 5)."

None of the above conditions are present at the site. Therefore, it is our opinion, that the site does not contain a landslide hazard area as defined by the DMC.

3.4.2 Erosion Hazard Areas

Section 25.105.030.130 of the DMC defines an Erosion Hazard Areas as "areas containing soils which, according to the USDA Soil Conservation Service, may experience severe to very severe erosion."

The United States Department of Agriculture Natural Resources Conservation Service (NRCS), formerly the Soil Conservation Service maps the site as Spanaway gravelly sandy loam. These soils will have a slight potential for erosion when disturbed. Therefore, the site does not contain erosion hazards as defined by the DMC. Regardless, erosion protection measures as required by the City of DuPont will need to be in place prior to initiating grading activities on the site. This would include perimeter silt fencing to contain erosion onsite and cover measures to prevent or reduce soil erosion during and following construction.

3.4.3 Seismic Hazard Areas

Section 25.105.030.315 of the DMC defines a seismic hazard area as "areas subject to severe risk of damage because of seismic induced ground shaking, slope failure, settlement, soil liquefaction or surface faulting. Ground shaking is a primary risk, followed by slope failure. Soils on slopes greater than 40 percent that are expected to be seasonally or perpetually saturated pose a specific risk of settlement, movement, or liquefaction. When saturated, these soils tend to be cohesionless and are unsuitable for foundations."

Liquefaction is a phenomenon where there is a reduction or complete loss of soil strength due to an increase in water pressure induced by vibrations. Liquefaction mainly affects geologically recent deposits of fine-grained sand that is below the groundwater table. Soils of this nature derive their strength from intergranular friction. The generated water pressure or pore pressure essentially separates the soil grains and eliminates this intergranular friction; thus, eliminating the soil's strength.

Based on the soil conditions we observed and the absence of a shallow groundwater table, in our opinion, the risk for liquefaction to occur at this site during an earthquake is negligible.

3.5 Seismic Site Class

Based on the site soil conditions and our knowledge of the area geology, per the 2018 International Building Code (IBC), site class "D" should be used in structural design.

4.0 DISCUSSION AND RECOMMENDATIONS

4.1 General

Based on our study, in our opinion, there are no geotechnical conditions that would preclude development of the property, as planned. The buildings can be supported on conventional spread footings bearing on competent native soils, existing fill soils, or on structural fill placed and compacted above competent mineral soils. Pavement and floor slabs can be similarly supported.

In general, the upper outwash and fill soils (one to eight feet) encountered at the site contain a sufficient amount of soil fines and will be difficult to compact as structural fill when too wet. The ability to use these upper soils from site excavations as structural fill will depend on its moisture content and the prevailing weather conditions at the time of construction. The underlying clean outwash sand and gravel observed over much of the site has a low percentage of soil fines and should be suitable for use as structural fill in most weather conditions. Depending on how the site is graded and the available volume of cleaner outwash soils, the contractor should be prepared to import free-draining granular material for use as structural fill and backfill during the wet season.

Detailed recommendations regarding these issues and other geotechnical design considerations are provided in the following sections. These recommendations should be incorporated into the final design drawings and construction specifications.

4.2 Site Preparation and Grading

To prepare the site for construction, all debris, vegetation, and organic surface soils should be stripped and removed from below the building and pavement areas. Based on conditions observed in the test pits and test borings, surface stripping depths to remove topsoil ranging from 3 to 12 inches should be expected. Organic topsoil will not be suitable for use as structural fill but may be used for limited depths in nonstructural areas.

Once stripping operations are complete, cut and fill operations can be initiated to establish desired grades. Prior to placing fill, all exposed bearing surfaces should be observed by a representative of Terra Associates, Inc. to verify soil conditions are as expected and suitable for support of building foundations and pavement elements or placement of structural fill. Our representative may request proofrolling the exposed surface with a heavy rubber-tired vehicle to determine if any isolated soft and yielding areas are present. If unsuitable yielding areas are observed, they should be cut to firm bearing soil and filled to grade with structural fill. If depth of excavation to remove unstable soils is excessive, use of geotextile fabric such as Mirafi 500X or equivalent in conjunction with structural fill can be considered in order to limit the depth of removal. Our experience has shown, in general, a minimum of 18 inches of a clean, granular structural fill placed and compacted over the geotextile fabric should establish a stable bearing surface.

The native sand and gravel soils observed onsite should be suitable for reuse as structural fill year-round. During the drier summer months, it may become necessary to add water to the soil in order to achieve the soils optimal moisture content. If importing material for structural fill becomes necessary, we recommend importing a granular soil that meets the following grading requirements:

U.S. Sieve Size	Percent Passing
6 inches	100
No. 4	75 maximum
No. 200	5 maximum*

*Based on the ¾-inch fraction.

Prior to use, Terra Associates, Inc. should examine and test all materials imported to the site for use as structural fill.

Structural fill should be placed in uniform loose layers not exceeding 12 inches and compacted to a minimum of 95 percent of the soil's maximum dry density, as determined by American Society for Testing and Materials (ASTM) Test Designation D-698 (Standard Proctor). The moisture content of the soil at the time of compaction should be within two percent of its optimum, as determined by this ASTM standard. In nonstructural areas, the degree of compaction can be reduced to 90 percent.

4.3 Excavations

All excavations at the site associated with confined spaces, such as utility trenches, must be completed in accordance with local, state, or federal requirements. Based on current Washington Industrial Safety and Health Act (WISHA) regulations, the soils observed at the site would be classified as Type C soil.

Accordingly, for temporary excavations of less than 20 feet in depth, the side slopes in Type C soils should be laid back at a slope inclination of 1.5:1 (Horizontal:Vertical) or flatter from the toe to the crest of the slope. All temporary exposed slopes on excavations that will remain open for an extended time period should be covered with a durable reinforced plastic membrane during construction to prevent slope raveling and rutting during periods of precipitation.

This information is provided solely for the benefit of the owner and other design consultants and should not be construed to imply that Terra Associates, Inc. assumes responsibility for job site safety. It is understood that job site safety is the sole responsibility of the project contractor.

4.4 Foundations

The buildings may be supported on conventional spread footing foundations bearing on foundation subgrades prepared as recommended in Section 4.2 of this report. Perimeter foundations exposed to the weather should bear at a minimum depth of 1.5 feet below final exterior grades for frost protection. Interior foundations can be constructed at any convenient depth below the floor slab.

We recommend designing foundations being on competent soils for a net allowable bearing capacity of 3,000 pounds per square foot (psf). For short-term loads, such as wind and seismic, a one-third increase in this allowable capacity can be used in design. With the anticipated building loads and this bearing stress applied to the soil, we estimate total foundation settlement would not exceed one inch.

For designing foundations to resist lateral loads, a base friction coefficient of 0.35 can be used. Passive earth pressures acting on the sides of the footings can also be considered. We recommend calculating this lateral resistance using an equivalent fluid weight of 350 pounds per cubic foot (pcf). We recommend not including the upper 12 inches of soil in this computation because it can be affected by weather or disturbed by future grading activity. This value assumes the foundations will be constructed neat against competent native soil or the excavations are backfilled with structural fill, as described in Section 4.2 of this report. The recommended passive and friction values include a safety factor of 1.5.

4.5 Slab-on-Grade Floors

Slabs on grade may be supported on subgrade prepared as recommended in Section 4.2 of this report. Immediately below the floor slabs, we recommend placing a four-inch thick capillary break layer of clean, free-draining, coarse sand or fine gravel that has less than five percent passing the No. 200 sieve. This material will reduce the potential for upward capillary movement of water through the underlying soil and subsequent wetting of the floor slabs.

Installation of a capillary break layer will not be necessary where the floor subgrade is composed of the clean native outwash or structural fill comprised of the clean outwash. A representative of Terra Associates should observe the subgrade at the time of construction to verify this condition and determine if an imported capillary break layer is required.

The capillary break layer will not prevent moisture intrusion through the slab caused by water vapor transmission. Where moisture by vapor transmission is undesirable, such as covered floor areas, a common practice is to place a durable plastic membrane on the capillary break layer and then cover the membrane with a layer of clean sand or fine gravel to protect it from damage during construction, and aid in uniform curing of the concrete slab. It should be noted that if the sand or gravel layer overlying the membrane is saturated prior to pouring the slab, it will be ineffective in assisting in uniform curing of the slab, and can actually serve as a water supply for moisture transmission through the slab and affecting floor coverings. Therefore, in our opinion, covering the membrane with a layer of sand or gravel should be avoided if floor slab construction occurs during the wet winter months and the layer cannot be effectively drained. We recommend floor designers and contractors refer to the current American Concrete Institute (ACI) guides for slab construction for further information regarding vapor barrier installation below slab-on-grade floors.

For design of the floor slab to support product loading or fork-lift traffic, a subgrade modulus (k_s) of 100 pounds per cubic inch (pci) can be used.

4.6 Stormwater Facilities

Site stormwater will be collected and directed to one of five stormwater ponds throughout the site. Pond #1 has a bottom elevation of 206.26 feet with a top of berm elevation of 213.26 feet. Pond #2 has a bottom elevation of 214 feet with a top of berm elevation of elevation 221 feet. Pond #3 has a bottom elevation of 220.42 feet with a top of berm elevation of elevation 227.42 feet. Pond #4 has a bottom elevation of 216 feet with a top of berm elevation of elevation 224 feet. Pond #5 has a bottom elevation of 210 feet with a top of berm elevation of elevation 217 feet. The ponds will be formed by a combination of excavation below grade and minor fills to construct pond berms.

If fill berms will be constructed, the berm locations should be stripped of topsoil, duff, and soils containing organic material prior to the placement of fill. The fill berms should be constructed by placing structural fill in accordance with recommendations outlined in Section 4.2 of this report. Material used to construct pond berms should consist of predominately granular soils with a maximum size of 3 inches and a minimum of 20 percent fines. Terra Associates, Inc. should examine and test all onsite or imported materials proposed for use as berm fill prior to their use.

Because of exposure to fluctuating stored water levels and wave action, soils exposed on the interior side slopes of the ponds may be subject to some risk of periodic shallow instability or sloughing. Establishing interior slopes at a 3:1 gradient will significantly reduce or eliminate this potential. Exterior berm slopes and interior slopes above the maximum water surface should be graded to a finished inclination no steeper than 2:1. Finished slope faces should be thoroughly compacted and vegetated to guard against erosion.

4.7 Infiltration Feasibility

Based on our observations, the native outwash sands and gravels observed below the existing fill material will support infiltration of the project site stormwater. Stormwater infiltration facility design will need to consider the expected seasonal high groundwater level as a potential barrier layer from which the minimum required separation distance of five feet from the facility's base is maintained. Based on our groundwater study we recommend using the following seasonal high table for each pond.

Pond Number	Approximate Seasonal High Groundwater Elevation (feet)	Proposed Bottom of Pond Elevation (feet)	Separation (feet)
1	197	206.26	9
2	208	214	6
3	213	220.42	7
4	211	216	5
5	197	210	13

Based on the estimated seasonal high groundwater elevations and the proposed bottom of pond elevation there is a sufficient separation between the bottom of the facility and the seasonal high groundwater. Therefore, the site can be constructed as shown on the plans.

We used Soil Grain Size Analysis Method as outlined in Volume III Section 3.3.6 of the 2014 Washington State Department of Ecology Stormwater Management Manual for Western Washington, to determine a preliminary long-term design infiltration rate. This method correlates the saturated hydraulic conductivity with the D10, D60, and D90 particle sizes determined from gradation testing of the soils in accordance with ASTM Test Designation D-422. The D10 particle size represents the grain size below, ten percent of the soil is smaller in size. The D60 particle size represents the grain size below, 60 percent of the soil is smaller in size. The D90 particle size represents the grain size below, 90 percent of the soil is smaller in size. The particle sizes are put in the Massman formula to determine the saturated hydraulic conductivity. Gradation curves from laboratory testing on the soils are in Appendix A. Based on the results of the testing, a long-term design infiltration rate of ten inches per hour can be used for the gravel layers.

A representative of Terra Associates, Inc should observe the subgrade of the facilities during construction to ensure the material is consistent with the expected soil conditions.

The permeability of the native outwash soils will be significantly impacted by the intrusion of soil fines (silt- and clay-sized particles). A relatively minor amount of soil fines can reduce the permeability of the formation by a factor of ten. The greatest exposure to soil fines contamination will occur during mass grading and construction. Therefore, we recommend the Temporary Erosion and Sedimentation Control (TESC) plans route construction stormwater to a location other than the permanent infiltration facility.

4.8 Drainage

Surface

Final exterior grades should promote free and positive drainage away from the site at all times. Water must not be allowed to pond or collect adjacent to foundations or within the immediate building areas. We recommend providing a positive drainage gradient away from the building perimeters. If this gradient cannot be provided, surface water should be collected adjacent to the structures and disposed to appropriate storm facilities.

Subsurface

With positive drainage away from the building provided and with paved surfaces extending to the building perimeter, in our opinion, customary installation of the perimeter foundation drains would not be required. Foundation drains should be installed, where positive drainage is not provided or where soft landscaping will occur at the building perimeter. The drains can consist of 4-inch diameter perforated PVC pipe that is enveloped in washed ½- to ¾-inch gravel-sized drainage aggregate. The aggregate should extend six inches above and to the sides of the pipe. The drains can be laid to grade at an invert elevation equivalent to the bottom of footing grade. The foundation drains and roof downspouts should be tightlined separately to an approved point of controlled discharge. All drains should be provided with cleanouts at easily accessible locations. These cleanouts should be serviced at least once each year.

4.9 Utilities

Utility pipes should be bedded and backfilled in accordance with American Public Works Association (APWA) or the local jurisdiction's specifications. As a minimum, trench backfill should be placed and compacted as structural fill, as described in Section 4.2 of this report. The sands and gravels should be suitable to reuse as structural fill in most weather conditions.

4.10 Pavements

Pavement subgrades should be prepared as described in Section 4.2 of this report. Regardless of the degree of relative compaction achieved, the subgrade must be firm and relatively unyielding before paving. The subgrade should be proofrolled with heavy rubber-tired construction equipment, such as a loaded 10 yard dump truck to verify this condition.

The pavement design section is dependent upon the supporting capability of the subgrade soils and the traffic conditions to which it will be subjected. We expect traffic at the facility will consist of cars and light trucks, along with heavy traffic in the form of semi-trucks. For design considerations, we have assumed traffic in parking and in car/light truck access pavement areas can be represented by an 18-kip Equivalent Single Axle Loading (ESAL) of 50,000 over a 20-year design life. For heavy traffic pavement areas, we have assumed an ESAL of 300,000 would be representative of the expected loading. These ESALs represent loading approximately equivalent to 3 and 18, loaded (80,000-pound GVW) rigs traversing the pavement daily in each area, respectively.

With a stable subgrade prepared as recommended, we recommend the following pavement sections:

Light Traffic and Parking:

- Two inches of hot mix asphalt (HMA) over four inches of crushed rock base (CRB)
- Full depth HMA – 3½ inches

Heavy Traffic:

- Three inches of HMA over six inches of CRB
- Full depth HMA – 5 inches

For exterior Portland cement concrete (PCC) pavement, we recommend the following:

- 6 inches of PCC over two inches of CRB
    - 28 day compressive strength – 4,000 psi
    - Control joints spaced at a maximum of 15 feet

The paving materials used should conform to the Washington State Department of Transportation (WSDOT) specifications for ½-inch class HMA, PCC, and CRB.

Long-term pavement performance will depend on surface drainage. A poorly-drained pavement section will be subject to premature failure as a result of surface water infiltrating the subgrade soils and reducing their supporting capability. For optimum performance, we recommend surface drainage gradients of at least two percent. Some degree of longitudinal and transverse cracking of the pavement surface should be expected over time. Regular maintenance should be planned to seal cracks as they occur.

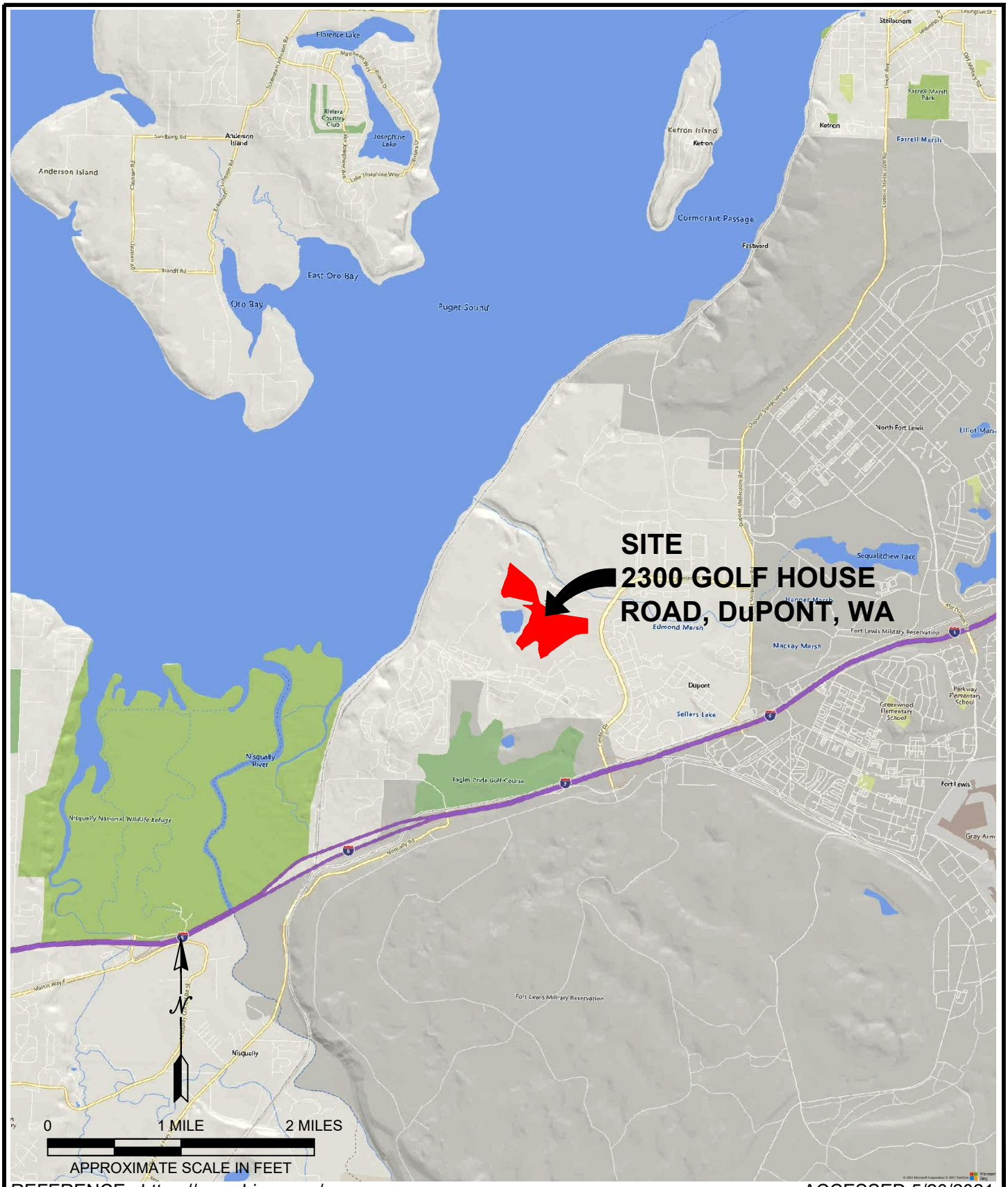
5.0 ADDITIONAL SERVICES

Terra Associates, Inc. should review project designs and specifications to verify that earthwork and foundation recommendations have been properly interpreted and incorporated into project design. We should also provide geotechnical services during construction to observe compliance with our design concepts, specifications, and recommendations. This will allow for expedient design changes if subsurface conditions differ from those anticipated prior to the start of construction.

6.0 LIMITATIONS

We prepared this report in accordance with generally accepted geotechnical engineering practices. No other warranty, expressed or implied, is made. This report is the copyrighted property of Terra Associates, Inc. and is intended for specific application to the Founder's Ridge project in DuPont, Washington. This report is for the exclusive use of NorthPoint Development and their authorized representatives.

The analyses and recommendations presented in this report are based on data obtained from the subsurface explorations completed onsite. Variations in soil conditions can occur, the nature and extent of which may not become evident until construction. If variations appear evident, Terra Associates, Inc. should be requested to reevaluate the recommendations in this report prior to proceeding with construction.

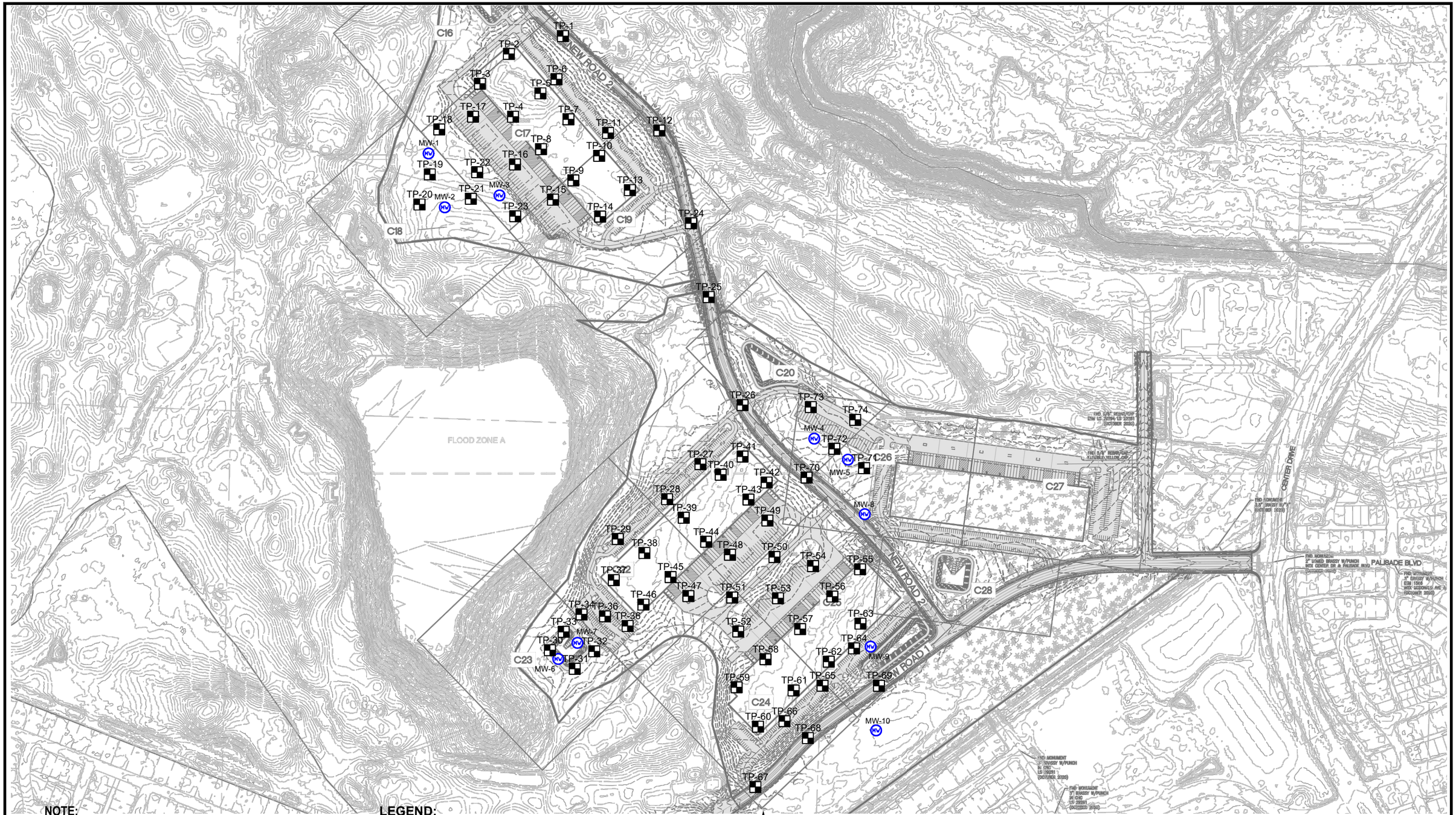


REFERENCE: https://www.bing.com/maps ACCESSED 5/20/2021

Terra Associates, Inc.
Consultants in Geotechnical Engineering
Geology and
Environmental Earth Sciences

VICINITY MAP
FOUNDERS RIDGE
DuPONT, WASHINGTON

Proj.No. T-8399	Date: MAY 2021	Figure 1



NOTE:

THIS SITE PLAN IS SCHEMATIC. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE. IT IS INTENDED FOR REFERENCE ONLY AND SHOULD NOT BE USED FOR DESIGN OR CONSTRUCTION PURPOSES.

REFERENCE: SITE PLAN PROVIDED BY BARGHAUSEN.

LEGEND:

APPROXIMATE TEST PIT LOCATION

APPROXIMATE MONITORING WELL LOCATION

0 400 800

APPROXIMATE SCALE IN FEET

N

Terra Associates, Inc.

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Geology and
Environmental Earth Sciences

EXPLORATION LOCATION PLAN
FOUNDERS RIDGE
DuPONT, WASHINGTON

Proj.No. T-8399	Date: MAY 2021	Figure 2

APPENDIX A
FIELD EXPLORATION AND LABORATORY TESTING

Founder's Ridge
DuPont, Washington

On September 14, 2020 through September 17, 2020, we explored subsurface conditions at the site by excavating 74 test pits to maximum depths of about 15 feet below existing surface grades using a track-mounted excavator. On September 24, September 25, and September 28, 2020, we drilled 10 test borings to maximum depths of approximately 21.5 feet below current site grades. The Test Pit and Test Boring locations were approximately determined in the field using GPS coordinates and by pacing and sighting from existing site features. The approximate locations of the Test Borings and Test Pits are shown on the attached Exploration Location Plan, Figure 2. Test Boring Logs and Test Pit Logs are attached as Figures A-2 through A-85.

A geotechnical engineer from our office conducted the field exploration. Our representative classified the soil conditions encountered, maintained a log of each test pit and test boring, obtained representative soil samples, and recorded water levels observed during subsurface exploration. During drilling, soil samples were obtained in general accordance with ASTM Test Designation D-1586. Using this procedure, a 2-inch (outside diameter) split barrel sampler is driven into the ground 18 inches using a 140-pound hammer free falling a height of 30 inches. The number of blows required to drive the sampler 12 inches after an initial 6-inch set is referred to as the Standard Penetration Resistance value or N value. This is an index related to the consistency of cohesive soils and relative density of cohesionless materials. N values obtained for each sampling interval are recorded on the Test Boring Logs, Figures A-76 through A-85. All soil samples were visually classified in accordance with the Unified Soil Classification System (USCS) described on Figure A-1.

Representative soil samples obtained from the test borings and test pits were placed in closed containers and taken to our laboratory for further examination and testing. The moisture content of each sample was measured and is reported on the individual Test Boring or Test Pit Logs. Grain size analysis were completed on select samples. Grain size analyses results are shown on Figures A-86 through A-88.

MAJOR DIVISIONS			LETTER SYMBOL	TYPICAL DESCRIPTION
COARSE GRAINED SOILS: More than 50% material larger than No. 200 sieve size	**GRAVELS** More than 50% of coarse fraction is larger than No. 4 sieve	Clean Gravels (less than 5% fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines.
			GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines.
		Gravels with fines	GM	Silty gravels, gravel-sand-silt mixtures, non-plastic fines.
			GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines.
	SANDS More than 50% of coarse fraction is smaller than No. 4 sieve	Clean Sands (less than 5% fines)	SW	Well-graded sands, sands with gravel, little or no fines.
			SP	Poorly-graded sands, sands with gravel, little or no fines.
		Sands with fines	SM	Silty sands, sand-silt mixtures, non-plastic fines.
			SC	Clayey sands, sand-clay mixtures, plastic fines.
FINE GRAINED SOILS: More than 50% material smaller than No. 200 sieve size	**SILTS AND CLAYS** Liquid Limit is less than 50%		ML	Inorganic silts, rock flour, clayey silts with slight plasticity.
			CL	Inorganic clays of low to medium plasticity. (Lean clay)
			OL	Organic silts and organic clays of low plasticity.
	SILTS AND CLAYS Liquid Limit is greater than 50%		MH	Inorganic silts, elastic.
			CH	Inorganic clays of high plasticity. (Fat clay)
			OH	Organic clays of high plasticity.
HIGHLY ORGANIC SOILS			PT	Peat.

DEFINITION OF TERMS AND SYMBOLS

COHESIONLESS

Density	Standard Penetration Resistance in Blows/Foot
Very Loose	0-4
Loose	4-10
Medium Dense	10-30
Dense	30-50
Very Dense	>50

COHESIVE

Consistancy	Standard Penetration Resistance in Blows/Foot
Very Soft	0-2
Soft	2-4
Medium Stiff	4-8
Stiff	8-16
Very Stiff	16-32
Hard	>32

I	2" OUTSIDE DIAMETER SPILT SPOON SAMPLER
II	2.4" INSIDE DIAMETER RING SAMPLER OR SHELBY TUBE SAMPLER
▼	WATER LEVEL (Date)
Tr	TORVANE READINGS, tsf
Pp	PENETROMETER READING, tsf
DD	DRY DENSITY, pounds per cubic foot
LL	LIQUID LIMIT, percent
PI	PLASTIC INDEX
N	STANDARD PENETRATION, blows per foot

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UNIFIED SOIL CLASSIFICATION SYSTEM
FOUNDERS RIDGE
DuPONT, WASHINGTON

Proj.No. T-8399	Date: MAY 2021	Figure A-1

LOG OF TEST PIT NO. TP-1

FIGURE A-2

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Heavy Grass/Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 15, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 4.5 to 14 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		Brown silty SAND, fine to medium sand, dry, scattered gravel and roots. (SM)		4.9
2		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry, cobbles. (GP)	Medium Dense	
9		*Fainting mottling observed.		
12		Gray/brown sandy GRAVEL, medium to coarse sand, fine to coarse gravel, moist, cobbles, trace silt. (GW)		
14		Test pit terminated at approximately 14 feet. No groundwater seepage observed. Moderate caving observed from 4.5 to 14 feet.		2.9
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-2

FIGURE A-3

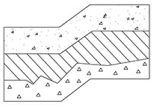
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Vegetation, Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 15, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 7.5 to 13 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(12 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3				
4				1.6
5				
6				
7			Medium Dense	
8		Gray/brown sandy GRAVEL, medium to coarse sand, fine to coarse gravel, moist to wet, cobbles, trace silt. (GP)		
9				
10				
11				
12				
13				5.4
14		Test pit terminated at approximately 13 feet. No groundwater seepage observed. Moderate caving observed from 7.5 to 13 feet.		
15				
16				
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-3

FIGURE A-4

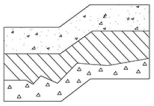
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 15, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 11 to 13 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(6 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				1.6
3				
4				
5				
6			Medium Dense	
7				
8				
9				
10				
11		Gray/brown sandy GRAVEL to gravelly SAND, medium to coarse sand, fine to coarse gravel, moist to wet, cobbles, trace silt. (GP/SP)		
12				
13				3.7
14		Test pit terminated at approximately 13 feet. No groundwater seepage observed. Moderate caving observed from 11 to 13 feet.		
15				
16				
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-4

FIGURE A-5

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Weeds/Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 15, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** N/A

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0–1		Brown SILT with sand and gravel, fine to medium sand, fine to medium gravel, dry, scattered roots. (ML)		4.2
2–5		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
6–13		Gray/brown sandy GRAVEL to gravelly SAND, medium to coarse sand, fine to coarse gravel, moist to wet, cobbles, trace silt. (GP/SP)	Medium Dense	
14				3.6
15–20		Test pit terminated at approximately 14 feet. No groundwater seepage observed. No caving.		

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-5

FIGURE A-6

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Grass, Vegetation **APPROX. ELEV:** N/A

DATE LOGGED: September 15, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 3 to 9 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(10 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3				
4		*Scattered roots observed to 4 feet.		
5				
6			Medium Dense	
7				
8		*Faint mottling observed.		
9		Gray/brown sandy GRAVEL to gravelly SAND, medium to coarse sand, fine to coarse gravel, moist, cobbles, trace silt. (GP/SP)		
10				
11				
12				
13		Test pit terminated at approximately 13 feet. No groundwater seepage observed. Minor caving from 3 to 9 feet.		5.0
14				
15				
16				
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-6

FIGURE A-7

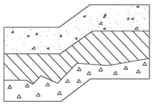
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 15, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 3 to 8 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(8 inches GRAVELLY TOPSOIL)		
1		Light brown/gray GRAVEL, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3				
4				
5				
6				
7			Medium Dense	
8		Gray/brown sandy GRAVEL, medium to coarse sand, fine to coarse gravel, moist, cobbles, trace silt. (GP)		
9				
10				
11				
12				
13				
14				
15				5.0
16		Test pit terminated at approximately 15 feet. No groundwater seepage observed. Minor caving observed from 3 to 8 feet.		
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-7

FIGURE A-8

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 16, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 12 to 15 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(12 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3				
4				
5		Gray/brown sandy GRAVEL, fine to medium sand, fine to coarse gravel, moist to wet, cobbles, trace silt. (GP)		
6				
7			Medium Dense	
8				
9				
10				
11				
12				
13				
14				
15				5.2
16		Test pit terminated at approximately 15 feet. No groundwater seepage observed. Minor caving observed from 12 to 15 feet.		
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-8

FIGURE A-9

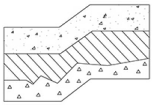
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Sparse Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 16, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 0 to 13 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(10 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3			Loose to Medium Dense	
4				
5				
6				
7		Brown/gray SAND with gravel, fine to medium sand, fine to medium gravel, moist, trace silt. (SP)		
8				
9				
10			Medium Dense	5.7
11		Gray/brown sandy GRAVEL to gravelly SAND, medium to coarse sand, fine to coarse gravel, moist, cobbles, trace silt. (GP/SP)		
12				
13				5.1
14		Test pit terminated at approximately 13 feet. No groundwater seepage observed. Moderate caving observed from 0 to 13 feet.		
15				
16				
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-9

FIGURE A-10

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Thick Grass **APPROX. ELEV:** N/A

DATE LOGGED: September 16, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 8 to 14 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0–7		FILL(?): Dark brown SILT with gravel and sand, fine to medium sand, fine to medium gravel, dry, scattered, roots and organic inclusions. (ML) Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)	Medium Dense	
7–14		Gray/brown sandy GRAVEL to gravelly SAND, fine to medium sand, coarse gravel, moist, cobbles. (GP/SP)	Medium Dense	6.4
14–20		Test pit terminated at approximately 14 feet. No groundwater seepage observed. Minor caving observed from 8 to 14 feet.		

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-10

FIGURE A-11

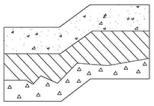
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 16, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 11 to 14 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(12 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3				
4				
5				
6				
7			Medium Dense	
8		Gray/brown sandy GRAVEL with silt, fine to medium sand, fine to coarse gravel, moist, cobbles. (GP-GM)		
9				
10				
11		Gray/brown sandy GRAVEL to gravelly SAND, fine to medium sand, fine to coarse gravel, moist, cobbles, trace silt. (GP, SP)		
12				
13				
14				5.1
15		Test pit terminated at approximately 14 feet. No groundwater seepage observed. Minor caving observed from 11 to 14 feet.		
16				
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-11

FIGURE A-12

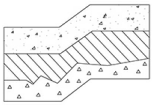
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 16, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 13 to 15 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(10 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3		*Scattered roots observed to 3 feet.		
4				
5				
6				
7		Gray/brown sandy GRAVEL, fine to medium sand, fine to coarse gravel, moist to wet, cobbles, trace silt. (GP)	Medium Dense	
8				
9				
10				
11				
12				
13				
14				
15				3.9
16		Test pit terminated at approximately 15 feet. No groundwater seepage observed. Minor caving observed from 13 to 15 feet.		
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-12

FIGURE A-13

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Vegetation **APPROX. ELEV:** N/A

DATE LOGGED: September 15, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** N/A

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(6 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3				
4				
5				
6				
7			Medium Dense	
8		*Faint mottling observed.		
9				
10		Gray/brown sandy GRAVEL to gravelly SAND, fine to coarse sand, coarse gravel, moist, cobbles, trace silt. (GP/SP)		
11				
12				
13				
14				4.9
15		Test pit terminated at approximately 14.5 feet. No groundwater seepage observed. No caving.		
16				
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-13

FIGURE A-14

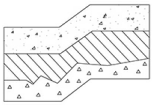
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Grass, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 16, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 3 to 5 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(11 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3				
4		*Roots observed to 4.5 feet.		
5		Gray/brown sandy GRAVEL, fine to medium sand, fine to coarse gravel, moist to wet, cobbles, trace silt. (GP)		
6				
7			Medium Dense	
8				
9				
10				
11				
12				
13				
14				
15				4
16		Test pit terminated at approximately 15 feet. No groundwater seepage observed. Minor caving observed from 3 to 5 feet.		
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-14

FIGURE A-15

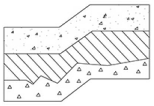
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Cobbles, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 16, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 12 to 15 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(5 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3				
4				
5		*Scattered roots observed to 7 feet.		
6				
7			Medium Dense	
8		Gray/brown sandy GRAVEL, fine to medium sand, fine to coarse gravel, moist to wet, cobbles, trace silt. (GP)		
9				
10				
11				
12				
13				
14				6.4
15		Test pit terminated at 15 feet prior to caving.		
16		No groundwater seepage observed.		
17		Moderate caving observed from 12 to 15 feet.		
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-15

FIGURE A-16

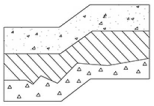
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Grass, Sparse Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 15, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 8 to 15 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(10 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3				
4				
5		*Scattered roots observed to 7 feet.		
6				
7			Medium Dense	
8		Gray/brown sandy GRAVEL to gravelly SAND, medium to coarse sand, fine to coarse gravel, moist, cobbles, trace silt. (GP, SP)		
9				
10				
11				
12				
13				
14				
15				3.7
16		Test pit terminated at approximately 15 feet. No groundwater seepage observed. Moderate caving observed from 8 to 15 feet.		
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-16

FIGURE A-17

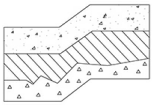
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Grass, Sparse Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 16, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 3 to 5, 7 to 10 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(12 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3		*Faint mottling observed to 5 feet.		
4				
5				
6				
7		Brown SAND, fine to medium sand, moist, trace silt. (SP)	Medium Dense	
8				
9				
10		Gray/brown sandy GRAVEL, fine to medium sand, fine to coarse gravel, moist, cobbles, trace silt. (GP)		
11				
12				
13				
14				
15				4.9
16		Test pit terminated at approximately 15 feet. No groundwater seepage observed. Moderate caving observed from 3 to 5 feet and 7 to 10 feet.		
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-17

FIGURE A-18

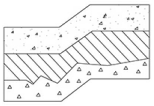
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Grass, Sparse Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 15, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** N/A

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(10 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3				
4				
5				2.1
6				
7			Medium Dense	
8				
9				
10		Gray/brown sandy GRAVEL, fine to medium sand, fine to coarse gravel, moist to wet, cobbles, trace silt. (GP)		
11				
12				
13				
14				
15		Test pit terminated at approximately 14.5 feet. No groundwater seepage observed. No caving.		4.9
16				
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-18

FIGURE A-19

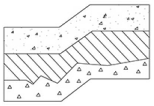
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Grass, Sparse Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 15, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** N/A

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(10 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3				
4				
5				
6		Interbedded gray/brown sandy GRAVEL and gravelly SAND, medium to coarse sand, fine to coarse gravel, moist, cobbles, some silt. (GW/SP)	Medium Dense	
7				
8				
9		Gray/brown sandy GRAVEL to gravelly SAND, fine to medium sand, fine to coarse gravel, moist to wet, cobbles, trace silt. (GP/SP)		
10				
11				
12				
13				
14		Test pit terminated at approximately 14 feet. No groundwater seepage observed. No caving.		3.5
15				
16				
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-19

FIGURE A-20

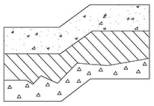
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 15, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 2 to 8 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(10 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to medium sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3				
4				
5				
6				
7			Medium Dense	
8		Gray/brown sandy GRAVEL to gravelly SAND, medium to coarse sand, fine to coarse gravel, moist, cobbles, trace silt. (GP/SP)		
9				
10				
11				
12				
13				
14				3.8
15		Test pit terminated at approximately 14 feet. No groundwater seepage observed. Minor caving observed from 2 to 8 feet.		
16				
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-20

FIGURE A-21

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 15, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 6.5 to 13.5 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0–6		(10 inches GRAVELLY TOPSOIL) Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry, cobbles, trace silt. (GP)		
6–13		Gray/brown sandy GRAVEL to gravelly SAND, medium to coarse sand, fine to coarse gravel, moist, cobbles, trace silt. (GP/SP)	Medium Dense	4
13–20		Test pit terminated at approximately 13.5 feet. No groundwater seepage observed. Minor caving observed from 6.5 to 13.5 feet.		

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-21

FIGURE A-22

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Grass, Vegetation **APPROX. ELEV:** N/A

DATE LOGGED: September 15, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 12 to 15.5 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(11 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry, cobbles, trace silt. (GP)		
2				
3				
4		Interbedded gray/brown sandy GRAVEL and gravelly SAND, medium to coarse sand, fine to coarse gravel, moist, mottled, cobbles, some silt. (GW/SP)		
5				
6				
7		Gray/brown sandy GRAVEL to gravelly SAND, fine to medium sand, fine to coarse gravel, moist to wet, cobbles, trace silt. (GP/SP)	Medium Dense	
8				
9				
10				
11				
12				
13				
14				
15				5.3
16		Test pit terminated at approximately 15.5 feet. No groundwater seepage observed. Moderate caving observed from 12 to 15.5 feet.		
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-22

FIGURE A-23

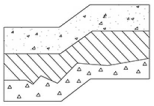
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Grass, Sparse Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 15, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** N/A

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		FILL: Brown/light brown sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry, cobbles, trace silt. (GP)		
1				
2		*3-inch diameter metal pipe observed at 2 feet.		
3		Interbedded gray/brown sandy GRAVEL and gravelly SAND, medium to coarse sand, fine to coarse gravel, moist, mottled, cobbles, some silt. (GW/SP)		
4				
5				
6				
7			Medium Dense	
8				
9		Gray/brown sandy GRAVEL to gravelly SAND, medium to coarse sand, fine to coarse gravel, moist, cobbles, trace silt. (GP/SP)		
10				
11				
12				
13				
14				
15				4.6
16		Test pit terminated at approximately 15 feet. No groundwater seepage observed. No caving.		
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-23

FIGURE A-24

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 15, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 13 to 15 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0–2		FILL(?): Brown sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry, cobbles, trace silt. (GP)	Medium Dense	
2–12		Interbedded gray/brown sandy GRAVEL and gravelly SAND, medium to coarse sand, fine to coarse gravel, moist, mottled, cobbles, some silt. (GW/SP)		
12–15		Gray GRAVEL with sand, fine to medium sand, fine to coarse gravel, moist, cobbles, trace silt. (GP)		3.4
15–20		Test pit terminated at approximately 15 feet. No groundwater seepage observed. Moderate caving observed from 13 to 15 feet.		

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-24

FIGURE A-25

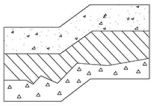
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Thick Grass **APPROX. ELEV:** N/A

DATE LOGGED: September 16, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 6 to 7 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(12 inches GRAVELLY TOPSOIL)		
1		FILL: Dark brown gravelly SILT, coarse gravel, dry, trace sand. (ML)		
2				
3				
4		FILL: Black silty SAND with gravel, fine to medium sand, fine to coarse gravel, moist. (SM)		
5				5.4
6		*Approximate 1-foot layer of brown sand observed at 6 feet.		
7			Medium Dense	
8		Gray/brown sandy GRAVEL, fine to medium sand, fine to coarse gravel, moist to wet, cobbles. (GP)		
9				
10				
11				
12				
13				
14				
15				5.9
16		Test pit terminated at approximately 15 feet. No groundwater seepage observed. Minor caving observed from 6 to 7 feet.		
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-25

FIGURE A-26

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Grass, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 16, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 12 to 15 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(8 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, faintly mottled, trace silt. (GP)		
2				
3				
4				
5				
6		*Scattered roots observed to 6 feet.		
7				
8			Medium Dense	
9				
10				
11				
12		Gray/brown sandy GRAVEL, fine to medium sand, fine to coarse gravel, moist, cobbles, trace silt. (GP)		
13				
14				
15				5.2
16		Test pit terminated at approximately 15.5 feet. No groundwater seepage observed. Moderate caving observed from 12 to 15 feet.		
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-26

FIGURE A-27

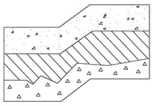
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Grass **APPROX. ELEV:** N/A

DATE LOGGED: September 16, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 0 to 14 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(6 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, faintly mottled, trace silt. (GP)		
2				
3				
4				
5				
6				
7			Medium Dense	
8				
9				
10		Gray/brown sandy GRAVEL to gravelly SAND, fine to medium sand, coarse gravel, moist, cobbles, trace silt. (GP/SP)		
11				
12				
13				
14				3.5
15		Test pit terminated at approximately 14 feet. No groundwater seepage observed. Moderate caving observed from 0 to 14 feet.		
16				
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-27

FIGURE A-28

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Vegetation **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 0 to 10 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(5 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry, cobbles, trace silt. (GP)		
2				
3			Loose	
4				
5				
6				2
6		Gray/brown sandy GRAVEL to gravelly SAND, medium to coarse sand, fine to coarse gravel, moist, cobbles. (GP/SP)		
7				
8			Medium Dense	
9				
10				4.4
10		Test pit terminated at approximately 10 feet. No groundwater seepage observed. Heavy caving observed from 0 to 10 feet.		
11				
12				
13				
14				
15				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-28

FIGURE A-29

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Vegetation **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 0 to 10 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(5 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry, cobbles, trace silt. (GP)		
2				
3			Loose	
4				
5				2.6
6		Gray/brown sandy GRAVEL to gravelly SAND, fine to medium sand, coarse gravel, dry to moist, cobbles, trace silt. (GP/SP)		
7				
8			Loose to Medium Dense	
9				
10		Test pit terminated at approximately 10 feet.		1.3
11		No groundwater seepage observed. Heavy caving observed from 0 to 10 feet.		
12				
13				
14				
15				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-29

FIGURE A-30

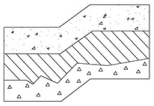
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Vegetation **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 5 to 10 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(6 inches GRAVELLY TOPSOIL)		
1		Brown silty SAND to SAND with silt, fine to medium sand, dry. (SM/SP-SM)		
2		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry, cobbles, trace silt. (GP)		5.8
3				
4				
5		Gray/brown sandy GRAVEL to gravelly SAND, fine to medium sand, fine to coarse gravel, moist, cobbles. (GP/SP)	Medium Dense	3.2
6				
7				
8				
9				
10		Test pit terminated at approximately 10 feet. No groundwater seepage observed. Moderate caving observed from 5 to 10 feet.		2.7
11				
12				
13				
14				
15				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-30

FIGURE A-31

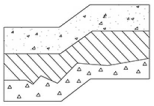
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 0 to 7 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(3 inches GRAVELLY TOPSOIL) Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)	Loose	
7		Test pit terminated at approximately 7 feet. No groundwater seepage observed. Heavy caving observed from 0 to 7 feet.		1.4
10				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-31

FIGURE A-32

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 0 to 7.5 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(3 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, some mottling, trace silt. (GP)		
2				
3				
4			Loose	
5				
6				
7				1.4
8		Test pit terminated at approximately 7.5 feet. No groundwater seepage observed. Heavy caving observed from 0 to 7.5 feet.		
9				
10				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-32

FIGURE A-33

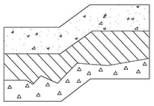
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Vegetation, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** N/A

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(3 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry, cobbles, trace silt. (GP)		
2				
3				
4				
5		Gray GRAVEL with sand and silt, fine to medium sand, fine to coarse gravel, moist. (GP-GM)	Medium Dense	
6				
7				
8				
9				
10		Black/dark brown silty SAND with gravel, fine to medium sand, coarse gravel, moist, trace gray clay. (SM)		4.4
11				
12				10.3
13				
14				8.6
15		Test pit terminated at approximately 14.5 feet. No groundwater seepage observed. No caving.		
16				
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-33

FIGURE A-34

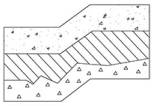
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 2-6, 10-12 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(4 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3			Loose to Medium Dense	
4				
5				
6				
7		Gray/brown sandy GRAVEL to gravelly SAND, fine to coarse sand, fine to coarse gravel, moist, cobbles, trace silt. (GP/SP)		
8				
9			Medium Dense	4.9
10				
11				
12				3.5
13		Test pit terminated at approximately 12 feet. No groundwater seepage observed. Minor caving observed from 2 to 6 feet and 10 to 12 feet.		
14				
15				
16				
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-34

FIGURE A-35

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 7 to 10 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(4 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3				
4				
5			Medium Dense	2.2
6				
7		Gray/brown sandy GRAVEL to gravelly SAND, fine to coarse sand, fine to coarse gravel, moist, cobbles. (GP/SP)		
8				
9				
10				
11		Test pit terminated at approximately 10.5 feet. No groundwater seepage observed. Slight caving observed from 7 to 10 feet.		2.8
12				
13				
14				
15				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-35

FIGURE A-36

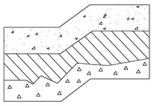
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Light Vegetation **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** N/A

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(4 inches GRAVELLY TOPSOIL)		
1		Light brown/gray GRAVEL with sand, fine to medium sand, fine to coarse gravel, dry to moist, cobbles. (GP)		
2		*Scattered roots observed to 2 feet.		
3				
4				
5		Gray/brown sandy GRAVEL, fine to medium sand, coarse gravel, moist, cobbles, trace silt. (GP)	Medium Dense	2.3
6				
7				
8				
9				
10		Test pit terminated at approximately 10 feet. No groundwater seepage observed. No caving.		2.3
11				
12				
13				
14				
15				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-36

FIGURE A-37

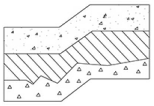
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** N/A

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(2 nches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry, cobbles, trace mottling, trace silt. (GP)		
2		*Scattered roots observed to 1-foot.		
3				
4				
5			Medium Dense	2.5
6		Gray/brown sandy GRAVEL to gravelly SAND, fine to medium sand, fine to coarse gravel, moist, cobbles. (GP/SP)		
7				
8				
9				
10				3.4
11		Test pit terminated at approximately 10 feet. No groundwater seepage observed. No caving.		
12				
13				
14				
15				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-37

FIGURE A-38

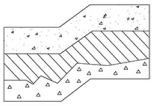
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 10 to 12 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(3 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, mottled, trace silt. (GP)		
2				
3				
4				
5				
6			Medium Dense	
				3.9
7		Gray/brown sandy GRAVEL to gravelly SAND, fine to medium sand, fine to coarse gravel, moist, cobbles, trace silt. (GP/SP)		
8				
9				
10				
11				
12				3.6
		Test pit terminated at approximately 12 feet. No groundwater seepage observed. Moderate caving observed from 10 to 12 feet.		
13				
14				
15				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-38

FIGURE A-39

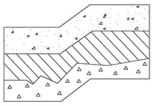
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 5 to 11 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(5 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry, cobbles, trace silt. (GP)		
2				
3				
4				
5				
			Medium Dense	1.9
6		Gray/brown sandy GRAVEL to gravelly SAND, fine to medium sand, fine to coarse gravel, moist, cobbles. (GP/SP)		
7				
8				
9				
10				
11				2.0
		Test pit terminated at approximately 11 feet. No groundwater seepage observed. Moderate caving observed from 5 to 11 feet.		
12				
13				
14				
15				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-39

FIGURE A-40

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Vegetation **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 0.5 to 10 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(4 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3			Loose to Medium Dense	
4				
5				2.1
6				
7		Gray/brown sandy GRAVEL to gravelly SAND, fine to medium sand, fine to coarse gravel, moist, cobbles. (GP/SP)		
8			Medium Dense	
9				
10		Test pit terminated at approximately 10 feet. No groundwater seepage observed. Heavy caving observed from 0.5 to 7 feet, moderate caving observed from 7 to 10 feet.		3.4
11				
12				
13				
14				
15				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-40

FIGURE A-41

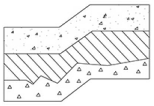
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Vegetation **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 1 to 11 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		FILL(?): Dark brown SILT with sand and gravel, fine sand, coarse gravel, dry, scattered roots. (ML)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry, cobbles, trace silt. (GP)		
2				
3				
4				
5				3.4
6			Medium Dense	
7				
8		Gray/brown sandy GRAVEL, fine to medium sand, fine to coarse gravel, moist, cobbles, trace silt. (GP)		
9				
10				2.9
11		Brown GRAVEL with sand, fine to coarse sand, fine to coarse gravel, moist to wet, cobbles, some silt. (GP)		
12				
13				4.3
14		Test pit terminated at approximately 13 feet. No groundwater seepage observed. Moderate caving observed from 1 to 11 feet.		
15				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-41

FIGURE A-42

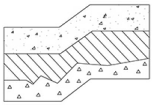
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Grass, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 8 to 14 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(5 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry, cobbles, trace silt, faintly mottled. (GP)		
2				
3				
4				
5				2.1
6		Gray/brown gravelly SAND, fine to medium sand, coarse gravel, moist, cobbles, trace silt. (SP)		
7			Medium Dense	
8				
9				
10		Gray/brown sandy GRAVEL, fine to medium sand, fine to coarse gravel, moist to wet, cobbles, trace silt. (GP)		
11				
12				
13				
14				2.8
15		Test pit terminated at approximately 14 feet. No groundwater seepage observed. Moderate caving observed from 8 to 14 feet.		
16				
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-42

FIGURE A-43

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 16, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 3 to 7 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0–7		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
7–15		Gray/brown sandy GRAVEL, fine to medium sand, fine to coarse gravel, moist to wet, cobbles, trace silt. (GP)	Medium Dense	5.3
15–20		Test pit terminated at approximately 15 feet. No groundwater seepage observed. Moderate caving observed from 3 to 7 feet.		

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-43

FIGURE A-44

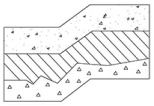
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Vegetation **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 1 to 10 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		FILL(?): Dark brown SILT with sand and gravel, fine sand, coarse gravel, dry, scattered roots. (ML)		
1		Brown/gray GRAVEL with sand, fine to coarse sand, fine to coarse gravel, moist to wet, cobbles, some silt. (GP)		
2				
3				
4				
5			Medium Dense	4.8
6				
7		Gray/brown sandy GRAVEL to gravelly SAND, fine to medium sand, fine to coarse gravel, moist, cobbles, trace silt. (GP, SP)		
8				
9				
10		Test pit terminated at approximately 10 feet. No groundwater seepage observed. Moderate caving observed from 1 to 10 feet.		4.1
11				
12				
13				
14				
15				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-44

FIGURE A-45

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 0 to 10 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry, cobbles, trace silt. (GP)		
1				
2		*Scattered roots observed to 2 feet.		
3			Loose	
4				
5				
6		Gray/brown sandy GRAVEL to gravelly SAND, fine to medium sand, fine to coarse gravel, moist, cobbles, trace silt. (GP/SP)		2.5
7				
8			Medium Dense	
9				
10		Test pit terminated at approximately 10 feet. No groundwater seepage observed. Heavy caving observed from 0 to 6 feet, moderate caving observed from 6 to 10 feet.		2.6
11				
12				
13				
14				
15				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-45

FIGURE A-46

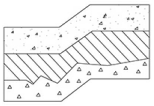
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 7 to 13 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(3 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3				
4				
5				
6		*Scattered roots observed at 6 feet.	Medium Dense	4.3
7				
8				
9				
10				
11				4.8
12		Gray/brown sandy GRAVEL to gravelly SAND, fine to medium sand, fine to coarse gravel, moist, cobbles, trace silt. (GP/SP)		
13				5.1
14		Test pit terminated at approximately 13 feet. No groundwater seepage observed. Slight caving observed from 7 to 13 feet.		
15				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-46

FIGURE A-47

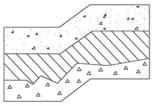
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Sparse Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 9 to 11 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
1				
2		*Scattered roots observed at 2 feet.		
3				
4				
5			Medium Dense	3.5
6				
7		Gray/brown GRAVEL with sand, fine to medium sand, coarse gravel, moist, cobbles, some silt. (GP)		
8		Gray/brown SAND with gravel and silt, fine to medium sand, coarse gravel, moist, cobbles. (SP-SM)		
9				
10				
11				7.6
12		Test pit terminated at approximately 11 feet. No groundwater seepage observed. Moderate caving observed from 9 to 11 feet.		
13				
14				
15				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-47

FIGURE A-48

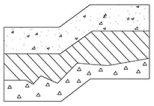
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 7 to 10 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(2 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3				
4				
5		*Scattered roots observed to 5 feet.	Medium Dense	
6				3.3
7		Gray GRAVEL with sand, fine to medium sand, coarse gravel, moist, cobbles, trace silt. (GP)		
8				
9		Gray/brown sandy GRAVEL to gravelly SAND, fine to medium sand, fine to coarse gravel, moist, cobbles, trace silt. (GP/SP)		
10				3.0
11		Test pit terminated at approximately 10.5 feet. No groundwater seepage observed. Moderate caving observed from 7 to 10 feet.		
12				
13				
14				
15				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-48

FIGURE A-49

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Vegetation **APPROX. ELEV:** N/A

DATE LOGGED: September 16, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** N/A

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0–6		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry, cobbles, trace silt. (GP)		
7–15		Gray/brown sandy GRAVEL to gravelly SAND, fine to medium sand, fine to coarse gravel, moist, cobbles, trace silt. (GP/SP)	Medium Dense	4.3
15–20		Test pit terminated at approximately 15 feet. No groundwater seepage observed. No caving.		

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-49

FIGURE A-50

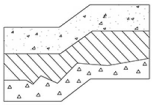
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Vegetation **APPROX. ELEV:** N/A

DATE LOGGED: September 16, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 2 to 6 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(12 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3				
4				
5				
6				
7			Medium Dense	
8		Gray/brown sandy GRAVEL to gravelly SAND, fine to medium sand, fine to coarse gravel, moist, cobbles, trace silt. (GP/SP)		
9				
10				
11				
12				
13				
14				
15				4.5
16		Test pit terminated at approximately 15 feet. No groundwater seepage observed. Moderate caving observed from 2 to 6 feet.		
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-50

FIGURE A-51

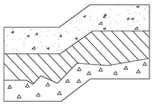
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Vegetation **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 1 to 7 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(8 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry, cobbles, trace silt. (GP)		
2				
3				
4				
5			Medium Dense	2.7
6				
7		Gray/brown sandy GRAVEL to gravelly SAND, fine to medium sand, fine to coarse gravel, moist, cobbles, trace silt. (GP/SP)		
8				
9				
10				3
11		Test pit terminated at approximately 15 feet. No groundwater seepage observed. Moderate caving observed from 1 to 7 feet.		
12				
13				
14				
15				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-51

FIGURE A-52

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Vegetation **APPROX. ELEV:** N/A

DATE LOGGED: September 16, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 7 to 8 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(7 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3				
4				
5				
6				
7			Medium Dense	
8		Gray/brown sandy GRAVEL to gravelly SAND, fine to coarse sand, fine to coarse gravel, moist, cobbles. (GP/SP)		
9				
10				
11				
12				
13				
14				3.7
15		Test pit terminated at approximately 14 feet. No groundwater seepage observed. Slight caving observed from 7 to 8 feet.		
16				
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-52

FIGURE A-53

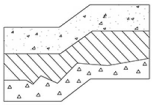
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 16, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 9 to 14.5 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(4 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3		*Roots observed to 3.5 feet.		
4				
5				
6				
7		Gray/brown sandy GRAVEL to gravelly SAND, fine to coarse sand, fine to coarse gravel, moist, cobbles, trace silt. (GP/SP)	Medium Dense	
8				
9				
10				
11				
12				
13				
14				
15		Test pit terminated at approximately 14.5 feet. No groundwater seepage observed. Slight caving observed from 9 to 14.5 feet.		4.8
16				
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-53

FIGURE A-54

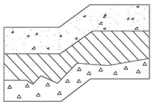
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Sparse Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** N/A

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry, cobbles, mottled, trace silt. (GP)	Medium Dense	
6				6.6
7		Gray/brown gravelly SAND, fine to medium sand, fine to coarse gravel, moist, cobbles, some silt. (SP)		
10				3.2
10		Test pit terminated at approximately 10 feet. No groundwater seepage observed. No caving.		
15				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-54

FIGURE A-55

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 14, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 8 to 13 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(4 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry, cobbles, trace silt. (GP)		
2			Loose to Medium Dense	
3				
4		*Roots observed through 5 feet.		
5		Gray/brown sandy GRAVEL to gravelly SAND, medium to coarse sand, fine to coarse gravel, moist to wet, cobbles, trace silt. (GP/SP)		
6				
7				
8				
9		*Trace mottling observed at 9 feet.	Medium Dense	
10				
11				
12				
13				3.6
		Test pit terminated at approximately 13 feet. No groundwater seepage observed. Minor light caving observed from 8 to 13 feet.		
14				
15				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-55

FIGURE A-56

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Sparse Vegetation **APPROX. ELEV:** N/A

DATE LOGGED: September 14, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 1 to 14 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0–1		FILL(?): Brown sandy SILT, fine to medium sand, dry, scattered gravel and roots. (ML)	Medium Dense	
1–7		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry, cobbles, trace silt. (GP) *Boulder observed at 10 feet.	Loose to Medium Dense	
7–14		Gray/brown sandy GRAVEL to gravelly SAND, medium to coarse sand, fine to coarse gravel, moist, cobbles, trace silt. (GP/SP)	Medium Dense	4.2
14–20		Test pit terminated at approximately 14.5 feet. No groundwater seepage observed. Minor caving observed from 1 to 14 feet.		

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-56

FIGURE A-57

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Sparse Vegetation **APPROX. ELEV:** N/A

DATE LOGGED: September 14, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 0 to 13.5 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0–6		FILL(?): Brown sandy SILT, fine to medium sand, dry, scattered gravel and roots. (ML) Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)	Loose to Medium Dense	
6–13		Gray/brown sandy GRAVEL to gravelly SAND, medium to coarse sand, fine to coarse gravel, moist, cobbles, trace silt. (GP/SP)	Medium Dense	2.8
13–20		Test pit terminated at approximately 13.5 feet. No groundwater seepage observed. Minor caving observed from 0 to 13.5 feet.		

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-57

FIGURE A-58

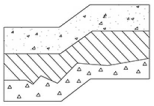
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 14, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** N/A

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(6 inches GRAVELLY TOPSOIL)		
1		FILL(?): Dark brown grading to brown silty GRAVEL with sand, fine to medium sand, coarse gravel, dry, scattered roots. (GM)		
2				
3		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		2.7
4				
5				
6				
7			Medium Dense	
8		Gray/brown sandy GRAVEL to gravelly SAND, medium to coarse sand, fine to coarse gravel, moist to wet, cobbles, trace silt. (GP/ SP)		
9				
10				
11				
12				
13				
14				
15				3.9
16		Test pit terminated at approximately 15 feet. No groundwater seepage observed. No caving.		
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-58

FIGURE A-59

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Vegetation **APPROX. ELEV:** N/A

DATE LOGGED: September 16, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 14 to 15 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0–2		(4 inches GRAVELLY TOPSOIL) FILL(?): Dark brown gravelly SILT, fine to coarse gravel, dry, scattered sand and roots. (ML)		
2–7		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP) *Scattered roots observed to 6 feet.		
7–15		Gray/brown sandy GRAVEL to gravelly SAND, fine to coarse sand, fine to coarse gravel, moist, cobbles, trace silt. (GP/SP)	Medium Dense	
15				4.1
15–20		Test pit terminated at approximately 15 feet. No groundwater seepage observed. Slight caving observed from 14 to 15 feet.		

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-59

FIGURE A-60

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Grass, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 16, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 9 to 14 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
7		Gray/brown sandy GRAVEL to gravelly SAND, medium to coarse sand, fine to coarse gravel, moist, cobbles, trace silt. (GP/SP)	Medium Dense	
14		Test pit terminated at approximately 14 feet. No groundwater seepage observed. Slight caving observed from 9 to 14 feet.		3.0
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-60

FIGURE A-61

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Vegetation **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 3.5 to 7 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0–1		FILL(?): Brown sandy SILT with gravel, fine to medium sand, fine to coarse gravel, dry, scattered roots. (ML)		
1–2		FILL(?): Interbedded gray/brown sandy GRAVEL and sandy SILT, fine to medium sand, coarse gravel, dry, scattered cobbles. (GP/ML)		
2–4		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
4–5				2.1
5–7		Gray/brown sandy GRAVEL to gravelly SAND, medium to coarse sand, fine to coarse gravel, moist, cobbles. (GP/SP)	Medium Dense	
7–10				4.3
10–15				2.9
15–20		Test pit terminated at approximately 15 feet. No groundwater seepage observed. Slight caving observed from 3.5 to 7 feet.		

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-61

FIGURE A-62

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 14, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** N/A

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		FILL(?): Dark brown sandy SILT, fine to medium sand, dry, scattered gravel and roots. (ML)		
2		Brown SAND with gravel, fine to medium sand, fine to coarse gravel, dry to moist, cobbles. (SP) *Faint mottling observed from 3 to 5 feet.		
7		Gray/brown sandy GRAVEL to gravelly SAND, medium to coarse sand, fine to coarse gravel, moist, cobbles, trace silt. (GP/SP)	Medium Dense	
14		Test pit terminated at approximately 14 feet. No groundwater seepage observed. No caving.		4.9
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-62

FIGURE A-63

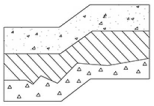
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 14, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** N/A

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(3 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3				
4				
5				
6				
7				
8		Gray/brown sandy GRAVEL to gravelly SAND, fine to coarse sand, coarse gravel, moist, cobbles. (GP/SP)	Medium Dense	
9				
10				
11				
12				
13				
14				
15				3.4
16		Test pit terminated at approximately 15 feet. No groundwater seepage observed. No caving.		
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-63

FIGURE A-64

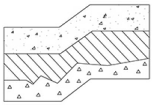
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Light Vegetation, Gravel **APPROX. ELEV:** N/A

DATE LOGGED: September 14, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 1 to 3 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		FILL(?): Brown sandy SILT, fine to medium sand, dry, scattered gravel and roots. (ML)		
1				
2		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
3				
4				
5				
6				
7			Medium Dense	1.9
8		Gray/brown sandy GRAVEL to gravelly SAND, fine to coarse sand, coarse gravel, moist, cobbles, trace silt. (GP/SP)		
9				
10				
11				
12				
13				
14				3.0
15		Test pit terminated at approximately 14 feet. No groundwater seepage observed. Minor caving observed from 1 to 3 feet.		
16				
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-64

FIGURE A-65

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 14, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 0 to 3 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0–6		(6 inches GRAVELLY TOPSOIL) Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry, cobbles, trace silt. (GP)	Loose to Medium Dense	
6–15		Gray/brown sandy GRAVEL to gravelly SAND, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP/SP)	Medium Dense	2.1
15–20		Test pit terminated at approximately 15 feet. No groundwater seepage observed. Moderate caving observed from 0 to 3 feet.		

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-65

FIGURE A-66

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Tree **APPROX. ELEV:** N/A

DATE LOGGED: September 14, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 0 to 6.5 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(6 inches GRAVELLY TOPSOIL) Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry, cobbles, trace silt. (GP)	Loose	1.1
7		Test pit terminated at approximately 6.5 feet. No groundwater seepage observed. Heavy caving observed from 0 to 6.5 feet.		

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-66

FIGURE A-67

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel **APPROX. ELEV:** N/A

DATE LOGGED: September 14, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** N/A

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0–1		FILL(?): Brown sandy SILT, fine to medium sand, dry, scattered gravel and roots. (ML)		
2–4		FILL(?): Brown SAND, fine to medium sand, dry. (SP)		
4–10		Brown SAND with gravel, fine to medium sand, coarse gravel, dry to moist, cobbles. (SP)	Medium Dense	2.3
10–14		Gray/brown sandy GRAVEL to gravelly SAND, fine to coarse sand, coarse gravel, moist, cobbles, trace silt. (GW/SP)		2.5
14–20		Test pit terminated at approximately 14 feet. No groundwater seepage observed. No caving.		

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-67

FIGURE A-68

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Grass, Vegetation **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 5 to 7 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		FILL(?): Dark brown SILT with sand and gravel, fine sand, coarse gravel, dry, scattered roots and organic inclusions. (ML)		
3		Brown GRAVEL with sand, fine to medium sand, coarse gravel, dry, cobbles. (GP)		
5		Brown SAND, fine to medium sand, moist, trace silt and gravel. (SP) *Heavy root inclusions to 5 feet, scattered roots observed to 7 feet.	Medium Dense	3.3
7		Gray/brown sandy GRAVEL, fine to medium sand, fine to coarse gravel, moist to wet, cobbles. (GW)		
10		Test pit terminated at approximately 10 feet. No groundwater seepage observed. Slight caving observed from 5 to 7 feet.		2.0
15				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-68

FIGURE A-69

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 5 to 7 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
5		*Roots observed to 5 feet.	Medium Dense	3.2
7		Gray/brown gravelly SAND, fine to medium sand, fine to coarse gravel, moist, cobbles, trace silt. (SP)		
10		Test pit terminated at approximately 10 feet. No groundwater seepage observed. Slight caving observed from 5 to 7 feet.		3.2
15				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-69

FIGURE A-70

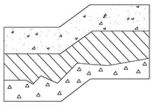
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 17, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 1 to 12 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		FILL(?): Brown sandy SILT to silty SAND, fine to medium sand, dry, scattered gravel and root. (ML/SM)	Loose to Medium Dense	
1				
2		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
3				
4				
5				
6			Medium Dense	
7		*Faint mottling observed at 7 feet.		
8				
9		Gray/brown sandy GRAVEL to gravelly SAND, medium to coarse sand, fine to coarse gravel, moist, cobbles, trace silt. (GW/SP)		
10				
11				
12				2.7
13		Test pit terminated at approximately 12 feet. No groundwater seepage observed. Moderate caving observed from 1 to 12 feet.		
14				
15				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-70

FIGURE A-71

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 14, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 1 to 8 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0–2		(10 inches GRAVELLY TOPSOIL) Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry, cobbles, trace silt. (GP)	Loose to Medium Dense	
3–8		Gray GRAVEL, dry to moist, cobbles, trace silt and sand. (GP)		
8–14		Gray/brown gravelly SAND, medium to coarse sand, fine to coarse gravel, moist, cobbles, trace silt. (SP)	Medium Dense	4.9
15–20		Test pit terminated at approximately 14.5 feet. No groundwater seepage observed. Moderate caving observed from 1 to 8 feet.		

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-71

FIGURE A-72

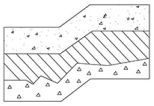
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 14, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 0 to 13 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(6 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3				
4				
5		*Scattered roots observed through 5 feet.		1.5
6		Gray/brown gravelly SAND, medium to coarse sand, fine to coarse gravel, moist to wet, cobbles, trace silt. (SP)	Medium Dense	
7				
8				
9				
10				
11				
12				
13				4.1
14		Test pit terminated at approximately 13 feet. No groundwater seepage observed. Minor caving observed from 0 to 13 feet.		
15				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-72

FIGURE A-73

PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 14, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** 3 to 7 Feet

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0–3		(6 inches GRAVELLY TOPSOIL) Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry, cobbles, trace silt. (GP)	Medium Dense	
3–7		Gray GRAVEL, dry to moist, cobbles, trace silt and sand. (GP)	Loose to Medium Dense	
7–13		Gray/brown gravelly SAND, medium to coarse sand, fine to coarse gravel, moist to wet, cobbles, trace silt. (SP)	Medium Dense	
13		Test pit terminated at approximately 13 feet. No groundwater seepage observed. Moderate caving observed from 3 to 7 feet.		4.1

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-73

FIGURE A-74

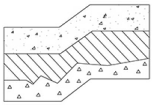
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 14, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** N/A

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(10 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry, cobbles, trace silt. (GP)		
2				1.9
3				
4		Gray GRAVEL, dry to moist, cobbles, trace silt and sand. (GP)		
5		Gray/brown gravelly SAND, medium to coarse sand, fine to coarse gravel, moist to wet, cobbles, trace silt. (SP)		
6				
7			Medium Dense	
8				
9				
10				
11				
12				
13				
14				5.4
15		Test pit terminated at approximately 14 feet. No groundwater seepage observed. No caving.		
16				
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF TEST PIT NO. TP-74

FIGURE A-75

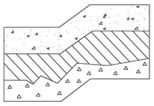
PROJECT NAME: Founder's Ridge **PROJ. NO:** T-8399 **LOGGED BY:** SLK

LOCATION: DuPont, Washington **SURFACE CONDITIONS:** Gravel, Pine Trees **APPROX. ELEV:** N/A

DATE LOGGED: September 14, 2020 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** N/A

Depth (ft)	Sample No.	Description	Consistency/ Relative Density	W (%)
0		(8 inches GRAVELLY TOPSOIL)		
1		Light brown/gray sandy GRAVEL, fine to coarse sand, fine to coarse gravel, dry to moist, cobbles, trace silt. (GP)		
2				
3				
4				
5				
6				
7		Gray/brown gravelly SAND, medium to coarse sand, fine to coarse gravel, moist, cobbles, trace silt. (SP)	Medium Dense	
8				
9				
10				
11				
12				
13				
14				5.1
15		Test pit terminated at approximately 14.5 feet. No groundwater seepage observed. No caving.		
16				
17				
18				
19				
20				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.



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LOG OF BORING NO. B-1

Figure No. A-76

Project: Founder's Ridge **Project No:** T-8399 **Date Drilled:** September 24, 2020

Client: NorthPoint Development **Driller:** Boretec **Logged By:** SLK

Location: DuPont, Washington **Depth to Groundwater:** N/A **Approx. Elev:** N/A

Depth (ft)	Sample Interval	Soil Description	Consistency/ Relative Density	SPT (N) Blows / foot (10 / 30 / 50)		Moisture Content (%)	Observ. Well
0		Dark brown gravelly SILT with sand, fine gravel, fine to medium sand, moist, some organics. (ML)					
5		Gray/brown sandy GRAVEL, fine to medium sand, fine to coarse gravel, dry, trace silt. (GP)	Dense to Very Dense *Density is overestimated due to large gravels.		33	12.6	
10					70	2.1	
15		*Soils become moist at about 16 feet.			34	3.9	
20		Gray/brown gravelly SAND, fine to coarse sand and gravel, moist to wet, trace silt. (SP)	Medium Dense		14	4.6	
25		Test boring terminated at approximately 21.5 feet. No groundwater seepage observed. Boring converted to 2-inch diameter monitoring well; DOE Well Tag #BJZ 568.					
30							

NOTE: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site

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LOG OF BORING NO. B-2

Figure No. A-77

Project: Founder's Ridge **Project No:** T-8399 **Date Drilled:** September 24, 2020

Client: NorthPoint Development **Driller:** Boretec **Logged By:** SLK

Location: DuPont, Washington **Depth to Groundwater:** 19.7 Feet **Approx. Elev:** N/A

Depth (ft)	Sample Interval	Soil Description	Consistency/ Relative Density	SPT (N) Blows / foot (10 / 30 / 50)	Moisture Content (%)	Observ. Well
0		Gray/brown sandy GRAVEL, fine to medium sand, fine to coarse gravel, dry, trace silt. (SP)				
5	I		Very Dense *Density is overestimated due to large gravels.	50/4"	1.3	
10	I			53	3.3	
15	I	*Soils become moist at about 15 feet.		25	8.2	
20 ▼	I	*Soils become wet at about 20 feet.	Medium Dense	27	4.2	
		Test boring terminated at approximately 21.5 feet. Groundwater observed at 19.7 feet during drilling. Boring converted to 2-inch diameter monitoring well; DOE Well Tag #BJZ 569.				
25						
30						

NOTE: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site

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LOG OF BORING NO. B-3

Figure No. A-78

Project: Founder's Ridge **Project No:** T-8399 **Date Drilled:** September 24, 2020

Client: NorthPoint Development **Driller:** Boretec **Logged By:** SLK

Location: DuPont, Washington **Depth to Groundwater:** N/A **Approx. Elev:** N/A

Depth (ft)	Sample Interval	Soil Description	Consistency/ Relative Density	SPT (N) Blows / foot (10 / 30 / 50)	Moisture Content (%)	Observ. Well
0		Dark brown gravelly SILT with sand, fine gravel, fine to medium sand, wet, some organics. (ML)			16.5	
5		Gray/brown sandy GRAVEL, fine to medium sand, fine to coarse gravel, moist, trace silt. (GP)	Very Dense *Density is overestimated due to large gravels.	50/5"	3	
10				50/2"	1.1	
15		*Soils become wet and trace mottling observed at about 16 feet.	Medium Dense	20	4.6	
20				68/10"	4.7	
		Test boring terminated at approximately 21.5 feet. No groundwater seepage observed. Boring converted to 2-inch diameter monitoring well; DOE Well Tag #BJZ 570.				
25						
30						

NOTE: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site

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LOG OF BORING NO. B-4

Figure No. A-79

Project: Founder's Ridge **Project No:** T-8399 **Date Drilled:** September 25, 2020

Client: NorthPoint Development **Driller:** Boretec **Logged By:** SLK

Location: DuPont, Washington **Depth to Groundwater:** N/A **Approx. Elev:** N/A

Depth (ft)	Sample Interval	Soil Description	Consistency/ Relative Density	SPT (N) Blows / foot (10 / 30 / 50)	Moisture Content (%)	Observ. Well
0		Gray/brown gravelly SAND to sandy GRAVEL, fine to medium sand, fine to coarse gravel, moist, trace silt. (SP, GP)				
5			Medium Dense	23	4.8	
		Gray/brown sandy GRAVEL, fine to medium sand, fine to coarse gravel, dry, trace silt. (GP)				
10				50/6"	3.7	
			Very Dense *Density is overestimated due to large gravels.			
15		*Soils become wet at about 16 feet.		50/2"	12.2	
20		*Trace mottling observed at about 20 feet.	Dense	46	4.3	
		Test boring terminated at approximately 21.5 feet. No groundwater seepage observed. Boring converted to 2-inch diameter monitoring well; DOE Well Tag #BJI 128.				
25						
30						

NOTE: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site

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LOG OF BORING NO. B-5

Figure No. A-80

Project: Founder's Ridge **Project No:** T-8399 **Date Drilled:** September 25, 2020

Client: NorthPoint Development **Driller:** Boretec **Logged By:** SLK

Location: DuPont, Washington **Depth to Groundwater:** N/A **Approx. Elev:** N/A

Depth (ft)	Sample Interval	Soil Description	Consistency/ Relative Density	SPT (N) Blows / foot (10 / 30 / 50)	Moisture Content (%)	Observ. Well
0		Gray/brown gravelly SAND to sandy GRAVEL, fine to medium sand, fine to coarse gravel, moist to dry, trace silt and mottling. (SP/GP)				
5				84/11"	2.8	
10		Gray/brown gravelly SAND, fine to coarse sand and gravel, moist to dry, trace silt, faint mottling. (SP)	Very Dense *Density overestimated due to large gravels.	50/3"	3.3	
15				58	3.8	
20			Dense	41	3.2	
		Test boring terminated at approximately 21.5 feet. No groundwater seepage observed. Boring converted to 2-inch diameter monitoring well; DOE Well Tag #BJI 129.				
25						
30						

NOTE: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site

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LOG OF BORING NO. B-6

Figure No. A-81

Project: Founder's Ridge **Project No:** T-8399 **Date Drilled:** September 25, 2020

Client: NorthPoint Development **Driller:** Boretec **Logged By:** SLK

Location: DuPont, Washington **Depth to Groundwater:** N/A **Approx. Elev:** N/A

Depth (ft)	Sample Interval	Soil Description	Consistency/ Relative Density	SPT (N) Blows / foot (10 / 30 / 50)	Moisture Content (%)	Observ. Well
0		Gray/brown gravelly SAND to sandy GRAVEL, fine to medium sand, fine to coarse gravel, moist to dry, trace silt and mottling. (SP/GP)				
5			Loose	9	3	
10				82/10"	3.2	
15			Very Dense to Medium Dense *Density is overestimated due to large gravels.	50/4"	.5	
20		Brown SAND, fine to medium sand, moist, trace silt. (SP)		20	4.8	
		Test boring terminated at approximately 21.5 feet. No groundwater seepage observed. Boring converted to 2-inch diameter monitoring well; DOE Well Tag #BJI 126.				
25						
30						

NOTE: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site

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LOG OF BORING NO. B-7

Figure No. A-82

Project: Founder's Ridge **Project No:** T-8399 **Date Drilled:** September 25, 2020

Client: NorthPoint Development **Driller:** Boretec **Logged By:** SLK

Location: DuPont, Washington **Depth to Groundwater:** N/A **Approx. Elev:** N/A

Depth (ft)	Sample Interval	Soil Description	Consistency/ Relative Density	SPT (N) Blows / foot (10 / 30 / 50)	Moisture Content (%)	Observ. Well
0		Gray/brown sandy GRAVEL, fine to medium sand, fine to coarse gravel, dry, trace silt. (GP)				
5		Brown SAND, fine to medium sand, moist, trace silt. (SP)	Medium Dense	12	5.7 5.8	
10		Gray/brown gravelly SAND to sandy GRAVEL, fine to medium sand, fine to coarse gravel, moist, trace silt. (SP/GP)	Medium Dense to Dense	36	2.9	
15				45	4.2	
20				18	3.9	
25		Test boring terminated at approximately 21.5 feet. No groundwater seepage observed. Boring converted to 2-inch diameter monitoring well; DOE Well Tag #BJI 127.				
30						

NOTE: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site

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LOG OF BORING NO. B-8

Figure No. A-83

Project: Founder's Ridge **Project No:** T-8399 **Date Drilled:** September 28, 2020

Client: NorthPoint Development **Driller:** Boretec **Logged By:** SLK

Location: DuPont, Washington **Depth to Groundwater:** N/A **Approx. Elev:** N/A

Depth (ft)	Sample Interval	Soil Description	Consistency/ Relative Density	SPT (N) Blows / foot (10 / 30 / 50)	Moisture Content (%)	Observ. Well
0		Dark brown sandy SILT with gravel, coarse gravel, fine to medium sand, moist, some organics. (ML) (Minimal recovery, topsoil slough)				
5			Medium Dense	23	5.9	
		Gray/brown gravelly SAND, fine to coarse sand and gravel, dry to moist, trace silt. (SP)				
10				41	7.2	
			Dense to Very Dense *Density is overestimated due to large gravels.			
15		*Iron-stained gravel observed at 15 feet.		50/3"	5.1	
20				31	3.5	
		Test boring terminated at approximately 21.5 feet. No groundwater seepage observed. Boring converted to 2-inch diameter monitoring well; DOE Well Tag #BJI 130.				
25						
30						

NOTE: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site

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LOG OF BORING NO. B-9

Figure No. A-84

Project: Founder's Ridge **Project No:** T-8399 **Date Drilled:** September 28, 2020

Client: NorthPoint Development **Driller:** Boretec **Logged By:** SLK

Location: DuPont, Washington **Depth to Groundwater:** N/A **Approx. Elev:** N/A

Depth (ft)	Sample Interval	Soil Description	Consistency/ Relative Density	SPT (N) Blows / foot (10 / 30 / 50)		Moisture Content (%)	Observ. Well
0		Gray/brown gravelly SAND, fine to coarse sand and gravel, dry, trace silt. (SP)					
5					33	3.3	
10			Dense to Medium Dense		32	2.5	
15		Gray/brown sandy GRAVEL, fine to medium sand, fine to coarse gravel, moist to wet, trace silt and mottled gravel. (GP)			21	3.8	
20		Gray/brown gravelly SAND, fine to coarse sand and gravel, moist, trace silt. (SP)	Dense		49	2.7 2	
		Test boring terminated at approximately 21.5 feet. No groundwater seepage observed. Boring converted to 2-inch diameter monitoring well; DOE Well Tag #BJI 131.					
25							
30							

NOTE: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site

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LOG OF BORING NO. B-10

Figure No. A-85

Project: Founder's Ridge **Project No:** T-8399 **Date Drilled:** September 24, 2020

Client: NorthPoint Development **Driller:** Boretec **Logged By:** SLK

Location: DuPont, Washington **Depth to Groundwater:** N/A **Approx. Elev:** N/A

Depth (ft)	Sample Interval	Soil Description	Consistency/ Relative Density	SPT (N) Blows / foot (10 30 50)	Moisture Content (%)	Observ. Well
0		Gray/brown sandy GRAVEL, fine to medium sand, fine to coarse gravel, moist to dry, trace silt and topsoil slough. (GP)				
5			Medium Dense	21	4.6	
10				53	4.3	
		*Soils become moist at about 15 feet.				
15		Gray/brown gravelly SAND, fine to coarse sand and gravel, moist, trace silt. (SP)	Dense *Density is overestimated due to large gravels.	50/6"	7.1	
20		Brown/gray SAND, fine to medium sand, wet, trace silt and gravel. (SP)	Very Dense	80/9"	8.2	
		Test boring terminated at approximately 21.5 feet. No groundwater seepage observed. Boring converted to 2-inch diameter monitoring well; DOE Well Tag #BJZ 571.				
25						
30						

NOTE: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpeted as being indicative of other areas of the site

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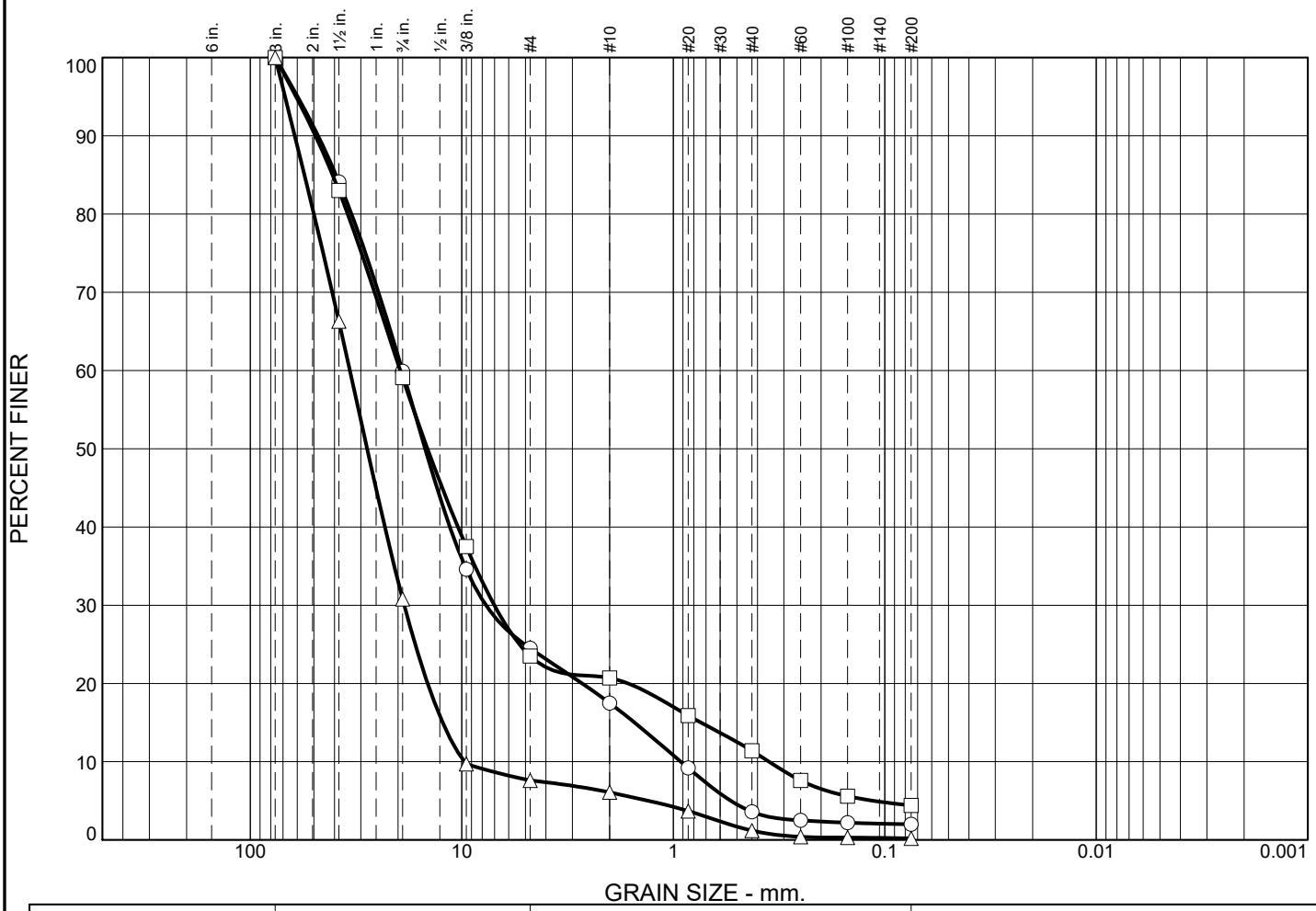
Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	40.1	35.4	7.0	13.9	1.6	2.0	
□	0.0	40.9	35.6	2.8	9.3	7.0	4.4	
△	0.0	69.2	23.2	1.5	4.9	1.0	0.2	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			39.3453	19.0978	14.8980	7.6878	1.5252	0.9209	3.36	20.74
□			40.7931	19.5450	14.5259	7.0181	0.7397	0.3525	7.15	55.45
△			55.4911	33.8035	28.0212	18.7098	12.3118	9.7216	1.07	3.48

Material Description	USCS	AASHTO
○ poorly graded GRAVEL with sand	GP	
□ poorly graded GRAVEL with sand	GP	
△ poorly graded GRAVEL	GP	

Project No. T-8399 **Client:** NorthPoint Development

Project: Founder's Ridge

Dupont, Washington

○ **Location:** TP-18 **Depth:** -14 ft

□ **Location:** TP-24 **Depth:** -5.5 ft

△ **Location:** TP-28 **Depth:** -10 ft

Terra Associates, Inc.

Kirkland, WA

Remarks:

○ Tested on September 23, 2020

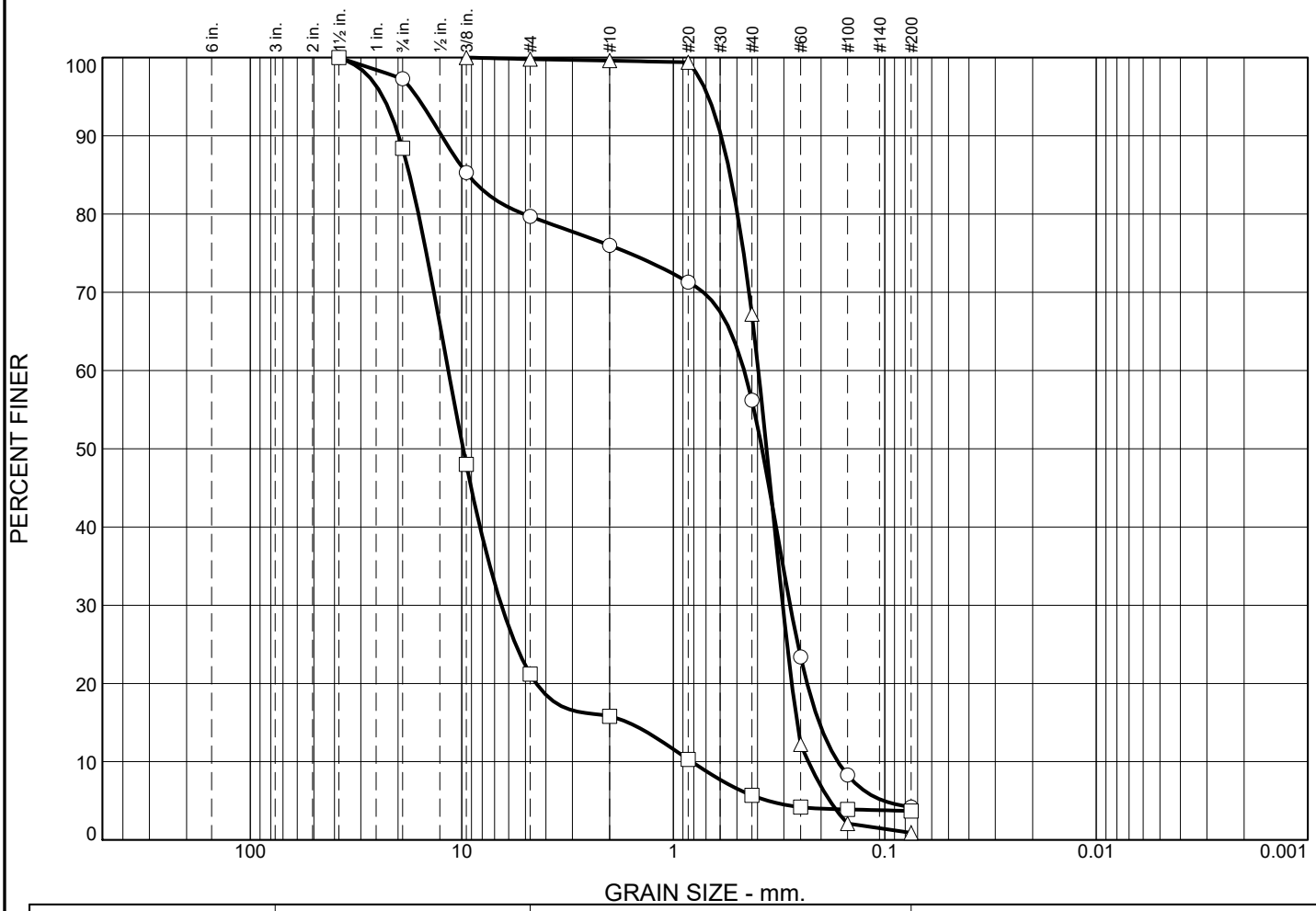
□ Tested on September 23, 2020

△ Tested on September 23, 2020

Figure A-86

Tested By: FQ

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	2.7	17.6	3.7	19.8	52.0	4.2	
□	0.0	11.6	67.2	5.4	10.1	2.0	3.7	
△	0.0	0.0	0.2	0.2	32.4	66.3	0.9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			9.3308	0.4620	0.3807	0.2802	0.2043	0.1668	1.02	2.77
□			17.6468	11.5789	9.8567	6.4961	1.6320	0.8184	4.45	14.15
△			0.5377	0.3961	0.3621	0.3038	0.2597	0.2298	1.01	1.72

Material Description	USCS	AASHTO
○ poorly graded SAND with gravel	SP	
□ poorly graded GRAVEL with sand	GP	
△ poorly graded SAND	SP	

Project No. T-8399 **Client:** NorthPoint Development

Project: Founder's Ridge

Dupont, Washington

○ **Location:** TP-29 **Depth:** -2 ft

□ **Location:** TP-45 **Depth:** -11 ft

△ **Location:** TP-69 **Depth:** -5 ft

Remarks:

○ Tested on September 23, 2020

□ Tested on September 23, 2020

△ Tested on September 23, 2020

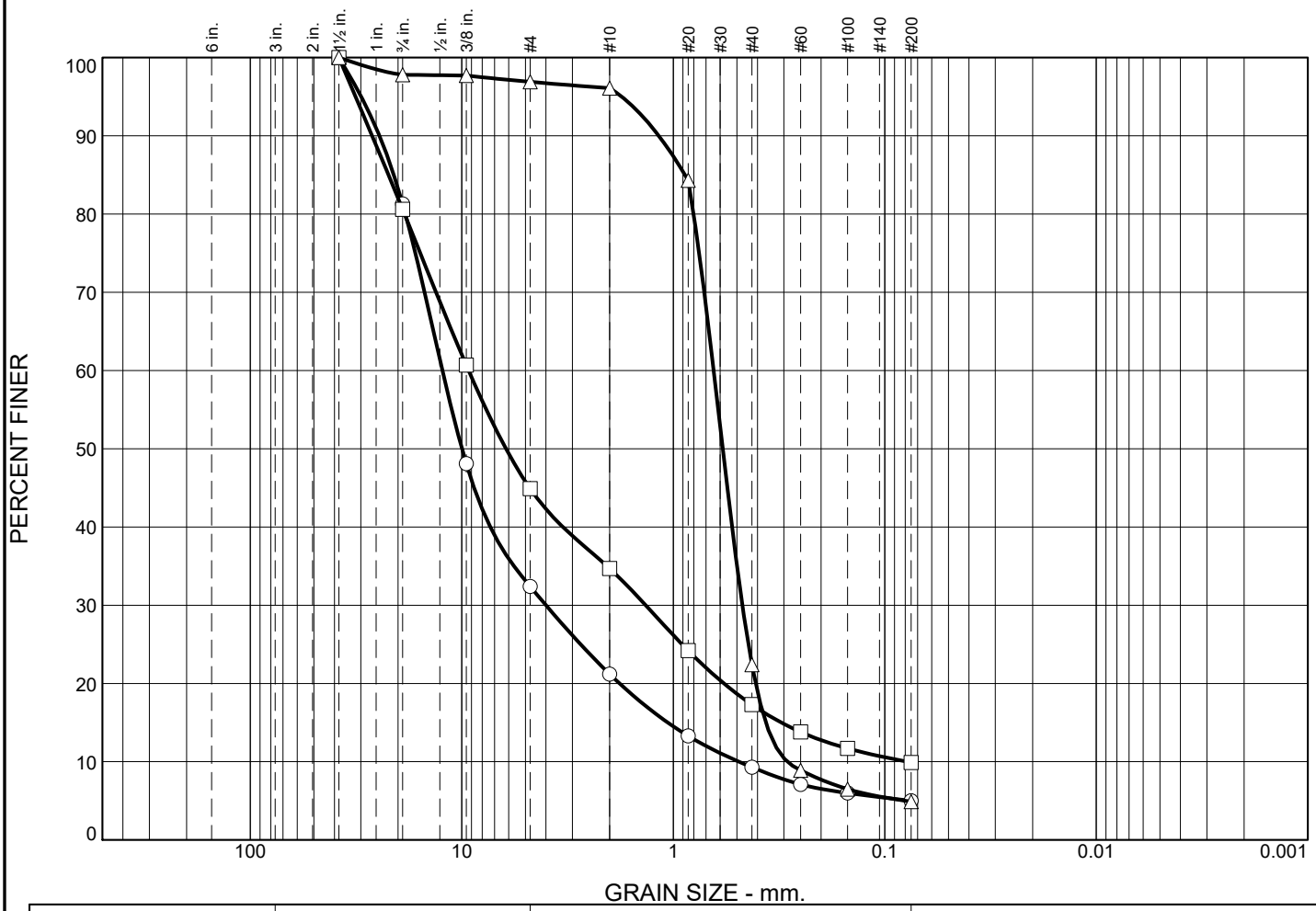
Terra Associates, Inc.

Kirkland, WA

Figure A-87

Tested By: FQ

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	18.7	48.9	11.2	11.9	4.3	5.0	
□	0.0	19.4	35.7	10.2	17.4	7.4	9.9	
△	0.0	2.2	0.9	0.8	73.7	17.5	4.9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			20.9658	12.3438	9.9820	3.9987	1.0612	0.4892	2.65	25.23
□			22.2205	9.2816	6.1797	1.3509	0.3081	0.0784	2.51	118.46
△			0.8804	0.6440	0.5833	0.4714	0.3653	0.2892	1.19	2.23

Material Description	USCS	AASHTO
○ well graded GRAVEL with sand	GW-GM	
□ well graded GRAVEL with silt and sand	GW-GM	
△ poorly graded SAND	SP	

Project No. T-8399 **Client:** NorthPoint Development

Project: Founder's Ridge

Dupont, Washington

○ **Location:** B-3 **Depth:** -20 ft **Sample Number:** S-4

□ **Location:** B-5 **Depth:** -5 ft **Sample Number:** S-1

△ **Location:** B-6 **Depth:** -20 ft **Sample Number:** S-4

Terra Associates, Inc.

Kirkland, WA

Remarks:

○ Tested on October 5, 2020

□ Tested on October 5, 2020

△ Tested on October 5, 2020

Figure A-88

Tested By: FQ/EB