CULTURAL RESOURCES REPORT COVER SHEET

DAHP Project Number: _____

Author: Kelly R. Bush and Aleta R. Baxley

Title of Report: Archaeological Survey and Monitoring Report: Arlington East Hill Project, Arlington, Snohomish County, Washington

Date of Report: April16, 2025

County: Snohomish Section(s): 12 and 13 Township: 31 N Range: 05 E

Quad: Arlington East Acres: 467

PDF of report submitted (REQUIRED) ☒ Yes

Historic Property Inventory Forms to be Approved Online? ☐ Yes ☒ No

Archaeological Site(s)/Isolate(s) Found or Amended? ☐ Yes ☒ No

TCP(s) found? ☐ Yes ☒ No

Replace a draft? ☐ Yes ☒ No

Satisfy a DAHP Archaeological Excavation Permit requirement? ☐ Yes # ☒ No

Were Human Remains Found? ☐ Yes DAHP Case # ☒ No

DAHP Archaeological Site #:

_____
_____
_____
_____
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_____
_____
_____

ARCHAEOLOGICAL SURVEY AND MONITORING REPORT: ARLINGTON EAST HILL PROJECT, ARLINGTON, SNOHOMISH COUNTY, WASHINGTON

Prepared for: LandPro Group, Inc.

April 16, 2025

Prepared by:

ERCI

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CREDITS AND ACKNOWLEDGMENTS

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Equinox Research and Consulting International Inc. (ERCI) would like to thank LandPro Group Inc. for retaining us for this investigation and for their commitment to the process and archaeological resources.

We extend our thanks to the representatives of the Sauk-Suiattle Indian Tribe, Stillaguamish Tribe of Indians, Suquamish Tribe, Tulalip Tribes, and Upper Skagit Indian Tribe for their insights and timely attention to our projects.

The opinions and recommendations in this report are those of ERCI alone and do not necessarily reflect those held by any of the organizations or individuals mentioned above. Any errors or omissions are ERCI's responsibility.

MANAGEMENT SUMMARY

County	Snohomish
TRS	Township 31 N, Range 05 E, Sections 12 and 13
Quad	Arlington East
Area	~467.39 acres
Lat/Long	48° 10′ 57″ N/ 122° 6′ 25″ W
UTM	Zone 10U 566382 Easting 5336961 Northing
Elevation	148–455′
Nearest Water Body	South Fork Stillaguamish River
Nearest Arch Site	45SN486– ~0.3 miles
Soils	Norma loam, Pastik silt loam, 8 to 25 percent slopes, Pastik silt loam, 25 to 50 percent slopes, Ragnar fine sandy loam, 0 to 8 percent slopes, Tokul gravelly medial loam, 0 to 8 percent slopes, Tokul gravelly medial loam, 8 to 15 percent slopes, Tokul gravelly medial loam, 15 to 30 percent slopes, and Tokul-Winston gravelly loams, 25 to 65 percent slopes
Geology	Vashon recessional outwash Marysville Sand Member, Fraser Glaciation to pre-Fraser transitional beds, Vashon advance outwash, and Vashon till
Agency/Project No.	

Parcel ID	31051200400400
Address	N/A
Parcel ID	31051200400200
Address	9110 Tveit Rd, Arlington, WA 98223-7483
Property Owner	RLM Properties LLC
Property Owner Address	9104 Tveit Rd, Arlington, WA 98223 United States

Parcel ID	31051200300500
Address	N/A
Parcel ID	31051200300100
Address	8904 Tveit Rd, Arlington, WA 98223-7478
Property Owner	Tveit Road LLC
Property Owner Address	16720 Smokey Point Blvd, Suite 3, Arlington, WA 98223

Parcel ID	31051300100200
Address	N/A
Property Owner	Brekhus Property LLC
Property Owner Address	17436 Dunbar Rd, Mt Vernon, WA 98273

Parcel ID	31051200402300
Address	9104 Tveit Rd, Arlington, WA 98223-7483
Year House Built	1988
Property Owner	Robert E. Putnam
Property Owner Address	9104 Tveit Rd, Arlington, WA 98223 United States

Parcel ID	31051200401000
Address	9116 Tveit Rd, Arlington, WA 98223-7483
Year House Built	1984

Property Owner	Larry D. Putnam
Property Owner Address	9116 Tveit Rd, Arlington, WA 98223 United States

Parcel ID	31051200400300
Address	9302 Tveit Rd, Arlington, WA 98223-7488
Year House Built	1938 (house outside Project area)
Property Owner	William C. Harvey
Property Owner Address	P.O. Box 25, Lakewood, WA 98259 United States

Parcel ID	31051200101300
Address	9202 Tveit Rd, Arlington, WA 98223-5011
Year House Built	1995
Property Owner	Mark Dolan
Property Owner Address	9202 Tveit Rd, Arlington, WA 98223-5011 United States

In March 2023, Ryan Larsen of LandPro Group, Inc., contacted Kelly R. Bush of Equinox Research and Consulting International Inc. (ERCI) to carry out an archaeological survey for the Arlington East Hill Project (the Project), on 467.39 acres (Snohomish County Assessor's Parcels 31051200400400, 31051200400200, 31051200300500, 31051200300100, 31051300100200, 31051200402300, 31051200401000, 31051200400300, 31051200101300), in Arlington, Snohomish County, Washington (Township 31 N, Range 05 E, Sections 12 and 13).

The Project is a housing development, and the plan currently includes construction of single family homes, duplexes, 3-plexes, 4-plexes and 5-plexes, along with designated open space totaling approximately 29 acres, and all associated housing infrastructure such as roads and utilities. The exact depth and extent of ground disturbance is unknown at this time.

On April 24–27, May 2 and 3, and July 27, 2023, ERCI undertook a thorough pedestrian survey and a stratified subsurface shovel-testing program (181 subsurface shovel probes) to look for material traces of past human activity.

On May 22–26, 2023, ERCI monitored the excavation of geotechnical test pits (44 machine tests). Associated Earth Sciences, Inc. (AESI) conducted the geotechnical testing and Land Dirt Pipe Construction, LLC. conducted the excavation.

On July 26–28, 2023, ERCI monitored geotechnical drilling for two borings for geotechnical testing and to install groundwater monitoring wells. AESI conducted the geotechnical testing and Holocene Drilling conducted the drilling.

No Protected Cultural Resources or Historic Properties were identified during the archaeological survey and monitoring within the Project area.

The management recommendations that we are now providing are based on this survey. We recommend:

1. Deep machine testing be conducted in Parcels 31051200300100 and 31051200400200 (adjacent to SPs 28, 86, and 87) to examine sediments below disturbed deposits that were not reached during subsurface survey and in additional areas to match the maximum depth of disturbance of the development plans that will be determined when the final design is 60-90% complete.

2. Additional pedestrian and subsurface hand shovel survey during late winter or early spring in Parcel 3151300100300, in the western portion and southeastern corner of Parcel 31051200300100, in the northeast corner of Parcel 31051200300500, and on the western boundary of 31051200400400. All work should match proposed development. See Figure 68.
3. Archaeological monitoring for geotechnical drilling or any other open excavation during the Project planning period, especially in areas within 200 feet of the ravines and creeks.
4. Archaeological monitoring for temporary road installation.
5. Archaeological monitoring for grubbing and clearing of dense blackberry in Parcel 31051200300100. See Figure 68.
6. An unanticipated discovery protocol (UDP) training be given to all construction personnel by a professional archaeologist. A copy of the Unanticipated Discoveries Protocol (UDP) will be kept on site at all times.
7. In the event that any ground-disturbing activities or other project activities related to this development or in any future development uncover protected archaeological objects or sediments (e.g., old bottles or cans, charcoal, bones, shell, stone, horn or antler tools or weapons), all work in the immediate vicinity should stop, the area should be secured, and any equipment moved to a safe distance away from the location. The on-site superintendent should then follow the steps specified in the UDP.
8. In the event that any ground-disturbing activities or other project activities related to this development or in any future development uncover human remains, all work in the immediate vicinity should stop, the area should be secured, and any equipment moved to a safe distance away from the location. The on-site superintendent should then follow the steps specified in the UDP.

CONTENTS

FIGURES

TABLES

1.0 INTRODUCTION

In March 2023, Ryan Larsen of LandPro Group, Inc., contacted Kelly R. Bush of Equinox Research and Consulting International Inc. (ERCI) to carry out an archaeological survey for the Arlington East Hill Project (the Project), a planned residential development on 467.39 acres in Arlington, Snohomish County, Washington (Snohomish County Assessor's Parcels 31051200101300, 31051200300100, 31051200300500, 31051200400200, -300, -400, 31051200401000, 31051200402300, 31051300100200; Sections 12, 13, Township 31 N, Range 05 E, Willamette Meridian) (Figure 1–Figure 5).

The Project is a housing development on East Hill south of Tveit Road; at this time it includes constructing 646 single-family homes, 152 duplexes, 38 triplexes, 72 fourplexes and 68 fiveplexes; approximately 29 acres of designated open space; all associated housing infrastructure such as roads and utilities. The exact depth and extent of ground disturbance is unknown at the time of this report. The City of Arlington is permitting the Project and is therefore the lead agency.

This report documents ERCI's background research, archaeological survey, and monitoring for the Project.

Figure 1: Regional map showing approximate Project location.

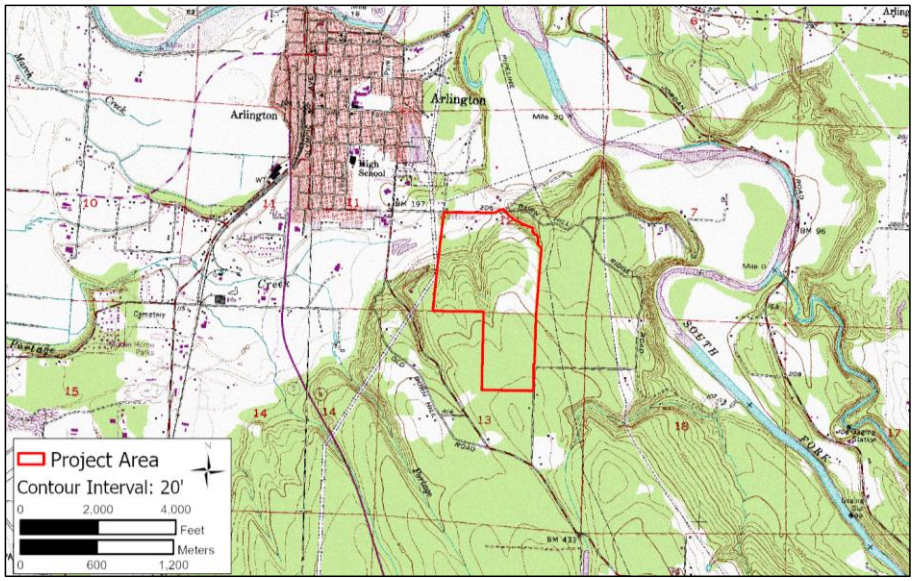

Figure 2: USGS Arlington East 7.5-minute quadrangle with Project area outlined in red.

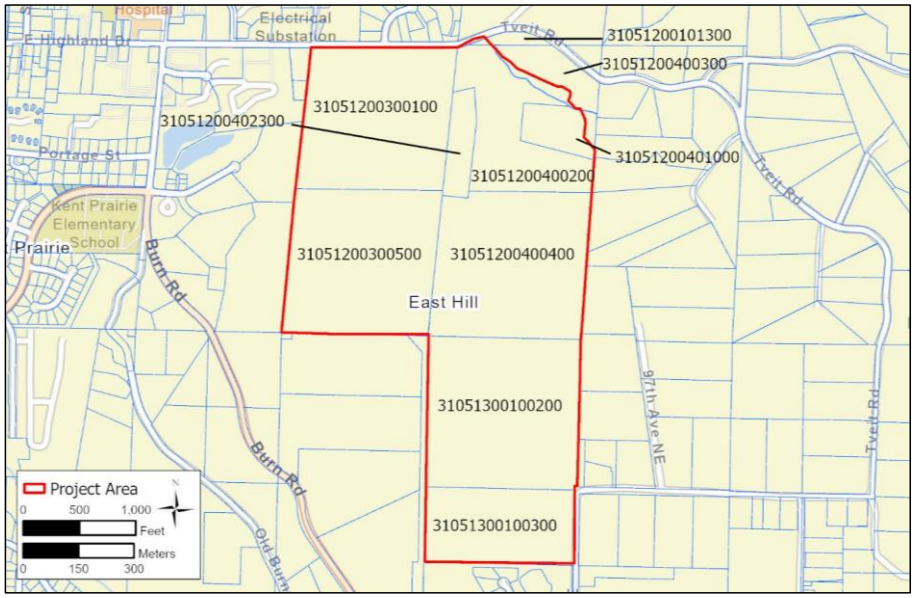

Figure 3: Snohomish County Assessor's map with Project area outlined in red.

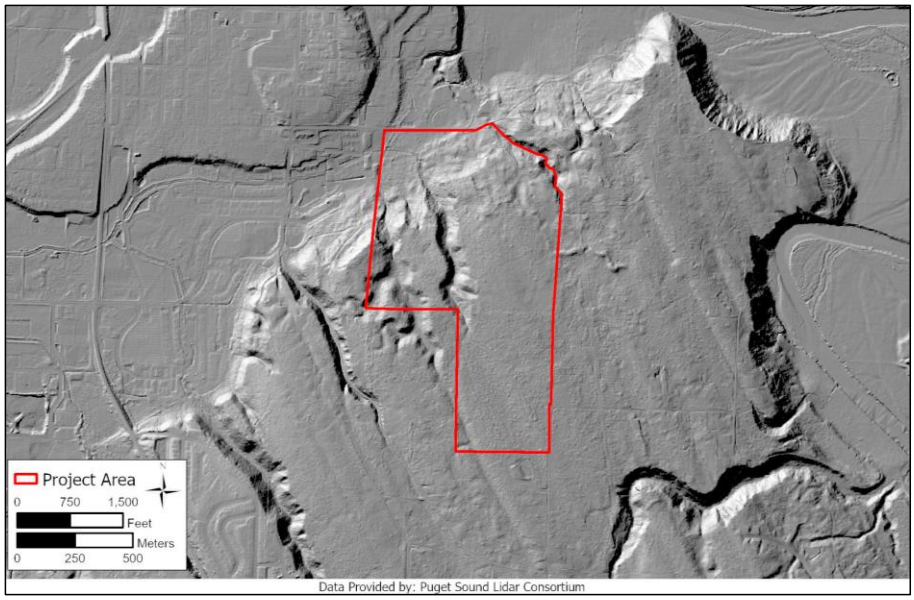

Figure 4: Lidar map with Project area outlined in red.

Figure 5: Aerial photograph with Project area outlined in red.

2.0 REGULATORY FRAMEWORK

The State Environmental Policy Act (SEPA) requires that all major actions sponsored, funded, permitted, or approved by state and/or local agencies undergo planning to ensure environmental considerations, such as impacts on historic and cultural resources, are given due weight in decision-making. State implementing regulations are in WAC 197- 11 and WAC 468-12 (WSDOT). For details on SEPA procedures see Chapter 400.

In Washington State, archaeological sites are protected by several state laws, including the Revised Code of Washington (RCW) 27.53—Archaeological Sites and Resources, and RCW 27.44—Indian Graves and Records. These laws require that consideration be given to archaeological resources during construction and development activities. RCW 27.44 also strictly mandates the protection of human skeletal remains and imposes a duty to notify law enforcement in the case of inadvertent discovery.

The City of Arlington is the lead agency for the Project and is responsible for consultation and distribution of this report to the appropriate parties.

3.0 TRIBAL CONSULTATION

The Sauk-Suiattle Indian Tribe, Stillaguamish Tribe of Indians, Suquamish Tribe, Tulalip Tribes, and Upper Skagit Indian Tribe consider the Project area within their traditional use area. The Tribes will require detailed development descriptions to adequately review the project. Tribal representatives are the only people qualified to determine if Traditional Cultural Properties exist within the project area, whether they will be affected by the undertaking, and how any suggested management strategies might work. As lead agency, the City of Arlington is responsible for carrying out consultation regarding this project, including providing our report to the affected Tribes.

4.0 BACKGROUND

Any archaeological undertaking requires knowledge of the physical surroundings (and their evolution) and the duration and kind of human activity in any given area. From this knowledge, archaeologists are able to develop the current best method to carry out field investigations. For example, environmental factors play an important role in the location and preservation of archaeological sites. Sediments and soils are of particular interest to cultural resource managers because they can be used for reconstructing past landscapes and landscape evolution, in estimating the age of surfaces and depositional episodes, and providing physical and chemical indicators of human occupation (Holliday 1992).

4.1 Physical Environment

The Project area lies on and below a remnant glacial till plateau east of the South Fork Stillaguamish River and southeast of the confluence of the North and South Forks Stillaguamish Rivers. The plateau extends south and southeast of the Project area, while the floodplain of the South Fork Stillaguamish River lies to the north. A steep-sided ravine with an ephemeral stream borders the northeast corner of the Project area, and two large ravines with ephemeral creeks cut through the till plateau in the western portion of the Project area. Elevation ranges from 148 to 455 feet above sea level, with the northern portion of the Project area at the lower elevation.

Previous disturbance to the Project area includes:

- Logging and associated infrastructure
- Construction and maintenance of roads and infrastructure
- Construction and use of residential houses and farm buildings.

Geology and Soils

The geology of a region is important to archaeological investigations because it lays the foundation for landforms and soil development. Like the foundation of a house, it determines the shape and subsequently the human use of the landscape above it. How water and sediment move across the surface of the earth is in a great part determined by the geology of a region. This, in turn, affects how people use the land. Slope, available water, exposed bedrock, the success of vegetation are all influenced by what is under the soil. We use the geology of the project area and the surrounding landscape to help assess the likelihood of encountering archaeological objects and features based on how the landscape would have influenced human activities in the past.

Geomorphology of the Puget Lowland

For most of the last 2.6 million years—the Pleistocene Epoch—the Earth underwent drastic shifts in global temperature caused by periodic variations in the Earth's orbital eccentricity, axial tilt and precession. The result has been 11 ice ages, during which almost 30 percent of the world's land surface was covered by sheets of ice as much as 3 kilometers (km) thick (Porter and Swanson 1998).

As the last cold stage intensified, high-altitude valley glaciers grew in depth and extent, and through a process of coalescence formed the Cordilleran Ice Sheet, centered over the Pacific Northwest's Mountain ranges: Coast Mountains, Cascade Range, Olympic Mountains, Columbia Mountains and Rocky Mountains. Further east in North America, ice simply accumulated in place, creating the Laurentide ice sheet, centered over Hudson Bay. During the cold periods (glacials or glaciations) so much of the world's water was stored as ice that global sea level dropped by as much as 150 meters (m) (almost 500 feet). At the same time, beneath the ice, Earth's crust was depressed by the enormous weight. Thus, during the last glaciation, much of what is now the coastline was below present-day sea level. The most recent glacial period—the Fraser Glaciation—began about 25,000 years ago and ended by about 10,000. In that time the ice advanced and retreated twice in what is now the area of Puget Sound, first during the Everson Creek Stade and most recently in the Vashon Stade (Easterbrook 1986). At the height of the Vashon Stade—about 17,500 years ago—the Project area was under as much as 2 km of glacial ice (Porter and Swanson 1998:206). By about 16,500 years ago the ice was retreating—exposing the Puget Lowland and Cascade Range—and glacial meltwater carried rivers of sediment onto the lowlands, mantling the area with deep deposits that subsequent stream activity covered with alluvium in river valleys and built out deltas in Puget Sound.

As the ice sheets finally retreated the land rebounded and sea level rose. The precise timing of sea-level stabilization (eustacy) and the rate of post-glacial rebound (isostasy) varied from place to place due to a complex interplay between the underlying geology and the surficial geological processes that predominated at any given location. In the Pacific Northwest, most of the coastline has been within a few meters of present-day sea level for about the last 6,000 years (Anundsen et al. 1994), while in the northernmost parts of the Northern Hemisphere the land is still rebounding (Thorson 1980, 1989). Yet, in the Hakai Passage region of the central British Columbia coast, due to the particulars of geology and movement of the receding ice sheet, sea level has been relatively stable for most of the past 15,000 years (McLaren et al. 2014), which has implications for early human migration.

On the Salish Sea the picture is equally complex. Due to the gradual south-to-north progression of deglaciation and the relatively rapid rise of sea level in the early postglacial period, sea level in the southern Puget Sound was about 40 m below its present elevation by 8,000 years ago (Thorson 1989). By contrast, in the northern Puget Sound at the same time, sea level was only about 10 m below its present elevation (Clague 1983; Easterbrook 1963; Kelsey et al. 2004; Thorson 1989).

Across the globe, sea level has been rising gradually since about 8,000 years ago. By about 5,000 years ago, sea level across Puget Sound was about 2 to 3 m below its present level; it reached its present-day elevation only in the last 1,500 years or so (Kelsey et al. 2004; Sherrod et al. 2000). For all these reasons, even though people have been in the region for 14,000 or more years, evidence for human occupation near the present Puget Sound coastline dates to the time since sea level stabilized at or near its present elevation. In general, evidence of earlier coastal occupation has been inundated by the encroaching sea.

Surface geology

Surface sediments in the Project area are Pleistocene Fraser Glaciation Vashon Stade recessional outwash (Marysville Sand Member) (Qvrm in Figure 6), Pleistocene Fraser Glaciation to Pre-Fraser Glaciation transitional beds (Qtb in Figure 6), Vashon Stade advance outwash (Qva in Figure 6), and Vashon Stade till (Qvt in Figure 6), described as:

> [Qvrm] stratified to massive, outwash sand with some pebble gravel [Minard 1985].
>
> [Qtb] These deposits lie below the sand of the advance outwash; they consist mostly of a thick section of thin-bedded clay and silt, and fine-grained sand. Some layers of peaty sand and gravel may be present in the lower part of the unit. The fine-grained sediments were deposited mostly in the ponded water some distance from the ice front; the coarse-grained sediments were deposited in stream channels and bars [Minard 1985].
>
> [Qvt] These deposits mantle large upland areas and crop out in valley sides beneath the younger recessional outwash and ablation deposits. The till…consists of a non-sorted mixture of clay-silt, sand, pebbles, cobbles, and boulders (diamicton), but includes some lenses of stratified material, particularly near the base of the deposit. The deposit is generally a compact lodgment till and often is referred to as hardpan [Minard 1985].
>
> [Qva] Deposits of the advance outwash underlie and crop out beneath the till that mantles the upland in the southwest part of the quadrangle. The advance outwash is a thick section of mostly clean, gray, pebbly sand, with increasing amounts of gravel higher in the section. Fine-grained sands and silts are common in the lower part and also occur sparingly in the upper part of the unit [Minard 1985].

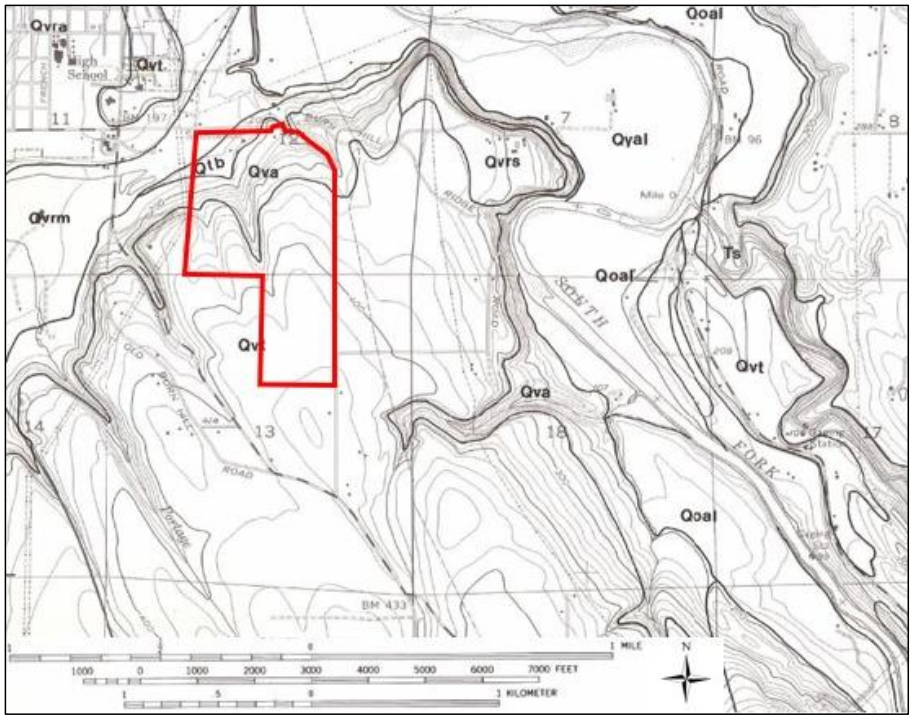

Figure 6: Map of surface geology with the Project area outlined in red (after Minard 1985).

Soils

Geologists define a soil as the effect of weathering on naturally or culturally deposited sediments, which creates discernible 'horizons' within a vertical soil profile. A soil typically comprises an A horizon that contains decomposed organic material mixed with the upper portion of the so-called parent material—usually naturally occurring deposits that are exposed to weathering. The A horizon lies above one or more horizons that develop as a result of water percolating downward, carrying chemicals leached from the A and lower horizons. Soils vary from place to place across the landscape, in keeping with the type of sediments that form the parent material and the local environmental conditions. The horizons of different soil types display color variations according to the local soil chemistry. Color, coupled with the nature of the parent material are what enable soil scientists and archaeologists to distinguish one soil type from another, and, most importantly, to tell a naturally developed soil from a stratigraphic profile that results from cultural processes. A soil complex consists of areas of two or more soils, so intricately mixed or so small in size that they cannot be shown separately on the soil map. Each area of a complex contains some of each of the two or more dominant soils, and the pattern and relative proportions are about the same in all areas.

There are eight soil types within the Project area: Norma loam (39 on Figure 7), Pastik silt loam, 8 to 25 percent slopes (48 on Figure 7), Pastik silt loam, 25 to 50 percent slopes (49 on Figure 7), Ragnar fine sandy loam, 0 to 8 percent slopes (57 on Figure 7), Tokul gravelly medial loam, 0 to 8 percent slopes (72 on Figure 7), Tokul gravelly medial loam, 8 to 15 percent slopes (73 on Figure 7), Tokul

gravelly medial loam, 15 to 30 percent slopes (74 on Figure 7), and Tokul-Winston gravelly loams, 25 to 65 percent slopes (77 on Figure 7).

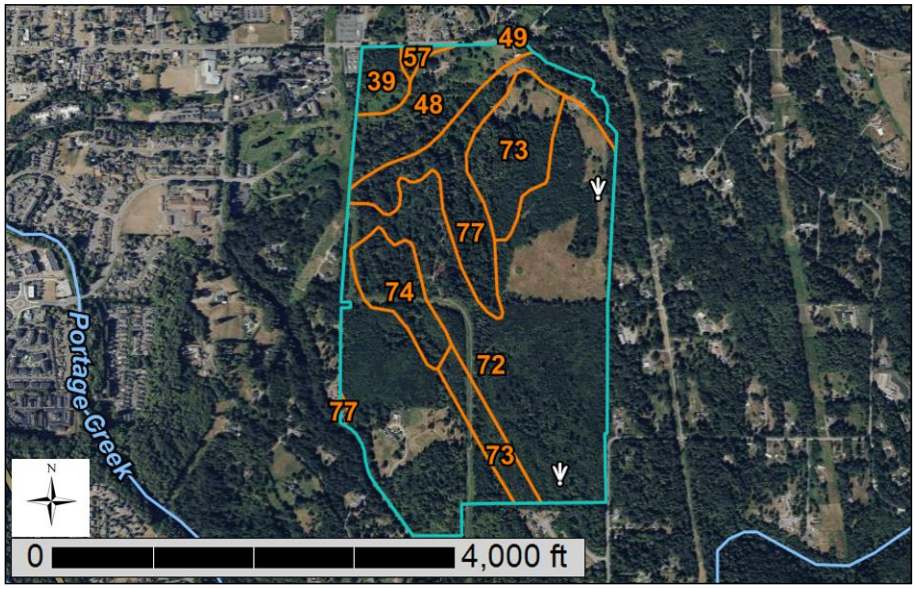

Figure 7: Map of soils with Project area indicated with blue lines (after Soil Survey Staff 2019).

Norma loam is found on drainageways and depressions, the parent material is alluvium. It is poorly drained with about 0 inches to the water table. On the surface it will not flood but will frequently pond. A typical profile consists of 0 to 10 inches: ashy loam, 10 to 28 inches: sandy loam, 28 to 60 inches: sandy loam (Soil Survey staff 2022).

> 0 to 9 inches; very dark gray (10YR 3/1) ashy loam, gray (10YR 5/1) dry; moderate fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many fine, medium and coarse roots; many very fine tubular pores; slightly acid (pH 6.2); abrupt wavy boundary. (6 to l0 inches thick)
>
> 9 to 28 inches; dark grayish brown (2.5Y 4/2) sandy loam, light brownish gray (2.5Y 6/2) dry; common medium prominent yellowish brown (10YR 5/8) redox concentrations; weak medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; few fine roots; many very fine pores; slightly acid (pH 6.4); clear wavy boundary. (10 to 35 inches thick)
>
> 28 to 60 inches; dark gray (5Y 4/1) sandy loam, light gray (5Y 6/1) dry; common fine prominent red (2.5Y 4/6) yellowish brown (10YR 5/6) redox concentrations; massive; slightly hard, friable, nonsticky and nonplastic; few roots; many very fine pores; slightly acid (pH 6.4) [National Cooperative Soil Survey 2001].

Pastik silt loam, 8 to 25 percent slopes, and 25 to 50 percent slopes is found on terraces, the parent material is volcanic ash and lacustrine deposits. It is moderately well drained with about 18 to 30 inches to the water table. It does not pond or flood on the surface. A typical profile consists of ashy silt loam, 6 to 29 inches: ashy silt loam, 29 to 60 inches: silt loam (Soil Survey Staff 2022).

0 to 6 inches; dark brown (7.5YR 3/2) silt loam, brown (7.5YR 5/2) dry; weak fine granular structure; soft, very friable, slightly sticky, slightly plastic, weakly smeary; many fine and very fine roots; common fine and very fine interstitial pores; slightly acid (pH 6.2); abrupt smooth boundary. (0 to 7 inches thick)

6 to 14 inches; dark brown (7.5YR 4/4) silt loam, brown (7.5YR 5/4) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic and weakly smeary; common fine and medium roots; few fine tubular pores; moderately acid (pH 6.0); clear wavy boundary. (6 to 8 inches thick)

14 to 20 inches; yellowish brown (10YR 5/4) silt loam, light yellowish brown (10YR 6/4) dry; few medium distinct dark brown (7.5YR 4/4) mottles, light brown (7.5YR 6/4) dry; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic and weakly smeary; common fine and medium roots; few very fine and common fine tubular pores; moderately acid (pH 6.0); clear wavy boundary. (6 to 14 inches thick)

20 to 29 inches; yellowish brown (10YR 5/4) silt loam, light yellowish brown (10YR 6/4) dry; few medium distinct dark brown (7.5YR 4/4) and few medium distinct reddish yellow (7.5YR 6/6) mottles, light brown (7.5YR 6/4) and reddish yellow (7.5YR 8/6) dry; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic and weakly smeary; few fine roots; few fine tubular pores; moderately acid (pH 6.0); abrupt smooth boundary. (0 to 13 inches thick)

29 to 60 inches; light olive gray (5Y 6/2) silt loam, light gray (5Y 7/2) dry; few fine distinct yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) mottles, brownish yellow (10YR 6/6) and reddish yellow (7.5YR 6/6) dry; massive; slightly hard, friable, slightly sticky, slightly plastic; few fine tubular pores; moderately acid (pH 6.0) [National Cooperative Soil Survey 2002].

Ragnar fine sandy loam, 0 to 8 percent slopes is found on outwash plains, the parent material is glacial outwash. It is well drained with more than 80 inches to the water table. It does not pond or flood on the surface. A typical profile consists of 0 to 2 inches: ashy fine sandy loam, 2 to 24 inches: ashy sandy loam, 24 to 60 inches: loamy sand (Soil Survey Staff 2022).

0 to 1 inch; black (10YR 2/1) partially decomposed leaves and twigs; many roots; abrupt smooth boundary. (1 to 2 inches thick)

1 to 5 inches; very dark grayish brown (10YR 3/2) and very dark gray (10YR 3/1) fine sandy loam, grayish brown (10YR 5/2) dry; massive; slightly hard, very friable, nonsticky, nonplastic; many roots; many very fine pores; NaF pH 10.5; moderately acid (pH 6.0); abrupt wavy boundary. (3 to 9 inches thick)

5 to 18 inches; dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6) fine sandy loam, brown (10YR 5/3) dry; massive; slightly hard, very friable, nonsticky, nonplastic; many roots; many very fine pores; NaF pH 11.5; moderately acid (pH 6.0); clear smooth boundary. (5 to 13 inches thick)

18 to 28 inches; yellowish brown (10YR 5/4) loamy fine sand, brown (10YR 5/3) dry; massive; slightly hard, very friable, nonsticky, nonplastic; common roots; many very fine pores; NaF pH 10.5; slightly acid (pH 6.2); clear smooth boundary. (6 to 12 inches thick)

28 to 41 inches; olive brown (2.5Y 4/4) loamy sand, yellowish brown (10YR 5/3) dry; massive; loose; few roots; many very fine pores; NaF pH 10.0; slightly acid (pH 6.2) [National Cooperative Soil Survey 2000a].

Tokul gravelly medial loam, 0 to 8 percent slopes, 8 to 15 percent slopes, 15 to 30 percent slopes is found on hillslopes and till plains, the parent material is volcanic ash mixed with loess over glacial till. It is moderately well drained with about 18 to 36 inches to the water table. A typical profile consists of 0 to 1 inch: slightly decomposed plant material, 1 to 2 inches: highly decomposed plant material, 2 to 6 inches: gravelly medial loam, 6 to 9 inches: gravelly medial loam, 9 to 17 inches: gravelly medial loam, 17 to 24 inches: gravelly medial loam, 24 to 33 inches: gravelly medial fine sandy loam, 33 to 62 inches: cemented material (Soil Survey Staff 2022).

0 to 3 cm; forest litter consisting of leaves and twigs.

3 to 5 cm; black (10YR 2/1) decomposed litter.

5 to 15 cm; gravelly medial loam, yellowish brown (10YR 5/4) dry, dark brown (7.5YR 3/2) moist; moderate medium granular structure; soft, very friable, slightly sticky and nonplastic, weakly smeary; common very fine, fine, and medium and few coarse roots; common very fine discontinuous pores; 5 percent medium rounded concretions; 15 percent gravel; moderately acid (pH 5.8); abrupt wavy boundary

15 to 23 cm; gravelly medial loam, light brown (7.5YR 6/4) dry, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic, weakly smeary; common very fine, fine, and medium and few coarse roots; common very fine discontinuous pores; 5 percent fine and medium rounded concretions; 15 percent gravel; slightly acid (pH 6.2); clear smooth boundary

23 to 43 cm; gravelly medial loam, light yellowish brown (10YR 6/4) dry, strong brown (7.5YR 5/6) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic, weakly smeary; common very fine, fine, and medium and few coarse roots; common very fine discontinuous pores; 5 percent fine and medium rounded concretions; 15 percent gravel; slightly acid (pH 6.2); clear smooth boundary

43 to 61 cm; gravelly medial loam, very pale brown (10YR 7/4) dry, dark yellowish brown (10YR 4/4) moist; common medium distinct yellowish brown (10YR 5/8) redoximorphic concentrations; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic, weakly smeary; few very fine, fine, medium, and coarse roots; common very fine discontinuous pores; 3 percent fine rounded concretions; 20 percent gravel and 10 percent cobbles; slightly acid (pH 6.2); abrupt smooth boundary

61 to 84 cm; gravelly medial fine sandy loam, pale yellow (2.5Y 8/4) dry, light olive brown (2.5Y 5/4) moist; common fine distinct yellowish brown (10YR 5/8) redoximorphic concentrations; massive; slightly hard, friable, slightly sticky and nonplastic; weakly smeary; few very fine, fine, medium, and coarse roots; common very fine discontinuous pores; 1 percent fine irregularly shaped concretions; 25 percent gravel and 5 percent cobbles; moderately acid (pH 6.0); abrupt smooth boundary

84 to 157 cm; very gravelly sandy loam, light gray (2.5Y 7/2) dry, dark grayish brown (2.5Y 4/2) moist; common medium distinct yellowish brown (10YR 5/8) redoximorphic concentrations; massive; hard, extremely firm, weakly cemented, extremely hard in places; 35 percent gravel; very thin (0.55 mm) discontinuous indurated layer on surface of horizon; moderately acid (pH 6.0) [National Cooperative Soil Survey 2017].

Tokul-Winston gravelly loams, 25 to 65 percent slopes is found on escarpments and till plains, the parent material is volcanic ash over basal till. It is moderately well drained with about 18 to 36 inches

to the water table. It does not pond or flood on the surface. A typical profile consists of 0 to 4 inches: gravelly medial loam, 4 to 22 inches: gravelly medial loam, 22 to 31 inches: gravelly medial fine sandy loam, 31 to 60 inches: gravelly sandy loam (Soil Survey Staff 2022).

> 0 to 4 inches; dark brown (7.5YR 3/2) ashy loam, dark brown (7.5YR 4/2) dry; moderate medium and fine granular structure; soft, very friable, nonsticky and nonplastic, weakly smeary; many very fine, fine and medium roots; many very fine interstitial pores; 5 percent concretions; 5 percent pebbles; slightly acid (pH 6.2); clear smooth boundary. (3 to 8 inches thick)
>
> 4 to 8 inches; dark reddish brown (5YR ¾) ashy loam, dark reddish brown (5YR ¾) dry; moderate very fine subangular structure; soft, very friable, nonsticky and nonplastic, weakly smeary; many very fine, fine and medium roots; many very fine irregular pores; 5 percent concretions, 5 percent pebbles; slightly acid (pH 6.4); clear smooth boundary.
>
> 8 to 35 inches; dark brown (7.5YR 4/4) ashy loam, brown (7.5YR 5/4) dry; weak medium subangular blocky structure parting to weak fine and very fine subangular blocky; soft, friable, nonsticky and nonplastic, weakly smeary; common very fine, fine and medium roots; many very fine tubular pores; 2 percent concretions; 10 percent pebbles; moderately acid (pH 6.0); gradual wavy boundary. (Combined thickness of the Bs horizon is 9 to 40 inches)
>
> 35 to 60 inches; dark brown (10YR 4/3) and dark grayish brown (10YR 4/2) extremely gravelly sand, pale brown (10YR 6/3) and light brownish gray (10YR 6/2) dry; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; many very fine irregular pores; 70 percent pebbles; neutral (pH 6.8) [National Cooperative Soil Survey 2000b].

Climate and Biota

Warm, dry summers and mild, wet winters prevail in this biogeoclimatic zone. Before the influx of immigrant settlers, the Project area and surroundings likely supported prairies and the *Tsuga heterophylla* (western hemlock) Zone (Franklin and Dyrness 1988), which includes western red cedar (*Thuja plicata*) (see also Heusser 1983; Pojar and Mackinnon 1994; Turner 1995).

Thuja plicata occurred in low frequencies throughout the region between 10,000 and 6,000 years before present (BP) (Hebda and Mathewes 1984). Both cedar and hemlock began to expand following 6800 BP and likely dominated the Puget Lowland by 5000 BP. Cooling temperatures and increased rainfall also resulted in the increase of deltaic wetland and riparian habitat (Hebda 2000; Hutchings and Campbell 2005).

The area likely supported a wide variety of large and small mammals, birds, reptiles, and amphibians common to river deltas and foothill transition zones. Bear, cougar, deer and elk are the indigenous large mammals, with small mammals including otter, beaver, fox, porcupine, marten, snowshoe hare, bobcat, chipmunk and squirrel. In the nearby Stillaguamish River, high-value fish such as salmon and trout would have been an abundant resource.

Prior to immigrants arriving in this area, land mammals and plant resources would have been abundant during all seasons. Additionally, much of the use of river- and/or lake-edge sites, such as we might expect to find in the Project area, is interpreted as related primarily to fishing and fish processing, as well as village activities. However, in the Project area, which falls in the transition zone between the delta and the foothills, land mammals would account for a great deal of the total calorie consumption among archaeological cultures.

4.2 Cultural Environment

The Project area lies in a region that Native Americans have inhabited for at least 14,000 years by the time of contact with Europeans, when Salishan-speaking people occupied vast tracts in the Columbia and Fraser River basins, the inland waters of the Salish Sea, the Puget Lowland, the Cascade Range, and parts of the Pacific Coast between the Columbia River and the Olympic Peninsula. European explorers first entered the region in the late sixteenth century, with immigrant settlement beginning in the early nineteenth century and increasing after the Donation Land Claim Act of 1850 and Homestead Act of 1862. Here we present a synopsis of the archaeological cultures, traditional Salish lifeways, and pertinent details of the time since immigrant occupation.

Archaeological cultures

Archaeological evidence of human presence in Western Washington is at least 14,000 years old in the upland areas, evidenced by finds of Clovis and other early postglacial cultural traditions, though evidence for earlier occupation on the Pacific Coast of Canada and in other areas of North America date up to 23,000 years ago (Ames and Maschner 1999; Bennett et al. 2021; Kopperl 2016; Kopperl et al. 2015; McLaren et al. 2018). Although people have been in the region all along, sea level rise in the early and middle Holocene caused river valleys in the Puget Lowlands to gradually fill up with sediment, burying any early archaeological sites in the near-stream areas. Thus, evidence for early human occupation around Puget Sound is most often found at higher elevations on landforms that retain sediments from those earlier times, and sometimes deeply buried in river valleys. In those upland areas, where sea level change has had no effect on archaeological visibility, evidence from the early Holocene is widespread, but well-dated contexts are extremely rare—most archaeological assemblages are 'dated' by their formal similarity to those recovered from dated contexts.

The earliest period in Western Washington is represented by the Lower Bear Creek Site (45KI839), near the shore of Lake Sammamish. It is a late Pleistocene-Holocene (LPH) transition site with diagnostic lithics of the western North American Paleoindian and Paleoarchaic traditions with two archaeological deposits. Peat formation and deposition persisted from about 12,900 cal BP until about 7600 cal BP; Mazama tephra serves as a time marker, at 7580 to 8030 cal BP, for deposition in the region. A more recent deposit lies below Mazama tephra and peat, accumulation of diatomaceous earth, which persisted from about 7600 cal BP until 3900 cal BP. The second deposit is a deeper LPH component below the peat. The deeper component rests on glacial sediments and is below peat and diatomaceous earth (Kopperl 2016).

In the North Cascades National Park near Marblemount and Newhalem in the Skagit River basin, the Cascade Pass site yielded artifacts and a cooking feature beneath Mazama volcanic ash, estimated to be 9,700 years old. The site is nine layers of volcanic ash from four Cascade volcanoes that are interbedded with archaeological deposits. Archaeological deposits include heating and cooking pits, flaked stone, discarded tool fragments, and quartz quarrying debris. Charcoal, burnt seeds and burnt wood also found at all deposit depths. The most recent deposit is dated 2200 and 2000 years old, exhibiting a long history of utilization of the Cascade Pass (Mierendorf et al. 2018:99). The Beech Creek Site (45LE415) in the Gifford Pinchot National Forest of southwestern Washington represents another early Holocene archaeological culture, the Stemmed Point Tradition, at 9,200 years old (Mack et al. 2010).

In the Puget Sound/Cascade regional cultural chronology, the Olcott Phase (ca. 10,000 to 7,550 years ago) succeeds the Fluted Point and Stemmed traditions. Olcott assemblages are remarkably similar to others attributed to the Old Cordilleran Tradition, well known from other parts of the Northwest Coast (Chatters et al. 2011). Typical Olcott artifacts include "Cascade" leaf-shaped bifaces, which bear

distinctive edge grinding on the stem, or hafting portion, and often-heavily patinated expedient stone artifacts of medium- to coarse-grained raw material, and lacking in fine-grained silicates.

Although there are numerous sites ascribed to the Olcott Phase, securely dated components are rare, as evidenced by the few mentioned here. Thermoluminescence (TL) dating of fire-modified rock (FMR) from the Woodhaven Site (45SN417), near Granite Falls, produced median dates of 9,316 and 7,886 years ago (Kiers 2014). Two other Olcott Phase sites near Granite Falls, 45SN28 and 45SN303, yielded TL dates on FMR in the same age range, between 7,340 and 9,650 years ago (Chatters et al. 2011).

Between about 7,550 and 4,000 years ago—often termed the middle Holocene—well-dated archaeological sites are more numerous, in part due to the gradual stabilization of sea level near present elevations. The archaeological cultures are called by many names, but the Marymoor Phase and Charles Culture (or Mayne Phase in the San Juan/Gulf Islands) seem most common in the region. Many include microblade technology. Recent radiocarbon dates from calcined bone at the Marymoor Site (45KI9) range between approximately 5300 to 7000 BP (Chatters et al. 2017; Greengo and Houston 1970). Other sites in the region dated to the middle Holocene include Cattle Point (45SJ9) on San Juan Island (King 1950), the Glenrose Cannery Site (DgRr-22) near Vancouver, BC. (Matson 1976), the Milliken Site (DjRi-3) near Yale, B.C. (Borden 1960), and Pender Island (DeRt-1 and -2) in the Gulf Islands, the northern extension of the San Juan Islands (Carlson and Hobler 1993) and the more recent deposits at the Cascade Pass Site (45CH221) (Mierendorf et al. 2018).

Beginning roughly 5,000 years ago western red cedar became more prevalent in the coastal forests, and archaeological evidence reveals the intensification of its use by the people living on the Salish Sea. Specifically, in the Locarno Beach Phase (3,300–3,500 to 2,500 years ago) and the succeeding Marpole Phase, the woodworking triad of the antler wedge, polished nephrite adze bit and hand maul formed an increasingly prominent part of coastal culture-rich shell deposits (Hebda and Mathewes 1984). In addition, evidence for large post and plank houses and food storage comes to the fore (Matson 2010). Artifact assemblages from this time also illustrate increasing social complexity in the form of personal adornment—e.g., finely made nephrite and jadeite labrets—refinements in procurement technology—e.g., ground slate knives, toggling harpoons and fishing paraphernalia—and ascribed status in the form of status symbols interred with infants and very young children, and cranial deformation. These archaeological manifestations comprise the climax Northwest Coast cultural pattern that was encountered when Europeans first visited the region. Among the best known archaeological sites in the region, the Ozette site (2,500 to 500 years ago) (e.g., Daugherty and Fryxell 1967) and the Hoko River site (3,000 to 1,700) (Croes 1995) on the Olympic Peninsula preserved botanical material in addition to the other artifacts common in most Northwest Coast culture-rich shell deposits, thus revealing a breadth of material culture similar to that known ethnographically, and underscoring the material and social complexity of the regional cultures that existed in the late precontact period.

Finally, the complex interplay of post-glacial geological processes meant that salmon streams were constantly disrupted by cycles of erosion and deposition, which precluded establishment of nearshore marine resources and climax salmon runs between the time of deglaciation and that of sea-level stabilization, which began around 5,000 years ago and ended approximately 1,500 years ago (Fladmark 1975). Thus, prior to about 5,000 years ago, without the abundant, predictable salmon runs, which affect entire river systems and the people who exploit them, the entire region would have been populated by more mobile foragers (Grier et al. 2009; Moss et al. 2007). Since that time, the rich resources available in the maritime and riverine environments encouraged a less mobile lifestyle for some people. We see larger residential villages, increasingly dense populations and complex cultures that existed at the time of European contact (Butler and Campbell 2004; Taylor et al. 2011).

Specific archaeological findings for the Project area and surroundings are discussed in Section 4.3.

Salish Ethnography and Ethnohistory

A detailed description of central Puget Sound cultures is beyond the scope of this report. Instead, we present a broad overview of their traditional lifeways, including what is known of the precontact cultures, using knowledge gained from ethnography, ethnohistory, and the historic record. For in-depth descriptions of traditional Salish culture, readers are directed to the following references: Adamson (1969), Allen (1976), Amoss (1977a, 1977b, 1978, 1981), Belcher (1986), Bierwert (1990, 1993, 1999), Blukis Onat and Hollenbeck (1981), Boyd (1994, 1999), Bruseth (1926), Collins (1950, 1952, 1974a, 1974b [1946]), Curtis (1913), Dewhirst (1976), Eells and Castile (1985), Elmendorf (1971), Guilmet et al. (1991), Gunther (1928, 1945), Haeberlin (1924), Haberlin and Gunther (1930), Harmon (1998), Harris (1994), Howay (1918), Jorgensen (1969), Kew (1972, 1990), Mansfield (1993), B. Miller (1993, 1995, 1997, 1998, 2001), Miller and Boxberger (1994), Mooney (1976), Moss (1986), M. Smith (1941, 1950, 1956), Snyder (1954, 1980, 1981), Spier (1935, 1936), Stewart (1973, 1977, 1979, 1984, 1996), Suttles (1957, 1958, 1960, 1974 [1951], 1987, 1990a, b), Suttles and Lane (1990), Taylor (1953, 1984), Tollefson (1989, 1992), Tollefson et al. (1996), Tweddell (1974 [1953]), United States (1859), United States Court of Claims (1933), Waterman (1920), and Waterman et al. (2001).

The Project area has been home to people since time immemorial. Ethnographic accounts, the historic record and the oral histories of the people who lived provide stories of the lives and deaths of the area's original inhabitants. The published material for the overall Coast Salish tribal area is primarily written by early and mid-twentieth century ethnographers and archaeologists educated in universities. These ethnographies are precious, but they are one snapshot from one researcher based on interviews with select informants. They are extremely filtered and limited. It is also easy to read these accounts and think that the descendants of the informants too lived in the past, however modern-day tribal communities are vibrant active neighbors and partners in cultural resource management and protection. Their cultures are alive. It is within this context that we provide a brief summary of the published work of these researchers with the understanding that they are limited in scope and content.

Salish social life

The peoples of the greater Stillaguamish River watershed, like other groups in the Puget Sound, followed seasonal mobility patterns dictated by the time of year resources became available, generally occupying a permanent village in the winter, and traveling throughout the rest of the year to temporary camps at known fishing, hunting, and gathering locations. Territory boundaries were flexible, often crossed by marriage, kin groups, and resource acquisition areas shared between friendly tribes (Dover and Fitzpatrick 2015; Miss and Campbell 1991). Winter villages were permanent habitation sites with some occupants residing there year-round. Two or more extended families lived together in a winter house, and during the spring, summer, and fall when individual families left the winter village for their temporary gathering and hunting camps, they would often join with relatives or friends from other villages (Haeberlin and Gunther 1930). Resident families were generally related through the father's line, though there were men who moved to live with their wife's family (Tweddell 1974 [1953]). Marriages were exogamous, to expand the social and economic resources of the group and strengthen ties with friendly tribes (Miss and Campbell 1991).

Smith 1941(209) describes two ethnographic villages, one at the confluence of the North and South Forks of the Stillaguamish River near present-day Arlington, and one a little way up the North Fork near present-day Trafton. Bruseth (1926) describes the village of *Skabalko* at:

> …the junction of the rivers at Arlington…*Skabalko* was known far and wide. Sauks travelling to the Sound and back, Snohobish coming down the South fork, parties coming up river to dig for roots, spaykoolist and leek at Ba-quad (Kent's Prairie) nearly always stopped there and camped. At Bah-quad lived an old man and woman about 50 years ago. They seldom left their home, but kept watch over the Prairie,

> dug roots and gave to travelers in exchange for fish and venison. From Ba-quad there was a trail to Kellogg Marsh, to Quil Ceda and on to the Snohomish [Bruseth 1926].

Longhouses in the winter villages were constructed of cedar planks over posts. The planks forming the walls were tied to the post, while roof planks were loose so they could be removed to allow sunlight into the house during the day or to act as a chimney for cooking-fire smoke (Bruseth 1926; Dover and Fitzpatrick 2015). Unlike other Puget Sound tribes who tied the wall planks vertically, the Stillaguamish tied them horizontally; however, they did use the swinging entrance doors of the other tribes. The interior poles were often carved (Haeberlin and Gunther 1930). Woven cattail mats covered the floors and walls, and were used as bedding, while beds and storage shelves lined the walls. Baskets were hung from hooks on the poles and dried fish was hung from the roof support pole. Each longhouse was home to up to 30 people (Blukis Onat and Hollenbeck 1981). Winter houses were one to two hundred feet long, often built on Puget Sound or rivers and streams facing the water.

Summer houses constructed for the gathering and hunting camps were often simpler and made of materials that were easily transported. The Snoqualmie made square mat-covered houses with gable roofs (Haeberlin and Gunther 1930: 18). Four poles with forked ends were at each corner, the forked ends held up horizontal poles that made the roof. One side of the house was left open, unless there was bad weather, and the roof and other sides were covered with mats (Haeberlin and Gunther 1930: 18). A temporary house, called *g.ʷElai'txʷ*, made of cattail mats tied to wood poles, could be up to 30 feet long and usually housed one family, though if more than one family resided together the house would be built larger to accommodate them (Haeberlin and Gunther 1930:19). Figure 8 is an example of the summer square house style made by the Skokomish, a tribe in the south Puget Sound.

Figure 8: Example of a seasonal house, “Mat House—Skokomish” (1912) by Edward S. Curtis (Northwestern University Library 2003a).

Each village had a potlatch house unless economic circumstances prevented a village from building one. Potlatches were held at remarkable occasions, like when a young person received the name of an ancestor, when the salmon runs began, when a death occurred, when a body was reburied, or after

successful hunts. There was a potlatch house at the village of *hēbō'lb* near present-day Everett and one at the largest village, *tc'iɪ.!ā'qs*, at Priest Point (Haeberlin and Gunther 1930).

The peoples of the greater Stillaguamish and Snohomish River watersheds had friendly relations with the tribes east of the Cascades, including the Chelan and Wenatchee, and would trade and intermarry with them. The Snoqualmie Valley hosted one of the principal regional east–west trade routes across the Cascade Mountains, which facilitated frequent interactions between the Salish Sea and Interior Salish groups across the Cascade Divide. Trading parties from the east journeyed through this area on their way to Puget Sound (Haeberlin and Gunther 1930:11; Teit 1928:110, 121). The Stillaguamish shared hunting areas with the eastern tribes under the condition that they stayed within certain boundaries and did not take too much game (Bruseth 1926).

Fish and Fishing

Fish are central to the culture of the central Puget Sound today and to their ancestors. Salmon was a primary staple in the diet and were most bountiful in the fall and early winter when they traveled up streams to spawn. Winter villages were often at or near important salmon fishing locations. Salmon were caught in a variety of ways, including using weirs, nets, traps, lines, or spears, depending on the number of fish and location within the river or stream. Smelt, herring, flounder, and trout were sought after, and the peoples of the greater Snohomish River watershed fished for sturgeon, cod, and skates. Smelt and herring were prized for their oil, which could be drained and stored (Haeberlin and Gunther 1930). Weirs placed across small streams, or large circular nets tied between two canoes were used to catch large numbers of salmon during spawning. As weirs were labor- and time-intensive to construct, they were often used year after year and repaired as needed. Flounder and trout were caught with long lines or nets, while smelt and herring were caught with rakes made of cedar and ironwood pegs; sturgeon were speared. Fish were dried or smoked to store the meat for winter.

Marine resources such as clams, barnacles, oysters, and crabs also contributed a great deal to peoples subsistence. They were collected from large clam beds along the coast and on the islands (Tweddell 1974 [1953]). Fishing and processing of the catch, as well as associated feasting, played a large and complex role in the culture of the traditional people of this area. Each part of the process was subject to cultural and religious influence. Success in fishing is related to guardian spirit power, not just for the act of fishing, but also for acquiring materials and building fishing equipment, including canoes, gear, traps, and weirs. Acquiring and maintaining gear to catch and process fish is regarded as equally as important as the ritual paraphernalia to bless the canoes and catch (American Friends Service Committee [AFSC] 1970).

Gathering and Processing

The daily lives of the traditional people of the central Puget Sound revolved around food gathering, preparation, preserving and presentation. The abundant resources of the riverine and marine environment rewarded hard work. Foods were collected based on seasonal availability and complex social constructs developed to allow for maximum collection efficiency, redistribution, and healthy alliances within and between groups. Women, through the centuries, devised ingenious methods of gathering, preparing, and preserving food. They learned when the edibles were mature and ripe for harvesting, and they developed tools and techniques for the work. They learned which woods to use, and which kinds of fire best suited their needs; they designed and made their own cooking utensils and equipment (Batdorf 1980:4).

Plant resources comprised the bulk of the diet of peoples in the greater Snohomish River watershed. Roots of the brake fern, wood fern, dandelion, wild sunflower, cattail, and wild carrot were collected, along with wild potatoes and bulbs of the camas and wild tiger lily. Wild strawberries, blackberries, elderberries, salal berries, thimbleberries, gooseberries, huckleberries, blueberries, blackcaps, and

salmonberries were collected in the summer, along with acorns and hazelnuts. Most of the food gathered in the spring and summer months was processed for storage, to be consumed during the winter when food was scarce (Haeberlin and Gunther 1930). For the Stillaguamish, these resources were especially plentiful in the Kent Prairie near Arlington and the Sauk Prairie on the Sauk River north of Darrington, which they shared with the Sauk. Other groups were known to travel to Kent Prairie as well—using a trail from Quilceda Creek to the prairie and the Sauk coming down the North Fork Stillaguamish River (Bruseth 1926). These prairies were regularly burned to promote the growth of berry and other harvestable plants (Blukis Onat and Hollenbeck 1981).

Among the plant resources, the cedar tree was also an integral part of traditional life that provided material for clothing, houses, transportation, and tools as well as spirit power and central stability for the traditional peoples of the Sound. "They held the supernatural cedar in high esteem, for, like the bountiful salmon of the seas, the ubiquitous tree of the forest gave of itself to sustain and enrich their lives" (Stewart 1984:19). In the contemporary response of Salishan people to the new needs of their peoples, the cedar is once again central to maintaining identity.

> The Northwest Coast people are again a positive force in the land, facing up to governments, industry and the business world – and themselves. Many are grasping the tools of education to enable them to compete…and many are focusing on the old art forms. The cedar tree is often central to that art, providing, as in the past, the raw material they need: wood, bark, roots and withes [Stewart 1984:19].

The cedar tree was part of every moment of life in traditional culture and continues to be paramount to the cultural activities of tribal members today. The respect for and importance of this tree is ubiquitous today in ceremonial life, where clothing, regalia, ritual items, firewood, functional items and indeed the buildings used for ceremonies are still made of cedar. Administrative buildings incorporate cedar, as it is still considered a cornerstone of cultural identity (Stewart 1984).

Hunting

Mammals and birds were the primary prey. Birds were successfully hunted in coastal marshlands and other wetlands. Following the traditional philosophy, much of the creature was used. Skin or fur for clothing, flesh for food, sinew and other soft tissue for various uses, bone for tools, weapons, and other functional devices such as straws. Many parts of animals and birds are also used in ceremony (Eells and Castille 1985).

Deer, elk, beaver, bear, mountain goat, wildcat, groundhog, cougar, and birds were hunted using traps, snares, nets, and sometimes bow and arrow. For those who would travel there, the Sultan Basin, north of present-day Sultan, was a popular area for elk hunting in the late summer, while mountain goat was hunted near Index (Tweddell 1974 [1953]). Stillaguamish hunted mountain goat and elk in the mountains, especially near the headwaters of the South Fork Stillaguamish River. Snares set up on mountain-goat trails could last years (Bruseth 1926). Birds, especially ducks, were caught in large nets or snares. As with all other food, the majority of the meat was dried or smoked to be saved for the lean winter months (Tweddell 1974 [1953]).

Material Culture

In addition to the archaeological collections and oral histories, much of what we know of traditional Coast Salish material culture derives from ethnographic collections residing in local, regional, and international museums, from the observations of ethnographers and historians, and photographs taken in the nineteenth and early twentieth centuries. However, all these sources of information have been defined by preservation biases. These biases are found in the greater preservation potential of stone and hardy materials, the interpretations made by archaeologists and ethnographers for what they found, and what they deemed important to collect or record. Much is known about stone tools due to how easily

they preserve and how important they were to early archaeologists and ethnographers, and it is only the development of a more recent and broader focus on plant and other perishable materials that has provided a similar depth of knowledge.

Stone implements (lithics) were made of local or exotic stone depending on what stone types were available within a group's use area. Exotic stone was traded for or acquired if tribal members had access to distant quarries. The stone was then flaked or ground to fashion a wide variety of tools. Knives, spear, dart and arrow tips were usually flaked and then hafted to wood or bone for hunting and processing game and plant materials. Mauls, wedges, adzes, and chisels were used for woodworking and other tasks (Eells and Castille 1985). Stone mauls and spear points were polished by placing them in a fire of fir needles then dousing it with water. Wedges made of elk horn and yew were used in conjunction with the mauls for chopping trees. Fishing barbs, toggling harpoon, combs, pins, needles, and many other items were fashioned from animal bone, horn, antler, teeth, and shell (Haeberlin and Gunther 1930).

Salish groups relied heavily on plants to create functional, decorative, and ceremonial objects. For example, western red cedar provided wood for longhouses, canoes, and storage containers, as well as bark that, when shredded, could be woven to make clothing, capes, and head coverings. Sails made of woven cattails were occasionally used with canoes (Haeberlin and Gunther 1930). Cedar and spruce root were used along with other fiber to make baskets like those shown in Figure 9, for use when foraging or cooking, some so tightly woven that they were waterproof. Plants and trees were also used to construct elaborate fish traps and weirs (Bruseth 1926; Haeberlin and Gunther 1930).

Figure 9: Examples of the kind of baskets made by Coast Salish people, "Puget Sound Baskets" (1912) by Edward S. Curtis (Northwestern University Library 2003b).

Like many Salish groups, the peoples of the greater Snohomish River watershed wove blankets of dog and mountain goat wool, often using alder bark and hemlock to dye the wool pink (Figure 10). Feathers and fireweed were also incorporated into the blankets after being pounded soft. The woolly dogs were

kept by women who were weavers, and were valuable possessions, as blankets were given as gifts at potlatch (Haeberlin and Gunther 1930; Tweddell 1974 [1953]). Some clothing was made from bear and buckskin, especially men's garments. Women wore cedar skirts and small cedar bark caps in summer and added buckskin shirts and leggings in winter. Among the many uses for marine shell, clam shell disc beads—"shell money"—were used for trade and as ear and nose adornments (Haeberlin and Gunther 1930:29).

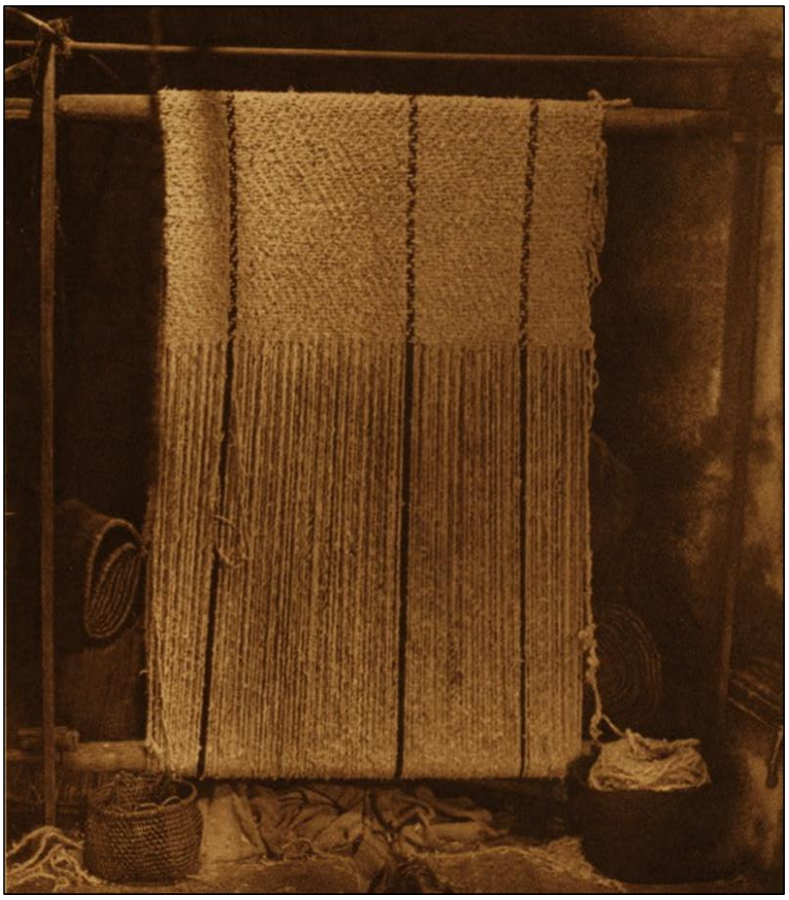

Figure 10: Example of the kind of weaving done by Salish people, "Goat-hair Blanket—Cowichan" (1912) by Edward S. Curtis (Northwestern University Library 2003c).

Summary

This overview has barely sketched traditional lifeways. The Salish People thrived for millennia, and developed a rich and complex culture within an environment that supported a large population prior to European contact and the devastation of disease and political oppression. Despite these hardships the peoples of the region have resiliency, and continue to fight for renewed political and economic power, at the same time working to preserve and maintain traditional cultural knowledge and beliefs.

Exploration and Immigration

The first documented exploration of the Pacific Northwest was a Spanish expedition in 1592, led by Greek-born Apostolus Valerianos, more commonly known as Juan de Fuca, after whom the entrance to the Salish Sea is named. Between 47° and 48° north latitude—after entering a "broad Inlet of the Sea" de Fuca traveled for "twentie dayes … passed divers Ilands … went on Land in divers places, and … saw some people on Land, clad in Beasts skins" (Purchas 1906 [1625]:416).

Some of the earliest English-language records of this region come from George Vancouver's exploration of the Salish Sea. On June 4, 1792, he went ashore in the vicinity of Tulalip, near today's Everett, Washington, and claimed for King George III the coast south to 39° 20' N, which had been his first landfall. Vancouver was convinced of the historical justification of his claim and his maps all show British Territory from about 39° north latitude northward (Hayes 1999:85). The southern portion of the Salish Sea is named after Vancouver's lieutenant, Peter Puget.

Beginning in the late eighteenth century, introduced diseases took an enormous toll on Northwest Coast Native American populations. Estimates of mortality range from 30 to 90 percent, with the higher estimate being the more likely result of several successive catastrophic episodes of, especially, smallpox (Boyd 1994, 1998; Campbell 1991).

The Hudson's Bay Company

The first Europeans to stay for any length of time in the Puget Sound area were traders, trappers and explorers associated with the Hudson's Bay Company (HBC). From the 1820s through to the 1860s, HBC employees regularly traveled and traded around the Puget Sound (Harmon 1998). Tribes around Puget Sound took benefit from trading and bartering with HBC, and many were hired as guides. Fort Nisqually was established in 1833 at the southern end of Puget Sound, the first European settlement on Puget Sound (Bagley 1915). Using the Naches, Snoqualmie, and Yakima passes through the Cascades, even the Yakama people traded with HBC at Fort Nisqually and Fort Langley, to the north. The influence of HBC in the Puget Sound was felt by native people and immigrants alike (Suttles and Lane 1990).

Fort Nisqually was handed over to the US in 1846 after a treaty between Great Britain and the United States had ostensibly settled the dispute over the Oregon Country; however, that treaty was vague as to possession of the islands that straddled the new boundary—including San Juan Island. The HBC took advantage of the confusion, built a log trading post on San Juan Island, and for several years traded with the resident Native American population for fish, which they salted and transported in barrels that they made on site (Bailey–Cummings and Cummings 1987).

At Garrison Bay, the HBC also began a new venture, Bellevue Farm, which was a salmon fishing station and sheep ranch. In 1859 a dispute led to HBC officials demanding the arrest of an American settler. The United States responded by sending sixty-six soldiers to set up a garrison at the southern tip of the island. The British countered with warships and more soldiers. By September 1859 there were three warships with numerous guns and roughly two thousand men on the British side, and nearly five hundred Americans, although fewer cannons. A joint military presence was negotiated (McDonald 1990). In 1860 the HBC charter expired, and British claims to land south of the 49th parallel were laid to rest.

The Donation Land Claim Act of 1850

The pace of immigrant settlement was encouraged by the US 31st Congress, with the 1850 passage of Statute 496, an unnamed Act known by various names, most commonly as the Donation Land Claim

Act, which legitimized a practice originally set in motion by the territorial Provisional Government in 1843 (Robbins 2022). The Act was

> to create the Office of Surveyor–General of the Public Lands in [the] Oregon [Territory], and to provide for the Survey, and to make Donations to Settlers of the said Public Lands. … granted to every white settler or occupant of the public lands, American half-breed Indians included ... three hundred and twenty acres of land, if a single man, and if a married man ... the quantity of one section, or six hundred and forty acres, one half to himself and the other half to his wife, to be held by her in her own right ... [US Statute 496, September 27, 1850]

The law explicitly excluded African Americans and Hawaiians. Prior to its enactment Territorial Delegate Samuel Thurston had told Congress that extinguishing Indian title was the "first prerequisite step" to settling Oregon's land question, so Congress had earlier authorized commissioners to negotiate treaties with that would, among other things, remove Native Americans from their land (Robbins 2022).

Treaties, allotments, assimilation and reorganization

What followed were the 1854 Treaty of Medicine Creek, the 1855 Treaties of Point Elliott, Point No Point, Neah Bay, Yakama, and Walla Walla, and the Quinault Treaty of 1856, by which the American government promised Native American tribes continued resource procurement rights, 'land reservations' (for some, but not all of the tribes), and a one-time payment. Once the treaties were in place, settlement and commercial exploitation of previously tribal lands proceeded almost unfettered. In addition, several subsequent acts of federal legislation created the circumstances that would hasten the already severe breakdown of Tribal lifeways that followed European-introduced disease pandemic in the 1770s that killed nearly 90% of the region's original inhabitants (Boyd 1994).

With the purpose of encouraging Tribal members to adopt the ways of the dominant culture—to assimilate them—the Dawes Act of 1887 provided "for the allotment of lands in severalty to Indians." The most charitable reading of this act was that it was intended to break the tradition of tribal communalism that most immigrants believed was an obstacle to their 'progress' and assimilation into US society; more accurately it as a continuation of efforts ultimately to take even the Reserve lands from the original inhabitants. Those who wished to take part were given either a portion of the reservation on which they lived, or, if their tribe had no reservation, a plot of land in or near their traditional use areas. In both cases the individual was granted US citizenship. Regardless of the reason, fragmentation and fissioning of traditional communities was the inevitable result, which was made worse by provisions of the legislation that enabled eventual sale of the land to non-tribal people. In the 47 years between its enactment and its dismantling, the Dawes Act was responsible for reducing the acreage under Native title from 138 million to just 48 million (Newcomb 2012).

The disastrous effects of the Dawes Act did not go unnoticed. As part of F.D. Roosevelt's New Deal in the 1930s, the Indian Reorganization Act (IRA) (1934) was intended to redress some of the worst effects of the efforts at assimilation. It was:

> [a]n Act to conserve and develop Indian lands and resources; to extend to Indians the right to form business and other organizations; to establish a credit system for Indians; to grant certain rights of home rule to Indians; to provide for vocational education for Indians; and for other purposes.

Although the IRA also restored rights to land and minerals, it was a temporary and controversial measure and by the end of WWII the federal government was back asserting their dominance including the continued abusive practice of removing children from their families and placing them in 'Residential Schools,' where they were forced to speak only English and taught only Euro-American history and culture. Only in the 1970s was this system dismantled, but the loss of cultural memory that

it brought about was and is devastating, to say nothing of the intergenerational persistence of accumulated trauma it visited on the children who were subjected to this practice (see, e.g., Brave Heart and DeBruyn 1998).

Industry and infrastructure

Several large-scale commercial undertakings underpinned and dominated economic development and fueled immigration in the region during the nineteenth and early twentieth centuries: construction of transcontinental railroads, logging and sawmilling, mining, and hydroelectric power projects.

The Northern Pacific Railway was the first transcontinental route to Puget Sound. During the early 1870s, construction of the Northern Pacific Railway was underway, financed by Jay Cooke. The question of there its terminus would be located was between Tacoma, Seattle, or Mukilteo was a hot button topic at the time. In 1873, much to Seattle's disappointment, the railroad settled on Tacoma for its terminus. The Northern Pacific Railway terminus in Tacoma was completed in 1883. Later in 1890, railroad tycoon James Hill was considering expanding the Great Northern Railway the Puget Sound. The Great Northern trains began arriving to the terminal at Smith Cove on June 20, 1893 (MacIntosh and Crowley 1999). These railways and their local spurs promoted economic growth and prompted the founding and development of small towns throughout the region.

Many small towns of Washington were built by loggers and miners, "driven west by the railroad and its unprecedented consumption of wood and by the depleted lumber supplies in the east and Great Lakes" (Carlson 2003:3). Numerous rail spurs from larger lines maintained by Northern Pacific and Great Northern supported the overall success of the timber, sawmill, and mining industries in the Pacific Northwest. The discovery of gold in California in 1848 ignited periodic gold rushes throughout the west and into the Pacific Northwest through 1900 (Tate 2004). Coal mining efforts in Washington had a symbiotic relationship with the railroads: coal, which is a heavy resource, needed to be transported with the railroad, and locomotives themselves burned coal to operate. Over time, entrepreneurs built small towns near important mines and quarries, including Black Diamond, Franklin, Renton, Carbonado, Roslyn, Centralia, and more (McCarty 2003). Timber harvested locally, or rafted by sea and river, was milled and loaded on trains for transport. Frederick Weyerhaeuser founded the Weyerhaeuser Company in 1900, and by 1903 owned over 1.5 million acres of land in Washington. Despite local and national ebbs and flows of the economy, Weyerhaeuser has remained a prominent lumber company. Weyerhaeuser lumber would eventually be used by the U.S. military to reinforce ships, planes, and barracks (Warren 1999).

Hydropower became an increasingly common electricity source in the late nineteenth century after engineer James Francis developed the first modern water turbine in 1848 (Lowell Cemetery 2023). George A. Fitch built the first hydroelectric project in the Pacific Northwest in Spokane in 1885 (Kershner 2016; Northwest Power and Conservation Council 2023). The Snoqualmie Falls Power Plant was in operation in 1899, supplying power to Seattle and Tacoma via a substation in Issaquah (Stein 2001). In 1902, Seattle voters and City Council voted in favor of constructing the Cedar Falls hydroelectric plant to supply power to Seattle. The plant was owned by the City of Seattle and was the first municipally owned power plant in the United States (Lange 1999). The Whatcom County Railway and Light Company began construction of a power plant at Nooksack Falls in 1903, which helped to meet the increasing power needs of the booming towns in the area (historic-structures.com 2021; Soderberg 1986a). The Baker River Hydroelectric Power Plant was constructed in 1924 to meet the power needs of western Whatcom County without relying on power from Canada. The Puget Sound Power and Light Company constructed the plant on the Baker River (Soderberg 1986b). By the late 1910s, the City of Seattle was making plans to develop dams and hydroelectric plants along the Skagit River east of Marblemount. The first, the Newhalem Creek Powerhouse, was completed in 1921 and began operation in the same year. The next plant to be constructed was the Gorge Powerhouse in Skagit

County, completed in 1924, with the Diablo Powerhouse, and the Ross Powerhouse following in 1936 and 1952, respectively. Electricity from these plants was directed mainly to Seattle (Johnson 2010).

The effect of logging and sawmilling, mining, railroad, and hydroelectric power projects on the development of early Washington cannot be understated, because the abundance of natural resources in the Pacific Northwest cannot be understated. Reconstruction and urbanization after the Civil War resulted in limited resources in the East, which resulted in westward movement.

City of Arlington

Non-Indigenous exploration of the area around Arlington began in the 1850s. At the time, the Treaty of Point Elliot of 1855 was changing the social and political landscape of the area. Members of the Stillaguamish Tribe, spelled *Stoluck-wa-mish* in the Treaty of Point Elliott, were present for and party to the signing. However, "no separate reservation was established for the Stoluck-wa-mish River Tribe. Some moved to the Tulalip Reservation, but the majority remained in the aboriginal area along the Stillaguamish River" (Boser 2023). By 1856, the U.S. Army established a trail through the area, but it was heavily forested, and immigrants were slow to move there. It was not until 1887 that the area had its first store, and soon after its first hotel. Nels K. Tvete and Nils C. Johnson established a store at Stillaguamish River forks, the area grew to become Arlington. Lee Rogers and Al Dinsmore, two loggers, owned the hotel, built near the store. The hotel and store mainly served area loggers (Oakley 2007a).

Into the late 1800s, the areas that would become known as Arlington and Haller City competed for dominance. Haller City, along "the on the riverbank with Arlington on higher ground to the south" initially grew quicker than Arlington, but Arlington gained the advantage in 1890 when a railroad depot was established there (City of Arlington 2024a; Interstate Publishing Company 1906:360). The first business to start in the Arlington area was the *Stillaguamish Star* newspaper, beginning in August 1890 (Interstate Publishing Company 1906:360). By the next year, Arlington had an express office, a warehouse, a post office, a hotel, and three miles of streets. Arlington's development was not hindered by the Panic of 1893–1896 (Interstate Publishing Company 1909:361). In 1893, Arlington's estimated population of roughly 500 residents enjoyed the developing area, which now included a bank, shingle mills, general stores, a creamery and hotels (Cameron et al. 2005:117; Oakley 2007a).

Among those who contributed to Arlington's early development were John Brown, John H. Cole, and Alfred S. Garlick, all three of whom filed land claims for a portion of the APE from 1889–1892 (Figure 11) (BLM GLO 2023a, 2023b, 2023c). John H. Cole was born in Indiana around 1852 (Ancestry.com 2023a). In 1889, John H. Cole filed a land claim for 160.00 acres in Arlington, including a portion of the APE (BLM GLO 2023c). Alfred S. Garlick was born in New York in 1848 (Ancestry.com 2023b). He married Izora Garlick in 1885 (Ancestry 2023c). In 1891, Alfred Garlick filed a land claim for 160 acres in Arlington, including a portion of the APE (BLM GLO 2023a). There is no biographical information for John Brown, but the following year, John Brown filed a land claim for 160 acres in Arlington, including a portion of the APE (BLM GLO 2023a).

From the late 1800s through the early 1900s, Arlington's economy was dominated by dairies, shingle mills, and logging operations (Cameron et al. 2005:130). As Arlington began to surpass Haller City in commerce and population, businesses were moved closer to Arlington (Cameron et al. 2005:117). Arlington area residents had provided a 200-foot flagpole for the World's Fair in Chicago in 1893 (Oakley 2007a; Whitfield 1926:574). By 1900, Arlington's population was 852 (Interstate Publishing Company 1909:361). In 1901, the Arlington Cooperative Association was started by local dairymen to provide a market for dairy products (Oakley 2007c). By 1903, Arlington had incorporated, and was then distinct from Haller City (Oakley 2010).

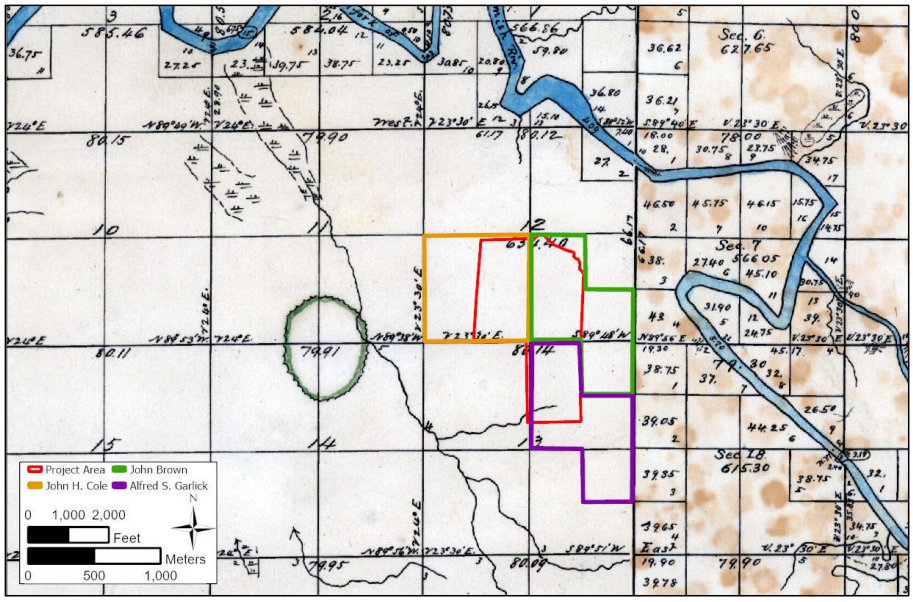

Figure 11: 1879 GLO map showing early land ownership in Project vicinity.

In 1904, the town also erected the same 200-foot flagpole at the St. Louis World's Fair (Oakley 2007a; Whitfield 1926:574). The town was bustling, with the Northern Pacific Railroad coming to town three times a week, and the arrival of the Sunset Telephone Company to provide telephone services through the area (Oakley 2007a). In 1905, Neil Brown, Thomas Moran, and Nels K. Tvete organized and incorporated the Arlington Water, Light & Power Company (City of Arlington 2024b; Oakley 2007b; Whitfield 1926:538).

By 1908, mills surrounding Arlington were producing 375,000 board feet of lumber and 18 million shingles monthly (Cameron et al. 2005:144). The population had grown quickly to 2,000 in 1908 and had its own school system to serve over 400 students. In the same year, Arlington produced over 7,500 pounds of butter a month from the highly regarded dairies in the area (Cameron et al. 2005:144).

In 1912, the original immigrants to the Stillaguamish River Valley began coordinating meetings and neighborhood picnics. The group incorporated in 1916 and became known as the Stillaguamish Valley Pioneers Association. This association remains in existence today, known as the Stillaguamish Valley Pioneer Museum, which preserves artifacts, photographs, and histories of the development of "household[s], logging, diary, military, railroad, sports, medical, education, transportation and music" around Arlington (Stilly Museum 2024).

When the United States declared war on the German Empire in April 1917, residents from Arlington were among the first in Snohomish County to ship out for overseas service. Servicemen from Arlington were part of the 5th Artillery Company that left on August 1, 1917 (Cameron et al. 2005:175). Arlington's R. L. Johnstone family had five sons serving, one of whom was killed "by a high explosive shell while serving at Chateau-Thierry" (Cameron et al. 2005:179). On the home front, Arlington residents participated in Red Cross campaigns and exceeded their quota by over 500 percent. In 1918, a wartime parade in Arlington attracted a crowd of approximately 6,000 spectators who gathered around

to hear one of the organizations proclaim, "We Want Peace and Will Fight For it" (Cameron et al. 2005:179).

The Great Depression hit the area hard, however, and by the 1930s mill closures had led to high rates of unemployment. In response, the Arlington Commercial Club leased acreage from M. Birckenmeier to help the Civil Works Administration's (CWA) federal relief programs (Oakley 2007a). Arlington also built an airport with funding from the federal Emergency Relief Administration, which succeeded the CWA. The project was expected to provide work for 50–60 people. The first airplane landed there on June 3, 1934. Soon, the airport was used for aviator practice and airshows. In 1935, the city was promoting its use as a military base (Cameron et al. 2005:253).

In 1940, the U.S. Navy announced that it would be taking over the Arlington airport as an auxiliary Naval Air Station. During World War II, the Army used the airport briefly as an adjunct to Paine Field (Cameron et al. 2005:266). When the airfield returned to Navy use in 1943, it grew to a total of 1,162 acres, complete with two 5,000-foot runways, 33 buildings capable of housing 850 people, and 116 officer barracks (Cameron et al. 2005:273, 275). The Arlington Naval Auxiliary Air Station is now listed on the National Register of Historic Places (Boswell and Heideman 2011).

In the years after World War II, Arlington continued to develop as a typical example of small-town America. Logging and agriculture remained prominent industries, but many dairy farmers moved toward the Skagit River Valley (Oakley 2007a). In the 1950s, the Arlington Cooperative Association plant in Arlington came under the control of Darigold, which had accumulated several dairy associations at the time. Darigold continued to operate the facility for a few years, but the plant closed in the 1950s (Oakley 2007c).

In 1969, Interstate 5 was completed, providing easy access to Arlington from larger cities such as Everett and Seattle (Oakley 2007a). In 1970, Arlington's population was only 2,261 (Cameron et al. 2005:297). In 1974, the Stillaguamish Tribe of Indians petitioned the Secretary of the Interior for federal acknowledgement and recognition as an Indian Tribe. By 1976, the Tribe was made eligible for federal status (Boser 2023). Arlington experienced continued residential growth in the 1980s because of increases in the cost of living in the larger cities such as Everett and Seattle (Oakley 2007a).

During the 1970s and 1980s, the Stillaguamish Tribe, championed by Tribal member Lew Goodridge, constructed a fish hatchery and rearing ponds on Harvey Creek north of Arlington. The Snohomish County Public Works Department and the Western Washington Indian Employment and Training Program provided labor for constructing the rearing ponds in 1987 (*The Arlington Times* 1987). Upon his retirement, Goodridge stated that the "growth of a strong cooperative relationship between the Stillaguamish and Tulalip tribes and the Washington Department of Fisheries [w]as the most important development during his tenure as fisheries manager" (*The Arlington Times* 1988).

In 2007, Arlington had a population of approximately 15,000 (Oakley 2007a). In 2014, 64 acres of Stillaguamish Tribe land was federally recognized as a reservation (Boser 2023). Arlington continues to be popular today as a bedroom community for people who work in Everett and Seattle.

Property History

Parcel 31051200400400 is 39.68 acres of undeveloped land. In 2011, the estate of Robert M. Putnam transferred the property to Wuanita May Putnam, who remains the property owner (Snohomish County Assessor 2023a).

Parcel 31051200400200 is 19.41 acres of developed land with a two-story residential structure built in 1890. In 2011, the estate of Robert M. Putnam transferred the property to Wuanita May Putnam, who remains the property owner (Snohomish County Assessor 2023b).

Parcel 31051200300500 is 40.00 acres of developed land with no residential structures. It was owned by Fred and Phyllis Steen before 1999, and was transferred several times between the Steens, Steen, LLC., and Frederick Steen's estate between 1999 and 2020. In 2020, Phyllis Steen sold the property to the State of Washington Department of Natural Resources (DNR). In 2021, the property was then sold to Tveit Road LLC, which remains the property owner (Snohomish County Assessor 2023c).

Parcel 31051200300100 is 39.09 acres of developed land with no residential structures. It was owned by Fred and Phyllis Steen before 1999, and was transferred several times between the Steens, Steen, LLC., and Frederick Steen's estate between 1999–2020. In 2020, Phyllis Steen sold the property to the DNR. In 2021, the property was sold to Tveit Road LLC, which remains the property owner (Snohomish County Assessor 2023d)

Parcel 31051300100200 is 39.99 acres of undeveloped land. In 2021, Delores Thorsen and Donald B. Brekhus Trust transferred the property to Brekhus Property LLC, who remains the property owner (Snohomish County Assessor 2023e).

Parcel 31051200402300 is 5.00 acres of developed land with a two-story residential structure with a basement and a detached garage, built in 1988. There are no sales data available on the Snohomish County Assessor website. The property is owned by Robert E. Putnam (Snohomish County Assessor 2023f).

Parcel 31051200401000 is 5.91 acres of developed land with a one-story residential structure with a basement and a detached garage, built in 1984. There are no sales data available on the Snohomish County Assessor website. The property is owned by Larry D. Putnam (Snohomish County Assessor 2023g).

Parcel 31051200400300 is 8.97 acres of developed land with a 1.5-story residential structure built in 1938. In 2005, William C. and Lavona D. Harvey sold the property to Northwest Pipeline Corporation. However, according to the Snohomish County Assessor, William Harvey remains the property owner (Snohomish County Assessor 2023h). The dwelling is on a portion of Harvey's land that is not in the Project area.

Parcel 31051200101300 is 1.43 acres of developed land with a two-story residential structure with a basement and a detached garage, built in 1995. There are no sales data available on the Snohomish County Assessor website. The property is owned by Mark Dolan (Snohomish County Assessor 2023i).

4.3 Previous Archaeology

Franz Boas was the first archaeologist to work in the Pacific Northwest, and was notably the leader of the Jesup North Pacific Expedition, of which Harlan I. Smith (1900, 1903, 1907) was also a part. After the expedition, Smith continued to do extensive work in Washington and Canada. From this point to the 1970s, archaeology in the Pacific Northwest was driven by academic interest in precontact peoples, and by public interest in antiquity that, in part, museum collections satisfied. Archaeologists used a mix of excavation, survey, and the ethnographic record to find sites and make inferences about past cultures. The American Antiquities Act of 1906 and the National Historic Preservation Act of 1966, as amended, made federal agencies and those undertaking federally funded projects consider their impact on archaeological sites and historic structures; this was the beginning of public-sector archaeology. It was

not until the creation of the Environmental Protection Agency, the passing of the National Environmental Policy Act, and litigation involving them, which mandated environmental reviews for federally funded projects. It was really at that time that cultural resource surveys became more common. Since that time a variety of regulations and policies here in Washington State have broadened the scope of archaeological and architectural survey. This burgeoning industry is now known as cultural resource management (CRM). As part of the report preparation, and to aid in planning, cultural resource managers review background research to inform past land use of an area and therefore what evidence of past use is near or within a project area. Knowing the location and type of previously recorded archaeological or historic sites, and the risk of encountering sites are invaluable information to the archaeologist and project proponents alike.

For general overviews of the archaeology and cultural resources of the Pacific Northwest, see Ames (1995, 2003, 2005a, 2005b), Ames and Maschner (1999), Borden (1950, 1951, 1975), Butler and Campbell (2004), Carlson (1990), Matson and Coupland (1995), Matson et al. (2003), Meltzer (2004), and Smith and Fowkes (1901). The earliest archaeological studies of the northern Puget Sound are H.I. Smith's (1900, 1907). In addition to those cited in the next two sections, more recent archaeological overviews can be found in Blukis Onat et al. (1980), Erlandson et al. (1998), Greengo (1983), Mattson (1971, 1989), Miss and Campbell (1991), Nelson (1990), Snyder (1980, 1981), and Stein (1984).

Previously Recorded Archaeological Sites

Records of six archaeological sites within about one mile of the Project area are on file at the Washington State Department of Archaeology and Historic Preservation (DAHP). A short description of the sites is provided below, and summarized in Table 1.

45SN486—Basalt Scraper is a thumbnail basalt scraper encountered about 0.3 miles from the Project area near the confluence of the North and South Forks of the Stillaguamish River (Carrilho 2009).

45SN391—a historic agriculture site approximately 0.3 miles from the Project area. The site is a drainage ditch that is part of an irrigation network that most likely connects to the South Fork Stillaguamish River and may have been constructed between 1890, the year which Arlington was founded, and 1910 (Ozbun 2004).

45SN766—Jensen Lithic Scatter is a precontact lithic material site about 0.6 miles from the Project area. The site is in the South Fork Stillaguamish River floodplain and consists of flaked lithic material and FMR. The flaked material included one partial flake, a projectile point base of white cryptocrystalline silicate, and a bifacial flake of fine-grained volcanic rock, all from the Olcott Phase (Osiensky 2020).

45SN666—a precontact lithic material site approximately 0.7 miles from the Project area on a low terrace south of the South Fork Stillaguamish River. The site consists of lithics, FMR, charcoal, and calcined bone, with most of the cultural materials found in a charcoal and burned soil lens. The lithics were made from fine-grained metamorphic metasediment and volcanic material types, all with a weathered patina (Osiensky and North 2016).

45SN65—New Stilli is a precontact lithic material site about 0.9 miles from the Project area on a terrace on the Stillaguamish River. The site is a low-density lithic scatter consisting of a uniface chopper, a massive core, a flake chopper, a flaked pebble, a blade-like flake, a beaked tool, and eight waste flakes (Mattson 1980).

45SN63—East Arlington Regional is a precontact lithic material site about 1 mile from the Project area on a terrace above the Stillaguamish River. The site consists of 22 points, knives, scrappers, drills, choppers, and four waste flakes made of basalt and one bone object (Blukis Onat 1979).

Table 1: Previously recorded archaeological sites within one mile of the Project area.

Site #	Type	Distance (Miles)	Author, Year	NRHP Eligibility
45SN486	Precontact Lithic Isolate	~0.3	Carrilho 2009	Survey/Inventory
45SN391	Historic Agriculture	~0.3	Ozbun 2004	Potential
45SN766	Precontact Lithic Material	~0.6	Osiensky 2020	Survey/Inventory
45SN666	Precontact Lithic Material, Precontact Camp	~0.7	Osiensky and North 2016	Survey/Inventory
45SN65	Precontact Lithic Material	~0.9	Mattson 1980	Survey/Inventory
45SN63	Precontact Lithic Material	~1	Blukis Onat 1979	Survey/Inventory

Previous Cultural Resources Surveys

There are 12 reports on file with DAHP from previous cultural resource surveys within one mile of the Project area; they are listed below in Table 2, along with annotations for those that included subsurface investigation such as shovel probes (SP), machine tests (MT) or monitoring.

Table 2: Previous cultural resource reports on file with DAHP.

Author	Title	Date
Ozbun et al.	*Cultural Resource Survey of Northwest Pipeline Corporation's Capacity Replacement Project, Western Washington: Addendum One Supplemental Surveys of Workspace, Extra Workspace, Access Roads, and Pipeyards*. **Pedestrian survey. No cultural resources.**	2004
Piper and Smith	*Phase 2 Cultural Resources Assessment for the Sedro Woolley-Horse Ranch Transmission Line Upgrade, Skagit and Snohomish County, Washington*. **529 SPs. 45SN486.**	2009
Compas and Dellert	*Archaeological Monitoring for the Sedro-Woolley Horse Ranch Transmission Line Rebuild Project, Skagit and Snohomish County, Washington*. **Monitoring. No cultural resources.**	2010
Larsen et al.	*Archaeological Survey and Evaluation of the Proposed Park 77 Development, Arlington, Snohomish County, Washington*. **30 SPs. No cultural resources.**	2016
Steinkraus	*Cultural Resources Assessment for the Eagle Creek Substation Project, Arlington, Snohomish County, Washington*. **3 SPs. No cultural resources.**	2016
Gargett et al. 2016	*Archaeological Investigation Report: Hebert Riparian Planting Project, Snohomish County, Washington*. **173 SPs. 60 MTs. 45SN666.**	2016
Homan and Perkins	*Cultural Resources Survey for 2016 Snohomish District Priority Wood Pole Replacement Project, Snohomish County, Washington*. **2 SPs. No cultural resources.**	2016
Hushour	*RE: East Arlington Substation Project, an Addendum to the Cultural Resources Assessment for the Eagle Creek Substation Project, Arlington, Snohomish County, Washington*. **No subsurface survey. No cultural resources.**	2017

Author	Title	Date
Schwab and Schwab	*Cultural Resources Inventory BPA Snohomish District FY18 Priority Poles, Skagit and Snohomish Counties, Washington*. **3 SPs. No cultural resources.**	2019
Pierson et al. 2019	*Archaeological Resources Survey for the Temporary Extra Work Area at Williams northwest Pipeline Arlington Meter Station at Milepost 1422.56, Snohomish County, Washington, Addendum Report*. **3 SPs. No cultural resources.**	2019
Iversen and Osiensky	*Archaeological Assessment for the Lux Project, Arlington, Snohomish County, Washington*. **39 SPs. 45SN766.**	2020
Berry	*A Cultural Resources Assessment of the Proposed Septic System Upgrades at 21202 89th Ave NE (TPN 00830700000300), Arlington, Washington*. **5 SPs. No cultural resources.**	2021

National Register of Historic Places Properties

The record of one National Register property within four of the Project area is on file with DAHP. A short description is provided below and summarized in Table 3.

45SN350—Naval Auxiliary Air Station—Arlington was used as training station during World War II, though the first runway was constructed in 1934 as part of a New Deal-era public works project. Before World War II, the station was a commercial airport and pilot training facility. During the war the Navy and Army took control of the facility and constructed many new buildings to serve its new function, some of which remain (Boswell 2011).

Table 3: National Register Properties within four miles of the Project area.

Distance	NRHP	Name	Period of Significance
~2 miles	45SN350	Naval Auxiliary Air Station—Arlington	1942–1946

Previous Cemetery Reports

Records of three cemeteries within three miles of the Project area are on file with DAHP. A short description is provided below.

45SN523—Old Pioneer Cemetery is an inactive cemetery about 0.8 miles from the Project area. It was established in 1902, and most of the burials were moved to Arlington Cemetery in 1989, though a few markers remain (DAHP 2023a).

45SN543—Arlington Municipal Cemetery is an active cemetery approximately 1.3 miles from the Project area. The cemetery was established in 1903 as the Harwood Cemetery. The City of Arlington took possession of the cemetery in 1999 (DAHP 2023b)

45SN392—Skaboalko village burials is a pre- and post-contact indigenous burial site about 1.5 miles from the Project area (Trautman 2005).

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State Heritage Barn Register

Three barns are on the Washington State Heritage Barn Register within four miles of the Project area. A short description is provided below.

45SN585—McCaully-Boland, Maude, Farm is approximately 0.7 miles from the Project area and was originally purchased by Mathew McCaully. McCaully was one of the first immigrant settlers in

Arlington and on the South Fork Stillaguamish River and a police judge in Arlington for twenty years. After his death, the farm was divided between his daughter, Maude McCaully, and son James McCaully. The barn was most likely built by Maude in the 1920s (Maddy 2011).

45SN614—a barn with a gambrel roof, concrete foundation, and oriented strand board siding about 1.7 miles from the Project area. The barn was moved from its original location in 1972 (Jackson and Jackson 2013).

45SN534—a barn about 3.3 miles from the Project area constructed in the 1930s as an all-purpose family barn. The barn was used as a dairy from the 1960s to 2000 and was left in a state of disrepair. After it was sold in 2000, the new owners refurbished the barn (Lovejoy and Lovejoy 2009).

Archaeological Expectations

The Project area lies on a glacial deposit laid down before the end of the last Ice Age, approximately 11,700 years ago. This is a dynamic landscape, which, when forested, would have been regularly disturbed by natural forest processes.

For at least the last 14,000 years the region's first occupants have lived and foraged in and around what is now Arlington—with copious archaeological evidence around the city, especially along the South Fork Stillaguamish River. The Arlington area had great strategic and economic importance for the Salish people, as it is at the confluence of the North and South Forks of the Stillaguamish River. Moreover, a network of east-trending travel routes converged here; thus, the area was a focal point for travelers, and may have functioned that way for millennia. For these reasons, in the Project area we would expect to find anything from single artifacts lost or discarded on the landscape (isolates) to small lithic scatters, to very large accumulations of artifacts. Since the Project area is near a late Holocene village that was in present-day Arlington, it is likely that village inhabitants traveled to the area on day trips for plant gathering and processing, as well as hunting. These activities would leave behind plant processing pits and ovens, cache pits, and lost or discarded single artifacts.

Not all artifacts can be expected to preserve in the acidic soils that would have characterized the Project area and vicinity in the past. Stone is the most likely raw material to survive; organic material such as bone and antler, and even teeth decay relatively rapidly in an acidic forest soil, as does plant material such as wood and basketry. There is a slight possibility that a perennially damp area, such as a glacial kettle, could have preserved organic artifacts.

In addition to the activities of the area's Indigenous peoples, since the late nineteenth century immigrant settlers have farmed, logged, and taken part in commercial activities in and around the Project area. We would expect to find isolated farming and logging equipment as well as logging camps, roads, notched stumps, and refuse scatters.

5.0 METHODS

This section provides details on the archival research and fieldwork methods that Equinox Research and Consulting International Inc. (ERCI) employed in support of the Project. The research undertaken for the Project uses best-practice archaeological survey techniques to record the presence or absence of moderate to large archaeological sites, with the expectation that we may also find isolated artifacts or features, or small artifact scatters. When sites or isolated artifacts are discovered ERCI records them on DAHP forms in accordance with the *Washington State Standards for Cultural Resources Reporting*.

5.1 Archival Research

ERCI researchers

- Reviewed site forms and reports of previous archaeology on file at DAHP
- Reviewed other archaeological reports and related documents on file at the ERCI offices in Mount Vernon
- Reviewed published information on the precontact, traditional Native American and historic land use in and around the Project area
- Reviewed the Snohomish County Assessor's records
- Reviewed General Land Office maps.

5.2 Fieldwork

ERCI's field work for the Project included both archaeological survey and monitoring.

Archaeological Survey

Fieldwork entailed a thorough pedestrian surface survey and subsurface shovel probes. The pedestrian survey was carried out in conjunction with subsurface survey and in 30-meter (m) wide transects. The technicians moved slowly across their individual transects, and paused at alternating changes of direction to look backwards at trees and the ground surface. Root wads (uplifted tree roots) were inspected because they provide surface exposure and the sediments in the roots are visible. The slopes of the ravines in the norther portion of the Project area were not surveyed due to the steepness and density of the vegetation and some portions of the forested areas in the northern parcels were not surveyed due to dense vegetation.

Shovel probes (SP) consisted of cylindrical pits dug by hand using round-nosed shovels, approximately 50 centimeters (cm) in diameter, ranging up to 100 cm deep. SPs were abandoned before reaching the maximum possible depth due to, among other factors, large cobbles or boulders, large roots, groundwater, or densely compacted sediment. All excavated sediments were passed through ¼-inch mesh hardware cloth shaker screens.

SP locations were determined using a stratified strategy, with SPs placed at 10-m intervals in high probability areas such as along ravine edges, terrace edges, and along defined creeks; at 20-m intervals in moderate probability areas such as within 20 to 30 m of high probably zones; and at 40-m intervals in low probability areas. Areas within the Project area that matched these criteria and were easily accessible by vehicle were prioritized for this preliminary survey.

Geotechnical Monitoring

ERCI monitored geotechnical testing, including exploratory probes (EP) and exploratory bores (EB).

During EP testing, archaeological monitors stood close to the trenches, watching the trench walls and excavator bucket for any cultural resources. When the AESI geologist collected soil samples at 3 feet, the monitor would enter the trench and examine the walls. ERCI archaeologists also monitored as vegetation was cleared in order to gain access to some of the EP locations.

During EB testing, samples were taken using a split spoon and were examined by the monitor along with the tailings from the hollow-stem auger, any sediment disturbed during the setup of the drill rig at each location, and sediment removed by post-holing for installing the bollards for each well monument. The monitor was on site during drilling until 15 feet of intact glacial sediments had been encountered, as archaeological material is unlikely to be present in greater glacial deposits.

6.0 RESULTS

ERCI's archaeological survey included pedestrian and subsurface survey, which was carried out on April 24–27, May 2 and 3, and July 27, 2023. The field team was led by Aleta R. Baxley, BA, and included Emma S. Dubois, BA, Fiona L. Koehnen, BA, Lane Larson, BA, Kelsey A. Maloy, BA, Kayden Rinaldi, BA, and Ashley A. Yates, BA. The weather was mostly sunny.

From May 22–26, 2023, ERCI archaeologists Aleta R. Baxley and Ashley A. Yates monitored geotechnical machine testing. From July 26–28, 2023, ERCI archaeologist Aleta R. Baxley monitored geotechnical drilling and groundwater monitoring-well installation. The results of ERCI's archaeological survey and monitoring are summarized below, followed by a discussion of the findings.

6.1 Pedestrian Survey

On April 24–27, May 2 and 3, and July 27, 2023, ERCI archaeologists undertook pedestrian survey of the Project area, both in conjunction with the subsurface survey and via transects (Figure 12). The Project area encompasses a variety of landforms and land uses that have impacted the vegetation and areas accessible for survey.

In the northwest corner of the Project area in Parcel 31051200300100 the terrain is relatively level, with three small ephemeral creeks that downcut though the glacial terrace creating ravines in the southern portion of the Parcel (Figure 13). The northeast corner of the parcel has a small secondary terrace north of the larger main terrace that extends northeast outside the Project area (Figure 14 and Figure 15). The terrace slopes are steep, and in some places greater than 45 degrees. The landscape in the western portion of Project area is dominated by two northwest–southeast-trending steep-sided ravines feeding creeks at the base (Figure 16). Between the ravines is a slightly sloping glacial outwash hillside. The western ravine has a small tributary ravine that extends from the southwest corner of the parcel northeast to connect with the main ravine, which extends southeast outside the Project area. The northeast Project boundary is bordered by another steep-sided ravine with an ephemeral creek that cuts into the glacial till plateau—the dominant landform for the eastern portion of the Project area (Figure 17). Southeast of this ravine the glacial outwash slopes up to the southeast and then becomes relatively level at the boundary between parcels 31051200400400 and 31051300100200 (Figure 18 and Figure 19). A northwest–southeast linear depression in the southwest corner of the Project area has an ephemeral creek at the base that extends northeast to form the western ravine in the western portion of the Project area (Figure 20).

Vegetation in the Project area varies with terrain and proximity to water sources. The low-lying northwest corner has a mix of alder stands with limited ground vegetation (Himalayan blackberry, salmonberry, ferns). Marshy areas along and near creeks include alder, vine maple, Himalayan blackberry, salmonberry, ferns, skunk cabbage, false lily of the valley, holly, and horsetails. Similar vegetation is found south of this low area, around the ravines and in the southern portion of the Project area, along with western hemlock, cedar, elderberry, snowberry, trillium, wild bleeding heart, and piggyback plant. Devil's club is present mainly in and near the ravines. On the eastern side of the eastern ravine the trees—mainly alder, vine maple, cedar, and western hemlock—are sparser and the ground vegetation—mainly Himalayan blackberry and salmonberry—is denser. In some places ground vegetation made pedestrian survey impossible; some areas were clearer due to the presence of old logging roads. Mowed grass is found in portions of the eastern boundary and around each residence.

Parcel 31051200300100 has a barn and several small sheds on the secondary terrace in the northern portion close to Tveit Road (Figure 21). Below the terrace, closer to Tveit Road, were three semi-truck cargo containers at the time of the survey. A gravel driveway connects the barn to Tveit Road.

There is a two-story single-family residence, along with a small barn, and two sheds on Parcel 31051200400200 just south of Tveit Road (Figure 22). The residence is the only historic property within the Project area, and was first constructed in 1890, although it has undergone renovations since then. A gravel driveway connects this residence and the residences on parcels 31051200402300 and 31051200401000 to Tveit Road.

On Parcel 31051200402300 is a two-story single-family residence and a carport (Figure 23). On the parcel to the east, 31051200401000, is a two-story single-family residence, garage, and carport (Figure 24). None of the other parcels within the Project area contain structures.

ERCI's principal observations of cultural material are described below.

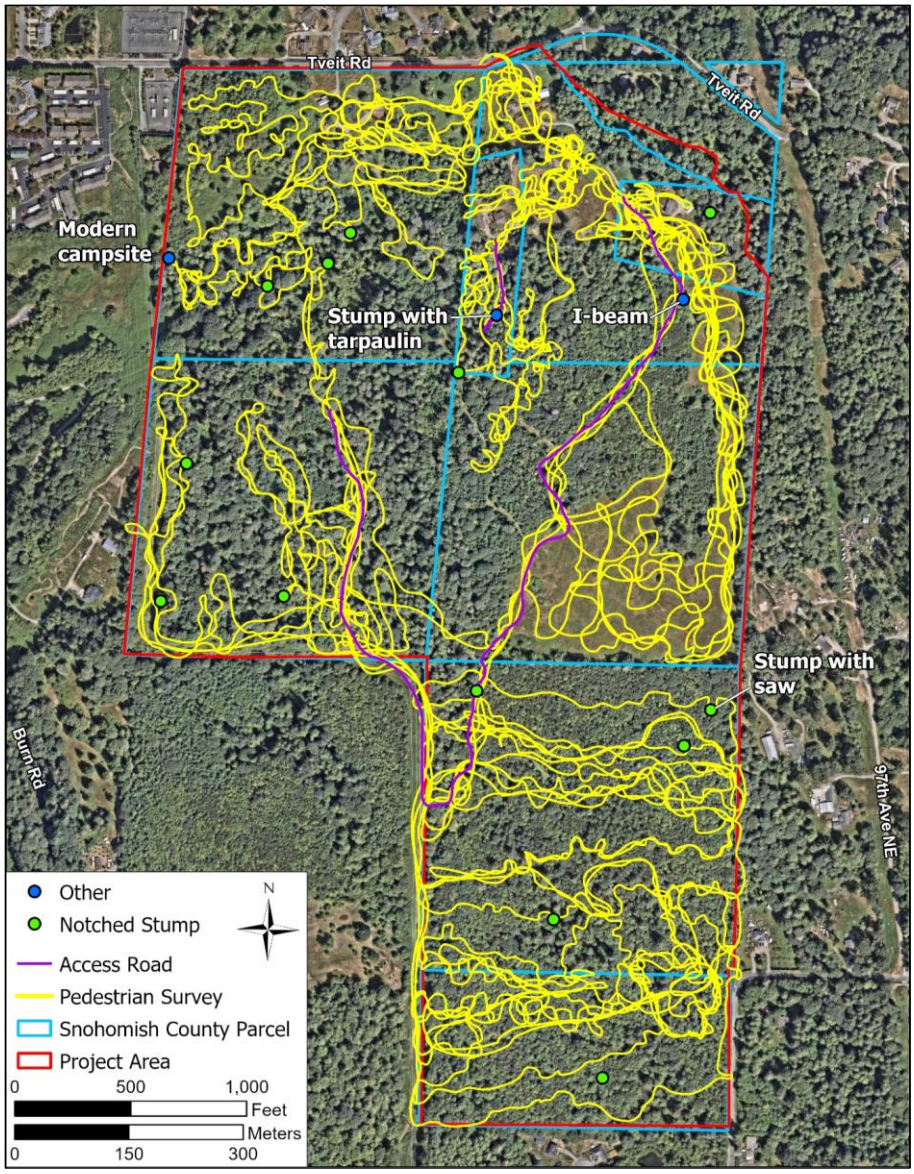

Figure 12: Sketch map of pedestrian survey routes; items called out are discussed below.

Figure 13: View west, level area in northwest portion of Project area.

Figure 14: View west, small terrace with low area below, Parcel 31051200300100.

Figure 15: View north, glacial outwash hillslope, Parcel 31051200402300.

Figure 16: View west, western ravine viewed from raised area between ravines, western portion of Project area.

Figure 17: View southeast, Parcel 31051200400300, ravine on northeastern Project boundary.

Figure 18: View south, Parcel 31051200400400, slightly sloping terrain on eastern Project boundary.

Figure 19: View north, level terrain in southern portion of Project area.

Figure 20: View northwest, Parcel 31051300100300, linear depression in southwest portion of Project area.

Figure 21: View northeast, Parcel 31051200300100, barn.

Figure 22: View west, Parcel 31051200400200, residence and small carport.

Figure 23: View west, Parcel 31051200402300, residence.

Figure 24: View northeast, Parcel 31051200401000, residence, garage, and carport.

Cultural Materials

A falling saw was encountered resting on a cut stump in Parcel 31051200400200 near SP 50 (Figure 25). Thirteen springboard-notched stumps were encountered throughout the Project area, including the one with the falling saw, with some clustered at the base of the glacial outwash slope and on the sides of the ravines (Figure 26). These notched stumps and the falling saw are indications the Project area was logged in the late 1800s or early 1900s.

There are several narrow roads throughout the Project area; some are passible by truck and are used by the landowners, and some are overgrown. These were likely created by loggers, though ERCI could not associate them with any particular logging company. Most of these roads are simply cleared paths through the forested areas; however, on slopes the roads were created with cut-and-fill techniques, and in areas of standing water they are built up on fill (Figure 27 and Figure 28). A Snohomish Public Utility District (PUD) power-line corridor forms the western border of the Project area (Figure 29). Throughout Parcels 31051200300100, 31051200400200, 31051200401000, and 31051200400400 there are narrow, shallow drainage ditches that divert water into the creeks (Figure 30). Several have iron or concrete culverts where the ditches intersect with logging roads and driveways (Figure 31).

A steel I-beam was encountered in the vicinity of SP 103. ERCI did not find any associated cultural materials, but it is just east of one of the logging roads, and may pertain to logging activities (Figure 32).

ERCI encountered a recent campsite on the western boundary of Parcel 31051200300100, consisting of a recent firepit with camping chairs around it; two makeshift plank bridges across a creek; a shallow trench on the eastern side of the creek, with boards partially lining the lower portion; a round shallow basin with constructed dirt walls lined at the base with river rocks; and several buckets and shovels (Figure 33–Figure 35). In Parcel 31051300100200 ERCI encountered an old sawn stump with a tarpaulin clamped to it; possibly part of another recent campsite (Figure 36).

Recent refuse and wood debris piles were encountered in Parcel 31051200300100 south and southeast of the barn and in Parcel 31051200300500 in the raised area between the two ravines (Figure 37). The refuse piles consisted of plastic containers, tarpaulins, plastic chairs, car tires, and glass bottles. A tire dump was encountered on the western Project boundary in Parcel 31051300100200 (Figure 38). Recent refuse such as soda and beer cans, nondescript plastic, vehicle parts, and a child's car booster seat were encountered across the Project area, mainly near the residences and logging roads (Figure 39).

Nonhuman mammal bones were encountered on the surface in Parcels 31051200300100, 31051200300500, 31051200400400, and 31051300100200 (Figure 40). Each bone was immediately photographed, and digital images transmitted electronically to Alyson M. Rollins, MA, ERCI's biological anthropologist, who confirmed the remains were nonhuman.

The refuse encountered on the surface within the Project area was recent or nondescript and could not be dated; therefore, it is not considered a cultural resource for management purposes.

No cultural resources were observed during the pedestrian survey.

Figure 25: View east, Parcel 31051200402300, stump with falling saw blade.

Figure 26: View southeast, Parcel 31051300100200, stump with springboard notch with ERCI.

Figure 27: View southeast, Parcel 31051300100200, overgrown logging road.

Figure 28: View southwest, Parcel 31051200300100, logging road on west side of eastern ravine.

Figure 29: View south, Parcel 31051300100200, PUD road with ERCI.

Figure 30: View southeast, Parcel 31051200400200, drainage ditches in cleared area.

Figure 31: View west, Parcel 31051200300100, iron culvert for drainage ditch.

Figure 32: View northeast, I-beam near SP 103.

Figure 33: View southwest, Parcel 31051200300100, firepit and camping chairs at recent campsite.

Figure 34: View northwest, bridge and rock-lined path at recent campsite.

Figure 35: View south, trench with boards at recent campsite.

Figure 36: View west, Parcel 31051300100200, stump with tarpaulin and clamps.

Figure 37: View south, Parcel 31051200300100, refuse and wood debris piles southwest of barn.

Figure 38: View southwest, Parcel 31051300100200, tire pile by access road.

Figure 39: View east, Parcel 31051300100200, car parts and refuse scatter.

Figure 40: Plan view, Parcel 31051200400400, nonhuman cranial fragment found on the surface.

6.2 Subsurface Survey

On April 24–27, and May 3, 2023, ERCI archaeologists undertook a subsurface survey program of the Project area that included 139 SPs, with a total of 19.76 cubic meters of sediment excavated (Figure 41, Figure 42). Table 4 lists each parcel in the Project area and the SPs placed within it. SPs were placed using a stratified strategy with a focus on high-probability locations determined by the landscape and water resources (Figure 43–Figure 45). SPs were not placed in Parcels 31051200400300 and 31051300100200.

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Table 4: SPs in each Parcel.

Parcel Number	SPs in Parcel
31051200300100	63–84, 86–93
31051200300500	41–46, 54–59, 85, 130, 132
31051200102300	1, 2, 51, 61
31051200400200	3–40, 47–50, 62, 94, 95, 103–108
31051200401000	96–102
31051200400300	No SPs
31051200101300	No SPs
31051200400400	53, 60, 109–129, 131, 134–139
31051300100200	No SPs
31051300100300	52, 133

Four distinct sedimentary matrices were identified: Matrix 1 (M1), a dark brown to dark yellowish-brown disturbed local sediment of sandy silt with few pebbles and organics; Matrix 2 (M2), a dark brown to yellowish-brown intact glacial till of sandy silt with some gravels, pebbles, few cobbles and organics; Matrix 3 (M3), a yellowish-brown intact glaciolacustrine deposit of sandy silt; and Matrix 4 (M4), a dark yellowish-brown to yellowish-brown intact glacial outwash of sand with few gravels and pebbles. Full matrix descriptions are available in Appendix 1; annotated sediment profiles can be seen in Figure 46–Figure 48.

M1 was encountered in the vicinity of the residences and barn in Parcels 31051200300100, 31051200402300, 31051200400200, and 31051200401000 in 19 SPs, and was also encountered in SP 130 near the Snohomish PUD power-line corridor. M1 was encountered above intact sediments in all SPs, except SPs 28, 86, and 87, where M1 was the only sediment present. The most common profile—encountered in 82 SPs—consisted of only M2. This profile was found throughout the Project area, mostly on the glacial outwash plain and terraces which are mantled with glacial till. The second most common profile was M2 above M3—encountered in 25 SPs—mainly on the lower terrace. M4 was concentrated in Parcel 31051200300100. It was encountered in SPs 98, 99, and 132, as the only sediment, and below disturbed sediment or glacial till in SPs 80, 88–92, and 144.

Nondescript refuse was encountered in 7 SPs (5, 9, 28, 80, 89, 92, 130). All SPs with refuse were in the vicinity of a residence, barn, or the PUD power-line corridor. Refuse included colorless, aqua, amber, and blue glass fragments, ceramic fragments, nails, aluminum fragments, corroded metal fragments, a ferrous metal stake fragment, black plastic fragments, a black plastic object, Styrofoam, a metal object, a dimensional lumber fragment, blue fabric, and orange flagging tape (Figure 49–Figure 50).

A milk glass canning jar insert fragment with “AIN” embossed on it was encountered in SP 34 (Figure 51). The embossing cannot be definitively linked to a certain manufacturing company; however, milk glass was manufactured between the 1870s and the mid-twentieth century (Lindsey 2021).

All materials were found in disturbed sediment with little context; none can be considered cultural resources for management purposes. **No cultural resources were encountered during the subsurface survey.**

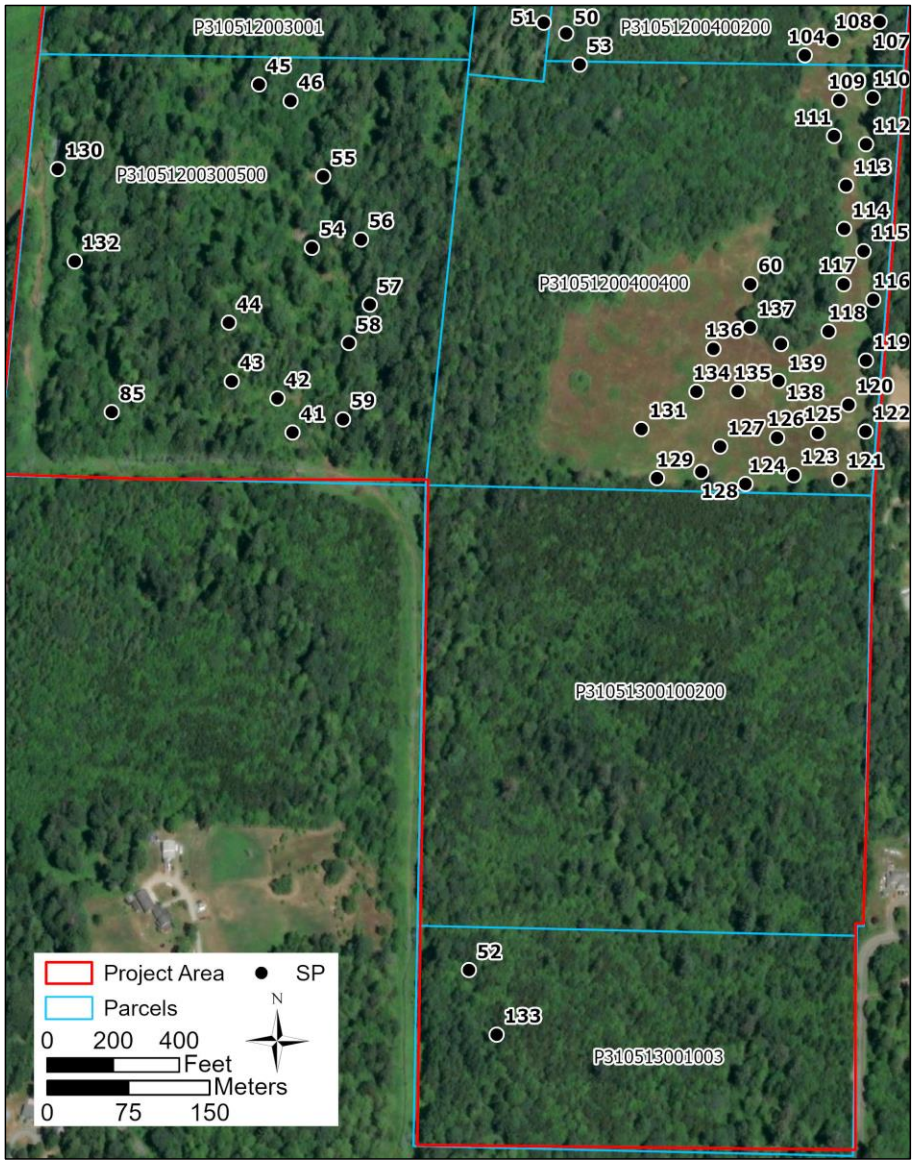

Figure 41: Sketch map of SP locations in center and southern parcels.

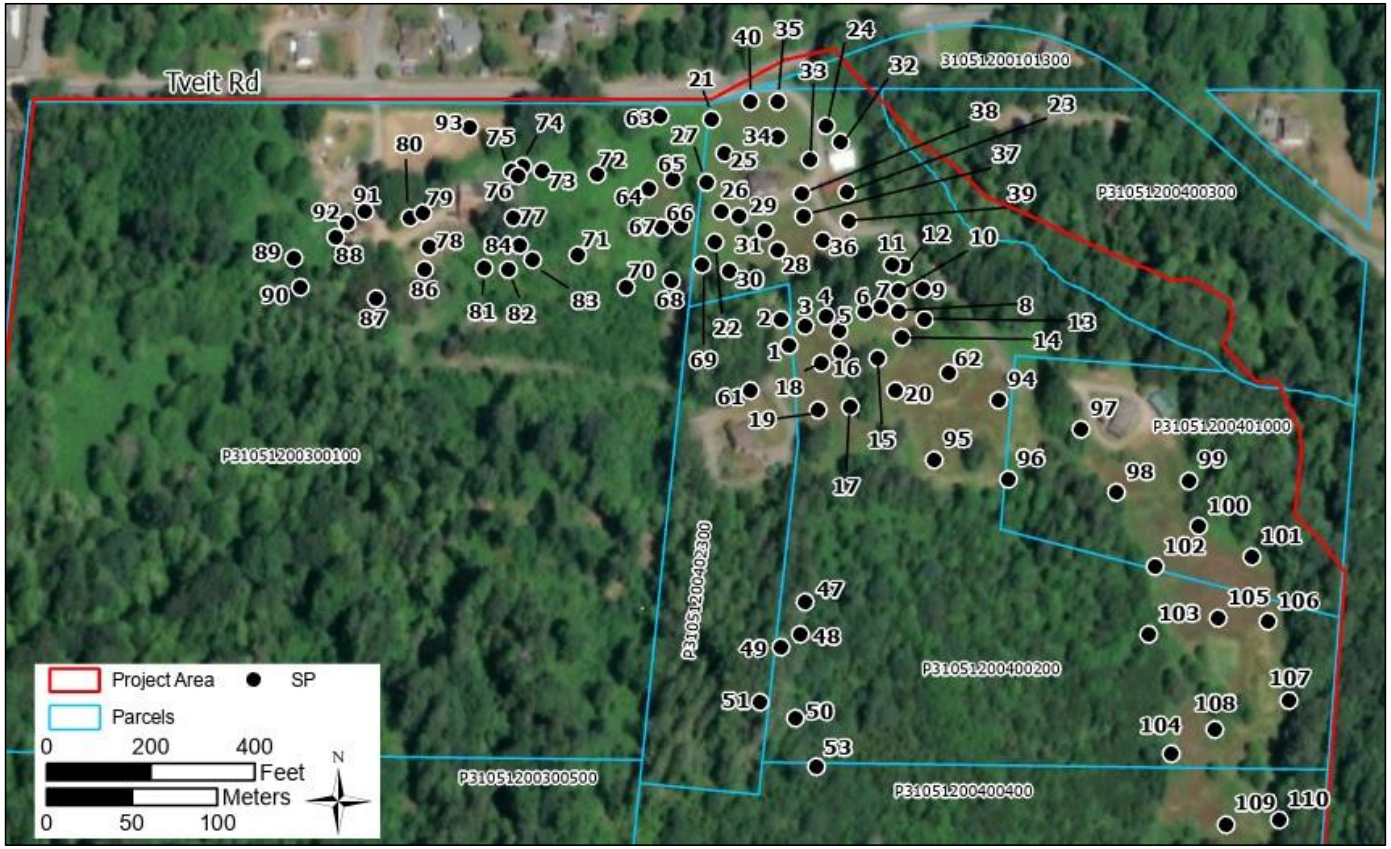

Figure 42: Sketch map of SP locations in northern parcels.

Figure 43: View northwest, SP 86 overview with ERCI at SP 78.

Figure 44: View west, SP 120 overview with ERCI at SP 138 (center) and SP 139 (right).

Figure 45: View west, SP 59 overview.

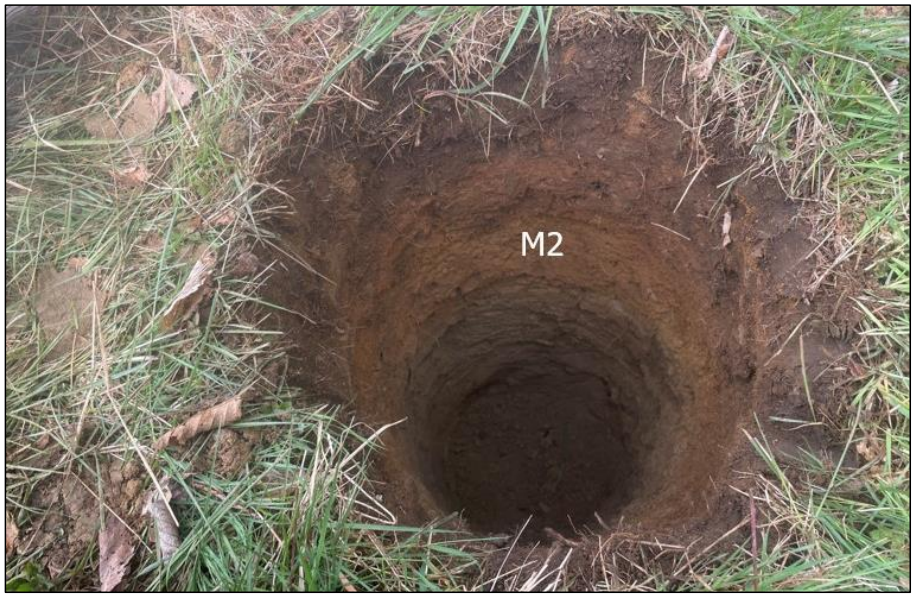

Figure 46: View northwest, SP 10 profile; example of M2 with gradual color change.

Figure 47: View west, SP 69 profile, example of M3.

Figure 48: View north, SP 89 profile, example of M1 and M4.

Figure 49: Plan view, SP 80, colorless and amber glass fragments, and roofing nail.

Figure 50: Plan view, SP 9, ferrous metal stake fragment.

Figure 51: Plan view, SP 34, milk glass canning jar lid insert fragment (scale in cm).

6.3 Monitoring

From May 22–26, 2023, ERCI archaeologists Aleta R. Baxley and Ashley A. Yates monitored geotechnical machine testing—excavation of 44 exploratory probes (EP)—throughout the Project area (Figure 52). Associated Earth Sciences, Inc. (AESI) conducted the geotechnical testing and Land Dirt Pipe Construction, LLC, conducted the excavation. ERCI monitors examined sediments during excavation and examined the profiles of each EP. EPs 21–23 were not monitored due to time constraints. ERCI archaeologists also monitored vegetation clearing for access to some of the EP locations.

The target depth for the EPs was 22 feet, though most were terminated at a shallower depth due to compaction. All were the width of the excavator bucket (about 3 feet) and varied from 10 to 15 feet deep. AESI geologist Peter Linton collected soil samples at 3 feet, at the final depth of the EP, and whenever there was a change in sediment.

M1, M2, M3, M4, along with four matrices not encountered during the subsurface survey (Matrix 5, Matrix 6, Matrix 7, and Matrix 8), were present in the EPs. Matrix 5 (M5) is a dark yellowish brown to gray intact glacial recessional outwash of silty sand; Matrix 6 (M6) is a gray to blueish gray intact lacustrine deposit of laminated silt; Matrix 7 (M7) is an intact glacial outwash of coarse sand with some gravels and few pebbles and cobbles; and Matrix 8 (M8) is colluvium that has a wide range of colors and compositions. The most common profiles were M2 and M2 overlying M4. M5, M6, and M7 were encountered only in the two most northern parcels in the Project area. M8 was encountered in EPs 43 and 44. Full descriptions of M5, M6, M7, and M8 can be found in Appendix 2; annotated sediment profiles can be seen in Figure 54–Figure 56.

ERCI encountered refuse in EP-44: plastic fragments, a spray paint can lid, wire, and a PVC pipe. While monitoring vegetation clearing, ERCI encountered a refuse pile near EP-14, with discarded pots, plastic cups, a metal bowl, a glass jug, a tarp, and a Nintendo game cartridge from the 1990s. There was another recent refuse and burn pile south of EP-18 with spray-paint cans, metal cans, cardboard, a metal chair frame, drug paraphernalia (one item had characters from the cartoon show Rick and Morty, 2013–present, printed on it), and nondescript refuse (Figure 57–Figure 59). Nondescript refuse with no datable features or modern refuse is not considered a cultural resource for management purposes.

An amber bottle with an Owens-Illinois Glass Co. maker's mark dated ca. 1931–1966 was encountered on the surface near EP-1 (Lockhart and Hoenig 2018), and near EP-44 ERCI encountered a milk glass jar embossed with "PONDS 11" on the base, dated from 1890s to the mid-twentieth century (Lindsey 2020) (Figure 60, Figure 61). As both the bottle and the jar were found on the surface and not in association with other historic objects or features, and may have been deposited on the surface as well as moved around at any time after their manufacture up to the present, little archaeological information can be gleaned from them; they are not considered cultural resources for management purposes.

From July 26 to 28, 2023, ERCI archaeologist Aleta R. Baxley monitored the installation of two groundwater-monitoring wells, monuments, and protective bollards. Holocene Drilling prepared two exploratory bores (EB), EB-1W and EB-2W (Figure 52). AESI conducted the geotechnical testing. EB-1W was drilled to 90 feet, and EB-2W was drilled to 50 feet. Geotechnical testing samples were taken using a split spoon every 2.5 feet for the first ten feet, then every 5 feet. Both a 1 inch- and 2 inch-diameter split spoon were used.

ERCI examined sediments recovered in the geotechnical samples, the tailings from the hollow-stem auger used for EB-2W, as well as any sediment disturbed during the setup of the drill rig at each location and sediment removed by post-holing for installing the bollards for each well monument. As mud rotary

was used for drilling EB-1W; no other sediments were visible during drilling. The monitor was on site during drilling for the first 15 feet of each bore.

EB-1W was placed on the glacial outwash hillside south of 8904 Tveit Road (Figure 62, Figure 63). The 2.5-foot sample had no recovery, though the sediment on the surface was dark brown to yellowish-brown M2. The 5-, 7.5-, and 10-foot samples all contained a grayish-brown M2. The 15-foot sample contained a grayish-brown sandy M4 above a grayish-brown M4 of sandy silt. These sediments were consistent with the nearby EP-42. Additionally, a section measuring 4 feet by 2 feet by 8 inches was dug with hand shovels to level out an area for the mud rotary trough. The sediment profile was dark brown M2 above a yellowish-brown M2. Three holes, measuring 3 inches by 3 inches by 12 inches were dug with a post-holer for the bollards around the well monument. All bollard holes contained M2.

EB-2W was placed on the glacial outwash hillside about 13 feet west of the driveway of 9116 Tveit Road (Figure 64, Figure 65). The 2.5-foot sample contained a brown M2; the 5- and 7.5-foot samples had poor recovery and contained a brown, sandy M2; the 10-foot sample contained a grayish-brown M4 with an oxidation lens; and the 15 foot sample contained a gray M4 with some oxidation veins. The three bollard holes contained dark brown to yellowish brown M2. No refuse was encountered during drilling for EB-1W and EB-2W.

On November 20 and 21, 2023, ERCI archaeologist Aleta R. Baxley monitored clearing and grading for drill rig access at six proposed drill locations, excavation during five machine tests (EP-45–EP-49), and excavation of three sample trenches adjacent to EP-45, EP-46, and EP-47. The drill locations were at the edges of ravines in the northern portion of the Project area. The pads for drill rig access were typically about 32 feet by 32 feet and had up to 11 inches of ground disturbance in M2 from clearing vegetation and disturbance from the excavator tracks (Figure 66). Two of the pads required leveling; one required excavation about 20 inches deep over an area 52 feet by 32 feet, and the other required a ramp and pad to be constructed, as the drill location was on a slope. The ramp was 30 feet by 6 feet, and up to 5 feet of sediment was removed, with a sediment profile of M2 above an older sand of unknown origin. The pad was 18 feet by 10 feet of built-up material taken from ramp excavation; the rest of the material from the ramp was piled at the top of the slope (Figure 67).

EP-45 to EP-49 were dug close to one another but had varied profiles due to variation of sediment on the slope. EP-45 had M8 above M2, with an older sand at the base. EP-46 was similar, though it did not have M8. EP-47 and EP-48 had the same profile of M1 above M8, and EP-49 had M2 above M8. The sample trenches all had the same profile as the EP they were dug next to. No refuse was encountered.

No cultural resources were encountered during monitoring.

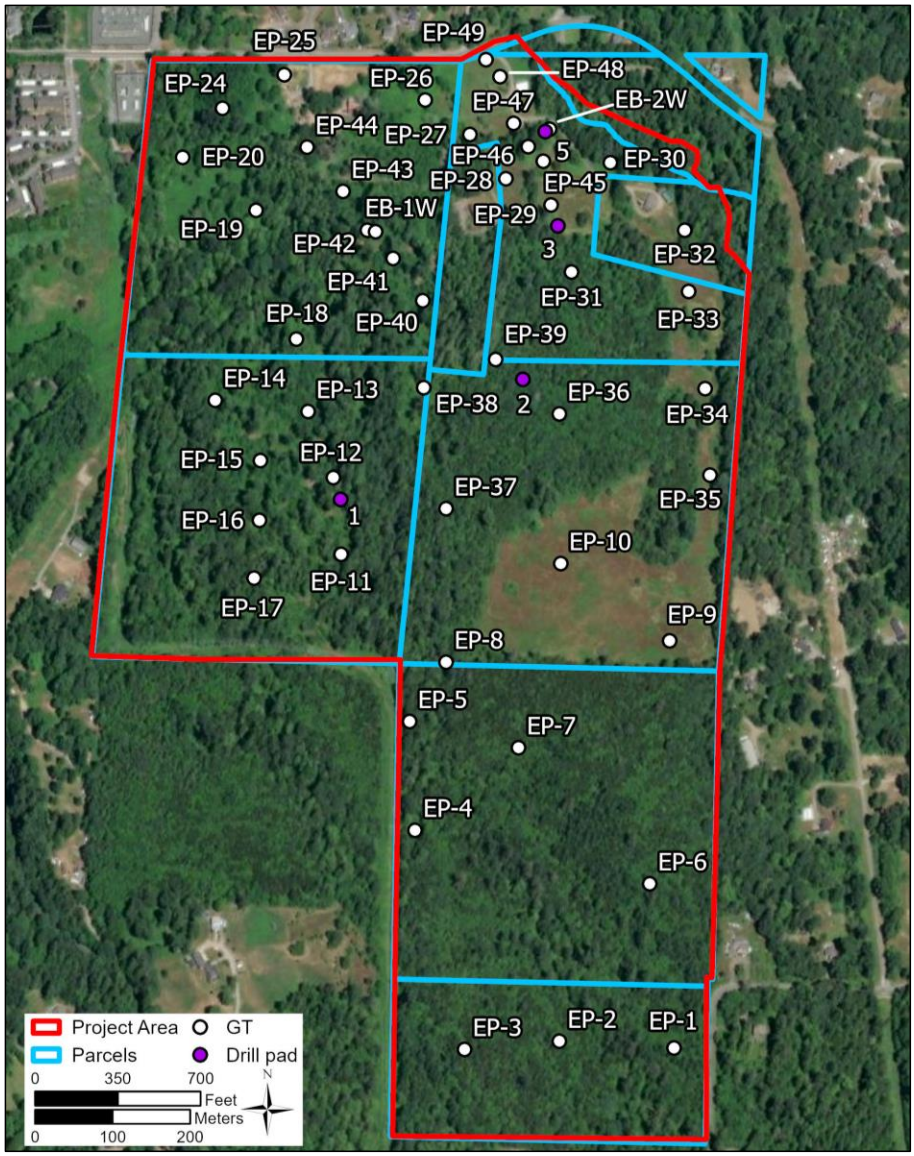

Figure 52: Sketch map of geotechnical machine test and bore locations.

Figure 53: View southeast, excavating EP-5.

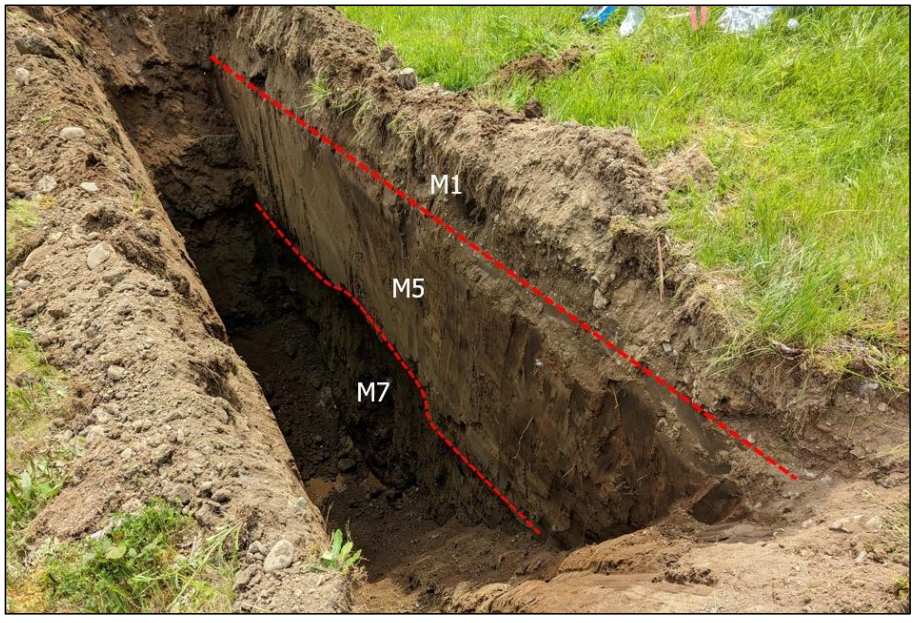

Figure 54: View southwest, EP-25 profile, example of M1, M5, and M7.

Figure 55: View northeast, EP-27 profile, example of M3 and M6.

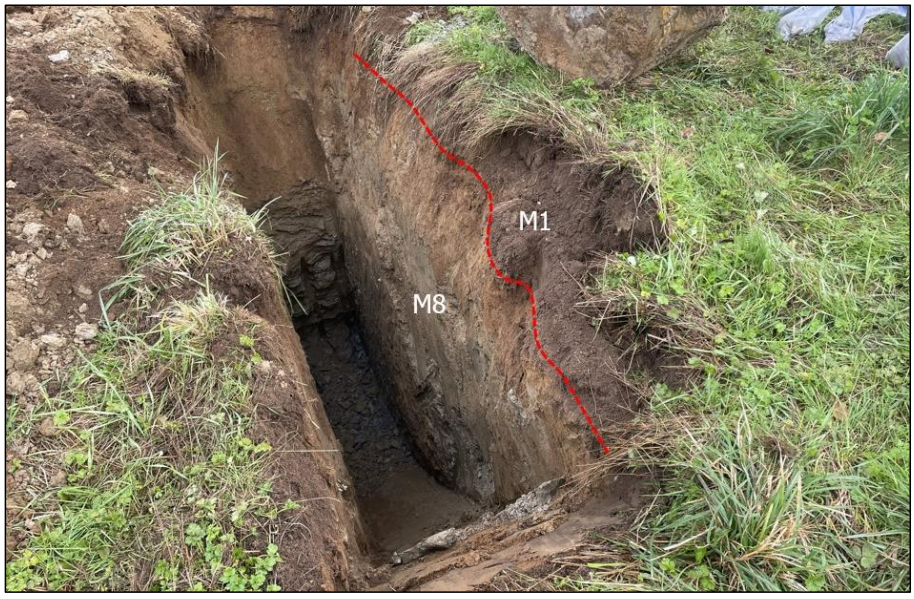

Figure 56: View northeast, EP-48 profile, example of M1 and M8.

Figure 57: View southwest, refuse pile by EP-14.

Figure 58: Plan view, Nintendo game cartridge from refuse pile by EP-14.

Figure 59: View north, recent refuse and burn pile south of EP-18.

Figure 60: Plan view, Owens-Illinois bottle base from near EP-1.

Figure 61: Plan view, Pond's milk glass jar base from near EP-44.

Figure 62: View northwest, drilling at EB-1W.

Figure 63: View north, well monument and bollards installed at EB-1W.

Figure 64: View northwest, overview of drilling at EB-2W.

Figure 65: View north, well monument and bollards installed at EB-2W.

Figure 66: View northwest, second drill pad cleared and leveled.

Figure 67: View north, ramp and drill rig pad on slope.

6.4 Discussion

ERCI's archaeological survey and monitoring for the Arlington East Hill Project encountered no protected cultural resources. Given the Project area's proximity to historic and precontact sites, and its location between multiple water sources, there remains a moderate to high probability of encountering precontact, protohistoric, and historic cultural resources during ground-disturbing Project activities, especially those related to agriculture, logging, or residential land use.

The sediments encountered were expected based on recorded surface geology (Minard 1985). The disturbed local sediments were likely related to residential use. As M2—glacial till—was encountered only above the other intact sediments, M2 was the most recent sediment deposit within the Project area. The lacustrine and glacial outwash were deposited either earlier within the same glaciation or during an earlier glacial event. Within the Project area each parcel had varying amounts of previous ground disturbance mostly related to utilities and housing infrastructure, or to recent vegetation clearance. Modern and indeterminate surface refuse also indicated recent residential activity; this was expected given that several parcels currently contain residences, as was the evidence of prior logging.

Dense vegetation covered much of the area in and around the two ravines in the western portion of the Project area that were logged more recently, especially during the pedestrian surveys in May and July, which obscured much of the surface and limited survey.

ERCI focused our survey on the areas of highest risk to cultural resources; however, the Project is still in the planning phases. When the Project plans are at 60% they should be reviewed by the Project archaeologist to identify any areas where additional survey should be conducted, especially in areas

that ERCI was unable to access. When the affected Tribes and DAHP have reviewed the Project plans, they may have additional requirements and may ask for additional survey or monitoring.

Figure 68 is a map with the current development site plan for the Project with the completed SPs and the areas ERCI recommends for subsurface survey, pending review of the 60% plans, as well as areas where we recommend archaeological monitoring during clearing and grubbing of dense blackberries. These areas correspond to those outlined in the Management Summary.

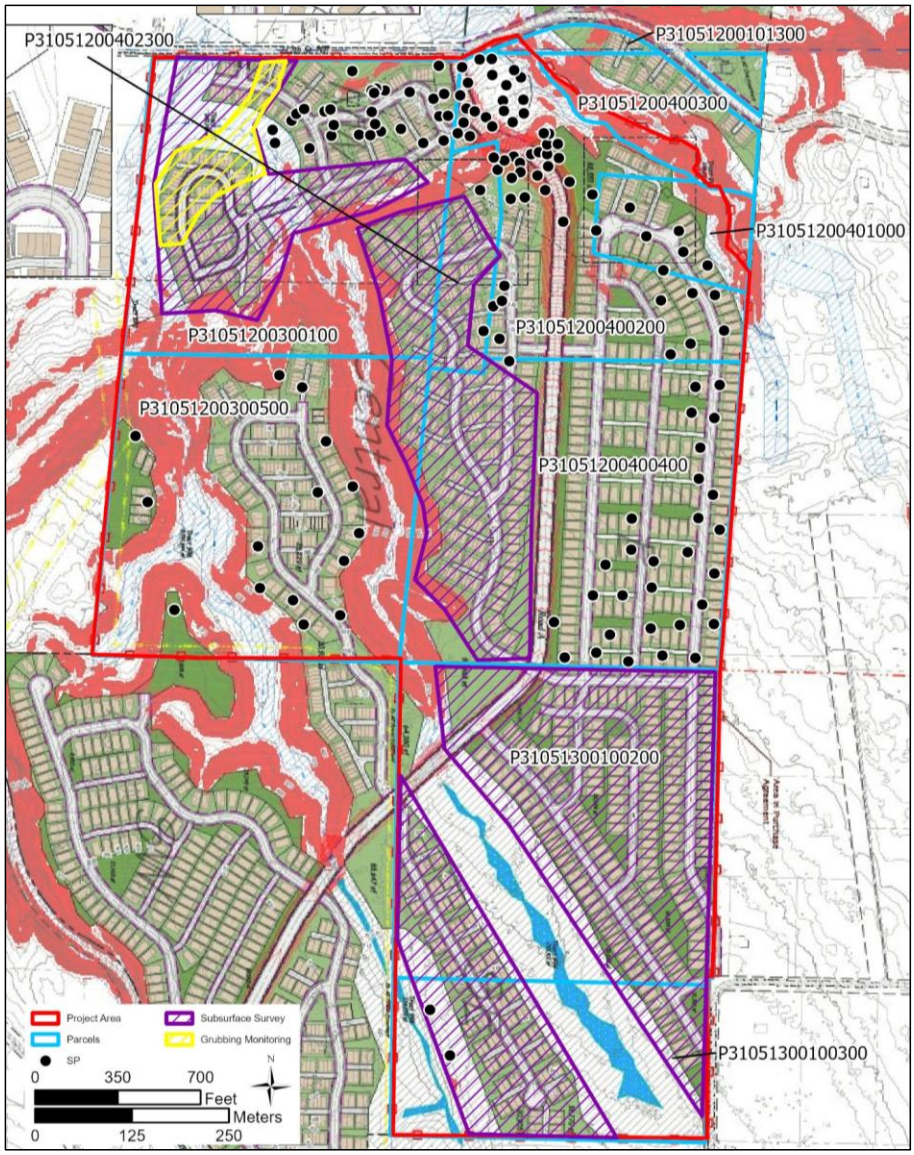

Figure 68: Site plan map with recommendations for further subsurface survey (purple) and monitoring of grubbing (orange).

7.0 MANAGEMENT RECOMMENDATIONS

No protected cultural resources were identified during our fieldwork.

The management recommendations that we are now providing are based on this survey. We recommend:

1. Deep machine testing be conducted in Parcels 31051200300100 and 31051200400200 (adjacent to SPs 28, 86, and 87) to examine sediments below disturbed deposits that were not reached during subsurface survey and in additional areas to match the maximum depth of disturbance of the development plans that will be determined when the final design is 60-90% complete.
2. Additional pedestrian and subsurface hand shovel survey during late winter or early spring in Parcel 3151300100300, in the western portion and southeastern corner of Parcel 31051200300100, in the northeast corner of Parcel 31051200300500, and on the western boundary of 31051200400400. All work should match proposed development. See Figure 68.
3. Archaeological monitoring for geotechnical drilling or any other open excavation during the Project planning period, especially in areas within 200 feet of the ravines and creeks.
4. Archaeological monitoring for temporary road installation.
5. Archaeological monitoring for grubbing and clearing of dense blackberry in Parcel 31051200300100. See Figure 68.
6. An unanticipated discovery protocol (UDP) training be given to all construction personnel by a professional archaeologist. A copy of the Unanticipated Discoveries Protocol (UDP) will be kept on site at all times.
7. In the event that any ground-disturbing activities or other project activities related to this development or in any future development uncover protected archaeological objects or sediments (e.g., old bottles or cans, charcoal, bones, shell, stone, horn or antler tools or weapons), all work in the immediate vicinity should stop, the area should be secured, and any equipment moved to a safe distance away from the location. The on-site superintendent should then follow the steps specified in the UDP.
8. In the event that any ground-disturbing activities or other project activities related to this development or in any future development uncover human remains, all work in the immediate vicinity should stop, the area should be secured, and any equipment moved to a safe distance away from the location. The on-site superintendent should then follow the steps specified in the UDP.

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9.0 APPENDICES

Appendix 1: Shovel Probe Descriptions

Particle Size Classes

Scale	Clay	Silt	Sand	Gravel	Pebble	Cobble	Boulder
in	<.00015	.00015–.0025	.0025–.08	.08–1	1–4	4–10	>10
mm	<.004	.004–.062	.062–2	2–25.4	25.4–102	102–254	>254

Matrix Descriptions

Matrix 1: 10YR 3/3 dark brown to 4/4 dark yellowish-brown. 90% silt, 5% sand, 5% subangular pebbles, <1% organics; damp to wet; moderate compaction; clear interface. Disturbed local sediment.

Matrix 2: 10YR 3/3 dark brown to 5/8 yellowish-brown to 6/4 light yellowish-brown. 55% silt, 10% fine sand, 15% subangular-subrounded gravels, 15% subangular-subrounded pebbles, 5% subangular to subrounded cobbles, <1% organics; damp to wet; loose to moderate compaction; clear to gradual interface. Intact glacial till.

Matrix 3: 10YR 5/4 yellowish-brown. 75% silt, 25% sand; dry to saturated; moderate to dense compaction. Intact glaciolacustrine deposit.

Matrix 4: 10YR 4/6 dark yellowish-brown to 5/4 yellowish-brown. 85% sand, 10% subrounded to round gravels, <5% subrounded to round pebbles; damp; loose to moderate compaction. Intact glacial outwash.

Shovel Probe Descriptions

SP	Depth (cm)	Dia (cm)	Matrix Description (Depths in cm)	Result
1	100	50	**0–100:** M2, dark brown from 0–50, yellowish-brown to gray 50–100, lots of natural charcoal throughout	Negative
2	85	49	**0–85:** M2, dark brown from 0–16, 16–85 color gradually lightens, sandier. Terminated due to compaction	Negative
3	100	50	**0–100:** M2, 0–16 dark brown, color gradually lightens with depth, 82–100 sandier	Negative
4	102	49	**0–102:** M2, gradual color change, little natural charcoal	Negative
5	67	50	**0–20:** M1, one wire-cut nail **20–67:** M2, yellowish-brown, groundwater at base. Terminated due to groundwater	Negative
6	60	49	**0–60:** M2, darker color from 0–21, sandier, groundwater at 56. Terminated due to groundwater	Negative
7	90	49	**0–90:** M2, darker color from 0–20, more sandy than silty. Terminated due to compaction	Negative
8	100	44	**0–100:** M2, 0–18 dark brown with clear color change, gradual color change yellow-brown to light yellowish-brown, damp getting wetter with increased depth, moderate compaction	Negative
9	80	45	**0–35:** M1 dark brown with large corroded ferrous stake fragment (no head) at 10 **35–80:** M2 clear upper interface, yellow-brown, clear change to sandier (~10% silt with 15% subangular gravels 10% subangular-subrounded gravels with 1% cobbles, rest coarse wet sand) gradual color change in M2 lighter with depth. Terminated due to compaction	Negative

SP	Depth (cm)	Dia (cm)	Matrix Description (Depths in cm)	Result
10	102	45	**0–102:** M2, 0–17 brown with clear color change to yellow-brown, around 50 gradual change in color to light yellow-brown, gradual decrease in percentage of cobbles, gravels, pebbles, moderate compaction, damp	Negative
11	100	53	**0–50:** M2, gradual interface and compaction change to M3 at 50 (with natural charcoal (decomposition 30–40 north wall) **50–100:** M3, gradual color change, moderate compaction, damp to wet increase water with depth	Negative
12	100	45	**0–100:** M2, clear color change at 10 cm (brown to yellow-brown) gradual color change yellow-brown to light yellow-brown	Negative
13	100	46	**0–100:** M2, dark brown from 0–25, natural charcoal throughout, lighter color and sandier with depth	Negative
14	102	49	**0–45:** M2 gradual basal interface gradual (25–45) color change yellow-brown to light yellow-brown and 0–10 brown, **45–102:** M3 with less than 1% SR gravels, damp to saturated, groundwater 90–100	Negative
15	100	50	**0–32:** M2 gradual basal interface and gradual color change from dark brown to yellow-brown damp, moderate compaction, boulder in east wall 25–50 **32–100:** M3 gradual change in color and composition 32–45, damp to wet, moderate compaction	Negative
16	80	50	**0–80:** M2, 0–20 brown with clear color change, from 20–70 gradual color change from yellowish-brown to light yellowish-brown 70–80 clear composition change to dense compaction gray with same percentage of gravels pebbles as above matrix, 60–80 wet. Terminated due to compaction	Negative
17	98	50	**0–98:** M2, dark brown from 0–31, color gradually lightens with depth, sand increases with depth, natural charcoal throughout	Negative
18	80	49	**0–80:** M2, boulder in north wall, clear color change at 18 from brown to yellow-brown then gradual change around 35 to light yellow-brown, damp. Terminated due to boulder	Negative
19	39	48	**0–39:** M2, dark brown from 0–20, boulder in east wall. Terminated due to boulder	Negative
20	97	52	**0–97:** M2, dark brown from 0–23, color lightens and sand percentage increases with depth	Negative
21	75	45	**0–70:** M2 **70–75:** M3. Terminated due to boulder	Negative
22	90	45	**0–25:** M2 **25–90:** M3 saturated and heavily oxidized. Terminated due to compaction	Negative
23	100	46	**0–34:** M3 **34–100:** M3 but 85% sand 15% silt (opposite composition).	Negative
24	100	50	**0–60:** M1, clear transition from dark brown to yellowish-brown at 24 **60–100:** M3, moderate compaction and no oxidation	Negative
25	100	49	**0–40:** M2 **40–100:** M3, wet past 80	Negative
26	105	48	**0–33:** M2 **33–105:** M3, sand percentage increases with depth	Negative

SP	Depth (cm)	Dia (cm)	Matrix Description (Depths in cm)	Result
27	60	45	**0–23:** M2 **23–60:** M3. Terminated due to groundwater	Negative
28	45	50	**0–45:** M1, colorless glass fragment. Terminated due to boulder	Negative
29	105	45	**0–30:** M1 **30–90:** M1/M3 mix with pockets of M3, colorless glass fragment at 50–60 **90–105:** M3	Negative
30	100	53	**0–36:** M2 **36–100:** M3 wet to saturated	Negative
31	100	47	**0–65:** M2, dark brown color transition to dark yellowish-brown at 20, dark yellowish-brown to yellowish-brown at 35 **65–100:** M3	Negative
32	45	45	**0–20:** M1 dark brown **20–45:** M2 dense. Terminated due to compaction	Negative
33	75	55	**0–50:** M1, clear transition from dark brown to dark yellowish-brown at 35 **50–75:** M2, density increased with depth. Terminated due to compaction	Negative
34	48	47	**0–25:** M1, dark brown, wet, one milk glass canning jar insert fragment embossed with "…AIN" **25–48:** M3, groundwater at 40. Terminated due to groundwater	Negative
35	75	50	**0–75:** M2, dark brown from 0–25, groundwater at base. Terminated due to groundwater	Negative
36	100	47	**0–17:** M2 **17–100:** M3, 85% sand 15% silt	Negative
37	100	47	**0–20:** M1 **20–90:** M2/M3 mix with pockets of M3 **90–100:** M3	
38	80	50	**0–17:** M2 **17–80:** M3, compaction increased with depth. Terminated due to compaction	Negative
39	45	50	**0–45:** M2, saturated. Terminated due to groundwater	Negative
40	90	47	**0–69:** M2, dark brown to 24 **69–90:** M3. Terminated due to compaction	Negative
41	67	49	**0–67:** M2, higher percentage of cobbles, boulder in east wall 30 cm long	Negative
42	100	45	**0–70:** M2, gradual transition to fine sand starting at 50, no rocks past 70 **70–100:** M4, fine sand	Negative
43	100	45	**0–100:** M2	Negative
44	103	45	**0–70:** M2, very gradual transition, fewer cobbles and pebbles by 50 **70—103:** M4 fine sand	Negative
45	40	45	**0–40:** M2. Terminated due to impassible roots and cobbles	Negative
46	100	45	**0–100:** M2	Negative
47	100	44	**0–100:** M2 damp, gradual change in composition, 0–10 dark brown clear color change, 10–42 yellow-brown, fewer cobbles, gravels, & pebbles; more silt, gradual change to 20% silt 50% sand (medium to fine)	Negative

SP	Depth (cm)	Dia (cm)	Matrix Description (Depths in cm)	Result
48	75	45	**0–75:** M2, less than 1% cobbles, 5% gravels, 5% pebbles all subrounded to subangular, decomposing branch on surface, and at 58–70 in west wall, clear color change from brown to yellow-brown at 13, damp, moderate compaction. Terminated due to impassible boulder	Negative
49	90	45	**0–90:** M2, clear color change from dark brown to yellow-brown at 20, gradual color change yellow-brown to light yellow-brown, damp, moderate compaction, rootlets throughout. Terminated due to impassible boulder	Negative
50	78	48	**0–78:** M2, some angular clasts and fine to coarse sand throughout. Darker brown at 0–12 (clear color change) then gradual color change through yellowish-brown to light yellowish-brown. Terminated due to time	Negative
51	70	45	**0–70:** M2, clear color change brown to yellow-brown at 12, at about 40 a fragment of ochre (not cultural) more cobbles pebbles gravels than in usual M2. Terminated due to time	Negative
52	92	47	**0–92:** M2 color change brown to yellow-brown clear at 12, gradual lightening in color with depth, clear change in compaction and color at 87 to gray-brown dense compaction with some oxidation. Terminated due to compaction	Negative
53	40	50	**0–40:** M2, decomposing wood and many rootlets. Terminated due to impassible root	Negative
54	50	45	**0–50:** M2, higher percentage of cobbles, dense. Terminated due to impassible cobble and compaction	Negative
55	60	48	**0–60:** M2. Terminated due to impassible roots	Negative
56	100	45	**0–100:** M2	Negative
57	70	48	**0–70:** M2, dense at base. Terminated due to compaction	Negative
58	70	50	**0–70:** M2. Terminated due to impassible boulder	Negative
59	85	45	**0–85:** M2. Terminated due to impassible roots and cobbles	Negative
60	45	47	**0–45:** M2, sandy silt. Terminated due to groundwater	Negative
61	80	49	**0–80:** M2, dark brown with many organics 0–22. Terminated due to impassible roots	Negative
62	92	50	**0–92:** M2, dark brown from 0–9, color lightens and sand percentage increases with depth. Dense compaction at 90. Terminated due to compaction	Negative
63	75	45	**0–36:** M2 **36–75:** M3 saturated. Terminated due to groundwater	Negative
64	39	47	**0–39:** M3, dark brown from 0–20, sandy, groundwater at 29. Terminated due to groundwater	Negative
65	100	47	**0–30:** M2, gradual transition to M3 **30–100:** M3, higher percentage of sand and less than one percent subangular pebbles	Negative
66	80	48	**0–42:** M2, gradual to clear transition to M3 **42–80:** M3. Terminated due to groundwater	Negative
67	55	43	**0–55:** M3, sandy, groundwater at 42. Terminated due to groundwater	Negative
68	100	50	**0–100:** M3, groundwater at 83	Negative
69	80	45	**0–80:** M3, groundwater at 70. Terminated due to groundwater	Negative

SP	Depth (cm)	Dia (cm)	Matrix Description (Depths in cm)	Result
70	70	45	**0–20:** M2, organic-rich, woody debris pushed into sediment **20–70:** M3, organic-rich and dark, woody debris pushed into sediment, saturated **70–100:** M3, wet to saturated, density increased with depth	Negative
71	48	46	**0–33:** M2, dark brown **33–48:** M3, groundwater at base. Terminated due to groundwater	Negative
72	60	50	**0–60:** M2. Terminated due to groundwater	Negative
73	30	49	**0–30:** M2, dark brown from 0–21, groundwater at 26. Terminated due to groundwater	Negative
74	100	52	**0–46:** M2 **46–100:** M3	Negative
75	100	45	**0–70:** M2, oxidation and natural charcoal starting at 15, natural charcoal lens, about 10 cm thick, swirls down to 68 **70–100:** M3, sandy	
76	60	51	**0–60:** M2, many roots, wet at base. Terminated due to impassible roots	Negative
77	100	50	**0–33**: M2 **33–100:** M3, natural charcoal at 60	Negative
78	100	46	**0–24:** M1 **24–45:** M2 **45–100:** M3 dense, more cobbles	Negative
79	80	50	**0–27:** M2 **27–80:** M3, dense. Terminated due to compaction	Negative
80	107	50	**0–15:** M1, 15–23 sandy construction fill, colorless and amber glass, and nail **23–36:** M2 **36–100:** M4	Negative
81	58	49	**0–58:** M3, wet to saturated, dark and organic-rich with woody debris. Terminated due to groundwater	Negative
82	80	49	**0–15:** M2 **15–80:** M3, wet to saturated, compaction increased with depth. Terminated due to compaction	Negative
83	70	48	**0–18:** M1 **18–28:** M1, light gray **28–61:** M2, large cobble in north wall at 61 **61–70**: M3 (south half). Terminated due to boulder	Negative
84	100	50	**0–43:** M3, sandier **43–100:** M3, siltier	Negative
85	75	44	**0–75:** M2, roots throughout 0–15, brown with more organics clear interface to yellow-brown with gradual lightening of color. Terminated due to impassible root	Negative
86	50	48	**0–50:** M1, round pebble fill at base (septic). Terminated due to possible septic.	Negative
87	50	48	**0–50:** M1, clear color change at 20 from dark brown to yellowish-brown. Terminated due to impassible root	Negative
88	100	46	**0–20:** M2, clear transition **20–100:** M4, at 55 gradual color change from yellowish-brown to gray	Negative

SP	Depth (cm)	Dia (cm)	Matrix Description (Depths in cm)	Result
89	100	46	**0–24:** M1, brown, one metal fragment **24–100:** M4, yellowish-brown, no gravels or pebbles	Negative
90	100	50	**0–70:** M1 with colorless and aqua glass fragments, Styrofoam, ceramic fragments, and aluminum **70–100:** M4	Negative
91	100	49	**0–27:** M1, mixed with angular road gravels, natural charcoal in north wall **27–100:** M4, at 60 gradual color transition from yellowish-brown to gray, gray has higher percentage of gravels and pebbles (15% and 10%)	Negative
92	97	50	**0–19:** M1, black plastic fragments, black plastic object, one nondescript colorless glass fragment, blue fabric, one metal object, one wood fragment **19–67:** M4 **67–71:** gray sandy silt with gravels, pebbles, cobbles, till–like **71–97:** M4, brown	Negative
93	100	56	**0–30:** M2 **30–100:** M3	Negative
94	83	50	**0–83:** M2, higher percentage of cobbles. Terminated due to impassible cobbles	Negative
95	100	51	**0–100:** M2	Negative
96	90	45	**0–90:** M2, 0–8 dark brown, yellowish-brown 8–80 with clear color and compaction change at 80 to lighter yellow-brown densely compact silty sand with gravels and pebbles, damp to saturated with water 85–90. Terminated due to groundwater	Negative
97	65	48	**0–65:** M2, sandy silt, some natural charcoal, dark brown from 0–16, groundwater at 60. Terminated due to groundwater	Negative
98	100	52	**0–100:** M4, dark brown from 0–20	Negative
99	105	50	**0–105:** M4, 0–13 dark brown clear color change to yellow-brown with ~10% gravels 10% pebbles less than 5% cobbles (subrounded to subangular) gradual color and composition change to light yellow-brown, no cobbles less than 1% gravels <1% pebbles (interface 45–53), moderate compaction, damp	Negative
100	100	55	**0–100:** M2	Negative
101	100	47	**0–100:** M2, clear color change dark brown to yellow-brown at 12, 12–100 gradual color change from yellow-brown to light yellow-brown (50–70 color change), damp, moderate compaction, boulder in north wall 75–100	Negative
102	62	45	**0–62:** M2. Terminated due to groundwater	Negative
103	55	49	**0–55:** M2, sandy silt, dark brown from 0–15, groundwater at 46, some natural charcoal. Terminated due to groundwater	Negative
104	73	50	**0–73:** M2, dark brown from 0–19, gradual transition to gray sandy silt from 50–73, dense compaction. Terminated due to groundwater	Negative
105	73	46	**0–73:** M2, lower percentage of cobbles and pebbles, mostly silt and sand. Terminated due to impassible cobble	Negative
106	90	53	**0–90:** M2, boulders, waterlogged roots. Terminated due to compaction	Negative
107	85	45	**0–85:** M2. Terminated due to groundwater	Negative

SP	Depth (cm)	Dia (cm)	Matrix Description (Depths in cm)	Result
108	66	46	**0–66:** M2. Terminated due to groundwater	Negative
109	100	48	**0–93:** M2, wet **93–100:** M3, saturated	Negative
110	100	47	**0–60:** M2 with color change from dark brown to yellow-brown at 20, in east/southeast/south walls at varying depths and thicknesses natural charcoal (35–40 and 45–55), discontinuous clear basal interface **60–100:** M3, some oxidation streaks, damp to wet	Negative
111	65	47	**0–65:** M2. Terminated due to groundwater	Negative
112	45	46	**0–45:** M2. Terminated due to groundwater	Negative
113	75	47	**0–75:** M2. Terminated due to compaction	Negative
114	35	51	**0–35:** M2. Terminated due to groundwater	Negative
115	70	46	**0–70:** M2 gradual color change dark brown to yellow-brown 17–25 and gradual change yellow-brown to light yellow-brown 45–52, damp to saturated, moderate compaction. Terminated due to groundwater	Negative
116	62	45	**0–62:** M2. Terminated due to impassible cobbles	Negative
117	15	50	**0–15:** M2, dense compaction, dry, boulders. Terminated due to boulder	Negative
118	90	45	**0–90:** M2. Terminated due to boulder	Negative
119	60	47	**0–60:** M2, very dark brown from 0–20, natural charcoal in north wall, dark yellowish-brown from 20–60. Terminated due to groundwater	Negative
120	50	46	**0–50:** M2. Terminated due to impassible cobbles	Negative
121	55	46	**0–55:** M2, damp to saturated. Terminated due to groundwater	Negative
122	51	49	**0–51:** M2, silty sand, dark brown from 0–14, boulder at base in north wall, large root in south wall. Terminated due to boulder	Negative
123	81	47	**0–81:** M2, silty sand, dark brown from 0–13, yellowish-brown from 13–81. Terminated due to impassible cobbles	Negative
124	80	49	**0–80:** M2, clear color change brown to yellow-brown at 8, gradual color change from yellow-brown to light yellow-brown at 35, 76–80 dense compaction sandier M2 grayer with oxidation, damp to wet, moderate to dense compaction. Terminated due to compaction	Negative
125	58	48	**0–58:** M2, color change from brown to yellow-brown at 10, clear change in compaction and composition at 50 to very dense with increase in sand content, damp to saturated. Terminated due to groundwater and compaction	Negative
126	85	45	**0–85:** M2. Terminated due to groundwater	Negative
127	44	47	**0–44:** M2, very compact. Terminated due to compaction	Negative
128	58	50	**0–58:** M2, silty sand, dark brown from 0–11, groundwater at 53. Terminated due to groundwater	Negative
129	55	48	**0–55:** M2, decomposing organics, natural charcoal throughout, damp to saturated, clear color changes. Terminated due to groundwater	Negative

SP	Depth (cm)	Dia (cm)	Matrix Description (Depths in cm)	Result
130	97	47	**0–5:** M1, orange flagging tape, many roots and rootlets (gradual basal interface) **5–40:** M2, roots and rootlets throughout with some subrounded pebbles and gravels, decrease in percentage from 5% to 1% with depth **40–97:** M3, damp throughout fewer roots in M3	Negative
131	58	49	**0–58:** M2, sandy silt, dark brown from 0–13, groundwater at base. Terminated due to groundwater	Negative
132	100	44	**0–30:** Decomposing tree and organics **30–100:** M4, medium grain sand with 10% subrounded gravels and 5% subrounded pebbles	N
133	98	47	**0–98:** M2, clear color change from organic-rich dark brown 0–15 to yellow-brown with gradual color lightening with depth and gradual increase in moisture (less damp to more damp) moderate compaction, clear color and compaction change 90–98 to grayish with oxidation and very dense compaction	Negative
134	90	50	**0–90:** M2. Terminated due to groundwater	Negative
135	85	45	**0–85:** M2. Terminated due to groundwater	Negative
136	52	49	**0–52:** M2, dark brown from 0–7, sandy silt from 8–52. Terminated due to boulder	Negative
137	62	49	**0–62:** M2. Terminated due to groundwater	Negative
138	70	45	**0–70:** M2. Terminated due to boulder	Negative
139	60	49	**0–60:** M2, natural charcoal and silty sand from 0–50, 50–60 wet, sandy silt, fewer gravels, pebbles. Terminated due to groundwater	Negative

Appendix 2: Geotechnical Machine Test Descriptions

Matrix Descriptions

Matrix 5: 10YR 4/6 dark yellowish to brown to 5/4 yellowish-brown to 5/1 gray with mottled oxidation. 90% sand, 10% silt; damp; moderate compaction. Intact glacial recessional outwash.

Matrix 6: GLEY 1 5/ gray to GLEY 2 5/1 bluish gray. 100% silt; damp; moderate compaction; laminated. Intact lacustrine.

Matrix 7: GLEY 2 5PB. 60% coarse sand, 20% subrounded to round gravels, 10% subrounded to round pebbles, 10% subrounded to round cobbles; wet; moderate compaction. Intact glacial outwash.

Geotechnical Machine Test Descriptions

MT	Depth (feet)	Length (feet)	Width (feet)	Orientation	Description (depths in feet)	Result
EP-1	16	10	3	N-S	**0–16:** M2, color gradually changes from dark brown to bluish-gray, density increases with depth	N
EP-2	14	12	4	NE-SW	**0–14:** M2, some natural charcoal, color gradually transitions from dark brown to grayish-blue, density and sand increases with depth	N

Commented [RG3]: When indicating that the two items are at two ends of a journey, or are oriented along a line between two compass directions—e.g., the Hope–Princeton Highway, an east–west line. Please make this change throughout.

MT	Depth (feet)	Length (feet)	Width (feet)	Orientation	Description (depths in feet)	Result
EP-3	12	10	4	E-W	**0–12:** M2, some natural charcoal, gradual color change, density increases at about 4	N
EP-4	12	12	4	E-W	**0–12:** M2, some natural charcoal, gradual color change to gray with some blue, density increases after about 4	N
EP-5	14	12	4	NE-SW	**0–14:** M2, some natural charcoal, gradual color change to gray	N
EP-6	12	12	4	NE-SW	**0–12:** M2, sandy 5–6, some natural charcoal, density increases at 6, gradual color change to bluish-gray	N
EP-7	16	10	4	NE-SW	**0–16:** M2, gradual color change to bluish-gray, some natural charcoal, density increases at 5, some groundwater seepage at 6	N
EP-8	22	15	4	NW-SE	**0–15:** M2, gradual color transition to gray, some charcoal, density increases at 5 **15–22:** M4, gray	N
EP-9	16	12	4	NE-SW	**0–2:** M1, plow zone **2–16:** M2, groundwater seepage from gravelly layer at 5, gradual color change to blue-gray	N
EP-10	13	12	4	NE-SW	**0–2:** M1, plow zone, some natural charcoal **2–13:** M2, some natural charcoal, gradual transition to gray, sandy lens at 11–12	N
EP-11	19	12	4	N-S	**0–10:** M2, gradual color transition to gray, density increases at 4 **10–19:** M4, gray	N
EP-12	18	10	4	NE-SW	**0–10:** M2, gradual color transition to gray, groundwater seepage at 9, some natural charcoal **10–18:** M4, gray, some oxidation, stratification	N
EP-13	19	10	4	N-S	**0–6:** M2, gradual color change to gray, some natural charcoal **6–19:** M4, gray, some gravels, pebbles, cobbles	N
EP-14	19	12	4	NE-SW	**0–19:** M4, gradual color transition to gray, some silt in the yellowish-brown layer, some natural charcoal, gravels and pebbles at 0–3, finer sand at base	N

MT	Depth (feet)	Length (feet)	Width (feet)	Orientation	Description (depths in feet)	Result
EP-15	18	12	4	NW-SE	**0–10:** M2, sandy, density increases at 4, gradual color change to gray, some natural charcoal **10–18:** M4, gray, finer with depth	N
EP-16	18	12	4	NE-SW	**0–2:** M2, dark brown to yellowish brown, sandy, some natural charcoal **2–18:** M4, gray, pockets of gray M2	N
EP-17	20	12	4	NW-SE	**0–4:** M2, dark brown to yellowish brown, thicker at edge of ravine, some natural charcoal **4–20:** M4, gray	N
EP-18	20	14	4	NE-SW	**0–12:** M2, sandier, gradual color change to gray, denser with depth, some natural charcoal **12–20:** M4, gray	N
EP-19	20	13	4	NW-SE	**0–12:** M5, lots of mottling, gradual transition from dark brown to yellowish-brown, some natural charcoal **12–20:** M6, gray to bluish-gray	N
EP-20	17	13	5	N-S	**0–14:** M5, dark brown first 6 inches, groundwater seepage at about 10 **14–17:** M6, gradual transition from gray to bluish-gray	N
EP-24	17	16	3	NW-SE	**0–6:** M5, gradual interface with M6 **6–15:** M6 **15–17:** M7	N
EP-25	13	16	3	NNW-SSE	**0–1.5:** M1 **1.5–6:** M5 **6–10:** M7	N
EP-26	17	16	3	ESE-WNW	**0–2:** M2 **2–15:** M3 **15–17:** M6	N
EP-27	15	16	3	E-W	**0–3:** M3 **3–15:** M6, much oxidation, large roots, quite a few boulders, pocket of brown M5, sandier with depth (up to 25%), walls collapsing	N
EP-28	17	16	3	E-W	**0–17:** M2, color transitions from dark brown to yellowish-brown to gray	N
EP-29	16	16	3	NE-SW	**0–4:** M2 **4–16:** M4, at about 15 silt percentage increases to 50%, sediment has lamination ripples from river or lake	N
EP-30	21	16	3	N-S	**0–3:** M2 **3–21:** M4	N

MT	Depth (feet)	Length (feet)	Width (feet)	Orientation	Description (depths in feet)	Result
EP-31	19	10	4	N-S	**0–3:** M2, dark brown to yellowish-brown, some natural charcoal **3–19:** M4, gradual transition from gray to bluish-gray	N
EP-32	18	10	4	NW-SE	**0–11:** M2, dark brown to gray, large boulders **11–18:** M4, gray	N
EP-33	15	10	4	N-S	**0–15:** M2, dark brown to gray to bluish-gray, sandier with depth	N
EP-34	15	10	4	NW-SE	**0–6:** M5, more silt than sand, lots of groundwater seepage 4–10 **6–15:** M2, gray, dense	N
EP-35	14	10	4	N-S	**0–14:** M2, dark brown to bluish-gray, sandier with a sand lens with groundwater water at about 7	N
EP-36	14	12	4	NW-SE	**0–8:** M5, recessional outwash, dark brown to yellowish-brown, more clasts **8–14:** M2, gray, dense	N
EP-37	14	10	4	W-E	**0–4:** M5, dark brown to yellowish-brown, more clasts **4–8:** M2, gray, dense, **8–14:** M4, gray, wet, huge boulder in M2/M4	N
EP-38	18	10	4	W-E	**0–8:** M2, dark brown to gray, density increases with depth, sandy **8–18**: M4, gray	N
EP-39	16	12	4	N-S	**0–10:** M2, dark brown to gray, density increases with depth, sandier **10–16:** M4, gray	N
EP-40	19	10	4	NE-SW	**0–17:** M2 dark brown to gray, density increases with depth, some natural charcoal, groundwater at 6 in sandy lens **17–19:** M4, gray	N
EP-41	18	10	4	W-E	**0–11:** M2, dark brown to gray, density increases with depth, sandier **11–18:** M4, gray, silty sand from 11–16	N
EP-42	18	15	4	NW-SE	**0–16:** M2, dark brown to gray, some sandy gravel from 5–8, density increases with depth **16–18:** M4, gray, silt at base (may be pre-Fraser)	N
EP-43	18	13	4	NW-SE	**0–1:** M1, very dark brown **1–8:** M8, brownish-gray silty sand **8–12:** M4 with some silt, highly oxidized layer at interface with M6	N

MT	Depth (feet)	Length (feet)	Width (feet)	Orientation	Description (depths in feet)	Result
					12–18: M8, bluish-gray silt	
EP-44	21	10	4	NW-SE	**0–2:** M1, plastic, spray paint can lid, wire, PCV pipe **2–9:** M8, yellowish-brown silty sand with gravels, pebbles, some till inclusions **9–14:** M4, silty **14–21:** M6	N
EP-45	18	12	3.5	NW-SE	**0–9:** M8, dark brown to yellowish-brown sandy silt with gravels from 0–2.5, grayish-brown and sandy from 2.5–6.5, some natural root burn, groundwater perching basal interface, gray medium to coarse sand from 6.5–9 **9–12:** M2, gray with oxidation, dense, may be older till **12–18:** older sand, gray medium sand with some oxidation veins, coarse sand with gravels and pebbles at base	N
EP-46	16	12	3.5	N-S	**0–2:** M2, dark brown to yellowish-brown, groundwater perching at basal interface in south wall **2–16:** older sand, grayish brown to gray, some silt in sand from 2–4, some bedding, oxidation, mica flecks visible, very thin silt lenses	N
EP-47	17	12	3.5	NE-SW	**0–1:** M1, dark brown to dark yellowish-brown, sand to silty sand with gravels, pebbles, cobbles **1–17:** M8, sandy silt to silt, grayish-brown, mottled oxidation, interbedding is fractured/discontinuous/wavy, very few organics	N
EP-48	14	11	3.5	NE-SW	**0–1:** M1 **1–14:** M8, silty with mottled oxidation and slick, shiny surfaces from sliding, groundwater seepage at 8, grayish-brown from 1–11, bluish-gray from 11–14	N
EP-49	14	12	4	NW-SE	**0–2:** M2 **2–14:** M8, silty with mottled oxidation and slick, shiny, smooth surfaces, disjointed bedding, groundwater seepage throughout,	N

MT	Depth (feet)	Length (feet)	Width (feet)	Orientation	Description (depths in feet)	Result
					grayish-brown from 2–12, bluish-gray from 12–14	

Appendix 3: Photograph Log

Number	View	Description
23.04.24AAY001	W	House at 9110 Tveit Parcel 31051200400200
23.04.24AAY002	SW	Vegetation by driveway on Parcel 31051200400200
23.04.24AAY003	NW	Slope south of barn on Parcel 31051200400200
23.04.24AAY004	E	Looking up slope south of house on Parcel 31051200400200
23.04.24AAY005	SW	Creek leading down to road
23.04.24AAY006	NW	Backside of house
23.04.24AAY007	W	Creek overview with blackberry
23.04.24AAY008	N	Front lawn of house (9110 Tveit) on Parcel 31051200400200
23.04.24AAY009	SE	Barn/shed
23.04.24AAY010	E	Front of barn
23.04.24AAY011	E	Looking down to large creek behind barn
23.04.24AAY012	SE	Looking down to large creek behind barn
23.04.24AAY013	E	Between barn and shed
23.04.24AAY014	N	SP 33 with scale
23.04.24AAY015	N	SP 33 without scale
23.04.24AAY016	W	SP 33 overview with 9110 Tveit house
23.04.24AAY017	N	SP 32 with scale
23.04.24AAY018	N	SP 32 without scale
23.04.24AAY019	E	SP 32 overview and north side of barn
23.04.24AAY020	S	SP 24 with scale
23.04.24AAY021	S	SP 24 without scale
23.04.24AAY022	S	SP 24 overview with barn
23.04.24AAY023	S	SP 38 with scale
23.04.24AAY024	S	SP 38 without scale
23.04.24AAY025	SW	SP 38 overview
23.04.24AAY026	W	View along south side of attached garage
23.04.24AAY027	S	View up slope of south house
23.04.24AAY028	E	SP 23 with scale
23.04.24AAY029	E	SP 23 without scale
23.04.24AAY030	N	SP 23 overview with barns in background
23.04.24AAY031	P	SP 23 ferrous metal debris
23.04.24AAY032	P	SP 23 amber glass fragment
23.04.24AAY033	P	SP 23 six colorless glass fragments
23.04.24AAY034	S	SP 39 with scale
23.04.24AAY035	S	SP 39 without scale
23.04.24AAY036	S	SP 39 overview with address signs
23.04.24AAY037	W	SP 36 with scale
23.04.24AAY038	W	SP 36 without scale
23.04.24AAY039	N	SP 36 overview with 9110 Tveit house
23.04.24AAY040	SW	Road up slope to 9104 Tveit
23.04.24AAY041	S	SP 37 with scale

Number	View	Description
23.04.24AAY042	S	SP 37 without scale
23.04.24AAY043	W	SP 37 overview
23.04.24ARB001	W	9104 Tveit Road-Rob Putnam house
23.04.24ARB002	N	Driveway of 9104 Tveit Road
23.04.24ARB003	SW	Top of slope, towards 9104 Tveit Road
23.04.24ARB004	SE	Top of slope, Parcel 31051200400200
23.04.24ARB005	NW	SP 1 with scale
23.04.24ARB006	NW	SP 1 without scale
23.04.24ARB007	SW	SP 1 overview
23.04.24ARB008	NW	SP 4 with scale
23.04.24ARB009	NW	SP 4 without scale
23.04.24ARB010	W	SP 4 overview
23.04.24ARB011	W	SP 3 with scale
23.04.24ARB012	W	SP 3 without scale
23.04.24ARB013	SW	SP 3 overview
23.04.24ARB014	NW	SP 2 with scale
23.04.24ARB015	NW	SP 2 without scale
23.04.24ARB016	SW	SP 2 overview
23.04.24ARB017	N	SP 5 with scale
23.04.24ARB018	N	SP 5 without scale
23.04.24ARB019	SW	SP 5 overview
23.04.24ARB020	P	Corroded ferrous metal fragment from SP 5
23.04.24ARB021	NE	SP 6 with scale
23.04.24ARB022	NE	SP 6 without scale
23.04.24ARB023	SW	SP 6 overview
23.04.24ARB024	NE	SP 7 with scale
23.04.24ARB025	NE	SP 7 without scale
23.04.24ARB026	SW	SP 7 overview
23.04.24ARB027	E	Stump with saw
23.04.24ARB028	SE	Stump with saw
23.04.24ARB029	NE	Stump with saw and access road
23.04.24ARB030	NE	Stump with saw and access road
23.04.24ARB031	E	Close-up of saw
23.04.24ESD001	SW	Path from driveway
23.04.24ESD002	NW	View from path (vegetation)
23.04.24ESD003	NE	Path from driveway with house
23.04.24ESD004	SE	View from path large stump
23.04.24ESD005	SW	Stacked milled lumber
23.04.24ESD006	NW	Stacked milled lumber
23.04.24ESD007	NE	Pile of cobbles near stacked milled lumber
23.04.24ESD008	NE	Stacked milled lumber
23.04.24ESD009	P	Deer antler

Number	View	Description
23.04.24ESD010	W	Cedar trees and cleared area
23.04.24ESD011	SW	Cedar trees and cleared area
23.04.24ESD012	NW	Cedar trees and cleared area
23.04.24ESD013	Delete	Delete
23.04.24ESD014	X	Close-up of natural mark on cedar (delete)
23.04.24ESD015	X	Close-up of natural mark on cedar (delete)
23.04.24ESD016	NE	Natural mark insert and camera flash
23.04.24ESD017	X	Closeup of natural mark on cedar (delete)
23.04.24ESD018	NE	Naturally scarred tree overview
23.04.24ESD019	NE	Naturally scarred tree overview
23.04.24ESD020	NE	Naturally scarred tree overview
23.04.24ESD021	NE	Naturally scarred tree overview
23.04.24ESD022	N	Open forested area
23.04.24ESD023	ESE	View up slope
23.04.24ESD024	SE	Road between two large cedar stumps
23.04.24ESD025	SE	Road between two large cedar stumps
23.04.24ESD026	SE	Road between two large cedar stumps
23.04.24ESD027	X	Lidar map
23.04.24ESD028	SE	Road between two large cedar stumps
23.04.24ESD029	E	Vegetation on slope up to ravine
23.04.24ESD030	E	Vegetation on slope up to ravine
23.04.24ESD031	SW	Vegetation near northwest edge of ravine
23.04.24ESD032	SW	Vegetation near northwest edge of ravine
23.04.24ESD033	SW	Brush pile
23.04.24ESD034	W	Vegetation on terrace
23.04.24ESD035	W	Vegetation on terrace
23.04.24ESD036	N	Vegetation on terrace
23.04.24ESD037	N	Cut stumps
23.04.24ESD038	NE	Vegetation (Salmonberry)
23.04.24ESD039	SW	SP 50 with scale
23.04.24ESD040	SW	SP 50 without scale
23.04.24ESD041	WNW	SP 50 overview toward edge of ravine
23.04.24ESD042	E	Stump with broken saw blade
23.04.24ESD043	P	Broken end of saw blade
23.04.24ESD044	P	Handle end (no handle present) of sawblade
23.04.24ESD045	P	Handle end (no handle present) of sawblade
23.04.24ESD046	P	Saw teeth pattern closeup
23.04.24ESD047	ENE	SP 49 with scale
23.04.24ESD048	ENE	SP 49 without scale
23.04.24ESD049	S	SP 49 overview with slope of ravine
23.04.24ESD050	W	SP 48 with scale
23.04.24ESD051	W	SP 48 without scale

Number	View	Description
23.04.24ESD052	W	SP 48 overview with decomposing stump
23.04.24ESD053	W	SP 48 overview with decomposing stump
23.04.24ESD054	NW	SP 47 with scale
23.04.24ESD055	NW	SP 47 without scale
23.04.24ESD056	E	SP 47 overview
23.04.24ESD057	E	Large stump adjacent to SP 47
23.04.25AAY001	W	P31051200300100 overview
23.04.25AAY002	SW	P31051200300100 overview
23.04.25AAY003	SE	P31051200300100 overview
23.04.25AAY004	W	P31051200300100 overview
23.04.25AAY005	S	P31051200300100 overview
23.04.25AAY006	S	SP 31 with scale
23.04.25AAY007	S	SP 31 without scale
23.04.25AAY008	S	SP 31 overview
23.04.25AAY009	S	SP 28 with scale
23.04.25AAY010	S	SP 28 without scale
23.04.25AAY011	S	SP 28 overview
23.04.25AAY012	S	SP 28 nondescript colorless glass fragment
23.04.25AAY013	S	SP 30 with scale
23.04.25AAY014	S	SP 30 without scale
23.04.25AAY015	E	SP 30 overview
23.04.25AAY016	S	SP 22 with scale
23.04.25AAY017	S	SP 22 without scale
23.04.25AAY018	SE	SP 22 overview
23.04.25AAY019	S	SP 26 with scale
23.04.25AAY020	S	SP 26 without scale
23.04.25AAY021	E	SP 26 overview
23.04.25AAY022	P	SP 29 colorless glass fragment
23.04.25AAY023	E	SP 29 with scale
23.04.25AAY024	E	SP 29 without scale
23.04.25AAY025	E	SP 29 overview
23.04.25AAY026	N	SP 27 with scale
23.04.25AAY027	N	SP 27 without scale
23.04.25AAY028	NE	SP 27 overview
23.04.25AAY029	NE	Slope north of house 9110 Tveit on P31051200400200
23.04.25AAY030	N	Slope north of house 9110 Tveit on P31051200400200
23.04.25AAY031	N	View towards northeast corner of P31051200400200
23.04.25AAY032	NE	View towards northeast corner of P31051200400200
23.04.25AAY033	NW	Machine path through blackberries
23.04.25AAY034	N	SP 25 with scale
23.04.25AAY035	N	SP 25 without scale
23.04.25AAY036	SE	SP 25 overview with ERCI working

Number	View	Description
23.04.25AAY037	N	SP 21 with scale
23.04.25AAY038	N	SP 21 without scale
23.04.25AAY039	N	SP 21 overview with Tveit Rd in background
23.04.25ARB001	N	Driveway down the slope from 9104 Tveit Rd
23.04.25ARB002	W	Slope edge north of 9104 Tveit Rd
23.04.25ARB003	NW	SP 61 with scale
23.04.25ARB004	NW	SP 61 without scale
23.04.25ARB005	W	SP 61 overview
23.04.25ARB006	NW	SP 19 with scale
23.04.25ARB007	NW	SP 19 without scale
23.04.25ARB008	NW	SP 19 overview
23.04.25ARB009	S	SP 17 with scale
23.04.25ARB010	S	SP 17 without scale
23.04.25ARB011	W	SP 17 overview
23.04.25ARB012	NW	SP 20 with scale
23.04.25ARB013	NW	SP 20 without scale
23.04.25ARB014	NW	SP 20 overview
23.04.25ARB015	NW	SP 62 with scale
23.04.25ARB016	NW	SP 62 without scale
23.04.25ARB017	NE	SP 62 overview
23.04.25ARB018	NW	ERCI at SP 11
23.04.25ARB019	NW	Barn northwest of SP 11
23.04.25ARB020	SE	Driveway along creek to 9116 Tveit Rd
23.04.25ARB021	SW	ERCI at SP 14
23.04.25ARB022	NE	SP 13 with scale
23.04.25ARB023	NE	SP 13 without scale
23.04.25ARB024	W	SP 13 overview
23.04.25ARB025	NE	SP 34 with scale
23.04.25ARB026	NE	SP 34 without scale
23.04.25ARB027	W	SP 34 overview with ERCI at SP 38
23.04.25ARB028	P	Milk glass jar insert fragment from SP 34
23.04.25ARB029	NE	SP 35 with scale
23.04.25ARB030	NE	SP 35 without scale
23.04.25ARB031	NW	SP 35 overview
23.04.25ARB032	NE	SP 40 with scale
23.04.25ARB033	NE	SP 40 without scale
23.04.25ARB034	NW	SP 40 overview
23.04.25ESD001	S	SP 8 with scale
23.04.25ESD002	S	SP 8 without scale
23.04.25ESD003	N	SP 8 overview
23.04.25ESD004	NW	SP 10 with scale
23.04.25ESD005	NW	SP 10 without scale

Number	View	Description
23.04.25ESD006	NE	SP 10 overview (over-exposed)
23.04.25ESD007	NE	SP 10 overview
23.04.25ESD008	W	SP 9 with scale
23.04.25ESD009	W	SP 9 without scale
23.04.25ESD010	N	SP 9 overview
23.04.25ESD011	P	SP 9 ferrous metal stake
23.04.25ESD012	P	SP 9 ferrous metal stake
23.04.25ESD013	P	SP 9 ferrous metal stake
23.04.25ESD014	NNE	Farm equipment hanging from tree
23.04.25ESD015	NNE	Farm equipment hanging from tree
23.04.25ESD016	SSW	Farm equipment hanging from tree
23.04.25ESD017	N	SP 12 with scale
23.04.25ESD018	N	SP 12 without scale
23.04.25ESD019	N	SP 12 overview
23.04.25ESD020	N	SP 11 with scale
23.04.25ESD021	N	SP 11 without scale
23.04.25ESD022	E	SP 11 overview with edge of landform above driveway to 9116 Tveit Rd
23.04.25ESD023	N	SP 14 with scale
23.04.25ESD024	N	SP 14 without scale
23.04.25ESD025	NE	SP 14 overview
23.04.25ESD026	NE	ERCI at SP 13
23.04.25ESD027	S	SP 15 with scale
23.04.25ESD028	S	SP 15 without scale
23.04.25ESD029	E	SP 15 overview
23.04.25ESD030	P	SP 16 angular rock, not an artifact
23.04.25ESD031	P	SP 16 angular rock, not an artifact
23.04.25ESD032	P	SP 16 angular rock, not an artifact
23.04.25ESD033	P	SP 16 angular rock, not an artifact
23.04.25ESD034	P	SP 16 angular rock, not an artifact
23.04.25ESD035	P	SP 16 angular rock, not an artifact
23.04.25ESD036	P	SP 16 angular rock, not an artifact
23.04.25ESD037	P	SP 16 angular rock, not an artifact
23.04.25ESD038	NE	SP 16 with scale
23.04.25ESD039	NE	SP 16 without scale
23.04.25ESD040	W	SP 16 overview
23.04.25ESD041	NE	SP 17 with scale
23.04.25ESD042	NE	SP 17 without scale
23.04.25ESD043	N	SP 17 overview
23.04.26AAY001	S	SP 63 with scale
23.04.26AAY002	S	SP 63 without scale
23.04.26AAY003	S	SP 63 overview with house in background

Number	View	Description
23.04.26AAY004	SW	Overview in P310512003000100
23.04.26AAY005	SW	ERCI working in P310512003000100
23.04.26AAY006	S	SP 65 with scale
23.04.26AAY007	S	SP 65 without scale
23.04.26AAY008	S	SP 65 overview with ERCI working in P310512003000100
23.04.26AAY009	N	SP 66 with scale
23.04.26AAY010	N	SP 66 without scale
23.04.26AAY011	E	SP 66 overview with house and shed
23.04.26AAY012	S	SP 70 with scale
23.04.26AAY013	S	SP 70 without scale
23.04.26AAY014	S	SP 70 overview with ERCI
23.04.26AAY015	SE	SP 83 with scale
23.04.26AAY016	SE	SP 83 without scale
23.04.26AAY017	SE	SP 83 overview looking up slope with agricultural ditch
23.04.26AAY018	SW	Vehicle debris and brush pile at P310512003000100
23.04.26AAY019	W	Vehicle debris and brush pile at P310512003000100
23.04.26AAY020	SE	Brush and structure debris pile at P310512003000100
23.04.26AAY021	S	Refuse between piles
23.04.26AAY022	SE	Refuse between piles closeup
23.04.26AAY023	P	Pantera cassette tape
23.04.26AAY024	P	Small blue bottle base
23.04.26AAY025	P	Brick
23.04.26AAY026	P	Colorless bottle base
23.04.26AAY027	P	Colorless bottle "MONT BA…"
23.04.26AAY028	N	SP 81 with scale
23.04.26AAY029	N	SP 81 without scale
23.04.26AAY030	SW	SP 81 overview with ERCI working
23.04.26AAY031	N	SP 87 with scale
23.04.26AAY032	N	SP 87 without scale
23.04.26AAY033	SW	SP 87 overview with ERCI working
23.04.26AAY034	P	SP 87 colorless plastic fragment
23.04.26AAY035	N	SP 90 with scale
23.04.26AAY036	N	SP 90 without scale
23.04.26AAY037	N	SP 90 overview
23.04.26AAY038	P	SP 90, three colorless glass fragments
23.04.26AAY039	P	SP 90 aqua bottle base fragment
23.04.26AAY040	P	SP 90 terra-cotta pot fragments and white ceramic fragment
23.04.26AAY041	P	SP 90 Styrofoam
23.04.26AAY042	P	SP 90 blue plastic
23.04.26AAY043	P	SP 90 aluminum
23.04.26AAY044	NE	SP 88 with scale
23.04.26AAY045	NE	SP 88 without scale

Number	View	Description
23.04.26AAY046	NE	SP 88 overview with ERCI working
23.04.26AAY047	N	SP 91 with scale
23.04.26AAY048	N	SP 91 without scale, natural charcoal visible
23.04.26AAY049	WSW	SP 91 overview with ERCI working
23.04.26AAY050	S	Wire in SP 91
23.04.26AAY051	NW	SP 75 with scale
23.04.26AAY052	NW	SP 75 without scale
23.04.26AAY053	SE	SP 75 overview with ERCI working
23.04.26AAY054	N	SP 82 with scale
23.04.26AAY055	N	SP 82 without scale
23.04.26AAY056	S	SP 82 overview with ditch
23.04.26ARB001	W	Slope down from barn at 8904 Tveit
23.04.26ARB002	NE	Blackberries on slope northeast of barn
23.04.26ARB003	S	Leveled area on the east side of barn
23.04.26ARB004	SW	Barn at 8904 Tveit
23.04.26ARB005	N	Blackberries on terrace edge
23.04.26ARB006	SE	Drainage ditch by SP 70
23.04.26ARB007	NW	Drainage ditch by SP 70
23.04.26ARB008	N	SP 64 with scale
23.04.26ARB009	N	SP 64 without scale
23.04.26ARB010	N	SP 64 overview
23.04.26ARB011	N	SP 67 with scale
23.04.26ARB012	N	SP 67 without scale
23.04.26ARB013	N	SP 67 overview with ERCI at SP 66
23.04.26ARB014	NW	Drainage ditch towards SP 70
23.04.26ARB015	SE	Road on slope south of SP 70
23.04.26ARB016	NW	Road on slope south of SP 70
23.04.26ARB017	S	Refuse and wood debris piles SW of barn
23.04.26ARB018	NW	Blackberries west of barn
23.04.26ARB019	NE	Cleared area to the southwest of barn
23.04.26ARB020	N	SP 71 with scale
23.04.26ARB021	N	SP 71 without scale
23.04.26ARB022	SE	SP 71 overview
23.04.26ARB023	NW	Car axle near SP 84
23.04.26ARB024	NW	SP 86 with scale
23.04.26ARB025	NW	SP 86 without scale
23.04.26ARB026	NW	SP 86 overview with ERCI at SP 78
23.04.26ARB027	N	SP 89 with scale
23.04.26ARB028	N	SP 89 without scale
23.04.26ARB029	NW	SP 89 overview
23.04.26ARB030	P	Metal fragment from SP 89
23.04.26ARB031	N	SP 92 with scale

Number	View	Description
23.04.26ARB032	N	SP 92 without scale
23.04.26ARB033	NE	SP 92 overview with ERCI at SP 91
23.04.26ARB034	P	Black plastic from SP 92
23.04.26ARB035	P	Plastic object from SP 92
23.04.26ARB036	P	Glass fragment from SP 92
23.04.26ARB037	P	Wood and fabric and metal object from SP 92
23.04.26ARB038	NE	Barn at 8904 Tveit Rd
23.04.26ARB039	N	SP 73 with scale
23.04.26ARB040	N	SP 73 without scale
23.04.26ARB041	NW	SP 73 overview with ERCI at SP 74 and 75
23.04.26ARB042	N	SP 76 with scale
23.04.26ARB043	N	SP 76 without scale
23.04.26ARB044	E	SP 76 overview
23.04.26 FLK001	N	SP 68 with scale
23.04.26 FLK002	N	SP 68 without scale
23.04.26 FLK003	N	SP 68 overview
23.04.26 FLK004	W	SP 69 with scale
23.04.26 FLK005	W	SP 69 without scale
23.04.26 FLK006	E	SP 69 overview
23.04.26 FLK007	W	SP 84 with scale
23.04.26 FLK008	W	SP 84 without scale
23.04.26 FLK009	N	SP 84 overview
23.04.26 FLK010	E	SP 78 with scale
23.04.26 FLK011	E	SP 78 without scale
23.04.26 FLK012	NE	SP 78 overview with ERCI
23.04.26 FLK013	S	SP 80 with scale
23.04.26 FLK014	S	SP 80 without scale
23.04.26 FLK015	S	SP 80 overview
23.04.26 FLK016	P	SP 80 colorless glass, amber glass fragments, wire-cut nail
23.04.26 FLK017	SE	SP 79 with scale
23.04.26 FLK018	SE	SP 79 without scale
23.04.26 FLK019	SE	SP 79 overview
23.04.26 FLK020	E	SP 72 with scale
23.04.26 FLK021	E	SP 72 without scale
23.04.26 FLK022	W	SP 72 overview
23.04.26 FLK023	S	SP 74 with scale
23.04.26 FLK024	S	SP 74 without scale
23.04.26 FLK025	W	SP 74 overview with ERCI
23.04.26 FLK026	NE	SP 77 with scale
23.04.26 FLK027	NE	SP 77 without scale
23.04.26 FLK028	E	SP 77 overview
23.04.26 FLK029	SE	SP 93 with scale

Number	View	Description
23.04.26 FLK030	SE	SP 93 without scale
23.04.26 FLK031	E	SP 93 overview
23.04.27 ESD001	NW	SP 96 with scale
23.04.27 ESD002	NW	SP 96 without scale
23.04.27 ESD003	NW	SP 96 overview
23.04.27 ESD004	NW	SP 99 with scale
23.04.27 ESD005	NW	SP 99 without scale
23.04.27 ESD006	NW	SP 99 overview
23.04.27 ESD007	SW	SP 101 with scale
23.04.27 ESD008	SW	SP 101 without scale
23.04.27 ESD009	E	SP 101 overview
23.04.27 ESD010	E	SP 110 with scale
23.04.27 ESD011	E	SP 110 without scale
23.04.27 ESD012	NNW	SP 110 overview (with ERCI)
23.04.27 ESD013	N	SP 115 with scale
23.04.27 ESD014	N	SP 115 without scale
23.04.27 ESD015	NNW	SP 115 overview
23.04.27 ESD016	P	Non-human skull fragment
23.04.27 ESD017	P	Non-human skull fragment
23.04.27 ESD018	P	Non-human skull fragment
23.04.27 ESD019	P	Non-human skull fragment
23.04.27 ESD020	P	Non-human skull fragment
23.04.27 ESD021	P	Non-human skull fragment
23.04.27 ESD022	P	Non-human skull fragment
23.04.27 ESD023	P	Non-human skull fragment
23.04.27 ESD024	P	Non-human skull fragment
23.04.27 ESD025	P	Non-human skull fragment
23.04.27 ESD026	P	Non-human skull fragment
23.04.27 ESD027	P	Non-human calcaneus
23.04.27 ESD028	P	Non-human calcaneus
23.04.27 ESD029	P	Non-human calcaneus
23.04.27 ESD030	P	Video (ERCI in the field)
23.04.27 ESD031	NW	SP 125 with scale
23.04.27 ESD032	NW	SP 125 without scale
23.04.27 ESD033	W	SP 125 overview
23.04.27 ESD034	NE	SP 124 with scale
23.04.27 ESD035	NE	SP 124 without scale
23.04.27 ESD036	NNW	SP 124 overview
23.04.27 ESD037	NW	ERCI working
23.04.27 ESD038	NW	ERCI working
23.04.27 ESD039	NW	ERCI working
23.04.27 ESD040	S	SP 129 with scale

Number	View	Description
23.04.27 ESD041	S	SP 129 without scale
23.04.27 ESD042	NW	SP 129 overview
23.04.27KAM001	NE	SP 95 with scale
23.04.27 KAM002	NE	SP 95 without scale
23.04.27 KAM003	NE	SP 95 overview
23.04.27 KAM004	SW	SP 100 with scale
23.04.27 KAM005	SW	SP 100 without scale
23.04.27 KAM006	SW	SP 100 overview
23.04.27 KAM007	NE	SP 106 without scale
23.04.27 KAM008	NE	SP 106 with scale
23.04.27 KAM009	NE	SP 106 overview
23.04.27 KAM010	NE	SP 114 with scale
23.04.27 KAM011	NE	SP 114 without scale
23.04.27 KAM012	NE	SP 114 overview
23.04.27 KAM013	E	SP 117 without scale e
23.04.27 KAM014	NE	SP 117 with scale
23.04.27 KAM015	NE	SP 117 overview
23.04.27 KAM016	NW	SP 139 without scale
23.04.27 KAM017	NW	SP 139 with scale
23.04.27 KAM018	NW	SP 139 overview
23.04.27 KAM019	NE	SP 137 with scale
23.04.27 KAM020	NE	SP 137 without scale
23.04.27 KAM021	NE	SP 137 overview
23.04.27 KAM022	NE	SP 136 with scale
23.04.27 KAM023	NE	SP 136 without scale
23.04.27 KAM024	NE	SP 136 overview
23.04.27 KAM025	NE	SP 60 with scale
23.04.27 KAM026	NE	SP 60 without scale
23.04.27 KAM027	NE	SP 60 overview
23.04.27 AAY001	S	SP 94 with scale
23.04.27 AAY002	S	SP 94 without scale
23.04.27 AAY003	S	SP 94 overview
23.04.27 AAY004	W	SP 102 with scale
23.04.27 AAY005	W	SP 102 without scale
23.04.27 AAY006	W	SP 102 overview
23.04.27 AAY007	W	SP 105 with scale
23.04.27 AAY008	W	SP 105 without scale
23.04.27 AAY009	W	SP 105 overview
23.04.27 AAY010	W	SP 108 with scale
23.04.27 AAY011	W	SP 108 without scale
23.04.27 AAY012	S	SP 108 overview
23.04.27 AAY013	W	SP 109 with scale

Number	View	Description
23.04.27 AAY014	W	SP 109 without scale
23.04.27 AAY015	N	SP 109 overview
23.04.27 AAY016	N	SP 116 with scale
23.04.27 AAY017	N	SP 116 without scale
23.04.27 AAY018	S	SP 116 overview
23.04.27 AAY019	N	SP 120 with scale
23.04.27 AAY020	N	SP 120 without scale
23.04.27 AAY021	W	SP 120 overview
23.04.27 AAY022	N	SP 121 with scale
23.04.27 AAY023	W	SP 121 without scale
23.04.27 AAY024	W	SP 121 overview
23.04.27 AAY025	NE	SP 127 with scale
23.04.27 AAY026	NE	SP 127 without scale
23.04.27 AAY027	NW	SP 127 overview
23.04.27 ARB001	SE	Cleared area south of 9116 Tveit Rd
23.04.27 ARB002	NE	9116 Tveit Rd
23.04.27 ARB003	SE	Cleared area south of 9116 Tveit Rd
23.04.27 ARB004	SW	Cleared area south of 9116 Tveit Rd
23.04.27 ARB005	S	Cleared area south of 9116 Tveit Rd
23.04.27 ARB006	NE	Cleared area south of 9116 Tveit Rd
23.04.27 ARB007	NW	SP 97 with scale
23.04.27 ARB008	NW	SP 97 without scale
23.04.27 ARB009	NW	SP 97 overview
23.04.27 ARB010	NW	Slope down from southwest of 9116 Tveit Rd
23.04.27 ARB011	N	9116 Tveit Rd and garage
23.04.27 ARB012	NW	SP 98 with scale
23.04.27 ARB013	NW	SP 98 without scale
23.04.27 ARB014	N	SP 98 overview
23.04.27 ARB015	NW	SP 103 with scale
23.04.27 ARB016	NW	SP 103 without scale
23.04.27 ARB017	E	SP 103 overview with I-beam
23.04.27 ARB018	SE	Open area in large parcel area P310512001000400
23.04.27 ARB019	E	Open area in large parcel area P310512001000400
23.04.27 ARB020	SW	Open area on eastern boundary, P310512001000400
23.04.27 ARB021	NW	Open area on eastern boundary, P310512001000400
23.04.27 ARB022	SE	Standing water by SP 110
23.04.27 ARB023	SW	Large open area in P310512001000400
23.04.27 ARB024	S	Large open area in P310512001000400
23.04.27 ARB025	SE	Large open area in P310512001000400
23.04.27 ARB026	N	SP 104 with scale
23.04.27 ARB027	N	SP 104 without scale
23.04.27 ARB028	N	SP 104 overview

Number	View	Description
23.04.27 ARB029	N	SP 119 with scale
23.04.27 ARB030	N	SP 119 without scale
23.04.27 ARB031	NW	SP 119 overview
23.04.27 ARB032	NE	SP 122 with scale
23.04.27 ARB033	NE	SP 122 without scale
23.04.27 ARB034	NW	SP 122 overview
23.04.27 ARB035	NW	SP 123 with scale
23.04.27 ARB036	NW	SP 123 without scale
23.04.27 ARB037	W	SP 123 overview
23.04.27 ARB038	NW	SP 128 with scale
23.04.27 ARB039	NW	SP 128 without scale
23.04.27 ARB040	SE	SP 128 overview
23.04.27 ARB041	NE	SP 131 with scale
23.04.27 ARB042	NE	SP 131 without scale
23.04.27 ARB043	SE	SP 131 overview
23.04.27 FLK001	NW	SP 107 with scale
23.04.27 FLK002	NW	SP 107 without scale
23.04.27 FLK003	W	SP 107 overview
23.04.27 FLK004	NW	SP 112 with scale
23.04.27 FLK005	NW	SP 112 without scale
23.04.27 FLK006	N	SP 112 overview
23.04.27 FLK007	N	SP 111 with scale
23.04.27 FLK008	N	SP 111 without scale
23.04.27 FLK009	N	SP 111 overview
23.04.27 FLK010	E	SP 113 with scale
23.04.27 FLK011	E	SP 113 without scale
23.04.27 FLK012	S	SP 113 overview
23.04.27 FLK013	S	SP 118 with scale
23.04.27 FLK014	S	SP 118 without scale
23.04.27 FLK015	S	SP 118 overview
23.04.27 FLK016	S	SP 138 with scale
23.04.27 FLK017	S	SP 138 without scale
23.04.27 FLK018	S	SP 138 overview
23.04.27 FLK019	S	SP 126 with scale
23.04.27 FLK020	S	SP 126 without scale
23.04.27 FLK021	E	SP 126 overview
23.04.27 FLK022	S	SP 135 with scale
23.04.27 FLK023	S	SP 135 without scale
23.04.27 FLK024	S	SP 135 overview
23.04.27 FLK025	S	SP 134 with scale
23.04.27 FLK026	S	SP 134 without scale
23.04.27 FLK027	S	SP 134 overview

Number	View	Description
23.05.02 ESD001	NNW	View toward ravine/creek
23.05.02 ESD002	NNW	Edge of landform near where Parcels 300500/400400 meet
23.05.02 ESD003	NE	View toward ravine/creek
23.05.02 ESD004	NW	View across
23.05.02 ESD005	NNW	View down stream
23.05.02 ESD006	N	View down stream
23.05.02 ESD007	S	View up ravine
23.05.02 ESD008	E	Vegetation in Project area
23.05.02 ESD009	P	False lily of the valley
23.05.02 ESD010	E	Vegetation in Project area
23.05.02 ESD011	n/a	Plant information screenshot
23.05.02 ESD012	P	Trillium
23.05.02 ESD013	W	Stump with tarp and clamps
23.05.02 ESD014	NW	Stump with tarp and clamps
23.05.02 ESD015	E	Closeup of clamp
23.05.02 ESD016	NNW	Closeup of clamp
23.05.02 ESD017	N/A	Screen shot of tarp and stump location
23.05.02 ESD018	E	Across east boundary of Parcel 31051300100200
23.05.02 ESD019	W	View of Parcel 31051300100200 from east boundary
23.05.02 ESD020	W	Excavation trench
23.05.02 ESD021	N	Excavation trench
23.05.02 ESD022	N	Old excavation trench
23.05.02 ESD023	NE	View toward neighboring parcel
23.05.02 ESD024	P	Datum 159
23.05.02 ESD025	P	Datum 159
23.05.02 ESD026	SW	Vegetation (red alder/ salmon berries)
23.05.02 ESD027	SW	Vegetation (red alder/ salmon berries)
23.05.02 ESD028	SW	Possible notched stump
23.05.02 ESD029	SW	Notch stump close-up
23.05.02 ESD030	SW	Notch stump close-up
23.05.02 ESD031	W	Wet area
23.05.02 ESD032	NW	Wet area
23.05.02 ESD033	W	Wet area
23.05.02 ESD034	S	Wet area
23.05.02 ESD035	N/A	Screen shot of south of wetland
23.05.02 ESD036	N/A	Screen shot of south of wetland
23.05.02 ESD037	S	Possible notched stump
23.05.02 ESD038	S	Possible modified tree
23.05.02 ESD039	S	Possible modified tree
23.05.02 ESD040	P	Bud light can
23.05.02 ESD041	P	Bud light can
23.05.02 ESD042	P	Bud light can

Number	View	Description
23.05.02 ESD043	P	Bud light can
23.05.02 ESD044	NW	Cleared road
23.05.02 ESD045	P	Chainsaw lube container
23.05.02 ESD046	P	Chainsaw lube container
23.05.02 ESD047	E	Creek
23.05.02 ESD048	S	Creek
23.05.02 ESD049	N/A	Screenshot of creek crossing
23.05.02 ESD050	NW	Creek
23.05.02 ESD051	NNW	Creek
23.05.02 ESD052	SW	Creek
23.05.02 ESD053	E	Creek
23.05.02 ESD054	P	Budweiser can
23.05.02 ESD055	P	Budweiser can
23.05.02 ESD056	P	Budweiser can
23.05.02 ESD057	P	Budweiser can
23.05.02 ESD058	SW	Transect 2 stump with 2 notches
23.05.02 ESD059	SW	Transect 2 stump with 2 notches
23.05.02 ESD060	SW	Transect 2 stump with 2 notches
23.05.02 ESD061	SW	Transect 2 stump with 2 notches
23.05.02 ESD062	NW	Devil's club
23.05.02 ESD063	NW	Devil's club
23.05.02 ESD064	E	Transect 3 car parts scatter
23.05.02 ESD065	E	Transect 3 car parts scatter
23.05.02 ESD066	P	Car radio
23.05.02 ESD067	P	Metal and glass
23.05.02 ESD068	P	Metal and glass
23.05.02 ESD069	P	Door panel
23.05.02 ESD070	E	Metal
23.05.02 ESD071	SE	Tire
23.05.02 ESD072	N/A	Screenshot of car parts
23.05.02 ESD073	N/A	Screenshot
23.05.02 ESD074	E	Hole with boulder near east boundary 31051300100200
23.05.02 ESD075	E	Close-up of hole with boulder
23.05.02 ESD076	E	Sediment profile
23.05.02 ESD077	W	Circle of rocks near Parcel 31051300100200
23.05.02 ESD078	N/A	Screenshot
23.05.02 ESD079	E	Stump with a springboard notch
23.05.02 ESD080	SE	Near boundary of Parcel 31051300100200
23.05.02 ESD081	N/A	Screenshot of Transect 4 location / start
23.05.02 ESD082	W	From 95th Avenue NE
23.05.02 ESD083	N/A	Transect 4 point (screenshot)
23.05.02 ESD084	NW	Surface of wet area

Number	View	Description
23.05.02 ESD085	N/A	Point of Transect 4 (screenshot)
23.05.02 ESD086	P	Metal wires wrapped in electrical tape
23.05.02 ESD087	P	Metal wires wrapped in electrical tape
23.05.02 ESD088	P	Metal wires wrapped in electrical tape
23.05.02 ESD089	P	Metal wires wrapped in electrical tape
23.05.02 ESD090	N/A	Point of Transect 4 (screenshot)
23.05.02 ESD091	NW	Tree tip (in wet area)
23.05.02 ESD092	N/a	Screenshot of point on Transect 4
23.05.02 ESD093	N/A	Screenshot of point on Transect 4
23.05.02 ESD094	W	Stump (no notches present)
23.05.02 ESD095	N/A	Screenshot of point on Transect 4
23.05.02 ESD096	WNW	Slope near southwest corner of Parcel 31051300100300
23.05.02 ESD097	WNW	Screenshot of point Transect 4
23.05.02 ESD098	WNW	Screenshot of point Transect 4
23.05.02 ESD099	WNW	Screenshot of point Transect 4
23.05.02 ESD100	NW	Datum 146
23.05.02 ESD101	E	Southwest property boundary corner P31051300100300
23.05.02 ESD102	WNW	Screenshot of point Transect 4
23.05.02 ESD103	N	View up P31051300100300 west boundary
23.05.02 ESD104	N	Vegetation P31051200300500 widest part of landform
23.05.02 ESD105	NW	Old stump springboard notch
23.05.02 ESD106	NW	Old stump springboard notch
23.05.02 ESD107	P	Non-human skull fragments
23.05.02 ESD108	P	Non-human skull fragments
23.05.02 ESD109	N	Dense vegetation between ravines in P31051200300500
23.05.02 ESD110	E	Spruce tree
23.05.02 ESD111	E	Debris from far away
23.05.02 ESD112	E	Debris from far away
23.05.02 ESD113	SE	Debris (modern)
23.05.02 ESD114	N	Vegetation toward north
23.05.02 ESD115	P	Debris close-up (rice and bucket)
23.05.02 ESD116	E	Chair, tarp, extension cord and wood (debris)
23.05.02 ESD117	S	Debris (modern)
23.05.02 ESD118	S	Debris (modern), white cage (animal)
23.05.02 ESD119	SW	Debris (modern), white cage (animal)
23.05.02 ESD120	W	Chair, tarp, extension cord, wood (debris) and cooler
23.05.02 ESD121	S	Debris (modern) with tarps
23.05.02 ESD122	S	Debris (modern) with tarps
23.05.02 ESD123	W	Debris (modern) with tarps
23.05.02 ESD124	N	Dense vegetation between two ravines in P31051200300500
23.05.02 ESD125	E	Dense vegetation between two ravines in P31051200300500
23.05.02 ESD126	SE	Burned area between two ravines in P31051200300500

Number	View	Description
23.05.02ARB001	N	PUD road, eastern boundary of 31051300100200
23.05.02ARB002	S	PUD road, eastern boundary of 31051300100200
23.05.02ARB003	E	Start of Transect 1 (west side)
23.05.02ARB004	N	Creek at western end of transect
23.05.02ARB005	SE	Creek at western end of transect
23.05.02ARB006	P	False lily of the valley
23.05.02ARB007	E	Open alder forest, Transect 1
23.05.02ARB008	NE	Old stump with no notches, Transect 1
23.05.02ARB009	P	Plastic jug with animal teeth marks, Transect 1
23.05.02ARB010	E	Vegetation, eastern portion of Transect 1
23.05.02ARB011	W	East end of Transect 1
23.05.02ARB012	N	East end of Transect 1
23.05.02ARB013	W	Start of Transect 2 (east side)
23.05.02ARB014	W	Vegetation and landscape, eastern portion, Transect 2
23.05.02ARB015	N	Vegetation and landscape, eastern portion, Transect 2
23.05.02ARB016	W	Overgrown logging road, Transect 2
23.05.02ARB017	SW	Tire dump by road, Transect 2
23.05.02ARB018	P	Close-up of tire from tire dump
23.05.02ARB019	S	PUD road, end of Emma's second transect (west side)
23.05.02ARB020	E	Start of Transect 3 (west side)
23.05.02ARB021	E	Vegetation and landscape, Transect 3
23.05.02ARB022	E	Vegetation and landscape, Transect 3
23.05.02ARB023	E	Vegetation and landscape, Transect 3
23.05.02ARB024	NW	West area, middle of Transect 3
23.05.02ARB025	P	Pepsi can on surface, Transect 3
23.05.02ARB026	SE	Overgrown logging road, Transect 3
23.05.02ARB027	E	Vegetation and landscape, Transect 3
23.05.02ARB028	W	End of Transect 3 (east side)
23.05.02ARB029	N	End of Transect 3 (east side)
23.05.02ARB030	W	Start of Transect 4 (east end)
23.05.02ARB031	NW	Car seat on side of logging road, Transect 4
23.05.02ARB032	W	Vegetation and landscape, Transect 4
23.05.02ARB033	W	Vegetation and landscape, Transect 4
23.05.02ARB034	SW	Vegetation and landscape, Transect 4
23.05.02ARB035	NW	Vegetation and landscape, Transect 4
23.05.02ARB036	W	Vegetation and landscape, Transect 4, western portion
23.05.02ARB037	NW	Vegetation and landscape, Transect 4, western portion
23.05.02ARB038	NW	Creek at west end of Transect 4
23.05.02ARB039	N	PUD road from southwest Project area
23.05.02ARB040	W	PUD line southern boundary of 31051200300500
23.05.02ARB041	SW	Recently cut tree, base of western ravine
23.05.02ARB042	W	Base of western ravine

Number	View	Description
23.05.02ARB043	N	Top of western ravine, near SP 85
23.05.02ARB044	S	Top of western ravine, near SP 85
23.05.02ARB045	N	Top of western ravine to small ravine, southwest corner
23.05.02ARB046	W	PUD line, southwest corner of 31051200300500
23.05.02ARB047	N	PUD line, southwest corner of 31051200300500
23.05.02ARB048	NW	Creek at base of small ravine
23.05.02ARB049	SE	Notched stump, southwest corner of 31051200300500
23.05.02ARB050	SE	PUD road gravels
23.05.02ARB051	NE	Small ravine in southwest corner from PUD line
23.05.02ARB052	S	Southwest corner of 31051200300500
23.05.02ARB053	N	PUD line, western boundary of 31051200300500
23.05.02ARB054	NE	Western ravine from western bank
23.05.02ARB055	N	Vegetation on western bank
23.05.02ARB056	P	Metal stakes
23.05.02ARB057	NE	Vegetation and western ravine slope
23.05.02ARB058	SE	Notched stump, western boundary of 31051200300500
23.05.02ARB059	N	Overview from top of terrace
23.05.02ARB060	NE	Overview from top of terrace
23.05.02ARB061	NE	Car seat, metal container and old mattress by PUD line
23.05.02ARB062	NE	I-beam by SP 103
23.05.02KAM001	SE	Stump notched overview
23.05.02KAM002	SE	Stump with ERCI
23.05.02KAM003	P	Notch (closer)
23.05.02KAM004	P	Notch (closer)
23.05.02KAM005	NE	Stump overview with road
23.05.02KAM006	P	Notch (burned)
23.05.02KAM007	SE	Stump notched overview
23.05.02KAM008	NW	Stump notch 2, chainsaw
23.05.02KAM009	SE	Stump overview (chainsaw)
23.05.02KAM010	P	Deer scapula
23.05.02KAM011	NE	Small cedar with ERCI, natural scar
23.05.02KAM012	P	Dog food bag (potentially recent)
23.05.02KAM013	E	Trail (property), Transect 3
23.05.02KAM014	W	Trail (property) Transect 3
23.05.02KAM015	W	Transect 4 overview, from beginning
23.05.02KAM016	W	Deer tibia
23.05.02KAM017	N	Overview, from beginning Transect 5
23.05.02KAM018	N	Chainsaw stump (recent), logging disturbance
23.05.03 AAY001	W	SP 45 with scale
23.05.03 AAY002	W	SP 45 without scale
23.05.03 AAY003	S	SP 45 overview
23.05.03 AAY004	W	SP 54 with scale

Number	View	Description
23.05.03 AAY005	W	SP 54 without scale
23.05.03 AAY006	NE	SP 54 overview
23.05.03 AAY007	S	SP 44 with scale
23.05.03 AAY008	S	SP 44 without scale
23.05.03 AAY009	N	SP 44 overview
23.05.03 AAY010	E	SP 43 with scale
23.05.03 AAY011	E	SP 43 without scale
23.05.03 AAY012	NW	SP 43 overview
23.05.03 AAY013	E	SP 42 with scale
23.05.03 AAY014	E	SP 42 without scale
23.05.03 AAY015	W	SP 42 overview
23.05.03 AAY016	S	SP 41 with scale
23.05.03 AAY017	S	SP 41 without scale
23.05.03 AAY018	SW	SP 41 overview
23.05.03 AAY019	E	SP 53 with scale
23.05.03 AAY020	E	SP 53 without scale
23.05.03 AAY021	NE	SP 53 overview
23.05.03ARB001	NE	Low area north of barn, mowed field
23.05.03ARB002	W	Blackberries northwest of barn
23.05.03ARB003	W	Alder and maple stand in northwest portion of Project area
23.05.03ARB004	P	Steel Reserve beer can
23.05.03ARB005	NW	Creek in northwest portion of Project area
23.05.03ARB006	W	Marshy area by creek
23.05.03ARB007	W	Alder and maple stand in northwest portion of Project area
23.05.03ARB008	SW	Blackberries in alder and maple stand
23.05.03ARB009	P	Deer bones on surface
23.05.03ARB010	W	Blackberries in northwest portion of Project area
23.05.03ARB011	S	Alders by blackberries northwest portion of Project area
23.05.03ARB012	E	Blackberries in clear area Parcel 310512003000100
23.05.03ARB013	SE	Drainage ditch south of blackberries, northwest portion of Project area
23.05.03ARB014	SW	Horsetail meadow south of blackberries
23.05.03ARB015	S	Overgrown road, southeast of blackberries
23.05.03ARB016	P	Wild bleeding heart
23.05.03ARB017	W	Iron culvert for drainage ditch
23.05.03ARB018	W	Vegetation east of western creek
23.05.03ARB019	N	Bar-B-Que on surface, east of creek
23.05.03ARB020	NW	Modern campsite
23.05.03ARB021	S	Trench with boards at modern campsite
23.05.03ARB022	W	Large stump west of modern campsite
23.05.03ARB023	NW	Make-shift bridge and rock lined path along creek
23.05.03ARB024	SW	Modern campsite

Number	View	Description
23.05.03ARB025	W	Tree fall east of modern campsite
23.05.03ARB026	W	Vegetation east of western creek
23.05.03ARB027	N	Notched stump by small creek
23.05.03ARB028	SW	Overgrown logging road
23.05.03ARB029	SW	Logging road on west side of eastern ravine
23.05.03ARB030	SW	Small ravine from logging road
23.05.03ARB031	SW	Logging road
23.05.03ARB032	NW	Logging road and top of terrace
23.05.03ARB033	NE	Eastern ravine from logging road
23.05.03ARB034	SW	Notched stump on western bank of eastern ravine
23.05.03ARB035	NW	Western side of east ravine
23.05.03ARB036	S	Small ravine vegetation
23.05.03ARB037	NW	Vegetation in east ravine
23.05.03ARB038	NW	East ravine overview from eastern bank
23.05.03ARB039	SW	East ravine from eastern bank
23.05.03ARB040	SE	Notched stump on eastern side of east ravine
23.05.03ARB041	W	Vegetation and slope on eastern side of east ravine
23.05.03ARB042	N	Dense salmonberry east of east ravine
23.05.03ARB043	SW	Dense salmonberry east of east ravine
23.05.03ARB044	NW	Logging road, eastern side of Parcel 31051200300100
23.05.03ARB045	SE	Logging road, eastern side of Parcel 31051200300100
23.05.03ARB046	S	Dense vegetation east of logging road
23.05.03ARB047	NW	Logging road from top of terrace
23.05.03ARB048	E	Clear area at top of terrace
23.05.03ARB049	W	Top of terrace
23.05.03ARB050	NW	Top of terrace
23.05.03ARB051	NW	Edge of terrace and eastern ravine
23.05.03ARB052	NW	Recently cut tree stump on top of terrace
23.05.03ARB053	NW	Overview from top of terrace
23.05.03ARB054	N	Overview from top of terrace
23.05.03ARB055	SW	Overview from top of terrace
23.05.03ESD001	S	SP 52 with scale
23.05.03ESD002	S	SP 52 without scale
23.05.03ESD003	S	SP 52 overview with edge of glacial striation slope
23.05.03ESD004	NW	SP 133 with scale
23.05.03ESD005	NW	SP 133 without scale
23.05.03ESD006	S	SP 133 overview with edge of glacial striation slope
23.05.03ESD007	P	Work photo
23.05.03ESD008	P	Screenshot of map
23.05.03ESD009	N	SP 130 with scale
23.05.03ESD010	N	SP 130 without scale
23.05.03ESD011	NE	SP 130 overview

Number	View	Description
23.05.03ESD012	P	SP 130, orange flagging tape (old)
23.05.03ESD013	P	Map screenshot
23.05.03ESD014	N	SP 132 with scale
23.05.03ESD015	N	Spa 132 without scale
23.05.03ESD016	E	SP 132 overview
23.05.03ESD017	P	Map screenshot
23.05.03ESD018	NE	SP 85 with scale
23.05.03ESD019	NE	SP 85 without scale
23.05.03ESD020	NE	SP 51 with scale
23.05.03ESD021	NE	SP 51 without scale
23.05.03ESD022	NW	SP 51 overview
23.05.03ESD023	P	Red ochre (naturally occurring)
23.05.03ESD024	P	Red ochre (naturally occurring)
23.05.03FLK001	N	SP 46 with scale
23.05.03FLK002	N	SP 46 without scale
23.05.03FLK003	E	SP 46 overview
23.05.03FLK004	W	SP 55 with scale
23.05.03FLK005	W	SP 55 without scale
23.05.03FLK006	E	SP 55 overview
23.05.03FLK007	W	SP 56 with scale
23.05.03FLK008	W	SP 56 without scale
23.05.03FLK009	E	SP 56 overview
23.05.03FLK010	E	SP 57 with scale
23.05.03FLK011	E	SP 57 without scale
23.05.03FLK012	N	SP 57 overview
23.05.03FLK013	W	SP 58 with scale
23.05.03FLK014	W	SP 58 without scale
23.05.03FLK015	W	SP 59 with scale
23.05.03FLK016	W	SP 59 without scale
23.05.03FLK017	W	SP 59 overview
23.05.22ARB001	N	Excavating EP-1
23.05.22ARB002	N	EP-1 profile
23.05.22ARB003	P	Amber glass bottle on surface near EP-1
23.05.22ARB004	SW	Excavating EP-2
23.05.22ARB005	SW	EP-2 profile
23.05.22ARB006	S	EP-2 profile
23.05.22ARB007	SW	Excavating EP-3
23.05.22ARB008	SW	Excavating EP-3
23.05.22ARB009	W	EP-3 profile
23.05.22ARB010	NW	EP-3 profile
23.05.22ARB011	SE	Clearing excavator track
23.05.22ARB012	W	Clearing area for EP-4

Number	View	Description
23.05.22ARB013	N	EP-4 profile
23.05.22ARB014	NE	EP-4 profile
23.05.22ARB015	SE	Excavating EP-5
23.05.22ARB016	SE	EP-5 profile
23.05.22ARB017	SW	EP-5 profile
23.05.22ARB018	SE	Excavating EP-6
23.05.22ARB019	SE	EP-6 profile
23.05.22ARB020	NW	EP-6 profile
23.05.22ARB021	E	Excavating EP-7
23.05.22ARB022	SE	EP-7 profile
23.05.22ARB023	NE	EP-7 profile
23.05.22ARB024	N	Excavating EP-8
23.05.22ARB025	NE	EP-8 profile
23.05.22ARB026	NW	EP-8 profile
23.05.22ARB027	W	Excavating EP-9
23.05.22ARB028	SE	EP-9 profile
23.05.22ARB029	NW	EP-9 profile
23.05.22ARB030	NE	Excavating EP-10
23.05.22ARB031	NW	EP-10 profile
23.05.22ARB032	SW	EP-10 profile
23.05.23ARB001	SW	Excavating EP-11
23.05.23ARB002	W	EP-11 profile
23.05.23ARB003	N	EP-11 profile
23.05.23ARB004	NE	Stratification in M4 in EP-12
23.05.23ARB005	SE	EP-12 profile
23.05.23ARB006	NW	EP-12 profile
23.05.23ARB007	SW	Refuse pile by EP-12
23.05.23ARB008	SE	EP-13 profile
23.05.23ARB009	SW	EP-13 profile
23.05.23ARB010	NE	Cleared excavator path
23.05.23ARB011	N	Cleared excavator path towards terrace
23.05.23ARB012	P	Glass bottle by EP-14
23.05.23ARB013	P	Glass bottle by EP-14
23.05.23ARB014	SW	Refuse pile by EP-14
23.05.23ARB015	P	Pot base from refuse pile by EP-14
23.05.23ARB016	S	Tarp by EP-14
23.05.23ARB017	E	EP-14 profile
23.05.23ARB018	SW	EP-14 profile
23.05.23ARB019	P	Nintendo from refuse pile by EP-14
23.05.23ARB020	SE	Excavating EP-15
23.05.23ARB021	E	EP-15 profile
23.05.23ARB022	SW	EP-15 profile

Number	View	Description
23.05.23ARB023	SE	EP-15, backfilled
23.05.23ARB024	SE	EP-16 profile
23.05.23ARB025	W	EP-16 profile
23.05.23ARB026	N	EP-16 backfilled
23.05.23ARB027	N	EP-17 profile
23.05.23ARB028	SE	EP-17 profile
23.05.23ARB029	NW	EP-17 being backfilled
23.05.23ARB030	N	Refuse pile south of EP-18
23.05.23ARB031	W	EP-18 profile
23.05.23ARB032	SE	EP-18 profile
23.05.23ARB033	NE	Beginning excavation of EP-20
23.05.23ARB034	SW	EP-20 profile
23.05.23ARB035	SE	EP-20 profile
23.05.23ARB036	S	Clearing for EP-19
23.05.23ARB037	SE	Lamination in M6, EP-19
23.05.23ARB038	P	Cable by EP-19
23.05.23ARB039	NW	EP-19 profile
23.05.24AAY001	SE	EP-24 start of excavation
23.05.24AAY002	SE	EP-24 being backfilled
23.05.24AAY003	E	Start of EP-25
23.05.24AAY004	S	EP-25 in progress
23.05.24AAY005	E	Root burn in EP-25
23.05.24AAY006	SW	EP-25 profile
23.05.24AAY007	S	EP-25 complete
23.05.24AAY008	SW	EP-25 complete
23.05.24AAY009	NNW	EP-26 location overview
23.05.24AAY010	W	Collecting samples from EP-26
23.05.24AAY011	S	EP-26 profile at 3 feet
23.05.24AAY012	NW	EP-26 at 8 feet
23.05.24AAY013	NW	EP-26 complete
23.05.24AAY014	NNW	EP-26 complete
23.05.24AAY015	E	EP-26 complete
23.05.24AAY016	NE	EP-27
23.05.24AAY017	E	EP-27 at 4 feet
23.05.24AAY018	NW	Roots in EP-27 M5
23.05.24AAY019	NE	EP-27
23.05.24AAY020	E	EP-27 after walls collapsed
23.05.24AAY021	SE	EP-27 after walls collapsed
23.05.24AAY022	NE	EP-28 overview
23.05.24AAY023	E	EP-28 at 4.5 feet
23.05.24AAY024	N	EP-28 profile at 4.5 feet
23.05.24AAY025	SW	EP-29 overview

Number	View	Description
23.05.24AAY026	P	Laminations with ripple marks
23.05.24AAY027	SW	EP-29 complete
23.05.24AAY028	S	EP-29 complete
23.05.24AAY029	W	EP-29 overview being backfilled
23.05.24AAY030	SE	EP-30 overview
23.05.24AAY031	N	EP-30 at 3 feet
23.05.24AAY032	N	EP-30 at 10 feet
23.05.24AAY033	N	EP-30 at 21 feet
23.05.24AAY034	N	EP-30 at 21 feet
23.05.25ARB001	SW	Clearing for EP-31
23.05.25ARB002	NE	EP-31, 1–3-foot profile
23.05.25ARB003	W	EP-31 profile
23.05.25ARB004	NE	EP-31 profile
23.05.25ARB005	S	EP-32 profile
23.05.25ARB006	NW	EP-32 profile
23.05.25ARB007	NE	I-beam by SP 103
23.05.25ARB008	NW	Excavating EP-33
23.05.25ARB009	W	EP-33 profile
23.05.25ARB010	NE	EP-33 profile
23.05.25ARB011	NE	Groundwater seepage at 4 feet in EP-34
23.05.25ARB012	SW	Groundwater seepage at 4 feet in EP-34
23.05.25ARB013	NE	EP-34 profile
23.05.25ARB014	SW	EP-34 profile
23.05.25ARB015	W	EP-35 profile
23.05.25ARB016	W	EP-35 profile
23.05.25ARB017	NE	EP-35 profile
23.05.25ARB018	N	EP-35 backfilled
23.05.25ARB019	N	EP-36 profile
23.05.25ARB020	SW	EP-36 profile
23.05.25ARB021	NE	EP-36 overview
23.05.25ARB022	N	EP-37 profile
23.05.25ARB023	SE	EP-37 profile
23.05.25ARB024	W	Notched stump near EP-38
23.05.25ARB025	NE	Notched stump near EP-38
23.05.25ARB026	N	Excavating EP-38
23.05.25ARB027	N	EP-38 profile
23.05.25ARB028	SE	EP-38 profile
23.05.26ARB001	W	EP-39 profile
23.05.26ARB002	N	EP-39 profile
23.05.26ARB003	E	Backfilling EP-39
23.05.26ARB004	SE	Excavating EP-40
23.05.26ARB005	SE	EP-40 profile

Number	View	Description
23.05.26ARB006	SW	EP-40 profile
23.05.26ARB007	N	Starting EP-41
23.05.26ARB008	N	EP-41 profile
23.05.26ARB009	SE	EP-41 profile
23.05.26ARB010	NE	EP-42 overview
23.05.26ARB011	NE	EP-42 overview
23.05.26ARB012	E	EP-42 profile
23.05.26ARB013	SW	EP-42 profile
23.05.26ARB014	NW	Interface between M4 and M6, EP-43
23.05.26ARB015	E	EP-43 profile
23.05.26ARB016	S	EP-43 profile
23.05.26ARB017	P	Milk glass jar at EP-44
23.05.26ARB018	P	Milk glass jar at EP-44
23.05.26ARB019	P	Spray paint can lid, EP-44
23.05.26ARB020	NE	EP-44 profile
23.05.26ARB021	SW	EP-44 profile
23.07.26ARB001	SE	Setting up at EB-1W
23.07.26ARB002	NW	Overview of EB-1W
23.07.26ARB003	P	EB-1W, 7.5-foot sample
23.07.26ARB004	P	EB-1W, 15-foot sample
23.07.26ARB005	NW	Drilling at EB-1W
23.07.26ARB006	NW	Drilling at EB-1W
23.07.27ARB001	SE	Start of pedestrian survey, old road or trail
23.07.27ARB002	NW	Pedestrian survey, excavator cleared path
23.07.27ARB003	N	Pedestrian survey, excavator cleared path, small terrace edge
23.07.27ARB004	SW	Pedestrian survey, excavator cleared path
23.07.27ARB005	N	Small terrace and exposed sediment
23.07.27ARB006	S	Excavator cleared path
23.07.27ARB007	S	Excavator cleared path
23.07.27ARB008	SE	Installing monument and bollards, EB-1W
23.07.27ARB009	P	Bollard in place
23.07.27ARB010	NW	Monument and bollards installed, EB-1W
23.07.27ARB011	N	Monument and bollards installed, EB-1W
23.07.27ARB012	N	Towards creek on northeast Project area boundary
23.07.27ARB013	SE	Concrete slabs on surface
23.07.27ARB014	NE	Creek on northeast Project area boundary
23.07.27ARB015	NE	Seasonal drainage into creek
23.07.27ARB016	SE	Creek on northeast Project area boundary
23.07.27ARB017	E	Car chaises part on surface
23.07.27ARB018	N	Top of ravine east of 9116 Tveit
23.07.27ARB019	N	Notched stump east of 9116 Tveit
23.07.27ARB020	N	Top of ravine southeast of 9116 Tveit

Number	View	Description
23.07.27ARB021	E	Setting up rig at EB-2W
23.07.27ARB022	E	Starting to drill at EB-2W
23.07.27ARB023	P	EB-2W, 2.5-foot sample
23.07.27ARB024	P	EB-2W, 5-foot sample
23.07.27ARB025	P	EB-2W, 10-foot sample
23.07.27ARB026	NW	Overview of EB-2W
23.07.08ARB001	P	Bollard post hole and excavated sediment, EB-2W
23.07.08ARB002	N	Well monument and bollards installed, EB-2W
23.11.20ARB001	SE	First drill pad before clearing
23.11.20ARB002	N	Beginning to clear first drill pad
23.11.20ARB003	N	Clearing first drill pad
23.11.20ARB004	N	Leveling first drill pad with log
23.11.20ARB005	SW	First drill pad cleared and leveled
23.11.20ARB006	NW	Second drill pad before clearing
23.11.20ARB007	NW	Cleared road (from May) with excavator at second drill pad
23.11.20ARB008	NW	Cleared path to second drill pad
23.11.20ARB009	NW	Second drill pad cleared and leveled
23.11.20ARB010	NE	Second drill pad cleared and leveled
23.11.20ARB011	SW	Second drill pad cleared and leveled
23.11.20ARB012	NE	Starting to level for the third drill pad
23.11.20ARB013	NE	Starting to level for the third drill pad
23.11.20ARB014	E	Leveling for third drill pad
23.11.20ARB015	N	Leveling for third drill pad
23.11.20ARB016	E	Leveling for third drill pad
23.11.20ARB017	SE	Leveling for third drill pad
23.11.20ARB018	E	Leveling for third drill pad
23.11.20ARB019	E	Leveling for third drill pad
23.11.20ARB020	SE	Leveling for third drill pad
23.11.20ARB021	E	Leveling for third drill pad
23.11.20ARB022	E	Third drill pad complete
23.11.20ARB023	E	Third drill pad complete
23.11.20ARB024	SW	Third drill pad complete
23.11.20ARB025	SW	Third drill pad complete
23.11.20ARB026	P	Chunk out of sod from excavator bucket
23.11.20ARB027	NE	Fourth drill location
23.11.20ARB028	W	Fifth drill pad before clearing/leveling
23.11.20ARB029	DEL	DELETE
23.11.20ARB030	S	Clearing vegetation for fifth drill pad
23.11.20ARB031	SW	Clearing vegetation for fifth drill pad
23.11.20ARB032	W	Clearing vegetation for fifth drill pad
23.11.20ARB033	W	Leveling for fifth drill pad
23.11.20ARB034	SW	Leveling for fifth drill pad

Number	View	Description
23.11.20ARB035	W	Fifth drill pad complete
23.11.20ARB036	E	Fifth drill pad complete
23.11.20ARB037	SE	Fifth drill pad complete
23.11.20ARB038	N	Fifth drill pad complete
23.11.20ARB039	N	Fifth drill pad complete
23.11.20ARB040	NW	Excavator path up slope at EP-46
23.11.20ARB041	E	Starting at EP-45
23.11.20ARB042	SE	Starting at EP-45
23.11.20ARB043	SE	Digging EP-45, east wall
23.11.20ARB044	SE	Digging EP-45, east wall
23.11.20ARB045	SW	EP-45 west wall profile
23.11.20ARB046	SE	EP-45 east wall profile
23.11.20ARB047	E	EP-45 overview
23.11.20ARB048	N	Starting to level out for EP-46
23.11.20ARB049	N	Leveling for EP-46
23.11.20ARB050	NE	Starting EP-46
23.11.20ARB051	NE	Digging EP-46
23.11.20ARB052	P	Silt lens in older sand from EP-46
23.11.20ARB053	N	EP-46 east wall profile
23.11.20ARB054	S	EP-46 west wall profile
23.11.20ARB055	S	EP-46 west wall profile
23.11.20ARB056	N	EP-46 overview
23.11.20ARB057	NW	Starting EP-47
23.11.20ARB058	S	Digging EP-47, southeast wall profile
23.11.20ARB059	W	EP-47 northwest wall profile
23.11.20ARB060	SW	EP-47 southeast wall profile
23.11.20ARB061	P	Bedding in silt from base of EP-47
23.11.20ARB062	SW	EP-47 overview
23.11.20ARB063	S	Excavator path at EP-46
23.11.21ARB001	W	Starting EP-48
23.11.21ARB002	W	Digging EP-48, northwest wall
23.11.21ARB003	W	EP-48 profile, northwest wall
23.11.21ARB004	NE	EP-48 profile, northwest wall
23.11.21ARB005	NE	EP-48 overview
23.11.21ARB006	SW	Starting at EP-49
23.11.21ARB007	P	Silt lens at color change in colluvium in EP-49
23.11.21ARB008	W	EP-49 profile, southwest wall
23.11.21ARB009	N	EP-49 profile, northeast wall
23.11.21ARB010	NW	EP-49 overview
23.11.21ARB011	NW	Starting bulk sample first trench
23.11.21ARB012	NW	First bulk sample trench profile
23.11.21ARB013	SE	Starting second bulk sample trench

Number	View	Description
23.11.21ARB014	S	Second bulk sample trench
23.11.21ARB015	W	Starting third bulk sample trench
23.11.21ARB016	W	Starting third bulk sample trench
23.11.21ARB017	NW	Third bulk sample trench profile
23.11.21ARB018	S	Started grading for ramp for sixth drill rig pad
23.11.21ARB019	S	Started grading for ramp for sixth drill rig pad
23.11.21ARB020	S	Grading for ramp
23.11.21ARB021	SW	Grading for ramp
23.11.21ARB022	SE	Grading for ramp
23.11.21ARB023	SW	Building sixth drill rig pad
23.11.21ARB024	SW	Grading for ramp
23.11.21ARB025	SW	Building sixth drill rig pad
23.11.21ARB026	SW	Grading for ramp
23.11.21ARB027	SW	Grading for ramp
23.11.21ARB028	SW	Grading for ramp
23.11.21ARB029	S	Grading for ramp
23.11.21ARB030	N	Ramp and drill rig pad
23.11.21ARB031	E	Leveling spoil pile
23.11.21ARB032	NE	Leveling spoil pile
23.11.21ARB033	N	Spoil pile leveled and covered
23.11.21ARB034	N	Ramp and drill rig pad complete
23.11.21ARB035	S	Ramp and drill rig pad complete

Appendix 3: Unanticipated Discovery Protocol

In the event that any ground-disturbing activities or other project activities related to this development or any future development uncover protected cultural material (see below), the following actions should be taken:

1. If the cultural material is a historic or precontact object (glass bottle, tin can, stone, bone, horn or antler tool); a historic or precontact feature (hearth, building foundation, privy), then the on-site supervisor should avoid the object, secure the location and relocate work activities to a different part of the Project area. The Project manager should then call a professional archaeologist to evaluate the discovery.
2. If ground disturbing activities encounter human skeletal remains during the course of construction, then all activity will cease that may cause further disturbance to those remains. The area of the find will be secured and protected from further disturbance. The finding of human skeletal remains will be reported to the Snohomish County medical examiner (425-438-6200) and Arlington Police Department (360-403-3400) in the most expeditious manner possible. The remains will not be touched, moved, or further disturbed. The county medical examiner will assume jurisdiction over the human skeletal remains and make a determination of whether those remains are forensic or non-forensic. If the county medical examiner determines the remains are non-forensic, then they will report that finding to the Department of Archaeology and Historic Preservation (DAHP) who will then take jurisdiction over the remains. The DAHP will notify any appropriate cemeteries and all affected tribes of the find. The State Physical Anthropologist, Guy Tasa, (360-790-1633) will make a determination of whether the remains are Indian or Non-Indian and report that finding to any appropriate cemeteries and the affected tribes. The DAHP will then handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains.

Cultural material that may be protected by law could include but is not limited to:

- Logging or agriculture equipment older than 50 years
- Historic foundations (Figure 69)
- Historic bottles, ceramics, and soldered dot cans (Figure 70, Figure 71)
- Buried cobbles that may indicate a hearth feature (Figure 72)
- Non-natural sediment or stone deposits that may be related to activity areas of people
- Stone tools or stone flakes, projectile points (arrowheads), ground stone adzes or grinding stones (abraders) (Figure 73–Figure 76)
- Bone, shell, horn, or antler tools that may include scrapers, cutting tools, wood working wedges (Figure 77, Figure 78)
- Perennially damp areas may have preservation conditions that allow for remnants of wood and other plant fibers; in these locations there may be remains including fragments of basketry, weaving, wood tools, or carved pieces (Figure 79)
- Culturally modified trees (Figure 80)
- Human remains

Figure 69: Example of historic foundation for UDP.

Figure 70: Example of historic glass artifacts for UDP.

Figure 71: Example of historic solder dot can for UDP

Figure 72: Example of protected rock-lined hearth feature for UDP.

Figure 73: Example of projectile point for UDP.

Figure 74: Example of protected adze blade for UDP.

Figure 75: Example of stone tool for UDP.

Figure 76: Example of stone tool for UDP.

Figure 77: Example of bone awl for UDP.

Figure 78: Example of worked bone and spines for UDP.

Figure 79: Example of cedar bark basketry for UDP.

Figure 80: Example of planked tree for UDP.

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