



April 24, 2024  
HWA Project No. 2022-144-21

Perteet  
2707 Colby Avenue, Suite 900  
Everett, WA 98201

Attention: Jennifer Saugen P.E.

Subject: **Geotechnical Exploration Plan  
Yakama Nation Nason Creek Floodplain – SR 207 Reroute Final Design  
Chelan County, Washington**

Dear Ms. Saugen:

HWA GeoSciences Inc. (HWA) is pleased to present this geotechnical exploration plan associated with drilling up to seven (7) machine drilled geotechnical borings in support of the Yakama Nation Nason Creek Floodplain SR 207 Reroute project (Project) final design in Chelan County, Washington. As part of preliminary design, HWA conducted a series of 4 machine drilled boring, designated BH-1 through BH-4, and 12 hand boring, designated HH-1 through HH-12. The 4 machine drilled borings were drilled along portions of the alignment that could be accessed by United States Forest Service (USFS) Road 6603. The hand borings were drilled along the remainder of the alignment, not accessible with large drilling equipment, to screen the alignment for geotechnical challenges. The additional seven geotechnical explorations, proposed in this exploration plan, are meant to supplement the previous explorations and meet the exploration frequency and depth requirements of the WSDOT Geotechnical Design Manual and Stormwater design Manual for the various proposed improvements.

The extent of the Project corridor is shown on the Site and Exploration Plan ([Figure 1](#)). All geotechnical explorations will be conducted along the proposed alignment. The exploration locations will be accessed by USFS Road 6603. We have generated this narrative to convey the specifics of our proposed explorations to the design team and the Yakama Nation for approval and permitting.

## **PROPOSED EXPLORATIONS**

HWA's proposed exploration program will consist of drilling up to seven (7) machine-drilled geotechnical soil borings to depths ranging from 15-20 feet below ground surface. The exact number of borings completed will be dependent on drilling conditions and ease of access to the boring locations. These borings will be designated BH-5 through BH-11, and their approximate locations are shown in the Site and Exploration Plan, [Figure 1](#).

Each proposed boring will be drilled near USFS Road 6603 within the proposed roadway realignment. HWA anticipates that drilling these borings will take three (3) days to complete. HWA will schedule Geologic Drill Partners, Inc., from Fall City, Washington, to complete these borings. Each of these borings will be completed using an Acker limited access drill rig, shown in Exhibit 1. The Acker limited access drill rig can be disassembled for manual transport into the wooded areas where the explorations will be conducted. The borings will be advanced into the ground using the hollow-stem auger drilling technique. The borehole is drilled by simultaneously rotating and axially advancing an approximately 3-inch diameter auger column into the soil. The cutting teeth on the auger break up the soil formation and convey the soils upwards along the rotating auger flights. Standard Penetration Test (SPT) sampling will be performed in the boreholes at desired intervals using a 2-inch outside diameter split-spoon sampler and a 140-pound manual drop hammer. The soil samples obtained will be transported to HWA's Bothell laboratory for further testing. Soil cuttings from the borings will be scattered on the project site in a manner that does not impact the roadway or vegetation. The borings will be abandoned using bentonite chips in accordance with Washington State department of Ecology (DOE) requirements.



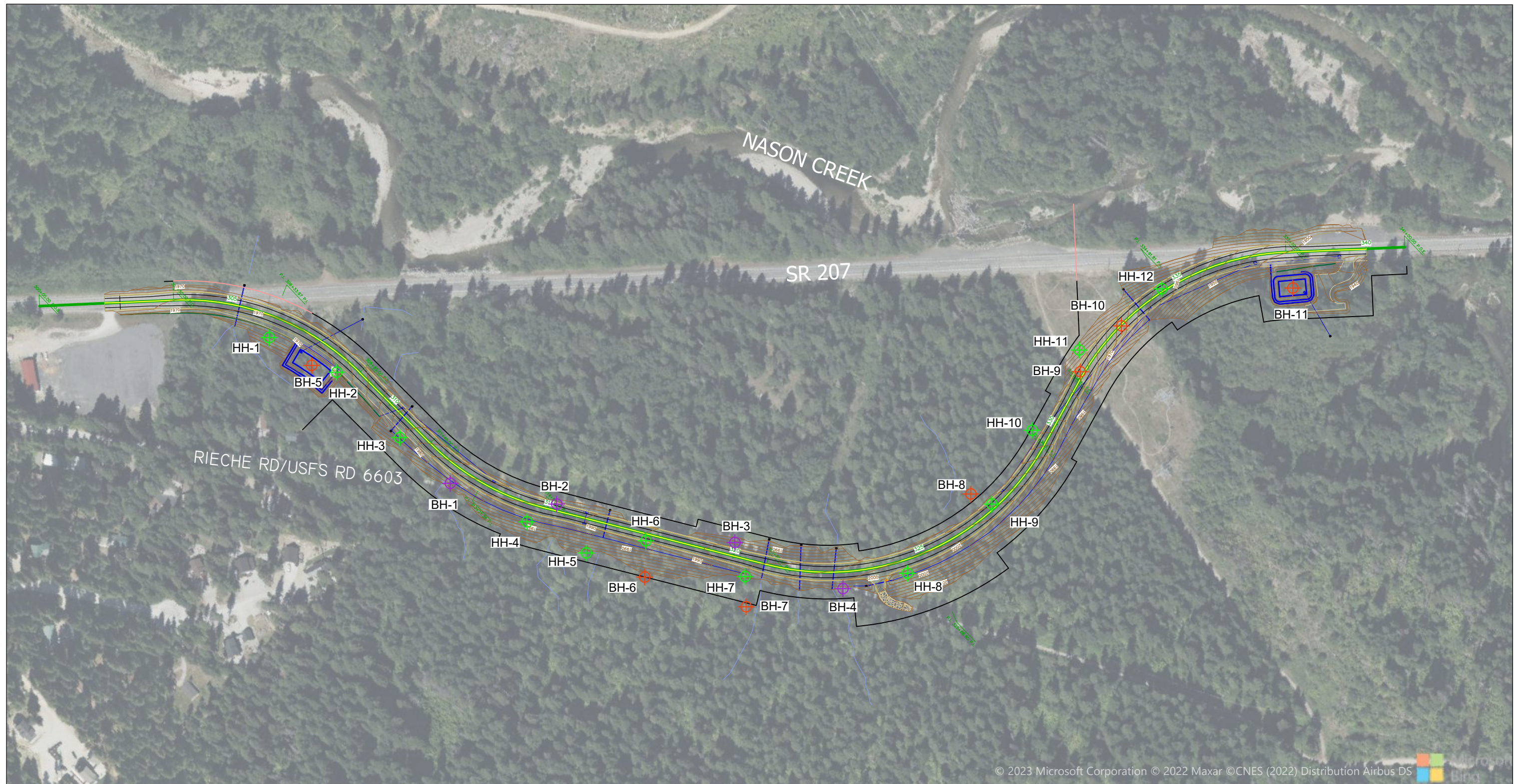
Exhibit 1: Type and approximate geometry of proposed drilling equipment.

Groundwater monitoring wells will be installed in up to two (2) geotechnical borings to monitor seasonal groundwater fluctuations, using water level transducers. Once the target depth is reached, a 1-inch to 1.5-inch diameter groundwater monitoring piezometer will be installed per DOE requirements. This diameter is smaller than a standard groundwater monitoring piezometer, and is necessitated by the size of auger used with the Acker. Periodic well access for data retrieval will require the installation of a flush mount monument cover, located directly over the well hole and placed flush with the ground surface. These wells will remain in place throughout the design process and will be decommissioned as part of the construction contract.

Two HWA staff will mark the locations of the proposed borings and submit utility locate requests to the One-Call utility locate service. The proposed boring locations are subject to minor








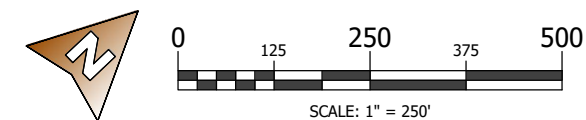


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**EXPLORATION LEGEND**

- BH-4  MACHINE DRILLED BORING DESIGNATION AND APPROXIMATE LOCATION
- HH-12  HAND BORING DESIGNATION AND APPROXIMATE LOCATION (HWA, 2023)
- BH-4  MACHINE DRILLED BORING DESIGNATION AND APPROXIMATE LOCATION (HWA, 2023)

**NASON CREEK FLOODPLAIN**  
Scale: 1" = 250'-0"



**YAKAMA NATION NASON CREEK FLOODPLAIN**  
SR 207 REROUTE - FINAL  
CHELAN COUNTY, WASHINGTON

**SITE AND  
EXPLORATION PLAN**

DRAWN BY:	FIGURE NO.:
CF	<b>1</b>
CHECK BY:	PROJECT NO.:
MAB/DJH	2022-144-21