TECHNICAL SPECIFICATIONS

Pipeline Relocation at Alger Interchange Project
Project # 14017

ISSUED FOR BIDDING

May 1, 2025

DISTRICT OFFICE

1415 Freeway Drive
Mount Vernon, WA 98273
(360) 424-7104 -- Telephone
(360) 424-8764 -- Facsimile

DISTRICT OFFICIALS

Commission
Andrew Miller, President
Corrin Hamburg, Vice-President
Joe Lindquist, Secretary

General Manager
George Sidhu, P.E.

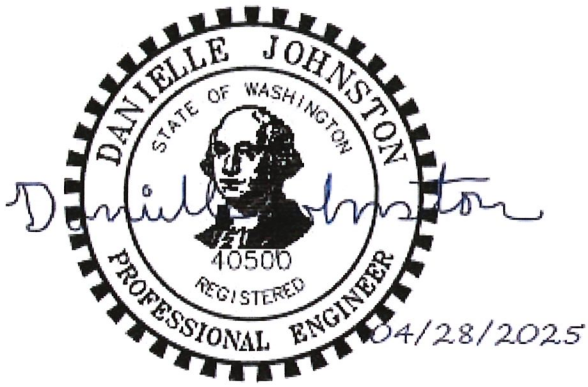
Engineering Manager
Mark C. Handzlik, P.E.

Operations Manager
Mike Fox

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CERTIFICATIONS PAGE

PIPELINE RELOCATION AT ALGER INTERCHANGE PROJECT

These specifications and design drawings for the **Pipeline Relocation at Alger Interchange Project** have been prepared under the direction of the following Registered Professional Engineers.

Danielle Johnston, P.E. Wilson Engineering, LLC 805 Dupont St STE 7 Bellingham, WA 98225	 04/28/2025
Mark Handzlik, P.E. Skagit PUD 1415 Freeway Drive Mount Vernon, WA 98273 Sections: Division 0 and 1	 4/29/25

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SECTION 00 11 13
INVITATION TO BID

INVITATION TO BID

Notice is hereby given that Public Utility District No. 1 of Skagit County (Skagit PUD) will receive sealed Bids for the **Pipeline Relocation at Alger Interchange Project.** Each bid shall be placed in a sealed envelope and shall be mailed or delivered to Skagit PUD's office, Attn: Catherine Price, Contract Coordinator, 1415 Freeway Drive, Mount Vernon, Washington 98273, to arrive no later than 11:00 a.m., June 3, 2025. All complete bids will be opened and read immediately following.

Pipeline Relocation at Alger Interchange Project
Installation of approximately 215 linear feet of water pipeline, including 177 LF of 14-inch HDPE DR11 and 38 LF of diameter CL50 ductile iron pipe, with 40 LF of 24-inch C-900 PVC casing at the deepest portion of the installation (will be below a future culvert to be constructed by Others). The project also includes the installation of approximately 177 linear feet of 2-inch HDPE fiber optic conduit. All installation is to be done by traditional trenching methods along Lake Samish Road, west of Interstate 5 Interchange southbound off-ramp, in unincorporated Skagit County, State of Washington. Work includes asphalt removal and replacement, rock excavation, shoring, traffic control, and pressure and purity testing of the pipe, and site restoration, along with incidentals and appurtenances, such as valves, fittings, dewatering, in estimated quantities identified in the Bid Proposal.

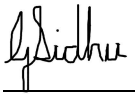
A Pre-Bid Meeting will be held at 11:00 a.m. on Tuesday, May 20, in the Aqua Room of Skagit PUD's Mount Vernon office complex at 1415 Freeway Drive, Mount Vernon, Washington.

An unofficial bid set can be viewed at Skagit PUD's office located at 1415 Freeway Drive, Mount Vernon, Washington 98273, or on PUD's website www.SkagitPUD.org. Construction plans, specifications, addenda, and plan holders list for this project can be viewed or purchased on-line through Builders Exchange of Washington, Inc., at http://www/bxwa.com; 2607 Wetmore Avenue, Everett, WA 98201-2929, (425) 258-1303, Fax (425) 259-3832. Click on: "bxwa.com"; "Posted Projects"; "Public Works", "PUD #1 of Skagit County" and "Projects Bidding". (Note: Bidders are encouraged to "Register as a Bidder" in order to receive automatic e-mail notification of future addenda and to be placed on the "Bidders List"). This service is provided free of charge to Prime Bidders, Subcontractors, and Vendors bidding on this project. Contact Builders Exchange of Washington at (425) 258-1303, should you require further assistance. Contract documents will be available on or after May 1, 2025.

This project is partially funded by an Infrastructure Project Program Grant through the Washington State Department of Commerce and a Federal Community Projects Grant administered by the U.S. Environmental Protection Agency. Skagit PUD is an equal-opportunity employer. Procurement and contracts are administered without discrimination based on race, color, sex, or national origin. Disadvantaged Business Enterprises have an equal opportunity to compete for and participate in the performance of all agreements, contracts, and subcontracts awarded by Skagit PUD or its contractors, and are encouraged to submit.

Point of Contact: Catherine Price, Contract Coordinator

PUBLIC UTILITY DISTRICT NO. 1 OF SKAGIT COUNTY



George Sidhu, P.E., General Manager

SECTION 00 21 13

INSTRUCTIONS TO BIDDERS

INSTRUCTIONS TO BIDDERS

1.1 GENERAL

This Pipeline Relocation at Alger Interchange Project consists of the following:

Installation of approximately 215 linear feet of water pipeline, including 177 LF of 14-inch HDPE DR11 and 38 LF of diameter CL50 ductile iron pipe, with 40 LF of 24-inch C-900 PVC casing at the deepest portion of the installation (will be below a future culvert to be constructed by Others). The project also includes the installation of approximately 177 linear feet of 2-inch HDPE fiber optic conduit. All installation is to be done by traditional trenching methods along Lake Samish Road, west of the Interstate 5 Interchange southbound off-ramp, in unincorporated Skagit County, State of Washington. Work includes asphalt removal and replacement, rock excavation, shoring, traffic control, and pressure and purity testing of the pipe, and site restoration, along with incidentals and appurtenances, such as valves, fittings, dewatering, in estimated quantities identified in the Bid Proposal.

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2.1 LOCATION

The location for the project is:

Lake Samish Road, west of the Interstate 5 Interchange (Exit 240) southbound off-ramp, in unincorporated Skagit County, State of Washington, as shown on the Contract Drawings.

3.1 EXAMINATION OF PLANS, SPECIFICATIONS, AND SITE

Bidders shall satisfy themselves as to construction conditions by personal examination of the Plans, Specifications, and other Bid Documents and from attendance at applicable Pre-Bid Meetings. Bidders shall carefully correlate their observations with the requirements of the Contract Documents and shall otherwise satisfy themselves regarding the expense and difficulties associated with performing the Work and shall fully account for it in their bids. The submission of a bid shall constitute a representation of compliance by the Bidder with this requirement.

3.2 BID DOCUMENTS

The Bid Documents for the Project include the following:

1. Project Manual, including general and technical specifications and addenda issued through bidding
2. Washington State Department of Transportation Standard Specifications.
3. Contract Drawings.
4. Skagit PUD Design Standards and Details.

4.1 BIDS

The project will be awarded based on the lowest responsive, responsible Bidder.

Bids shall be made on the forms included herewith and shall be addressed to the Public Utility District No. 1 of Skagit County, 1415 Freeway Drive, Mount Vernon, Washington 98273. Each Bid shall be placed in a sealed envelope and shall be mailed or delivered to the Public Utility District No. 1 of Skagit County, to arrive no later than 11:00 a.m. on June 3, 2025. All complete submitted Bids will be opened and publicly read aloud immediately following. No Bid may be withdrawn after the time set for the Bid opening or before award and execution of the contract unless the Owner does not award the contract within sixty (60) calendar days after the opening of Bids.

5.1 BID DEPOSIT

As a guarantee of good faith and as required by law, each Bid shall be accompanied by a Bid Deposit in the form of a certified check, cashier's check, postal money order, or surety bond payable to the order of the “Public Utility District No. 1 of Skagit County” for an amount not less than 5 percent of the total amount of the Bid, including all potential additions and alternatives, but not including sales tax. The Bid Deposits of the three lowest Bidders will be retained until the Contract between the successful Bidder and the Owner has been entered into, and a Performance and Payment Bond in the amount of one hundred percent (100%) of the contract price has been filed as required under these Contract Documents. The Bid Deposits of each other Bidder will be returned as soon as it is determined that they are not one of the three lowest Bidders.

6.1 EVALUATION OF BIDS AND AWARD OF CONTRACT

The Owner will award the Bid to the lowest responsive, responsible Bidder based on the Total Bid Amount as stated on the Bid Proposal Form. In the case of a conflict between the Total Bid Amount as stated numerically and as stated in words, the words shall take precedence.

In the case of a conflict between the quantity, unit price and unit price extension for a given bid item, the Owner will adjust the unit price extensions based on the unit price. If the Bidder does not provide a unit price or a unit price extension for every bid item, the bid will be considered non-responsive.

The right is reserved by the Owner to waive any and all informality in the Bids, to reject any or all Bids, including nonresponsive, unbalanced, or conditional bids, to reject any or all schedules, to re-advertise for new Bids, or to otherwise carry out the Work. The Owner reserves the right to reject any bid that is materially unbalanced to the Owner’s potential detriment. The Owner further reserves the right to delete portions of the Work.

Bids which are incomplete, or which are conditioned in any way, or which contain erasures, alterations, or items not called for in the Bid Form, or which are not in conformity with the law or these Instructions, may be rejected as non-responsive.

6.2 RESPONSIBILITY CRITERIA

Before the Owner awards the contract, state law is used to determine that responsible contractors and subcontractors perform the work. Bidder responsibility is determined by the Bidder successfully demonstrating its ability to satisfy the mandatory responsibility criteria and any project specific criteria established by the Owner.

To comply with the responsibility criteria for this bid, a Bidder must provide sufficient information as required. If the Bidder fails to provide the requested information within the time and manner specified in these bid documents, the Owner reserves the option to determine responsibility upon any available information related to any supplemental criteria and/or may find the Bidder not responsible. If the lowest Bidder is found not responsible, the Owner reserves the right to award to the next low Bidder without re-advertising or rebidding the project.

6.3 MANDATORY RESPONSIBILITY CRITERIA

It is the intent of Owner to award a contract to the low responsible bidder. Before award, the bidder must meet the following Bidder responsibility criteria to be considered a responsible bidder. The Bidder may be required by the Owner to submit documentation demonstrating compliance with the criteria. The Bidder must:

1. Have a current certificate of registration as a contractor in compliance with chapter 18.27 RCW, which must have been in effect at the time of bid submittal.

2. Have a current Washington Unified Business Identifier (UBI) number.

3. If applicable, have Industrial Insurance (workers' compensation) coverage for the bidder's employees working in Washington, as required in Title 51 RCW.

4. Have a Washington Employment Security Department number, as required in Title 50 RCW.

5. Have a Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW.

6. Not be disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065(3).

7. Until December 31, 2013, not violated more than one time the off-site, prefabricated, non-standard, project specific items reporting requirements of RCW 39.04.370.

8. For public works projects subject to the apprenticeship utilization requirements of RCW 3.0.04.320, not have been found out of compliance by the Washington state apprenticeship and training council for working apprentices out of ratio, without appropriate supervision, or outside their approved work processes as outlined in their standards of apprenticeship under chapter 49.04 RCW for the one-year period immediately preceding the first date of advertising for the project.

9. Prior to the award date, the Contractor shall produce evidence of having received by the Department of Labor & Industries training on prevailing wage and public works requirements or are exempt under RCW 39.04.350.

6.4 SUBCONTRACTOR RESPONSIBILITY CRITERIA

Before award, the Bidder shall verify responsibility criteria for each first-tier subcontractor the Contractor hires and a subcontractor of any tier subcontractor that hires other subcontractors must verify responsibility criteria for each of its subcontractors. Verification shall occur at the time of subcontract execution and shall include that each subcontractor meets the responsibility criteria listed in Section 6.03 and possesses an electrical contractor license (if required by RCW Chapter 19.28) or an elevator contractor license (if required by RCW Chapter 70.87). These verification requirements, as well as the responsibility criteria, shall be included in each of the Contractor's subcontracts of any tier. The Contractor shall certify that this verification is complete prior to contract close-out.

6.5 PROTESTS

Any Bidders wanting to file a bid protest shall submit a formal protest consisting of a written letter signed by an authorized official of the company within 48 hours of the bid opening. The protest will be reviewed by the Owner, and if warranted, a meeting will be held with the Owner, the low Bidder, and the Bidder filing the protest within 4 calendar days to review the protest. A decision on the protest will be made by the Owner within 7 calendar days.

6.6 CONTRACT TIME

The Contract completion date is an essential part of the Contract, and it will be necessary for each Bidder to satisfy the Owner of its ability to complete the Work within the time allowed. Work shall be substantially complete in 90 calendar days.

7.1 FAILURE TO EXECUTE CONTRACT AND FURNISH BOND

In the event the successful Bidder fails to furnish a Payment and Performance Bond complying with this Invitation for Bids, and fails to sign the contract within ten (10) calendar days after notification by the Owner, an amount equal to 5 percent of the amount of the Bid shall be forfeited to the Owner as liquidated damages, and it is agreed that this said sum is a fair estimate of the amount of damages the Owner would sustain in the event that the Bidder failed to enter into the Contract or furnish the required Bond. Said liquidated damages shall be paid from the Bid Deposit submitted with the Bid. Other Bids will then be reconsidered for award by the Owner.

8.1 CORRECTIONS, INTERPRETATIONS, AND ADDENDA

If Bidders find or observe any omissions, discrepancies, or need for interpretations of the Bid Documents, they shall bring such facts in writing to the attention of the Owner. Written addenda to clarify questions which arise will then be issued. Interpretations or explanations of the Contract Documents will be in the form of written addenda only. Oral statements by the Owner, Engineer, or other representative of the Owner whether made before or after award of the Contract shall in no way modify the Contract Documents.

Any requests for information or interpretation of the Bid Documents shall be made by email to Catherine Price, Contract Coordinator, Price@SkagitPUD.org. All such requests shall be received no later than three (3) days prior to bid opening.

10.1 SUBCONTRACTORS & SUPPLIERS

In compliance with RCW 39.30.060 for all projects estimated to cost $1 million or more, all Bidders must complete and submit the Subcontractors List form provided in the Bid Proposal Forms. The Subcontractors List form must be submitted with the Bid. The failure of a Bidder to submit the names of such subcontractors, or to name itself to perform such work, or the naming of two or more firms (subcontractors or Bidders) to perform the same work shall render the Bidder's bid non-responsive and, therefore, void.

11.1 BIDDER QUALIFICATIONS

All Bidders shall submit with their bids evidence of sufficient qualifications and experience for the work as specified in Bid Proposal Forms. The Owner will utilize the information submitted for the purpose of determining the responsibility of the low Bidder for determining eligibility for award.

12.1 PERMITS

The Owner has obtained or will obtain the permits and approvals required for the Work as listed below. The Contractor shall comply with the provisions of all permits, approvals, and easements. All other required permits or licenses (i.e., right of way permits) shall be the responsibility of the Contractor. Below is a list of the Owner-obtained permits and approvals, which are included for reference in Appendix A.

- WSDOT Franchise Permit
- Skagit County Right of Way Permit
- Skagit County Critical Areas Permit

Should the Contractor procure additional formal or informal access easements, rights of entry, Work or storage areas, or enter private property, he/she shall obtain and file all such private property agreements with the Owner prior to such access. The Contractor shall provide to the Owner property release forms for all Work or access on private property.

13.1.1 FEDERAL FUNDING REQUIREMENTS

A. This project has been funded wholly or in part with state funds. Neither the State of Washington nor any of its departments or employees are or shall be, a party to this contract or any subcontract.

B. This project has been funded wholly or in part with a Community Grant through the United States Environmental Protection Agency (EPA) under assistance agreement #CG 02J51701-0 to the Public Utility District No. 1 of Skagit County.

C. *Equal Employment Opportunity*. Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of "federally assisted construction contract" in 41 CFR Part 60-1.3 must include the equal opportunity clause provided under 41 CFR 60-1.4(b), in accordance with Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and implementing regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

D. *Davis Bacon Act:* The work performed for this project is subject to the wage requirements of RCW 39.12, RCW 49.28, and the David-Bacon Act. Work performed on the project will be subject to the higher prevailing state or federal Davis-Bacon wage rates.

Obtain the Contract Provisions for Davis-Bacon and Related Acts (DBRA) by using the following link: https://www.epa.gov/grants/contract-provisions-davis-bacon-and-related-acts

DBA Wage Rates – Heavy Construction, Skagit County, Washington **https://sam.gov/wage-determinations**		
Position	**Rates**	**Fringes**
CARPENTER	59.92	15.04
Line Construction: LINE PERSON	64.17	23.58+1.5%
TREE TRIMMER: Ground Person	22.60	16.37
TREE TRIMMER	42.57	17.97
ELECTRICIAN	55.01	29.20
OPERATOR: Bulldozer D9 & under	54.47	25.57
OPERATOR: Drill		
Drill Drilling Machine	56.64	25.57
Horizontal/directional drill locator	54.47	25.57
Horizontal/directional drill operator	55.09	25.57
OPERATOR: Oiler Drill Oilers: auger type, truck or crane mount	54.47	25.57
Truck Crane Oiler/Driver: 100 tons and over	55.09	25.57
OPERATOR: Roller Other than plant mix	50.98	25.57
Plant mix or multi-lift materials	54.47	25.57
OPERATOR: Scraper Self-propelled under 45 yards	53.42	25.57
OPERATOR: Concrete Pump	49.03	16.90
IRONWORKER	53.45	34.02
LABORER: Mason Tender - Cement/Concrete	44.53	14.40
LABORER: Nozzle Person	47.95	14.40
LABORER: Asphalt, Includes Raker, Shoveler, Spreader and Distributor	47.95	14.40
TRAFFIC CONTROL: Flagger	30.88	15.70
PAINTER	37.80	13.63
CEMENT MASON/CONCRETE FINISHER	54.16	21.27
TRUCK DRIVER: Asphalt Mix	52.88	26.52
OPERATOR: Crane	56.02	25.57
GRADE CHECKER	34.79	13.87
LABORER: Common or General	33.11	7.81
LABORER: Concrete Saw Chain	36.24	10.89
LABORER: Hod Carrier	35.06	10.94
LABORER: Pipelayer	42.21	9.42
LABORER: Fence Erector	30.21	0.00
OPERATOR: Backhoe/Excavator/Trackhoe	43.66	6.63
OPERATOR: Bobcat/Skid Steer/Skid Loader	43.60	0.00
OPERATOR: Forklift	45.93	19.20
OPERATOR: Grader/Blade	40.28	16.17
OPERATOR: Loader	37.92	12.05
OPERATOR: Mechanic	34.39	14.95
OPERATOR: Paver (Asphalt, Aggregate, and Concrete)	32.35	13.44
TRAFFIC CONTROL: Laborer-Cones/ Barricades/Barrels - Setter/Mover/Sweeper	30.61	10.89
TRUCK DRIVER: Dump Truck	26.27	8.56
TRUCK DRIVER: Water Truck	31.62	16.84
WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.		

E. *American Iron and Steel:* The goods and services provided for this project are being funded with monies made available by the US EPA, which contains provisions commonly known as "American Iron and Steel " that require all the iron and steel products used in the project to be produced in the United States ("American Iron and Steel Requirements").

F. *Build America, Buy America Act:* The Contractor acknowledges to and for the benefit of the Skagit PUD ("Owner") and the EPA (the "Funding Authority") that it understands the goods and services under this Agreement are being funded with federal monies and have statutory requirements commonly known as "Build America, Buy America;" that requires all of the iron and steel, manufactured products, and construction materials used in the project to be produced in the United States ("Build America, Buy America Requirements") including iron and steel, manufactured products, and construction materials provided by the Contactor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the Owner and Funding Authority that (a) the Contractor has reviewed and understands the Build America, Buy America Requirements, (b) all of the iron and steel, manufactured products, and construction materials used in the project will be and/or have been produced in the United States in a manner that complies with the Build America, Buy America Requirements, unless a waiver of the requirements is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the Build America, Buy America Requirements, as may be requested by the Owner or the Funding Authority. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Owner or Funding Authority to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney's fees) incurred by the Owner or Funding Authority resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the Funding Authority or any damages owed to the Funding Authority by the Owner). If the Contractor has no direct contractual privity with the Funding Authority, as a lender or awardee to the Owner for the funding of its project, the Owner and the Contractor agree that the Funding Authority is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the Funding Authority.

G. *Debarment and Suspension (Executive Orders 12549 and 12689)*: A contract award (see 2 CFR 180.220) must not be made to parties listed on the governmentwide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), "Debarment and Suspension." SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

H. *Disadvantaged Business Enterprise (DBE): (40 CFR Part 33)* The Bidder shall make "Good Faith Effort" per 40 CFR Part 33 Subpart C whenever procuring subcontracts, equipment, services, and supplies. Records documenting compliance with the six good faith efforts shall be retained. The specific six good faith efforts can be found here: 40 CFR Section 33.301 (a)-(f).

Prevention of Unfair DBE Practice: There are a number of provisions set by EPA (40 CFR, 33.302) to prevent unfair practices that adversely affect DBEs:

- General contractors are required to pay DBE subcontractors for satisfactory performance no more than 30 days from the time they receive reimbursement from borrowers.
- General contractors must notify Skagit PUD prior to any DBE termination for convenience.
- If the General Contractor awards contracts to subcontractors, the following Good Faith Efforts must be employed.

Six Good Faith Efforts (40 CFR Part 33 Subpart C).

The contractor agrees to make the following good faith efforts whenever procuring subcontracts, equipment, services, and supplies. The contractor shall retain records documenting compliance with the following six good faith efforts.

1. Ensuring Disadvantaged Business Enterprises are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. For Indian Tribal, State and Local and Government recipients, this will include placing Disadvantaged Business Enterprises on solicitation lists and soliciting them whenever they are potential sources.
2. Qualified Women and Minority business enterprises may be found on the Internet at www.omwbe.wa.gov or by contacting the Washington State Office of Minority and Women's Enterprises at (866) 208-1064.
3. Making information on forthcoming opportunities available to Disadvantaged Business Enterprises and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by Disadvantaged Business Enterprises in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of thirty (30) calendar days before the bid or proposal closing date.
4. Considering in the contracting process whether firms competing for large contracts could subcontract with Disadvantaged Business Enterprises. For Indian Tribal, State and local Government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by Disadvantaged Business Enterprises in the competitive process.
5. Encourage contracting with a consortium of Disadvantaged Business Enterprises when a contract is too large for one of these firms to handle individually.
6. Using services and assistance of the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.
7. If the prime contractor awards subcontracts, requiring the subcontractors to take the six good faith efforts in paragraphs 1 through 5 above.
    1. The contractor shall employ the six good faith efforts even if the contractor has achieved its fair share objectives.

I. *Non-Discrimination Provisions*: The Contractor shall not discriminate on the basis of race, color, national origin or sex in the performance of this contract. The contractor shall carry out applicable requirements of 40 CFR part 33 in the award and administration of contracts awarded under EPA financial assistance agreement's Failure by the Contactor to carry out these requirements is a material breach of this Contract which may result in the termination of this Contract or other legally available remedies.

J. *Byrd Anti-Lobbying Amendment (31 U.S.C. 1352):* Contractors that apply or bid for an award exceeding $100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352 . Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award.

K. *Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708):* All contracts awarded more than $100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. 3702 supplemented by Department of Labor regulations (29 CFR Part 5 and 3704). Under 40 U.S.C. 3702, as of the Act, each Contractor must be required to compute the wages of every mechanic and laborer based on a standard work week of 40 hours. Work more than the standard work week is permissible provided the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous.

L. *Access to Record and Reports (2 CFR 200.337):* EPA and the EPA Office of Inspector General (OIG) have the right to access any documents, papers, or other records, including electronic records, of Skagit PUD and Contractor which are pertinent to this award in order to make audits, examinations, excerpts, and transcripts. This right of access also includes timely and reasonable access to Skagit PUD and Contractors personnel for the purpose of interviewing and discussion related to such documents. This right of access shall continue as long as the records are retained.

14.1 PRE-BID MEETING

A Pre-Bid Meeting will be held at 11:00 a.m. on May 20, 2025, in the Aqua Room of Skagit PUD's Mount Vernon office complex at 1415 Freeway Drive, Mount Vernon, WA 98273.

END OF SECTION

MANDATORY BIDDER RESPONSIBILITY CHECKLIST

The following checklist may be used by Owners in documenting that a Bidder meets the mandatory bidder responsibility criteria. It is suggested that Owners print a copy of documentation from the appropriate website to include with this checklist in the contract file.

General Information	
Project Name:	Project Number:
Bidder's Business Name:	Bid Submittal Deadline:
Contractor Registration – https://fortress.wa.gov/lni/bbip/	
License Number:	Status: Active: Yes ☐ No ☐
Effective Date (must be effective on or before Bid Submittal Deadline):	Expiration Date:
Is Bidder on Infraction List?	Yes ☐ No ☐
Current UBI Number – http://dor.wa.gov/content/doingbusiness/registermybusiness/brd/	
UBI Number:	Account Closed: Open ☐ Closed ☐
Industrial Insurance Coverage – https://fortress.wa.gov/lni/crpsi/MainMenu.aspx	
Account Number:	Account Current: Yes ☐ No ☐
Employment Security Department Number –	
Employment Security Department Number:	
• Has Bidder provided account number on the Bid Form? Yes ☐ No ☐ • And/or have you asked the Bidder for documentation from Employment Security Department on account number? Yes ☐ No ☐	
State Excise Tax Registration Number – http://dor.wa.gov/content/doingbusiness/registermybusiness/brd/	
Tax Registration Number:	Account Closed: Open ☐ Closed ☐
Not Disqualified from Bidding – http://www.lni.wa.gov/TradesLicensing/PrevWage/AwardingAgencies/DebarredContractors/default.asp	
Is the Bidder listed on the "Contractors Not Allowed to Bid" list of the Department of Labor and Industries? Yes ☐ No ☐	
Checked by:	
Name of Employee:	Date:

SUBCONTRACTOR RESPONSIBILITY CHECKLIST

The following checklist may be used by Contractors and Subcontractors in documenting that a subcontractor of any tier meets the subcontractor responsibility criteria. It is suggested that Contractors and Subcontractors print a copy of documentation from the appropriate website to include with this checklist in their contract file.

General Information	
Project Name:	Project Number:
Subcontractor's Business Name:	Subcontract Execution Date:
Contractor Registration – https://fortress.wa.gov/lni/bbip/	
License Number:	Status: Active: Yes ☐ No ☐
Effective Date (must be effective on or before Subcontract Bid Submittal Deadline):	Expiration Date:
Current UBI Number – http://dor.wa.gov/content/doingbusiness/registermybusiness/brd/	
UBI Number:	Account Closed: Open ☐ Closed ☐
Industrial Insurance Coverage – https://fortress.wa.gov/lni/crpsi/MainMenu.aspx	
Account Number:	Account Current: Yes ☐ No ☐
Employment Security Department Number –	
Employment Security Department Number:	
• Has Subcontractor provided account number on the Bid Form? Yes ☐ No ☐ • And/or have you asked the Subcontractor for documentation from Employment Security Department on account number? Yes ☐ No ☐	
State Excise Tax Registration Number – http://dor.wa.gov/content/doingbusiness/registermybusiness/brd/	
Tax Registration Number:	Account Closed: Open ☐ Closed ☐
Not Disqualified from Bidding – http://www.lni.wa.gov/TradesLicensing/PrevWage/AwardingAgencies/DebarredContractors/default.asp	
Is the Subcontractor listed on the "Contractors Not Allowed to Bid" list of the Department of Labor and Industries? Yes ☐ No ☐	
Contractor Licenses – https://fortress.wa.gov/lni/bbip/	
Electrical: If required by Chapter 19.28 RCW, does the Subcontractor have an Electrical Contractor's License? Yes ☐ No ☐	Elevator: If required by Chapter 70.87 RCW, does the Subcontractor have an Elevator Contractor's License? Yes ☐ No ☐
Checked by:	
Name of Employee:	Date:

CERTIFICATION OF COMPLIANCE WITH WAGE PAYMENT STATUTES

The bidder hereby certifies that, within the three-year period immediately preceding the bid solicitation date of May 1, 2025, the bidder is not a "willful" violator, as defined in RCW 49.48.082, of any provision of chapters 49.46, 49.48, or 49.52 RCW, as determined by a final and binding citation and notice of assessment issued by the Department of Labor and Industries or through a civil judgment entered by a court of limited or general jurisdiction.

I certify under penalty of perjury under the laws of the State of Washington that the foregoing is true and correct.

_____
Bidder

_____
Signature of Authorized Official*

_____
Printed Name

_____
Title

_____ _____ _____
Date City State

Check One:
Individual ☐ Partnership ☐ Joint Venture ☐ Corporation ☐

State of Incorporation, or if not a corporation, State where business entity was formed:

_____

If a co-partnership, give firm name under which business is transacted:

_____

** If a corporation, proposal must be executed in the corporate name by the president or vice-president (or any other corporate officer accompanied by evidence of authority to sign). If a co-partnership, proposal must be executed by a partner.*

SECTION 00 40 00

PROCUREMENT FORMS AND SUPPLEMENTS

BIDDER'S CHECKLIST

This Checklist has been prepared and furnished to aid Bidders in including all necessary supporting information with their Bid. Bidder's submittals shall include, but not be limited to, the following:

No.	Bid Proposal Item	Checked
1.	Bid to Commission	☐
2.	Bid Schedule	☐
3.	Proposal Signature, Addenda Acknowledgment, and Non-Collusion Declaration Sheet	☐
4.	Subcontractors List	☐
5.	Statement of Bidder’s Qualifications	☐
6.	Bidder’s List	☐
7.	Bid Bond	☐

BID TO COMMISSION

TO: Board of Commissioners
Public Utility District No. 1 of Skagit County, Washington

Commissioners:

The undersigned has examined the site, specifications, plans, laws, and ordinances covering the improvements contemplated. In accordance with the terms, provisions and requirements of the foregoing, the following lump sums and unit prices are tendered as an offer to perform the work and furnish the labor, tools, equipment, materials, appurtenances, incidentals, and guarantees, where required, complete in place, in good working order.

As a guarantee of good faith and as required by law, a Bid Deposit in the form of a certified check, cashier's check, postal money order or surety bond made payable to the order of Public Utility District No. 1 of Skagit County ("District") is attached hereto. The undersigned understands and hereby agrees that, should this offer be accepted and the undersigned failure or refuse to enter into a Contract, furnish the required Payment and Performance Bond and required liability insurance, the undersigned shall forfeit to Skagit PUD an amount equal to five percent (5%) of the amount Bid as liquidated damages, all as provided for in this Invitation for Bids.

The undersigned hereby proposes to undertake and complete the work embraced in this improvement, in accordance with the terms of the Specifications and Contract Documents, at the following lump sum and unit prices:

BID SCHEDULE:

PIPELINE RELOCATION AT ALGER INTERCHANGE PROJECT

Item No.	Bid Schedule Description	Est. Quantity	Unit	Unit Price	Total
1.	Mobilization	1	LS	$	$
2.	SPCC Plan, TESC Plan, Contractors Safety Plan, and Site-Specific Safety Plan, Shoring Plan, and Steel Plate Plan	1	LS	$	$
3.	Construction Surveying	1	LS	$	$
4.	Install and Maintain Temporary Erosion Control and Water Pollution Control Measures	1	LS	$	$
5.	Project Temporary Traffic Control	1	LS	$	$
6.	Asphalt Saw Cutting	868	IN-FT	$	$
7.	Removal and Disposal of Asphalt	128	SY	$	$
8.	Roadway Excavation, including Haul	43	CY	$	$
9.	Rock Excavation	200	CY	$	$
10.	Furnish and Install Engineer-Ordered Over Excavation or Shoring	2970	SF	$	$
11.	Furnish and Install Engineer-Ordered Trench Stabilization Material	10	Tons	$	$
12.	Furnish and Install Adequate Site and Trench Safety Systems in Accordance with Chapter 49.17 RCW	1	LS	$	$
13.	Furnish and Install 8-Inch Watermain Temporary Bypass	1	LS	$	$
14.	Furnish and Install 12-inch DI CL50 Pipe, including Trench Excavation, Dewatering, Backfill and Compaction	38	LF	$	$
15.	Furnish and Install 12-inch Butterfly Valve with Valve Box and Cover	2	EA	$	$
16.	Furnish and Install 14-inch HDPE Pipe, including Trench Excavation, Dewatering, Backfill and Compaction	177	LF	$	$
17.	Furnish and Install 14-inch HDPE Mitered or Sweep Fitting	4	EA	$	$
18.	Furnish and Install HDPE / DI Transition or Flanged End	2	EA	$	$
19.	Furnish and Install 2-inch HDPE Fiber Conduit	215	LF	$	$
20.	Furnish and Install 24-inch C-900 PVC Watermain Casing	40	LF	$	$
21.	Furnish and Install Protection Plates	165	LF	$	$

22.	Gravel Backfill for Pipe Zone Bedding	137	Tons	$	$
23.	Bank Run Gravel for Trench Backfill	556	Tons	$	$
24.	Furnish and Install Trench Dam	2	EA	$	$
25.	Key Block	2	EA	$	$
26.	Furnish and Install Electrical Handhole Vault	2	EA	$	$
27.	Furnish and Install 3-inch Combination Air Valve Assembly	1	EA	$	$
28.	Waterline Flushing, Pressure Testing, Disinfection and Bac-T testing	1	LS	$	$
29.	Connection Work for Tie-In at Station 0+68	1	LS	$	$
30.	Connection Work for Tie-In at Station 2+60	1	LS	$	$
31.	Furnish and Place Woven Geotextile for Separation	284	SY	$	$
32.	Furnish and Install Gravel Base, including Compaction	143	Tons	$	$
33.	Furnish and Place Crushed Surfacing Material, Top Course, including Compaction	30	Tons	$	$
34.	Furnish and Install Hot Mix Asphalt Class ½-inch PG 64-22	15	Tons	$	$
35.	Furnish and Place Topsoil Type B	460	SY	$	$
36.	Seeding and Fertilizing by Hand	460	SY	$	$
37.	Paint Line	209	LF	$	$
38.	Minor Changes	1	Est	$10,000	$

Sub-Total Base Bid	$
Sales Tax (8.6%)	$
Total Bid Amount	$

DOLLARS

Total Bid with Sales Tax (written in words)

PROPOSAL SIGNATURE, ADDENDUM ACKNOWLEDGMENT AND NON-COLLUSION DECLARATION

The bidder is hereby advised that by signature of this proposal he/she is deemed to have acknowledged all requirements and signed all certificates contained herein. The undersigned hereby agrees to pay to labor not less than the prevailing rates of wages or less than the hourly minimum rate of wages as specified in the Specifications and Conditions for this project. A proposal guarantees in an amount of five percent (5%) of the total bid not including sales tax, based upon the approximate estimate of quantities at the above prices and in the form as indicated below, is attached hereto:

CASH $ _____ CASHIER'S CHECK $ _____

BID BOND $ _____ CERTIFIED CHECK $ _____

Receipt is hereby acknowledged of Addenda Nos. _____, _____, and _____.

I, by signing the proposal, hereby declare, under penalty of perjury under the laws of the United States that the undersigned person(s), firm, association or corporation has (have) not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the project for which this proposal is submitted.

SIGNATURE OF AUTHORIZED OFFICIAL(S)
NOTE: Proposal must be signed

Signature _____

Print Name & Title _____

Firm Name _____

Address _____

_____

Washington State Contractor's License Number _____

Sworn to before me this _____ day of _____, 20___

_____

(SEAL) NOTARY PUBLIC

SUBCONTRACTORS LIST – RCW 39.30.060 FORM

In compliance with RCW 39.30.060 for all projects estimated to cost $1 million or more, all Bidders must complete and submit this Subcontractors List form with their Bid Proposal.

List of Subcontractors: The Bidder shall indicate on the Subcontractors List the names of the subcontractors with whom the Bidder, if awarded the contract, will subcontract for performance of the work of heating, ventilation and air conditioning, plumbing as described in Chapter 18.106 RCW, and electrical as described in Chapter 19.28 RCW.

List Bidder if Bidder Performing Work: If the Bidder will perform the work in any of the three areas required, the Bidder shall name itself for the work on the Subcontractors List.

Name Only One Form for Each Category of Work: The Bidder shall not list more than one firm (subcontractor or Bidder) for each category of work identified, unless subcontractors vary with bid alternates or additive, in which case the Bidder must indicate which firm will be used for which alternate or additive.

Substitution of Subcontractors: Substitution of any listed subcontractor may only be according to the procedure and parameters set forth in RCW 39.30.060.

Factors relating to Non-Responsiveness: Failure of the Bidder to submit the names of such subcontractors, or to name itself to perform such work, or the naming of two or more firms (subcontractor or Bidder) to perform the same work shall render the Bidder's bid non-responsive and, therefore, void.

Applicable to Direct Subcontractors: The requirement of this section to name the Bidders' proposed heating, ventilation and air conditioning, plumbing and electrical subcontractors applies only to proposed heating, ventilation and air conditioning, plumbing and electrical subcontractors who will contract directly with the Bidder.

Submission Requirements: The Subcontractors List must be submitted with the Bid Proposal.

Trade	**Bidder must check one box for each Trade. If subcontracting the work, Bidder must name the subcontractor.**
HVAC (Heating, Ventilation and Air Conditioning	□ N/A (this project does not include this work) □ Bidder will self-perform this work □ Name and address of subcontractor _____ _____
Plumbing	□ N/A (this project does not include this work) □ Bidder will self-perform this work □ Name and address of subcontractor _____ _____
Electrical	□ N/A (this project does not include this work) □ Bidder will self-perform this work □ Name and address of subcontractor _____ _____

Structural Steel Installation	□ N/A (this project does not include this work) □ Bidder will self-perform this work □ Name and address of subcontractor _____ _____
Rebar Installation	□ N/A (this project does not include this work) □ Bidder will self-perform this work □ Name and address of subcontractor _____ _____

STATEMENT OF BIDDER'S QUALIFICATIONS

COMPARABLE CONTRACT HISTORY

The following is a partial list of the last five jobs our organization completed which are similar in character to this project:

Year	Project Name	Pipe Diameter	Feet	Owner Rep.	Phone No.

Name of Company: _____

Address: _____

Telephone: _____

_____
Date

_____
Signature

_____
Title

_____
Contractor's License Number

BIDDER'S LIST

Contractors are required to complete the following information for all subcontractors submitting bids for this work. The Bidder's List is required to be submitted with the Bid. (use additional sheets if necessary).

Subcontractor's Name and Point of Contact	Address, Phone, and E-Mail Address	Work Bid by Subcontractor	Status as MBE/WBE or Non MBE/WBE

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, _____

_____

Of _____

Hereinafter called the Contractor (Principal), and _____

_____

a corporation duly organized and existing under and by virtue of the laws of the State of _____ hereinafter called the Surety, and authorized to transact business within the State of Washington as Surety, are held and firmly bound unto Public Utility District No. 1 of Skagit County, Washington (Obligee) in the full and penal sum of five percent (5%) of the total bid amount appearing on the bid proposal of said principal for the work hereinafter described, for the payment of which, well and truly be made to the Owner, the Contractor and the Surety bind themselves and each of their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITIONS OF THE ABOVE OBLIGATION ARE SUCH THAT WHEREAS, the Principal herein is herewith submitting his or its bid proposal for **Pipeline Relocation at Alger Interchange Project.**

NOW THEREFORE, if the bid proposal submitted by the Principal is accepted, and the contract is awarded to said Principal, and if said Principal shall duly make and enter into and execute said contract and shall furnish the Performance and Payment Bond as required by the bidding and contract documents within a period of ten (10) days from and after said award, exclusive of the day of such award, then its obligation to pay the above-mentioned penal sum as liquidated damages shall be null and void, otherwise it shall remain and be in full force and effect.

Signed and sealed this _____ day of _____, 20____.

_____	_____
Contractor	Surety
By _____	By _____
	Attorney-In-Fact
Title _____	
Corporate Seal	Corporate Seal

The Attorney-In-Fact who executes this bond on behalf of the Surety must attach a copy of his Power of Attorney as evidence of his authority.

SECTION 00 52 00

AGREEMENT FORMS

CONTRACT NO. XXXX

THIS CONTRACT is made and entered into by and between the PUBLIC UTILITY DISTRICT NO. 1 OF SKAGIT COUNTY (Owner/Skagit PUD) and CONTRACTOR NAME (Contractor).

WITNESSETH:

WHEREAS, the Owner has caused the preparation of certain Contract Documents entitled **Pipeline Relocation at Alger Interchange Project.**

WHEREAS, the Owner has invited proposals, has received, and analyzed said proposals, and has duly given notice of Acceptance of Proposal to the Contractor herein set forth and as stated more in detail in the Contract Documents which are defined in Section II General Conditions, all of which Contract Documents are made a part hereof and which constitute the whole Contract between the Owner and the Contractor.

NOW, THEREFORE, it is hereby agreed that:

1. The Contractor shall furnish the work, pay all costs, and perform all requirements of this Contract in the manner specified in the Contract Documents,

2. The Proposal calls for unit prices and lump sums in the Bid Schedule(s) set forth in (1) above. The Owner shall pay to the Contractor a corrected Total Contract Amount computed from the unit prices and lump sums in said Bid Schedule(s) set forth in the Contractor's Proposal and the actual quantities of units furnished. Based upon the lump sum and unit prices in said Bid Schedule(s) set forth in the Contractor's Proposal and upon the quantities estimated from the Contract Drawings for bidding purposes, the estimated Total Contract Amount is (spell out dollar amount/100) Dollars (capitalize each word of the dollar amount) ($ insert numeric dollar amount),

3. In Washington State the Owner is required to pay state or local sales or use taxes included in the Total Contract Amount and the Contractor is required to receive the said taxes for payment to the state, the amount payable to the Contractor by the Owner shall be the Total Contract Amount as above specified including the amount of the said taxes,

4. It is further agreed that the Contractor will start work within ten (10) calendar days after the date specified in the Owner's Notice to Proceed. Work shall be substantially complete within 90 calendar days,

5. In the event that the Contractor fails to substantially complete the Project by the date of substantial completion as specified above or as modified by Change Order, the Contractor shall be liable for liquidated damages of five hundred dollars ($500.00) per calendar days thereafter until the Owner determines the Project to be substantially complete, and

6. The attached Indemnification Agreement is hereby made part of this Contract.

IN WITNESS WHEREOF, two identical counterparts of this Contract, each of which shall for all purposes be deemed an original hereof, have been duly executed by the parties hereto.

(CONTRACTOR name here)

By _____
(Name, Title here)

Date _____

PUBLIC UTILITY DISTRICT NO. 1
OF SKAGIT COUNTY, WASHINGTON

By _____
George Sidhu, P.E., General Manager

Date _____

INDEMNIFICATION AGREEMENT

The Contractor agrees to defend, indemnify, and hold Skagit PUD harmless from any and all claims, demands, losses, and liabilities to or by third parties arising from, resulting from, or connected with work performed or to be performed under this Contract by the Contractor, its agents, employees, and subcontractors, even though such claims may prove to be false, groundless or fraudulent, to the fullest extent permitted by law and subject to the limitations provided below.

The Contractor's duty to indemnify Skagit PUD shall not apply to liability for damages arising out of bodily injury to persons or damage to property caused by or resulting from the sole negligence of Skagit PUD or Skagit PUD's agents or employees. The Contractor's duty to indemnify Skagit PUD for liability for damages arising out of bodily injury to persons or damage to property caused by or resulting from the concurrent negligence of Contractor, its agents, employees, or subcontractors and/or Skagit PUD or Skagit PUD's agents or employees, shall apply only to the extent of negligence of Contractor, its agents, employees, or subcontractors.

With respect to claims against Contractor by Skagit PUD pursuant to this Contract only, Contractor expressly waives any immunity that may be granted it under the Workers' Compensation, Industrial Insurance or like statutes and/or any administrative regulations issued pursuant thereto. This waiver does not include or extend to any claims by Contractor's employees directly against Contractor.

Further, Contractor's defense and indemnification obligations under this Contract shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable to or for any third party under Workers' Compensation, Industrial Insurance or like statutes and/or any administrative regulations issued pursuant thereto.

Contractor's duty to indemnify Skagit PUD for liabilities or losses, other than for bodily injury to persons or damage to property caused by or resulting from negligence, shall apply only to the extent of the fault of Contractor, its agents, employees, or subcontractors, except in situations where fault is not a requirement for liability, in which case indemnity will be provided to the extent the liability or loss was caused by Contractor or its agents, employees, or subcontractors.

Contractor's duty to defend, indemnify and hold Skagit PUD harmless shall include, as to all claims, demands, losses and liabilities to which it applies, Skagit PUD's actual attorneys' fees and costs incurred in connection with defending such claim(s) including, without limitation, consultant and expert witness fees and expenses and personnel-related costs in addition to costs otherwise recoverable by statute or court rule.

THE UNDERSIGNED HEREBY CERTIFY THAT THIS AGREEMENT WAS MUTUALLY NEGOTIATED.

(CONTRACTOR name here)	PUBLIC UTILITY DISTRICT NO. 1 OF SKAGIT COUNTY, WASHINGTON
By: _____ (Name, Title here)	By: _____ George Sidhu, P.E., General Manager
Dated: _____	Dated: _____

The Contractor shall cause each of its subcontractors (and suppliers to the extent any perform any work on the Project site) to execute an Indemnification Contract substantially in the form of the foregoing by which each such entity or person assumes to Skagit PUD all obligations Contractor assumes to Skagit PUD as set forth above.

CERTIFICATE OF OWNER'S ATTORNEY

I, the undersigned, **Peter Gilbert**, the duly authorized and acting legal representative of Public Utility District No. 1 of Skagit County, do hereby certify as follows:

I have examined the attached contract(s) and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements are adequate and have been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties named thereon; and that the foregoing agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with terms, conditions, and provisions thereof.

_____

Peter Gilbert, Attorney

Date: _____

PERFORMANCE AND PAYMENT BOND

Bond No._____
Amount: $_____

KNOW ALL MEN BY THESE PRESENTS, that

_____

Of_____
Hereinafter called the Contractor (Principal), and _____

_____

a corporation duly organized and existing under and by virtue of the laws of the State of _____ hereinafter called the Surety, and authorized to transact business within the State of Washington as Surety, are held and firmly bound unto Public Utility District No. 1 of Skagit County, Washington as Owner (Obligee), in the sum of _____ Dollars ($_____), lawful money of the United States of America, for the payment of which, well and truly be made to the Owner, the Contractor and the Surety bind themselves and each of their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents as follows:

THE CONDITIONS OF THE ABOVE OBLIGATION ARE SUCH THAT:
WHEREAS, the Contractor has executed and entered into a certain Contract hereto attached, with the Owner, dated _____, 20____.
For:_____

_____.

IN WITNESS:NOW THEREFORE, if Contractor, its heirs, executors, administrators, successors, or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and agreements in the said Contract for the duration thereof, including the one-year warranty period, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions and agreements of any and all duly authorized modifications of said Contract that may hereafter be made, at the time and in the manner therein specified and shall pay all laborers, mechanics, subcontractors or lower tier subcontractors, and material persons, and all persons who shall supply such person or persons, or subcontractors or lower tier subcontractors, with provisions and supplies for the carrying on of such work, on his or their part, and shall indemnify and save harmless Owner, its officers and agents, then this obligation shall become null and void; otherwise, it shall be and remain in full force and effect.

And Surety, for value received, hereby further stipulates and agrees that no change, extension of time, alteration or addition to the terms of Contract or to the work to be performed thereunder or the plans or specifications accompanying the same shall in any way affect its obligation of this Bond, and it does hereby waive notice of any change, extension of time, alterations or additions to the terms of the Contract, the plans or the specifications.

Surety hereby agrees that modifications and changes may be made in the terms and provisions of the Contract without notice to Surety, and any such modifications or changes increasing the total amount to be paid the Contractor shall automatically increase the obligation of the Surety on this Bond in a like amount.

The Surety expressly acknowledges that it shall be liable, under this Bond, for any liquidated damages assessed against the Contractor in accordance with the provisions of the Contract.

Any claim(s) relating to or against this Bond shall be subject to and decided by arbitration in accordance with the provisions of the Revised Code of Washington Chapter 7.04.

Any dispute relating to the performance or enforcement of the provisions of this Bond shall be governed by Washington State Law. Jurisdiction and venue shall be Skagit County Courts. If non-binding arbitration or mediation is conducted involving the Owner, the Contractor, the Surety, or any other party concerning or in any way relating the work required or alleged to be required by the Contract, the Contractor and Surety expressly consent to a consolidated or joint arbitration if and as called for by the Owner. The prevailing party in each such litigation shall be entitled to recover its attorneys' fees, in addition to any other relief granted.

IN WITNESS WHEREOF, the Contractor and the Surety have caused this bond and two (2) counterparts thereof to be signed and sealed by their duly authorized officers.

Signed and sealed this _____ day of _____, 20____.

ATTEST:

By:_____

Title _____

CORPORATE SEAL:

_____

SURETY:

By _____

Print name: _____
Its Attorney-In-Fact

Address of local office and agent of Surety Company:

_____

_____

_____

APPROVED AS TO FORM:

PUD attorney: _____, Owner _____, 20____

SECTION 00 72 00
GENERAL CONDITIONS

GENERAL CONDITIONS

NOTICE OF DISCLAIMER

TAKE NOTICE, that the General Conditions are the 2025 Edition of the Washington State Department of Transportation Standard Specifications for Road, Bridge and Municipal Construction.

TAKE NOTICE, that these General Conditions have been materially amended by certain additions, deletions or other modifications to meet the needs of the Public Utility District No.1 of Skagit County. These amendments are contained in the Supplementary General Conditions.

END OF SECTION

SECTION 00 73 00

SUPPLEMENTARY CONDITIONS

SUPPLEMENTARY GENERAL CONDITIONS

The following provisions of the Washington State 2025 Standard Specifications for Road, Bridge, and Municipal Construction (WSDOT) Division 1 General Requirements is hereby amended, changed, or supplemented and superseded as follows. All other provisions which are not amended, changed, or supplemented remain in full force.

1	Order of Precedence	
2	Section 1-01.3	Definitions
3	Section 1-03	Award and Execution of Contract
3.1	Section 1-03.4	Contract Bond
3.2	Section 1-03.8	Award and Execution of Contract
4	Section 1-05	Control of Work
4.1	Section 1.05.0	General
4.2	Section 1-05.4	Conformance with and Deviations from Plans and Stakes
4.3	Section 1-05.10	Guarantees
5	Section 1-07	Legal Relations and Responsibilities to the Public
5.1	Section 1-07.1(1)	Owners Safe Access
5.2	Section 1-07.6	Permits and Licenses
5.3	Section 1-07.9(1)	Prevailing Wages
5.4	Section 1-07.18	Public Liability and Property Damage Insurance
5.5	Section 1-07.26	Personal Liability of Public Officers
6	Section 1-08	Prosecution and Progress
6.1	Section 1-08.5	Time for Completion (Contract Time)
6.2	Section 1.08.9	Liquidated Damages
6.3	Section 1.08.10(2)	Termination for Public Convenience
7	Section 1-09	Measurement and Payment
7.1	Section 1-09.4	Equitable Adjustment
7.2	Section 1-09.6	Force Account
7.3	Section 1-09.11(3)	Time Limitations and Jurisdiction
7.4	Section 1-09.13(3)	Claims Resolution
7.5	Section 1-09.14	Claims Against Contractor’s Retainage and/or Public Contract Bond
8	Section 1-10	Temporary Traffic Control
8.1	Section 1-10.2(2)	Traffic Control Plans

1 ORDER OF PRECEDENCE. THE ORDER OF PRECEDENCE OF THE CONDITIONS OF THE CONTRACT ARE AS LISTED BELOW, FIRST IS THE HIGHEST AND LAST IS THE LOWEST:

Addenda
Bid Forms
Technical Specifications
Drawings
Special Provisions
Supplementary General Conditions
Division 1 General Requirements (WSDOT) 2025 Edition

2 SECTION 1-01.3 DEFINITIONS IS SUPPLEMENTED BY ADDING THE FOLLOWING DEFINITIONS:

Whenever these words are used in the Contract Documents, they shall have the following meanings:

"COMMISSION": Redefined to mean the three elected Commissioners of Skagit PUD; substitute for "Commission" and "Washington State Transportation Commission" whenever cited.

"CONTRACTING AGENCY", "DISTRICT" or "OWNER": Public Utility District No. 1 of Skagit, Washington; substitute for "State," "Department," and "Department of Transportation" whenever cited.

"GENERAL MANAGER": The person appointed by the Commission per RCW 54.16.100 as the chief administrative officer of Skagit PUD; substitute for "Secretary" and "Secretary of Transportation" whenever cited.

"ENGINEER": Wilson Engineering, LLC

"OWNER": Public Utility District No. 1 of Skagit County (Skagit PUD).

"STANDARD PLANS": Redefined to refer to the Standard Detail Sheets included with the Plans and Specifications as well as the WSDOT Standard Plans. The requirements of the Standard Detail Sheets shall be controlling in the case of any discrepancy between the Standard Details and the WSDOT Standard Plans.

3 SECTION 1-03 AWARD AND EXECUTION OF CONTRACT IS SUPPLEMENTED BY ADDING THE FOLLOWING:

3.1 Add the following to Section 1-03.4, Contract Bond:

Upon substantial completion of the Project, the Contractor shall provide a Utility Maintenance Bond for 25% of the Total Contract Amount on the form specified by Skagit PUD that warrants all equipment, materials, and labor it furnishes or performs under the Agreement against defects in design, materials, and workmanship for one (1) year after final acceptance as described in Section 1-05.10.

3.2 Add the following new Section 1-03.8 Award and Execution of Contract:

1-03.8 Award and Execution of Contract.

1-03.8(1) The Contract for the Project shall be awarded to the responsible Bidder submitting the lowest responsive Bid. The lowest responsive Bid shall be determined by the total amount of the Bid.

4 SECTION 1-05 CONTROL OF WORK IS REVISED AS FOLLOWS:

4.1 Insert the following new Section 1-05.0 General:

1-05.0 General

Where the Specifications, the Owner's instructions, laws, ordinances, or any government authority require any work to be specially tested, or inspected, the Contractor shall give the Owner timely notice that such test of completed work is ready for inspection. If the inspection is by another authority than the Owner, the Contractor shall give the Owner timely notice of the date fixed for such inspection. Required certificates of inspection by other authority than the Owner shall be secured by the Contractor.

4.2 Revise Section 1-05.4, Conformance with And Deviation from Plans and Stakes, as follows:

Delete the word “Engineer” and replace with “Contractor” throughout this section with reference to setting stakes, marks, lines, etc. for the layout and prosecution of the Work. All surveying and layout required for this Project shall be performed by the Contractor. The Engineer retains final authority for determination of conformity of the Work and shall be notified immediately of any errors found to cause deviations in the Work.

4.3 Delete Section 1-05.10, Guarantees, and replace with the following:

1-05.10 Guarantees

The Contractor shall furnish to the Contracting Agency any guarantee or warranty furnished as a normal trade practice in connection with the purchase of any equipment, materials, or items used in the construction of the project.

The Contractor shall be responsible for correcting all defects in workmanship and materials incurred within one year (365 days) after the date of final acceptance of the project. When corrections of defects are made, the Contractor shall be responsible for correcting all defects in workmanship and/or materials in the corrected Work for one year after acceptance of the correction by the Owner. The Contractor shall commence remedying such defects within seven (7) days of receipt of notice of discovery thereof from the Owner and shall complete such Work within a reasonable time. In emergencies, where damage may result from delay or where loss of service may result, such corrections may be made by the Owner, in which case the cost shall be borne by the Contractor. In the event the Contractor does not complete corrections within a reasonable time, the Work shall be otherwise accomplished and the cost of same shall be paid by the Contractor.

The Contractor shall be liable for any costs, losses, expenses, or damages, including consequential damages, suffered by the Owner resulting from defects in the Contractor’s Work,

including but not limited to costs, labor, materials, equipment, and administration incurred by Owner in making emergency repairs of such defective Work and associated costs of engineering, inspection, and supervision by the Owner or Engineer. The Contractor shall defend, indemnify, and hold the Owner harmless from any and all claims that may be made against the Owner as a result of the Contractor's defective Work.

5 SECTION 1-07 LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLIC IS SUPPLEMENTED BY ADDING THE FOLLOWING:

5.1 Add the following Section 1-07.1(1) Owner Safe Access:

1-07.1(1) **Owner Safe Access**

The Contractor shall provide safe access for the Owner and its inspectors to adequately inspect the quality of work and the conformance with Contract Documents. The Contractor shall provide adequate lighting, ventilation, ladders, and other protective facilities as may be necessary for the safe performance of inspections.

5.2 Add the following to Section 1-07.6, Permits and Licenses:

The Contractor shall comply with all requirements of all permits provided by the Owner for this project.

5.3 Add the following to Section 1-07.9, Wages, 1-07.9(1), General:

Current Washington State Department of Labor and Industries prevailing wage rates are available at:

http://www.lni.wa.gov/tradeslicensing/prevwage/wagerates/

Wage rates applicable for this project are those for Skagit County with an effective date of this Contract Bid Date.

5.4 Revise Section 1-07.18, Public Liability and Property Damage Insurance as follows:

All reference to the State or Department of Transportation shall be supplanted with Public Utility District No. 1 of Skagit County.

5.5 Revise Section 1-07.26, Personal Liability of Public Officers, as follows:

Neither the Owner nor any elected official, officer, or its employees shall be personally liable for any acts or failure to act in connection with the Contract, it being understood that in such manners, they are acting solely as agents of the Owner.

No right of action shall accrue upon or by reason of this Contract to or for the use or benefit of anyone other than the parties to this Contract. The parties to this Contract are the Contractor and the Owner.

6 SECTION 1-08, PROSECUTION AND PROGRESS, IS REVISED AS FOLLOWS:

6.1 Supplement Section 1-08.5, Time for Completion (Contract Time), with the following:

Contractor shall complete all work associated with the Bid Schedule after the issuance of the Notice to Proceed. Work shall be substantially complete within 90 calendar days.

6.2 Section 1-08.9, Liquidated Damages replaced numbered paragraphs 1 and 2 with the following:

1. To pay liquidated damages for each working day beyond the number of days established for substantial completion, to authorize the Owner to deduct these liquidated damages from any money due or coming due to the Contractor.

6.3 Revise Section 1-08.10(2), Termination for Public Convenience, as follows:

Substitute "Resolution" for "Executive Order", substitute "Commission" for "President", and delete "or Governor".

7 SECTION 1-09, MEASUREMENT AND PAYMENT, IS REVISED AS FOLLOWS:

7.1 Supplement Section 1-09.4, Equitable Adjustment, with the following:

All bilateral agreements shall constitute a full accord and satisfaction and represent payment in full as to adjustments in both Contract price and time of completion for all costs, whether direct or indirect, arising out of, or incidental to, or otherwise attributable to, the changed work including any and all delays and impacts resulting from the change to the contract. Acceptance of payment by Contractor pursuant to such bilateral agreement shall constitute a waiver of any and all claims, known or unknown, arising out of, or incidental to, or otherwise attributable to the changed work.

7.2 Revise Section 1-09.6, Force Account, as follows:

Revise Item No. 1 as follows: Substitute “21 Percent” for “29 percent” for Contractor’s allowance for overhead and profit.

7.3 Revise Section 1-09.11(3), TIME LIMITATIONS AND JURISDICTION

Revise as follows: Substitute Public Utility District No.1 of Skagit County for the State of Washington (six times). Substitute Superior Court of Skagit County for Superior Court of Thurston County.

7.4 Replace Sections 1-09.13(3), (3)A, (3)B and (4), Claims Resolution, with the following:

CLAIMS 1-09.13(3)

The Contractor and Contracting agency mutually agree that claims submitted in accordance with Section1-09.11 and not resolved by nonbinding ADR process, shall be resolved by litigation unless the Contracting agency elects to resolve the claim through binding arbitration.

Venue. The venue of any Dispute Resolution Proceedings between the parties to this Agreement shall be Mount Vernon, Washington unless otherwise mutually agreed in writing.

Injunctive Proceedings. Notwithstanding any other provisions of these Dispute Resolution Procedures, any Disputes otherwise subject to submission to these Dispute Resolution Procedures may instead be first submitted, by any party having a legal interest therein, to the jurisdiction of the Superior Court for Skagit County, State of Washington, if and only to the extent necessary to secure injunctive relief reasonably necessary under the circumstances.

7.5 Add the following new Section 1-09.14 Claims Against Contractor's Retainage and/or Public Contract Bond:

1-09.14 Claims Against Contractor's Retainage and/or Public Contract Bond

The Contractor shall be liable for all costs incurred by the Owner, including, but not limited to, legal fees, salary/wage costs of Owner's employees and litigation costs (whether or not recoverable by statute or court rule) arising out of claims against the retainage or the Contractor's Public Contract Bond. Owner may deduct any such costs from funds otherwise due the Contractor, including the retention, by unilateral Change Order.

8 SECTION 1-10, TEMPORARY TRAFFIC CONTROL

8.1 Revise Section 1-10.2(2), Traffic Control Plans, as follows:

Delete the first sentence of Section 1-10.2(2) and replace with the following:

Skagit PUD is providing an approved traffic control plan for the project that the Contractor will implement to handle traffic safety during construction.

END OF SECTION

D I V I S I O N 1

GENERAL REQUIREMENTS

SECTION 01 11 00
SUMMARY OF WORK

PART 1 GENERAL

1.1 SUMMARY

A. The Work to be performed under this Contract is summarized in the Invitation to Bid and Agreement.

B. The Work includes, but is not limited to, furnishing tools, equipment, materials, supplies, and manufactured articles, and furnishing all labor, transportation, and services, including fuel, power, water, and essential communications, and performing all work or other operations required for the fulfillment of the Contract in strict accordance with the Contract Documents. The Work shall be complete, and all work, materials, and services not expressly indicated or called for in the Contract Documents which may be necessary for the complete and proper construction of the Work in good faith shall be provided by the CONTRACTOR as though originally so indicated, at no increase in cost to the OWNER.

C. Section Includes:

1. Summary of Work
2. Coordination with work performed by others
3. Contractor's use of the site

1.2 SUMMARY OF WORK:

Installation of approximately 215 linear feet of water pipeline, including 177 LF of 14-inch HDPE DR11 and 38 LF of diameter CL50 ductile iron pipe, with 40 LF of 24-inch C-900 PVC casing at the deepest portion of the installation (will be below a future culvert to be constructed by Others). The project also includes the installation of approximately 177 linear feet of 2-inch HDPE fiber optic conduit. All installation is to be done by traditional trenching methods along Lake Samish Road, west of the Interstate 5 Interchange southbound off-ramp, in unincorporated Skagit County, State of Washington. Work includes asphalt removal and replacement, rock excavation, shoring, traffic control, and pressure and purity testing of the pipe, and site restoration, along with incidentals and appurtenances, such as valves, fittings, dewatering, in estimated quantities identified in the Bid Proposal.

1.3 WORK BY OTHERS

A. The CONTRACTOR's attention is directed to the fact that work may be conducted on the Site by other contractors and the OWNER'S crews during the performance of the Work under this Contract. The CONTRACTOR shall conduct its operations to cause a minimum of interference with the work of such other contractors and shall cooperate fully with such contractors to allow continued safe access to their respective portions of the Site, as required to perform work under their respective contracts.

B. Interference with Work on Utilities: The CONTRACTOR shall cooperate fully with all utility forces of the OWNER or forces of other public or private agencies engaged in the relocation, altering, or otherwise rearranging of any facilities which interfere with the progress of the Work, and shall schedule the Work to minimize interference with said relocation, altering, or other rearranging of facilities.

1.4 CONTRACTOR'S USE OF THE SITE:

A. **Site Location:** North right-of-way of Lake Samish Road, west of the Interstate 5 Interchange Exit 240) southbound off-ramp, in unincorporated Skagit County, State of Washington, as shown on the Contract Drawings.

B. The CONTRACTOR's use of the Site shall be limited to its construction operations and storage and layout of materials. All work shall be contained within the Site, and any easements or permissible land encumbrances negotiated by the CONTRACTOR.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 22 00
MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.1 SUMMARY

A. The entire cost of the work and the material necessary to complete all items shown on the Contract Documents will be paid for on a Lump Sum or Unit Price basis, as further specified herein, and shall include all compensation to be received by the CONTRACTOR for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor, operations, and incidentals appurtenant to the items of work being described, as necessary to complete the various items of the Work all in accordance with the requirements of the Contract Documents, including all appurtenances thereto, and including all costs of permits and cost of compliance with the regulations of public agencies having jurisdiction, including Safety and Health Requirements of the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA) and the State of Washington, Division of Industrial Safety and Health (WISHA). All costs therefore shall be included in the price named in the CONTRACTOR's Proposal for the work.

B. Payment shall only be made in accordance with the CONTRACTOR's Proposal or as listed in executed change orders. References in the Contract Documents to the 2025 Standard Specifications (of the Washington State Department of Transportation) are for purposes of defining products or execution of the work, but payment provisions of the Standard Specifications do not apply unless specifically incorporated by reference in these Contract Documents.

1.2 BID ITEMS

A. Item 1 - Mobilization

1. Progress payment for Mobilization shall be paid on a percentage of total contract value complete at the time of payment application submission as measured by the OWNER.

2. Payment for Mobilization will be made in accordance with Section 1-09.7 of the Standard Specifications.

B. Item 2 - Spill Prevention Control and Countermeasure (SPCC) Plan, Temporary Erosion and Sediment Control (TESC) Plan, Contractor Health and Safety Plan, Site-Specific Safety Plan, Shoring Plan, and Steel Plate Plan.

1. No measurement of Spill Prevention Control and Countermeasure (SPCC) Plan, Temporary Erosion and Sediment Control (TESC) Plan, Contractor Health and Safety Plan, and Site-Specific Safety Plan shall be made.

2. Payments for Spill Prevention Control and Countermeasure (SPCC) Plan, Temporary Erosion and Sediment Control (TESC) Plan, Contractor Health and Safety Plan, and Site-Specific Safety Plan shall be by the lump sum price named in the Proposal, which price shall constitute full payment for all tools, equipment, labor, and materials required to complete this work as specified herein; including but not limited to the preparation, submission, and implementation of the SPCC Plan, TESC Plan, Contractor Health and Safety Plan, and Site-Specific Safety Plan, Shoring Plan, and Steel Plate Plan, as well as all incidentals necessary to comply with federal, state, and local regulations, including Safety and Health Requirements of the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA) and the State of Washington, Division of Industrial Safety and Health (WISHA), in accordance with requirements of the Contract Documents.

3. Payment for Spill Prevention Control and Countermeasure (SPCC) Plan, Temporary Erosion and Sediment Control (TESC) Plan, Contractor Health and Safety Plan, and Site-Specific Safety Plan, Shoring Plan, and Steel Plate Plan will be made at 70% of the value after receipt of plans and the remaining 30% will be paid after substantial completion of the project.

C. Item 3 – Construction Surveying

1. No measurement of Construction Surveying shall be made.

2. Payment for Construction Surveying shall be by the lump sum price named in the Proposal, which price shall constitute full payment for all tools, equipment, labor, and materials required to complete this work as specified herein; including but not limited to establishment of horizontal and vertical control, staking of alignments, grades, and locations for all project features (such as pipelines, fittings, valves, hydrants, trenches, pavement, curbs, sidewalks, and ramps), verification of existing conditions, as-built surveys, and all incidental work necessary to support construction activities in accordance with requirements of the Contract Documents.

3. Progress payments for Construction Surveying shall be based upon the actual percentage of the work complete at the time of payment application submission as measured by the OWNER.

D. Item 4 - Install and Maintain Temporary Erosion Control and Water Pollution Control Measures

1. No measurement of Install and Maintain Temporary Erosion Control and Water Pollution Control Measures shall be made.

2. Payment for Install and Maintain Temporary Erosion Control and Water Pollution Control Measures shall be by the lump sum price named in the Proposal, which payment shall be considered full compensation for all tools, equipment, labor, and materials required to complete this work as specified herein; including but not limited to the establishment, maintenance, and removal of temporary erosion and water pollution control measures in accordance with requirements of the Contract Documents.

3. Eighty percent of the lump sum unit price will be dispersed according to an agreed upon schedule of value earned, while the remaining twenty percent of the lump sum price will be paid after final site stabilization and removal of erosion control measures.

E. Item 5 - Project Temporary Traffic Control

1. No measurement of Project Temporary Traffic Control shall be made. The work will be considered as a single lump sum item, encompassing all temporary traffic control measures required for the project.

2. Payment for Project Temporary Traffic Control shall be by the lump sum price named in the Proposal, which price shall constitute full payment for all tools, equipment, labor, materials, and incidentals required to complete the work as specified in the Contract Documents. This includes, but is not limited to:

   a. Provision of a Traffic Control Supervisor, including completion of Contractor's Daily Report of Traffic Control – Summary and Traffic Control Logs.

   b. Flaggers and spotters for traffic control.

   c. Furnishing, installing, maintaining, and removing Class "A" and "B" Traffic Control Signs and Devices.

   d. Provision, operation, and maintenance of Portable Changeable Message Signs (PCMS), including mobilization within project limits.

e. Coordination and services of Uniformed Police Officers (UPO), including wages, equipment, daily logs, and incidentals for traffic control or site security.

f. All other activities necessary to maintain safe and effective traffic control in accordance with the Contract Documents.

F. Item 6 – Asphalt Saw Cutting

1. Measurement of Asphalt Saw Cutting shall be measured by the linear foot-inch (LF-IN) along the line and slope of the cut, as staked by the Engineer, prior to saw cutting. Only saw cutting used for the edge of the permanent asphalt patch will be measured.

2. Payment for Asphalt Saw Cutting shall be based on the unit contract price per linear foot-inch (LF-IN) as indicated on the Bid Proposal. Payment shall include the full compensation for all labor, materials, tools, equipment, and hand removal if required, in accordance with Section 1-04.1 of the Standard Specifications.

G. Item 7 – Removal and Disposal of Asphalt

1. Measurement of Removal and Disposal of Asphalt shall be by the number of square yards of asphalt pavement removed and disposed of, as measured in place prior to removal, regardless of depth, as directed by the Engineer.

2. Payment for Removal and Disposal of Asphalt shall be by the unit price per square yard named in the Proposal, covering all tools, equipment, labor, and materials for breaking, removal, hauling, and lawful disposal of asphalt, including environmental compliance, per Contract Documents.

H. Item 8 – Roadway Excavation

1. Measurement of Roadway Excavation shall be by the number of cubic yards of excavation, as measured in the position it occupied before the excavation was performed and established by the Engineer prior to removal.

2. Payment for Roadway Excavation shall be by the unit price per cubic yard named in the Proposal, which price shall constitute full payment for all tools, equipment, labor, and materials required to complete this work as specified herein: including but not limited to, removal, hauling, and lawful disposal in accordance with the requirements of the Contract Documents.

I. Item 9 – Rock Excavation

1. Measurement of Rock Excavation shall be by the number of cubic yards of rock excavated, as measured in place by neat lines established by the Engineer prior to removal, limited to areas where rock is encountered and special excavation methods are required, as determined by the Engineer.

2. Payment for Rock Excavation shall be by the unit price per cubic yard named in the Proposal, which price shall constitute full payment for all tools, equipment, labor, and materials required to complete this work as specified herein: including but not limited to break, removal, hauling, and lawful disposal of rock, as well as any necessary blasting, drilling, or mechanical methods in accordance with the requirements of the Contract Documents.

J. Item 10 – Furnish and Install Engineer-Ordered Over Excavation or Shoring

1. Measurement of Furnish and Install Engineer-Ordered Over Excavation or Shoring shall be per square foot as follows: The area for payment will be one vertical plane measured along the centerline of the trench, including Structures. Measurement will be made from the

existing ground line to the bottom of the excavation and for the length of the Work performed.

2. Payment of Furnish and Install Engineer-Ordered Over Excavation or Shoring shall be made at the unit price per square foot, which includes all labor, materials, and equipment required to perform the work as described. No separate payment will be made for the removal of shoring. All excavation, backfill, compaction, and other Work required when extra excavation is used in lieu of constructing shoring is considered incidental.

K. Item 11 - Furnish and Install Engineer-Ordered Trench Stabilization Material

1. Measurement of Furnish and Install Engineer-Ordered Trench Stabilization Material shall be by the number of tons placed in the trench, based on truck scale ticket weights.

2. Payment for Furnish and Install Engineer-Ordered Trench Stabilization Material shall be by the unit price per ton named in the Proposal, which price shall constitute full payment for all tools, equipment, labor, and materials required to complete this work as specified herein; including but not limited to furnishing, placing, and compacting the trench stabilization materials, and for filter fabric around the stabilization material in accordance with requirements of the Contract Documents.

L. Item 12 - Furnish and Install Adequate Site and Trench Safety Systems in Accordance with Chapter 49.17 RCW

1. No measurement of Furnish and Install Adequate Site and Trench Safety Systems shall be made.

2. Payments for Furnish and Install Adequate Site and Trench Safety System shall be by the unit price lump sum named in the Proposal, which price shall constitute full payment for all tools, equipment, labor, and materials required to complete this work as specified herein; including but not limited to the setup and take down of all site and trench safety systems in accordance with requirements of the Contract Documents. If used, structural shoring is incidental to this work.

3. Progress payments for Furnish and Install Adequate Site and Trench Safety Systems shall be based upon the actual percentage of the work complete at the time of payment application submission as measured by the OWNER. Work on this item shall be in accordance with Chapter 49.17 RCW.

M. Item 13 – Furnish and Install 8-inch Watermain Temporary Bypass

1. No measurement of Furnish and Install 8-inch Watermain Temporary Bypass shall be made; the work shall be considered a lump sum item encompassing all activities required to furnish, install, maintain, and remove the temporary bypass system as directed by the Engineer.

2. Payment for Furnish and Install 8-inch Watermain Temporary Bypass shall be by the lump sum price named in the Proposal, which price shall constitute full payment for all tools, equipment, labor, and materials required to complete this work as specified herein; including but not limited to furnishing and installing 8-inch watermain pipe, fittings, valves, and appurtenances for the temporary bypass, pressure testing, disinfection, maintenance during use, removal after construction, installation of blind flanges on the permanent system, and restoration of affected areas, in accordance with requirements of the Contract Documents.

3. Payment will be made at 70 percent upon installation and successful operation of the bypass, with the remaining 30 percent paid after removal and restoration are completed to the Engineer’s satisfaction.

N. Item 14 - Furnish and Install 12-inch DI Pipe, including Trench Excavation, Dewatering, Backfill, and Compaction

1. Measurement of Furnish and Install 12-inch DI Pipe, including Trench Excavation and Haul, Dewatering, Backfill, Compaction, and potholing of existing utilities incidental to pipe installation, shall be by the number of linear feet of pipe installed as determined by horizontal measurement along the pipe centerline.

2. Payment for Furnish and Install 12-inch DI Pipe, including Trench Excavation and Haul, Dewatering, Backfill, Compaction, and potholing of existing utilities incidental to pipe installation, shall be at the unit price per linear foot named in the Proposal. This price covers all tools, equipment, labor, and materials for pipe installation, fittings, welding, thrust blocking, joint restraints, tracer wire, potholing, temporary patching, mailbox protection, asphalt disposal, dewatering, backfilling, compaction, restoration, and staking per the Contract Documents.

3. Progress payments for Furnish and Install 12-inch DI pipe, Including Trench Excavation, Dewatering, Backfill, and Compaction shall be based upon the unit price of the work complete at the time of payment application submission as measured by the OWNER.

O. Item 15 – Furnish and Install 12-ich Butterfly Valve

1. Measurement of Furnish and Install 12-inch Butterfly Valve shall be per each valve installed and accepted by the OWNER.

2. Payment at the unit price per each valve in the Proposal, covering all tools, equipment, labor, materials, and incidentals for complete installation, including fittings, testing, and coordination, per Contract Documents.

3. Progress payments for Furnish and Install 12-ich Butterfly Valve based on the unit price per each valve installed and accepted at payment application submission.

P. Item 16 - Furnish and Install 14-inch HDPE Pipe, including Trench Excavation, Disposal, and Dewatering

1. Measurement of Furnish and Install 14-inch HDPE Pipe, including Trench Excavation and Haul, Dewatering, Backfill, Compaction, and potholing of existing utilities incidental to pipe installation, shall be by the number of linear feet of pipe installed as determined by horizontal measurement along the pipe centerline.

2. Payment for Furnish and Install 14-inch HDPE Pipe, including Trench Excavation and Haul, Dewatering, Backfill, Compaction, and potholing of existing utilities incidental to pipe installation, shall be at the unit price per linear foot named in the Proposal. This price covers all tools, equipment, labor, and materials for pipe installation, fittings, welding, thrust blocking, joint restraints, tracer wire, potholing, temporary patching, mailbox protection, asphalt disposal, dewatering, backfilling, compaction, restoration, and staking per the Contract Documents.

3. Progress payments for Furnish and Install 14-inch HDPE pipe, Including Trench Excavation, Dewatering, Backfill, and Compaction shall be based upon the unit price of the work complete at the time of payment application submission as measured by the OWNER.

Q. Item 17 – Furnish and Install 14-inch HDPE Mitered or Sweep Fitting

1. Measurement of Furnish and Install 14-inch HDPE Mitered or Sweep Fitting will be per each of the actual number of 14-inch HDPE mitered or sweep fittings installed, accepted, and in place.

2. Payment will be made at the contract unit price per each for "Furnish and Install 14-inch HDPE Mitered or Sweep Fitting." The unit price shall include full compensation for all costs associated with furnishing, handling, installing, welding, jointing, testing, and incidental work necessary to complete the installation in accordance with the contract documents.

R. Item 18 – Furnish and Install HDPE / DI Transition or Flanged End

1. Measurement of HDPE / DI transition or flanged end fittings installed shall be per each of the actual number of transition or flanged end fittings installed, accepted, and in placed.

2. Payment will be made at the contract unit price per each for "Furnish and Install HDPE / DI Transition or Flanged End." The unit price shall include full compensation for all costs associated with furnishing, handling, installing, jointing, testing, and incidental work necessary to complete the installation in accordance with the contract documents.

S. Item 19 – Furnish and Install 2-inch HDPE Fiber Conduit

1. Measurement of Furnish and Install 2-inch HDPE Fiber Conduit shall be by the number of linear feet of conduit installed as determined by horizontal measurement along the conduit centerline.

2. Payment of Furnish and Install 2-inch HDPE Fiber Conduit shall be by the unit price per linear foot in the Proposal, covering all tools, equipment, labor, and materials for conduit installation, fittings, pull string, excavation, backfill, compaction, tracer wire, and restoration per the Contract Documents.

3. Progress payments for Furnish and Install 2-inch HDPE Fiber Conduit shall be based upon the unit price of the work complete at the time of payment application submission as measured by the OWNER.

T. Item 20 – Furnish and Install 24-inch C-900 PVC Watermain Casing

1. Measurement of Furnish and Install 24-inch C-900 PVC Watermain Casing shall be by the number of linear feet of casing installed as determined by horizontal measurement along the casing centerline.

2. Payment for Furnish and Install 24-inch C-900 PVC Watermain Casing shall be by the unit price per linear foot named in the Proposal, which price shall constitute full payment for all tools, equipment, labor, and materials required to complete this work as specified herein; including but not limited to casing installation, spacers, and end seals.

3. Progress payments for Furnish and Install 24-inch C-900 PVC Watermain Casing shall be based upon the unit price of the work complete at the time of payment application submission as measured by the OWNER.

U. Item 21 – Furnish and Install Protection Plates

1. Measurement of Furnish and Install Protection Plates shall be by lineal foot of underground pipeline the protection plates are installed over, as determined by the horizontal measurement along the pipe centerline, excluding overlaps.

2. Payment for Furnish and Install Protection Plates shall be by the unit price per lineal foot named in the Proposal, which price shall constitute full payment for all tools, equipment, labor, and materials required to complete this work as specified herein; including but not limited to furnishing and installing injection-molded HDPE protection plates with perforated surfaces for water flow, beveled edges, non-slip pins, full-body yellow color (UV resistant) as a warning signal, and customizable embossed warning messages, assembling plates by superposition (4-inch overlap) or juxtaposition with HDPE clips or connectors, and all

incidentals necessary to protect underground pipelines in accordance with requirements of the Contract Documents.

V. Item 22 – Gravel Backfill for Pipe Zone Bedding

1. Measurement of gravel backfill for pipe zone bedding shall be by the number of tons placed in the pipe zone, as determined by truck scale ticket weights, and in conformance with the plans and specifications.

2. Payment for Gravel Backfill for Pipe Zone Bedding shall be by the unit price per ton named in the Proposal, which price shall constitute full payment for all tools, equipment, labor, and materials required to complete this work as specified herein; including but not limited to furnishing, placing, and compacting gravel backfill material in the pipe zone bedding in accordance with requirements of the Contract Documents.

W. Item 23 – Bank Run Gravel for Trench Backfill

1. Measurement of Bank Run Gravel for Trench Backfill shall be by the number of tons placed in the trench, based on truck scale ticket weights, as determined by the Engineer for areas requiring imported trench backfill.

2. Payment for Bank Run Gravel for Trench Backfill shall be by the unit price per ton named in the Proposal, which price shall constitute full payment for all tools, equipment, labor, and materials required to complete this work as specified herein; including but not limited to furnishing, hauling, placing, and compacting Bank Run Gravel as imported trench backfill in accordance with the requirements of the Contract Documents

X. Item 24 – Furnish and Install Trench Dam

1. Measurement for Furnish and Install Trench Dams shall be by the number of trench dams installed, as shown on the plans accepted by the Engineer.

2. Payment for Furnish and Install Trench Dams shall be made by the unit price per each named in the Proposal, which payment shall constitute full compensation for all tools, equipment, labor, and materials required to complete this work as specified herein; including but not limited to furnishing and installing trench dams, excavation, backfill, compaction, and any incidental work necessary to complete the installation in accordance with the plans accepted by the Engineer and the requirements of the Contract Documents.

Y. Item 25 – Key Block

1. Measurement of Key Block will be per each based on the actual number of key blocks installed, accepted, and in place.

2. Payment for Key Block will be made at the contract unit price per each. The unit price shall include full compensation for all costs associated with furnishing, handling, installing, and completing the key block, including all specified materials (restraining rods, nuts, washers, Romac components, rebar, concrete, asphalt coating), excavation, backfill, compaction, labor, equipment, and incidental work necessary to complete the installation in accordance with the contract documents.

Z. Item 26 – Furnish and Install Electrical Handhole Vault

1. Measurement of Furnish and Install Electrical Handhole Vault shall be by the number of electrical handhole vaults furnished and installed, as determined by the actual count of units completed and accepted by the Engineer.

2. Payment for Furnish and Install Electrical Handhole Vault shall be by the unit price per each named in the Proposal, which price shall constitute full payment for all tools, equipment,

labor, and materials required to complete this work as specified herein; including but not limited to excavation, bedding, furnishing and installing the handhole vault, backfilling, compaction, connection to conduit systems, installation of covers, grounding as required, and restoration of disturbed surfaces in accordance with requirements of the Contract Documents.

AA. Item 27 – Furnish and Install 3-inch Combination Air Valve Assembly

1. Measurement of Furnishing and Install 3-inch Combination Air Valve Assembly shall be by the number of complete assemblies furnished and installed.

2. Payment for Furnishing and Install 3-inch Combination Air Valve Assembly shall be by the unit price per each named in the Proposal, which price shall constitute full payment for all tools, equipment, labor, materials, required to complete this work as specified herein; including but not limited to corporation stop, piping and fittings, wax tap wrap, combination air valve assembly with concrete box, appurtenances, and restoration of all landscape in accordance with requirements of the Contract Documents .

BB. Item 28 - Waterline Flushing, Pressure Testing, Disinfection and Bacteriological Testing

1. No measurement of Waterline Flushing, Pressure Testing, Disinfection and Bacteria Testing shall be made.

2. Payment for Waterline Flushing, Pressure Testing, Disinfection and Bacteriological Testing shall be by the lump sum price named in the Proposal, which price shall constitute full payment for all tools equipment, labor, and materials required to complete this work as specified herein; including but not limited to waterline pressure testing, flushing and disinfection and bacteria testing, including temporary blocking, temporary flushing assemblies, connections, sample ports, and other appurtenant work, in accordance with the requirements of the Contract Documents.

CC. Item 29 and 30 – Connection Work for Tie-in at Station "__+__"

1. No measurement of Connection Work for Tie-in at Station "__+__" shall be made.

2. Payment for Connection Work for Tie-in at Station "__+__" shall be by the lump sum price named in the Proposal, which payment shall constitute full payment for all tools, equipment, labor, and materials required to complete this work as specified herein; including but not limited to excavation, shoring, backfill, thrust blocking, removal and disposal of asphalt, disposal of excess soils, road and shoulder restoration, dewatering for District crew to make final connection to existing pipelines, ditch and landscape restoration, survey and construction staking in accordance with the requirements of the Contract Documents. No additional measurements will be made for additional contractor tie-ins to facilitate means and methods.

3. Crushed Surfacing Top Course shall be paid as separate units of work.

DD. Item 31 – Furnish and Place Woven Geotextile for Separation

1. Measurement of Furnish and Place Woven Geotextile for Separation, shall be by the square yard as measured by the width and length of pavement shown on the plan and by the trench horizontal limits per Section 2-09.4.

2. Payment for Furnish and Place Woven Geotextile for Separation shall be by the unit price per square yard named in the Proposal, which price shall constitute full payment for all tools, equipment, labor, and materials required to complete this work as specified herein; including but not limited to placing and in accordance with requirements of Section 2-12.3 and the Contract Documents.

EE. Item 32 – Furnish and Install Gravel Base, including Compaction

1. Measurement of Furnish and Install Gravel Base shall be by the number of tons placed, based on truck scale ticket weights, as determined by the Engineer.

2. Payment for Furnish and Install Gravel Base shall be by the unit price per ton named in the Proposal, which price shall constitute full payment for all tools, equipment, labor, and materials required to complete this work as specified herein; including but not limited to furnishing, hauling, placing, and compacting the gravel base material in accordance with requirements of the Contract Documents.

FF. Item 33 – Furnish and Place Crushed Surfacing Material, Top Course, including Compaction

1. Measurement of Furnish and Place Crushed Surfacing Material, Top Course, shall be by the number of tons placed in the trench and in conformance with the plans, based on truck scale ticket weights.

2. Payment for Furnish and Place Crushed Surfacing Material, Top Course shall be by the unit price per ton named in the Proposal, which price shall constitute full payment for all tools, equipment, labor, and materials required to complete this work as specified herein; including but not limited to placing and compacting top course material in accordance with requirements of the Contract Documents.

GG. Item 34 – Furnish and Install Hot Mix Asphalt Class ½-inch PG 64-22

1. Measurements of Furnish and Install Hot Mix Asphalt Class ½-inch PG 64-22, shall be by the number of tons placed and compacted based on truck ticket weights.

2. Payment for Furnish and Install Hot Mix Asphalt Class ½-inch PG 64-22 shall be by the unit price per ton named in the Proposal, which price shall constitute full payment for all tools, equipment, labor, and materials required to complete this work as specified herein; including but not limited to furnishing, placing and compacting hot mix asphaltic concrete permanent patch in accordance with requirements of the Contract Documents.

3. Temporary patch work shall be considered incidental to pipeline installation and other pay items.

HH. Item 35 – Furnish and Place Topsoil Type B

1. Measurement of Furnish and Place Topsoil Type B shall be by the square yard of completed surface area as shown on the plans or directed by the Engineer.

2. Payment will be made at the contract unit price per square yard (SY) for "Topsoil Type B, Furnish and Place," covering all labor, materials, equipment, and incidentals to furnish, place, and spread Topsoil Type B per Section 8-02.3(4)B and Section 2-03.3(10), with no additional payment for unauthorized or non-conforming work.

II. Item 36 – Seeding and Fertilizing by Hand

1. Measurement of Seeding and Fertilizing by Hand shall be by the square yard of completed surface area as shown on the plans or directed by the Engineer.

2. Payment for Seeding and Fertilizing by Hand will be made at the contract unit price per square yard and shall constitute full payment for all tools, equipment, labor, and materials required to complete this work as specified herein; including but not limited to furnishing and applying seed, fertilizer, and any necessary soil amendments and mulch, as well as hand labor for preparation and application, in accordance with requirements of the Contract Documents.

JJ. Item 37 - Paint Line

1. Measurements for Paint Line shall be according to linear foot of paint lane line installed.
2. Payment for Paint Line shall be made at the unit price per linear foot named in the Proposal, which payment shall be considered full compensation for all tools, labor, equipment, materials, and incidentals for layout, and placement in accordance with the requirements of the Contract Documents.

KK. Item 38 - Minor Changes

1. No measurement of Minor Changes shall be made.
2. Payment for Minor Changes will be made in accordance with Section 1-04.4(1) and Section 1-09.4 of the Standard Specifications.
3. To provide a common Proposal for all Bidders, the Contracting Agency has entered an amount for “Minor Changes” in the Proposal that will become part of the Contractor's total bid.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 31 19
PROJECT MEETINGS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. The OWNER and CONTRACTOR will schedule periodic meetings to review Work progress, coordinate activities, and address Work issues.

B. Related Sections:

1. Section 01 33 00 – Submittal Procedures

1.2 PROJECT MEETINGS

A. Preconstruction Conference**:**

1. Prior to the commencement of Work, a Preconstruction Conference will be held at a mutually agreed time and place. This meeting shall be attended by the CONTRACTOR's Project Manager, its superintendent, and its Subcontractor representatives as the CONTRACTOR deems appropriate. Other attendees will be:
   a. OWNER and OWNER representatives.
   b. Regulatory Agency representatives as appropriate.
   c. Others as requested by CONTRACTOR or OWNER.
2. The CONTRACTOR shall bring to the Preconstruction Conference submittals in accordance with Section 01 33 00 – Submittal Procedures.
3. The purpose of the conference is to designate responsible personnel and establish a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established. The complete agenda will be furnished to the CONTRACTOR prior to the meeting date. However, the CONTRACTOR should be prepared to discuss all the items listed below.
   a. Status of CONTRACTOR's insurance and bonds.
   b. CONTRACTOR's tentative schedules.
   c. Transmittal, review, and distribution of CONTRACTOR's submittals.
   d. Federal and State Prevailing Wage Requirements
   e. Processing applications for payment.
   f. Maintaining record documents.
   g. Critical work sequencing.
   h. Field decisions and Change Orders.
   i. Use of Site, office and storage areas, security, housekeeping, and OWNER's needs.
   j. Major equipment deliveries and priorities.
   k. CONTRACTOR's assignments for safety and first aid.
   l. CONTRACTOR’s Daily Report Form.
   m. Submittal Transmittal Form (Section 1 33 00).
   n. Request for Information (RFI) Form, which is appended at the end of this section, or the CONTRACTOR’s standard form as approved by the OWNER.

o. Deviation Request Form, which is appended at the end of this section, or the CONTRACTOR's standard form as approved by the OWNER.

4. The OWNER will preside at the preconstruction conference and will arrange for keeping and distributing the minutes to all persons in attendance.
5. The CONTRACTOR and its Subcontractors should plan for the conference to take no less than 1 hour. The meeting will cover the items listed in paragraphs 2 and 3, and review of the Drawings and Specifications, with the OWNER.

B. Progress Meetings:

1. The CONTRACTOR shall schedule and hold regular on-site progress meetings at least biweekly and at other times as requested by OWNER or as required by progress of the Work. The CONTRACTOR and all active Subcontractors shall attend each meeting. CONTRACTOR may at its discretion request attendance by representatives of its suppliers, manufacturers, and other Subcontractors.
2. The OWNER will preside at the progress meetings and will arrange for keeping and distributing the minutes. The purpose of the meetings is to review the progress of the WORK, maintain coordination of efforts, discuss changes in scheduling, and resolve other problems that may develop. During each meeting, the CONTRACTOR shall present any issues that may impact its progress with a view to resolving these issues expeditiously.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

REQUEST FOR INFORMATION

RFI NO: _____

Owner: Public Utility District No. 1 of Skagit County

Contractor: _____

Project: Pipeline Relocation at Alger Interchange

Project No. 14018 _____

(FOR CONTRACTOR'S USE)

DATE:

SUBJECT:

DESCRIPTION:

CONTRACTOR'S AUTHORIZED SIGNATURE:

(FOR ENGINEER'S USE)

DATE:
SUBJECT:
DESCRIPTION:

ENGINEER'S AUTHORIZED SIGNATURE:

Distribution:

1. **Contractor**
2. **Owner**
3. **Project Manager**
4. **Construction Manager**
5. **Project Files**

Skagit PUD
PUBLIC UTILITY DISTRICT

DEVIATION REQUEST

FILE: NO: _____

Owner _____ No. _____

Contractor _____ Project No. **14018**

Project **Pipeline Relocation at Alger Interchange**

Date _____

Subject _____

Sheet No. _____ Specification _____

Any change in contract time or cost? _____

Proposed: Approved ☐ Disapproved ☐

_____ _____
Contractor's Signature Engineer's Signature

SECTION 01 32 00
CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. This Section includes administrative and procedural requirements and constraints for scheduling, recording, and reporting progress.
2. Constraints on the construction schedule are imposed by permits, environmental regulations, the OWNER, and other agency requirements. The CONTRACTOR is expected to use this information in preparing construction schedules to ensure adequate planning and performance of the Work by the CONTRACTOR in compliance with permits and other regulatory constraints.

B. Related Sections:

1. Section 01 33 00 – Submittal Procedures
2. Section 01 41 00 – Regulatory Requirements

1.2 SUBMITTALS

A. Submittals for this section shall be in accordance with Section 01 33 00 of these Specifications.

B. Construction schedule shall clearly show restricted portions of the Work with respect to time and hours of work.

PART 2 PRODUCTS

2.1 NETWORK DIAGRAM

A. The network diagram shall be printed on sufficient-sized sheets with a font size large enough to clearly show all activities and scheduling information. The network diagram shall have a title block including the print date, revision number, contract number, CONTRACTOR name, and Project title.

PART 3 EXECUTION

3.1 SCHEDULING OF WORK

A. The scheduling of the Work under the Contract shall be performed by the CONTRACTOR in accordance with the requirements of this section. Where submittals are required hereunder, the CONTRACTOR shall submit four copies of each submittal item.

B. Scheduling terms and practices shall conform to the standards established in “Construction Planning and Scheduling, Second Edition”, published by the Associated General Contractors of America. Except for weekly look-ahead schedules, all schedules shall meet these general requirements and provide the following information:

1. Include all activities necessary to physically complete the Work.
2. Show the planned order of activities in a logical sequence.
3. Show durations of activities in working days.
4. Show activity durations that are reasonable for the intended Work.

5. Show activity durations in sufficient detail to evaluate the progress of individual activities daily.
6. Show the completion of all Work within the authorized contract time.

3.2 CONSTRUCTION PROGRESS SCHEDULES

A. The CONTRACTOR shall submit project schedule at the Preconstruction Conference which shall serve as the CONTRACTOR's Plan of Operation for the period of the Contract Time and to identify when the CONTRACTOR intends to complete all Work within the Contract Time. The schedule document shall reflect the Construction and Schedule Constraints identified in this Section.

B. The Progress Schedule may be a critical path method (CPM) schedule, Gantt chart, or another standard schedule format. Regardless of which format is used, the schedule shall identify the critical path. The Progress Schedule shall indicate the relationships and time frames in which the various components of the Work will be made substantially complete and placed into service in order to meet the project milestones. For the main Work, sufficient detail shall be included for the identification of subdivisions of major components into such activities as:

1. Shop drawing submittals
2. Pipe fabrication and delivery
3. Permit and other scheduling constraints
4. Installation of erosion/sedimentation control measures
5. Traffic Control Plan signage procurement and installation
6. Trench excavation and backfill
7. Restoration and revegetation
8. Pipeline testing and disinfection
9. Other important activities for each major facility within the overall project scope.

C. If requested by the OWNER, the OWNER and the CONTRACTOR shall meet to review and discuss the Project Schedule within 5 working days after they have been submitted to the OWNER. The OWNER’s review and comment on the Project Schedule shall be limited to Contract conformance (with the construction and schedule constraints as stated in Section 3.04). The CONTRACTOR shall make corrections to the Project Schedule necessary to comply with the Contract requirements and shall adjust the Project Schedule to incorporate any missing information requested by the OWNER.

D. Within 2 working days of receipt of comments, the CONTRACTOR shall have revised the original Progress Schedule submittal to address all review comments from the review meeting and resubmit revised Progress Schedule for the OWNER'S review. The OWNER, within 2 working days from the date that the CONTRACTOR submitted his revised schedule will either (1) accept the Project Schedule as submitted, or (2) advise the CONTRACTOR in writing to revise any part or parts of the Project Schedule which either do not meet the Contract requirements or are unsatisfactory for the OWNER to monitor the project's progress and status or evaluate monthly payment requests by the CONTRACTOR. The OWNER reserves the right to require that the CONTRACTOR adjust, add to, or clarify any portion of the Project Schedule which may later be insufficient for the monitoring of the Work or approval of partial payment requests. No additional compensation will be provided for such adjustments or clarifications.

E. The acceptance of the CONTRACTOR'S schedule by the OWNER will be based solely upon the schedule's compliance with the Contract requirements. By way of the CONTRACTOR assigning activity durations and proposing the sequence of the Work, the CONTRACTOR agrees to utilize sufficient and necessary management and other resources to perform the Work in accordance with the schedule. Upon submittal of a schedule update, the updated schedule shall be considered the "current" project schedule.

1. Submission of the CONTRACTOR’s progress schedule to the OWNER shall not relieve the CONTRACTOR of total responsibility for scheduling, sequencing, and pursuing the Work to comply with the requirements of the Contract Documents, including adverse effects such as delays resulting from ill-timed activity scheduling.

F. Following the acceptance of the CONTRACTOR’s schedule, the CONTRACTOR shall monitor the progress of the Work and adjust the schedule at each meeting to reflect actual progress and any changes in planned future activities. Each schedule update submitted must be complete including all information requested in the original schedule submittal. Each update shall continue to show all activities including those already completed. These completed activities shall accurately reflect the "as built" information by indicating when the activity was actually started and completed.

1. Neither the submission nor the updating of the CONTRACTOR’s original schedule submittal nor the submission, updating, change or revision of any other report, curve, schedule or narrative submitted to the OWNER by the CONTRACTOR under this Contract, nor the OWNER’s review or acceptance of any such report, curve, schedule or narrative shall have the effect of amending or modifying, in any way, the Contract completion date or milestone dates or of modifying or limiting, in any way, the Contractor’s obligations under this Contract. Only a signed, fully executed change order can modify these contractual obligations.

G. The schedule update submittal will be reviewed with the CONTRACTOR during the construction progress meeting. The goal of these meetings is to enable the CONTRACTOR and the OWNER to initiate appropriate remedial action to minimize any known or foreseen delay in completion of the Work and to determine the amount of Work completed since the previous schedule update. The status of the Work will be determined by the percent completion of each activity shown on the schedule. These meetings are considered a critical component of the overall schedule update submittal and the CONTRACTOR shall have appropriate personnel attend. As a minimum, these meetings shall be attended by the contractor’s Project Manager and General Superintendent.

3.3 CHANGE ORDERS

A. Upon approval of a change order, or upon receipt by the CONTRACTOR of authorization to proceed with additional Work, the change shall be reflected in the next submittal of the schedule by the CONTRACTOR.

3.4 PROJECT CONSTRAINTS

A. Schedule Constraints

1. Some permits may have specific restrictions on construction timing, work hours and type of construction activity allowed. The CONTRACTOR shall abide by all restrictions imposed by these permits.

2. Refer to Permissible Construction Windows shown on the plan and profile drawings for schedule constraints.
3. The CONTRACTOR shall prepare a construction schedule, which incorporates the schedule information shown on the drawings and in **Table 1** at the end of this section. These constraints have been identified here for the convenience of the CONTRACTOR. However, all schedule constraints identified in permits, regulations, or elsewhere in the Specifications or Drawings shall be incorporated into the CONTRACTOR's schedule, whether included in **Table 1** or not.

B. Property Constraints

1. The CONTRACTOR shall not impact or trespass on adjacent private property without an executed easement.
2. The CONTRACTOR shall be available for periodic construction coordination meetings with landowners as the CONTRACTOR proceeds with activities along the pipeline alignment. These meetings will ensure the proper coordination of protection for structures and utilities, temporary utility shutdowns (if necessary), traffic control, safety, minimizing impacts to business operations, etc.

C. Right-of-Way Constraints

1. Working hours for the project shall be from **Table 1**.

TABLE 1. CONSTRUCTION TIMING CONSTRAINTS SUMMARY

Location/ Jurisdiction[1]	Activity	Constraints[2]
WSDOT ROW	Closure Days and Hours	• Closure days and hours shall be 8:00PM through 5:00AM nightly. • Allowable traffic hold hours shall be Sunday through Thursday 11:00PM to 4:00AM nightly. • No closures will be allowed from noon the day prior to a holiday or holiday weekend through noon the day following a holiday or holiday weekend. It is a holiday weekend when the holiday falls on a Friday, Saturday, Sunday or Monday.
SKCO ROW	Closure Days and Hours	Same as WSDOT

Notes:
1. Per locations noted on plan/profile drawings.
2. Unless otherwise noted, a time period is when construction can occur. If there is a conflict between permits/approvals, the more restrictive constraint will apply.

END OF SECTION

SECTION 01 33 00
SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Wherever submittals are required hereunder, all such submittals by the CONTRACTOR shall be submitted to the OWNER.

B. Related Sections:

1. Section 01 31 19 – Project Meetings
2. Section 01 32 00 – Construction Progress Documentation
3. Section 01 77 00 – Closeout Procedures

1.2 DEFINITIONS

A. Shop Drawings:

1. See General Conditions.
2. Product data and samples are Shop Drawing information.
3. Manufacturer Certification

B. Miscellaneous Submittals:

1. Submittals other than Shop Drawings and O&M Manuals.
2. Representative types of miscellaneous submittal items include but are not limited to:
   a. Construction Stormwater Pollution Prevention Plan (SWPPP)
   b. Spill Prevention Control and Countermeasure Plan (SPCC)
   c. Site-Specific Health and Safety Plan
   d. Instrumentation and control commissioning reports.
   e. Warranties.
   f. Construction photographs.

1.3 PRECONSTRUCTION MEETING SUBMITTALS

A. At the Preconstruction Meeting referred to in Section 01 31 19, Project Meetings, which shall be held within ten (10) days of Notice to Proceed, the CONTRACTOR shall submit the following items to the OWNER for review:

1. A preliminary schedule of Shop Drawings, Samples, and proposed Substitute ("Or-Equal") requests.
2. A list of all submittals that will be prepared and a schedule for submission to the OWNER.
3. A list of all permits and licenses the CONTRACTOR is obtaining per the requirements of these Contract Documents indicating the agency required to grant the permit, the expected date of submittal for the permit, and the required date for receipt of the permit.
4. A 30-day plan of operation in accordance with Section 01 32 00 – Construction Progress Documentation.
5. A Progress Schedule in accordance with Section 01 32 00 – Construction Progress Documentation, which identifies critical activities to meet the project milestones.

6. Erosion Control Plan for areas outside of the right-of-way and any alternative Traffic Control Plan.

1.4 PREPARATION OF SUBMITTALS

A. General:

1. All submittals and all pages of all copies of a submittal shall be completely legible.
2. Submittals that, in the Engineer's sole opinion, are illegible will be returned without review.

B. Shop Drawings:

1. Wherever called for in the Contract Documents, or where required by the OWNER, the CONTRACTOR shall furnish to the OWNER two copies for review, plus one reproducible copy (When feasible, an electronic copy may be substituted), of each shop drawing submittal. The term "Shop Drawings" as used herein shall be understood to include detailed design calculations, shop drawings, fabrication, and installation drawings, erection drawings, lists, graphs, catalog sheets, data sheets, and similar items. Whenever the CONTRACTOR is required to submit design calculations as part of a submittal, such calculations shall bear the signature and seal of an engineer registered in the appropriate branch in Washington State, unless otherwise directed.
2. All Shop Drawing submittals shall be accompanied by the OWNER's standard submittal transmittal form which is appended at the end of this section or the CONTRACTOR's standard transmittal form approved by the OWNER. Any submittal not accompanied by such a form, or where all applicable items on the form are not completed, will be returned for resubmittal.
3. Except as may otherwise be indicated herein, the OWNER will return prints of each submittal to the CONTRACTOR with its comments noted thereon, within 7 Calendar Days following their receipt by the OWNER. It is considered reasonable that the CONTRACTOR shall make a complete and acceptable submittal to the OWNER by the second submission of a submittal item. The OWNER reserves the right to withhold money due to the CONTRACTOR to cover additional costs of the submittal review beyond the second submittal. The OWNER'S maximum review period for each submittal, including all resubmittals, will be 14 Calendar Days per submittal.
4. The OWNER's review of CONTRACTOR shop drawings submittals shall not relieve the CONTRACTOR of the entire responsibility for the correctness of details and dimensions. The CONTRACTOR shall assume all responsibility and risk for any misfits due to any errors in CONTRACTOR submittals. The CONTRACTOR shall be responsible for the dimensions and the design of adequate connections and details.
5. Numbering letter of transmittal:
   a. Assign submittal numbers beginning with "001" and increasing sequentially with each additional transmittal.
6. Describing transmittal contents:
   a. Provide listing of each component or item in submittal capable of receiving an independent review action.
   b. Identify for each item:
      1) Manufacturer and Manufacturer's Drawing or data number.
      2) Contract Drawing Section or detail number if applicable.
      3) Specification Article/Paragraph number if applicable.

4) Unique page numbers for each page of each separate item.

c. When submitting "or-equal" items that are not the products of named manufacturers, include the words "or-equal" in the item description.

7. Resubmittals:
   a. Number with original root number and a suffix letter starting with "A" on a (new) duplicate transmittal form.
   b. Do not increase the scope of any prior transmittal.
   c. Account for all components of prior transmittal.
      1) If items in prior transmittal received "A" or "B" Action code, list them and indicate "A" or "B" as appropriate.
         a) Do not include submittal information for items listed with prior "A" or "B" Action in resubmittal.
      2) Indicate "Outstanding-To Be Resubmitted at a Later Date" for any prior "C" or "D" Action item not included in resubmittal.
         a) Obtain Engineer's approval to exclude items.
8. Contractor shall not use red color for marks on transmittals.
   a. Duplicate all marks on all copies transmitted, and ensure marks are photocopied reproducible.
   b. Outline Contractor marks on reproducible transparencies with a rectangular box.
9. Transmittal contents:
   a. Coordinate and identify Shop Drawing contents so that all items can be easily verified by the Engineer.
   b. Identify equipment or material use, Drawing detail reference, weight, and other Project specific information.
   c. Provide sufficient information together with technical cuts and technical data to allow an evaluation to be made to determine that the item submitted is in compliance with the Contract Documents.
   d. Submit items such as equipment brochures, cuts of fixtures, product data sheets or catalog sheets on 8½ x 11-inch pages.
      1) Indicate exact item or model and all options proposed.
   e. When a Shop Drawing submittal is called for in any Specification Section, include as appropriate, scaled details, sizes, dimensions, performance characteristics, capacities, test data, anchoring details, installation instructions, storage and handling instructions, color charts, layout Drawings, rough-in diagrams, wiring diagrams, controls, weights and other pertinent data in addition to information specifically stipulated in the Specification Section.
      1) Arrange data and performance information in format similar to that provided in Contract Documents.
      2) Provide, at minimum, the detail specified in the Contract Documents.
   f. If proposed equipment or materials deviate from the Contract Drawings or Specifications in any way, clearly note the deviation and justify the said deviation in detail in a separate letter immediately following transmittal sheet.

1.5 ENGINEER'S REVIEW ACTION

A. Shop Drawings and Samples:

1. Items within transmittals will be reviewed for overall design intent and will receive one of the following actions:
   a. A - Furnish as Submitted
   b. B - Furnish as Noted
   c. C - Revise and Resubmit
   d. D - Rejected
   e. E - Engineer's Review Not Required
2. Submittals received will be initially reviewed to ascertain inclusion of Contractor's approval stamp.
   a. Submittals not stamped by the Contractor or stamped with a stamp containing language other than that specified herein will not be reviewed for technical content and will be returned without any action.
3. In relying on the representation on the Contractor’s review and approval stamp, Owner and Engineer reserve the right to review and process poorly organized and poorly described submittals as follows:
   a. Submittals transmitted with a description identifying a single item and found to contain multiple independent items:
      1) Review and approval will be limited to the single item described on the transmittal letter.
      2) Other items identified in the submittal will:
         a) Not be logged as received by the Engineer.
         b) Be removed from the submittal package and returned without review and comment to the Contractor for coordination, description and stamping.
         c) Be submitted by the Contractor as a new series number, not as a re-submittal number.
   b. Engineer, at Engineer’s discretion, may revise the transmittal letter item list and descriptions, and conduct review.
      1) Unless Contractor notifies Engineer in writing that the Engineer’s revision of the transmittal letter item list and descriptions was in error, Contractor’s review and approval stamp will be deemed to have applied to the entire contents of the submittal package.
4. Submittals returned with Action "A" or "B" are considered ready for fabrication and installation.
   a. An electronic copy of said submittal will be returned to the Contractor.
   b. If for any reason a submittal that has an "A" or "B" Action is resubmitted, it must be accompanied by a letter defining the changes that have been made and the reason for the resubmittal.
   c. Destroy or conspicuously mark "SUPERSEDED" all documents having previously received "A" or "B" Action that are superseded by a resubmittal.
5. Submittals with Action "A" or "B" combined with Action "C" (Revise and Resubmit) or "D" (Rejected) will be individually analyzed giving consideration as follows:
   a. The portion of the submittal given "C" or "D" will not be distributed (unless previously agreed to otherwise at the Preconstruction Meeting).

1) One (1) copy or the one (1) transparency of the "C" or "D" Drawings will be marked up and returned to the Contractor.
2) Correct and resubmit items so marked.

b. Items marked "A" or "B" will be fully distributed.
c. If a portion of the items or system proposed are acceptable, however, the major part of the individual Drawings or documents are incomplete or require revision, the entire submittal may be given "C" or "D" Action.
1) This is at the sole discretion of the Engineer.
2) In this case, some Drawings may contain relatively few or no comments or the statement, "Resubmit to maintain a complete package."
3) Distribution to the Owner and field will not be made (unless previously agreed to otherwise).

6. Failure to include any specific information specified under the submittal paragraphs of the Specifications will result in the submittal being returned to the Contractor with "C" or "D" Action.
7. Calculations required in individual Specification Sections will be received for information purposes only, as evidence calculations have been performed by individuals meeting specified qualifications and will be returned stamped "E. Engineer's Review Not Required" to acknowledge receipt.
8. All costs associated with the Engineer’s review of any Shop Drawing resubmitted more than once shall be borne by the Contractor with said costs being deducted from the Contract Price.
9. Transmittals of submittals that the Engineer considers as "Not Required" submittal information, which is supplemental to but not essential to prior submitted information, or items of information in a transmittal which have been reviewed and received "A" or "B" Action in a prior submittal, will be returned with Action "E. Engineer’s Review Not Required."
10. Samples may be retained for comparison purposes.
a. Remove samples when directed.
b. Include in bid all costs of furnishing and removing samples.
11. Approved samples submitted or constructed constitute criteria for judging completed work.
a. Finished work or items not equal to samples will be rejected.

1.6 SAMPLES

A. Whenever Specification samples are required, the CONTRACTOR shall submit not less than three samples of each item or material to the OWNER for acceptance at no additional cost to the OWNER.

B. Samples, as required herein, shall be submitted for acceptance a minimum of 7 Calendar Days prior to ordering such material for delivery to the job site and shall be submitted in an orderly sequence so that dependent materials or equipment can be assembled and reviewed without causing delays in the WORK.

C. All samples shall be individually and indelibly labeled or tagged, indicating thereon all specified physical characteristics and the Manufacturer’s name for identification and submitted to the OWNER for acceptance. Upon receiving acceptance of the OWNER, one set of the samples will be stamped and dated by the OWNER and returned to the CONTRACTOR, one set of samples

will be retained by the OWNER, and one set of samples shall remain at the job site until completion of the WORK.

D. Unless indicated otherwise, all colors and textures of specified items presented in sample submittals shall be from the manufacturer's standard colors and standard materials, products, or equipment lines. If the samples represent non-standard colors, materials, products, or equipment lines and their selection will require an increase in contract time or price, the CONTRACTOR will clearly indicate the same on the transmittal page of the submittal.

1.7 CONTRACTOR'S SCHEDULE SUBMITTAL

A. See Section 01 32 00 for CONTRACTOR's schedule submittal requirements.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

Contractor's Submittal Transmittal Form

For all contractor submittals, including shop drawings, samples calculation, data, or other	Date	Transmittal No.

Project Name:

Owner: Skagit PUD No. 1	Contractor:
Attention: Wendy LaRocque	Attention:
Address: 1415 Freeway Drive Mount Vernon, WA 98273	Address:

Action Legend:
- A – Furnish as Submitted
- B – Furnish as Noted
- C – Revise and Resubmit
- D – Rejected
- E – Engineer's Review Not Required

This is: Check one
- ☐ an original submittal
- ☐ a 2nd submittal
- ☐ a ____ submittal

Item No.	Description	Spec Section or Drawing No.	Action Taken

District Reviewer:

Contractor to complete either (a) or (b), following:

☐ (a) We have verified that the materials or equipment contained in this submittal meets all the requirements specified or shown (no exceptions)

☐ (b) We have verified that the material or equipment contained in this submittal meets all the requirements specified or shown, except for the following deviations (List Deviations):

Contractor's Authorized Representative _____

SECTION 01 35 29
HEALTH, SAFETY, AND EMERGENCY RESPONSE PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes the administrative and procedural requirements for health, safety, and emergency response procedures.

1.2 RELATED SECTIONS

A. Section 01 33 00 – Submittal Procedures

1.3 REQUIREMENTS

A. CONTRACTOR and all subcontractors shall:

1. Select all appropriate safety equipment required to do the job and furnish it to workers.
2. Participate in coordination of all safety issues among all contractors on the job.
3. Make your Accident Prevention Plan [APP] and Health and Safety Plan [HASP] available and accessible to your workers at the site.
4. Communicate to all workers the work rules and abide by said rules. Implement a disciplinary plan for safety or work rule violations which is consistently enforced.
5. Provide weekly documentation relating to your safety compliance, identification of hazards or safety violations, actions taken to correct those hazards and safety training undertaken.
6. Provide safety training on a regular basis to all workers as required by WISHA and other regulations.
7. Conduct safety inspections as required by the Washington Industrial Safety and Health Act [WISHA] and report all identified hazards.

1.4 SUBMITTALS

A. Provide the Table of Contents for the Accident Prevention Plan.

B. A written site-specific Health and Safety Plan for the CONTRACTOR and each SUBCONTRACTOR which identifies anticipated job safety hazards within the scope of CONTRACTOR's and subcontractor's work for all phases of the CONTRACT, including the specific means used to address each hazard prior to starting the job. The APP and HASP must conform to the requirements of WISHA.

C. Submittals shall be furnished prior to starting the job.

1.5 WARRANTIES

A. CONTRACTOR warrants that before starting the job, it will develop and furnish the District with a copy of its written APP and site-specific HASP, which identifies anticipated job safety hazards within the scope of its contract and for all phases of its contract and which addresses the specific means it will use to address each hazard.

B. CONTRACTOR warrants that it's Health and Safety Plan conforms to the requirements of the Washington Industrial Safety and Health Act.

C. CONTRACTOR warrants it will ensure that its employees follow all APP and HASP policies and work rules.

D. CONTRACTOR warrants that it will communicate all work rules to its employees and that it has a disciplinary plan for safety or work rule violations which it consistently enforces and will continue to enforce throughout the length of this contract.

E. CONTRACTOR warrants that it will select and furnish to its employees all appropriate safety equipment and participate fully in the coordination of all safety issues among all CONTRACTORs and subcontractors on the job.

F. CONTRACTOR warrants that it will make its APP and HASP available and accessible at the site to all its employees.

G. CONTRACTOR agrees that it will have available in its job file weekly documentation relating to CONTRACTOR's safety compliance, identification of hazards or safety violations, actions taken to correct those hazards and safety training undertaken.

H. CONTRACTOR warrants that it will provide safety training on a regular basis to all workers as required by WISHA and other regulations, will conduct safety inspections as required by WISHA and will report all identified hazards.

I. CONTRACTOR warrants and agrees that it and each of its employees will comply with all safety rules and regulations, including, but not limited to, WISHA regulations.

J. CONTRACTOR agrees to undertake any abatement actions required as a result of the discovery of violations.

K. CONTRACTOR warrants and agrees to require each subcontractor to have its own APP and site-specific HASP.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 41 00
REGULATORY REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. This section describes the Contract's applicable permits and easements.
2. As shown in the vicinity map on the Contract Plans, Work will occur within the County of Skagit, State of Washington.

B. Related Sections:

1. Section 01 32 00 – Construction Progress Documentation
2. Section 01 77 00 – Closeout Procedures

1.2 PERMITS

A. Keep fully informed of all local ordinances, as well as state and federal laws, which in any manner affect the Work specified herein. At all times, comply with said ordinances, laws, and regulations, and protect and indemnify the OWNER and its officers and agents against any claim or liability arising from or based on the violation of such laws, ordinances, or regulations. Secure and pay for all permits, licenses, and inspection fees necessary for prosecution and completion of the Work unless otherwise specified.

B. Permits:

1. OWNER will provide and pay all fees for the permits shown in **Table 1**.
2. Comply with all conditions attached to applicable federal, state, and local permits.

Agency/Jurisdiction	Permit Name	Permit #	Status	Issued Date
WSDOT	Franchise	UF10322CRAM02	Approved	04/23/2025
Skagit County	ROW	UTIL-2025-0102	Approved	04/24/2025
Skagit County	Critical Areas	CAO-2025-029	Approved	03/12/2025

1.3 OWNER OBTAINED EASEMENTS

A. The OWNER may have obtained easements for portions of the Work as required. These easement limits are shown on the Drawings.

B. Easements provide for the use of private property for construction purposes or for access during construction to the extent indicated in the easements. It shall be the CONTRACTOR's responsibility to:

1. Determine the limitations in the easement obtained in every case and abide by all requirements and provisions of the easement.

2. Confine construction operations within the easement limits or street right-of-way limits or make special arrangements with the property owner and appropriate public agency for the additional area required.
3. Pay for any property used outside the prescribed limits and easements provided for in the Contract Documents.
4. Repair to an equal to or better condition any property damaged either inside or outside the limits of the easements.
5. Remove, protect, and reinstall all fences, mailboxes, paving, utilities, or other items encountered on public or private property.
6. If the CONTRACTOR makes "special arrangements" with the property owner, then the CONTRACTOR shall inform the OWNER of these arrangements and provide written documents.
7. CONTRACTOR may negotiate with the adjacent property owner if additional easements are required.

C. CONTRACTOR shall comply with all applicable terms and conditions contained in such easements and additional easements that the CONTRACTOR may acquire.

1.4 PERMITS AND EASEMENTS OBTAINED AFTER BID SUBMITTAL

A. If, after the bid submittal date, the OWNER obtains any permits or easements that require changes to the Work hereunder and thereby cause an increase or decrease in the cost of, or the time required for, the performance of the Work, submit information sufficient for the OWNER to determine the extent of the effects on the cost and/or schedule. If the OWNER agrees the cost and/or schedule will be affected by such changes, such effects will be handled in accordance with the General Conditions. The OWNER will provide CONTRACTOR with a copy of any such permits or easements. The CONTRACTOR shall comply with all applicable terms and conditions contained in such permits or easements.

1.5 EASEMENTS AND AGREEMENTS TO BE OBTAINED BY THE CONTRACTOR

A. Obtain all other easements, permits and agreements required to perform the Work. Prepare and submit to the proper authority all information required for the issuance of such easements, permits, and agreements and pay all costs thereof, including agency inspections unless specifically provided otherwise in these Contract Documents. Submit a copy of each such easement, permit, and agreement to the OWNER.

1.6 POSTING PERMITS

A. Post permits at the site of the Work if required.

1.7 RESTORATION OF PROPERTY

A. Comply with all property restoration requirements contained in permits, easements, and agreements to complete the Work.

B. Restoration of road shoulders within the right of way, driveways, and private property and landscaping outside the neat lines of Work damaged by the CONTRACTOR through the course of the Work or by accident shall be repaired to same at no cost to the OWNER.

C. Whenever any Work is performed on property where an easement, permit, or agreement has been obtained by the CONTRACTOR, submit to the OWNER, before final payment under Section 01

77 00 – Closeout Procedures, a written release from the property owner or proper authority acting for the property owner, of each property affected, stating that the restoration of structures and surfaces has been completed to the satisfaction of the property owner and that the property owner has no claims for damages on account of such restoration. Use the release form provided by the OWNER. If, in the opinion of the OWNER, the release is unreasonably withheld by the property owner, the OWNER may, in its sole discretion, accept the portion of the Work involved and cause final payment to be made.

1.8 HOURS OF WORK

A. Comply with Section 01 32 00 - Construction Progress Documentation.

1.9 LICENSES

A. The CONTRACTOR is responsible for obtaining all required licenses including all required Business License(s).

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

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Skagit PUD
PUBLIC UTILITY DISTRICT

OWNER RELEASE FORM

To: _____

_____

_____

We (I), the undersigned, hereby acknowledge that _____

contractor, has satisfactorily restored the surface of the property owned by us (me) upon, or

under which said contractor has performed Work pursuant to contract with the _____

_____

_____

_____
(Owner)

_____
(Owner)

Address: _____

_____

Date: _____

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SECTION 01 42 13
ABBREVIATIONS AND ACRONYMS

PART 1 GENERAL

1.1 SUMMARY

A. Wherever in these Specifications references are made to the standards, specifications, or other published data of the various international, national, regional, or local organizations, such organizations may be referred to by their acronym or abbreviation only. As a guide to the user of these Specifications, the following acronyms or abbreviations which may appear in these Specifications shall have the meanings indicated herein.

1.2 ABBREVIATIONS

AAMA	Architectural Aluminum Manufacturer's Association
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute, Inc.
API	American Petroleum Institute
APWA	American Public Works Association
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASQC	American Society for Quality Control
ASTM	American Society for Testing and Materials
AWS	American Welding Society
AWWA	American Water Works Association
BBC	Basic Building Code, Building Officials and Code Administrators International
BNSF	Burlington Northern Santa Fe Railroad
BPA	Bonneville Power Administration
CRSI	Concrete Reinforcing Steel Institute
EIA	Electronic Industries Association
ETL	Electrical Test Laboratories
EPA	United States Environmental Protection Agency
HPA	Hydraulic Project Approval
IAPMO	International Association of Plumbing and Mechanical Officials
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronics Engineers
IES	Illuminating Engineering Society
ISA	Instrument Society of America
ISO	International Organization for Standardization
ITE	Institute of Traffic Engineers
MSS	Manufacturers Standardization Society
NAAMM	National Association of Architectural Metal Manufacturer's
NACE	National Association of Corrosion Engineers
NBS	National Bureau of Standards
NCCLS	National Committee for Clinical Laboratory Standards

NEC	National Electrical Code
NEMA	National Electrical Manufacturer's Association
NFPA	National Fire Protection Association
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
PPI	Plastic Pipe Institute
PUD	Public Utility District No. 1 of Skagit County
RWMA	Resistance Welder Manufacturer's Association
SAE	Society of Automotive Engineers
SAMA	Scientific Apparatus Makers Association
SMA	Screen Manufacturers Association
SPFA	Steel Plate Fabricators Association
SPR	Simplified Practice Recommendation
SSPC	Steel Structures Painting Council
SSPWC	Standard Specifications for Public Works Construction
UBC	Uniform Building Code
UL	Underwriters Laboratories, Inc.
UPRR	Union Pacific Railroad
WSDOT	Washington Department of Transportation
WCRSI	Western Concrete Reinforcing Steel Institute
WDFW	Washington Department of Fish and Wildlife
WISHA	Washington Industrial Safety and Health Administration
WRI	Wire Reinforcement Institute, Inc.

Other acronyms or abbreviations may appear and shall be determined by the context in which they are used.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 42 19
REFERENCE STANDARDS

PART 1 GENERAL

1.1 SUMMARY

A. **Titles of Sections and Paragraphs:** Captions accompanying specification sections and paragraphs are for convenience of reference only, and do not form a part of the Specifications.

B. **Applicable Publications**: Whenever in these Specifications references are made to published specifications, codes, standards, or other requirements, it shall be understood that wherever no date is specified, only the latest specifications, standards, or requirements of the respective issuing agencies which have been published as of the date that the Work is advertised for bids, shall apply; except to the extent that said standards or requirements may be in conflict with applicable laws, ordinances, or governing codes. No requirements set forth herein or shown on the Drawings shall be waived because of any provision of, or omission from, said standards or requirements.

C. **Specialists, Assignments**: In certain instances, specification text requires (or implies) that specific work is to be assigned to specialists or expert entities, who must be engaged for the performance of that work. Such assignments shall be recognized as special requirements over which the CONTRACTOR has no choice or option. These requirements shall not be interpreted so as to conflict with the enforcement of building codes and similar regulations governing the Work; also, they are not intended to interfere with local union jurisdiction settlements and similar conventions. Such assignments are intended to establish which party or entity involved in a specific unit of work is recognized as "expert" for the indicated construction processes or operations. Nevertheless, the final responsibility for fulfillment of the entire set of contract requirements remains with the CONTRACTOR.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. Without limiting the generality of other requirements of the Specifications, all work specified herein shall conform to or exceed the requirements of applicable codes and the applicable requirements of the following documents.

B. References herein to "Building Code" or "Uniform Building Code" shall mean Uniform Building Code of the International Conference of Building Officials (ICBO). Similarly, references to "Mechanical Code" or "Uniform Mechanical Code," "Plumbing Code" or "Uniform Plumbing Code," "Fire Code" or "Uniform Fire Code," shall mean Uniform Mechanical Code, Uniform Plumbing Code and Uniform Fire Code of the International Conference of the Building Officials (ICBO). "Electric Code" or "National Electric Code (NEC)" shall mean the National Electric Code of the National Fire Protection Association (NFPA). The latest edition of the codes as approved by the Municipal Code and used by the local agency as of the date that the Work is advertised for bids, as adopted by the agency having jurisdiction, shall apply to the Work herein, including all addenda, modifications, amendments, or other lawful changes thereto.

C. In case of conflict between codes, reference standards, drawings and the other Contract Documents, the most stringent requirements shall govern. All conflicts shall be brought to the attention of the OWNER for clarification and directions prior to ordering or providing any materials or furnishing labor. The CONTRACTOR shall bid for the most stringent requirements.

D. The CONTRACTOR shall construct the Work specified herein in accordance with the requirements of the Contract Documents and the referenced portions of those referenced codes, standards, and specifications listed herein.

E. **Applicable Standard Specifications**: References in the Contract Documents to "Standard Specifications" shall mean the Standard Specifications for Road, Bridge, and Municipal Construction of the Washington State Department of Transportation and Washington State Chapter of American Public Works Association, 2025 edition, which applicable parts are incorporated herein and made a part of these Documents by specific reference thereto. If requirements contained in the Standard Specifications are modified by or conflict with supplemental information in these Contract Documents, the requirements of these Contract Documents shall prevail.

F. References herein to "OSHA Regulations for Construction" shall mean **Title 29, Part 1926, Construction Safety and Health Regulations,** Code of Federal Regulations (OSHA), including all changes and amendments thereto.

G. References herein to "OSHA Standards" shall mean **Title 29, Part 1910, Occupational Safety and Health Standards,** Code of Federal Regulations (OSHA), including all changes and amendments thereto.

H. References herein to "WISHA Standards" shall mean **Chapter 296 - 24 WAC, General Safety and Health Standard,** State of Washington, Division of Industrial Safety and Health, (WISHA) including all changes and amendments thereto.

I. References herein to "WISHA Standards for Construction" shall mean **Chapter 296 - 155 WAC, Safety Standards for Construction Work,** State of Washington, Division of Industrial Safety and Health, (WISHA) including all changes and amendments thereto.

1.3 REGULATIONS RELATED TO HAZARDOUS MATERIALS

A. The CONTRACTOR is responsible that all work included in the Contract Documents, regardless if shown or not, shall comply with all EPA, OSHA, RCRA, NFPA, and any other Federal, State, and Local Regulations governing the storage and conveyance of hazardous materials, including petroleum products.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION – 01 45 00
QUALITY CONTROL

PART 1 GENERAL

1.1 DEFINITION

A. Specific quality control requirements for the Work are indicated throughout the Contract Documents. The requirements of this Section are primarily related to the performance of the Work beyond the furnishing of manufactured products. The term "Quality Control" includes inspection, sampling and testing, and associated requirements.

1.2 INSPECTION AT PLACE OF MANUFACTURE

A. Unless otherwise indicated, all products, materials, and equipment shall be subject to inspection by the OWNER at the place of manufacture.

B. The presence of the OWNER at the place of manufacture, however, shall not relieve the CONTRACTOR of the responsibility for furnishing products, materials, and equipment that comply with all requirements of the Contract Documents. Compliance is a duty of the CONTRACTOR and said duty shall not be avoided by any act or omission on the part of the OWNER.

1.3 SAMPLING AND TESTING

A. Unless otherwise indicated, all sampling and testing shall be in accordance with the methods prescribed in the current standards of the ASTM, NESC or NEC, and 2025 Standard Specifications as applicable to the class and nature of the article or materials considered; however, the OWNER reserves the right to use any generally-accepted system of sampling and testing which, in the opinion of the OWNER will ensure the OWNER that the quality of the workmanship is in full accord with the Contract Documents.

B. Any waiver by the OWNER of any specific testing or other quality assurance measures, whether or not such waiver is accompanied by a guarantee of substantial performance as a relief from the specified testing or other quality assurance requirements as originally specified, and whether or not such guarantee is accompanied by a performance bond to assure execution of any necessary corrective or remedial Work, shall not be construed as a waiver of any requirements of the Contract Documents.

C. Notwithstanding the existence of such waiver, the OWNER reserves the right to make independent investigations and tests, and failure of any portion of the Work to meet any of the requirements of the Contract Documents, shall be reasonable cause for the OWNER to require the removal or correction and reconstruction of any such work in accordance with the General Provisions.

1.4 INSPECTION AND TESTING LABORATORY SERVICE

A. Inspection and testing laboratory service shall comply with the following:
   1. OWNER will appoint, employ, and pay for services of an independent firm to perform inspection and testing or will perform inspection and testing itself.

2. The OWNER or independent firm will perform inspections, testing, and other services specified in individual specification sections and as required by the OWNER.
3. The independent firm will submit duplicate reports to the OWNER indicating observations and test results and compliance or non-compliance with the Contract Documents.
4. The CONTRACTOR shall cooperate with the OWNER or independent firm and furnish samples of materials, design mix, equipment, tools, storage, and assistance as requested.
5. The CONTRACTOR shall notify the OWNER 24 hours before the expected time for operations requiring inspection and laboratory testing services.
6. Retesting required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the OWNER. The CONTRACTOR shall bear all costs for such retesting at no additional cost to the OWNER.
7. For samples and tests required for CONTRACTOR's use, the CONTRACTOR shall make arrangements with an independent firm for payment and scheduling of testing. The cost of sampling and testing for the CONTRACTOR's use shall be included in the Contract Price.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 INSTALLATION

A. **Inspection**: The CONTRACTOR shall inspect materials or equipment upon arrival on the job site and immediately prior to installation and reject damaged and defective items.

B. **Measurements**: The CONTRACTOR shall verify the measurements and dimensions of the Work as an integral step before starting each installation.

C. **Manufacturer's Instructions**: Where installations include manufactured products, the CONTRACTOR shall comply with the manufacturer's applicable instructions and recommendations for installation, to whatever extent these are more explicit or more stringent than applicable requirements indicated in Contract Documents.

END OF SECTION

SECTION – 01 55 26.1
TRAFIC CONTROL

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

A. This section specifies furnishing, erecting, and maintaining, per the Approved Traffic Control Plans, temporary barricades, signs, flaggers, off-duty police officers, lights, road surfaces, detours, and other safeguards necessary to protect the life, health, and safety of the public and workers during the work.

B. During normal work hours, single-lane, two-way traffic with flaggers may be used for project areas for roadside work, shoulder construction, and material delivery.

C. Access to residences and businesses shall also be maintained. Temporary driveway closures shall be minimized. Full driveway access shall be restored after work hours.

D. CONTRACTOR is responsible for coordinating advanced notice to the traveling public and adjacent residents and businesses.

1.2 CONTRACTOR RESPONSIBILITY

A. The traffic control plan or plans appearing in the contract documents show a method of handling traffic. All flaggers are to be shown on the traffic control plan except for emergency situations. The CONTRACTOR shall designate and adopt in writing the specific traffic control plan or plans required for their method of performing the work. If the CONTRACTOR's methods differ from the contract traffic control plan(s), the CONTRACTOR shall propose modification of the traffic control plan(s) by showing the necessary construction signs, flaggers, and other traffic control devices required for the project. The CONTRACTOR's modified traffic control plan(s) shall be in accordance with the established standards for plan development as shown in the MUTCD, Part VI. The CONTRACTOR's letter designating and adopting the specific traffic control plan(s) or any proposed modified plan(s) shall be submitted to the OWNER and WSDOT Traffic Division for approval at least 30 calendar days in advance of the time the signs and other traffic control devices will be required. The CONTRACTOR shall be solely responsible for providing copies of the approved Traffic Control Plans to the Traffic Control Supervisor and jurisdictions.

B. OWNER will grant to the CONTRACTOR all traffic right-of-way and road crossing permits from the appropriate jurisdiction to accomplish the work.

C. CONTRACTOR and his surety shall be liable for injuries and damages to persons and property suffered by reason of the CONTRACTOR's operations or negligence.

D. CONTRACTOR shall provide advanced notice of work using methods specified in the Notification Plan. Advance notice shall be placed 5 days before the commencement of earthwork or other operations requiring long-duration lane closures. Advanced notice time shall include 1 weekend.

E. Provide a Traffic Control Supervisor in accordance with Section 1-10.2(1)B of the Standard Specifications for the duration of the time when traffic control signs, devices, or flaggers and spotters are in use

1.3 OWNER'S AUTHORITY

A. If the CONTRACTOR fails or refuses to provide and maintain all traffic controls required by the Contract Documents or ordered by the OWNER, the OWNER may:
   1. Suspend all work without further notice to the CONTRACTOR or the CONTRACTOR's surety until the CONTRACTOR complies with the requirements.
   2. At the CONTRACTOR's expense, immediately obtain the services of a uniformed police officer.
   3. At the CONTRACTOR's expense, provide, erect, maintain, and remove required traffic control devices.

B. OWNER will deduct all related costs from any payments due or coming due to the CONTRACTOR.

C. If the CONTRACTOR fails or refuses to complete and furnish the Contractor's Daily Report of Traffic Control –Traffic Control Log and Contractor's Daily Report of Traffic Control – Summary, the OWNER shall engage a third party to complete the reports and deduct any excess cost over the Contract amount for Traffic Control Supervisor from payments due the CONTRACTOR. Upon the CONTRACTOR's receipt of three written notices by the Engineer of the CONTRACTOR's failure to fulfill these Contract obligations, the OWNER shall exercise its right to complete this work and withhold excess amounts from payments due the CONTRACTOR.

D. The above options shall not bar the OWNER from exercising other remedies as a result of the CONTRACTOR's failure or refusal to comply with a contractual obligation.

1.4 QUALITY ASSURANCE

A. Referenced Standards:
   1. MUTCD: U.S. Department of Transportation, Federal Highway Administration: Manual on Uniform Traffic Control Devices, Part VI, "Work Zone Traffic Control Standards and Guidelines"
   2. Washington State Department of Transportation Standard Plans

1.5 SUBMITTALS

A. **Procedures:** Section 01 33 00 – Submittal Procedures.

B. Submit a Notification Plan within 10 days of the effective date of the Notice to Proceed and update for monthly coordination/progress meetings a notification procedure and plan to maintain access for adjacent or affected properties and businesses. The notification procedure and access plan should include:
   1. Advanced notice time
   2. Method of notice
   3. Detail of how access will be maintained
   4. A copy of a standard written notice with the CONTRACTOR's contact name and 24-hour phone number

5. Estimated week of construction within 150 feet of affected property.
6. Estimated number of days that construction will be fronting the property.
7. Special issues for maintaining access.

1.6 CONSTRAINTS

A. Multiple construction crews are allowed; however, two consecutive street intersections shall not be impacted at the same time.

B. Maintain pedestrian and bicycle access at all times where practical.

1.7 TRAFFIC CONTROL REQUIREMENTS

Consider and include the following street and lane closure restrictions:

1. Vehicular and pedestrian routing on streets where the work is not being performed shall not be revised.
2. Annotate the proposed location of barricades, lighting, signing, temporary striping, and other traffic control devices.
3. All Flaggers directing traffic shall possess a current Flagger Certification Card
4. Arrange for emergency exiting from buildings within and immediately adjacent to the construction site.
5. At each site where a two-way roadway is restricted to one lane of two-way traffic, provide a minimum of two certified flaggers to ensure safe and effective movement of traffic through the constricted zone. Provide three certified flaggers when the construction zone length causes sight distance or communication problems between a two-member team of flaggers to operate safely.
6. A Uniformed Police Officer (UPO) shall control and halt traffic on Interstate 5 (I-5) south off ramp and aid flow of Lake Samish Road after released by flaggers.
7. Submit for approval any specific streets not addressed above which will have a traffic impact.
8. Maintain emergency access and access to businesses, public service buildings, and residences at all times. Provide a minimum of one week's notice when driveway access will be restricted or modified. Clear residential driveways at the end of every workday. Provide driveway access to businesses, public service buildings, and industrial sites during their operating hours.
9. Provide local access to all businesses, industrial sites, and residences. Provide a certified flagger to reduce conflicts between local access traffic and construction crews and/or heavy equipment whenever local access is required into/out of the construction zone.
10. Channel traffic flow into the work zone per the approved Traffic Control Plan.

B. Refer to the Construction Timing Constraints Summary at the end of Section 01 32 00 for specific restrictions.

1.8 JOB COORDINATION

A. Coordinate all construction to offer the least possible obstruction and inconvenience to the public.

B. Coordinate with law enforcement for Uniformed Police Officer.

C. Do not open areas of work and leave the area unfinished; finish work in process insofar as practical. All work areas must be filled or covered at the end of the work shift.

D. Coordinate with property and business owners to always maintain convenient access for local traffic along the line of work and/or as specified on the Drawings.

E. Coordinate revisions to existing traffic control with the affected agencies. Keep traffic controls in operation unless otherwise required by the OWNER for the benefit of the traveling public during the progress of the work. As work progresses and as conditions permit, reset temporarily relocated or removed traffic and street name signs in their permanent location. Replace or repair signs and other traffic control devices damaged or lost.

F. Keep existing street lighting systems in operation during the progress of the work.

1.9 NOTIFICATIONS

A. To accommodate emergency vehicle rerouting, notify in writing local fire and law enforcement authorities and other affected agencies not less than 72 hours prior to construction operations that deviate or delay traffic from the existing traffic patterns.
   1. Skagit County Fire District 14
      a) Fire Chief (360) 724-3451
   2. Skagit County
      a) Sheriff (360) 336-9450
   3. Washington State Patrol
      a) Burlington Office (360) 757-7553
      b) Marysville (360) 654-1204

B. CONTRACTOR will notify the residents living adjacent to the work a minimum of 48 hours in advance of the construction in the area of work. The notification procedure and access plan are used for the advance notice and contain a general description of the purpose of construction work and the proposed schedule.

C. Directly inform individual owners or household residents at least 48 hours in advance of beginning the work to minimize or eliminate inconveniences to the public. Inform owners of work which blocks the use of the property in any way by construction or equipment.

D. Advanced notice of lane closure signs shall be placed 10 days in advance, including 2 consecutive weekends of lane closures unless indicated otherwise on the drawings.

E. Notify the local transit authorities and school district at least one week in advance of any construction that may disrupt school bus routes.

1.10 MEETINGS

A. Prior to the beginning of hauling materials, hold an awareness meeting with truck drivers regarding traffic concerns discussed at the preconstruction meeting, including methods to reduce congestion, obeying speed limits, specific locations identified as safety hazards, and allowable haul times.

B. During construction, discuss traffic safety and traffic concerns at the regularly scheduled progress meetings. Reinforce the importance of traffic safety; update the crews regarding safety

in the particular area where construction is occurring at the time and communicate feedback received from the local jurisdictions.

PART 2 PRODUCTS

2.1 SPECIAL SIGNS

A. Signs with special or non-standard messages may be included as part of the Traffic Control Plan as required to properly convey information to the motorist or pedestrian.

B. All signs shall conform and meet the minimum standards established in the latest adopted edition of the "Manual on Uniform Traffic Control Devises" (MUTCD) U.S. Department of Transportation, Federal Highway Administration, or the accepted Standards of the governing agency.

PART 3 EXECUTION

3.1 GENERAL

A. Comply with all requirements of the latest issue of the "Manual on Uniform Traffic Control Devices" for In-Street Work, local permits obtained by the CONTRACTOR, and permits obtained by the OWNER and other regulatory agencies.

B. CONTRACTOR shall comply with all local permits, conditions, and mitigation requirements related to the use of area roadways affected by construction activities. The CONTRACTOR shall haul only during permitted hours.

C. Contact Law Enforcement in advanced for placement of Uniformed Police Officer (UPO).

D. Comply with the following:
   1. When the CONTRACTOR, OWNER, Sheriff, or Skagit County determines it is necessary, additional flaggers shall be stationed within the construction area to mitigate congestion caused by construction.
   2. Construction equipment shall be parked off the traveled way with adequate barricades and flashers provided at night to lessen traffic hazards associated with construction activity.
   3. The CONTRACTOR shall have steel plate and steel beams available on the job site for bridging of trench cuts to mitigate safety hazards and problems associated with emergency and property access requirements.
   4. CONTRACTOR shall inspect and maintain the control site at least once per work shift.
   5. CONTRACTOR shall remove or cover all non-applicable signs when not in use.

3.2 TRAFFIC MAINTENANCE

A. Take all necessary measures to maintain a normal flow of vehicular and pedestrian traffic to prevent accidents and to protect the work throughout the construction stages until completion of the work. Make the necessary arrangements to reroute traffic and provide and maintain barriers, cones, guards, barricades, and construction warning and regulatory signs. Make all regulatory devices suitable for nighttime operation. Take effective measures necessary to protect all other portions of the work during construction and until completion. This includes providing and

maintaining all necessary barricade lights, construction signs, guards, temporary crossovers, and flaggers.

B. A Uniform Police Officer (UPO) will be directing traffic at the off-ramp adjacent to the project site. The CONTRACTOR's flaggers shall coordinate with the UPO to ensure that traffic control measures are synchronized, particularly during the single-lane closure on the two-way roadway. The CONTRACTOR shall establish a communication protocol with the UPO, such as using two-way radios, to facilitate real-time coordination of traffic control actions. In the event of conflicting instructions, the directions of the UPO shall take precedence over those of the flaggers.

C. Maintain emergency exiting from buildings within and immediately adjacent to the construction site.

D. Maintain vehicular traffic at all locations to the greatest extent possible and reduce and reroute traffic only for the shortest time possible consistent with effective construction operations. Do not block required travel lanes including trucks delivering materials. Material deliveries and other related trucking activities to occur in the CONTRACTOR's protected work area. Upon completion of a segment of work in streets traffic shall be restored to normal flow as soon as possible. Maintain existing directional operation of street systems at all times.

E. Access by emergency vehicles shall be maintained at all times in all roadways. Use temporary covers over cuts to accommodate traffic. Notification shall be given to the OWNER and the fire station chief prior to limitation of access in any section of the roadway.

F. Maintain pedestrian movements through construction areas. Facilities for pedestrians include provisions for the safe movement of mobility and sight-impaired individuals. This includes temporary ramps.

G. Coordinate traffic control plan with other contractor's traffic control plan for all work.

H. Inspect the control area at least once per work shift. Reset and repair all traffic control devices immediately.

3.3 ACCESS

A. Maintain access for emergency vehicles to private properties and businesses at all times. Access to private property shall be restored at the end of each work shift.

B. Where, during some urgent stages of construction, the OWNER determines that temporary closure of access to a property is unavoidable, coordinate the closure with the property and business owner.

C. When the abutting business or owners' access across the right-of-way is to be temporarily closed and replaced by other access, place an interim surface to restore access. Arrange work so that access is available to all properties at all times work is not occurring. Provide unimpeded local access to properties during non-construction periods.

3.4 SAFETY

A. Use adequate safeguards, safety devices and protective equipment. Take any actions needed to protect life, health and safety of the public and to protect property in connection with the performance of the work.

B. Use such flaggers, signs and other devices, and erect and maintain all barricades, guards, standard construction signs, warning signs and detour signs, as are necessary to warn and protect the public at all times from injury or damage as a result of the construction operations.

C. Where flaggers are employed to safeguard traffic, use flagger equipment in accordance with the referenced standards except for personal wearing apparel. This equipment must be used by flaggers while actually flagging traffic. All flaggers are required to possess a current flagging certification card.

D. Furnish any standard signs as well as any other appropriate signs prescribed by the OWNER as applicable and necessary for the work. Erect signs on posts and supports and maintain them in a neat and safe condition until the necessity for them has ceased. When the need for any sign has ceased, upon approval by the OWNER, take down such sign. All control signs necessary for nighttime traffic control or remaining in place during the night shall be fully reflectorized.

E. Safeguard and direct traffic after the existing signs have been removed. Preserve and maintain traffic control and street name signs. Signs and other traffic control devices damaged or lost by the CONTRACTOR shall be replaced or repaired.

F. Patrol traffic control areas and reset all disturbed signs and traffic control devices immediately. Remove or cover all non-applicable signs during periods not needed.

G. Use flaggers, barricades, lights and signs for protection of the work and the public at all times.

H. OWNER may, without further notice, supply such material and equipment as necessary and deduct all of the costs thereof from any payments due upon CONTRACTOR's failure to immediately supply flaggers; erect, maintain, and remove barricades and lights, and erect, maintain, and remove standard signs when ordered to do so by the OWNER.

I. During the hours of non-construction, maintain all existing traffic lanes safe for vehicular traffic. Leave all unfinished work in a safe, non-hazardous condition to the public in accordance with “Safety Standards for Construction Work,” Department of Labor and Industries, Chapter 296-155 WAC.

3.5 SIGNS

A. Signs are required for the duration of construction, from the commencement of earth-moving activities through substantial completion.

B. Replace signs that are stolen, vandalized, or damaged before work commences.

3.6 TRAFFIC CONTROL SUPERVISOR

A. CONTRACTOR shall have one (1) Traffic Control Supervisor on duty for the period of time work is being conducted under traffic and traffic control measures are in place. No more than one Traffic Control Supervisor will be allowed.

B. The Traffic Control Supervisor (TCS) shall fulfill all duties listed in Section 1-10.2(1)B of the Standard Specifications. No payment will be provided for any day in which a Contractor's Daily Report of Traffic Control – Summary and Traffic Control Log are not completed. A copy of each is attached hereto.

C. Failure to complete the Contractor's Daily Report of Traffic Control -Traffic Control Log or the Contractor's Daily Report of Traffic Control – Summary will result in no measurement for this work.

3.7 TEMPORARY CROSSINGS AND PUBLIC CONVENIENCE AND SAFETY

A. **Steel Plates**: Wherever necessary and when required by Section 1-07.23(1)A, the CONTRACTOR shall provide suitable steel plates over unfilled excavations, except in such cases as the CONTRACTOR shall secure the written consent of the individuals or authorities concerned to omit such steel plates, which written consent shall be delivered to the OWNER prior to excavation. All steel plates shall be maintained in service until access is provided across the backfilled excavation. Steel plates for street crossing shall conform to the requirements of Section 1-07.23(1)B2 and the authority having jurisdiction in each case, and the CONTRACTOR shall adopt designs furnished by said authority or shall submit designs to said authority for approval, as may be required.

B. **Street Use:** Nothing herein shall be construed to entitle the CONTRACTOR to the exclusive use of any public street, or parking area during the performance of the Work hereunder, and it shall so conduct its operations as not to interfere unnecessarily with the authorized work of utility companies or other agencies in such streets, or parking areas. CONTRACTOR shall follow the requirements of Section 1-07.23 for protection public safety. Fire hydrants on or adjacent to the Work shall be kept accessible to fire-fighting equipment at all times. Temporary provisions shall be made by the CONTRACTOR to assure the use of sidewalks and the proper functioning of all gutters, storm drain inlets, and other drainage facilities.

C. CONTRACTOR shall take all necessary precautions for the protection of the WORK and the safety of the public. All barricades and obstructions shall be illuminated at night, and all lights shall be kept illuminated from sunset until sunrise. All signs, signals, and barricades shall conform to the requirements of Subpart G, Part 1926, of the OSHA Safety and Health Standards for Construction.

D. CONTRACTOR shall remove traffic control devices when no longer needed, repair all damage caused by their installation, remove post settings, and backfill the resulting holes to match grade.

END OF SECTION

Attachment A

Contractor's Daily Report
of
Traffic Control

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Washington State Department of Transportation

Contractor's Daily Report of Traffic Control - Traffic Control Log

Use separate sheets for each setup. (May be altered to record Class A signs.)

Page

Contract Number	SR Number	Day	Date

Sta A	Setup		Sta B
	Station — Time	Station — Time	
◇	—	—	◇
◇	—	—	◇
◇	—	—	◇
◇	—	—	◇
◇	—	—	◇

Work Area

◇	—	—	◇
◇	—	—	◇
◇	—	—	◇
◇	—	—	◇
◇	—	—	◇

Sta C — Sta D

↑ One Way Traffic (one or more lanes) ↑

↓ Two Way Traffic (two or more lanes) ↑

Legend
(List of Signs Used)

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

Cones ☐ Yes ☐ No

Piloted ☐ Yes ☐ No

Per Approved Plan ☐ Yes ☐ No

Plan Title _____

Flagger/Spotter Sta	Start	End	Hours
Station A			
Station B			
Station C			
Station D			

Other Traffic Control Labor

Name	Start	End	Hours

_____
Contractor

_____
Contractor's Traffic Control Supervisor's Signature

Type of Traffic Control	Time Set Up	Time(s) Checked	Time Removed

To be Completed by Contractor's Traffic Control Supervisor (TCS)

)OT Form 421-040B EF
Revised 03/2008

Distribution: White - Contractor; Canary - Project Engineer

Washington State Department of Transportation

Contractor's Daily Report of Traffic Control - Summary

Page One

Contract Number	SR Number	Day	Date

Photos / Videos taken today for record? ☐ Yes ☐ No
If Yes, note locations:

Summary of TCS Activities

Contractor	Contractor's Traffic Control Supervisor's Signature

For WSDOT Project Office Only

Comments

To be Completed by Contractor's Traffic Control Supervisor (TCS)

DOT Form 421-040A EF
Revised 4/2004

Distribution: White - Contractor; Canary - Project Engineer

SECTION 01 57 19
TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 GENERAL

1.1 SUMMARY

A. This section specifies Temporary Environmental Controls required to be maintained during construction in addition to temporary erosion and sediment control.

B. The CONTRACTOR shall prepare a Spill Prevention, Control, and Countermeasures Plan (SPCC) in conformance with Section 1-07.15(1) of the Standard Specifications.

1.2 RELATED SECTIONS

A. Section 01 33 00 – Submittal Procedures

B. Section 31 25 00 – Erosion and Sedimentation Control

1.3 SUBMITTALS

A. SPCC Plan in conformance with Section 1-07.15(1) of the Standard Specifications.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 AIR POLLUTION CONTROL

A. The CONTRACTOR shall not discharge smoke, dust, and other contaminants into the atmosphere that violate the regulations of legally constituted authorities. Minimize dust nuisance by cleaning, sweeping, and sprinkling with water, or other means. The use of water, in amounts resulting in mud on public streets, is not acceptable as a substitute for sweeping or other methods.

3.2 NOISE CONTROL

A. The CONTRACTOR shall perform all work in compliance with the local jurisdiction's Noise Ordinance, except where additional restrictions are applicable. The CONTRACTOR shall schedule noisy operations to minimize their duration.

B. The CONTRACTOR shall use whatever means necessary to comply with the Noise Ordinance. The CONTRACTOR shall be responsible for all costs necessary to reduce noise levels to those specified in the Noise Ordinance or to obtain a variance from the specific levels.

C. The CONTRACTOR shall provide the following noise abatement equipment or operate construction equipment in the following manner so as to avoid exceeding noise limitations:

D. Each internal combustion engine, used for any purpose on the job or related to the job, shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated on the project without said muffler.

1. Equipment that cannot meet the noise levels specified under the local Noise Ordinance shall be quieted by use of improved exhaust mufflers or other means.
2. Noisy portable equipment, such as generators, compressors, and pumps, shall be located as far away from sensitive noise receptor areas as practicable. (Noise-sensitive receptors include residences.)

3. Noise barriers shall be constructed around stationary construction equipment which has to be utilized at locations near sensitive noise receptors.
4. Idling equipment shall be shut off when not in active use.

3.3 SITE MAINTENANCE

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

B. Remove waste materials, debris, and rubbish from the site immediately upon their becoming unfit for use in the work. If the material is not removed, the OWNER reserves the right to have it removed and the expense charged to the CONTRACTOR.

C. Prevent dirt and dust from escaping trucks departing the site by covering dusty loads, washing truck tires before leaving the site, or other methods as applicable.

D. CONTRACTOR is responsible for controlling dust and mud within the project limits. All streets outside the project limits used by the CONTRACTOR during the execution of this Contract shall be kept clean. The CONTRACTOR shall use watering trucks equipped with high-velocity water jets and low-head sprinkling devices, power sweepers, and any other pieces of equipment necessary to render the streets free of all mud, debris, and foreign materials. Any damage caused by dust or mud accumulation on the streets and in the storm drain system shall be the sole responsibility of the CONTRACTOR.

E. Watering trucks may be used on paved streets with an adequate storm drainage system. Watering trucks shall not be used on streets where, in the opinion of the OWNER, mud could be created, causing a nuisance. Where water flushing is not allowed, street sweepers (not power brooms) shall be used.

F. Sweep or flush all surface roadways upon completion of each day's activities. Equipment required for this operation shall be on the job site or available at all times. Failure to have this equipment on the job site or available may necessitate a shutdown of the project.

G. Clean all roadways, streets, and appurtenances, including sidewalks and paths which are open for public use, of all material or debris which has been dropped or otherwise deposited thereon, as a result of CONTRACTOR on- and off-site operations, at the conclusion of each working day, and at such other times as deemed necessary by the OWNER to ensure the safety of the traveling public and to prevent inconvenience to the public and owners of private property adjacent to the project.

H. Any violation of the above requirements will be sufficient grounds for the OWNER to order the roadways, streets and appurtenances cleaned or sprinkled by others, and to deduct all costs of such cleaning or sprinkling from any money due, or to become due to the CONTRACTOR.

3.4 OIL SPILL PREVENTION AND CONTROL

A. **Regulations**: The CONTRACTOR is advised that discharge of oil from equipment or facilities into state waters or onto adjacent land is not permitted under Washington State water quality regulations.

B. **Responsibility**: The CONTRACTOR shall be responsible for the prevention, containment, and cleanup of spilling of oil, fuel, and other petroleum products used in the CONTRACTOR's operations. All such prevention, containment, and cleanup costs shall be borne by the

CONTRACTOR. The CONTRACTOR shall, at a minimum, take the following measures regarding oil spill prevention, containment, and cleanup.

C. Minimum Precautions:

1. Fuel hoses, lubrication equipment, hydraulically operated equipment, oil drums, and other equipment and facilities shall be inspected regularly for drips, leaks, or signs of damage. They shall also be maintained and stored properly to prevent spills. Proper security shall be maintained to discourage vandalism.
2. All land-based oil and product storage tanks shall be diked or located to prevent spills from escaping to the water. Diking and subsoils shall be lined with impervious material to prevent oil from seeping through the ground and dikes.
3. All visible floating oils shall be immediately contained with booms, dikes, or other appropriate means and removed from the water prior to discharge into state waters. All visible oils on land shall be immediately contained using dikes, straw bales, or other appropriate means and removed using sand, ground clay, sawdust, or other absorbent material, which shall then be properly disposed of by the CONTRACTOR.
4. In the event of any oil or product discharges into public waters, or onto land with a potential for entry into public waters, the CONTRACTOR shall immediately notify the following agencies at their listed 24-hour response numbers:
   a. Washington DOE Northwest Regional Office, Telephone No. (425) 649-7000.
   b. U.S. Coast Guard Telephone No. (206) 217-6232.
   c. Maintain on the job site, in the vicinity of ongoing work, the following spill response and containment materials:
      1) Oil-absorbent booms: minimum four (4) each, five (5) feet long.
      2) Oil-absorbent pads or bulk material, adequate for coverage of 200 square feet of surface area, minimum.
      3) Straw bales.
      4) Dry all.
      5) Gloves.
      6) Plastic bags.

END OF SECTION

SECTION 01 66 00
PRODUCT STORAGE AND HANDLING REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes the requirements for storage and handling of products for the Project.

1.2 RELATED SECTIONS

A. Section 01 71 13 - Mobilization

1.3 DEFINITIONS

A. **"Products"** is defined to include purchased items for incorporation into the Work, regardless of whether specifically purchased for the project or taken from the CONTRACTOR's stock of previously purchased products.

B. **"Materials"** is defined as products that must be substantially cut, shaped, worked, mixed, finished, refined, or otherwise fabricated, processed, installed, or applied to form units of work.

C. **"Equipment"** is defined as products with operational parts, regardless of whether motorized or manually operated, and particularly including products with service connections (wiring, piping, and other like items).

D. Definitions in this paragraph are not intended to negate the meaning of other terms used in the Contract Documents, including "specialties," "systems," "structure," "finishes," "accessories," "furnishings," special construction," and similar terms, which are self-explanatory and have recognized meanings in the construction industry.

E. Neither Products, Materials, nor Equipment includes machinery and equipment used for preparation, fabrication, conveying, and erection of the Work.

1.4 QUALITY ASSURANCE

A. **Source Limitations:** To the greatest extent possible for each unit of work, the CONTRACTOR shall provide products, materials, and equipment of a singular generic kind from a single source.

B. **Compatibility of Options:** Where more than one choice is available as options for the CONTRACTOR's selection of a product, material, or equipment, the CONTRACTOR shall select an option that is compatible with other products, materials, or equipment. Compatibility is a basic general requirement of product, material, and equipment selections.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 GENERAL

A. Products shall be transported by methods to avoid damage and shall be delivered in undamaged condition in the manufacturer's unopened containers and packaging.

B. The CONTRACTOR shall deliver and store products in accordance with the manufacturer's written recommendations and by methods and means that will prevent damage, deterioration, and loss, including theft. Delivery schedules shall be controlled to minimize long-term storage of

products at the site and overcrowding of construction spaces. In particular, the CONTRACTOR shall ensure coordination to ensure minimum holding or storage times for flammable, hazardous, easily damaged, or sensitive materials to deterioration, theft, and other sources of loss.

C. The CONTRACTOR shall provide equipment and personnel to handle products, materials, and equipment by methods to prevent soiling and damage.

D. The CONTRACTOR shall provide additional protection during handling to prevent marring and otherwise damaging products, packaging, and surrounding surfaces.

3.2 PROTECTION

A. Products shall be stored in accordance with the manufacturer's written instructions and with seals and labels intact and legible. Sensitive products shall be stored in accordance with the manufacturer's recommendations.

B. For exterior storage of fabricated products, they shall be placed on sloped supports above ground. Products subject to deterioration shall be covered with impervious sheeting, and ventilation shall be provided to avoid condensation.

C. Loose granular materials shall be stored on solid flat surfaces in a well-drained area and shall be prevented from mixing with foreign matter.

D. Storage shall be arranged to provide access for inspection. The CONTRACTOR shall periodically inspect to ensure that the products are undamaged and maintained under the required conditions.

3.3 MAINTENANCE

A. The CONTRACTOR shall comply with the manufacturer's product storage requirements and recommendations.

B. The CONTRACTOR shall ensure that surfaces of products exposed to the elements are not adversely affected and that weathering of finishes does not occur.

C. The CONTRACTOR shall maintain manufacturer-required environmental conditions continually.

D. Products shall be serviced regularly, and a log of services shall be maintained and submitted as a recorded document prior to acceptance by the OWNER in accordance with the Contract Documents.

3.4 PIPE AND MATERIAL STORAGE

A. The CONTRACTOR shall not string pipe nor stockpile imported earth materials on streets or in places that interfere with vehicular traffic.

B. The CONTRACTOR may enter into an agreement with local property owners for temporary storage of project materials as required. If the CONTRACTOR does so, the costs for all access improvements, TESC measures, site grading, fencing, security, permits, and any other site improvements are the responsibility of the CONTRACTOR.

END OF SECTION

SECTION 01 71 13
MOBILIZATION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. The CONTRACTOR shall be responsible for all labor, equipment, and materials used to prepare the Site prior to beginning Work.
2. At the completion of the Work, the CONTRACTOR shall restore the Site.

B. Related Requirements

1. Section 01 33 00 - Submittal Procedures
2. Section 01 41 00 - Regulatory Requirements

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 MOBILIZATION

A. Mobilization shall include obtaining all permits, moving all equipment onto the site, furnishing and erecting plants, temporary buildings, and other construction facilities, and implementing security requirements, all as required for the proper performance and completion of the Work.

B. Mobilization shall include, but not be limited to, the following principal items:

1. Obtaining all required permits.
2. Provide required bonds and proof of insurance.
3. Moving on to the site of all CONTRACTOR’s plant and equipment required for first month operations.
4. Submittals for ordering long lead time materials and major equipment within ten (10) days of Notice to Proceed.
5. Installing temporary construction fencing, power, wiring, and lighting facilities.
6. Developing construction water supply.
7. Providing all on-site communication facilities.
8. Providing on-site sanitary facilities and potable water facilities.
9. Arranging for and erection of CONTRACTOR’s storage yard.
10. Having all OSHA-required notices and establishment of safety programs.
11. Having the CONTRACTOR’s superintendent at the job site full time.
12. Preparation and submission of initial submittals

3.2 DEMOBILIZATION

A. Demobilization shall include removal of all tools, equipment, facilities, and unused material from the Site.

B. Restore all disturbed area within and outside the Site to their preconstruction condition.

END OF SECTION

SECTION 01 71 33.11
PROTECTION OF ADJACENT UTILITIES

PART 1 GENERAL

1.1 SUMMARY

A. The CONTRACTOR shall protect and keep in service water pipelines and services, stormwater drains, underground and aboveground power lines, telephone lines, cable TV lines, fiber optic lines, natural gas lines, and fuel pipelines and shall perform water main relocations in accordance with the Contract Documents.

PART 2 PRODUCTS

2.1 UTILITY REPLACEMENT PIPING

A. Utility lines that are cut or otherwise damaged during the installation of the new water pipeline shall be replaced with a new pipe of the same type of material (e.g., reinforced concrete, ductile iron, copper, etc.) as that removed unless otherwise shown on the Drawings or as otherwise specified herein. New materials shall conform to the requirements of this Section.

2.2 WATER PIPE

A. Pipe materials shall conform to Division 33 of these specifications and shall be compatible with existing pipe materials.

PART 3 EXECUTION

3.1 GENERAL

A. The CONTRACTOR shall protect from damage and keep in service private and public utilities encountered during the work. Utilities shall include but are not limited to, storm drain systems, water distribution systems, electrical distribution systems, telephone, fiber optics and CATV systems, power lines and appurtenances, natural gas lines, oil pipelines, and similar facilities and systems.

B. The CONTRACTOR shall call the Utilities Underground Location Center at 811 at least 2 working days before an excavation. In the case of the high-pressure gas pipelines and fuel pipelines noted in the drawings, provide a minimum of 10 days advance notice before excavation and crossing of the pipeline.

C. The right is reserved to the OWNER and the owners of utilities, or their authorized agents, to enter upon the CONTRACTOR’s work area for the purpose of making changes, connections, or repairs to their facilities. The CONTRACTOR shall cooperate with the forces engaged in this work and shall avoid any unnecessary delay or hindrance to work being performed by other forces.

D. It shall be the CONTRACTOR’s responsibility to make whatever notifications and applications may be necessary for coordinating utility and CONTRACTOR work. Directly inform individual owners or household residents at least 48 hours in advance of beginning the work to minimize or eliminate inconveniences to the public. Inform owners of work which blocks the use of the property in any way by construction or equipment or which interferes with water or sewer service.

E. In the event any existing utility lines are cut or otherwise disrupted per requirements of the Work, or unintentionally cut or disrupted, the CONTRACTOR shall coordinate directly with the utility affected to restore service as quickly as possible without delay. CONTRACTOR shall bear all costs associated with removal and replacement of interfering utilities, which CONTRACTOR intentionally or unintentionally cuts, damages, or disrupts, that are not required to be cut and replaced as part of Work.

3.2 LOCATIONS OF UTILITIES

A. The locations shown on the Drawings for existing utilities are in accordance with available information obtained without uncovering, measuring, or other verification. It is the CONTRACTOR's responsibility to call the Utilities Underground Location Center and make every effort to identify the location of existing utilities before digging. The CONTRACTOR shall make necessary arrangements for the removal and replacement or repair of these utilities as necessary to facilitate pipeline construction, and the CONTRACTOR shall bear all related costs.

B. It is the CONTRACTOR's responsibility to contact the utility owners 10 days before excavation near the pipeline so a representative can be present.

C. Attention is directed to the possible existence of other underground facilities, such as below-grade vaults, which are not shown on the Drawings. When the removal and/or relocation of these facilities is necessary to accommodate the Work, the OWNER will provide for this additional work by other forces, or this additional work shall be performed by the CONTRACTOR as extra work pursuant to a Change Order. Notify the OWNER if utilities not shown on the Drawings are encountered.

D. It is anticipated that the CONTRACTOR may encounter water, sewer, and electric utilities (service lines running between street mains and private residences and businesses) during work operations. Records of these utility locations may be incomplete and, therefore, do not appear on the Drawings and will not be field located by the owning utilities. The locations of these services can usually be ascertained by relative meter location, residence location, or through discussion with various private property owners. It shall be the CONTRACTOR's responsibility to locate and protect these private services from damage.

3.3 UTILITY POLE AND GUY WIRE INTERFERENCE

A. Where work is close to power poles or if guys must be removed temporarily during construction, the CONTRACTOR shall coordinate with PSE to provide temporary supports, as necessary, to support electric power poles during construction. Replace permanent guys in original locations unless directed otherwise by PSE. All costs for temporary support and guy relocation will be paid for by the CONTRACTOR.

3.4 INTERFERING WATER SERVICES INTERRUPTIONS AND REPLACEMENT

A. Individual water services shall be maintained during construction. The CONTRACTOR shall coordinate with the OWNER to relocate and/or replace the interfering services.

3.5 INSTALLATION OF REPLACEMENT UTILITY PIPELINES (IF NECESSARY, BECAUSE OF INADVERTENT DAMAGE BY CONTRACTOR OR IF AC WATER MAIN)

A. Install replacement storm drains, water lines, and sewer line connections, in accordance with Section 7-08.3 of the Standard Specifications, except that trench excavation, bedding, and backfill shall conform to this Section.

B. Storm drain replacement shall conform to Section 7-04.3 of the Standard Specifications, except that infiltration/exfiltration testing will not be required.

C. Waterline replacement shall conform to Section 7-11 of the Standard Specifications, including the requirements of hydrostatic testing and disinfection.

D. The CONTRACTOR shall provide temporary pumps and piping as required to maintain storm and sanitary sewer flows past reaches of sewers temporarily interrupted by the water transmission main construction.

3.6 TRENCH EXCAVATION, BEDDING, AND BACKFILL

A. Excavation, bedding, and backfill shall conform to Section 31 23 00.

B. Backfill materials at the location of the utility crossing shall be as specified for the adjacent trench condition identified on the Drawings for the new water transmission main.

3.7 MINIMUM CLEARANCES

A. Where possible, minimum clearance between the new water transmission main and existing utilities shall be 12 inches. Where grades of existing gravity sewers or storm drains must be maintained, resulting in a clearance of less than 12 inches, notify the OWNER for directions.

B. Where clearance between the new water transmission main and an existing utility is less than 12 inches, a two-inch-thick neoprene pad shall be placed between the pipes.

3.8 DISSIMILAR PIPE ENDS

A. Where cut ends of existing sewer or storm drainpipes will not fit the standard factory integral fitting of the replacement pipe, CONTRACTOR shall join pipe with a factory-fabricated adapter coupling or a rubber sleeve type coupling (Fernco, Calder, or approved equal). Similarly, in the case of waterline replacement, CONTRACTOR shall use an appropriately sized transition coupling.

END OF SECTION

SECTION 01 77 00
CLOSEOUT PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. This section covers closeout procedures for the Work.

B. Related Sections:

1. Section 01 33 00 – Submittal Procedures
2. Section 32 01 30 – Operation and Maintenance of Site Improvements

1.2 FINAL CLEANUP

A. The CONTRACTOR shall promptly remove from the vicinity of the completed Work, all rubbish, unused materials, concrete forms, construction equipment, and temporary structures and facilities used during construction. Final acceptance of the Work by the OWNER will be withheld until the CONTRACTOR has satisfactorily complied with the foregoing requirements for the final cleanup of the Site.

1.3 CLOSEOUT TIMETABLE

A. The CONTRACTOR shall establish dates for testing.

1.4 FINAL SUBMITTALS

A. The CONTRACTOR, prior to requesting final payment, shall obtain and submit the following items to the OWNER:

1. Written guarantees, where required.
2. Operating manuals and instructions, as required
3. New permanent cylinders and key blanks for all locks.
4. Bonds for maintenance, etc., as required.
5. Certificates of inspection and acceptance by local governing agencies having jurisdiction.
6. Releases from all parties who are entitled to claims against the subject project, property, or improvement pursuant to the provisions of law on the OWNER-furnished form appended at the end of this section or on the CONTRACTOR's standard form as approved by the OWNER.
7. Releases from property owners where the CONTRACTOR has secured an easement, permit, or agreement for use of the property.

1.5 MAINTENANCE AND GUARANTEE

A. The CONTRACTOR shall comply with the maintenance and guarantee requirements contained in Section 4.4 of the Supplementary General Conditions.

B. Replacement of earth fill or backfill, where it has settled below the required finish elevations, shall be considered as a part of such required repair work, and any repair or resurfacing constructed by the CONTRACTOR which becomes necessary by reason of such settlement shall likewise be considered as a part of such required repair work unless the CONTRACTOR shall

have obtained a statement in writing from the affected private owner or public agency releasing the OWNER from further responsibility in connection with such repair or resurfacing.

C. The CONTRACTOR shall make all repairs and replacements promptly upon receipt of written order from the OWNER. If the CONTRACTOR fails to make such repairs or replacements promptly, the OWNER reserves the right to do the Work and the CONTRACTOR and his surety shall be liable to the OWNER for the cost thereof.

1.6 BOND

A. The CONTRACTOR shall provide a bond to guarantee performance of the provisions contained in Paragraph "Maintenance and Guarantee" above, and Section 4.4 of the Supplementary General Conditions.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

D I V I S I O N 3 1

Earthwork

SECTION 31 10 00
SITE CLEARING

PART 1 GENERAL

1.1 THE REQUIREMENT

A. The Work of this section includes measures required during the CONTRACTOR's initial move onto the site to protect existing fences, houses and associated improvements, streets, and utilities near the construction areas from damage and clearing, grubbing, and stripping.

1.2 SITE INSPECTION

A. Prior to moving onto the site, the CONTRACTOR shall inspect the Site conditions and review maps of the pipeline routes, future culvert location (by others), and facilities delineating the right-of-way lines and easement boundaries.

B. OWNER will document existing alignment conditions with video and photo records, which will be available to the CONTRACTOR if requested.

1.3 COORDINATION OF WORK

A. The scheduling and performance of this work are dependent on meeting the requirements of Section 31 25 00 - Erosion and Sediment Control. No ground-disturbing activities shall be performed before approved erosion and sediment control measures are implemented for that area to the satisfaction of the OWNER.

B. Comply with provisions on the Contract Drawings and in Section 01 41 00 – Regulatory Requirements, regarding restrictions on work and Section 01 57 19 – Temporary Environmental Controls.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 SITE ACCESS

A. The CONTRACTOR shall develop any necessary access to the pipeline route, including access barriers to prohibit unauthorized persons from entering.

B. **Utility Interference:** Where existing utilities interfere with the Work, notify the utility owner and the OWNER before proceeding. Coordinate with the utility owner to prevent damage to utilities.

C. Leveling platforms consisting of fill material may be installed within ditches for equipment access. Temporary culverts shall be installed within existing ditches below leveling platforms, as needed, to prevent water ponding. The contractor may use pumps instead of temporary culverts, as approved by the OWNER, to divert water around the leveling platform. Ditches shall be protected in accordance with Sections 01 57 19 - Temporary Environmental Controls.

3.2 CLEARING, GRUBBING, AND STRIPPING

A. Construction areas shall be cleared of grass and weeds to at least a depth of six inches and cleared of structures, pavement, sidewalks, concrete or masonry debris, trees, logs, upturned stumps, loose boulders, and any other objectionable material of any kind which would interfere

with the performance or completion of the Work, create a hazard to safety, or impair the subsequent usefulness of the Work, or obstruct its operation. Pavements, curbs, and sidewalks requiring removal shall be saw cut along neat lines as shown on the plans; those outside of the actual limits of construction shall be protected from damage during construction, as directed by the OWNER. Trees and other natural vegetation outside the actual limits of construction shall be protected from damage during construction, as directed by the OWNER.

B. Within the limits of excavation, the areas below the natural ground surface shall be grubbed to a depth necessary to remove all stumps, roots, buried logs, and all other objectionable material. Septic tanks, drain fields, connection lines, and any other underground structures, debris, or waste shall be removed if found on the Site unless marked for protection by the OWNER. All objectionable material from the clearing and grubbing process shall be removed from the Site and wasted in approved safe locations.

C. In areas not covered with pavement or sidewalks, and outside of wetlands, the topsoil or surficial gravel cover shall be removed to a depth of 6 inches below the stripping limits across the full width of the clearing limits. The stripped materials shall be stockpiled for later incorporation as the final backfill material for the trench and other disturbed areas, as shown on the Contract Drawings.

D. Unless otherwise indicated, native trees larger than three inches in diameter at the base shall not be removed without the OWNER's approval. The removal of any trees, shrubs, fences, or other improvements outside of rights-of-way, if necessary for the CONTRACTOR's choice of means and methods, shall be arranged with the owner of the property and shall be removed and replaced at no additional cost to the OWNER.

E. Backfill all holes and depressions resulting from tree root and stump removals.

1. Use native material
2. Compact by track-walking until no further settlement is noted under equipment weight.
3. Grade to conform to the surrounding ground contours.

F. Level all soil piles left from stump removal by rough grading.

END OF SECTION

SECTION 31 23 00
EXCAVATION AND FILL

PART 1 GENERAL

1.1 SUMMARY

A. Excavation, including rock, trenching, backfilling, and compacting, trench safety, removal of pavement and concrete, and haul and disposal of asphalt pavement and trench material for all underground utilities.

B. Related Sections:

1. Skagit Public Utility District No. 1 General Conditions
2. Division 1 - General Requirements
3. Section 31 10 00 - Site Clearing
4. Section 33 05 05 – Buried Piping Installation

C. Backfilling all signs, mailboxes, trench excavations, and behind walls is incidental to other work under the contract. The material shall be in conformance with the Plans and these specifications.

1.2 SUBMITTALS

A. **Materials:** Submit all applicable pre- and post-construction backfill material submittals to be used for this project. All backfill materials should be approved by the OWNER prior to use. Backfill material submittals should include testing results from an approved testing agency for the tests defined below.

1. Grain size distribution testing in accordance with ASTM D6913
2. Modified proctor testing in accordance with ASTM D1557

1.3 IMPORTED MATERIAL ACCEPTANCE

A. Tests necessary for the CONTRACTOR to locate an acceptable source of imported material shall be made by the CONTRACTOR. Certification that the material conforms to the Specification requirements, along with copies of the test results from a qualified commercial testing laboratory, shall be submitted to the OWNER for approval. All sieve analysis testing shall be at the CONTRACTOR’s sole expense.

B. No imported materials shall be delivered to the site until the OWNER has accepted the proposed source and materials tests.

1.4 PROTECTION OF EXISTING UTILITIES AND STRUCTURES

A. **Existing Utilities:** Protect existing utilities in accordance with Section 1-07.17 of the Standard Specifications.

B. **Existing Mailboxes and Signs:** Protect existing mailboxes and signs, which may include the temporary relocation of mailboxes.

C. **Damage to Existing Improvements:** The CONTRACTOR shall be responsible for damage in accordance with Section 1-07.17 of the Standard Specifications.

1.5 SITE CONDITIONS

A. Avoid overloading or surcharge a sufficient distance back from the edge of the excavation to prevent slides or caving.

B. Maintain and trim excavated materials in such a manner to be as little inconvenience as possible to the public and adjoining property owners.

C. Provide full access to public and private premises at street crossings, sidewalks, and other points as designated by OWNER to prevent serious interruption of travel.

D. Protect and maintain benchmarks, monuments, or other established points and reference points, and if disturbed or destroyed, replace items to the full satisfaction of OWNER and controlling agencies.

E. Verify the location of existing underground utilities.

PART 2 PRODUCTS

2.1 SUITABLE FILL AND BACKFILL MATERIAL REQUIREMENTS

A. Fill, backfill, and embankment materials shall be clean, fine earth, rock, or sand, free from grass, roots, brush, trash, organic matter, debris, and other deleterious material.

B. Fill and backfill materials to be placed within 6 inches of any structure or pipe shall be free of rocks or unbroken masses of earth materials having a maximum dimension larger than 1 inch.

C. **Suitable Materials:** Materials not defined as unsuitable in Article 2.2 below are defined as suitable materials and may be used in fills, backfilling, and embankment construction subject to the indicated limitations. In addition, when acceptable to the OWNER, some of the material listed as unsuitable may be used when thoroughly mixed with suitable material to form a stable composite, provided it is capable of being compacted to the specified relative compaction.

D. **Topsoil:** Topsoil shall be Topsoil Type B according to WSDOT Standard Specifications Section 9-14. Topsoil required to conduct surface restoration in the vicinity of the Air Release Valve and where pipelines run through and along vegetated areas shall be harvested from the immediate area where the improvements are installed.

E. Crushed Surfacing Top Course: Materials shall conform to Section 9-03.9(3) of the Standard Specifications.

F. Trench Backfill:

1. Bedding shall consist of Gravel Backfill for Pipe Zone Bedding meeting Section 9-03.12(3) of the Standard Specifications with 100% passing the 1½” sieve.
2. Trench backfill material above the pipe zone shall consist of Bank Run Gravel for Trench Backfill, Section 9-03.14(1) of the Standard Specifications with 100% passing the 3” sieve when native fill material is unstable, cannot achieve required compaction, or requires enhanced drainage/stability, as determined by the OWNER.

G. Engineer Ordered Trench Stabilization Material: Material shall consist of Quarry Spalls meeting Section 9-13.6 of the Standard Specifications.

2.2 UNSUITABLE MATERIAL

A. Soils (onsite or imported) that are not suitable as fill because they cannot be compacted sufficiently to achieve the density specified for the intended use according to the requirements of the Specifications.

B. Materials that contain hazardous or designated waste materials, including petroleum hydrocarbons, pesticides, heavy metals, and any material that may be classified as hazardous or toxic according to applicable regulations.

2.3 USE OF BACKFILL MATERIAL TYPES

A. Where these Specifications conflict with the requirements of any local agency having jurisdiction or with the requirements of a pipe material manufacturer, the OWNER shall be immediately notified. In case of conflict between types of pipe embedment backfills, the CONTRACTOR shall use the agency-specified backfill material if that material provides a greater degree of structural support to the pipe, as determined by the OWNER. In case of conflict between types of trenches or final backfill types, the CONTRACTOR shall use the agency-specified backfill material if that material provides the greater in-place density after compaction.

2.4 FILTER FABRIC

A. Geotextile used for Trench Stabilization shall conform to Section 9-33.1, Table 3, of the Standard Specifications for “Soil Stabilization” fabric.

PART 3 EXECUTION

3.1 EXCAVATION – GENERAL

A. **General:** Except when specifically provided to the contrary, excavation shall include the removal of all materials of whatever nature encountered, including all obstructions of any nature that would interfere with the proper execution and completion of the WORK, including rock excavation as defined herein. The removal of said materials shall conform to the lines and grades indicated or ordered. Unless otherwise indicated, the entire construction site shall be stripped of all vegetation and debris, and such material shall be removed from the site prior to performing any excavation or placing any fill. The CONTRACTOR shall furnish, place, and maintain all supports and shoring that may be required for the sides of the excavations. Excavations shall be sloped or otherwise supported in a safe manner in accordance with applicable State safety requirements and the requirements of OSHA Safety and Health Standards for Construction (29CFR1926).

B. Removal and Exclusion of Water:

1. The CONTRACTOR shall remove and exclude water, including stormwater, groundwater, irrigation water, and wastewater, from all excavations unless specifically stated herein. Dewatering shall conform to Section 31 23 19 – Dewatering. Water shall be removed and excluded until backfilling is complete and all field soil testing has been completed.

3.2 PIPELINE AND UTILITY TRENCH EXCAVATION

A. Pothole Existing Utility Location:

1. The CONTRACTOR shall excavate and expose existing utilities indicated on the Contract Drawings that may conflict with the work. Excavation shall be performed in advance of pipeline laying to allow time for the OWNER to resolve utility conflicts.
2. Data, including dates, locations excavated, sketches and photos, depths to existing ground, and horizontal distances, shall be submitted to the OWNER as soon as possible to minimize delays.
3. Damage to utilities from excavation activities shall be repaired by the CONTRACTOR at no additional cost to the OWNER or ENGINEER.

B. Furnish and Install Adequate Site and Trench Safety Systems in Accordance with RCW 49.17:

1. Install and maintain shoring, sheeting, bracing, and sloping necessary to support the sides of the excavation and to prevent any movement that may damage adjacent facilities, delay the work, endanger life and health, or pose a threat to the environment. Conform to the requirements of WISHA and other applicable governmental regulations and agencies.
2. All cribbing, sheeting, and shoring shall be designed by a licensed professional engineer in the State of Washington and meet the requirements of W.A.C. 296-155 (Safety Standards for Construction Work, Part N, Excavation, Trenching, and Shoring).
3. The CONTRACTOR shall familiarize themselves and comply with all other applicable codes, ordinances, and statutes, and bear sole responsibility for the penalties imposed for noncompliance.
4. The CONTRACTOR shall be solely responsible for making and maintaining all excavations in a safe manner.
5. Use any combination of shoring and overbreak, tunneling, boring, sliding trench shield, or other method allowed by the applicable local, state, and federal safety codes.
6. Carefully reconsolidate the bedding and side support behind a trench shield prior to placing backfill.
7. Leave in place those portions of cribbing and sheeting extending below the crown elevation of the pipe unless the bedding and side support can be reconsolidated to the satisfaction of the OWNER.
8. Where removal of sheeting would result in damage to adjacent utilities or other property, the OWNER may order all or a portion of sheeting to be cut off and left in place.
9. Do not use horizontal strutting below the barrel of a pipe.
10. Do not use the pipe as support for trench bracing.
11. Damages resulting from improper shoring and failure to shore shall be the sole responsibility of the CONTRACTOR.

C. Contaminated Soil and/or Water:

1. There are no known locations of soil contamination at the project site. However, contaminated material may exist within the work area.
2. Activities involving contaminated materials, should they be encountered, shall be in accordance with:
   a. Washington State Department of Health Regulations.
   b. Federal Resources Conservation and Recovery Act (RCRA), 42 USC, Sections 6901 through 6987.

c. Federal Hazardous and Solid Waste Amendments (HSWA), PL 98-616.
d. Other codes and regulations related to the scope of work.

3. If contaminated materials are encountered during construction, the CONTRACTOR shall stop work immediately in this area and shall sufficiently secure the work area such that contaminated materials or potentially contaminated materials are not exposed to the public. This shall be accomplished through temporary backfilling, trench plating, covering the exposed areas with plastic sheeting, or other means. The CONTRACTOR shall immediately notify the OWNER of his findings, shall secure the area, and then shall continue work in another area away from the area in question. The CONTRACTOR shall not continue work in the potentially contaminated area until directed by the OWNER. Stopping work in a potentially contaminated area and moving to another work area shall be considered part of the work, and no additional payment will be made. Payment for work within contaminated areas will be paid in accordance with that specified later in this section.
4. If contaminated materials are encountered, and if directed by the OWNER, the CONTRACTOR shall prepare a site-specific Health and Safety Plan (HSP), subject to review by the OWNER, which details how the CONTRACTOR intends to protect workers while working in the presence of contaminated soils and groundwater.

D. Open Trench:

1. All trenches shall be fully backfilled at the end of each day or, in lieu thereof, shall be covered by heavy steel plates adequately braced and capable of supporting vehicular traffic in those locations where it is impractical to backfill at the end of each day.
2. The above requirements for backfilling or use of steel plate will be waived in cases where the trench is located further than 100 feet from any traveled roadway or occupied structure. In such cases, however, barricades and warning lights meeting safety requirements shall be provided and maintained.

E. Engineer-Ordered Over Excavation or Shoring:

1. General: When directed by the OWNER, perform over-excavation or shoring per Section 2-09.3(1)C, "Shoring or Extra Excavation Class B," of the 2025 WSDOT Standard Specifications to stabilize trenches or protect adjacent features.
2. Shoring: Required when excavation exceeds 4 ft with worker entry, sidewalls are unstable, or within trench depth distance from structures/utilities/pavement, as determined by the OWNER. Install shoring (e.g., trench shields, sheet piling) per WSDOT specs, designed by a licensed engineer if required by WAC 296-155, to stabilize the trench.
3. Over-Excavation: When ordered, excavate beyond shown depth/width to OWNER-specified dimensions. Backfill to pipe bedding grade with trench stabilization material, compacted per this Section. Over-excavation less than 6 in. below Drawings at no cost to OWNER; 6 in. or greater/wider paid under bid item for over-excavation and stabilization material.
4. Coordination: Notify OWNER of conditions requiring action; proceed upon approval.

F. Where pipelines are to be installed in embankments, fills, or structure backfills, the fill shall be constructed to a level at least one foot above the top of the pipe before the trench is excavated.

G. If a moveable trench shield is used during excavation operations, the trench width shall be wider than the shield so that the shield is free to be lifted and then moved horizontally without binding against the trench sidewalls. If the trench walls cave in or slough, the trench shall be excavated

as an open excavation with sloped sidewalls or with trench shoring, as indicated and as required by the pipe structural design.

3.3 ROCK EXCAVATION

A. Rock excavation shall include the removal of solid rock, boulders, or other hard material that cannot be excavated with standard excavation equipment (e.g., backhoes or trenchers) without the use of drilling, blasting, hydraulic breakers, or other specialized methods, as determined by the OWNER.

B. Where rock is encountered, the CONTRACTOR shall use appropriate methods such as drilling, blasting, or mechanical breaking to remove the rock. Blasting, if required, shall comply with all local, state, and federal regulations, including obtaining necessary permits and providing advance notification to the OWNER and affected property owner

C. All rock excavation operations shall conform to OSHA Safety and Health Standards for Construction (29CFR1926) and applicable WISHA requirements. The CONTRACTOR shall submit a rock excavation safety plan to the OWNER for approval prior to commencing work if blasting or hydraulic breaking is proposed.

3.4 TRENCH STABILIZATION

A. When, in the opinion of the OWNER, the existing material in the bottom of the trench is unsuitable for supporting the pipe, excavate below the bottom of the pipe, as shown on the Drawings or as directed by the OWNER.

B. Install Geotextile across the full width of the trench and up the trench sides to a height adequate to form a 2-foot-minimum lap of fabric over the installed trench stabilization material.

C. Backfill the trench to the subgrade of the pipe base with the trench stabilization material specified herein. Place the material over the full width of the trench to the required grade. Compact the material to provide a firm, non-yielding surface as approved by the OWNER. Provide a minimum 2-foot lap at seams.

D. At the CONTRACTOR’s option, trench stabilization may be constructed to aid dewatering, at no additional cost to the OWNER.

3.5 INSTALL TRENCH DAM

1. General: Furnish and install trench dams at locations indicated on the Plans and Profile sheets or as directed by the OWNER.
2. Excavation:
    a. Excavate the trench dam area to extend from the bottom of the trench to 12 inches below the existing ground surface.
    b. Key the trench dam into undisturbed native soils for a minimum depth of 6 inches on all sides (bottom and trench walls) to ensure a continuous seal.
    c. Longitudinal thickness of the trench dam shall be a minimum of 12 inches and a maximum of 24 inches unless otherwise directed by the OWNER.
3. Material Placement:
    a. Mix bentonite and silty soil in a 1:4 ratio offsite or onsite using methods to ensure uniformity, subject to OWNER approval.
    b. Place trench dam material in lifts not exceeding 6 inches in thickness.

c. Ensure the material is free of voids and fully contacts native soils at the keyed interfaces.

4. Compaction:
   a. Compact each lift to a minimum of 90% of maximum dry density per ASTM D1557, within ±2% of optimum moisture content.
   b. Use hand-operated compaction equipment where necessary to avoid damage to adjacent pipe or trench walls.
5. Quality Control:
   a. Verify impermeability by visual inspection and, if directed by the OWNER, by field testing of a sample trench dam section.
   b. Adjust mix proportions or installation methods as needed to achieve the specified impermeability, at no additional cost to the OWNER.

3.6 OVER-EXCAVATION NOT ORDERED OR INDICATED

A. Any over-excavation carried below the grade ordered or indicated, shall be backfilled to the required grade with the indicated material and compacted. Such work shall be performed by the CONTRACTOR at no additional cost to the OWNER.

3.7 PRESERVATION AND RESTORATION OF ADJACENT LANDSCAPE AND SHOULDER

A. Where excavation occurs in landscaped or lawn areas the Contractor shall repair areas damaged through the course of the work to substantially similar condition on completion of the work.

B. CONTRACTOR shall restore City Roads and shoulders to substantially the same condition as prior to the work, with Crushed Surfacing Top Course meeting WSDOT's specifications, at the CONTRACTOR's expense.

3.8 EXCAVATION IN THE VICINITY OF TREES

A. Except where trees are indicated to be removed, trees shall be protected from injury during construction operations. Conform to applicable portions of Section 31 10 00 – Site Clearing regarding tree preservation. No tree roots over 2 inches in diameter shall be cut without express permission of the OWNER. Trees shall be supported during excavation by any means previously reviewed by the OWNER.

3.9 BACKFILL - GENERAL

A. Backfill shall not be dropped directly upon any structure or pipe. Backfill shall not be placed around or upon any structure until the concrete has attained sufficient strength to withstand the loads imposed.

B. Backfill shall be placed after all water has been removed from the excavation and the trench sidewalls and bottom have been dried to a moisture content suitable for compaction.

C. If a moveable trench shield is used during excavation, pipe installation, and backfill operations, the shield shall be moved by lifting the shield free of the trench bottom or backfill and then moving the shield horizontally. The CONTRACTOR shall not drag trench shields along the trench, causing damage or displacement to the trench sidewalls, the pipe, or the bedding and backfill.

D. Immediately prior to placing imported backfill materials, the bottoms and sidewalls of trenches and structure excavations shall have all loose sloughing or caving soil and rock materials

removed. Trench sidewalls shall consist of excavated surfaces that are relatively undisturbed before placement of backfill materials.

E. Use native fill materials above pipe zone if suitable and compacted per Article 2.1, with OWNER approval. If unsuitable or failing WSDOT 9-03.14(1) standards, use Bank Run Gravel for Trench Backfill.

3.10 PLACING AND SPREADING OF BACKFILL MATERIALS

A. Backfill materials shall be placed and spread evenly in layers. When compaction is achieved using mechanical equipment, the layers shall be evenly spread so that when compacted, each layer shall not exceed 6 inches in thickness.

B. During spreading, each layer shall be thoroughly mixed as necessary to promote uniformity of material in each layer. Pipe zone backfill materials shall be spread around the pipe so that when compacted, the pipe zone backfill will provide uniform bearing and side support.

C. Where the backfill material moisture content is below the specified moisture content, water shall be added before or during spreading until the proper moisture content is achieved.

D. Where the backfill material moisture content is too high to permit the specified degree of compaction, the material shall be dried until the moisture content is satisfactory.

3.11 COMPACTION OF BACKFILL MATERIALS

A. **Pipe Bedding:** When laying the pipe, not less than six inches of specified bedding shall be provided below the bottom of the pipe. An additional six inches of bedding shall be carefully screeded by means of a template shaped to the outside radius of the pipe to provide a firm bearing for the full length of each pipe section except at bell holes. A string and/or laser beam must be used to guide the template.

B. **Pipe Zone Backfill:** The pipe zone material tamped as specified herein shall be used for backfill up to a minimum of 6 inches above the top of the pipe. The backfill shall consist of a minimum of two steps: the first step consisting of backfill and compaction to the spring line, and the second step including backfill and compaction to 6 inches above the top of the pipe.

1. After the pipe has been laid and adjusted to specified line and grade, it shall be carefully cradled. Cradling shall be carried on, on both sides of the pipe simultaneously and thoroughly tamped under and around the pipe to secure a uniform bedding for the lower one-half of the pipe. Great care shall be exercised not to damage the protective coating. Backfilling shall be continued when necessary to prevent movement and/or flotation of the pipe.
2. After the pipe in the trench has been assembled, the CONTRACTOR shall backfill all bell holes in the same manner as specified for cradling pipe.
3. The CONTRACTOR shall place a protective covering of pipe zone material not less than 6 inches in thickness to cover the entire upper half of the pipe before the trench is backfilled by mechanical equipment. Conform to Standard Detail for “Typical Trench Section” on the Drawings.

C. Equipment weighing more than 10,000 pounds shall not be used closer to walls than a horizontal distance equal to the depth of the fill at that time. Hand operated power compaction

equipment shall be used where use of heavier equipment is impractical or restricted due to weight limitations.

D. **Compaction Requirements:** The following compaction test requirements shall be in accordance with ASTM D1557 - Test Method for Laboratory Compaction Characteristics of Soils Using Modified Effort (56,000 ft - lbf/ft3) (2,700 kN-m/m3) for fine-grained materials (sand and select trench backfill) materials; and in accordance with ASTM D4253 - Standard Test Method for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table, and D4254 - Standard Test Method for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density, for coarse materials (4-inch-minus gravel and coarse drain rock). Where agency or utility company requirements govern, the highest compaction standards shall apply.

Location or Use of Fill	Relative Compaction	Moisture Content
Pipe Zone backfill	90	Within ±2% of optimum
Trench backfill, beneath paved or gravel areas, and beneath structures	95	Within ±2% of optimum
Trench backfill, not beneath paved or gravel areas or structures	80	Within ±2% of optimum
Embankment fill for road	95	Within ±2% of optimum
Embankment supporting pipe	95	Within ±2% of optimum
Over-excavation Backfill	95	Within ±2% of optimum
Topsoil	Lightly rolled, suitable for seeding	

3.12 DISPOSAL OF EXCESS EXCAVATED MATERIALS

A. Excess excavated materials not required or not suitable for backfill or fill material shall be removed from the site. Material may not be placed on the right-of-way other than specifically shown on the grading and drainage plans. Make all arrangements for hauling and disposal of the excavated material and conform to the requirements of the local agency having jurisdiction. Excess rock material from rock excavation shall be disposed of in accordance with local regulations and OWNER approval.

3.13 TOPSOIL REPLACEMENT

A. Upon completion of trench backfill, embankment fills, and finished grading, previously stockpiled topsoil shall be placed and spread evenly over the disturbed areas. CONTRACTOR shall not operate vehicles and equipment resulting in compaction of topsoil after placement. All topsoil shall be retained and used on the site where regrading occurs. Additional topsoil may need to be imported to provide the required topsoil depth.

3.14 FIELD QUALITY CONTROL

A. Testing:

1. Perform in-place moisture-density tests as directed by the Owner.
2. Perform tests through a recognized testing laboratory approved by OWNER.
3. Costs of "Passing" tests paid by Owner.
4. Perform additional tests as directed until compaction meets or exceeds requirements.

5. Cost associated with "Failing" tests shall be paid by the CONTRACTOR.
6. Reference to Engineer in this section will imply Soils Engineer when employed by OWNER and directed by Engineer to undertake necessary inspections as approvals as necessary.
7. Assure the OWNER has immediate access to testing of all soil-related work.
8. Ensure excavations are safe for testing personnel.

END OF SECTION

SECTION 31 23 19
DEWATERING

PART 1 GENERAL

1.1 SUMMARY

A. CONTRACTOR shall provide all labor, materials, and equipment necessary to dewater trenches, excavations, or areas of ponding water resulting from construction in accordance with the requirements of the Contract Documents.

B. CONTRACTOR shall judge the level of effort required based on the review of the project Geotechnical Data Report (Appendix B) and independent investigations. The cost of dewatering shall be included for all other areas not specifically listed.

C. CONTRACTOR shall secure all other necessary permits to complete the requirements of this Section of the Specifications.

D. Subsurface conditions at the site are addressed in the "Geotechnical Data Report (Appendix B). This report provides information about explorations and tests of subsurface conditions at or contiguous to the Site. The subsurface investigations made were for the sole purpose of furnishing data necessary for the planning and design of the Work. The OWNER's Consultants warrant that the data represents, with reasonable accuracy, the conditions and materials found in the specific borings at the time they were made. The OWNER and the OWNER's Consultants do not warrant the condition, materials, or proportions of materials between such borings.

E. OWNER makes no representation or warranty, expressed or implied, that the Bidders' interpretations from the data are correct, that moisture conditions and indicated water tables will not vary substantially from those found at the time that the borings were made, and that the ground at the location of the borings has not been physically disturbed or altered after the tests were made. The availability of this subsurface information is solely for the convenience of the Bidder and shall not relieve the CONTRACTOR from any risks from any duty to make a separate examination and investigation, or any other responsibility under the terms and conditions of the Contract.

F. CONTRACTOR shall regularly monitor the quality of the water being pumped and discharged. If, based on code and permit requirements, the water is determined to be unsuitable for disposal to receiving waters, the CONTRACTOR shall provide appropriate treatment to achieve minimum water quality levels to allow release.

1.2 GENERAL REQUIREMENTS

A. Where groundwater is encountered during construction, the CONTRACTOR shall immediately take measures to control the rate of flow into the work area, and quality of water discharged from the work area. The OWNER shall judge the adequacy of the CONTRACTOR's dewatering effort, determine whether construction can continue without violating the terms of any permit, and direct a course of action.

B. In the limited trenching areas, the rate of groundwater infiltration is expected to be slow, and pumping directly from the excavation may be feasible.

C. Depending on the site, sediment-laden water from the excavation shall be settled in temporary storage facilities, such as ponds or Baker Tanks, and only clean water meeting permit requirements shall be discharged to the sewer.

D. If the settling process does not adequately remove sediment such that water can be discharged, the CONTRACTOR shall employ mechanical or chemical treatment to meet water quality discharge requirements prior to release.

E. When site conditions allow, the following measures shall be implemented to reduce sediment in water pumped directly from excavations.

1. If possible, a depression in the down-gradient portion of the excavation shall be over-excavated to collect water before removal.

1.3 QUALITY CONTROL

A. It shall be the sole responsibility of the CONTRACTOR to control the rate and effect of the dewatering in such a manner as to avoid all objectionable settlement and subsidence.

B. All dewatering operations shall be adequate to assure the integrity of the finished project and shall be the responsibility of the CONTRACTOR.

C. CONTRACTOR is solely responsible for conducting the dewatering operation in a manner that will protect adjacent structures and facilities. CONTRACTOR is also responsible for the cost of repairing any damage to adjacent structures and restoring facilities.

D. In the event that dewatering is determined to be affecting an adjacent facility or structure, including pavements, the CONTRACTOR shall cease dewatering until satisfactory methods can be developed so as not to endanger the integrity of the existing facility or structure. If an existing facility or structure is damaged in any way or if the owner of such facility or structure claims damage of any type, the CONTRACTOR shall be solely responsible for correcting the problem to the satisfaction of the owner of that facility or structure.

PART 2 PRODUCTS

2.1 EQUIPMENT AND MATERIALS

A. Dewatering, where required, may include the use of sump pumps, temporary pipelines for water disposal, rock or gravel placement, and other means. Standby pumping equipment shall be maintained on Site.

B. If the water produced as a result of dewatering operations is not suitable for direct discharge to receiving waters, it shall be treated. CONTRACTOR is responsible for selecting the proper equipment, chemicals, and processes to successfully treat the water for discharge.

2.2 CONTINGENCY EQUIPMENT AND MATERIALS

A. CONTRACTOR shall have sufficient pumping equipment to dewater any open sections of trench onsite, at all times, in good working condition, with spare pumps and other equipment for emergencies, including, but not limited to, power outages. CONTRACTOR shall also have competent workers on site to operate and repair the pumping equipment.

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

A. The CONTRACTOR shall provide all equipment necessary for dewatering, always have sufficient pumping equipment and machinery in good working condition on hand, and always have competent workers available to operate the pumping equipment. Adequate standby equipment shall be kept available to ensure efficient dewatering and maintenance of dewatering operation during power failure.

B. Dewatering for structures and pipelines shall commence when groundwater is first encountered and shall be continuous until water can be allowed to rise in accordance with the provisions of this Section or other requirements.

C. At all times, Site grading shall promote drainage. Surface runoff shall be diverted from excavations. Water entering the excavation from surface runoff shall be collected in shallow ditches around the perimeter of the excavation, drained to sumps, and pumped or drained by gravity from the excavation to maintain a bottom free from standing water.

D. Dewatering shall always be conducted in a manner that preserves the undisturbed subgrade soils at the proposed bottom of the excavation. If undisturbed subgrade soils are maintained, the use of sumps for dewatering is acceptable.

E. The quality and quantity of discharge water from the groundwater control and dewatering system shall be in conformance with all Federal, State, and local laws and regulations.

F. If foundation soils are disturbed or loosened by the upward seepage of water or an uncontrolled flow of water, the affected areas shall be excavated and replaced with material meeting the Standard Specification 9-03.12(3) or other material approved by the OWNER at no additional cost to the OWNER.

G. In general, the CONTRACTOR shall maintain the water level below the bottom of excavation in all work areas where groundwater occurs during excavation construction, backfilling, and up to acceptance.

H. Flotation shall be prevented by the CONTRACTOR by maintaining a positive and continuous removal of water. The CONTRACTOR shall be fully responsible and liable for all damages that may result from failure to adequately keep excavations dewatered.

3.2 SUMPS

A. Open or cased sumps may be used provided they meet the requirements of Section 3.1.

B. Sumps shall be designed and constructed to prevent the removal of native or other soils.

3.3 SYSTEM MODIFICATIONS

A. If the system does not meet the above requirements as determined by the OWNER, the CONTRACTOR shall modify sumps or wells, add sumps or wells, or install additional alternative systems as needed. If, during the course of construction, the system or a part thereof becomes inoperable, it shall be repaired or replaced at no additional cost to the OWNER.

3.4 SYSTEM PROTECTION

A. Necessary precautions shall be taken, including, but not limited to, marking wells and pipes, protecting pipes at vehicular crossings, and routing vehicular traffic away from dewatering facilities to protect the groundwater control system from damage and ensure continued operation.

3.5 DISPOSAL OF WATER

A. Pumped water shall be disposed of in such a manner so as not to cause damage to public or private property or adversely impact downstream receiving waters or facilities. Quality of discharge water will comply with all State and local regulations and with requirements of all applicable permits.

B. Quality of discharge water shall comply with permit requirements specified in Section 01 41 00 - Regulatory Requirements.

C. The removal of natural, in-place soils during dewatering operations shall be prevented. In order to remove sand and fine-sized soil particles before disposal into any drainage system, water shall be filtered or coagulated using an approved method or allowed to settle in a sediment trap designed to meet the requirements of the Washington Department of Ecology Stormwater Management Manual for Western Washington. If filtration or coagulation methods are used, they shall be conducted to achieve a minimum of 90 percent reduction in total suspended solids. The OWNER may require submission of test results to a frequency of one per day to demonstrate adequate reduction in total suspended solids. No water shall be released directly to private property without written permission from the owner. Water released into any ditch, swale, or watercourse shall be at such a rate so as to avoid any downstream flooding or channel erosion. The system shall be set up such that after initial development, the quantity and size of soil particles will decrease until no visible soil particles are present in the water being pumped at any time after 24 hours from initial pumping.

D. Pumped water shall not be disposed of in a manner that causes contamination of wells in the vicinity.

3.6 TERMINATING DEWATERING

A. The pumping equipment shall be operated prior to complete shutdown in a manner that will allow the groundwater level to rise gradually to its static level. The release of groundwater to its static level shall be performed in such a manner as to maintain the undisturbed state of the natural foundation soils, prevent disturbance of compacted backfill, and prevent flotation or movement of structures, pipelines, and sewers.

B. After the groundwater control system is deactivated, all wells, sumps, and drains shall be removed, and the ground shall be restored to a condition better than or equal to the condition prior to installation of the groundwater control system.

C. The construction, permitting, and abandonment of all wells used in dewatering systems shall comply with Washington State Department of Ecology requirements (Chapter 173-160 WAC and Chapter 18.104 RCW).

END OF SECTION

SECTION 31 25 00
EROSION AND SEDIMENTATION CONTROL

PART 1 GENERAL

1.1 SUMMARY

A. This section covers the work necessary to Install and Maintain Temporary Erosion Control and Water Pollution Control Measures at all CONTRACTOR work and staging areas.

B. CONTRACTOR is to be responsible for the preparation and implementation of the Stormwater Pollution Prevention Plan (SWPPP), all temporary erosion and sediment controls, plans, sampling, reporting, and closeout.

C. CONTRACTOR shall prepare a Construction Stormwater Pollution Prevention Plan (SWPPP) for the entire project in accordance with the requirements Stormwater Management Manual for Western Washington (SWMMWW).

D. CONTRACTOR's SWPPP shall include erosion control plans for staging areas used by the CONTRACTOR that are outside designated work area limits.

1.2 RELATED SECTIONS

A. Division 1 – General Requirements

B. Section 31 10 00 – Site Clearing

C. Section 31 23 00 - Excavation and Fill

D. Section 31 23 19 - Dewatering

E. Washington State Department of Ecology – Stormwater Management Manual for Western Washington (SMMWW), 2024

1.3 GENERAL REQUIREMENTS

A. All erosion and sediment control procedures shall conform to the current version of the Washington State Department of Ecology Stormwater Management Manual for Western Washington.

B. CONTRACTOR shall designate a person responsible as the Certified Erosion and Sediment Control Lead (CESCL). The CESCL shall hold a current certification with the Washington State Department of Ecology or associated training programs as CESCL. The CESCL will have overall responsibility for the implementation of the Contractor's SWPPP plan and the implementation of onsite erosion control measures.

C. CONTRACTOR shall take all precautions to prevent the silting of streams or water impoundments during construction and to control water pollution during the life of the Contract through the use of sediment traps, silt fences, mulching, covering stored piles of soil and backfill, and other erosion control devices or methods. Also, wherever feasible, natural vegetation should be retained and protected.

D. CONTRACTOR shall prepare a Construction Stormwater Pollution Prevention Plan required to complete the project. The SWPPP will follow the guidelines set in the Ecology Stormwater Management Manual for Western Washington.

E. CONTRACTOR shall represent, in the drawings, required temporary erosion sediment control BMP measures the Contractor intends to use in the implementation of the SWPPP. The SWPPP should extend to such facilities including, but not limited to, staging areas, parking areas, truck washing areas, and waste storage and disposal areas.

F. Perform no ground-disturbing activities on the project unless specifically authorized in writing by the OWNER, until the temporary erosion control BMPs required in the SWPPP are completely in place and functional.

G. CONTRACTOR shall have back-up equipment readily available in case emergency situations arise. This includes pumps, hoses, backhoes, and bulldozers. In addition, CONTRACTOR shall have a stockpile of extra temporary erosion and sediment control BMP materials such as filter fence, gravel, and crushed rock for emergency situations.

H. Clean water may be discharged into existing waterways or storm drains if the discharge points are sufficiently protected or into vegetated areas within the construction area if the ground infiltration characteristics are adequate to handle the discharge over the pumping period, as approved by the CESCL.

I. Depending on the site, sediment-laden water from trenches shall be dispersed over vegetated areas outside of sensitive area buffers, or the sediment shall be settled in temporary storage facilities, and only clean water shall be discharged to drainage channels.

1.4 SUBMITTAL REQUIREMENTS AND PROCEDURES

A. Submit in accordance with Section 01 33 00 a SWPPP for the project an erosion and sediment control plan to the OWNER for review. No work may begin before the SWPPP is submitted and reviewed by the OWNER.

B. Where the CONTRACTOR or OWNER determines temporary erosion sediment control measures are required, they shall be designed in accordance with the current version of the Washington State Department of Ecology Stormwater Management Manual for Western Washington and all other relevant regulations and design standards.

C. Plans for Temporary Erosion Sediment Control Measures:

1. CONTRACTOR shall describe how it intends to construct, inspect, operate, and maintain temporary erosion sediment control BMP measures shown on the Drawings or CONTRACTOR facilities such as stockpile areas or waste disposal sites.
2. CONTRACTOR may schedule the installation or implementation of BMPs in phases, providing no construction activity, including truck traffic, occurs in a segment with incomplete BMPs in place.
3. The SWPPP shall be coordinated with, and in no way contradict, the progress schedule required in Section 01 32 00 – Construction Progress Documents.

D. CONTRACTOR shall revise and bring the SWPPP up to date whenever the OWNER makes a written request for revisions or proposes changing the sequence of work. All revisions shall be coordinated with the current approved progress schedule.

E. CONTRACTOR’s proposed SWPPP shall include:

1. Scheduling and timing of temporary erosion sediment control BMP installations.
2. Manufacturer’s data and detailed plans for the products specified in this section.

3. Plans for diverting, collecting, pumping, and piping surface stormwater runoff, process water and seepage from source to the treatment/disposal facilities. The plan shall include the provisions for operating and maintaining the system during periods of inactivity. The plan shall include:
   a. Layout and details of the system.
   b. Flow calculations for stormwater, seepage, and dewatering pump discharge. Sketch of location and sizing calculations for dewatering systems.
   c. Information on pumps, including flow/head, power (gas, diesel, electric), and placement.
4. Plans for all work not shown on the Drawings, including:
   a. Additional earthwork proposed by CONTRACTOR.
   b. Temporary access or haul roads.
   c. CONTRACTOR-provided waste disposal areas.
   d. Staging, CONTRACTOR's field office, and parking sites.
   e. Storage of pipe and other trench materials along the right-of-way.
   f. Stockpile and material processing areas.
5. Plans and schedules for operating, inspecting, and maintaining erosion and sediment control measures and equipment.
6. The name and 24-hour-a-day phone number and alternate contacts for responsible CONTRACTOR personnel.
7. Plans for site restoration of the following areas:
   a. Work areas.
   b. Office and parking areas.
   c. Waste areas.
   d. Temporary access roads.
8. Designate an individual who will have primary responsibility for the installation and maintenance of the temporary erosion sediment control measures, as well as a designated group of work personnel who will report to the designated lead.
9. A description of the training that will be provided to all construction personnel to establish the importance of and the mechanics of the temporary erosion control measures on the project, including the individual expectations for following the SWPPP.
10. A plan for the locations and outlets of dewatering systems shall be required.

F. Shop Drawings, Samples, and Product Data:

1. Samples of all fabrics.
2. Manufacturer's data on all products.
3. Stone filter material gradation.
4. Riprap gradation.
5. Rock gradation for check dams.

G. Submission of SWPPP Plan: All submissions shall meet the requirements of Section 01 33 00.

H. Prepare a schedule of value earned on which to base payment.

1.5 OPERATION AND MAINTENANCE OF BMP FACILITIES AND PRACTICES

A. Requirements:

1. CONTRACTOR shall be directly responsible for the operation and maintenance of all BMP facilities, equipment, and treatment.
2. Provide the OWNER with the name and emergency phone number of one person who can be contacted 24 hours a day, 7 days a week. This person shall have the authority to implement maintenance of erosion sediment control measures.
3. CONTRACTOR shall respond with adequate personnel, equipment, and material immediately when notified of an emergency.
4. Adhere to approved schedules for inspection and maintenance.

B. Noncompliance:

1. After notification by the OWNER, in writing, of noncompliance with the requirements of this section, the OWNER may have the work required to restore compliance performed immediately by the OWNER's forces or by such other means as the OWNER may deem necessary.
2. For the purpose of this section, "compliance" shall be agreed to include all items of work shown in the plans, specifications, the approved SWPPP, and any additional items of work directed by the OWNER to meet the requirements of representatives of other agencies charged with enforcement of these requirements.
3. Direct and indirect costs incurred by the OWNER attributable to correcting noncompliance with this section shall be paid by the CONTRACTOR. Payment will be deducted by the OWNER from monies due, or to become due, the CONTRACTOR. Such direct or indirect cost shall include, but not be limited to, compensation for additional professional services required, all fines or penalties levied against the OWNER for damages relating to this section, corrections, repair, and replacement of damaged work, and compensation for OWNER overhead cost related to these activities.
4. The rights exercised under the provisions of this section shall not diminish the OWNER's ability to pursue any other avenue for additional remedy of damages with respect to the CONTRACTOR's failure to perform the work as required.

PART 2 PRODUCTS

2.1 TEMPORARY SEEDING

A. Temporary seed mixture shall conform to the proportions specified on the TESC plan.

2.2 MULCHING

A. Straw shall be used as the mulching material. The straw shall be Certified Weed-Free Straw per WSDOT Section 9-14.5(1).

2.3 PLASTIC COVERING

A. Plastic covering shall meet the requirements of the ASTM D4397 and have a minimum thickness of 6 mils.

2.4 ORANGE BARRIER FENCE

A. Orange barrier fence shall comply with WSDOT Standard Specification 9-14.6(8) – High-Visibility Fencing.

2.5 CHECK DAMS

A. Check Dams shall comply with WSDOT Standard Specification 9-14.6(5).

B. Triangular silt dikes may be used as approved by the OWNER.

2.6 EROSION CONTROL BLANKET

A. Erosion Control Blanket shall comply with WSDOT Standard Specification 9-14.6(2)B for slopes flatter than 3:1 and 9-14.6(2)C for ditches and swales.

2.7 HOLD DOWNS FOR PLASTIC SHEETING

A. As approved by the OWNER.

B. Hold downs consist of sandbags secured with 1/4-inch polypropylene rope at 10 feet on center maximum each way.

C. Anchor rope with 2-inch x 4-inch stake fir, standard or better.

2.8 INLET PROTECTION

A. Inlet protection inserts shall be in accordance with WSDOT Standard Specification 8-01.3(9)D Inlet Protection.

PART 3 EXECUTION

3.1 GENERAL

A. All construction procedures shall conform to the approved erosion and sediment control plans and the requirements of the respective jurisdictions and as shown on the Drawings.

B. All excavated materials shall be stockpiled at the CONTRACTOR staging area or at a site designated by the CONTRACTOR and approved by the OWNER.

C. During the period of October 1 to April 30, any stockpiled material that is left unworked for more than 24 hours shall be protected with plastic covering. In addition, any stockpiled material near sensitive areas left unworked for 12 hours during the period from May 1st to September 30th shall be protected with plastic.

D. Stockpiled material shall be covered during rainstorms.

E. From October 1st to April 30th, plastic covering shall be placed on bare soil slopes.

F. Where spoil is placed on the downhill side of the trench, it shall be back-sloped to drain toward the trench.

G. CONTRACTOR shall not side cast, push, sluice, or cause foreign, waste, or excavated material to enter surface waters. Materials shall be carefully excavated and moved to an approved spoil or waste area. Provide and maintain erosion and sediment control measures.

H. Sediment shall be trapped onsite using filter fabric fences, sedimentation ponds, sediment traps, and other appropriate methods.

I. All erosion and sediment control measures and facilities provided shall be maintained in proper condition so that they will individually and collectively perform the functions for which they were provided. To ensure the efficiency and proper maintenance of the measures and facilities, inspections shall be made daily to detect any impairment of the structural stability, adequate capacity or other requisites of the measures and facilities which might impair their effectiveness, and the CONTRACTOR shall take immediate steps to correct any such impairment found to exist.

J. All erosion and sediment control devices shall be removed immediately after the disturbed areas are brought to their final, completed condition. Removal of erosion sediment control devices shall be approved by the OWNER and/or the jurisdiction.

K. Runoff, stormwater, and wastewater flows shall be controlled and treated during construction to minimize water quality impacts. Runoff from undisturbed areas shall be diverted from areas of construction activity by utilizing existing road drainage ditches and drainage ways as much as possible. Where this is not possible, and as practical, diversion dikes and swales shall be constructed so runoff from undisturbed areas will not be contaminated by construction activity. Construction and grading materials shall not be stored within 50 feet of the Ordinary High-Water Level of streams, dry or flowing; and shall not be deposited or stored in or alongside wetlands, wetland buffers, streams, rivers, lakes, or watercourses where the materials can be eroded by high water or storm runoff. The OWNER shall approve all stockpile locations.

L. Water from runoff, dewatering, and process wastewater shall be treated and disposed of by dispersing it across vegetated (grassy) areas. The method of disposing of water shall be approved by the OWNER. Water with pollutants will require other disposal methods in accordance with local, State, and Federal law.

M. Stormwater runoff from disturbed areas within the limits of construction and from CONTRACTOR staging and laydown areas shall be collected and treated before release. The extent of erosion and sediment control measures required will depend on the extent of the CONTRACTOR's earthwork and ground cover disturbance and resulting erosion potential. The CONTRACTOR is responsible for meeting specified water quality criteria for all stormwater runoff discharge from construction areas.

N. CONTRACTOR shall comply with the water quality criteria stated in the permits if the sediment-laden flow from the disturbed area enters any streams.

3.2 GROUND COVER

A. Do not clear any areas until construction is ready to begin. Disturb only the minimum area necessary to accomplish the work. The summer construction season is defined as May 1 to September 30. If construction extends beyond the summer construction season, permanent seeding erosion control measures shall be installed in areas unworked for more than 15 consecutive days. In addition, all disturbed areas shall be covered with plastic sheeting when work has stopped for more than 24 hours. If seasonal cover and erosion control practices have already been placed, plastic sheeting is required during the winter season until plant growth is firmly established. If construction has stopped for more than 15 consecutive days during the summer season, temporary cover measures shall be applied to the affected cleared areas. All temporary measures (Summer and Winter) must be inspected and repaired daily.

B. Protect all disturbed areas, including cleared, cut, filled, or other areas of reduced plant cover or exposed soil caused by work in this contract, from erosion until permanent erosion control measures are established. Protection shall include plastic sheeting, organic or inorganic erosion control matting, riprap, temporary seeding, or straw mulch.

C. Temporary seeding shall be done in accordance with the provisions of WSDOT Standard Specifications Sections 8-01 and 9-14. Erosion control matting shall be applied according to the manufacturer's printed instructions. Temporary erosion control measures shall be removed prior to installing permanent seeding erosion control only if the temporary facilities interfere with the proper installation of permanent seeding (e.g., plastic on slopes to be seeded).

D. All disturbed work areas shall receive temporary or permanent cover measures. The table and text below list required cover measures by slope and season.

Season	Slope 3:1 or Flatter
Temporary, May 1 to September 30 (Dry Season)	3,000 lb/acre straw mulch if unworked for more than 15 consecutive days; temporary hydroseed mix if future earthwork is delayed more than 30 days.
Temporary, October 1 to April 30 (Wet Season)	Plastic on all slopes and stockpiles, with more than 10 feet of vertical relief, if unworked for more than 24 hours. Permanent measures (except hydroseeding, which must be performed in the next growing season) if unworked for more than 15 consecutive days.
Permanent Measures (After Construction)	Hand Seed disturbed areas outside of gravel shoulder and stabilized with mulch.

1. Slopes steeper than 3:1 and with more than 10 feet of vertical relief, require erosion control matting, as shown on the Drawings, in addition to the measures in the above table.

E. Areas receiving temporary treatments other than seeding shall be hydroseeded at the beginning of the following seeding season.

F. Temporary stockpile slopes shall not exceed 2:1. Stockpiles shall be covered with plastic sheeting.

G. Plastic covering shall be installed and maintained tightly in place using sandbags or tires on ropes with a maximum 10-foot grid spacing in all directions. All seams shall be overlapped 12 inches and taped or weighted down for the full length. Plastic covering sheets shall be toed in a minimum of 2 feet at the top of slopes to prevent surface water flow beneath the sheets.

H. Areas requiring mulching will be determined by the OWNER based on weather and site conditions. Mulching techniques and rates shall conform to the 1992 Puget Sound Stormwater Manual and the Washington State Department of Ecology Stormwater Management Manual for the Puget Sound Basin.

3.3 FLOW ROUTING

A. To the extent practical, install filter fabric and construct swales, berms, and ditches as required to route surface water from offsite around the areas disturbed by construction. In locations

where the offsite flow must cross the disturbed areas, install a temporary culvert pipe as required to convey the water across the disturbed areas.

3.4 OTHER EROSION CONTROL MEASURES

A. Construction of other erosion control measures, in addition to those detailed in these specifications, shall be in accordance with the current Washington State Department of Ecology Stormwater Manual for Western Washington.

3.5 MAINTENANCE DURING CONSTRUCTION

A. Inspect all erosion control facilities daily or more frequently, if necessary, to ensure that they are in good condition and operating properly. Repair or replace damaged or missing items immediately.

B. Clean, repair, and replace filter fabric fences, straw bale barriers, stormwater diversion pipe sections, check dams, and rip rap pads as necessary to maintain their effectiveness and proper operation.

C. Maintain seeded surfaces throughout construction, including watering and mowing.

D. Maintain an inspection report file.

E. Remove and properly dispose of trapped sediment, debris, trash, and all other material from measures designed to retain sediment.

F. After excavation and/or grading, slope protection where required or as instructed by the OWNER.

G. Construct and replace existing storm drains and inlets as soon as possible or as directed by the OWNER.

H. Provide necessary ditches, swales, and dikes to direct all water towards and into sediment ponds or traps.

I. Excavate sediment out of basins, catch basins, check dams, and traps when capacity has been reduced by 50 percent or when more than 1 foot of sediment has accumulated.

1. Remove the sediment from behind the sediment fence to prevent overtopping.
2. Prevent sediments from being flushed to the downstream system during cleaning.
3. Check dams shall be replaced before the pore spaces are filled with sediment.

3.6 HEAVY RAIN EVENTS

A. During periods of heavy rainstorms, as determined by the OWNER, construction work on the pipeline shall be discontinued. The CONTRACTOR’s equipment and personnel shall be available to construct and maintain the erosion control facilities.

B. A "Heavy Rain Event" is defined as a rainstorm that, in the opinion of the OWNER, is of sufficient duration and intensity that excavation activities must be stopped, and the personnel and equipment from the excavation work are needed to maintain the erosion control facilities.

3.7 SITE RESTORATION

A. As soon as practical after completion of a portion of the work, or when a work or waste area is no longer required, commence site restoration and install permanent erosion control measures.

Temporary erosion and sedimentation control methods shall be kept in effect until the permanent erosion control is established, and the OWNER approves removal of designated temporary facilities. The time between clearing, grubbing and final ground restoration shall be no more than 4 months in duration.

B. Upon completion of the project, all disturbed areas shall be properly cleared of temporary structures, rubbish, and waste materials.

C. After the completion of work, all designated temporary water diversion and treatment areas or devices shall be removed and restored to a permanently protected condition and drainage configuration.

D. Work, staging, laydown, office, and other disturbed areas shall be returned to their original condition. Contaminated material and captured sediment shall be removed from the site and disposed of in an approved location.

END OF SECTION

D I V I S I O N 3 2

Exterior Improvements

SECTION 32 01 30
OPERATION AND MAINTENANCE OF SITE IMPROVEMENTS

PART 1 GENERAL

1.1 SUMMARY

A. This section covers the work necessary to restore disturbed roadside landscaping, gravel shoulders, and unimproved areas to their original or better condition (as determined by the OWNER).

B. Roadside restoration includes all preparation work and import and installation of all required materials to match pre-construction conditions, including topsoil, seed, fertilizer, mulch, and/or gravel cover, as required.

C. Material placement shall be as designated on the Plans and as described in these or referenced specifications.

D. Supply and placement of backfill for all excavations, valves, and testing is considered incidental work.

1.2 CONTRACTOR SUBMITTALS

A. Restoration plans shall be included in the Erosion and Sediment Control Plan required in Section 31 23 00 – Excavation and Fill and shall include seed mix certifications and fertilizer analysis for hand application.

1.3 RELATED SECTIONS

A. Public Utility District General Notes

B. Division 1

C. Section 31 23 00 – Excavation and Fill

D. Section 31 25 00 – Erosion and Sedimentation Control

E. Division 33 – Utilities

F. Washington State Department of Transportation (WSDOT) Standard Specifications, 2025.

PART 2 PRODUCTS

2.1 MATERIAL REQUIREMENTS

A. See Section 31 23 00 for additional information regarding backfill aggregate requirements.

B. Seed mix per Plans.

C. Fertilizer per WSDOT Section 9-14.3(1), balanced granular, as specified on the Plans or by soil test.

D. Certified Weed-Free Straw per WSDOT Section 9-14.5(1).

PART 3 EXECUTION

3.1 SUBGRADE PREPARATION

A. The subgrade shall be prepared in accordance with Section 31 23 00 – Excavation and Fill. For gravel areas, the surface of the subgrade after compaction shall be hard, uniform, smooth, and true to grade and cross-section. Subgrade for base material shall not vary more than 0.04 feet from the indicated grade and cross-section.

3.2 SURFACE RESTORATION – INSTALLATION OF CRUSHED SURFACING MATERIAL

A. Install compacted crushed surfacing material as shown on the Drawings and in accordance with Section 31 23 00 – Excavation and Fill and Section 4-04 of the Standard WSDOT Specifications.

3.3 HAND SEEDING, FERTILIZING, AND MULCHING

A. Prepare for and apply seed mix per Plans and fertilizer at 300 lbs./acre by hand, per WSDOT Section 8-02.3(5)A and 8-02.3(9). Spread evenly in two perpendicular passes, rake the seed into the top 1/4 inch of soil, and water lightly. Mulch with Certified Weed-Free Straw per WSDOT Section 8-02.3. Protect until 90% grass coverage is achieved.

3.4 PRESERVATION AND RESTORATION OF ADJACENT LANDSCAPE AND SHOULDER

A. The utility trench and extensions thereof shall be backfilled such that the adjacent ground surface does not settle, thus compromising adjacent infrastructure. Backfill shall be in accordance with WSDOT Standard Specifications Section 2-09.3(1)E or as otherwise directed by OWNER.

B. Where excavation occurs in landscaped or lawn areas the Contractor shall repair areas damaged through the course of the work to substantially similar condition on completion of the work.

C. Contractor shall repair County Road shoulders to substantially the same condition as prior to the work with Crushed Surfacing Top Course meeting Skagit County, Washington’s specifications, at the Contractor’s expense.

D. Permanent seeding shall be performed in accordance with Best Management Practice (BMP) C120 of the SMMWW.

END OF SECTION

SECTION 32 11 23
AGGREGATE BASE AND ASPHALT PAVING

PART 1 GENERAL

1.1 SUMMARY

A. The Work includes but is not limited to the following:

1. Provide all material, labor, and equipment to prepare subgrade, base course, top course, and one or more lifts of asphaltic concrete pavement (ACP) (and synonymous with Hot Mix Asphalt (HMA)) at the locations, line, and grade shown on the Plans or at locations where asphalt concrete pavement is removed for pipeline installation and needs to be replaced to match pre-construction condition.

1.2 RELATED SECTIONS

A. Coordinate related work specified in other parts of the Project Manual, including but not limited to the following:

1. Section 01 33 00 – Submittal Procedures
2. Section 01 57 19 – Temporary Environmental Controls
3. Section 31 23 00 – Excavation and Fill
4. Section 31 25 00 – Erosion and Sedimentation Controls

1.3 REFERENCES

A. WSDOT Standard Specifications for Road, Bridge, and Municipal Construction, Current Edition (2025).

B. Skagit County Utility Policy, July 5, 2000 Update.

C. Skagit County Road Standards, 2000

1.4 SUBMITTALS

A. Submit in accordance with Section 01 33 00 – Submittal Procedures:

1. Gravel Base material certification.
2. Crushed Surfacing Top Course.
3. Asphalt Concrete Mix design showing compliance with specifications.

1.5 QUALITY ASSURANCE

A. Installer shall be a Specialist

B. Testing and Inspection

1. CONTRACTOR will provide testing and inspection by an independent testing and inspection agency which will perform the following tasks:
   a. Gradation analysis for gravel base and crushed surfacing top course.
   b. Compaction and Moisture Control Tests per WSDOT Standard Specifications Section 5-04.
2. OWNER will contract with an independent testing and inspection agency testing to perform the task(s) below. CONTRACTOR is responsible for scheduling and coordinating these tests.
   a. One compaction test shall be performed for every 100 linear feet of trench restoration, but not less than one, for each of the following surfaces: Subgrade, Gravel Base, Crushed Surfacing Top Course, and Asphalt. Testing and sampling of asphalt shall conform to WSDOT Standard Specification Section 5-04, non-statistical acceptance

procedures shall be employed in the sampling of materials, and density shall be determined using a nuclear density gauge.

1.6 PROJECT SITE CONDITIONS

A. **Coordination:** Notify the Engineer and County inspector upon completion of subgrade preparation work, completion of base course, and of the intended schedule for final surfacing. Subgrade compaction test results complying with project specifications will be required prior to authorization to place aggregate courses. The Engineer and County inspector will inspect all subgrades immediately prior to scheduled surfacing and notify the Contractor of unsatisfactory conditions. Do not proceed with the placement of HMA until all unsatisfactory subgrade conditions have been corrected to the satisfaction of the Engineer and County inspector.

B. **Grade Control:** Establish and maintain required lines, elevations, and drainage patterns.

C. **Weather Conditions:** Frozen materials or materials mixed or coated with ice or frost shall not be used. Do not surface over frozen or excessively wet subgrade conditions.

PART 2 PRODUCTS

2.1 GENERAL

A. Comply with "Quality Assurance" provisions, "References," and Specifications. Where these may be in conflict, the more stringent requirements govern.

2.2 MATERIALS

A. Asphalt Concrete Pavement.

B. Asphalt concrete pavement used for roadway wearing, base, and leveling courses shall be HMA Class ½ inch, PG 64-22 Mix Design (referred to as Class B in Skagit PUD standard details) that has been tested and approved for inclusion on the WSDOT Qualified Products List (QPL) within the previous twelve months.

C. Aggregate materials used for asphalt concrete pavement shall be a manufactured product complying with WSDOT Standard Specification 9-03.8 for the Class of Asphalt Concrete specified.

D. Crushed Surfacing Top Course. Crushed surfacing shall be in accordance with WSDOT Standard Specification 9-03.9(3).

E. Gravel Borrow. Natural or processed granular material conforming to WSDOT Standard Specification 9-03.10.

F. Tack Coat. Shall be in accordance with WSDOT Standard Specification 5-04.3(4).

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify installation conditions as satisfactory to receive work of this Section. Do not install until unsatisfactory conditions are corrected. Beginning work constitutes acceptance of conditions as satisfactory.

3.2 INSTALLATION

A. Install in accordance with "Quality Assurance" provisions, "References," Specifications, and Manufacturer's directions. Where these may be in conflict, the more stringent requirements govern.

B. General.

1. Where new pavement abuts the existing roadway, make an initial saw cut for trench excavation and a final saw cut of the existing pavement just before paving to provide a clean edge to pave against. The minimum trench width acceptable for HMA placement is 2 feet for private roads or in accordance with Skagit County requirements listed below unless otherwise approved by the Engineer.
2. All work associated with the manufacture, transport, placement, compaction, and testing of Asphalt Concrete Pavement shall be in conformance with Standard Specification 5-04.3
3. Where small areas are to be paved, the requirements for batch quantities shall be adjusted to reflect more appropriate quantities.
4. All patched areas shall be saw cut on neat, straight lines generally running parallel or perpendicular to the patch. Cuts shall be through the full depth of asphalt.

C. Subgrade Preparation.

1. Subgrade Preparation: Prepare road and shoulder subgrades by grading to appropriate lines, grades, and elevations necessary to establish specified drainage patterns as well as accommodate specified base courses and final surfacing thickness.
2. Compact subgrade to 95% of ASTM D1557 maximum dry density, at plus or minus 2% of optimum moisture, prior to placement of base and finish courses. Use compaction equipment appropriate to soil type. Display adequate compaction by proof rolling surface in the presence of the Engineer. Notify the engineer 48 hours in advance of proof rolling. Remove and replace unsuitable subgrade with gravel backfill only as authorized by the Engineer as described below.

D. Base Courses: Place Gravel Base and Crushed Surfacing Top Course material to lines, grades, and compacted depths indicated in the plans.

1. Roller compact Gravel Base and Crushed Surfacing Top Course lifts separately using a vibratory steel-wheel roller.
2. Slope finished base courses for proper drainage as indicated in the plans.
3. Soil Residual Herbicide: Apply application accepted herbicide in accordance with Standard Specification 5-04.3(4)B over all areas to receive Asphalt Concrete Pavement.

E. Removal and Replacement of Unsuitable Subgrade with Gravel Backfill.

1. The removal and replacement of unsuitable subgrade with gravel backfill shall only be performed as authorized by the Engineer. Unauthorized work will result in non-payment for the work.
2. Subgrade shall be tested for weak and yielding soil by proof rolling with construction equipment or other methods as directed by the Engineer. When unsuitable bearing materials are encountered at required subgrade elevations, carry excavations 2 feet deeper or as directed by the Engineer, place separation geotextile on the bottom of the excavation, replace with Gravel Base in 1-foot lifts or as directed by the Engineer, and compact to 95% of ASTM D1557 maximum dry density.

F. Placement of HMA.

1. The structural section of the HMA placed shall be equal to the section of the existing pavement, or as specified in the plans, whichever is greater.
2. Immediately prior to placement of HMA, a tack coat shall be uniformly applied to all edges to be joined and lapped six (6) inches over the existing pavement. The lines from the new asphalt pavement shall be raked over the tack coat, feathered, and rolled or tamped to seal the joint. The edge shall be sealed with hot tar seal, all edges, then topped with paver sand, in accordance with WSDOT/APWA Standards.

G. Equipment.

1. The Contractor may use specialized equipment when paving small or irregular areas.
2. Paving machines shall be self-propelled - drag pavers are not permitted.

H. Paving Operation Weather limitations per WSDOT Standard Specification 5-04.3(1).

I. **Pavement Removal and Restoration in Skagit County ROW** (from Skagit County Utility Policy, July 5, 2000 Update).

1. Skagit County recognizes that occasionally it will be necessary to place utilities within the roadway prism using trenched construction. All County roads that are excavated or damaged as a result of any such utility improvements shall be fully restored by the utility owner.
2. Prior to excavation, the asphalt shall be cut adjacent to the excavation to avoid unnecessary damage to the surrounding asphalt during excavation. Surface repair shall be completed according to the following requirements:
   a. Prior to patching, all asphalt edges shall be square cut to a vertical plane using appropriate machinery. The cut edge shall be at least 1 foot outside the edge of the excavation.
   b. All asphalt pavement edges shall be cleaned and coated with an approved asphalt emulsion.
   c. Restoration of an asphalt concrete pavement shall match the existing pavement section or shall match the standard section as specified in the Skagit County Road Standards, whichever is greater. All crushed surfacing material shall meet WSDOT Standard Specification 9-03.9(3). All asphalt concrete shall comply with WSDOT Standard Specifications (including composition and placement) for HMA Class ½" asphalt concrete. The finished patch shall have a minimal crown to allow for traffic compaction of the new asphalt concrete.
   d. Portland cement concrete pavement shall be restored consistent with Section 5-05 of WSDOT/APWA Standard Specifications.
   e. Traffic lanes affected by the trenching shall be replaced in half-lane increments so that there are no joints in the wheel tracks.
   f. All joints between the patch and the existing pavement shall be sealed on the surface with hot tar. The hot tar seal shall then be sprinkled with clean sand.
   g. The pavement repair shall have a design life at least as great as the existing pavement surrounding the patch.

J. Pavement Markings

1. Install all pavement markings in accordance with Section 8-22 of the WSDOT Standard Specifications and Skagit County Standards. Replace any pavement markings damaged by construction outside of the area of the removed asphalt pavement at the expense of the CONTRACTOR. Apply painted lane lines using traffic paint on dry, clean pavement above 40°F, ensuring uniform quality, clean edges, and no drips or overspray.

3.3 ADJUSTING AND CLEANING

A. Make any adjustments as required.

B. Clean: Leave installations clean; premises free from residue of work of this section.

END OF SECTION

SECTION 32 15 40
CRUSHED STONE SURFACING

PART 1 GENERAL

1.1 SUMMARY

A. The Work to be performed includes preparing, stockpiling, hauling, placing, and compacting crusher fines as indicated on the Contract Documents and specified herein.

1.2 RELATED SECTIONS

A. Section 01 33 00 – Submittal Procedures

B. Section 01 57 19 – Temporary Environmental Controls

C. Section 31 23 00 – Excavation and Fill

D. Section 31 25 00 – Erosion and Sedimentation Controls

1.3 REFERENCES

A. WSDOT Standard Specifications, Section 9-03.9(3) Crushed Surfacing.

1.4 SUBMITTALS

A. CONTRACTOR shall submit certification from the supplier certifying the crushed surfacing material, or approved equal, meets the requirements of this Specification.

PART 2 PRODUCTS

2.1 CRUSHED SURFACING TOP COURSE

A. Aggregate Base Course shall be furnished and installed as required and specified under Section 31 23 00, Excavation and Fill.

PART 3 EXECUTION

3.1 GENERAL

A. Equipment shall be capable of performing the Work as described in these Contract Documents. Equipment that is inadequate to obtain the results specified shall be replaced or supplemented as required to meet the requirements of these Contract Documents. Any equipment that is used in an improper manner may be cause for rejection of the Work if, in the opinion of OWNER or Engineer, the Work fails to meet the requirements of these Contract Documents.

B. Equipment used for compaction shall be the rolling type, vibratory type, or combination of both types and shall be of sufficient capacity to meet the compaction requirements herein.

3.2 SUB-GRADE PREPARATION

A. Crushed Surfacing Top Course shall be a minimum of 3” thick installed at 95% relative compaction on top of subgrade.

B. Make any corrections necessary to the base furnished and installed under Section 31 23 00, Excavation and Fill, to bring to the sections and elevations shown.

C. Make sure proper drainage is available to ensure no standing water on the surface.

3.3 PLACEMENT AND COMPACTION

A. The Contractor is responsible for controlling the placement of the material; no additional compensation will be made for material placement in excess of the specified thickness or width.

B. Do not install crushed surfacing material during rain or snow.

C. If the required compacted depth of the crushed surfacing exceeds 6 inches (6"), place the course in two or more layers of approximately equal thickness. The minimum thickness of any one layer shall be four inches (4").

D. Add water to ±2% wet of optimum moisture content. Use a roller or mechanical hand tamper for compaction. Compact to 95% Standard Proctor Density (ASTM D698-70) to a uniform thickness.

1. Use a plate compactor on edges and hard-to-get areas.
2. Loose material shall not be present on the final surface.

E. The top of the path shall be flush with the adjacent grade. Remove any excess gravel on the edges. Ensure that there are no low spots, high spots, or standing water on or adjacent to the path.

3.4 SURFACE FINISHING

A. Use a smooth steel wheel roller for the final rolling of crushed surfacing. Add water to the surface and evenly spread loose stones before final rolling. Make a minimum of two complete passes over the area to embed stones. Correct soft spots developed during rolling.

B. Compacted surface shall be smooth and free from waves and other irregularities. Unsatisfactory portions of crushed surfacing shall be torn up, reworked, re-laid, and rerolled at no additional expense to the Owner.

3.5 REPAIRS

A. Excavate the damaged area to the depth of the crushed surfacing.

B. If the area is dry, moisten the damaged portion lightly and scarify.

C. Apply crushed surfacing to the excavated area to the finished grade.

D. Compact with a 1000 lb. roller.

E. The repaired surface shall be smooth and free from waves and other irregularities. Unsatisfactory portions of the base course shall be torn up, reworked, re-laid, and rerolled at no additional expense to the Owner.

END OF SECTION

D I V I S I O N 3 3

Utilities

SECTION 33 05 05
BURIED PIPE INSTALLATION

PART 1 GENERAL

1.1 SUMMARY

A. The CONTRACTOR shall supply and install the piping systems, complete and operable, as indicated in the Contract Drawings, in accordance with the Contract Documents.

B. The Contractor shall provide fabrication and layout drawings for all piping systems. It is the CONTRACTOR's responsibility to construct the piping system according to the fabrication drawings for a complete and functional system.

C. The mechanical or Plan and Profile drawings define the general layout, configuration, routing, method of support, pipe size, and pipe type. These drawings are not pipe construction or fabrication drawings. It is the CONTRACTOR's responsibility to develop the details necessary to construct the mechanical piping systems to accommodate the specific equipment provided and to provide and install all spools, spacers, adapters, and connectors for a complete and functional system.

D. The provisions of this Section shall apply to all pipe Work in Division 33.

E. This section includes furnishing and installing a temporary waterline bypass as required to maintain water service during construction.

1.2 CONTRACTOR SUBMITTALS

A. General

1. Submittals shall be furnished in accordance with Section 01 33 00 – Submittal Procedures.

B. Samples

1. All expenses incurred in making samples for certification of tests shall be borne by the CONTRACTOR at no increase in cost to the OWNER.

C. Certifications

1. All necessary certificates, test reports, and affidavits of compliance shall be obtained by the CONTRACTOR.
2. **Fabricator Statement**: A statement from the pipe fabricator certifying that all pipes will be fabricated subject to a recognized Quality Control Program. An outline of the program shall be submitted to the OWNER for review prior to the fabrication of any pipe.

D. Bolting Torque for Gaskets

1. Provide bolting torques from the gasket supplier for proper seating of flange gaskets for each size and pressure rating required.

E. Product Technical Data Including

1. Copies of the manufacturer's written directions regarding material handling, delivery, storage, and installation.

2. Separate schedule sheet for each piping system scheduled in this Section showing compliance of all system components. Attach technical product data on gaskets, pipe fittings, and other components.
3. Submit casing diameter, thickness, and AWWA C900 certification to the OWNER.

F. Miscellaneous Submittals

1. Test reports:
   a. Copies of pressure test results on all piping systems.
   b. Notification of time and date of piping pressure tests.

PART 2 PRODUCTS

2.1 GENERAL

A. **Extent of Work:** All pipes, fittings, and appurtenances shall be provided in accordance with the requirements of the applicable Sections of Division 15 and as indicated.

B. **Pipe Supports:** All pipes shall be adequately supported, as indicated in the drawings.

C. **Pressure Rating:** The pipeline shall be designed for the maximum expected pressure as defined in Section 33 05 33.23 – High-Density Polyethylene Pipe.

D. **Inspection:** All pipes may be subject to inspection at the place of manufacture. During the manufacture of the pipe, the OWNER shall be given access to all areas where manufacturing is in progress and shall be permitted to make all inspections necessary to confirm compliance with requirements.

E. **Tests:** Except where otherwise indicated, all materials used in the manufacture of the pipe shall be tested in accordance with the applicable specifications and standards. Welds shall be tested as indicated. The CONTRACTOR shall perform all tests at no additional cost to the OWNER.

2.2 BUTT FUSION

A. Butt fusion of HDPE pipes shall be performed in accordance with Section 33 05 33.23.

2.3 PIPE FLANGES

A. **Flanges:** Metallic (including stainless steel), convoluted or flat-plate, backup rings, and bolt materials shall follow the guidelines of Plastic Pipe Institute Technical Note # 38, and shall have the bolt holes and bolt circles conforming to one of these standards: ASME B-16.5 Class 150, ASME B-16.47 Series A Class 150, ASME B-16.1 Class 125, or AWWA C207 Class 150 Series B, D, or E. The backup ring shall provide a long-term pressure rating equal to or greater than the pressure class of the pipe with which the flange adapter assembly will be used, and such pressure rating shall be marked on the backup ring. The backup ring, bolts, and nuts shall be protected from corrosion by a system such as paint, coal-tar epoxy, galvanization, polyether or polyester fusion bonded epoxy coatings, anodes, or cathodic protection, as specified.

B. **Blind Flanges:** Blind flanges shall be in accordance with ANSI/AWWA C207, or with the standards for miscellaneous small pipes. All blind flanges for pipe sizes 12 inches and over shall be provided with lifting eyes in the form of welded eye bolts.

C. **Flange Coating:** All machined faces of metal blind flanges and pipe flanges shall be coated with a temporary rust-inhibitive coating to protect the metal until the installation is completed.

D. **Flange Bolts:** Studs and bolts shall extend through the nuts a minimum of 1/4-inch.

E. **Insulating Flanges:** Insulated flanges shall have bolt holes 1/4-inch diameter greater than the bolt diameter.

F. **Flange Gaskets:** Gaskets for flanged joints shall be full faced, 1/8-inch thick compressed sheets of aramid fiber base, with nitrile binder and non-stick coating, suitable for temperatures to 700 degrees F, a pH of one to eleven, and pressures to 1,000 psi. Blind flanges shall have gaskets covering the entire inside face of the blind flange and shall be cemented to the blind flange. Ring gaskets shall not be permitted unless otherwise indicated. Provide bolting torques from the gasket supplier for proper seating of flange gaskets for each size and pressure rating required.

G. Flange gasket manufacturers, or approved equal:

1. John Crane, Style 2160.
2. Garlock, Style 3000.

2.4 THREADED INSULATING CONNECTIONS

A. **General:** Threaded insulating bushings, unions, or couplings, as appropriate, shall be used for joining threaded pipes of dissimilar metals and for piping systems where corrosion control and cathodic protection are involved.

B. **Materials:** Threaded insulating connections shall be of nylon, Teflon, polycarbonate, polyethylene, or other non-conductive materials, and shall have ratings and properties to suit the service and loading conditions.

2.5 MECHANICAL-TYPE COUPLINGS (GROOVED OR BANDED PIPE)

A. **General:** Cast mechanical-type couplings shall be provided where indicated. The couplings shall conform to the requirements of ANSI/AWWA C606 - Grooved and Shouldered Joints. Bolts and nuts shall conform to the requirements of Section 33 05 31.19, Paragraph 2.2.F.4. All gaskets for mechanical-type couplings shall be compatible with the piping service and fluid utilized, in accordance with the coupling Manufacturer's recommendations. The wall thickness of all grooved piping shall conform with the coupling manufacturer's recommendations to suit the highest expected pressure. All mechanical-type couplings on buried piping shall be bonded. CONTRACTOR shall have the coupling manufacturer's service representative verify the correct choice and application of all couplings and gaskets and the workmanship to ensure a correct installation.

2.6 SLEEVE-TYPE COUPLINGS

A. **Construction:** Sleeve-type couplings shall be provided where indicated, in accordance with ANSI/AWWA C219 - Standard for Bolted Sleeve-Type Couplings for Plain-End Pipe, and shall be of steel with steel bolts, without pipe stop, and be of sizes to fit the pipe and fittings indicated. Sleeve couplings shall be rated for 200 psi working pressure and 285 psi transient pressure. Couplings shall be hydraulically tested per AWWA C219. The middle ring shall be not less than 1/4-inch in thickness and shall be either 5 or 7 inches long for sizes up to and including 30 inches and 10 inches long for sizes greater than 30 inches, for standard steel couplings, and 16 inches long for long-sleeve couplings. The followers shall be single-piece contoured mill sections welded and cold-expanded as required for the middle rings and of

sufficient strength to accommodate the number of bolts necessary to obtain adequate gasket pressures without excessive rolling. The shape of the follower shall be of such design as to provide positive confinement of the gasket. Bolts and nuts shall conform to the requirements of 33 05 31.19, Paragraph 2.2.F.4. Buried sleeve-type couplings shall be epoxy-coated at the factory as indicated.

B. **Pipe Preparation:** The ends of the pipe, where indicated, shall be prepared for flexible steel couplings. Plain ends for use with couplings shall be smooth and round for a distance of 12 inches from the ends of the pipe, with an outside diameter not more than 1/64-inch smaller than the nominal outside diameter of the pipe. The middle ring shall be tested by cold-expanding a minimum of one percent beyond the yield point, to proof-test the weld to the strength of the parent metal. The weld of the middle ring shall be subjected to an air test for porosity.

C. **Gaskets:** Gaskets for sleeve-type couplings shall be rubber-compound material that will not deteriorate from age or exposure to air under normal storage or use conditions.

1. The rubber in the gasket shall meet the following specifications:
   a. Color: Jet Black.
   b. Surface: Non-blooming.
   c. Durometer Hardness: 74 ± 5.
   d. Tensile Strength: 1,000 psi minimum.
   e. Elongation: 175 percent minimum.
2. The gaskets shall be immune to attack by impurities normally found in water or wastewater. All gaskets shall meet the requirements of ASTM D 2000 - Classification System for Rubber Products in Automotive Applications, AA709Z, meeting Suffix B13 Grade 3, except as noted above. All gaskets shall be compatible with the piping service and fluid utilized.

D. **Insulating Couplings**: Where insulating couplings are required, both ends of the coupling shall have a wedge-shaped gasket that assembles over a rubber sleeve of an insulating compound in order to obtain insulation of all coupling metal parts from the pipe.

E. **Restrained Joints:** All sleeve-type couplings on pressure lines shall be harnessed unless thrust restraint is provided by other means. Harnesses shall be in accordance with the appropriate reference standard, or as indicated.

F. Manufacturers, or approved equal:

1. Dresser, Style 38.
2. Ford Meter Box Co., Inc., Style FC1 or FC3.
3. Smith-Blair, Style 411.

2.7 FLANGED COUPLING ADAPTERS

A. **Flange Couplings Adaptors:** Shall conform to requirements for sleeve type couplings as applicable, shall meet ANSI/AWWA C219, and shall be hydrostatically tested.

B. **Body:** Shall be made of either ductile iron per ASTM A536 or steel per ASTM A53 or ASTM A512 to match the adjoining pipe material. Bolt circle, bolt size, and spacing shall conform to the drilling pattern of an ANSI/ASME B16.5 Class 150 drilling. The body shall be rated for 200 psi working pressure and 285 psi transient pressure.

C. **Follower:** Follower shall be heavy rolled steel per AISI C1018.

D. **Gasket:** Grade 30 – standard – specially compounded rubber of all new materials with ingredients to produce superior storage characteristics, permanence, and resistance to set after installation. Recommended for water, salt solutions, mild acids, and bases.

E. **Bolts and Nuts:** Type 304 stainless steel.

F. **Painting:** The finish shall be enamel with an epoxy coating.

G. Manufacturers, or approved equal:

1. Smith-Blair, Inc.
2. Baker.

2.8 EXPANSION JOINTS

A. Expansion joints shall be Guardian "200" FEP-Lined Expansion Joints by Garlock or approved equal.

2.9 PIPE THREADS

A. All pipe threads shall be in accordance with ANSI/ASME B1.20.1 - Pipe Threads, General Purpose (inch), made up with Teflon tape unless otherwise indicated.

2.10 WATERMAIN CASINGS

A. Casing pipe shall be 24-inch polyvinyl chloride (PVC) conforming to AWWA C900, DR 18, Class 150 unless otherwise indicated on the Contract Drawings.

B. Casing spacers are made of Type 304 stainless steel, 12 gauge, with reinforced polymer runners, and are installed per the manufacturer's recommendations.

C. End seals shall be synthetic rubber with stainless steel clamps; grout optional if district-approved.

2.11 PIPELINE PROTECTION PLATES

A. Provide HDPE protection plates to prevent third-party damage to underground piping systems, serving as an alternative to concrete or steel plates

B. Requirements:

1. Material: Injection-molded HDPE, capable of withstanding 32-ton excavator impact.
2. Surface: Perforated (<1% area) for water flow, no manual drilling.
3. Features: Beveled edges, non-slip pins, imprinted with the warning message "WATER MAIN."
4. Compatibility: No interference with cathodic protection or locating equipment.
5. Size: Matches pipe diameter with side coverage, per manufacturer.
6. Assembly: 4-inch overlap or juxtaposition, secured with HDPE clips.

C. Acceptable product: OVERVIEW Protection Plates by CANUSA-CPS, or approved equal.

D. Submit the manufacturer's product data sheet, including dimensions, strength certification, and installation instructions.

2.12 KEY BLOCKS

A. Provide key blocks, including thrust blocks, as indicated in the contract drawings under the Thrust Block Detail to ensure thrust restraint for buried piping systems.

B. Requirements:

1. Materials:
   a. Restraining Rods: 3/4-inch diameter, high-strength low-alloy steel per AWWA C-111-90.
   b. Hex Nuts and Washers: High-strength low-alloy steel per AWWA C-111-90.
   c. Restraining System: Romac "Ductile Lug," 90° eye bolts, or "600" series, or approved equal.
   d. Rebar: Minimum #6 (3/4-inch), with 9-inch clearance from concrete surfaces.
2. Thrust Restraint Design:
   a. Thrust restraint calculated at 7500 pounds per bolt or as specified by ENGINEER.
   b. Minimum 3-inch clearance between water pipe and concrete.
   c. Soil compacted to 95% maximum dry density per ASTM D698.
3. Coating: All rods, eye bolts, and pipe restraints shall be cleaned and coated with two brush coats of ENGINEER-approved asphalt coating.

C. Submit manufacturer’s product data for rods, nuts, washers, and restraining systems, including material certifications and coating specs.

D. Provide thrust restraint calculations if requested by ENGINEER.

PART 3 EXECUTION

3.1 MATERIAL DELIVERY, STORAGE, AND PROTECTION

A. All piping materials, fittings, valves, and accessories shall be delivered in a clean and undamaged condition and stored off the ground for protection against oxidation caused by ground contact. All defective or damaged materials shall be replaced with new materials.

3.2 GENERAL

A. All pipes, fittings, and appurtenances shall be installed in accordance with the requirements of the applicable Sections of Division 33.

B. **Lined Piping Systems:** The lining manufacturer shall take full responsibility for the complete, final product and its application. All pipe ends and joints of lined pipes shall be epoxy-coated to assure continuous protection.

C. **Cleanup:** After completion of the work, all remaining pipe cuttings, joining and wrapping materials, and other scattered debris, shall be removed from the site. The entire piping system shall be handed over in a clean and functional condition.

D. **Testing and Disinfection:** Pipelines shall be tested and disinfected in accordance with WSDOT Standard Specifications.

3.3 BURIED PIPING

A. Bury piping with a minimum 3-foot cover without air traps, unless otherwise indicated on the Contract Drawings.

B. Laying Piping:

1. Lay piping in finished trenches free from water or debris.
2. Place piping with top or bottom markings with markings in the proper position.
3. Lay piping on an unyielding foundation with uniform bearing under the full length of barrels.
4. At the end of each day's construction, temporarily plug open ends of piping to prevent debris or animals from entering.

C. Casing Installation

1. Install 24-inch C-900 PVC casing to the line and grade indicated on the drawings.
2. Furnish all necessary equipment, power, water, and utilities for carrier pipe installation, insulator runner lubricant, grouting, and other associated work required for installation.
3. Remove all loose soil from the casing. Grind smooth all rough welds at casing joints.
4. The carrier pipe shall be installed without sliding or dragging it on the ground or in the casing in a manner that could damage the pipe's coatings. To minimize friction when installing the carrier pipe, coat the casing spacer runners with a noncorrosive, environmentally safe lubricant.
5. Install carrier pipe with spacers, 8-mil polyethylene encasement, tracer wire, and restrained joints per District standards, testing it separately prior to connection.
6. Sealing and testing shall use rubber seals (or grout if approved) to ensure watertightness during carrier pipe testing.
7. CONTRACTOR shall restore any damage caused by settlement at no additional cost to the OWNER.

D. Installation of Pipeline Protection Plates

1. Install protection plates above all buried piping systems (e.g., DI pipe, HDPE pipe, conduit) on top of the pipe zone bedding layer but before trench backfill, centered over the pipe with sufficient side coverage per manufacturer's recommendations, as shown on the Contract Drawings or directed by the OWNER, to protect against third-party damage.
2. Secure plates together using HDPE clips or connectors per manufacturer's instructions to prevent shifting during backfill.
3. **Backfill:** Per Section 31 23 00, maintain 3 feet of cover, and avoid plate damage.
4. **Inspection:** Check placement and integrity before final backfill; replace damaged plates at no cost to OWNER.

E. Temporary Watermain Bypass

1. CONTRACTOR shall furnish and install an 8-inch HDPE temporary bypass where indicated on the Contract Drawings or as required to maintain water service during construction. Piping shall conform to Section 33 05 31.13 or 33 05 33.23 unless otherwise approved. Install per manufacturer's instructions and AWWA standards and ensure proper support and blocking. Test and disinfect per WSDOT Standards before use, coordinate with the OWNER for service diversion, and remove upon completion, restoring the site and reconnecting the permanent system.

END OF SECTION

SECTION – 33 05 09.24
CASING UTILITY PIPE

PART 1 GENERAL

1.1 SUMMARY

A. The installation of casing pipe shall conform to these Specifications.

1.2 SUBMITTALS

A. See Section 01 33 00 for requirements for the mechanics and administration of the submittal process.

1.3 RELATED WORK

A. Excavation, backfilling, and compaction conform to the requirements set forth in Specification Section 31 05 05 – Buried Pipe Installation

PART 2 PRODUCTS

2.1 CASING PIPE

A. The dimensions and pressure classes for Dimension Ratios for large PVC pressure pipe with Cast-Iron Pipe Equivalent O.D.s shall conform to the requirements of AWWA C905.

B. Provide pipe of the indicated diameter, with a Standard Diameter Ratio (SDR) 18, and a minimum pressure class of 235.

C. Joints
   1. Joints for the buried PVC pipe shall be either an integral bell manufactured on the pipe, a separate coupling employing a rubber ring joint, or fused.
   2. Provide the bell and coupling of the same thickness as the pipe barrel or greater thickness.
   3. The sealing ring groove in the coupling should be of the same design as the groove in cast iron fittings and valves, which are available from local water works supply distributors.
   4. Where restrained pipe joints are indicated on the plans, provide mechanical pipe restraints/shackles or pipe that are capable of supporting integral bell restraints, fused PVC C-905 in equivalent pressure class, or another suitable means of joint restraint.

D. Joint Deflection
   1. Deflection at the joint shall not exceed one-half the maximum deflection recommended by the manufacturer.
   2. No deflection of the joint will be accepted for joints that are over-belled or not belled to the stop mark.

2.2 CASING INSULATORS

A. The carrier pipe and casing shall be separated by an insulator.

B. The insulator spacing shall be installed to support the weight of the pipe and contents.

C. As a minimum, an insulator shall be placed a maximum of 3 feet from each side of a joint and evenly spaced along the carrier pipe with 3 insulators per each length of carrier pipe.

D. Timber skids are not allowed.

E. Casing insulators shall be sized according to the manufacturer's pipe and casing size specifications.

2.3 END SEALS

A. Provide rubber end seals.

PART 3 EXECUTION

3.1 ALIGNMENT AND GRADE

A. Install casing as shown on the Drawings.

B. Do not place pipelines in a restricted area required for the purposes for which the bridges or culverts were to be built or endanger their foundations.

C. Install the casing pipe on an even grade for its entire length and sloped to one end or as noted in a profile plan if provided.

3.2 PROTECTION AT ENDS OF CASING

A. Block up both ends of casings in such a way as to prevent the entrance of foreign material, but to allow leakage to pass in the event of a carrier break.

3.3 INSTALLATION

A. Refer to Skagit PUD Standard Casing Detail for a typical casing installation detail.

B. Install casing insulators per Manufacturer's recommendations.

C. Install end seals per manufacturer's recommendations.

END OF SECTION

SECTION 33 05 31.13
DUCTILE IRON PIPE

PART 1 GENERAL

1.1 SUMMARY

A. This section specifies ductile iron pipe, including standards for dimensionality, quality assurance, safe handling, storage, and installation practices.

B. CONTRACTOR shall furnish all supervision, labor, equipment, materials, and supplies necessary to install ductile iron pipe, completely wrapped with minimum 8-mil polyethylene encasement, in accordance with the project Drawings, Specifications, Contract Documents, and this specification. Fittings shall conform to SECTION 33 14 13 - Public Water Utility Distribution Piping.

1.2 QUALITY ASSURANCE

A. General

1. This section contains references to the following documents. They are a part of this section as specified and modified. Where a referenced document contains references to other standards, those other standards are included as references under this section as if referenced directly. In the event of a conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.
2. Unless otherwise specified, references to documents shall mean the documents in effect at the time of design, bid, or construction, whichever is earliest. If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued.
3. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued or replaced.

B. References

1. ANSI/AWWA C151/A21.51-17 - Ductile-Iron Pipe, Centrifugally Cast, 3 In. Through 64 In. (100mm Through 1,500 mm)
2. American Society for Testing Materials International (ASTM) Standards
3. WSDOT Standard Specifications for Road, Bridge and Municipal Construction, 2025
   a. Section 7-09.3(17) - Polyethylene Encasement
   b. Section 9-30.1 - Water Pipe
   c. Section 9-30.1(1) - Ductile Iron Pipe
   d. Section 9-30.1(2) - Polyethylene Encasement
   e. Section 7-08 - General Pipe Installation Requirements
4. SECTION 33 14 13 – Public Water Utility Distribution Pipe (for fittings)

C. Installer Requirements

1. The installer shall be experienced in the installation of ductile iron pipe and polyethylene encasement per the referenced standards.

D. Warranty

1. The pipe shall be warranted for one year per the pipe supplier's standard terms.

1.3 SUBMITTAL REQUIREMENTS

A. Pre-Construction Submittals: The following product data is required from the pipe supplier and/or fusion provider:

1. Pipe Size
2. Dimensionality
3. Pressure Class per applicable standard
4. Color
5. Polyethylene encasement details
6. Certification of compliance with AWWA C151 and WSDOT 9-30.1 and 9-30.1(1)
7. Installation instruction for polyethylene encasement per AWWA C105 and WSDOT 9-30.1(2)

B. Post-Construction Submittal: The following as-recorded data is required from the CONTRACTOR to the OWNER or pipe supplier upon request:

1. Pipe installation records (location, depth, length)
2. Documentation of polyethylene encasement installation

PART 2 PRODUCTS

2.1 OWNER-SUPPLIED PRODUCTS

A. None

2.2 PIPE DESCRIPTION

A. Pipe supplier shall furnish ductile iron pipe conforming to all standards and procedures and meeting all testing and material properties as described in this specification.

B. Pipe shall conform to ANSI/AWWA C151/A21.51-17 Ductile-Iron Pipe, Centrifugally Cast, minimum Class 50, and WSDOT Standard Specifications 9-30.1 and 9-30.1(1)

Nominal Diameter	Pressure Class	Min. Wall Thickness	Internal Diameter
12-inch	Class 50	0.31 inches	12.38 inches

C. Ductile Iron Pipe

1. Ductile iron pipe shall conform to AWWA C151 and WSDOT 9-30.1(1) for standard dimensions. Testing shall be in accordance with AWWA C151 standards.
2. Pipe shall be manufactured with push-on joints, mechanical joints, or flanged ends as specified in the construction documents and compatible with fittings per SECTION 33 14 13.
3. Pipe shall be completely wrapped with polyethylene encasement, minimum 8-mil thickness, per AWWA C105 and WSDOT 9-30.1(2).
4. Pipe shall be marked as follows:
   a. Nominal pipe size
   b. "Ductile Iron" or "DI"
   c. Pressure class
   d. Manufacturer's trademark or trade mark

e. Production date or code

5. Pipe shall be homogeneous throughout and be free of visible cracks, holes, foreign material, blisters, or other visible deleterious faults.

D. Connection and Fittings for Pressure Applications

1. Connections
   a. Connections shall be defined in conjunction with the coupling of project piping, as well as the tie-ins to other piping systems, using fittings per SECTION 33 14 13.
2. Ductile Iron Mechanical and Flanged Fittings
   a. Fittings shall conform to SECTION 33 14 13 – Public Water Utility Distribution Piping, specifically ANSI/AWA C153/A21.53 ir ANSI/AWWA C110, with a minimum test pressure rating of 225 psi and working pressure rating of 150 psi.
   b. Fittings shall be mortar-lined and seal-coated per ANSI/AWWA C104/A21.4 and wrapped with polyethylene encasement per AWWA C105 and WSDIT 9-30.1(2).
   c. Joint design shall comply with SECTION 33 14 13, including,
      1) Mechanical and Push-on joints per ANSI/AWWA C111/A21.11.
      2) Flanged joints per ANSI/AWWA C110/A21.10-12, with flange drilling per ANSI B16.1, Class 125
      3) Restrained joints using a positive restraint method
3. Sleeve-Type Couplings
   a. Sleeve-type mechanical couplings shall be manufactured for use with ductile iron pressure pipe per SECTION 33 14 13 and may be restrained or unrestrained as indicated in the construction documents.
   b. Sleeve-type couplings shall be rated at the same or greater pressure carrying capacity as the pipe itself.
4. Connection Hardware
   a. Bolts and nuts for buried service shall be made of non-corrosive, high-strength, low-alloy steel having the characteristics specified in ANSI/AWWA C111/A21.11, regardless of any other protective coating.
   b. Bolts, Washers, and Other Hardware shall be in accordance with WSDOT Standard Specifications Section 9-06.22.
   c. Bolt and nut material shall be free-cutting steel.
   d. Nuts shall be capable of developing the full strength of the bolts. Threads shall be Coarse Thread Series conforming to the requirements of the American Standard for Screw Threads. All bolts and cap screws shall have hexagon heads and nuts shall be Heavy Hexagon Series.
   e. Bolts and nuts shall be installed with washers fabricated of material matching the base material of bolts, except that hardened washers for high strength bolts shall conform to the requirements of the AISC Specification. Lock washers fabricated of material matching the bolts shall be installed with washers where indicated.
   f. The length of each bolt shall be such that after the joint is made up, the bolt extends through the entire nut, but in no case more than 1/2-inch beyond the nut.

E. Casing Spacers

1. Prior to installation of the ductile iron pipe within a casing, plastic casing spacers shall be attached to the ductile iron pipe at regular intervals specified by the pipe and casing spacer

manufacturers. Casing spacers shall be situated in such a manner that the carrier pipe does not sag between casing spacers.

PART 3 EXECUTION

3.1 DELIVERY AND OFF-LOADING

A. All pipe shall be bundled or packaged in such a manner as to provide adequate protection of the ends during transportation to the site. Any pipe damaged in shipment shall be replaced as directed by the OWNER or ENGINEER.

B. Each pipe shipment should be inspected prior to unloading to see if the load has shifted or otherwise been damaged. Notify OWNER or ENGINEER immediately if more than immaterial damage is found. Each pipe shipment should be checked for quantity and proper pipe size, color, and type.

C. Pipe should be loaded, off-loaded, and otherwise handled in accordance with AWWA M41, and all of the pipe supplier's guidelines shall be followed.

D. Off-loading devices such as chains, wire rope, chokers, or other pipe handling implements that may scratch, nick, cut, or gouge the pipe are strictly prohibited.

E. During removal and handling, be sure that the pipe does not strike anything. Significant impact could cause damage, particularly during cold weather.

F. If appropriate unloading equipment is not available, the pipe may be unloaded by removing individual pieces. Care should be taken to ensure that the pipe is not dropped or damaged. Pipe should be carefully lowered, not dropped, from trucks.

3.2 HANDLING AND STORAGE

A. Any length of pipe showing a crack, or which has received a blow that may have caused an incident fracture, even though no such fracture can be seen, shall be marked as rejected and removed at once from the work. Damaged areas, or possible areas of damage may be removed by cutting out and removing the suspected incident fracture area. Limits of the acceptable length of pipe shall be determined by the OWNER.

B. Any scratch or gouge greater than 10% of the wall thickness will be considered significant and can be rejected unless determined acceptable by the OWNER.

C. Pipe lengths should be stored and placed on level ground. Pipe should be stored at the job site in the unit packaging provided by the manufacturer. Caution should be exercised to avoid compression, damage, or deformation to the ends of the pipe. The interior of the pipe, as well as all end surfaces, should be kept free from dirt and foreign matter.

D. Pipe shall be handled and supported with the use of woven fiber pipe slings or approved equal. Care shall be exercised when handling the pipe to not cut, gouge, scratch or otherwise abrade the piping in any way.

E. If the pipe is to be stored for periods of 1 year or longer, the pipe should be shaded or otherwise shielded from direct sunlight. Covering of the pipe which allows for temperature build-up is strictly prohibited. The pipe should be covered with an opaque material while permitting adequate air circulation above and around the pipe as required to prevent excess heat accumulation.

F. Pipe shall be stored and stacked per the pipe supplier's guidelines.

3.3 GENERAL INSTALLATIONS

A. Ductile iron pipe will be handled in a safe and non-destructive manner before, during, and after installation and in accordance with this specification and pipe supplier's guidelines.

B. Installation guidelines from the pipe supplier shall be followed for all installations.

C. The ductile iron pipe will be installed in a manner consistent with AWWA M41 and WSDOT 7-08.

D. Pipe and fittings shall be completed wrapped with polyethylene encasement per AWWA C105 and WSDOT 7-09.3(17). Overlap seams and secure with adhesive tape per AWWA C105, ensuring no exposed pipe or fittings.

E. The recommended Safe Pulling Force established by the pipe supplier shall not be exceed when installing by pulling in tension.

F. Prior to installing the ductile iron pipe within a casing, the CONTRACTOR shall attach casing spacers to the outside of the pipe per manufacturer's recommendations.

3.4 TESTING AND DISINFECTION

A. Hydrostatic testing, leakage testing, and disinfection for ductile iron pipe shall be performed in accordance with AWWA C600, WSDOT 7-09.3(23), and WSDOT 7-09.3(24), as applicable, and per Contract Drawings.

3.5 PIPE SYSTEM CONNECTIONS

A. Unless otherwise approved, new piping systems shall be completely assembled and successfully tested prior to making connections into existing pipe systems.

B. Approximate locations for existing piping systems are shown in the construction documents.

C. The OWNER's crew will make the final connection to the existing piping system.

D. Prior to making connections into existing piping systems, the CONTRACTOR shall:

1. Field verify location, size, piping material, and piping system of the existing pipe.
2. Obtain all required fittings, which may include saddles, sleeve type couplings, flanges, tees, or others as shown in the construction documents.
3. Have installed all temporary pumps and/or pipes in accordance with established connection plans.

END OF SECTION

SECTION 33 05 33.23
POLYETHYLENE PIPE

PART 1 GENERAL

1.1 SUMMARY

A. This section specifies polyethylene pipe and conduit, including standards for dimensionality, quality, acceptable fusion practice, safe handling, and storage.

1. 14-inch HDPE pipe for general pipeline applications.
2. 2-inch HDPE conduit for future fiber optic cable installation

B. CONTRACTOR shall furnish all supervision, labor, equipment, materials, and supplies to perform the work necessary to install HDPE pipe and conduit in accordance with the Contract Drawings, Specifications, Contract Documents, and this specification.

1.2 QUALITY ASSURANCE

A. General

1. This section contains references to the following documents. They are a part of this section as specified and modified. Where a referenced document contains references to other standards, those other standards are included as references under this section as if referenced directly. In the event of a conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.
2. Unless otherwise specified, references to documents shall mean the documents in effect at the time of design, bid, or construction, whichever is earliest. If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued.
3. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued or replaced.

B. References

1. American Society for Testing Material International (ASTM) Standards
2. American Water Works Association (AWWA) Standards
3. WSDOT Standard Specifications for Road, Bridge and Municipal Construction, 2024.

C. Fusion Technician Requirements

1. Fusion Technician shall be fully qualified by the pipe/conduit supplier to install HDPE pipe and conduits of the type(s) and size(s) being used.

D. Warranty

1. The pipe and conduit shall be warranted for one year per the pipe supplier’s standard terms.
2. In addition to the standard pipe and conduit warranty, the fusion services shall be warranted for one year per the fusion service provider’s standard terms.

1.3 SUBMITTAL REQUIREMENTS

A. Pre-Construction Submittals: The following product data is required from the pipe supplier and/or fusion provider:

1. Pipe/Conduit Size
2. Dimensionality
3. Pressure rating per applicable standard (pipe) or standard designation (conduit)
4. Color
5. Recommended Minimum Bending Radius
6. Recommended Maximum Safe Pull Force
7. Fusion technician qualification indicating conformance with these specifications
8. For mitered or sweep fittings: Submit bend angle, bend radius, number of segments (for mitered fittings), and fabrication method, as specified in the Contract Drawings.
9. For HDPE/DI transition or flanged end fittings: Submit fitting type, connection details, and certification of compliance with ASTM D3261 and Contract Drawings.
10. Post-Construction Submittal The following as-recorded data is required from the CONTRACTOR and/or fusion provider to the OWNER or pipe supplier upon request:
11. Approved data logger device reports
12. Fusion joint documentation containing the following information:
    a. Pipe/Conduit Size and Thickness
    b. Machine Size
    c. Fusion Technician Identification
    d. Job Identification
    e. Fusion Joint Number
    f. Fusion, Heating, and Drag Pressure Settings
    g. Heat Plate Temperature
    h. Time Stamp
    i. Heating and Cool Down Time of Fusion
    j. Ambient Temperature

PART 2 PRODUCTS

2.1 OWNER-SUPPLIED PRODUCTS

A. None

2.2 PIPE AND CONDUIT DESCRIPTION

A. Pipe suppliers shall furnish HDPE pipe and conduit conforming to all standards and procedures and meeting all material properties as described in this specification.

B. Pipe shall conform to the following dimensionality and general characteristics table:

Nominal Diameter	Dimension Ratio	Min. Wall Thickness	Internal Diameter
14-inch	DR 11	1.273 inches	11.45 inches
2-inch	DR 11	0.182 inches	1.636 inches

C. High Density Polyethylene

1. HDPE pipe and fitting shall contain no recycled compounds except that generated in the manufacturer's own plant from resin of the same specification from the same raw material.
2. HDPE pipe shall conform to ASTM F714.
3. HDPE conduit shall conform at ASTM F2160
4. HDPE pipe and conduit shall be extruded with plain ends. The ends shall be square to the pipe or conduit and free of any bevel or chamfer. There shall be no bell or gasket of any kind incorporated into the pipe or conduit.
5. HDPE pipe and conduit shall be manufactured in a standard 40' nominal length, unless otherwise approved by the OWNER.
6. Pipe and conduit shall be marked as follows:
   a. Nominal pipe/conduit size
   b. Dimension Ratio (DR), Standard Dimension Ratio (SDR), or Schedule
   c. AWWA pressure class, or standard pressure rating for non-AWWA pipe, as applicable (pipe)
   d. ASTM F2160 designation (conduit)
   e. AWWA standard designation number, or pipe type for non-AWWA pipe, as applicable (pipe)
   f. Extrusion production-record code
   g. Trademark or trade name
   h. Cell Classification Number
   i. Pipe and conduit shall be homogeneous throughout and be free of visible cracks, holes, foreign material, blisters, or other visible deleterious faults.
   j. **Conduit Color:** Black with a co-extruded orange stripe (or solid orange, if specified by OWNER) for fiber optic identification.
7. Fusion Joints
   a. Unless otherwise specified, HDPE pipe and conduit lengths shall be assembled in the field with butt-fused joints. The CONTRACTOR shall follow the pipe supplier's written guidelines for this procedure. All fusion joints shall be completed as described in this specification.
8. Pipeline Locating Materials
   a. The HDPE pipe and conduit shall be installed with an extra-high-strength, copper-clad steel tracer wire that shall either be wrapped around the pipe or conduit or taped to the pipe at 10-foot (minimum) intervals before installation.
9. End Seals (pipe)
   a. CONTRACTOR shall seal the ends of the casing pipe following the installation of the inner pipe. Per the contract drawings, end seals shall consist of rubber boots and stainless-steel clamps. They should be watertight and prevent soil migration into the casing.
10. Pull Cord (conduit)
    a. A pull cord shall be installed inside the conduit for future fiber optic cable installation.
       1) Certified Type III Nylon Paracord
       2) 550 lb. Tensile strength
       3) 4 mm diameter
       4) 7 inner strands

2.3 HDPE FITTINGS

1. HDPE Bend, Butt-Fused:
   a. Furnish HDPE bend fittings for pipeline turns, butt-fused per this section.
   b. Comply with ASTM F714 and ASTM D3261.
   c. Material: HDPE, no recycled compounds except manufacturer's own plant resin, matching pipe specs.
   d. Dimensions: Match pipe diameter and DR as specified in Contract Drawings or pipe table in this section.
   e. Fusion: Factory-formed or field butt-fused per supplier guidelines and Fusion Joints requirements; performed by qualified technician, logged per JOINT RECORDING.
   f. Markings: Size, DR, ASTM designation, manufacturer's name, production code.
   g. Quality: Homogeneous, free of cracks, holes, or defects, matching pipe standards.
   h. Color: Black, unless OWNER specifies otherwise.
2. HDPE Mitered or Sweep Fittings:
   a. Furnish HDPE mitered or sweep fittings for pipeline turns, as specified in the Contract Drawings.
   b. Mitered fittings shall be fabricated by cutting HDPE pipe segments at specified angles and butt-fusing them to achieve the required bend angle, per ASTM D3261 and pipe supplier guidelines.
   c. Sweep fittings shall be factory-formed or molded with a smooth, continuous curve, with a minimum bend radius as specified by the pipe supplier or Contract Drawings.
   d. Comply with ASTM F714 (material) and ASTM D3261 (fabrication), matching pipe specifications.
   e. Fusion: Factory-formed or field butt-fused by a qualified fusion technician, with joints logged per Section 3.4 - Joint Recording.
   f. Markings: Include size, DR, ASTM designation, manufacturer's name, and production code.
   g. Quality: Homogeneous, free of cracks, holes, or defects, matching pipe standards.
   h. Color: Black, unless otherwise specified by OWNER.
3. HDPE/DI Transition or Flanged End Fittings:
   a. Furnish HDPE/DI transition or flanged end fittings per Contract Drawings.
4. Transition Fittings: HDPE end butt-fused to pipe, with ductile iron end per AWWA C153/C110, 150 psi minimum, using sleeve-type couplings per Section 331413 if specified.
5. Flanged End Fittings: HDPE flange adapter butt-fused to pipe, with ductile iron backing ring, per ANSI B16.1 Class 125 and AWWA C207.
6. Comply with ASTM F714, D3261, AWWA C906 for HDPE; AWWA standards for DI.
7. Fusion: Butt-fused by qualified technician, logged per Section 3.4.
8. Markings: Size , DR , ASTM/AWWA designations, manufacturer's name.
9. Quality: Free of defects, matching pipe/fitting standards; HDPE black, DI coated per Section 331413.

PART 3 EXECUTION

3.1 DELIVERY AND OFF-LOADING

A. All pipe and conduit shall be bundled or packaged in such a manner as to provide adequate protection of the ends during transportation to the site. Any pipe damaged in shipment shall be replaced as directed by the OWNER.

B. Each pipe shipment should be inspected prior to unloading to see if the load has shifted or otherwise been damaged. Notify OWNER immediately if more than immaterial damage is found. Each pipe shipment should be checked for quantity and proper pipe size, color, and type. Notify OWNER if significant damage to conduit is observed.

C. Pipe should be loaded, off-loaded, and otherwise handled such that the pipe is not nicked, gouged, or otherwise physically damaged.

D. Off-loading devices such as chains, wire rope, chokers, or other pipe handling implements that may scratch, nick, cut, or gouge the pipe are strictly prohibited. Nylon slings are preferred.

E. During removal and handling, be sure that the pipe does not strike anything. Significant impact could cause damage, particularly during cold weather.

F. If appropriate unloading equipment is not available, pipe may be unloaded by removing individual pieces. Care should be taken to ensure that pipe is not dropped or damaged. Pipe should be carefully lowered, not dropped, from trucks.

3.2 HANDLING AND STORAGE

A. Any length of pipe or conduit showing a crack, or which has received a blow that may have caused an incident fracture, even though no such fracture can be seen, shall be marked as rejected and removed at once from the work. Damaged areas, or possible areas of damage may be removed by cutting out and removing the suspected incident fracture area. Limits of the acceptable length of pipe or conduit shall be determined by the OWNER.

B. Any scratch or gouge greater than 10% of the wall thickness will be considered significant and can be rejected unless determined acceptable by the OWNER.

C. Pipe and conduit lengths should be stored and placed on level ground. Pipe and conduit should be stored at the job site in the unit packaging provided by the manufacturer. Caution should be exercised to avoid compression, damage, or deformation to the ends of the pipe or conduit. The interior of the pipe or conduit, as well as all end surfaces, should be kept free from dirt and foreign matter.

D. If pipe or conduit is to be stored for periods of 1 year or longer, the pipe should be shaded or otherwise shielded from direct sunlight. Covering of the pipe or conduit which allows for temperature build-up is strictly prohibited. Pipe and conduit should be covered with an opaque material while permitting adequate air circulation above and around the pipe as required to prevent excess heat accumulation.

E. Pipe and conduit shall be stored and stacked per the pipe supplier’s guidelines.

3.3 GENERAL FUSION PROCESS

A. HDPE pipe and conduit will be handled in a safe and non-destructive manner before, during, and after the fusion process and in accordance with this specification and pipe supplier's guidelines.

B. HDPE pipe and conduit will be fused by qualified fusion technicians, as documented by the pipe supplier.

C. Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) connected to the fusion machine.

D. Only appropriately sized and outfitted fusion machines that have been approved by the pipe supplier shall be used for the fusion process. Fusion machines must incorporate the following elements:

1. HEAT PLATE - Heat plates shall be in good condition with no deep gouges or scratches. Plates shall be clean and free of any debris or contamination. Heater controls shall function properly; cord and plug shall be in good condition. The appropriately sized heat plate shall be capable of maintaining a uniform and consistent heat profile and temperature for the size of pipe being fused, per the pipe supplier's guidelines.
2. CARRIAGE – Carriage shall travel smoothly with no binding at less than 50 psi. Jaws shall be in good condition with proper inserts for the pipe size being fused. Insert pins shall be installed with no interference to carriage travel.
3. GENERAL MACHINE - Overview of machine body shall yield no obvious defects, missing parts, or potential safety issues during fusion.
4. DATA LOGGING DEVICE – An approved data logging device with the current version of the pipe supplier's recommended and compatible software shall be used. Data logging device operations and maintenance manual shall be with the unit at all times. If fusing for extended periods of time, an independent 110V power source shall be available to extend battery life.

E. Other equipment specifically required for the fusion process shall include the following:

1. Pipe rollers shall be used for support of pipe to either side of the machine.
2. A weather protection canopy that allows full machine motion of the heat plate, fusion assembly and carriage shall be provided for fusion in inclement, extreme temperatures, and /or windy weather, per the pipe supplier's recommendations.
3. An infrared (IR) pyrometer for checking pipe and heat plate temperatures.
4. Fusion machine operations and maintenance manual shall be kept with the fusion machine at all times.
5. Facing blades specifically designed for cutting HDPE pipe shall be used.

3.4 JOINT RECORDING

A. Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) connected to the fusion machine. The fusion data logging and joint report shall be generated by software developed specifically for the butt-fusion of fusible polyvinyl chloride pipe. The software shall register and/or record the parameters required by the pipe supplier and these specifications. Data not logged by the data logger shall be logged manually and be included in the Fusion Technician's joint report.

B. The following As-Recorded data is required from the CONTRACTOR and/or fusion subcontractor provided to the OWNER or supplier upon request:

1. Approved data logger device reports
2. Fusion joint documentation containing the following information:
3. Pipe/conduit size and thickness
4. Machine size
5. Fusion Technician Identification
6. Job identification
7. Fusion joint number
8. Fusion, heating and drag pressure settings
9. Heat plate temperature
10. Time stamp
11. Heating and cool down time of fusion
12. Ambient temperature

3.5 GENERAL INSTALLATION

A. Installation guidelines from the pipe supplier shall be followed for all installations.

B. The HDPE pipe and conduit shall be installed in a manner so as not to exceed the recommended bending radius.

C. Where HDPE pipe or conduit is installed by pulling in tension, the recommended Safe Pulling Force established by the pipe supplier shall not be exceeded.

D. Prior to installation of the HDPE pipe or conduit, the CONTRACTOR shall attach a tracer wire by wrapping it around the pipe or taping it to the pipe at 10-foot (minimum) intervals.

E. Install a pull cord inside the conduit per Pull Cord Section above.

END OF SECTION

SECTION 33 14 13
PUBLIC WATER UTILITY DISTRIBUTION PIPING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Ductile iron fittings.
2. Wax tape wrap for ductile iron pipe and fittings.

B. Related Sections

1. Skagit PUD No. 1 General Conditions
2. Division 1 - General Requirements
3. Section 31 23 00 - Excavation and Fill
4. Division 33

1.2 REFERENCED STANDARDS

A. American National Standards Institute (ANSI):

1. B1.1, Unified Inch Screw Threads (UN and UNR Thread Form).
2. B16.1, Cast-Iron Pipe Flanges and Flanged Fittings, Class 25, 125, 250, and 800.
3. B16.21, Nonmetallic Flat Gaskets for Pipe Flanges.

B. ASTM International (ASTM):

1. A183, Carbon Steel Track Bolts.
2. A193, Standard Specification for Alloy-Steel and Stainless-Steel Bolting Materials for High-Temperature Service.
3. A194, Standard Specification for Carbon and Alloy Steel Nuts for Bolts for High-Pressure and High-Temperature Service.
4. A307, Standard Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength.
5. B695, Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel.
6. C150, Specification for Portland Cement.
7. D1330, Rubber Sheet Gaskets.

C. American Water Works Association (AWWA):

1. C104, Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water.
2. C105, Polyethylene Encasement for Gray and Ductile Cast-Iron Piping for Water and Other Liquids.
3. C110, Ductile Iron and Gray Iron Fittings, 3-inch through 48-inch for Water and Other Liquids.
4. C111, Gasket Joints for Cast Iron and Ductile Iron Pressure Pipe and Fittings.
5. C115, Flanged Ductile Iron Pipe with Threaded Flanges.
6. C150, Thickness Design of Ductile Iron Pipe.
7. C151, Ductile Iron Pipe, Centrifugally Cast-In-Metal Molds or Sand-Lined Molds, for Water or Other Liquids.
8. C153, Ductile-Iron Compact Fittings, 3 in. through 16 in. for Water and Other Liquids.

9. C600, Installation of Ductile Iron Water Main and Their Appearances.
10. C606, Grooved and Shouldered Joints.

1.3 SUBMITTALS

A. Manufacturer Certification: Certification materials supplied meet criteria as specified.

PART 2 PRODUCTS

2.1 GENERAL

A. Fittings shall be of the diameter and class shown, shall be furnished complete with rubber gaskets.

2.2 WAX TAPE WRAP

A. Denso petrolatum tape system, or equal, meeting AWWA C217 and NACE RP0375 standards. Install per manufacture's recommendations.

2.3 SPECIALS AND FITTINGS

A. Fittings for ductile iron pipe shall conform to the requirements of ANSI/AWWA C153/A21.53 or ANSI/AWWA C110/A21.10 for diameters 3-inch through 48-inch and shall have a minimum test pressure rating of 225 psi and working pressure rating of 150 psi.

B. Fittings shall be furnished inclusive of mortar-lined and seal coated in accordance with ANSI/AWWA C104/A21.4.

C. The fittings shall be of the diameter and class shown.

D. Joint Design: Ductile iron pipe and fittings shall be furnished with mechanical joints, push-on joints, flanged joints, and restrained joints as required.

1. Mechanical and push-on joints shall conform to ANSI/AWWA C111/A21.11.
2. Flanged joints shall conform to ANSI/AWWA C110/A21.10-12, flange drilling in accordance with ANSI B16.1, Class 125.
3. Restrained joints shall utilize a positive restraint method, such as Grip Ring by Ford or approved equal. Restrained joints using friction restraint such as set screws, anchor lugs, exposed bolts in the thrust restraint assembly are unacceptable.

E. For bell-and-spigot ends with rubber gaskets, the clearance between the bells and spigots shall be such that when combined with the gasket groove configuration and the gasket itself, will provide watertight joints under all operating conditions when properly installed. The CONTRACTOR shall require the pipe manufacturer to submit details complete with significant dimensions and tolerances and also to submit performance data indicating that the proposed joint has performed satisfactorily under similar conditions. In the absence of a history of field performance, the results of a test program shall be submitted.

2.4 CEMENT-MORTAR LINING

A. Cement-Mortar Lining for Shop Application: Except as otherwise provided herein, interior surfaces of all ductile iron fittings shall be cleaned and lined in the shop with cement-mortar lining applied centrifugally in conformity with ANSI/AWWA C104/21.4. During the lining operation and thereafter, the fittings shall be maintained in a round condition by suitable bracing or strutting. Every precaution shall be taken to prevent damage to the lining. If the lining is damaged or found

faulty at delivery site, the damaged or unsatisfactory portions shall be replaced with lining conforming to these Specifications.

2.5 EXTERIOR COATING

A. Exterior Coating of Fittings: The exterior coating shall be an asphaltic coating approximately 1 mil thick.

B. The exterior of all ductile iron fittings shall be wrapped with wax tape wrap.

PART 3 EXECUTION

3.1 INSTALLATION OF PIPE FITTINGS

A. Handling and Storage: All pipe fittings shall be carefully handled and protected against damage, impact shocks, and free fall. All handling equipment shall be acceptable to the OWNER. Fittings shall be protected against injury whenever stored at the trench site or elsewhere. No fitting shall be installed where the lining or coating show defects that may be harmful as determined by the OWNER. Such damaged lining or coating shall be repaired, or a new undamaged fitting shall be furnished and installed.

B. All fittings damaged prior to Substantial Completion shall be repaired or replaced by the CONTRACTOR.

C. CONTRACTOR shall inspect each fitting prior to installation to ensure that there are no damaged portions.

D. Before placement, each fitting shall be thoroughly cleaned of any foreign substance that may have collected thereon and kept clean at all times thereafter. For this purpose, the openings of all pipes and fittings in the trench shall be closed during any interruption to the WORK.

E. The openings of all pipe and specials shall be protected with suitable bulkheads to prevent unauthorized access by persons, animals, water or any undesirable substance. At all times, means shall be provided to prevent the pipe from floating.

END OF SECTION

SECTION 33 14 19
VALVES AND HYDRANTS FOR WATER UTILITY SERVICE

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Valving, actuators, and valving appurtenances.
2. Air release valves, vacuum relief valves, and combination air valves.

B. Related Sections:

1. Skagit Public Utility District No. 1 General Conditions
2. Division 1 - General Requirements
3. Section 33 05 05 - Buried Piping Installation

C. **Unit Responsibility:** For the piping systems required to be provided by the CONTRACTOR, a single manufacturer shall be responsible for coordinating the design, assembly, testing, and furnishing of each valve; however, the CONTRACTOR shall be responsible to the OWNER for compliance with the requirements of each valve section. Unless indicated otherwise, the responsible manufacturer shall be the manufacturer of the valve.

D. **Single Manufacturer:** Where two or more valves of the same type or size are required, the valves shall be furnished by the same manufacturer.

1.2 REFERENCED STANDARDS

A. American National Standards Institute (ANSI):

1. B1.20.1, Pipe Threads, General Purpose.
2. B16.1, Cast Iron Pipe Flanges and Flanged Fittings.
3. B16.18, Cast Copper Alloy Solder Joint Pressure Fittings.
4. B16.34, Valves-Flanged, Threaded and Welding End.

B. ASTM International (ASTM):

1. D256, Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics.
2. D638, Standard Test Method for Tensile Properties of Plastics.
3. D648, Standard Test Method for Deflection Temperature of Plastics Under Flexural Load.
4. D695, Standard Test Method for Compressive Properties of Rigid Plastics.
5. D2240, Standard Test Method for Rubber Property-Durometer Hardness.

C. American Water Works Association (AWWA):

1. C207, Steel Pipe Flanges for Waterworks Service - Sizes 4-inch through 144-inch.
2. C500, Gate Valves for Water and Sewerage Systems.
3. C504, Rubber-Seated Butterfly Valves
4. C512, Air-Release, Air/Vacuum, and Combination Air Valves for Waterworks Service.
5. C540, Power-Actuating Devices for Valves and Sluice Gates.
6. C550, Protective Epoxy Interior Coatings for Valves and Hydrants.
7. C606, Grooved and Shouldered Joints.

D. Manufacturers Standardization Society of the Valve and Fittings Industry, Inc. (MSS).

E. National Electrical Manufacturers Association (NEMA):

1. 250, Enclosures for Electrical Equipment (1000 Volt Maximum).
2. MG 1, Motors and Generators.

1.3 CONTRACTOR SUBMITTALS

A. **General:** Submittals shall be furnished in accordance with Section 01 33 00 – Submittal Procedure.

B. **Shop Drawings:** Shop Drawings for the valves that are within the CONTRACTOR's scope of supply and responsibility shall contain the following information:

1. Valve name, size, valve flow coefficient (Cv factor), pressure rating, identification number (if any), and specification section number.
2. Complete information on valve actuator, including size, manufacturer, model number, limit switches, and mounting.
3. Cavitation limits for all control valves.
4. Assembly drawings showing part nomenclature, materials, dimensions, weights, special linings, and relationships of valve handles, handwheels, position indicators, limit switches, integral control systems, needle valves, and control systems.
5. Complete wiring diagrams and control system schematics.
6. Valve Labeling: A schedule of values to be labeled, indicating in each case the valve location and the proposed working for the label.
7. Acknowledgement that products submitted meet requirements of standard referenced.

C. Spare Parts List: A Spare Parts List shall contain the required information for each valve assembly, where indicated.

D. **Factory Test Data:** Where indicated, signed, dated, and certified factory test data for each valve requiring certification shall be submitted before shipment of the valve. The data shall also include certification of quality and test results for factory-applied coatings.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Refer to individual valve Specification Sections.

2.2 ISOLATION VALVES

A. Gate Valves (up to 8-inches)

1. Gate valves shall meet the requirements of AWWA C509 or AWWA C515.
2. CONTRACTOR shall provide an affidavit of compliance stating that the valve furnished fully complies with AWWA C509 or AWWA C515.

B. Butterfly Valves

1. Butterfly valves shall be rubber seated and shall meet the requirements of AWWA C504, Class 150B. Butterfly valves shall be suitable for direct burial.
2. Valve operators shall be of the traveling nut or worm gear type, sealed, gasketed, and permanently lubricated for underground service. Valve operators shall be constructed to the

standard of the valve manufacturer to withstand all anticipated operating torques and designed to resist submergence in ground water.

3. CONTRACTOR shall provide an affidavit of compliance stating that the valve furnished fully complies with AWWA C504.

C. Combination Air Release/Air Vacuum Valves

1. Combination air release/air vacuum valves shall be designed to operate with potable water under pressure to permit discharging a surge of air from an empty line when filling and relieve the vacuum when draining the system. The valves shall also release an accumulation of air when the system is under pressure. This shall be accomplished in a single valve body designed to withstand 300 psi.
2. The body and cover shall be cast iron conforming to ASTM A48, Class 30. Floats shall be stainless steel conforming to ASTM A240 and designed to withstand 1,000 psi. Seats shall be Buna N rubber. Internal parts shall be stainless steel or bronze

2.3 MATERIALS

A. **General:** All materials shall be suitable for the intended application. Materials not specified shall be high-grade standard commercial quality, free from all defects and imperfections that might affect the serviceability of the product for the purpose for which it is intended. Unless otherwise specified, valve and actuator bodies shall conform to the following requirements:

1. Steel: ASTM A216 – Specification for Steel Castings, Carbon Suitable for Fusion Welding for High-Temperature Service, or to ASTM A515 – Specification for Pressure Welding for Pressure Vessel Plates, Carbon Steel, for Intermediate- and Higher-Temperature Service.
2. Bronze: ASTM B62 – Specification for Composition Bronze or Ounce Metal Castings, and valve stems not subject to dezincification shall conform to ASTM B584 – Specification for Copper Alloy Sand Castings for General Applications.
3. Stainless Steel: Stainless steel valve and operator bodies and trim shall conform to ASTM A351 – Specification for Steel Castings, Austenitic, for High-Temperature Service, Grade CF8M, or shall be Type 316 stainless steel.

B. Unless otherwise noted valves shall be rated for 250 PSI working pressure.

C. All valves shall be furnished complete with the accessories required to provide a function system.

2.4 VALVE ACTUATORS

A. Valve Actuators - General:

1. Unless otherwise indicated, valves shall be furnished with manual actuators.
2. Provide actuators as shown on Drawings or specified.
3. Counterclockwise opening as viewed from the top.
4. Size actuator to produce required torque with a maximum pull of 80 LB at the maximum pressure rating of the valve provided and withstand without damage a pull of 200 LB on handwheel or chainwheel or 300 foot-pounds torque on the operating nut.
5. Unless otherwise specified, actuators for valves to be buried, or installed in vaults or manholes shall be sealed to withstand at least 20 FT of submergence.
6. Extension Stem:
   a. Install where shown or specified.

b. Solid steel with actuator key and nut, diameter not less than stem of valve actuator shaft.
c. Pin all stem connections.
d. Center in valve box or grating opening band with guide bushing.

B. Buried Valve Actuators:

1. Provide screw or slide type adjustable cast iron valve box, 5 IN minimum diameter, 3/16 IN minimum thickness, and identifying cast iron cover.
2. Box base to enclose buried valve gearbox or bonnet.
3. Provide 2-inch standard actuator nuts complying with Section 3.16 of AWWA C500.
4. Provide at least two tee-handle keys for actuator nuts, with a 5-foot extension between the key and handle.
5. Extension Stem:
   a. Provide for buried valves greater than 4 FT below finish grade.
   b. Extend to within 6 IN of finish grade.
6. Provide concrete pad encasement of valve box as shown for all buried valves unless shown otherwise.

2.5 FABRICATION

A. End Connections:

1. Provide the type of end connections for valves as required in the Piping Schedules presented in 33 05 07.13 or as shown on the Drawings.
2. Comply with the following standards:
   a. Threaded: ANSI B1.20.1.
   b. Flanged: ANSI B16.1 Class 125 unless otherwise noted or AWWA C207.
   c. Soldered: ANSI B16.18.
   d. Grooved: Rigid joints per Table 5 of AWWA C606.

B. Refer to individual valve sections for specifications of each type of valve on Project.

C. Nuts, Bolts, and Washers:

1. Wetted or internal to be bronze or stainless steel. Exposed to zinc or cadmium plated.

D. **On Insulated Piping:** Provide valves with extended stems to permit proper insulation application without interference from handle.

E. Protective Coating and Lining:

1. In accordance with AWWA C550 unless otherwise specified.
2. Either two-part liquid material or heat-activated (fusion) material except only heat-activated material if specified as “fusion” or “fusion-bonded” epoxy.
3. Minimum 7-mil dry film thickness except where limited by valve operating tolerances.
4. The valve manufacturer shall certify in writing that the required coating has been applied and tested in the manufacturing plant prior to shipment, in accordance with these Specifications. Alternatively, if required coatings are applied outside of the manufacturing plant, the manufacturer shall warrant the valve to the same standard provided for factory-coated valves.
5. Flange faces of valves shall not be epoxy-coated.

6. Lining shall be NSF approved.

F. **Valve Testing:** As a minimum, unless otherwise indicated, each valve body 4 inches and larger shall be tested hydrostatically to 1.5 times its rated 100 degrees F design water-working pressure. In addition, each valve 4 inches and larger shall undergo a functional test to demonstrate satisfactory operation throughout its operating cycle, and a closure test at rated 100 degrees F water-working pressure for a period of 5 minutes to demonstrate tight shut-off. Stem seal leakage shall not be a cause for rejection. All valves 3 inches and smaller shall undergo the manufacturer's standard test.

G. **Certification:** Prior to shipment, the CONTRACTOR shall submit certified, notarized copies of the hydrostatic factory tests for all valves over 12 inches in size, showing compliance with the applicable standards of AWWA, ANSI, and ASTM.

H. **Valve Marking:** All valve bodies shall be permanently marked in accordance with MSS SP25 – Standard Marking Systems for Valves, Fittings, Flanges, and Unions.

I. **Underground Valves:** Provide underground metallic valves with flanged, mechanical, or other type of joint required for the type of pipe to which the valve is to be connected. Plastic pipe shall be heat welded when buried and shall be flanged within any underground vaults and metering or valve boxes. Flanges attached to all plastic valves 2-inches in diameter and larger, shall meet the outside diameter and bolt hole dimensional requirements of ANSI/ASME B16.5.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Air Release, Vacuum Relief, and Combination Air Valves:

1. Install in accordance with the manufacturer's printed installation instructions.
2. Pipe exhaust to a suitable disposal point. Where exhausted to a trapped floor drain, terminate exhaust line 6 inches minimum above floor.
3. Clean, inspect, and operate valves to ensure all parts are operable and valves seat properly.
4. Check and adjust valves and accessories in accordance with manufacturer's instructions and place into operation.

C. Setting Buried Valves:

1. Locate valves installed in pipe trenches where buried pipe indicated on Drawings.
2. Set valves and valve boxes plumb.
3. Place valve boxes directly over valves with the top of the box being brought to the surface of the finished grade.
4. Install in closed position.
5. Place the valve on firm footing in the trench to prevent it from settling and putting excessive strain on the connection to the pipe.
6. After installation, backfill up to the top of the box for a minimum distance of 4 FT on each side of the box.

D. Support exposed valves and piping adjacent to valves independently to eliminate pipe loads being transferred to the valve and valve loads being transferred to the piping.

E. For grooved coupling valves, install rigid type couplings {or provide separate support to prevent rotation of valve from installed position}.

F. For threaded valves, provide union on one side within 2 feet of the valve to allow valve removal.

G. Install valves accessible for operation, inspection, and maintenance.

H. **Valve Accessories:** Where combinations of valves, sensors, switches, and controls are indicated, the CONTRACTOR shall properly assemble and install such items so that all systems are compatible and operating properly. The relationship between interrelated items shall be clearly noted on shop drawing submittals.

I. The exterior of all valve bodies shall be wrapped with wax tape wrap.

END OF SECTION

SECTION 33 14 19.12
BUTTERFLY VALVES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

1. Butterfly valves.

B. Related Sections

1. Skagit PUD No. 1 General Conditions.
2. Division 1 - General Requirements.
3. Section 33 14 13 – Public Water Utility Distribution Piping
4. Section 33 14 19 - Valves and Hydrants for Water Utility Service

1.2 REFERENCED STANDARDS

A. American Water Works Association (AWWA):

1. C504 – Rubber-Seated Butterfly Valves, 3 In. (75 mm) Through 72 In. (1,800 mm), for Water Supply Service.
2. C515 – Protective Interior Coatings for Valves and Hydrants.

B. American National Standards Institute (ANSI):

1. Cast-Iron Pipe Flanges and Flanged Fittings, Class 125

1.3 SUBMITTALS

A. Manufacturer’s certification that materials comply with specified requirements.

B. Product data including valve dimensions, materials, pressure ratings, and actuator details.

PART 2 PRODUCTS

2.1 BUTTERFLY VALVES

A. General:

1. Butterfly valves shall be manufactured in accordance with the latest revision of AWWA C504, Class 250B.
2. Valves shall be certified to NSF Standard 61 for potable water service.
3. Valves shall be rubber-seated, designed for bubble-tight shutoff at 250 psi applied from either direction.

B. Design Requirements:

1. Working Pressure: 250 psi.
2. Body: Flanged ends, flange drilling per ANSI B16.1, Class 125.

C. Actuation:

1. Valves 12-inch and smaller: Manual operation with lever or handwheel.
2. Valves 14-inch and larger: Gear actuator with 2-inch square AWWA operating nut, opening counterclockwise.

D. Materials:

1. Valve Body: ASTM A536 Grade 65-45-12 ductile iron.
2. Disc: ASTM A536 Grade 65-45-12 ductile iron or stainless steel, rubber-coated or encapsulated.
3. Seat: EPDM or Buna-N rubber, replaceable or bonded.
4. Shaft: Stainless steel, Type 304 or 316.
5. Bolts and Nuts: Type 304 stainless steel per ASTM F593/A193 (bolts) and F594/A194 (nuts).
6. Coating: Fusion-bonded epoxy interior and exterior per AWWA C550, minimum 8 mils thick.

E. Other:

1. Provide full-diameter waterway when fully open.
2. Valves installed horizontally (if applicable) shall include roller tracks or scrapers for sizes 16-inch and larger.

2.2 FABRICATION

A. General:

1. Provide valves with clear waterways the full diameter of the valve.

B. Support valves in accordance with MSS SP-9.

PART 3 EXECUTION

3.1 INSTALLATION

A. See Section 33 14 13 – Public Water Utility Distribution Piping and Section 33 14 19 - Valves and Hydrants for Water Utility Service.

B. Where larger buried valves utilize smaller bypass valves, provide a second valve box installed over the bypass valve operating nut.

C. Do not install gate valves inverted or with the stems sloped more than 45° from the upright unless the valve was ordered and manufactured specifically for this orientation.

D. The exterior of all valve bodies shall be wrapped with wax tape wrap.

END OF SECTION

SECTION 33 81 29
COMMUNICATION VAULTS, PEDESTALS, AND ENCLOSURES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Precast concrete fiber optic vaults with aluminum access hatches and conduit terminals.

B. Related Sections

1. Skagit PUD No. 1 General Conditions.
2. Division 1 - General Requirements.
3. Section 31 23 00 - Excavation and Fill
4. Section 33 05 05 – Buried Piping Installation
5. Section 33 05 33.23 – Polyethylene Pipe

1.2 REFERENCED STANDARDS

A. Standards:

1. ASTM C478 - Precast Reinforced Concrete Manhole Sections.
2. AASHTO HS-20 - Truck Loading.
3. ANSI/AWS D1.2 - Aluminum Welding.

1.3 SUBMITTALS

A. Shop Drawings:

1. Precast vaults and hatches per Section 01 33 00.
2. Vault design stamped by a Washington-licensed structural engineer.

B. Product Data:

1. Manufacturer’s installation instructions and compliance with standards.

1.4 QUALITY ASSURANCE

A. **Installers:** Experienced with precast vaults, hatches, and conduit terminals.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. **Precast Vaults:** Utility Vault Co., Hanson Pipe, Granite Precast, or equal.

B. **Hatches:** Bilco Type “J-AL” or equal.

2.2 MATERIALS

A. Precast Vaults:

1. Per ASTM C478, sized per Drawings.
2. **Top slab:** HS-20 load-rated.
3. **Knockouts:** For 2-inch conduit.

B. Aluminum Hatches:

1. 1/4-inch 6061-T6 aluminum, diamond pattern.
2. Type 316 stainless steel hardware, spring-assisted, padlockable snap lock.
3. HS-20 load-rated.
4. Bituminous coating (8 mils) on frame in concrete contact.

2.3 PERFORMANCE

A. Vaults and Hatches:

1. Support HS-20 load, max deflection 1/150th span.
2. Corrosion-resistant.

PART 3 EXECUTION

3.1 INSTALLATION

A. Vaults:

1. Install plumb on compacted gravel per Section 31 23 00.
2. Hatches in mortar (1:2.5 cement:sand ratio).

B. Hatches

1. Flush-mounted, secure frame in concrete, verify operation.

3.2 FIELD QUALITY CONTROL

A. Inspect hatch operation, conduit alignment, and watertightness.

3.3 CLEANUP

A. Remove debris and ensure clean, functional condition

END OF SECTION

A p p e n d i x A

Permits

Washington State Department of Transportation

Northwest Region
15700 Dayton Avenue North
P.O. Box 330310
Seattle, WA 98133-9710
206-440-4000
TTY: 1-800-833-6388
www.wsdot.wa.gov

April 22, 2025

Wendy LaRocque
Skagit PUD
1415 Freeway Drive
Mount Vernon, WA

Subject: I-5 MP 240.93
Relocation of Waterline for the I-5/Tributaries to Friday, Lake & Chuckanut Crks-FP
Utility Franchise UF10322CRAM02

Dear Wendy LaRocque,

Please respond with a confirmation email that you have received this email/letter and the attached utility permit or franchise.

Enclosed is your approved Utility Franchise for relocation of your waterline facilities for the construction of the I-5/ Tributaries to Friday. Lake & Chuckanut Crks – Fish Passage project. Construction of your utility must be completed that will meet the needs of the project work estimated to be August 15, 2025. Please note that the Traffic Control Plan for work within WSDOT right-of-way, Exhibit 'D', was approved as noted on March 18, 2025 and is valid for six months from that date. The Traffic Control Plan requires 5-day notice be provided to CTCO at WSDOT's Construction Traffic Coordination Office:

Austun Bighorse
Construction Traffic Coordination Office
15700 Dayton Ave. N., NB82-120
P.O. Box 330310
Seattle, WA 98133-9710
206-440-4430
Austin.bighores@wsdot.wa.gov

Prior to any construction equipment or personnel entering WSDOT right-of-way, a pre-construction conference is required with WSDOT's inspector, Inspector. The utility shall notify Inspector a minimum of 5 working days in advance:

Megan Mosebar
Burlington PE office
1019 Andis Rd
Burlington, WA 98233
564-900-0708
Mosebam@wsdot.wa.gov

Contact WSDOT NW Region Radio at (206) 440-4490 five minutes prior to start of all traffic closures and again upon reopening to traffic. A copy of the approved Utility Franchise must be on-site.

Please note, WSDOT invoice account number JA 2610 Grp 02 will continue to be charged for personnel time for inspection activities and attendance to the pre-construction conference.

For your convenience, here is the link to the WSDOT's Standard Specifications of Road, Bridge, and Municipal Construction: http://www.wsdot.wa.gov/Publications/Manuals/M41-10.htm

If you have any questions regarding your application, please contact me at 360-661-7776 or Johansp@wsdot.wa.gov.

Sincerely,

Paul Johansen

Engineer
Utilities Accommodations/Project Delivery Engineer

PJ:pj
Enclosures

cc: Megan Mosebar, Jared Bentley, Theo Dunk, Tom Chi, Austin Bighorse, Maria Mayrhofer
File

Washington State Department of Transportation

Utility Accommodation
(Permit or Franchise)

Utility Company: Skagit PUD IMPORT CLEAR FORM

Permit/Franchise Number	Expiration	Charge Code*	Group
UF10322CRAM02	03/06/2049	JZ2610	02

Date Received	Reviewed By	Region Address
3/6/25	Paul J	Northwest: 15700 Dayton Ave. N, Shoreline, WA 98133

Application Type	Category, Impact to R/W	Fees*	Access Control
Franchise Amendment	Category 3 - Low Impact	$150	Full - LF

☒ In accepting this Franchise Amendment No. 02 to UF10322CRAM , Utility agrees that the General Provisions to the original Franchise shall be replaced in their entirety with the General Provisions as included with this Amendment. All other terms and conditions of the original franchise shall remain in full force and effect.

* The fees required under WAC 468-34 and RCW 47.44 are paid by the Utility to cover the basic administrative expenses incidental to the processing of this application. The applicant promises to pay any additional costs for all work associated with the review, processing and inspection for the proposed installation. Checks or money orders are to be made payable to "Washington State Department of Transportation".

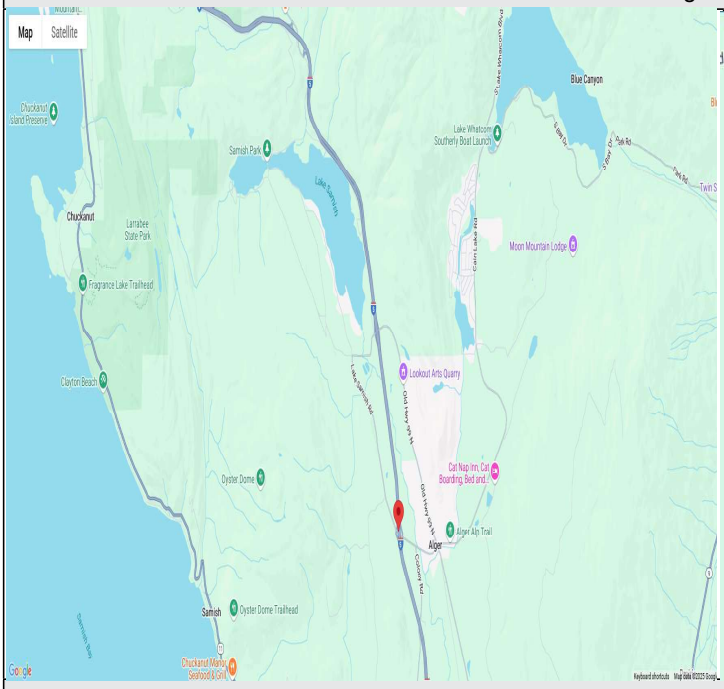
Exhibits

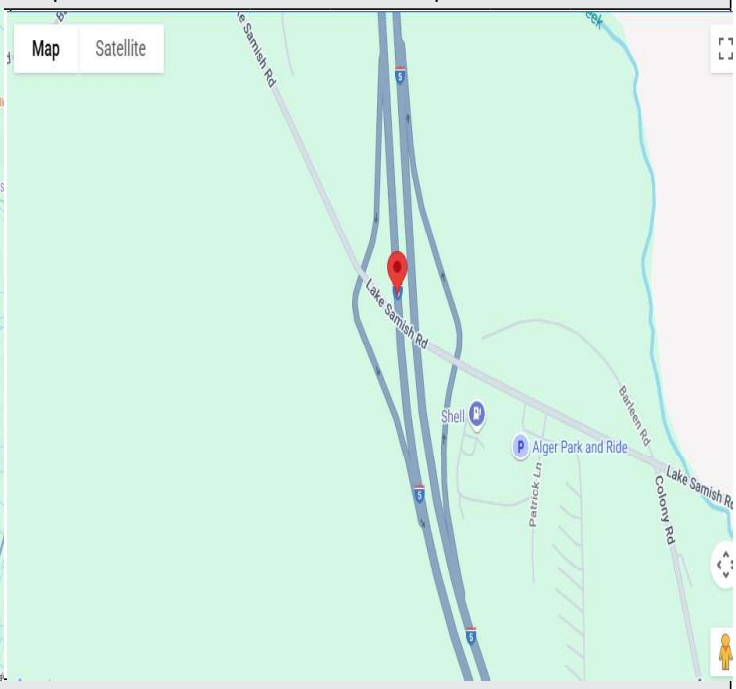
The above-noted Permit, Franchise or Franchise Amendment is subject to the terms and conditions stated in the General Provisions, as well as all the Exhibits.

Exhibit A: Special Provisions for Permits and Franchises	Page(s) 1-7 of 7
Exhibit B: Utility Facility Description (UFD)	Page(s) 1 of 1
Exhibit C: Plan Sheets/Maps	Page(s) 1-12 of 12
Exhibit D: Traffic Control Plan	Page(s) 1-6 of 6
Exhibit E: Pre-Construction Notification	Page(s) 1 of 1
Exhibit F: Maintenance Notification	Page(s) 1 of 1
Exhibit G: N/A	Page(s)
Exhibit H: N/A	Page(s)

Vicinity Maps

State Route: 5 ML Begin Milepost: 241.00 Link End Milepost: 241.00 Link





Departmental Approval

WSDOT Authorized Signatory	Printed Name and Job Title	Date Issued
Tom Chi Assistant NW Region Utilities Manager For Digitally signed by Tom Chi DN: C=US, E=tom.chi@wsdot.wa.gov, O=WSDOT, OU=NWR Utilities Office, CN=Tom Chi Date: 2025.04.22 16:09:39-07'00'	Maria Mayrhofer - NW Region Utilities Manager	4/22/2025

Washington State Department of Transportation

Utility Accommodation Application
(Permit or Franchise)

Utility Contact Information (Applicant)

Utility Company	Utility Contact Name
Skagit PUD	Wendy LaRocque

Email	Phone (Office/Cell/Voicemail)
larocque@skagitpud.org	360-399-5274

Location (Locate Mileposts)

State Route	Milepost Begin	Milepost End	County
SR-5	240.93	240.93	Skagit

Installation

Please Check One

- ☐ Power
- ☐ Sewer
- ☑ Water
- ☐ Telecommunication
- ☐ Gas
- ☐ Other _____

Please Check All That Apply

- ☑ Buried
- ☐ Aerial
- ☐ Surface Feature (Pole, ped, vault)
- ☐ Attached to a bridge/structure

Submit the Following Documentation:

Utility Facility Description (UFD)

Plan Sheets

For additional documents applicable to your work, see the Utilities Accommodation Guide.

Describe Installation Type (Briefly explain)

Installation of replacement approximately 43 LF of waterline (HDPE and DI) and new 4" PVC fiber conduit and appurtenances. Deactivation of existing 12" DI waterline. (System fiber for future water use only)

Anticipated Construction Start Date:	Project Duration:
May 2025	60 days

Billing Information*

Contact Name		
Wendy LaRocque		
Street		
1415 Freeway Drive		
City	**State**	**Zip + 4**
Mount Vernon	WA	98273
Phone (Office/Cell/Voicemail)	**Email**	
360-399-5274	larocque@skagitpud.org	
Statewide Vendor Number	**Applicant Reference Work Order *(optional)***	
91-6001038	CP 14017	

Utility Authorized Signatory

Signature	Printed Name & Title/Owner	Date
Mark Handzlik Digitally signed by Mark Handzlik Date: 2025.02.25 15:39:44 -08'00'	Mark C. Handzlik, Engineering Manager	02/25/25

The Authorized Signature indicates the General Provisions, as provided, have been read and are agreed to by the Utility. The Utility understands, based on the proposed installation, applicable special provisions will be provided at issuance of your Permit or Franchise.

* WSDOT has the authority to invoice the Utility for all work associated with the review, processing and inspection of the proposed installation. The applicant promises to pay any additional costs, in addition to the fees, incurred by WSDOT in accordance with WAC 468-34 and RCW 47.44.

Supplemental Contact Information of Authorized Agent if NOT the Utility

Company Name	Contact Name

Email	Phone (Office/Cell/Voicemail)

Washington State Department of Transportation

General Provisions for the Utility Accommodation Application

This Permit or Franchise is issued pursuant to the terms of RCW 47.32, RCW 47.44, and WAC 468-34, and amendments thereto. Renewal of a Franchise must be by application prior to expiration of this Franchise as required by RCW 47.44.020(3).

1. A copy of this Permit or Franchise must be on the job site, protected from the elements, at all times during any construction authorized by this Permit or Franchise.

2. The Utility agrees to pay the reasonable costs for investigating, handling, and granting the Permit or Franchise, including, but not limited to basic overhead charges and for providing an inspector during construction and/or maintenance of the Utility's facilities. Further, the Utility agrees that it shall be responsible for and pay WSDOT's expended direct and indirect costs associated with applicable provisions of the Permit or Franchise.
   (a) WSDOT will assign a reimbursable account to the Utility as a means of invoicing the Utility for the costs associated with this Permit or Franchise.
   (b) WSDOT will invoice the Utility and the Utility agrees to pay WSDOT within thirty (30) calendar days of receipt of an invoice.
   (c) The Utility agrees that it shall be responsible to maintain any bond or surety documentation with WSDOT according to WAC 468-34.

3. Upon approval of this Permit or Franchise, the Utility shall diligently proceed with the Work and comply with all General and Special Provisions herein. Construction of facilities proposed under this Permit or Franchise shall begin within one (1) year and must be completed within three (3) years from date of WSDOT approval. "Work" under this Permit or Franchise shall mean construction, operation, and maintenance of the Utility's facilities as authorized herein.

4. The Utility shall notify WSDOT Representative in Special Provision 1 of the name, address, and telephone number of its contractor when Work outlined herein is going to be performed with other than its own forces. When the Utility uses a contractor, an authorized representative of the Utility shall be present at all times unless otherwise agreed to by WSDOT Representative. A list of authorized representatives shall be submitted prior to the construction start date. (Authorized representatives are defined as persons having signatory authority for the Utility and or the authority to control the Work as needed for any issues identified by WSDOT.)

5. The Utility agrees to schedule and perform its Work in such a manner as not to delay WSDOT's contractor's work when WSDOT has a contractor performing work in the vicinity of the Utility's Work.

6. All contact between WSDOT and the Utility's contractor shall be through the Utility representative. Where the Utility chooses to perform the Work with its own forces, it may elect to appoint one of its own employees engaged in the Work as its representative. The Utility, at its own expense, shall adequately police and supervise all Work performed by itself, its contractor, subcontractor, agent, and/or others, so as not to endanger or injure any person or property.

7. In the event any milepost, fence, or guardrail is located within the limits of the Utility's Work and will be disturbed during Utility Work, the Utility shall submit a plan indicating impacts to these highway facilities to WSDOT's Representative for approval prior to Utility Work. Utility agrees to carefully remove these highway facilities prior to Utility Work and reset or replace these highway facilities after the Utility Work, to WSDOT's sole satisfaction and at the sole cost of the Utility. The Utility agrees that all highway signs and traffic control devices shall not be removed or disturbed during Utility Work.

8. The Utility agrees that all Work shall be done to the satisfaction of WSDOT. All material and workmanship shall conform to WSDOT's Standard Specifications for Road, Bridge, and Municipal Construction, current edition, and amendments thereto, and shall be subject to WSDOT inspection. All WSDOT acceptance and inspections are solely for the benefit of WSDOT and not for the benefit of the Utility, the Utility's contractor (if any), or any third party. The Utility agrees that it shall pay all WSDOT inspection costs in accordance with General Provision 2. The Utility shall perform in a timely manner all Utility work, to avoid highway project impacts or delays and in such manner as will cause the least disruption of traffic or interference with WSDOT's continued operation and/or maintenance of the highway.

9. The Utility shall comply with the Manual on Uniform Traffic Control Devices for Streets and Highways (Federal Highway Administration) and the State of Washington modifications thereto (chapter 468-95 WAC) while it performs the Work. If WSDOT requires, the Utility shall submit a signing and traffic control plan to WSDOT's Representative for approval prior to construction or maintenance Work. No lane closures shall be allowed except as approved by WSDOT's representative. Approvals may cause revision of Special Provisions of this Permit or Franchise, including hours of operation.

10. This Permit or Franchise may not be amended or modified without WSDOT's prior review and approval. Upon completion of the Work, the Utility shall provide a written notice of completion of the Work to WSDOT's Representative within ten (10) calendar days of the completion of the Work so that WSDOT may make its final inspection. Further, the Utility shall provide the Region Utilities Engineer with detailed as-built drawing within ninety (90) calendar days of Work completion, if the originally approved Permit or Franchise construction plans have been revised during the course of construction or upon request from the Region Utilities Engineer.

11. If WSDOT, at its sole discretion, shall determine that any or all of the Utility's facilities must be modified, removed from, or relocated within the state-owned highway right of way as necessary, incidental, or convenient for the construction, alteration, improvement, repair, relocation, or maintenance of the state highway, or for the safety of the traveling public, the Utility, its successors and assigns, shall, at its sole cost and expense, upon written notice by WSDOT, modify, relocate, or remove any or all of its facilities within or from the state-owned highway right of way as required by WSDOT. The Utility shall perform in a timely manner all facility modifications, relocations, and/or removals as WSDOT directs, to avoid highway project impacts or delays and in such manner as will cause the least disruption of traffic or interference with WSDOT's continued operation and/or maintenance of the highway. The Utility agrees it shall be solely responsible for any claims, damages, or any other associated project costs that are a result of the Utility's failure to modify, remove and/or relocate its facilities in timely manner as directed by WSDOT.

12. Should the Utility fail or refuse to comply with WSDOT's direction, pursuant to General Provision 11, to modify, remove, or relocate any Utility facility, WSDOT may undertake and perform any modification, removal, or relocation of the Utility facility that WSDOT, in its sole discretion, deems necessary. The Utility agrees to pay all of WSDOT's costs for performing this work, in accordance with General Provision 2.

13. If WSDOT determines in good faith that emergency maintenance work on the Utility's facility is needed to (a) protect any aspect of the state highway right of way, or (b) secure the safety of the traveling public due to a failure of the Utility's facility, WSDOT may perform the necessary work without the Utility's prior approval, and the Utility agrees to pay WSDOT's expended costs and expenses for performing the work in accordance with General Provision 2. WSDOT will notify the Utility of the emergency work performed as soon as practicable.

14. WSDOT may amend, revoke, or cancel this Permit or Franchise at any time by giving written notice to the Utility. If the Permit or Franchise is amended, the Utility will have thirty (30) calendar days to modify the facility as the Permit or Franchise amendment(s) require. If the facility modifications cannot be made within thirty (30) calendar days, the Utility shall respond to WSDOT, in writing, as to when the facility modifications can be made. If the Permit or Franchise is revoked or canceled, the Utility shall immediately remove all facilities from the right of way. Any facilities remaining upon the right of way thirty (30) calendar days after written notice of Permit or Franchise revocation or cancellation may be removed by WSDOT at the expense of the Utility. The Utility agrees to pay WSDOT's expended costs and expenses for performing the work in accordance with General Provision 2.

15. Should the Utility breach any of the conditions and requirements of this Permit or Franchise, or should the Utility fail to proceed with due diligence and in good faith with the Work as authorized by this Permit or Franchise, WSDOT may cancel or revoke the Permit or Franchise upon thirty (30) calendar days written notice to the Utility.

16. The Utility shall not excavate or place any obstacle within the state-owned highway right of way in such a manner as to interfere with WSDOT's construction, operation, and maintenance of the state- owned highway right of way or the public's travel thereon without first receiving WSDOT's written authorization.

17. The Utility agrees to maintain, at its sole expense, its facilities authorized by this Permit or Franchise in a condition satisfactory to WSDOT.

18. The Utility agrees that it is financially responsible to WSDOT for all necessary expenses incurred in inspecting the construction and restoring the highway pavement or related transportation equipment or facilities to a permanent condition suitable for travel as determined by WSDOT, as well as financially responsible to WSDOT for trenching work not completed and for compensating WSDOT for the loss of useful pavement life caused by trenching as required by RCW 47.44.020.

19. Upon completion of all Work, the Utility shall immediately remove all rubbish and debris from the state-owned highway right of way, leaving the state-owned highway right of way in a neat, presentable, and safe condition to WSDOT's satisfaction. Any clean up, or any necessary slope treatment, surface restoration, or protection of the state-owned right of way, not done within one (1) week (seven consecutive days) of Work completion, unless otherwise negotiated in writing, will be done by WSDOT at the expense of the Utility. The Utility agrees to pay WSDOT's expended costs and expenses for performing the work in accordance with General Provision 2.

20. For the benefit and safety of the traveling public, the Utility voluntarily agrees to permit WSDOT to attach and maintain upon any Utility facility under this Permit or Franchise any required traffic control devices, such as traffic signals, luminaires, and overhead suspended signs, when the use of such devices or attachments does not interfere with the use for which the facility was constructed. WSDOT shall bear the cost of attachment and maintenance of such traffic control devices, including the expended cost of any extra Utility infrastructure construction beyond what is necessary for the Utility's facility; such extra cost to be jointly determined by WSDOT and the Utility. WSDOT shall not share in the Utility facilities' cost of installation, operation, or maintenance of any of the facilities installed under this Permit or Franchise.

21. The Utility shall comply with WSDOT's Temporary Erosion and Sediment Control Manual (M 3103.01) and any revisions thereto, for erosion control and/or to mitigate any erosion occurring as a result of the Work. If the Utility Work performed under this Permit alters, modifies, changes, or interferes in any way with the drainage of the state-owned highway right of way, the Utility shall, at its own expense, make all corrections and/or provisions WSDOT requires to fix and restore the state-owned right of way drainage to its original condition and function prior to the Utility's Work. Any flows from the Utility shall not exceed the flows discharging to WSDOT drainage prior to the new work. Any flows discharged to state- owned highway right of way shall meet the requirements for quantity and water quality according to the current version Highway Runoff Manual (M 31-16). Should the Utility not make the required drainage restoration, WSDOT reserves the right to make such changes as necessary to restore the original drainage function at the sole cost of the Utility, and the Utility agrees to pay WSDOT's expended costs and expenses for performing the work in accordance with Stormwater Discharge General Provision 2.

22. The Utility shall be responsible for securing all necessary permits, including but not limited to, federal, state, and local regulatory, tribal, environmental, archeological, and railroad permits and permits from the Washington State Department of Ecology, the Washington State Department of Fish and Wildlife, and/or the U.S. Army Corps of Engineers prior to beginning the Work authorized by this Permit or Franchise. The Utility shall be responsible for mitigation measures where wetlands have been disturbed and agrees that it is responsible for any fines imposed for noncompliance with the permit(s) conditions or for failure to obtain the required permits. In addition, the Utility, on behalf of itself and its contractors, officers, officials, employees, and agents, agrees to indemnify, hold harmless, and defend, at its sole cost and expense, WSDOT and its officers, officials, employees, and agents from any and all fines, costs, claims, judgments, and/or awards of damages (to regulatory agencies, persons, and/or property), arising out of, or in any way resulting from, the Utility's failure to (1) obtain any required permit for the Utility Work or (2) comply with permit conditions. Further, the Utility shall be responsible for compliance with all federal, state, and local laws, regulations.

23. For any of the Utility's Work that requires permit coverage under the "CONSTRUCTION STORMWATER GENERAL PERMIT – National Pollutant Discharge Elimination System and State Waste Discharge General Permit for Stormwater Discharges Associated with Construction Activity" (Construction Stormwater General Permit), the Utility shall obtain said permit coverage and shall comply with all requirements of the Construction Stormwater General Permit. Upon WSDOT's request, the Utility shall provide a copy of the Construction Stormwater General Permit. In addition, the Utility, on behalf of itself and its contractors, officers, officials, employees, and agents, agrees to indemnify, hold harmless, and defend, at its sole cost and expense, WSDOT and its officers, officials, employees, and agents from any and all fines, costs, claims, judgments, and/or awards of damages (to regulatory agencies, persons, and/or property), arising out of, or in any way resulting from, the Utility's failure to (1) obtain coverage under the Construction Stormwater General Permit for Utility Work or (2) comply with the Construction Stormwater General Permit requirements.

24. This Permit or Franchise does not authorize the Utility, or its employees, contractors, or agents, any right to cut, spray, retard, remove, destroy, disfigure, or in any way modify the physical condition of any vegetative material located on the state-owned highway right of way. Should the Utility anticipate that its Work will alter the appearance of the state-owned highway right of way vegetation, the Utility shall notify WSDOT Representative to obtain WSDOT's prior written approval of the Utility's proposed work. If WSDOT permits the Utility to modify the state-owned highway right of way vegetation, it agrees that any vegetation cutting and/or trimming activities shall be conducted in such a manner that the state-owned highway right of way vegetation appearance will not be damaged. Should the Utility damage the appearance of the state-owned highway right of way vegetation without WSDOT's prior written approval, the Utility is subject to penalties provided for in RCWs 47.40.070, 47.40.080, and 4.24.630, as applicable.

25. The Utility hereby certifies that its facilities described in this Permit or Franchise are (1) in compliance with the Control Zone Guidelines, or (2) for a franchise consolidation or renewal, a mitigation plan has been submitted and approved for any existing Location I or Location II utility objects to be corrected in accordance with the Control Zone Guidelines, pursuant to Chapter 9 of WSDOT's Utilities Manual (M 22-87) and any revisions thereto.

26. The Utility shall not assign or transfer this Permit or Franchise without WSDOT's prior written approval. The Utility understands that any assignment or transfer requires the assignee or transferee to have the means to assume all obligations, duties, and liabilities of the terms and conditions of this Permit or Franchise, and the Utility will advise the assignee or transferee of its obligation to apply for an updated or replacement Permit or Franchise. If WSDOT does not approve the assignment or transfer, this Permit or Franchise shall automatically terminate, and the facility occupying state-owned highway right of way shall be subject to the terms of RCW 47.44.060.

27. The Utility, its successors and assigns, shall indemnify, defend at its sole cost and expense, and hold harmless the State of Washington, its officers and employees, from all claims, demands, damages (both to persons and/or property), expenses, regulatory fines, and/or suits that (1) arise out of or are incident to any acts or omissions of the Utility, its agents, contractors, and/or employees, in the use of the state-owned highway right of way as authorized by the terms and conditions of this Permit or Franchise, or (2) are caused by the breach of any of the terms or conditions of this Permit or Franchise by the Utility, its successors and assigns, and its contractors, agents, and/or employees. The Utility, its successors and assigns, shall not be required to indemnify, defend, or hold harmless the State of Washington, its officers and/or employees, if the claim, suit, or action for damages (both to persons and/or property) is caused by the acts or omissions of the State of Washington, its officers and/or employees; provided that, if such claims, suits, or actions result from the concurrent negligence of (a) the State of Washington, its officers and/or employees, and (b) the Utility, its agents, contractors, and/or employees, or involves those actions covered by RCW 4.24.115, the indemnity provisions provided herein shall be valid and enforceable only to the extent of the acts or omissions of the Utility, its agents, contractors, and/or employees.

28. The Utility agrees that its obligations under this Permit or Franchise extend to any claim, demand, and/or cause of action brought by, or on behalf of, any of its employees or agents while performing Work under this Permit or Franchise while located on state-owned highway right of way. For this purpose, the Utility, by MUTUAL NEGOTIATION, hereby waives, with respect to the State of Washington only, any immunity that would otherwise be available to it against such claims under the Industrial Insurance provisions in chapter 51.12 RCW.

29. The indemnification and waiver provided for in General Provisions 27 and 28 shall survive the termination of this Permit or Franchise.

30. Any action for damages against the State of Washington, its agents, contractors, and/or employees, arising out of damages to a utility or other facility located on state-owned highway right of way, shall be subject to the provisions and limitations of RCW 47.44.150.

31. This Permit or Franchise shall not be deemed or held to be an exclusive one and shall not prohibit WSDOT from granting rights of like or other nature to other public or private utilities, nor shall it prevent WSDOT from using any of the state-owned highway right of way or other properties for transportation purposes, or affect WSDOT's right to full supervision and control over all or any part of the state-owned highway right of way or properties, none of which is hereby surrendered. Further, WSDOT reserves the exclusive right to require that all utility facilities be subject to joint trenching and occupancy.

32. The Utility shall completely remove all Deactivated Facilities (as defined in WSDOT Utilities Manual M 22-87), unless agreed upon in writing by WSDOT, indicated in Special Provision 12. Any Deactivated facilities left within the state owned right of way shall remain owned by the Utility, who shall continue to bear all responsibility for any future costs incurred by WSDOT including for removal of the Deactivated facilities.

33. The Utility agrees that, in the event any construction and/or maintenance of the highway facility becomes necessary within the proximity of the utility installation, it is expressly understood that, upon request from WSDOT's Representative, the Utility will promptly identify and locate by suitable field markings (including test hole/pot hole), any and all of its underground facilities so that WSDOT or its contractor can be fully apprised at all times of their precise locations.

34. During non-working hours equipment and materials shall not be located or stored within the work zone clear zone (WZCZ) area. Minimum WZCZ distances will be measured from the edge of the traveled way (the portion of the roadway intended for the movement of vehicles, exclusive of shoulders and lanes for parking, turning, and storage for turning) and will be determined as follows:

Minimum Work Zone Clear Zone Distance

Posted Speed	Distance From Traveled Way (ft)
35 mph or less	10
40 mph	15
45 to 55 mph	20
55 to 60 mph	30
60 mph or greater	35

Washington State Department of Transportation

Special Provisions for Utility Accommodation Application

Applicable provisions are denoted by (✓)

☑ 1. All Work related to this Utility application must be authorized in advance by the following Washington State Department of Transportation (WSDOT) Representative(s):

Name: Megan Mosebar
Title: PE Northwest Region Burlington
Street: 1019 Andis Rd
City: Burlington
State: WA Zip: 98233
Phone: 564-900-0708 Cell:
Email/Fax: Mosebam@wsdot.wa.gov

Name: Paul Johansen
Title: Mt Baker Utility Engineer
Street: 1019 Andis Rd
City: Burlington
State: WA Zip: 982233
Phone: Cell: 360-661-7776
Email/Fax: Johansp@wsdot.wa.gov

2. The Utility must complete the following requirements prior to authorization by WSDOT to perform Work:

☐ a. The Utility shall notify in writing the identified WSDOT Representative(s) at least _____ working days (Monday through Friday excluding any holidays). The Utility may not perform Work until authorized by the WSDOT Representative(s) in Special Provision 1.

☑ b. A pre-construction conference shall be held with all pertinent representatives, as identified by the Utility, and agreed to by WSDOT. The Utility shall give 5 working days (Monday through Friday excluding any holidays) notice to WSDOT's Representative(s) (prior to the pre-construction conference). A pre-construction conference is not an authorization for the Utility to proceed with Work.

☐ 3. Work within the state-owned highway right of way shall be restricted to _____.
No Work shall be allowed on Saturday, Sunday, or holidays, without prior approval by WSDOT. In addition, the Utility shall be off the highway by noon the day prior to a holiday unless authorized by WSDOT. If a holiday falls on a Saturday, the preceding Friday is counted as the holiday, and the Utility shall be off the highway by noon Thursday. When the Holiday falls on a Monday the Utility shall be off the right of way at noon on the preceding Friday. Nothing in this section shall limit the authority of WSDOT to further restrict work within state-owned highway right of way at WSDOT's discretion. The hours of closure are subject to change if required by WSDOT.

☑ 4. The Utility shall not disturb, remove, or destroy any existing Survey Monument before obtaining a Permit from the Washington State Department of Natural Resources (RCW 58.24.040). During the Work, upon discovery, unauthorized damage, or unauthorized alteration of a monument or right of way marker, the Utility shall cease Work in that area and immediately notify the WSDOT Representative listed in Special Provision Number 1, or the Region Right-of-Way and Survey Manager listed below. Work in that area shall not resume until authorized by the WSDOT Representative.

Name: _____

Phone: _____

Email: _____

The Utility agrees to pay all WSDOT costs to perform monument or right of way marker work, as provided in this provision, in accordance with General Provision 2.

Exhibit 'A'
UF10322CRAM02
Special Provisions for Permits and Franchises
Page 1 of 7

☑ 5. In the event that during the course of this project an inadvertent discovery of historical/archeological objects, human remains, or a bone/bones of uncertain origin is made, the Utility shall immediately cease operations and contact WSDOT Representative in Special Provision 1 and WSDOT Archaeologist:

Name: Jason Cooper

Phone: Cell/Text 206-487-0604

Email: Coopjas@wsdot.wa.gov

Determination of necessary follow-up actions or the ability to continue work shall be at the sole discretion of the WSDOT.

☑ 6. Construction of this facility will not be permitted from the shoulders, traffic lanes, and/or ramps of SR _____ All construction access will be from _____.

BOND AND INSURANCE COVERAGE

☑ 7. The Utility has provided bond coverage for the Work under this Permit or Franchise by furnishing a blanket surety bond held by WSDOT at the WSDOT Headquarters Utilities in Olympia, WA.

☐ 8. The Utility or its contractor shall provide an individual surety bond to WSDOT in the amount of $ _____, written by a surety company authorized to do business in the State of Washington, or shall set up a WSDOT approved escrow account prior to the start of construction to cover the Work under this Permit or Franchise. The surety bond or escrow account shall remain in force for a period of one (1) year after the written notice of completion of the Work (as provided in General Provision 11), except that when the Work impacts the paved highway (open cuts, bores or damage to the highway surface), the Utility shall be required to maintain the surety bond or escrow account for a period of two (2) years after the notice of completion.

☐ 9. When the Utility chooses to perform the Work with other than its own forces and requires its contractor to provide a surety bond to WSDOT before performing any Work to ensure compliance with all of the terms and conditions of this Permit or Franchise, the bond shall be in the amount of $ _____, written by a surety company authorized to do business in the State of Washington and shall remain in force until all Work under this Permit or Franchise has been completed, and the Utility's contractor has restored any affected WSDOT property and right of way to the satisfaction of WSDOT.

☑ 10. The Utility shall have sufficient insurance coverage when performing any Work within state-owned highway right of way, as follows:

(a) Commercial General Liability covering the risks of bodily injury (including death), property damage, and personal injury, including coverage for contractual liability, with a limit of not less than $3 million per occurrence and in the aggregate.

(b) Business Automobile Liability (owned, hired, or non-owned) covering the risks of bodily injury (including death) and property damage, including coverage for contractual liability, with a limit of not less than $1 million per accident.

(c) Employers Liability covering the risks of Utility's employees' bodily injury by accident or disease, with limits of not less than $1 million per accident for bodily injury by accident and $1 million per employee for bodily injury by disease.

Such insurance policies or related certificates of insurance shall name the Washington State Department of Transportation as an additional insured on all general liability, automobile liability, employers' liability, and excess policies. A forty-five (45) calendar day written notice shall be given to WSDOT prior to termination of or any material change to the policy(ies) as such relate(s) to this Permit or Franchise. The Utility shall provide proof of insurance upon request to the WSDOT Representative(s) identified in Special Provision 1.

☐ 11. If the Utility is a city or county, they shall have sufficient insurance coverage through a Risk Pool or is self-insured, to comply with the insurance terms and conditions of this Permit or Franchise. The city or county shall provide proof of insurance upon request to the WSDOT Representative(s) identified in Special Provision 1.

UNDERGROUND FACILITIES

☑ 12. Deactivated facilities left within the state owned right of way shall remain owned by the Utility, who shall continue to bear any and all responsibility for any future costs or impacts related to the Deactivated facilities if required by WSDOT in its sole discretion.

☑ 13. For underground facilities, markers shall be placed at both ends of a crossing, and at all changes in offset distance from right of way line or centerline of the highway and placed approximately every 500 feet for longitudinal installations. Marker information as a minimum shall include owner name, pipeline or cable identification and station, and telephone number or other means to contact a local office. Markers must follow WSDOTs Standard Specifications for Road, Bridge, and Municipal Construction Manual M 41-10, Division 9 (9-17 Flexible Guideposts), not create a safety hazard, and all markers shall be placed and maintained so as to minimize interference with WSDOT maintenance operations. It is the Utility's responsibility to maintain its markers. Maintenance of markers includes but is not limited to update of Utility's name (if changed) or Utility's successors' or assigns' contact information, and replacement of damaged or missing markers.

☑ 14. All underground facilities shall include a component by which the utility can be located with conventional methods, provided that for all installations in trenches, the Utility shall install detector tape approximately 12 inches above the underground facility. The tape shall conform to the standards of the American Public Works Association Uniform Color Code.

☑ 15. Utility facilities or casings for facilities crossing under highways surfaced with oil, asphalt concrete pavement, or cement concrete pavement shall be by trenchless construction, using the appropriate equipment to jack, bore, or auger the facility through the highway prism with a minimum depth of 5 feet along any point from the top of facility to the lowest point of the finished highway grade, at a minimum of 3.5 feet depth from bottom of ditch/toe of slope to top of facility or casing.

☑ 16. If PVC or HDPE casings are utilized for crossings, they shall be greater than Schedule 80 or equivalent or as approved by WSDOT.

☑ 17. Casing requirements (WAC 468-34-210) for utilities are specified individually or in whole on the attached exhibits. Any variances to these casing requirements must be approved by WSDOT, in writing prior to installation.

☐ 18. Pipeline installation shall meet the provisions of chapter 480-93 WAC, Gas Companies- Safety, and amendments thereto.

☑ 19. Open trenching (cutting a trench for direct placement of a utility that does not include cutting an existing paved highway surface) will only be allowed at the locations identified on the plan sheets and/or listed on Exhibit(s) C, with restoration to be performed as noted on the attached "Open Trench Detail", Exhibit C.

☐ 20. Open cuts (cutting a trench for direct placement of a utility that does include cutting the existing paved highway surface) of the highway are a variance to WSDOT policy, requiring justification (Open Cut Variance Request) and approval by WSDOT prior to the Work beginning. Open cuts are only allowed at approved locations identified on the plan sheets and/or listed on Exhibit(s) _____, with restoration to be performed as noted on the attached "Open Cut Detail," Exhibit _____.

☑ 21. If determined necessary by WSDOT Representative, any or all of the excavated material shall be removed and replaced with suitable material as specified by WSDOT. It is the Utility's responsibility to obtain any necessary permits or comply with applicable requirements to haul or dispose of any excavated material.

☑ 22. If determined by the Washington State Department of Labor and Industries and/or WSDOT Representative that extra Shoring (beyond that specified in Section 7-08.3(1)B of WSDOT's Standard Specifications for Road, Bridge, and Municipal Construction) is necessary for the safety of the workers or the protection of the highway pavement, the trenching or excavation work shall be stopped and no Work in the trench or excavation area will be allowed until satisfactory modifications are made.

☑ 23. All trenches, boring or jacking pits, etc., shall be backfilled as soon as possible. If left open during nonworking hours, they shall be protected to the satisfaction of WSDOT. Methods of protection shall be submitted a minimum of 5 (five) calendar days in advance for approval by WSDOT prior to use.

AERIAL/ABOVEGROUND FACILITIES

☐ 24. All facilities on joint use poles shall be relocated at the time the pole owner either moves or removes its poles. (The pole owner is the Permit or Franchise holder under which the poles were installed and is responsible for ensuring the removal of the pole.)

☐ 25 Neutral conductors associated with circuits of 0 to 22 Kilovolts, where the neutral is considered to be 0-750 Volts, shall have a minimum clearance of 24 feet Vertical Clearance as indicated in WAC 468-34-290, 20 feet provided the facility is grounded at each pole at each end of the crossing.

☐ 26. The Utility agrees to underground the aboveground facilities covered by this Franchise in Scenic Classes “A” and “B”, as defined on the attached Exhibit(s) _____, either at the time of major construction of the facility, for that portion of facility to be reconstructed, or prior to expiration of this Franchise.

☐ 27. The Utility agrees to underground the aboveground facilities covered by this Franchise in Scenic Classes “A,” “AX,” “B,” and/or “BX,” as defined on the attached Exhibit(s) _____, at the time the pole owner undergrounds its facility. The existing aboveground facility may remain or be relocated as aboveground in Scenic Classes “AX” or “BX,” if acceptable to WSDOT.

☐ 28. The Utility agrees to underground or relocate the existing aboveground facilities covered by this Franchise in Scenic Classes “A,” “AX,” “B,” and/or “BX,” as defined on the attached Exhibit(s) _____, to a location acceptable to WSDOT either at the time of reconstruction, for the portion of line to be reconstructed, or prior to the expiration of this Franchise. The existing aboveground facility may remain or be relocated as aboveground in Scenic Classes “AX” or “BX,” if acceptable to WSDOT.

MAINTENANCE

☐ 29. No routine maintenance of the facility authorized by this Permit or Franchise will be allowed within the limited access area.

☐ 30. Maintenance access of this facility will not be permitted from the shoulders, thru-traffic lanes, and/or ramps of _____, and all service to this facility will be accessed from _____.

☐ 31. The Utility will notify WSDOT representative(s), listed in Special Provision 1, _____ (_____) working days (Monday through Friday excluding any holidays) prior to any scheduled maintenance work to be performed in the state-owned highway right of way.

Exhibit 'A'
UF10322CRAM02
Special Provisions for
Permits and Franchises
Page 4 of 7

☒ 32. Traffic control plans for this permit have been reviewed by the WSDOT Construction Traffic Coordination Office (CTCO) and have been Approved/Approved As Noted, when applicable. The Utility shall be required to follow the lane closure hours provided by WSDOT-Reviewed Traffic Control Plan. See Exhibit 'D' for approved Traffic Control Plans. The Utility, or the Utility's contractor, shall contact the following CTCO Engineer five (5) working days prior to traffic control set up for coordination:

Austin Bighorse
Construction Traffic Coordination Office
15700 Dayton Ave. N., NB82-120
P.O. Box 330310
Seattle, WA 98133-9710
206-440-4430
BighorA@wsdot.wa.gov

The approved traffic control plan expires on September 18, 2025 and is intended to be renewable through the construction phase of this Utility Franchise. For traffic control plan renewal or modification, send request to: Paul Johansen 360-757-5944 JOHANSP@wsdot.wa.gov

☒ 33. No closures will be allowed from noon the day prior to a holiday or holiday weekend through noon the day following a holiday or holiday weekend. It is a holiday weekend when the holiday falls on a Friday, Saturday, Sunday, or Monday.

☒ 34. The Utility shall notify the WSDOT representative(s), listed in Exhibit 'F', twenty (20) working days (Monday through Friday excluding any holidays) prior to any scheduled maintenance work to be performed in the state-owned highway right of way.

☒ 35. In the event that the Utility allows its customer, or its customer's contractor, to perform any work within the state-owned right of way, the Utility agrees to indemnify, defend at its sole cost and expense, and hold harmless the State of Washington, its officers and employees, from all claims, demands, damages (both to persons and/or property), expenses, regulatory fines, and/or suits arising out of or incident to the work performed by the Utility's customer, or its customer's contractor, within the state-owned right of way.

☒ 36. The Utility shall notify the WSDOT representative(s), listed in Exhibit 'F', twenty (20) working days (Monday through Friday excluding any holidays) prior to any scheduled maintenance work to be performed in the state-owned highway right of way.

☒ 37. Installation of empty fiber communication conduit and all future fiber installation in empty fiber communication conduit shall be used for the Utility facilities only, fiber installation for other purposes is not allowed.

☒ 38. All disturbed roadside areas must be restored, including the following:

- Restore grades between sidewalk and remaining private driveway pavement by matching the pre-existing south- and north-adjacent slopes.
- De-compact soils to allow good infiltration and root growth.
- Apply 4 inches of compost tilled into a depth of 12 inches prior to planting.
- Install plants. Plantings shall include the same species as existed prior to disturbance.
- Mulch landscaped area(s) with 3-inch layer of bark mulch.
- Provide plant establishment for 3 years to ensure 100% survival.
- If large roots of trees are exposed by the Utility's Improvements, they shall be wrapped with heavy, moist material, such as burlap or canvas, for protection and to prevent excessive drying. The material shall be kept moist and securely fastened until the roots are covered to finish grade. All material and fastening material shall be removed from the roots before covering. All roots 1 inch or larger in diameter that are damaged, shall be pruned with a sharp saw or pruning shear.

☒ 39. Native material may be used as backfill unless wet or unsuitable, otherwise gravel or select borrow shall be used.

☒ 40. The Deactivated facility shall be capped and backfilled with pressure grout or other suitable material as directed by WSDOT.

☒ 41. Pollinator Seed Mix
Seed of the following composition, proportion, and quality shall be applied at a rate of 55 pounds per acre on areas requiring seeding, fertilizing, and mulching.

Group	Type of Seed	Common Name	# pounds of PLS/acre
Group 1	Agrostis exarata*	Spike bentgrass	2.0
	Koeleria cristata	Prairie junegrass	
	Deschampsia cespitosa	Tufted hairgrass	
Group 2	Festuca rubra* (commutata) spp. rubra	'Chewing's' fescue	
	Festuca roemeri	'Roemer's' fescue	17.0
	Festuca rubra 'Molate'	'Molate' creeping red fescue	
Group 3	Lupinus bicolor*	Miniature lupine	
	Lupinus sericeous	Silky lupine	5.0
Group 4	Anaphalis margaritacea*	Pearly everlasting	0.50
	Eriogon speciosus	Showy fleabane	
Group 5	Achillea millefolium	Common yarrow	0.50

Group 6	Trifolium incarnatum	Crimson clover	2.0
Group 7	Eschscholzia californica	California poppy	5.5
Group 8	Gaillardia aristata	Blanket flower	6.0
Group 9	Linum Lewisii*	Lewis flax	9.5
	Eriogonum heracleoides*	Parsnipflower	
	Gilia capitata	Bluehead gilia	
	Eriogonium umbellatum	Sulphur flower	
Group 10	Penstemon erianthurus*	Fuzzytongue penstemon	7.0
	Prunella vulgaris L. ssp. Lanceolata*	Selfheal	
	Penstemon strictus	Rocky Mountain penstemon	
	Penstemon venustus	Venus penstemon	
	TOTAL		**55**

Instructions for using the seed choice chart:

The contractor shall choose a minimum of one seed type from each seed group 1 through 10 to meet the required pounds of pure live seed (PLS) for that group. The contractor may choose more than one seed type from each group to meet the total pounds of pure live seed. The seed type with an asterisk (*) represents the preferred seed choice for that group.

Washington State Department of Transportation

Utility Facility Description

All Greyed Out Areas are For Department Use Only				Accommodation Number:	UF10322CRAM02
State Route Number:	5	SnagMP (Link)		Access Control: LF	Scenic Class: C
Begin Mile Post:	240.95	End Mile Post:	240.95	T, R, Sec:	T36N R3E 12

Facility Description - *Provide a summary of the proposed work:* ***(press ALT+Enter to insert line break)***

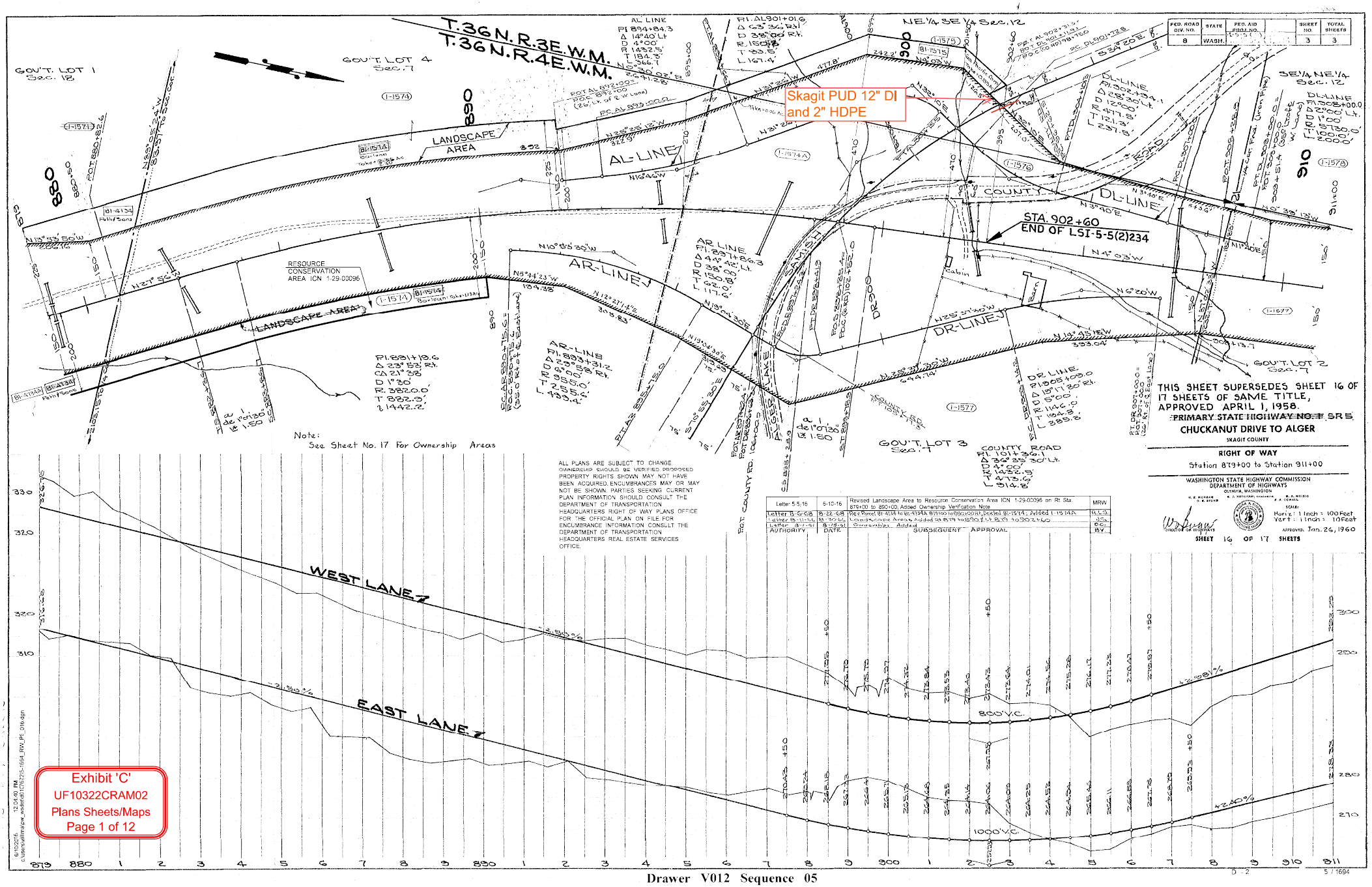
Installation of replacement approximately 43 LF of waterline (HDPE and DI) and new 2" HDPE fiber conduit and appurtenances. Deactivation of existing 12" DI waterline.

Additional Notes:

Begin Mile Post	End Mile Post	Left, Right or Xing	Offset Distances (feet)			Facility Description	Right of Way		Aerial, Buried, Bridge or Surface	Scenic Class	Access Control	Remarks and Installation Comments
			From Center Line	From Edge of Traveled Way (Fogline)	Depth or Height	Facility to be Installed/ Deactivated/ Upgraded (indicate size and/or diameter, and material)	Left	Right				1) Indicate where item enters/leaves R/W. 2) Include pertinent topography info (turnouts, Rd. approaches, intersections, culvert, guardrail, xing method, split grade/under/overpass, etc.)
240.95	240.95	Left	480'	410'		Deactivate 12" DI waterline	480"		Buried			Lake Samish Road (Alger)
240.95	240.95	Left	480'	410'	3' min	Install 14" HDPE waterline	480"		Buried			Lake Samish Road, </= 6' north of deactivated line
240.95	240.95	Left	480"	410"	3' min	Install 2" HDPE fiber conduit	480"		Buried			Lake Samish Road (Alger)
240.95	240.95	Left	472'	402'	2'	Install 2" Air Valve	480'		Surface			Lake Samish Road (Alger)
240.95	240.95	Left	457'	387'	3' min	Install 12" DI waterline	480'		Buried			Lake Samish Road (Alger)
240.95	240.95	Left	442'	372'	0'	Install fiber optic vault	480'		Surface			Lake Samish Road (Alger)
240.95	240.95	Left	437'	367'	3' min	Install butterfly valve	480'		Buried			Lake Samish Road (Alger)

DOT Form 224-697
Rev. 08/2019

Exhibit 'B'
UF10322CRAM02
Utility Facility Description (UFD)



THIS SHEET SUPERSEDES SHEET 16 OF 17 SHEETS OF SAME TITLE, APPROVED APRIL 1, 1958.
~~PRIMARY STATE HIGHWAY NO. 1~~ SR 5
CHUCKANUT DRIVE TO ALGER
SKAGIT COUNTY

RIGHT OF WAY
Station 879+00 to Station 911+00

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

SCALE: Horiz.: 1 Inch = 100 Feet; Vert.: 1 Inch = 10 Feet
APPROVED: Jan. 26, 1960

SHEET 16 OF 17 SHEETS

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.			3	3

ALL PLANS ARE SUBJECT TO CHANGE. OWNERSHIP SHOULD BE VERIFIED. PROPOSED PROPERTY RIGHTS SHOWN MAY NOT HAVE BEEN ACQUIRED. ENCUMBRANCES MAY OR MAY NOT BE SHOWN. PARTIES SEEKING CURRENT PLAN INFORMATION SHOULD CONSULT THE DEPARTMENT OF TRANSPORTATION HEADQUARTERS RIGHT OF WAY PLANS OFFICE FOR THE OFFICIAL PLAN ON FILE FOR ENCUMBRANCE INFORMATION CONSULT THE DEPARTMENT OF TRANSPORTATION HEADQUARTERS REAL ESTATE SERVICES OFFICE.

Letter 5-5-16	5-10-16	Revised Landscape Area to Resource Conservation Area ICN 1-29-00095 on Rt Sta. 879+00 to 890+00. Added Ownership Verification Note	MRW
Letter B-3-68	8-22-68	Rev. Parcel BI-413A to BI-413AS, 879+00 to 882+00 Rt. Deleted BI-1514, Added I-1514A	KLS
Letter B-11-54	11-30-54	Conservation Area Added at Sta 879+00 & Sta 890+00	JSA
Letter B-1-61	8-18-61	Ownerships Added	CC
AUTHORITY	DATE	SUBSEQUENT APPROVAL	BY

Exhibit 'C'
UF10322CRAM02
Plans Sheets/Maps
Page 1 of 12

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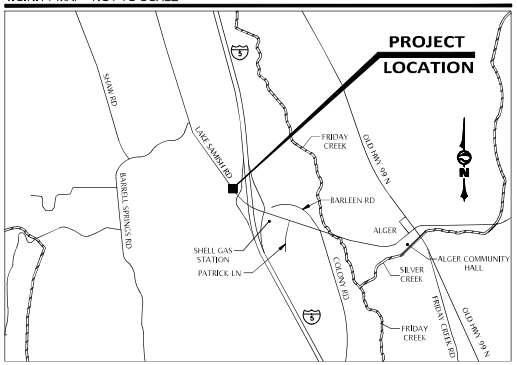
Drawer V012 Sequence 05

SKAGIT COUNTY PUBLIC UTILITY DISTRICT

PIPELINE RELOCATION AT ALGER INTERCHANGE

PUD PROJECT CP#14017

VICINITY MAP - NOT TO SCALE



INDEX TO DRAWINGS

1.	SHEET C0.1	COVER SHEET
2.	SHEET C0.2	LEGEND AND ABBREVIATIONS
3.	SHEET C1.1	EXISTING CONDITIONS
4.	SHEET C2.1	DEMOLITION AND TESC PLAN
5.	SHEET C2.2	TESC DETAILS
6.	SHEET C3.1	WATER MAIN REPLACEMENT PLAN AND PROFILE
7.	SHEET C3.2	SURFACING AND RESTORATION PLAN
8.	SHEET C4.1	PUD STANDARD DETAILS
9.	SHEET C4.2	PUD STANDARD DETAILS
10.	SHEET C4.3	CIVIL DETAILS
11.	SHEET C5.1	TRAFFIC CONTROL PLAN
12.	SHEET C5.2	TRAFFIC CONTROL PLAN
13.	SHEET C5.3	TRAFFIC CONTROL PLAN

COUNTY NOTES

A. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MOST CURRENT EDITION OF THE STATE OF WASHINGTON, DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND SKAGIT COUNTY ROAD STANDARDS.

B. ALL UTILITY WORK MUST BE IN ACCORDANCE WITH SKAGIT COUNTY ROAD STANDARDS.

C. BURIED UTILITIES ARE SHOWN IN THEIR APPROXIMATE LOCATION. THE CONTRACTOR SHALL HAVE THE UTILITIES VERIFIED ON THE GROUND PRIOR TO ANY CONSTRUCTION.

D. ONSITE EROSION CONTROL MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND BE IN PLACE PRIOR TO CONSTRUCTION. ANY PROBLEMS OCCURRING BEFORE FINAL ACCEPTANCE BY SKAGIT COUNTY AND WITHIN 24 MONTHS THEREAFTER SHALL BE CORRECTED BY THE CONTRACTOR.

E. PROJECT WILL COMPLY WITH ALL SKAGIT COUNTY PERMIT CONDITIONS. SEE SPECIFICATION APPENDICES.

F. COPIES OF ALL MATERIALS TESTING AND INPSECTIONS DESCRIBED IN "TESTING NOTES" SHALL BE PROVIDED TO THE COUNTY IN A TIMELY MANNER. ANY DEFICIENCIES SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE COUNTY ENGINEER.

GENERAL NOTES

1) CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE OWNER AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT.

2) IF THERE ARE ANY DISCREPANCIES BETWEEN DIMENSIONS IN DRAWING AND EXISTING CONDITIONS WHICH WILL AFFECT THE WORK, THE CONTRACTOR SHALL BRING SUCH DISCREPANCIES TO THE ATTENTION OF THE ENGINEER FOR ADJUSTMENT BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER FITTING OF ALL WORK AND FOR THE COORDINATION OF ALL TRADES, SUBCONTRACTORS, AND PERSONS ENGAGED UPON THIS CONTRACT.

3) CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR OR REPLACE ANY EXISTING IMPROVEMENTS OR UNDERGROUND FACILITIES DAMAGED BY HIM, HIS SUBCONTRACTORS, OR HIS MATERIAL SUPPLIERS WITHIN 48 HOURS OF THE DAMAGE OCCURRENCE AND/OR AS REQUIRED BY THE ENGINEER.

4) EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ARE FOR INFORMATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION AND DEPTH. THE ENGINEER ASSUMES NO RESPONSIBILITY THAT THE UTILITIES AND UNDERGROUND FACILITIES INDICATED WILL BE THE UTILITIES AND UNDERGROUND FACILITIES ENCOUNTERED.

5) THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ELEVATIONS OF THE EXISTING STORM DRAINS, SEWERS, AND WATER TO BE EXTENDED, CROSSED, OR CONNECTED TO PRIOR TO COMMENCING THE WORK. NOTIFY ENGINEER IF ACTUAL IS DIFFERENT FROM PLANS.

6) ALL WORK SHALL BE CONSTRUCTED IN STRICT COMPLIANCE WITH THE APPLICABLE SECTIONS OF WASHINGTON AND FEDERAL OSHA REQUIREMENTS AND OTHER APPLICABLE SAFETY ORDINANCES. CONTRACTOR SHALL BEAR FULL RESPONSIBILITY FOR SHORING DESIGN AND INSTALLATION.

7) THE CONTRACTOR IS RESPONSIBLE FOR MATCHING EXISTING STREETS, SURROUNDING LANDSCAPE, AND OTHER IMPROVEMENTS WITH A SMOOTH TRANSITION IN PAVING, CURBS, GUTTERS, SIDEWALKS, GRADING, ETC, AND TO AVOID ANY ABRUPT OR APPARENT CHANGES IN GRADES OR CROSS SLOPES, LOW SPOTS, OR HAZARDOUS CONDITIONS.

8) CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR OBTAINING PERMITS FROM THE WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES FOR REMOVING AND REPLACING ALL SURVEY MONUMENTATION THAT MAY BE AFFECTED BY CONSTRUCTION ACTIVITY, PURSUANT TO WAC 332-120. APPLICATIONS MUST BE COMPLETED BY A REGISTERED LAND SURVEYOR. APPLICATIONS FOR PERMITS TO REMOVE MONUMENTS MAY BE OBTAINED FROM THE WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES (DNR), OR BY CONTACTING THEIR OFFICE BY TELEPHONE AT (206) 902-1190.

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES
PUBLIC LAND SURVEY OFFICE
1111 WASHINGTON STREET S.E.
OLYMPIA, WASHINGTON 98504-7060

UPON COMPLETION OF CONSTRUCTION, ALL MONUMENTS DISPLACED, REMOVED, OR DESTROYED SHALL BE REPLACED BY A REGISTERED LAND SURVEYOR, AT THE COST OF THE CONTRACTOR, PURSUANT TO THESE REGULATIONS. THE APPROPRIATE FORMS FOR REPLACEMENT OF SAID MONUMENTS SHALL BE COMPLETED AND FILED WITH DNR AT THE CONTRACTOR'S EXPENSE.

9) REPLACE ALL FENCES, PAVEMENT STRIPING, SIGNAGE, AND OTHER SURFACE FEATURES AFFECTED BY CONSTRUCTION IN KIND.

10) ALL PIPES SHALL BE CLEANED AND TESTED PRIOR TO PAVING IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. TESTING SHALL TAKE PLACE AFTER ALL UNDERGROUND UTILITIES ARE INSTALLED AND COMPACTION OF THE ROADWAY SUBGRADE IS COMPLETED.

11) PRIOR TO BACKFILL, ALL PIPES AND APPURTENANCES SHALL BE INSPECTED AND APPROVED BY ENGINEER. APPROVAL SHALL NOT RELIEVE THE CONTRACTOR FROM CORRECTION OF ANY DEFICIENCIES AND/OR FAILURES AS DETERMINED BY SUBSEQUENT TESTING AND/OR INSPECTION. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE INSPECTOR FOR REQUIRED INSPECTIONS.

12) TRAFFIC SHALL BE MAINTAINED AND CONTROLLED IN ACCORDANCE WITH WSDOT SECTION 1-07.23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) INCLUDING MODIFICATIONS.

CONTACT INFORMATION

CIVIL ENGINEER
WILSON ENGINEERING, LLC
805 DUPONT STREET
BELLINGHAM, WA 98225
DANIELLE JOHNSTON, PE
djohnston@wilsonengineering.com
PHONE 360.733.6100 EXT. 1229

SURVEYOR
WILSON ENGINEERING, LLC
805 DUPONT STREET
BELLINGHAM, WA 98225
PAUL DARROW, PLS
pdarrow@wilsonengineering.com
PHONE 360.733.6100 EXT. 1242

DISTRICT OFFICIALS

ANDREW MILLER- PRESIDENT
CORRIN HAMBURG – VICE PRESIDENT
JOSEPH LINDQUIST – SECRETARY

GEORGE SIDHU, P.E. – GENERAL MANAGER
MARK C. HANDZLIK, P.E. – ENGINEERING MANAGER
MICHAEL FOX – OPERATIONS MANAGER

DISTRICT STANDARD GENERAL NOTES (MINIMUM REQUIREMENTS)

1. UNLESS STATED OTHERWISE, ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH THE MOST CURRENT WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT) STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION AND THE DISTRICT REQUIREMENTS AS OUTLINED IN THE DISTRICT'S WATER POLICY MANUAL.
2. THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION CONFERENCE WITH THE DISTRICT ENGINEERING DEPARTMENT, (360) 424-7104, A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION.
3. DISTRICT REFERENCE DOCUMENTS, SUCH AS STANDARD DETAILS, WATER POLICY MANUAL, DRAWING STANDARDS, ETC., CAN BE FOUND ON THE DISTRICT WEBSITE AT WWW.SKAGITPUD.ORG.
4. ALL TIE-INS, SHUTDOWN, FLUSHING, AND HEALTH SAMPLES SHALL BE COORDINATED WITH THE DISTRICT. THE CONTRACTOR SHALL NOT OPERATE ANY VALVES.
5. A LIST OF ALL MATERIALS, INDICATING THE MANUFACTURER, MODEL, AND SIZE, FOR THE WATER SYSTEM IMPROVEMENTS WILL BE APPROVED BY THE DISTRICT PRIOR TO CONSTRUCTION. CONTACT DISTRICT FOR SUBMITTAL REQUIREMENTS.
6. DUCTILE IRON PIPE WILL BE MINIMUM CLASS 50 AWWA C151 PER WSDOT STANDARD SPECIFICATIONS 9-30.1 AND 9-30.1(1). ALL DUCTILE IRON WATER PIPE AND FITTINGS SHALL BE COMPLETELY WRAPPED WITH A MINIMUM OF EIGHT-MIL POLYETHYLENE PIPE ENCASEMENT AND INSTALLED IN ACCORDANCE WITH AWWA C105 AND WSDOT STANDARD SPECIFICATIONS 7-09.3(17) AND 9-30.1(2).
7. ALL BOLTS USED IN BURIED FLANGES SHALL BE ASTM A307 GRADE B UNFINISHED WITH NUTS TO ASTM A563 GRADE A AND WASHERS TO ASTM F8444, OR ASTM A325 TYPE 3 (CORTEN STEEL) UNFINISHED. WITH NUTS TO ASTM A563C3 OR A563DH3 AND WASHERS TO ASTM F436-1. ALL BOLTS, NUTS AND WASHERS USED IN EXPOSED OR ABOVE GROUND LOCATIONS SHALL BE ASTM A307 GRADE B UNFINISHED OR HOT-DIP GALVANIZED.
8. ALL GATE VALVES TO BE RESILIENT SEATED GATE VALVES, AWWA C515 OR C509 (DUCTILE IRON BODY ONLY) WITH STAINLESS STEEL NUTS, BOLTS AND TRIM.
9. ALL BUTTERFLY VALVES TO BE RUBBER SEATED BUTTERFLY VALVES, AWWA C504 WITH STAINLESS STEEL NUTS, BOLTS AND TRIM.
10. RESTRAINED JOINTS MAY BE USED IN PLACE OF CONCRETE BLOCKING AS DIRECTED BY THE PROJECT'S DESIGN ENGINEER AND ACCEPTED BY THE DISTRICT.
11. ALL FIRE HYDRANTS SHALL CONFORM TO AWWA C502 WITH STORZ ADAPTORS. ACCEPTABLE FIRE HYDRANTS INCLUDE CLOW MEDALLION, MUELLER CENTURION OR SUPER CENTURION, AMERICAN DARLING B62B AND AMERICAN AVK NOSTALGIC.
12. A #10 SOLID COPPER WIRE WITH BLUE INSULATION IS TO BE INSTALLED WITH/AND ATTACHED TO ALL NEW WATER PIPELINES AND SERVICE PIPELINES. REFER TO DISTRICT DETAILS FOR INSTALLATION REQUIREMENTS. DISTRICT STANDARD GENERAL NOTES-C900 PVC REVISED OCTOBER 30, 2015 PAGE 2 OF 3
13. UNLESS OTHERWISE SPECIFIED, ALL WATER PIPELINE INSTALLATIONS REQUIRE A 36-INCH MINIMUM COVER AND 48-INCH TYPICAL TRENCH DEPTH TO EXISTING OR FUTURE FINISH GRADE AND A MINIMUM OF 1-FOOT VERTICAL AND 5-FOOT HORIZONTAL CLEARANCE BETWEEN WATER PIPELINE AND ALL OTHER UTILITIES UNLESS OTHERWISE SPECIFIED.
14. WHEN INSTALLING WATER PIPELINE ACROSS EXISTING OR PROPOSED SANITARY SEWER, A FULL LENGTH OF PIPE SHALL BE INSTALLED WITH MID-SPAN OF THE WATER PIPE OVER THE SEWER. A MINIMUM 10-FOOT HORIZONTAL SEPARATION AND 18-INCH VERTICAL SEPARATION BETWEEN WATER PIPELINES AND SANITARY SEWER PIPELINES IS REQUIRED, UNLESS AN ALTERNATIVE PROPOSAL FROM THE DESIGN ENGINEER IS SUBMITTED TO AND APPROVED BY THE DISTRICT.
15. BEDDING MATERIAL FOR THE DUCTILE IRON PIPE SHALL BE SELECT, NATIVE, GRANULAR MATERIAL FREE FROM WOOD WASTE, ORGANIC MATERIAL OR OTHER EXTRANEOUS OR OBJECTIONABLE MATERIALS AND SHALL BE A MAXIMUM SIZE OF 1 1/2-INCHES OR APPROVED PIPE BEDDING PER WSDOT SPECIFICATION 7-09.3(9) AND 9-03.12(3). PEA GRAVEL AND BUCKSHOT ARE NOT ACCEPTABLE.
16. BACKFILL TRENCHES IN PAVEMENT AREAS WITH PIT-RUN GRAVEL COMPACTED TO AT LEAST 95 PERCENT MINIMUM DENSITY PER WSDOT SPECIFICATION 7-09.3(11), THE CONTRACTOR SHALL MAKE ALL PAVEMENT REPAIRS AND PERFORM ALL RESTORATION.
17. DISINFECTION AND FLUSHING OF THE WATER PIPELINES ARE TO BE PER WSDOT SPECIFICATIONS. USE DECHLORINATION EQUIPMENT WHEN FLUSHING OR, WITH PERMISSION OF THE APPROPRIATE SEWER UTILITY, FLUSH INTO SANITARY SEWER MANHOLES. DO NOT FLUSH INTO OR ALLOW CHLORINATED WATER TO DRAIN INTO ANY CREEK, WETLAND, OR CATCH BASIN. THE CONTRACTOR WILL SUBMIT A PRESSURE TESTING, DISINFECTION, AND FLUSHING PLAN TO THE DISTRICT PRIOR TO CONSTRUCTION.
18. ALL SALVAGED USABLE DISTRICT OWNED MATERIALS ARE TO BE DELIVERED TO THE DISTRICT OFFICE AT 1415 FREEWAY DRIVE, MOUNT VERNON, OR AS DIRECTED BY THE DISTRICT.
19. THE UTILITY LOCATIONS MARKED ON THIS MAP ARE APPROXIMATE. THE CONTRACTOR IS TO VERIFY ACTUAL LOCATION AND DEPTH PRIOR TO CONSTRUCTION. CALL THE UNDERGROUND UTILITY LOCATE CENTER AT 800- 424-5555.
20. ALL PRIVATE FIRE SPRINKLERS OR PRIVATE FIRE HYDRANT PIPELINES ARE REQUIRED TO BE INSTALLED WITH A WASHINGTON STATE DEPARTMENT OF HEALTH (WSDOH) APPROVED DOUBLE CHECK DETECTOR ASSEMBLY(ES) OR REDUCED PRESSURE DETECTOR ASSEMBLY(ES), LOCATED IMMEDIATELY AFTER THE FIRE SERVICE CONNECTION. A BADGER RECORDALL METER WITH A REMOTE TOUCH-READ PAD WILL BE SUPPLIED AND INSTALLED BY THE DISTRICT WITHIN 6-INCHES OF THE VAULT LID'S HINGE AND BRASS PLUGS IN THE TEST PORTS. METER SUPPLY AND INSTALLATION WILL BE INCLUDED WITH THE CHARGES IN THE WORK ORDER.
21. A LEAD FREE, WASHINGTON STATE APPROVED, REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY SHALL BE INSTALLED AT TEMPORARY CONNECTIONS BETWEEN THE EXISTING DISTRICT PIPELINES AND NEW WATER PIPELINES FOR FILLING, FLUSHING AND PRESSURE TESTING OF THE IMPROVEMENTS. UPON TEMPORARY CONNECTION, AND PRIOR TO FILLING, THE ASSEMBLY SHALL HAVE BEEN SUCCESSFULLY TESTED BY A BACKFLOW ASSEMBLY TESTER (BAT) AND THE TEST REPORT IS TO BE PROVIDED TO THE DISTRICT.
22. BEFORE FINAL CONNECTION TO THE EXISTING DISTRICT SYSTEM, ALL NEW WATER PIPELINES AND REPAIRED PORTIONS OF/OR EXTENSION TO EXISTING PIPELINES SHALL BE ADEQUATELY DISINFECTED AND A SATISFACTORY BACTERIOLOGICAL REPORT OBTAINED. DISTRICT STANDARD GENERAL NOTES-C900 PVC REVISED OCTOBER 30, 2015 PAGE 3 OF 3.
23. PRESSURE TEST NEW PIPELINE, INCLUDING FIRE HYDRANTS AND SERVICE LINES AS PER WSDOT STANDARDS.
    TEST DATE TEST PRESSURE _____
    TIME START TIME END _____
    PRESSURE DROP MAKE-UP WATER _____

Skagit PUD
PUBLIC UTILITY DISTRICT

Exhibit 'C'
UF10322CRAM02
Plans Sheets/Maps
Page 2 of 12

811 Call 811 two business days before you dig

DESIGN DEVELOPMENT

WILSON ENGINEERING
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DANIELLE R. JOHNSTON — 22576 — REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON — 2-26-25

DESIGNED BY	DRAWN BY	CHECKED BY
DRJ/MDS	MDS	DRJ

SKAGIT COUNTY PUBLIC UTILITY DISTRICT
ALGER WASHINGTON
PIPELINE RELOCATION AT ALGER INTERCHANGE
COVER SHEET

DATE	SCALE	JOB NUMBER
02-26-2025	AS SHOWN	2023-065

SHEET C0.1 PAGE 1 OF 13

PLOT SETTINGS: RICOH 8X11- B&W.pc3, Letter, Portrait, 1:1.05, WE APWA_UNSCREENED.ctb
W:\2023\2023-065 SKAGIT PUD WATER PIPELINE RELOCATION\DWG\2024_2023-065 C01 COVER SHEET.DWG - 2/26/2025 1:15 PM - Jeff Smith

LEGEND & ABBREVIATIONS– SIZE & SCALE MAY VARY

EXISTING HATCH PATTERNS

DESCRIPTION
EXIST. CONCRETE
EXIST. BUILDING
EXIST. EARTH
EXIST. GRAVEL
EXIST. SAND

PROPOSED HATCH PATTERNS

DESCRIPTION
PROP. CONCRETE
PROP. ASPHALT CONCRETE
PROP. CRUSHED SURFACING
PROP. SAND
PROP. QUARRY SPALLS
WETLAND HATCH

SURFACE FEATURES EXISTING PLAN LINETYPES

DESCRIPTION
BRIDGE
BUILDING LINE
BUILDING COLUMN
BUILDING OVERHANG
BULKHEAD
CONCRETE EDGE
CREEK EDGE
CROWN OF ROAD
CURB
DITCH CENTERLINE
DECK
DOCK
EDGE OF SAWCUT
EDGE OF PAVEMENT
FENCE
GATE
GRADE
GRAVEL
GUARDRAIL
JERSEY BARRIER
LAKE/POND WATER EDGE
LIP OF CURB
MISC SURFACE FEATURE
MISC TRAFFIC
PLANTER
PATH
RAILROAD
RAMP (WOOD)
HANDRAIL
RETAINING WALL
ROAD STRIPING
ROCKERY
RIVERBANK/SHORELINE
THALWAG LINE
TOP OF BANK/SLOPE
TOE OF BANK/SLOPE
VEGETATION/SHRUB LINE
WETLAND/SWAMP PERIMETER
WETLAND BUFFER

SURFACE FEATURES PROPOSED PLAN LINETYPES

DESCRIPTION
BRIDGE
BUILDING LINE
CONCRETE
CURB
DITCH CENTERLINE
EDGE OF BIKE LANE
EDGE OF PAVEMENT
FENCE
GATE
GRAVEL
GUARDRAIL
JERSEY BARRIER
LIP OF CURB
REBAR
RETAINING WALL
ROCKERY
ROAD STRIPING
HANDRAIL
EDGE OF SAWCUT

UTILITIES EXISTING PLAN LINETYPES

DESCRIPTION
CABLE TELEVISION (AERIAL)
CABLE TELEVISION (BURIED)
SURVEILLANCE CAMERA (BURIED
FIBER OPTIC/COMMUNICATIONS LINE (AERIAL)
FIBER OPTIC/COMMUNICATIONS LINE (BURIED)
TELEPHONE/COMMUNICATIONS (AERIAL)
TELEPHONE/COMMUNICATIONS (BURIED)
TRAFFIC SIGNAL CONDUIT LINE
POWER (AERIAL)
POWER (BURIED)
UTILITY (AERIAL)
UTILITY (BURIED)
POWER DUCT BANK (BURIED)
DRAIN FIELD
SANITARY SEWER
APPROXIMATE SANITARY SEWER
SANITARY SEWER (FORCE MAIN)
APPROXIMATE SANITARY SEWER (FORCE MAIN)
STORM DRAINAGE
APPROXIMATE STORM DRAINAGE
CULVERT (@ WIDTH)
CULVERT
RECLAIMED WATER
IRRIGATION
WATER
APPROXIMATE WATER
8" WATER
OVERFLOW
STEAM
GAS
GAS TANK/STRUCTURE
OIL
AIR LINE
BURIED UTILITY APPROX. EXTENTS
MISC UTILITY (BURIED)

PROPOSED PLAN UTILITY LINETYPES

WATER

DESCRIPTION
WATER
8" WATER
IRRIGATION
RECLAIMED WATER
POTABLE WATER
WATER SERVICE
WATER STRUCTURE
FIRE DEPARTMENT CONNECTION
FIRE PROTECTION LINE

SANITARY SEWER

DESCRIPTION
SEWER
8" SEWER
FORCE MAIN
DRAIN FIELD
SEWER SERVICE
SEWER STRUCTURE

STORM DRAIN

DESCRIPTION
STORM DRAIN
STORM DRAIN
STORM DRAIN
STORM SERVICE
FOOTING DRAIN
STORM STRUCTURE

MISC. UTILITIES

DESCRIPTION
GAS
POWER
TELEPHONE/COMMUNICATIONS

EROSION CONTROL

DESCRIPTION
EROSION TRIANGULAR SILT DIKE
EROSION CONTROL COMPOST BERM
EROSION CONTROL MINOR CONTOUR
EROSION CONTROL MAJOR CONTOUR
ORANGE BARRIER FENCE
SILT FENCE
STRAW WATTLE
EROSION CONTROL FLOWLINE
STRAW BALE
INLET PROTECTION
CHECK DAM

SURVEY PLAN LINETYPES

DESCRIPTION
CENTERLINE (EXISTING)
CENTERLINE (CONSTRUCTION)
CENTERLINE (PROPOSED)
CONTOUR (EXISTING MINOR)
CONTOUR (EXISTING INDEX)
HYDRO CONTOUR (EXISTING INDEX)
CONTOUR (PROPOSED INDEX)
CONTOUR (PROPOSED MINOR)
DONATION LAND CLAIM (EXIST.)
EASEMENT (PROPOSED)
EASEMENT (EXISTING)
MEANDER LINE
ORDINARY HIGH WATER LINE
MEAN LOW LEVEL WATER LINE
OWNERSHIP LINE
PROPERTY LINE (RECORD OR ADJACENT)
PROPERTY LINE
QUARTER SECTION LINE
RANGE/TOWNSHIP LINE
RESERVATION/PARK/FOREST (EX)
RIGHT-OF-WAY ℄ (EXISTING)
RIGHT-OF-WAY (EXISTING)
RIGHT-OF-WAY (EXISTING USED)
RIGHT-OF-WAY (PROPOSED)
RIGHT-OF-WAY (EX. RECORD) (RECORD OR ADJACENT)
RIGHT-OF-WAY (LIMITED ACCESS)
RIGHT-OF-WAY (LIMITED ACCESS)
SECTION LINE
SETBACK LINE (EXISTING)
SIXTEENTH SECTION LINE
STATE/COUNTY/CORPORATE LIMIT
VACATED RIGHT-OF-WAY
EASEMENT (RECORD)
RIGHT-OF-WAY CENTER (RECORD)
DONATION LAND CLAIM (RECORD)
MEANDER LINE (RECORD)
PARK LINE (RECORD)
SECTION LINE (RECORD)
QUARTER SECTION LINE (RECORD)
SIXTEENTH SECTION LINE (RECORD)
STATE LINE (RECORD)
RANGE LINE (RECORD)

PROFILE LINETYPES

DESCRIPTION
PROFILE EX. GRND ℄
PROFILE FINISH GRND ℄
PROFILE GRID
PROFILE VERTICAL GRID
PROFILE EX. GROUND LEFT
PROFILE EXISTING GROUND RIGHT
FIBER OPTIC PROFILE (EXISTING)
GAS PROFILE (EXISTING)
POWER PROFILE (EXISTING)
RAILROAD PROFILE (EXISTING)
SANITARY PROFILE (EXISTING)
SANITARY PROFILE (PROPOSED)
STORM PROFILE (EXISTING)
TELEPHONE PROFILE (EXISTING)
STORM PROFILE (PROPOSED)
TV PROFILE (EXISTING)
UTILITY PROFILE (EXISTING)
WATER PROFILE (EXISTING)
WATER PROFILE (PROPOSED)

DEMOLITION

DESCRIPTION
SURFACE FEATURE OR UTILITY TO BE REMOVED
SAWCUT
CLEARING LIMIT
TREE OR BUSH TO BE REMOVED

GRADING

DESCRIPTION
GRADE BREAK
CATCHLINE
CUT LINE
FILL LINE
SLOPE ARROWS

MISC. SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		SOIL BORING
		MONITORING WELL
		TEST WELL
		TEST PIT
		EMBANKMENT
		MAIL BOX
		SIGN
		RIP RAP
		BOULDER
		SHRUB
		TREE (Conifer)*
		TREE (Deciduous)*
		STUMP–PLAN VIEW
		YARD LIGHT
		WELL
		PILE
		ROCKERY
		WHEEL STOP
		SPLASH BLOCK
		GAS METER
		GAS VALVE
		PAD MOUNTED TRANSFORMER
		POWER VAULT
		TRANSMISSION TOWER
		POWER CABINET OR PANEL
		POWER METER
		GUY POLE
		UTILITY POLE
		UTILITY POLE ANCHOR
		TELE RISER
		CABLE RISER
		FIBER OPTIC RISER
		FIBER OPTIC MANHOLE
		TELEPHONE MANHOLE
		TELEPHONE VAULT
		STEAM MANHOLE
		PARKING METER
		POST
		PUMP

SANITARY SEWER SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		SAN. SEWER CLEAN OUT
		SAN. SEWER MANHOLE

STORM DRAIN SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		STORM DRAIN CB TYPE 1
		STORM DRAIN CB TYPE 2
		STORM DRAIN CB TYPE 2 W/CB LID
		STORM DRAIN WITH OVERFLOW GRATE
		STORM DRAIN CLEAN-OUT
		STORM DOWNSPOUTS

PIPE CALL-OUT

(A) (B)
36-SS
XXXLF
(C)

PIPE CALL-OUTS: (A) REPRESENTS THE PIPE SIZE IN INCHES, (B) INDICATES THE UTILITY TYPE (C) REPRESENTS THE PIPE LENGTH IN LINEAL FEET

SYMBOLS

°	=DEGREES
±	=PLUS/MINUS
⌀	=DIAMETER
Δ	=DELTA
℄	=CENTERLINE
℄	=FLOWLINE
℄	=PROPERTY LINE

SPOT ELEVATIONS

190.00 TBC ① ②

①= ELEVATION
②= DESCRIPTION– SEE DEFINED ABBREVIATIONS ABOVE

DIRECTIONAL ABBREVIATIONS

N	=NORTH
NE	=NORTHEAST
E	=EAST
SE	=SOUTHEAST
S	=SOUTH
SW	=SOUTHWEST
W	=WEST
NW	=NORTHWEST

WATER SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		ARV VALVE
		GLOBE VALVE, FL
		BALL CHECK VALVE, FL
		BLOW–OFF VALVE
		SWING CHECK VALVE, FL
		BUTTERFLY VALVE, FL
		HOSE BIB/SPIGOT
		DOUBLE LEAF CHECK VALVE
		PLUG VALVE
		BALL VALVE
		FLOAT VALVE
		PINCH VALVE
		PRESSURE & VACUUM RELIEF VALVE
		VACUUM RELIEF VALVE
		PRESSURE RELIEF VALVE
		PRESSURE REGULATING VALVE (SELF CONTAINED)
		BACK PRESSURE REGULATING VALVE (SELF CONTAINED)
		IN–LINE SPRING LOADED RELIEF VALVE
		CAP/PLUG
		GUARD POST
		THRUST BLOCK
		WATER METER
		FIRE DEPARTMENT CONNECTION
		WATER VALVE
		FIRE HYDRANT
		WATER MANHOLE
		POST INDICATOR VALVE
		11–1/4 BEND, MJ–FL
		22–1/2 BEND, MJ–FL
		45 BEND, MJ–FL
		90 BEND, MJ–FL
		FLXMJ ADAPTER
		COUPLER
		BLIND FLANGE
		GATE VALVE, FLxMJ
		GATE VALVE, MJ
		REDUCER, MJxFL
		REDUCER, MJ
		TEE, FL
		TEE, MJ
		TEE, MJxFL
		TEE, FLxMJ
		CROSS, FL
		CROSS, MJ

SURVEY SYMBOLS

BRASS SURFACE MONUMENT
CONCRETE MONUMENT
FOUND REBAR
SET REBAR
MONUMENT IN CASE
TRAVERSE POINT

NOTE TO USER:
CONTENT SHOWN ON THIS PAGE IS SUBJECT TO CHANGE AND MAY DIFFER THROUGHOUT THE PLAN SET.

ABBREVIATIONS

AB	=AS–BUILT (RECORD)
AC	=ASBESTOS CEMENT
AL	=ALIGNMENT
APPROX	=APPROXIMATE
APWA	=AMERICAN PUBLIC WORKS ADMINISTRATION
ASPH or AC	=ASPHALT
ASSY	=ASSEMBLY
ASTM	=AMERICAN SOCIETY FOR TESTING & MATERIALS
AWWA	=AMERICAN WATER WORKS ASSOCIATION
BLDG	=BUILDING
BMP	=BEST MANAGEMENT PRACTICE
BVCS	=BEGIN VERTICAL CURVE STATION
BVCE	=BEGIN VERTICAL CURVE ELEVATION
CB	=CATCH BASIN
CK	=CHECK VALVE
C/L ℄	=CENTERLINE
CESCL	=CERTIFIED EROSION SEDIMENT CONTROL LEAD
COL	=COLUMN
CMP	=CORRUGATED METAL PIPE
CMU	=CONCRETE MASONRY UNIT
C.O. or CO	=CLEAN OUT
CONC, EC	=CONCRETE
COR	=CORNER
CRSI	=CONCRETE REINFORCING STEEL INSTITUTE
CPP	=CORRUGATED POLYETHYLENE PIPE
CSBC	=CRUSHED SURFACING BASE COURSE
CSTC	=CRUSHED SURFACING TOP COURSE
DCVA	=DOUBLE CHECK VALVE ASSEMBLY
DI or DIP	=DUCTILE IRON PIPE
DIAM	=DIAMETER
DNR	=DEPARTMENT OF NATURAL RESOURCES
DO	=DISSOLVED OXYGEN
DOT	=DEPARTMENT OF TRANSPORTATION
DR	=DIMENSION RATIO
DS	=DOWNSPOUT
EG	=EXISTING GRADE
ELEV, EL	=ELEVATION
EOG	=EDGE OF GRAVEL
EOP	=EDGE OF PAVEMENT
EP	=EXPLORATION PIT
EXIST, EX	=EXISTING
EVCS	=END VERTICAL CURVE STATION
EVCE	=END VERTICAL CURVE ELEVATION
FDC	=FIRE DEPARTMENT CONNECTION
FF	=FINISH FLOOR
FG	=FINISH GRADE
FL	=FLOWLINE OR PLANCE (CONNECTION)
℄	=FLOWLINE
FLC	=FLOWLINE OF CURB
FM	=FORCEMAIN
FRP	=FIBERGLASS REINFORCED PIPE
GB	=GRADE BREAK
GMET	=GAS METER
GP	=GUY POLE
GPM	=GALLONS PER MINUTE
GRVL, G	=GRAVEL
GV	=GATE VALVE
HDG	=HOT–DIP GALVANIZED
HDPE	=HIGH DENSITY POLYETHYLENE
HSS	=HOLLOW STRUCTURAL SECTION
H/V	=HORIZONTAL/VERTICAL
HWL	=HIGH WATER LEVEL
HYD	=HYDRANT
IBC	=INTERNATIONAL BUILDING CODE
IE	=INVERT ELEVATION
INFO	=INFORMATION
INV	=INVERT
IPS	=IRON PIPE SIZE
LF	=LINEAR FEET
LUM	=LUMINAIRE
LT	=LEFT
MAX	=MAXIMUM
MB	=MAIL BOX
MBR	=MEMBRANE BIO–REACTOR
MDD	=MAXIMUM DRY DENSITY
MFR	=MANUFACTURER
MH	=MANHOLE
MIN	=MINIMUM
MISC	=MISCELLANEOUS
MJ	=MECHANICAL JOINT
MUTCD	=MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
MW	=MONITORING WELL
NPDES	=NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
NSF	=NATIONAL SCIENCE FOUNDATION
O.C.	=ON CENTER
O.C.E.W	=ON CENTER EACH WAY
OD	=OUTSIDE DIAMETER
OHP	=OVERHEAD POWER
OHT	=OVERHEAD TELEPHONE
OSHA	=OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PC	=POINT OF CURVATURE
PCC	=POINT OF CONTINUING CURVATURE
PE	=POLYETHYLENE or PLAIN END
PIV	=POST INDICATOR VALVE
P/L ℄	=PROPERTY LINE
PLC	=PROGRAMMABLE LOGIC CONTROLLER
PLTR	=PLANTER
POL	=POINT ON LINE
PROP, PR	=PROPOSED
PS	=PUMP STATION
PSI	=POUNDS PER SQUARE INCH
PT	=POINT OF TANGENCY
PVC	=POLYVINYL CHLORIDE
PVI	=POINT OF VERTICAL INTERSECTION
PW	=POTABLE WATER
R	=RADIUS
RET	=RETAINING
REC	=RECORD
REINF	=REINFORCEMENT
REQ'D	=REQUIRED
RPBA	=REDUCED PRESSURE BACKFLOW ASSEMBLY
RR	=RAILROAD
RT	=RIGHT
R/W or ROW	=RIGHT–OF–WAY
RW	=REUSE WATER
SCADA	=SUPERVISORY CONTROL AND DATA ACQUISITION
SCH	=SCHEDULE
SD	=STORM DRAIN
SDCB	=STORM DRAIN CATCH BASIN
SDCO	=STORM DRAIN CLEAN OUT
SDMH	=STORM DRAIN MANHOLE
SFH	=SINGLE FAMILY HOUSING
SN	=SIGN
SPD	=STANDARD PROCTOR DENSITY
SPK	=SPIKE
SS	=SANITARY SEWER
SSCO	=SANITARY SEWER CLEAN–OUT
SSMH	=SANITARY SEWER MANHOLE
SST	=STAINLESS STEEL
STA	=STATION
S/W	=SIDEWALK
SYMM	=SYMETRY/SYMMETRICAL
TBC	=TOP BACK OF CURB
TBD	=TO BE DETERMINED
TBM	=TEMPORARY BENCH MARK
T.O.W.	=TOP OF WALL
TYP	=TYPICAL
UNK	=UNKNOWN
UP	=UTILITY POLE
VAC	=VACATED
VC	=VERTICAL CURVE
WA	=WATER
WAC	=WASHINGTON ADMINISTRATIVE CODE
WAS	=WASTE ACTIVATED SLUDGE
WL	=WATERLINE
WM	=WATER METER
WS	=WATER SURFACE
WSDOT	=WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
WV	=WATER VALVE
YD	=YARD DRAIN
YL	=YARD LIGHT

SECTION/DETAIL CALL-OUTS

B(A) CX.XC(B)

SECTION CALL-OUTS: (A) REPRESENTS THE SECTION LABEL. (B) INDICATES THE SHEET ON WHICH THE SECTION APPEARS.

1(A) CX.XC(B)

DETAIL CALL-OUTS: (A) REPRESENTS THE DETAIL LABEL. (B) INDICATES THE SHEET ON WHICH THE DETAIL APPEARS.

B(A) CX.XC(B)

SECTION SHEET LABELS: (A) REPRESENTS THE SECTION LABEL. (B) INDICATES THE SHEET ON WHICH THE SECTION IS CALLED OUT.

1(A) CX.XC(B)

DETAIL SHEET LABELS: (A) REPRESENTS THE DETAIL LABEL. (B) INDICATES THE SHEET(S) ON WHICH THE DETAIL IS CALLED OUT.

CX.XC (B)

Exhibit 'C'
UF10322CRAM02
Plans Sheets/Maps
Page 3 of 12

811 Call 811 two business days before you dig

DESIGN DEVELOPMENT

PLOT SETTINGS: Adobe PDF1.pc3, ANSI full bleed B (17.00 x 11.00 Inches), Portrait, 1:2, WE APWA_UNSCREENED.ctb
W:\2023\2023-065 SKAGIT PUD WATER PIPELINE RELOCATION\DWG\2024_2023-065 C.02 LEGEND & ABBREVIATIONS.DWG – 2/26/2025 1:18 PM – Jeff Smith

WILSON ENGINEERING
WILSONENGINEERING.COM

JOHNSTON, JEFFREY D. 22331 STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER
2-26-25

DESIGNED BY	DRAWN BY	CHECKED BY
DRJ/MDS	JGS	DRJ

SKAGIT COUNTY PUBLIC UTILITY DISTRICT
ALGER WASHINGTON
PIPELINE RELOCATION AT ALGER INTERCHANGE
LEGEND AND ABBREVIATIONS

DATE	SCALE	JOB NUMBER
02-26-2025	AS SHOWN	2023-065

SHEET C0.2
PAGE 2 OF 13

TOPOGRAPHIC SURVEY

IN THE NE 1/4 OF THE SE 1/4 SECTION 12, TOWNSHIP 36 NORTH, RANGE 4 EAST, W.M.
SKAGIT COUNTY, WASHINGTON

THIS SURVEY WAS PREPARED UNDER THE DIRECT SUPERVISON OF:
PAUL J. DARROW, WA PLS #50697
SURVEY MANAGER
WILSON ENGINEERING LLC
805 DUPONT STREET, SUITE 7
BELLINGHAM, WA 98225
360-733-6100 (EXT. 1243)
pdarrow@wilsonengineering.com

CONTROL NOTES

HORIZONTAL DATUM:
WASHINGTON STATE PLANE NORTH (NAD83(11))
BASIS OF COORDINATES: COORDINATION AND MENSURATION ARE LOCAL GROUND VALUES, BASED UPON HOLDING THE PUBLISHED WSDOT POSITION FOR THE BRASS DISK MONUMENT AT THE LAKE SAMISH ROAD UNDERCROSSING OF I-5, PUBLISHED AS WSDOT DESIGNATION GP29005-52. SAID MONUMENT HAS THE FOLLOWING PUBLISHED POSITION:

NORTHING = 595,070.80 USFT
EASTING = 1,272,031.37 USFT

BASIS OF BEARINGS: BEARINGS ARE NAD83(11), BASED UPON HOLDING THE PUBLISHED POSITIONS MONUMENTED BY WSDOT MONUMENTS GP29005-52 AND PHD-11, AN IRON PIPE MONUMENT ON THE OF WEST SIDE OF THE NORTHBOUND OFF-RAMP AT EXIT 240.

THE DERIVED INVERSE BETWEEN SAID MONUMENTS GP29005-52 AND PHD-11 IS **NORTH 47°52'04" WEST**, AT A DISTANCE OF **374.81 USFT**. THE PUBLISHED POSITION FOR PHD-11 IS:

NORTHING = 594,819.36 USFT
EASTING = 1,272,309.33 USFT

VERTICAL DATUM:
NAVD 88

BASIS OF ELEVATIONS: ELEVATIONS ARE NAVD88 VALUES, BASED UPON HOLDING THE PUBLISHED ELEVATION FOR GP29005-52 SAID MONUMENT HAS THE FOLLOWING PUBLISHED ELEVATION:
ELEVATION = 298.96 FEET

SOURCE OF CONTOURS: THE CONTOURS, IF ANY, DEPICTED ON THIS SURVEY WERE DERIVED/COMPUTED BASED ON FIELD OBSERVATIONS.

CONTOUR ACCURACY: ACCURACY STANDARDS FOR CONTOURS ARE PER THE NSPS "MODEL STANDARDS FOR TOPOGRAPHIC SURVEYS" POSITIONAL ACCURACY TABLE, SECTION E.8.

CONTOUR INTERVAL LABELING: MAJOR CONTOURS AT 5-FOOT INTERVALS HAVE BEEN EXPLICITLY LABELED.

ON-SITE SURVEY CONTROL TABLE

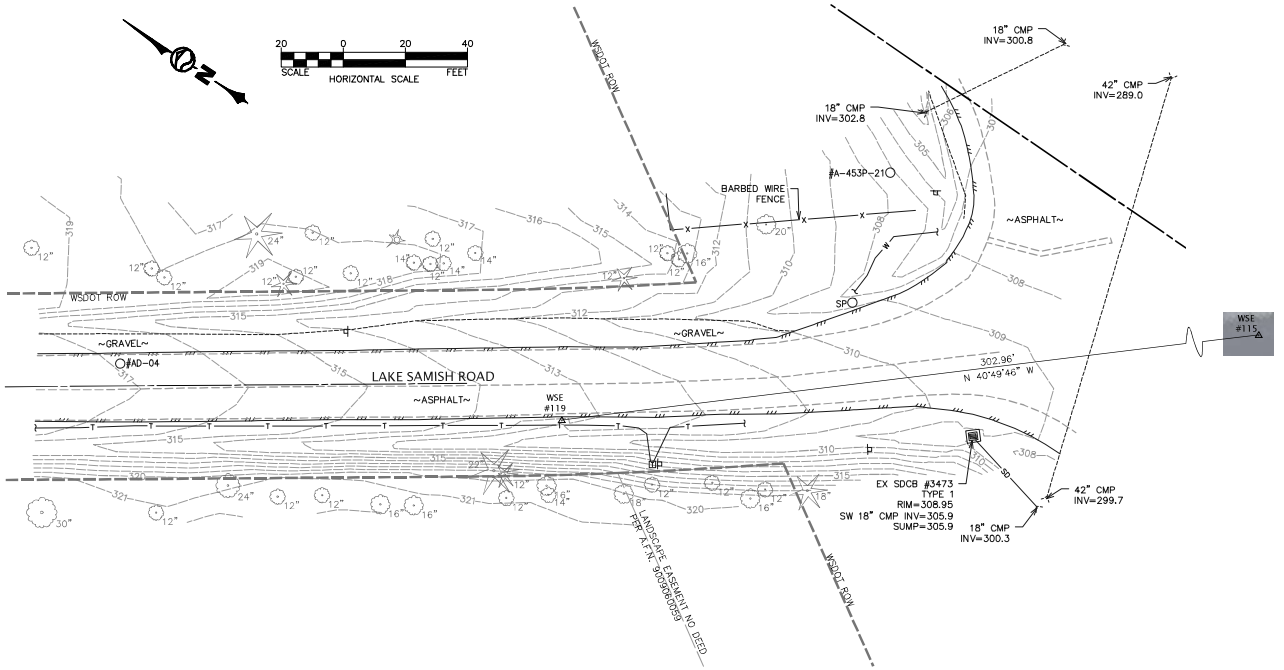
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
115	595,194.76	1,271,819.74	305.77	MAG NAIL
119	595,424.00	1,271,621.66	313.21	HUB & TACK

SURVEYOR'S NOTES

1. THIS SURVEY WAS PERFORMED FOR THE PURPOSE SKAGIT PUD #1 WATER PIPELINE RELOCATION.
2. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A CURRENT TITLE REPORT, AND WILSON CANNOT, AND DOES NOT, GUARANTEE THAT ALL EXTANT INTERESTS-- WHICH MIGHT HAVE BEEN REVEALED BY A CURRENT TITLE REPORT-- ARE HEREON DEPICTED.
3. BOUNDARIES SHOWN HEREON WERE DERIVED FROM SKAGIT COUNTY ASSESSOR'S MAPS AND THE ACCOMPANYING "REFERENCE DOCUMENTS". THIS IS NOT A BOUNDARY SURVEY AND NO CLAIMS ARE MADE TO THE COMPLETENESS OR ACCURACY OF THE BOUNDARIES DERIVED FROM THESE SOURCES.
4. UTILITY LOCATIONS DEPICTED HEREON ARE BASED UPON OBSERVATIONS OF PAINTED MARKINGS SET BY OTHERS, AND WILSON CAN NOT AND DOES NOT GUARANTEE THEIR ACCURACY RELATIVE TO THE PURPORTED FACILITIES .
5. WITHIN THIS SET OF PLANS LEGACY DATA SUPPLIED TO THE ENGINEER BY SKAGIT PUD HAS BEEN USED TO SUPPLEMENT THIS SURVEY. WE MAKE NO CLAIMS TO THE ACCURACY OF THIS THIRD PARTY DATA.

REFERNCE DOCUMENTS

1. RECORD OF SURVEY FOR GEORGIA-PACIFIC CORPORATION A.F.N. 9009060059
2. SKAGIT COUNTY ROAD PROJECT: "ALGER-LAKE SAMISH ROAD, ALGER INTERCHANGE", APPROVED JULY, 1964.
3. SHEET 16 OF 17 "CHUCKANUT DRIVE TO ALGER" WSDOT RIGHT-OF-WAY PLAN APPROVED JAN. 26, 1960.



SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT I AM A LICENSED LAND SURVEYOR IN THE STATE OF WASHINGTON, THAT THIS MAP IS BASED ON AN ACTUAL FIELD SURVEY DONE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT ALL DATA SHOWN HEREON ACTUALLY EXISTS IN THE LOCATIONS SHOWN AT THE TIME OF THIS SURVEY. THIS EXISTING CONDITIONS TOPOGRAPHIC MAP WAS DONE AT THE REQUEST OF SKAGIT PUD IN 2024.

PAUL JONATHAN DARROW, P.L.S. NO. 50697 DATE
2/20/25

PAUL JONATHAN DARROW
STATE OF WASHINGTON
50697
REGISTERED PROFESSIONAL LAND SURVEYOR
2/20/25

Exhibit 'C'
UF10322CRAM02
Plans Sheets/Maps
Page 4 of 12

811 Call 811 two business days before you dig

DESIGN DEVELOPMENT

WILSON ENGINEERING
WILSONENGINEERING.COM

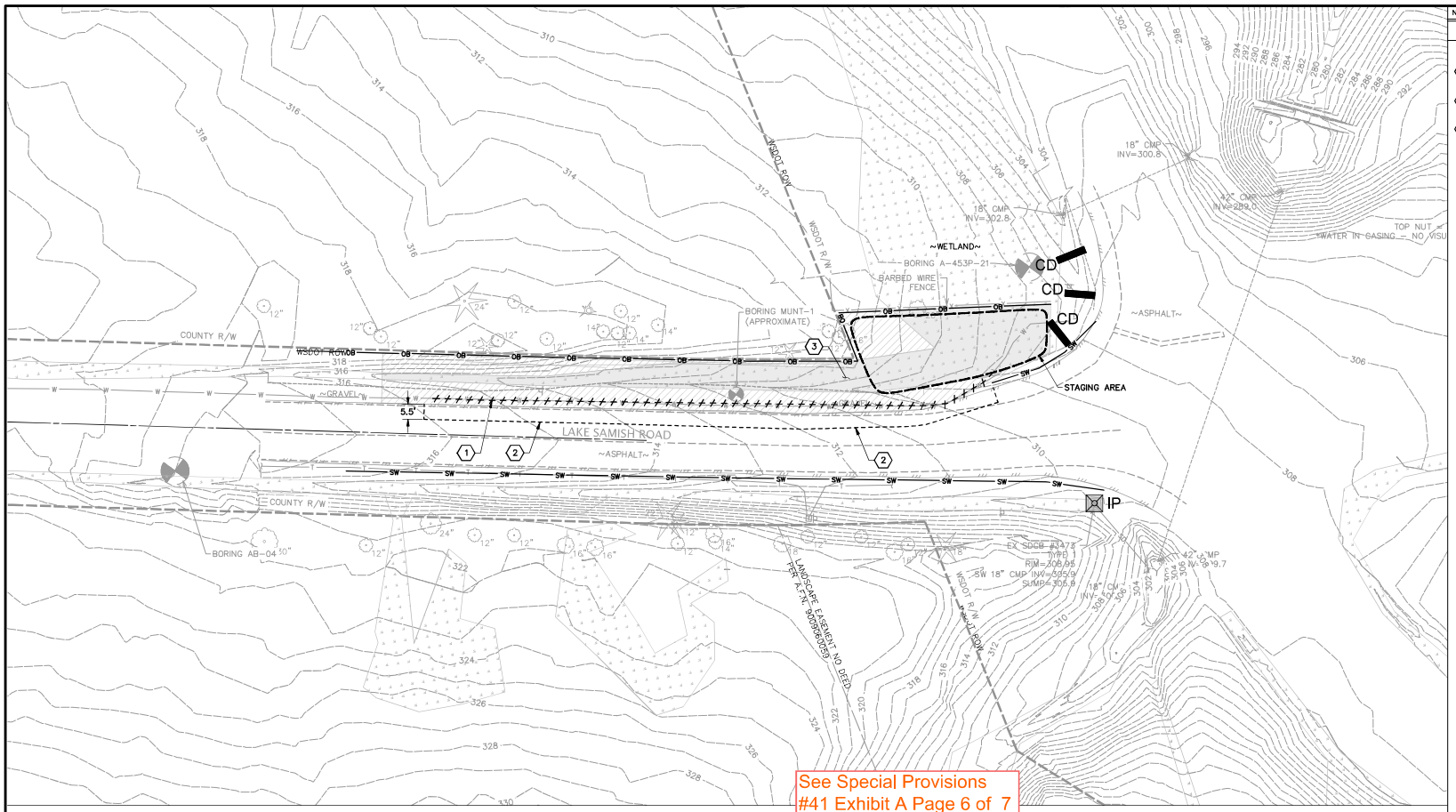
DESIGNED BY | DRAWN BY CLM | CHECKED BY PJD

SKAGIT COUNTY PUBLIC UTILITY DISTRICT
ALGER WASHINGTON
PIPELINE RELOCATION AT ALGER INTERCHANGE
EXISTING CONDITIONS

DATE 02-20-2025
SCALE AS SHOWN
JOB NUMBER 2023-065

SHEET C1.1
PAGE 3 OF 13

PLOT SETTINGS: Adobe PDF1.pc3, ANSI full bleed B (17.00 x 11.00 Inches), Portrait, 1:2, WE APWA_UNSCREENED.ctb
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See Special Provisions #41 Exhibit A Page 6 of 7 and Page 7 of 7

TEMPORARY SEED MIXTURE PROPORTIONS				
NAME	SCIENTIFIC NAME	BY WEIGHT	% PURITY	% GERMINATION
BLUE WILDRYE	ELYMUS GLAUCUS	30%	90%	85%
TUFTED HAIRGRASS	DESCHAMPSIA CESPITOSA	30%	90%	85%
NATIVE RED FESCUE	FESTUCA RUBRA	33%	90%	85%
REDTOP BENTGRASS	AGROSTIS GIGANTEA	10%	90%	85%

INERT/OTHER CROP: 2.5% MAX, WEED SEED: 0.5% MAX, NOXIOUS WEED SEED: 0.0% MAX.

SEED MIX NOTES:

1. MIX SHALL BE APPLIED PER MANUFACTURER/SUPPLIER RECOMMENDATIONS AND METHOD OF SEEDING (I.E., HYDROSEED, HAND-SEEDING, ETC.) WITH MINIMUM OF 3 LBS PER 1,000 SF.

2. SEED MIX SHOWN ABOVE IS REFLECTIVE OF DIRECT SEED SALES NATIVE EROSION CONTROL SEED MIX, CONTRACTOR SHALL UTILIZE THIS MIX OR EQUIVALENT AND SUBMIT SUPPLIER CUT SHEET FOR OWNER APPROVAL PRIOR TO USE.

Exhibit 'C'
UF10322CRAM02
Plans Sheets/Maps
Page 5 of 12

LEGEND

IP = EXISTING STRUCTURE INLET PROTECTION PER 4/C2.2

CD = CHECK DAM PER 5/C2.2

SW = BMP C235: STRAW WATTLE PER 1/C2.2, 2/C2.2

OB = ORANGE BARRIER FENCING PER 6/C2.2

= DISTURBED WETLAND AREA: 2550 SF

= DISTURBED NON-WETLAND AREA: 2810 SF

NOTE: RESTORE ALL DISTURBED SOIL PER BMP T5.13: POST CONSTRUCTION SOIL QUALITY AND DEPTH

OTHER RECOMMENDED BMP'S:
BMP C130 SURFACE ROUGHENING
BMP C140 DUST CONTROL
BMP C152 SAWCUTTING AND SURFACING POLLUTION PREVENTION

KEYED NOTES

1. = REMOVE EXISTING 12" DUCTILE IRON WATER MAIN
2. = SAWCUT
3. = STOCKPILE TOPSOIL TYPE B FROM DISTURBED WETLAND AREAS FOR RESTORATION.

NO.	REVISIONS	BY	DATE

20 0 20 40 SCALE HORIZONTAL SCALE FEET

5 0 5 10 SCALE VERTICAL SCALE FEET

811 Call 811 two business days before you dig

DESIGN DEVELOPMENT

WILSON ENGINEERING
WILSONENGINEERING.COM

JOHNSTON 12-26-25

DESIGNED BY	DRAWN BY	CHECKED BY
DRJ/MDS	MDS	DRJ

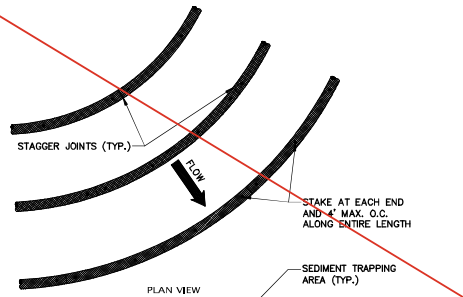
SKAGIT COUNTY PUBLIC UTILITY DISTRICT
ALGER WASHINGTON
PIPELINE RELOCATION AT ALGER INTERCHANGE
DEMOLITION AND TESC PLAN

DATE	SCALE	JOB NUMBER
02-26-2025	AS SHOWN	2023-065

SHEET C2.1 PAGE 4 OF 13

PLOT SETTINGS: Adobe PDF1.pc3, ANSI full bleed B (17.00 x 11.00 Inches), Portrait, 1:2, WE APWA_UNSCREENED.ctb
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Not reviewed

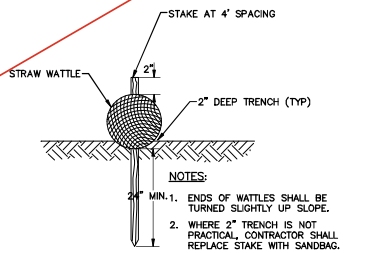


WATTLE SPACING TABLE	
SLOPE	MAXIMUM SPACING
1:1	10 FEET
2:1	20 FEET
3:1	30 FEET
4:1	40 FEET

NOTES:

1. INSTALL WATTLES ALONG CONTOURS (SEE STANDARD SPECIFICATION 8-01.3(10)).
2. WATTLES SHALL BE INSPECTED REGULARLY, AND IMMEDIATELY AFTER A RUNOFF PRODUCING RAINFALL, TO ENSURE THEY REMAIN THOROUGHLY ENTRENCHED AND IN CONTACT WITH THE SOIL.
3. LIVE STAKES MAY BE USED FOR PERMANENT INSTALLATIONS.
4. PERFORM MAINTENANCE IN ACCORDANCE WITH STANDARD SPECIFICATION 8-01.3(15).
5. INSTALL WATTLES SNUGLY INTO THE TRENCH. ABUT ADJACENT WATTLES TIGHTLY, END TO END, WITHOUT OVERLAPPING THE ENDS.
6. PILOT HOLES MAY BE DRIVEN THROUGH THE WATTLE AND INTO THE SOIL, WHEN SOIL CONDITIONS REQUIRE.

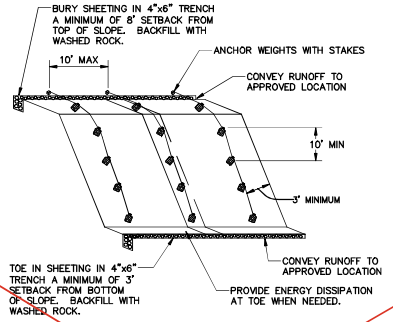
1 WATTLE INSTALLATION ON SLOPE
NOT TO SCALE



NOTES:

1. ENDS OF WATTLES SHALL BE TURNED SLIGHTLY UP SLOPE.
2. WHERE 2" TRENCH IS NOT PRACTICAL, CONTRACTOR SHALL REPLACE STAKE WITH SANDBAG.

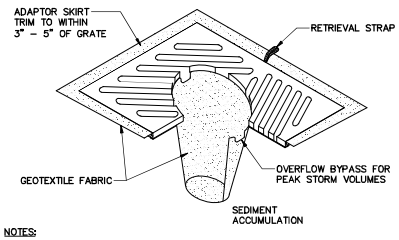
2 BMP C235: STRAW WATTLE
NOT TO SCALE



NOTES:

1. TIRES, SANDBAGS, OR EQUIVALENT MAY BE USED TO WEIGH DOWN PLASTIC SHEETING.
2. SEAMS BETWEEN SHEETS MUST OVERLAP A MINIMUM OF 12" AND BE WEIGHTED OR TAPED.
3. PLASTIC SHEETING SHALL HAVE A MINIMUM THICKNESS OF 6 MIL.
4. DUE TO RAPID RUNOFF CAUSED BY PLASTIC SHEETING, THIS METHOD SHALL NOT BE USED UPSLOPE OF AREAS THAT MIGHT BE ADVERSELY IMPACTED BY CONCENTRATED RUNOFF.
5. CONSTRUCT BERM OR SWALE AT TOP OF SLOPE AS DIRECTED BY THE CLEARING AND GRADING INSPECTOR.
6. CONSTRUCT DITCH AT BASE OF SLOPE AS REQUIRED BY CITY, AND DISCHARGE TO APPROVED LOCATION.

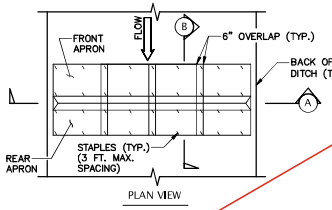
3 PLASTIC COVERING FOR SLOPES & STOCKPILES
NOT TO SCALE

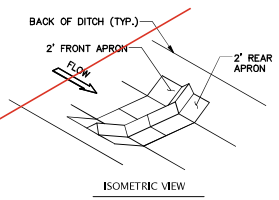


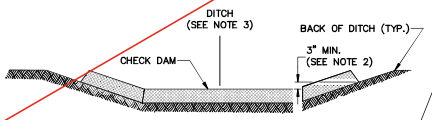
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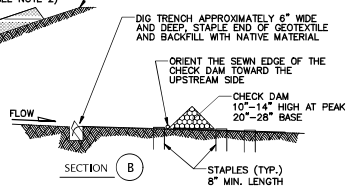
1. INSERT SHALL BE INSTALLED PRIOR TO CLEARING AND GRADING ACTIVITY, OR UPON PLACEMENT OF A NEW CATCH BASIN.
2. SEDIMENT SHALL BE REMOVED FROM THE UNIT WHEN IT BECOMES HALF FULL .
3. SEDIMENT REMOVAL SHALL BE ACCOMPLISHED BY REMOVING THE INSERT, EMPTYING, AND RE-INSERTING IT INTO THE CATCH BASIN.

4 CATCH BASIN INSERT
NOT TO SCALE









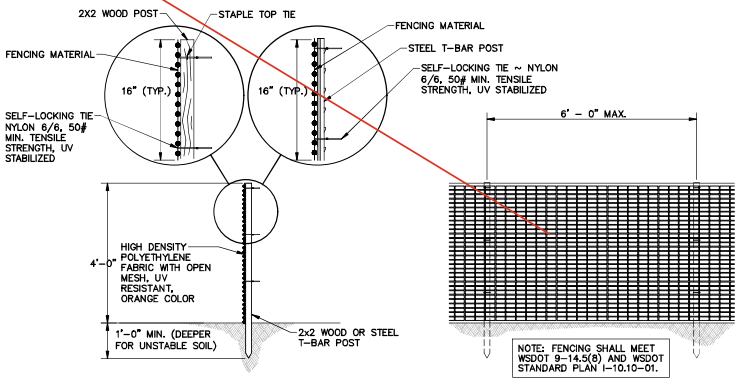
NOTES:

1. GEOTEXTILE ENCASED CHECK DAMS SHALL MEET THE REQUIREMENTS OF STANDARD SPECIFICATIONS 8-01.3(6)A AND 9-14.5(4).
2. INSTALL THE SLOPED ENDS OF THE CHECK DAM A MINIMUM OF 3" HIGHER THAN THE TOP OF THE CHECK DAM IN THE CHANNEL TO ENSURE THAT WATER FLOWS OVER THE DAM AND NOT AROUND IT.
3. FLAT BOTTOM DITCH DESIGN SHOWN, CHECK DAM INSTALLATION DETAILS ARE SIMILAR FOR "V" BOTTOM DITCHES.
4. PERFORM MAINTENANCE IN ACCORDANCE WITH STANDARD SPECIFICATION 8-01.3(15).

NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR UPDATING COVERAGE UNDER THE DOE'S "CONSTRUCTION STORMWATER GENERAL PERMIT". CONTACT LINDA MATLOCK AT DOE (360-407-6437, EMAIL: LMAT461@ECY.WA.GOV) FOR ADDITIONAL INFORMATION.

5 GEOTEXTILE ENCASED CHECK DAM
NOT TO SCALE



6 ORANGE BARRIER FENCING
NOT TO SCALE

Exhibit 'C'
UF10322CRAM02
Plans Sheets/Maps
Page 6 of 12

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DESIGN DEVELOPMENT

NO.	REVISIONS	BY	DATE

WILSON ENGINEERING
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JOHNSTON, DANIEL R. 22400 STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER 2-26-25

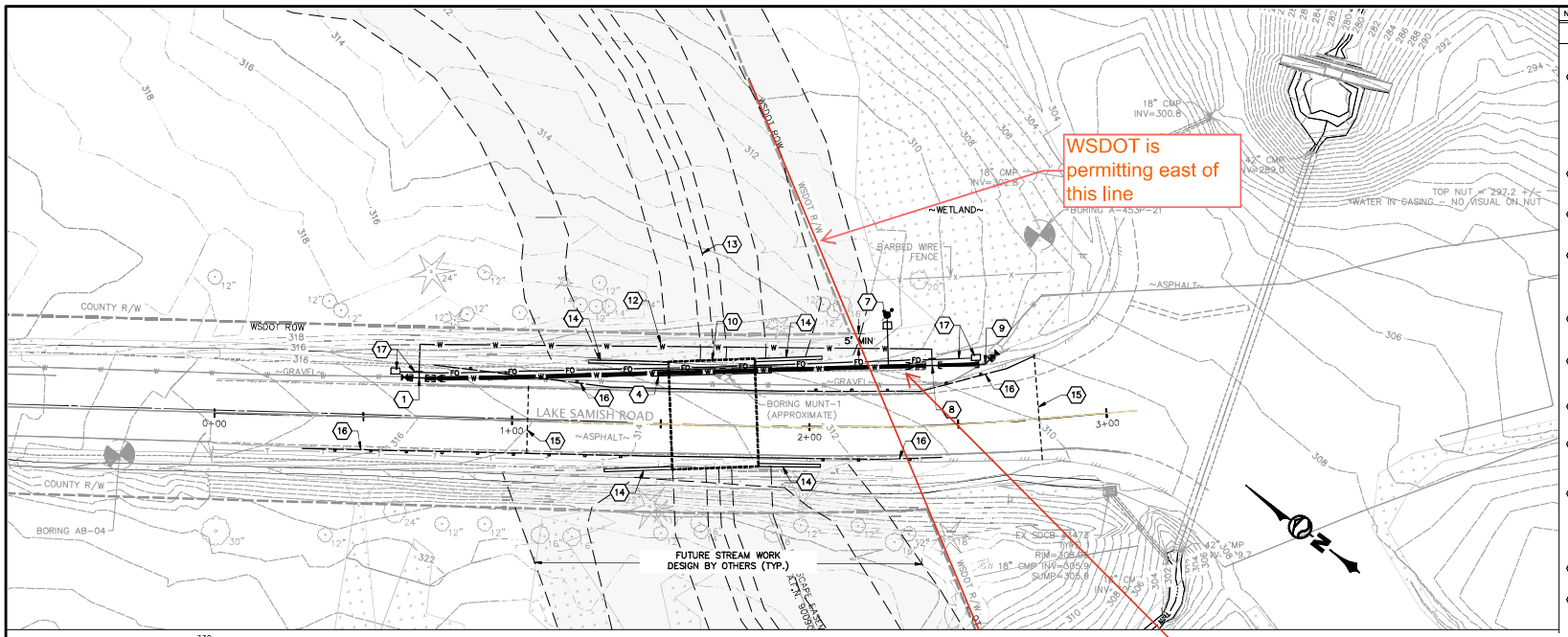
DESIGNED BY	DRAWN BY	CHECKED BY
DRJ/MDS	MDS	DRJ

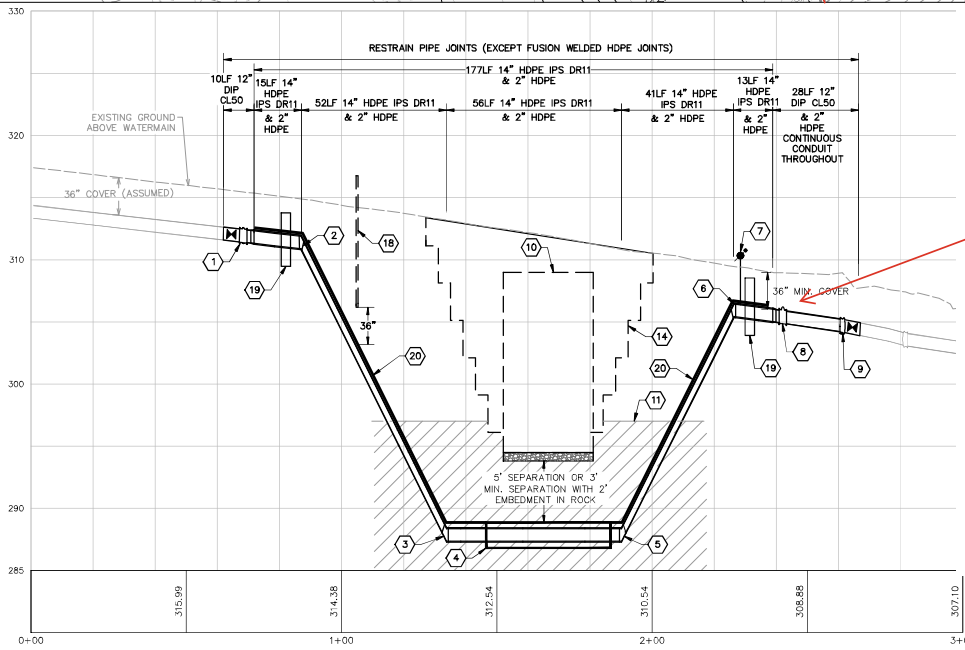
SKAGIT COUNTY PUBLIC UTILITY DISTRICT
ALGER WASHINGTON
PIPELINE RELOCATION AT ALGER INTERCHANGE
TESC DETAILS

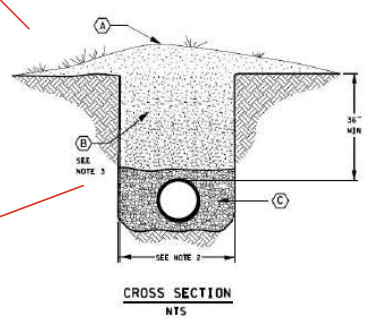
DATE	SCALE	JOB NUMBER
02-26-2025	AS SHOWN	2023-065

SHEET C2.2
PAGE 5 OF 13

PLOT SETTINGS: Adobe PDF1.pc3, ANSI full bleed B (17.00 x 11.00 Inches), Portrait, 1:2, WE APWA_UNSCREENED.ctb
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CROSS SECTION
NTS

LEGEND

(A) Surface treatment to restore existing to match adjacent (seeding, bark, etc.).
(B) Native material or as directed by WSDOT.
(C) Bedding material. Bedding material depth over and beneath pipe casing shall be half the diameter of pipe casing or 6 inches, whichever is less.

GENERAL NOTES

1. Trenching and pipe installation shall meet the requirements of WSDOT Standard Specification 7-08.
2. Maximum trench width shall be outside casing pipe width plus 1 foot either side of casing pipe.
3. Compaction shall be method ___C___ per Standard Specification Section 2-03.3 (14) C.
4. When connecting to an existing facility under the pavement, pavement restoration may, at the department's discretion, include the full lane width and encroached shoulder.
5. Casing pipes shall extend a minimum of six (6) feet beyond the toe of fill slopes, bottom of ditchline, or outside of curb.

KEYED NOTES

1. = STA 0+68.40, 13.46' LT PUD TO CUT EXISTING 12" DI AND INSTALL: (1) 12"x8" DI TEE, MJxFLxFL (1) 12" DI BUTTERFLY VALVE, MJxFL (1) 12" TO 14" DI REDUCER, FLXFL AFTER INSTALLATION OF 14" HDPE: REMOVE 12" TEMPORARY BYPASS INSTALL (1) 12" BLIND FLANGE
2. = STA 0+87.06, 13.85' LT 14" HDPE 22.5° BEND, BUTT FUSION WELDED (VERTICAL) INV. = 310.89
3. = STA 1+33.72, 16.22' LT 14" HDPE 22.5° BEND, BUTT FUSION WELDED (VERTICAL) INV. = 287.36
4. = STA 1+46.80, 16.90' LT TO STA 1+87.14, 19.00' LT 40LF 24" MIN. C-900 PVC WATERMAIN CASING INSTALLED PER (2 / C4.2) TOP = 288.81
5. = STA 1+90.20, 19.10' LT 14" HDPE 22.5° BEND, BUTT FUSION WELDED (VERTICAL) INV. = 287.36
6. = STA 2+26.49, 20.21' LT 14" HDPE 22.5° BEND, BUTT FUSION WELDED (VERTICAL) INV. = 305.43
7. = STA 2+26.04, 36' LT 3" AIR RELEASE VALVE PER (1 / C4.2)
8. = STA 2+42.08, 19.96' LT (1) 12"x8" DI TEE, FL (1) 12" TO 14" DI REDUCER, FL
9. = STA 2+59.90, 19.67' LT PUD TO CUT EXISTING 12" DI AND INSTALL: (1) 12" DI BUTTERFLY VALVE, MJ (1) 12" DI 45 BEND, MJ 17LF 12" DI PIPE (1) THRUST BLOCK (BY CONTRACTOR)
10. = FUTURE PRECAST BOX CULVERT BY OTHERS. BEDDING BOTTOM ELEV. = 293.81
11. = INFERRED BEDROCK ELEVATION AT FUTURE CULVERT OUTLET (WSDOT BORING MUNT-1) = 297'±
12. = 8" WATERMAIN TEMPORARY BYPASS
13. = APPROXIMATE FUTURE STREAM ALIGNMENT. DESIGN BY OTHERS.
14. = FUTURE STEPPED WINGWALL FOOTING BY OTHERS
15. = FUTURE SAWCUT FOR CULVERT INSTALLATION BY WSDOT
16. = FUTURE GUARDRAIL INSTALLATION BY WSDOT.
17. = 2" HDPE CONDUIT FOR FUTURE FIBER. TERMINATE CONDUIT IN 2'x3' PER (1 / C4.2)
18. = FUTURE GUARDRAIL POST. 8' DEPTH ASSUMED. DESIGN BY OTHERS.
19. = TRENCH DAM PER (4 / C4.3)
20. = INSTALL PROTECTION PLATES OVER PIPELINE

SHEET NOTES:

1. ALL DI FITTINGS TO BE WRAPPED WITH DENSO OR WAX TAPE SYSTEM.

SCALE 20 0 20 40 FEET
HORIZONTAL SCALE

SCALE 5 0 5 10 FEET
VERTICAL SCALE

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DESIGN DEVELOPMENT

Exhibit 'C'
UF10322CRAM02
Plans Sheets/Maps
Page 7 of 12

NO.	REVISIONS	BY	DATE

WILSON ENGINEERING
WILSONENGINEERING.COM

JOHNSTON, DAVID R. 25-26-25 REGISTERED PROFESSIONAL ENGINEER STATE OF WASHINGTON

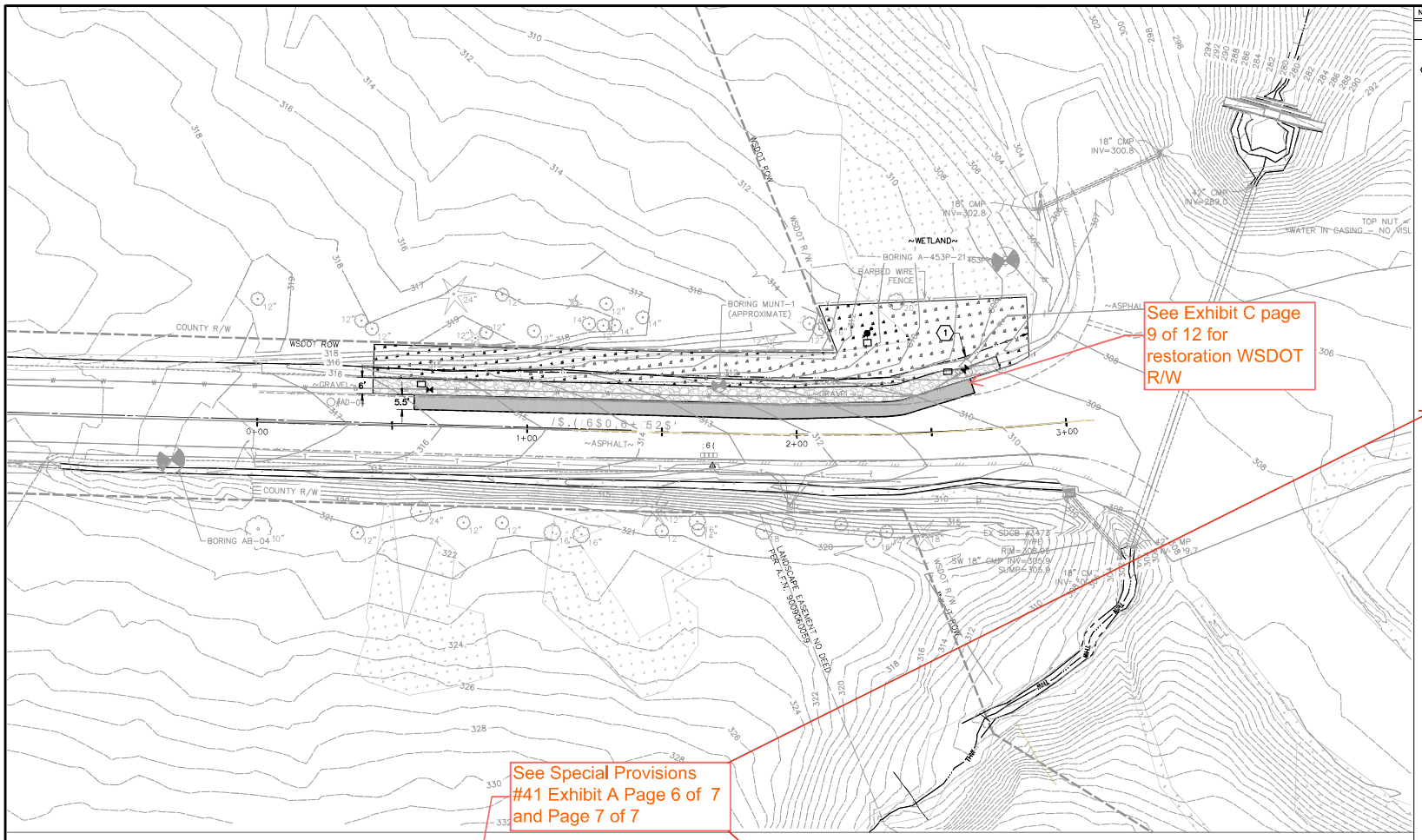
DESIGNED BY DRJ/MDS | DRAWN BY MDS | CHECKED BY DRJ

SKAGIT COUNTY PUBLIC UTILITY DISTRICT
ALGER WASHINGTON
PIPELINE RELOCATION AT ALGER INTERCHANGE
WATERMAIN REPLACEMENT PLAN AND PROFILE

DATE 02-26-2025 | SCALE AS SHOWN | JOB NUMBER 2023-065

SHEET C3.1 | PAGE 6 OF 13

PLOT SETTINGS: Adobe PDF1.pc3, ANSI full bleed B (17.00 x 11.00 Inches), Portrait, 1:2, WE APWA_UNSCREENED.ctb
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Exhibit 'C'
UF10322CRAM02
Plans Sheets/Maps
Page 8 of 12

NO.	REVISIONS	BY	DATE

KEYED NOTES
1 = RESTORE 1' DEEP SWALE PER □ & □□

/(*(1'

= PROP. CRUSHED GRAVEL
= PROP. ASPHALT
= PROP. GRASS RESTORATION

20 0 20 40
SCALE HORIZONTAL SCALE FEET

5 0 5 10
SCALE VERTICAL SCALE FEET

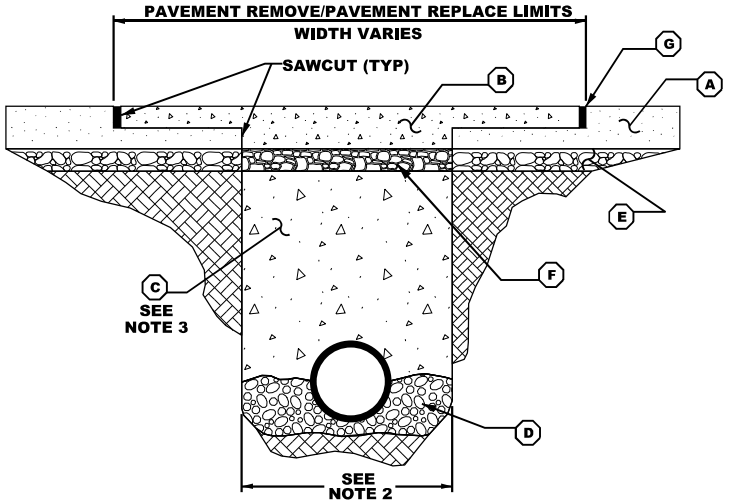
811 & DOG two business days before you dig

DESIGN DEVELOPMENT

WILSON ENGINEERING
WILSONENGINEERING.COM

SKAGIT COUNTY PUBLIC UTILITY DISTRICT
ALGER WASHINGTON
PIPELINE RELOCATION AT ALGER INTERCHANGE
SURFACING AND RESTORATION PLAN

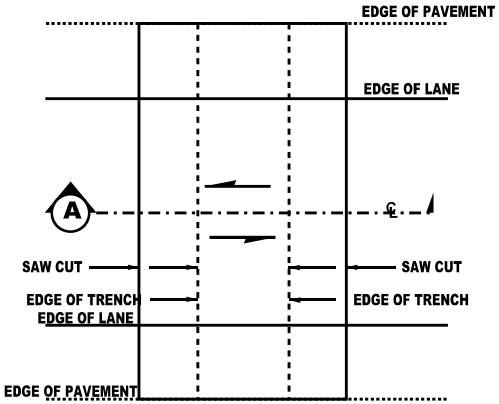
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CROSS SECTION
NTS

LEGEND

- (A) EXISTING HMA (HOT MIX ASPHALT) OR PCCP (PORTLAND CEMENT CONCRETE PAVEMENT).
- (B) HMA CLASS ½ INCH OR PCCP: DEPTH AND MATERIAL SHALL MATCH EXISTING PAVEMENT. REMOVAL AND REPLACEMENT LIMITS OF PAVEMENT TO BE DETERMINED AT THE TIME OF UTILITY PERMIT/FRANCHISE REVIEW.
- (C) APPROVED BACKFILL MATERIAL OR CDF (CONTROL DENSITY BACKFILL) OR AS SPECIFIED BY WSDOT.
- (D) BEDDING MATERIAL DEPTH BENEATH THE PIPE/CASING SHALL BE SIX (6) INCHES. ADDITIONAL PIPE BEDDING SHALL BE PLACED EQUAL TO HALF THE DIAMETER OF THE PIPE/CASING OR SIX (6) INCHES, WHICHEVER IS LESS.
- (E) EXISTING CRUSHED SURFACING BASE COURSE.
- (F) CRUSHED SURFACING BASE COURSE DEPTH SHALL MATCH DEPTH OF EXISTING CRUSHED SURFACING BASE COURSE.
- (G) HMA BUTT JOINT REQUIRES TACK, SEAL, AND SAND. FOR PCCP, REFER TO GENERAL NOTE 5.



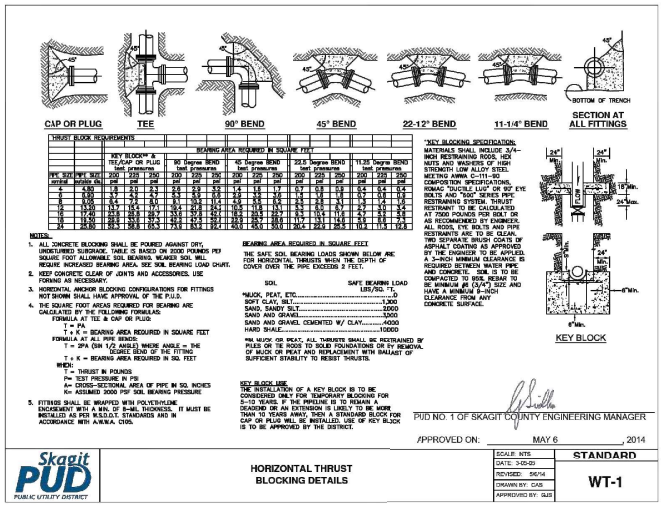
PLAN VIEW
NTS

GENERAL NOTES

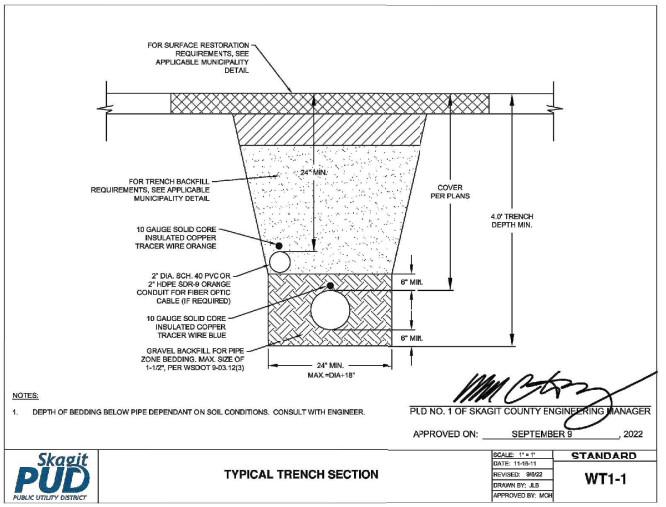
1. TRENCHING AND PIPE INSTALLATION SHALL MEET THE REQUIREMENTS OF WSDOT STANDARD SPECIFICATION 7-08.
2. MAXIMUM TRENCH WIDTH SHALL NOT EXCEED CASING/PIPE DIAMETER PLUS AN ADDITIONAL ONE (1) FOOT ON EITHER SIDE.
3. COMPACTION SHALL BE METHOD "C" PER STANDARD SPECIFICATION SECTION 2-03.3(14)C.
4. MINIMUM DEPTH SHALL BE SIXTY (60) INCHES FROM THE FINISHED SURFACE TO TOP OF CASING.
5. PCCP SHALL BE REPLACED TO THE NEXT PANEL JOINT IN EACH DIRECTION AS APPROVED BY WSDOT. ALL WORK SHALL BE AS SPECIFIED IN WSDOT STANDARD SPECIFICATION SECTION 5-01.3(4).
6. WHEN CONNECTING TO AN EXISTING FACILITY UNDER THE PAVEMENT, PAVEMENT RESTORATION MAY, AT THE DEPARTMENT'S DISCRETION, INCLUDE THE FULL LANE WIDTH AND ENCROACHED SHOULDER.
7. CASING PIPES SHALL EXTEND A MINIMUM OF SIX (6) FEET BEYOND THE TOE OF FILL SLOPES, BOTTOM OF DITCHLINE, OR OUTSIDE OF CURB.
8. TACK ASPHALT PER WSDOT STANDARD SPECIFICATION 5-4.3(5)A.

OPEN CUT DETAIL

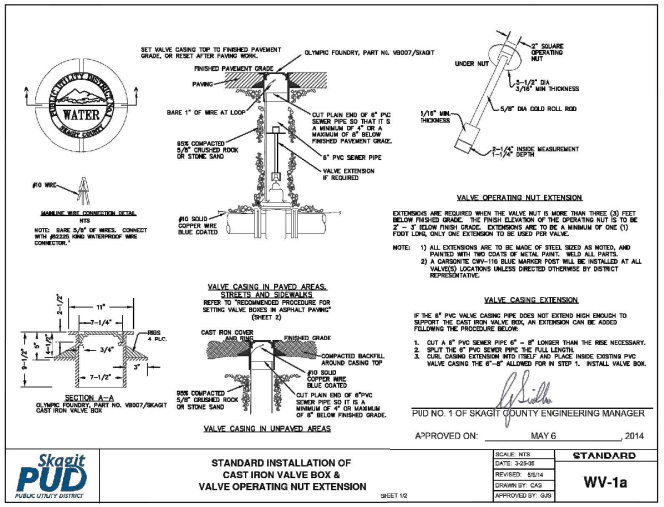
Exhibit 'C'
UF10322CRAM02
Plans Sheets/Maps
Page 9 of 12



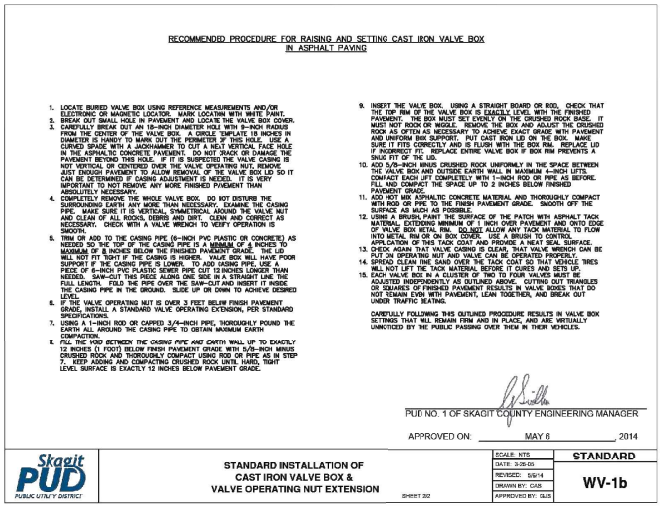
1 THRUST BLOCK DETAIL
NOT TO SCALE



2 TRENCH DETAIL
NOT TO SCALE



3 WATER VALVE DETAIL
NOT TO SCALE



4 WATER VALVE INSTALLATION DETAIL
NOT TO SCALE

Exhibit 'C'
UF10322CRAM02
Plans Sheets/Maps
Page 10 of 12

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DESIGN DEVELOPMENT

NO.	REVISIONS	BY	DATE

WILSON ENGINEERING
WILSONENGINEERING.COM

JOHNSTON, DANIEL S. — REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON — 22826 — 2-26-25

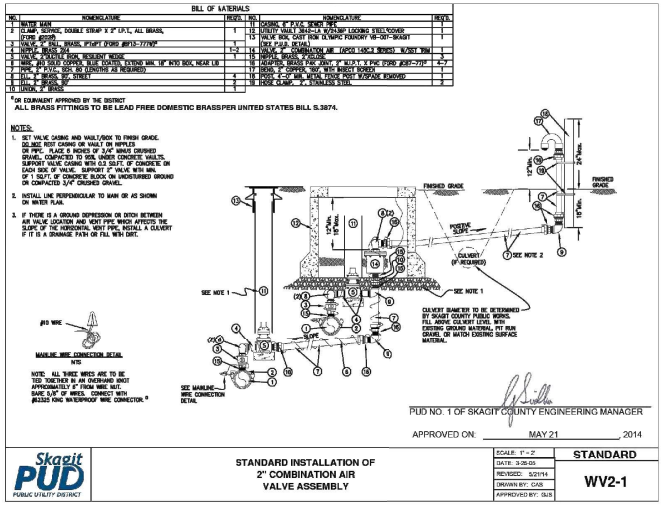
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DRAWN BY: MDS
CHECKED BY: DRJ

SKAGIT COUNTY PUBLIC UTILITY DISTRICT
ALGER WASHINGTON
PIPELINE RELOCATION AT ALGER INTERCHANGE
PUD STANDARD DETAILS

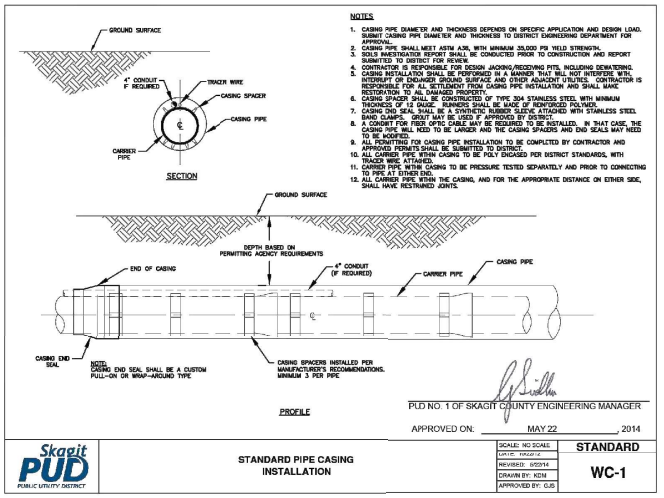
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SCALE AS SHOWN
JOB NUMBER 2023-065
SHEET C4.1
PAGE 8 OF 13

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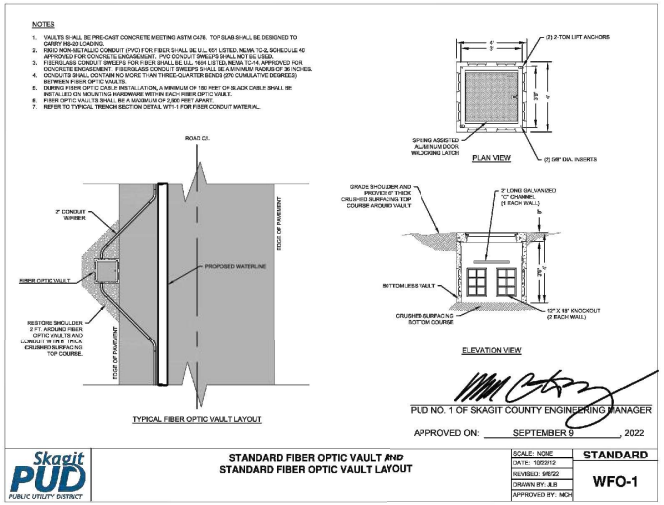
NO.	REVISIONS	BY	DATE



1 COMBINATION AIR VALVE
NOT TO SCALE



2 PIPE CASING INSTALLATION DETAIL
NOT TO SCALE



3 FIBER OPTIC VAULT DETAIL
NOT TO SCALE

Exhibit 'C'
UF10322CRAM02
Plans Sheets/Maps
Page 11 of 12

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DESIGN DEVELOPMENT

WILSON ENGINEERING
WILSONENGINEERING.COM

JOHNSTON SOUNDING SURVEYING PROFESSIONAL LAND SURVEYOR STATE OF WASHINGTON 2-26-25

DESIGNED BY	DRAWN BY	CHECKED BY
DRJ/MDS	MDS	DRJ

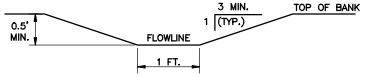
SKAGIT COUNTY PUBLIC UTILITY DISTRICT
ALGER WASHINGTON
PIPELINE RELOCATION AT ALGER INTERCHANGE
PUD STANDARD DETAILS

DATE	SCALE	JOB NUMBER
02-26-2025	AS SHOWN	2023-065

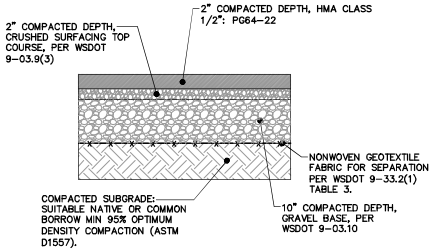
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PAGE 9 OF 13

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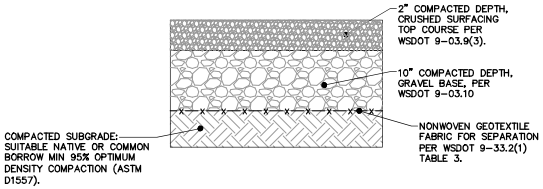
NO.	REVISIONS	BY	DATE



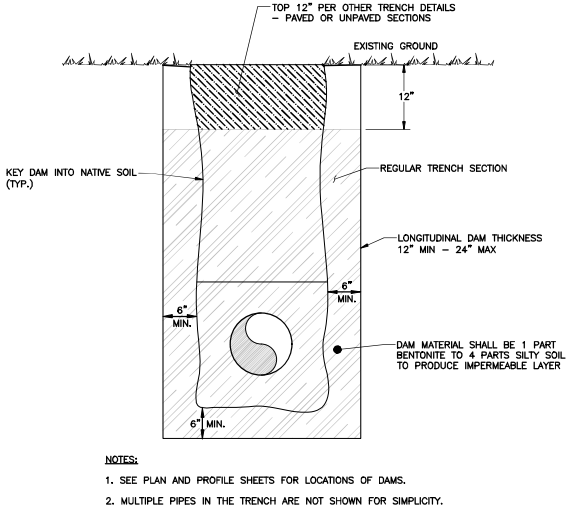
1 SWALE
NOT TO SCALE



2 TYPICAL ASPHALT PAVEMENT SECTION
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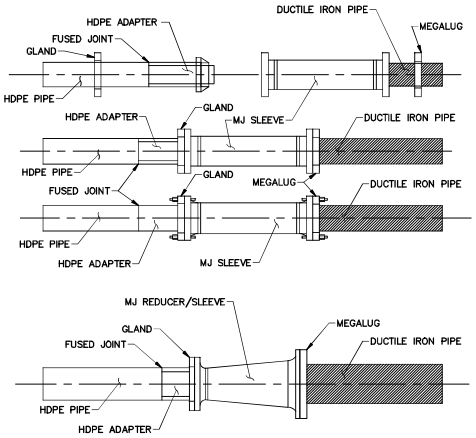
3 TYPICAL GRAVEL SHOULDER SECTION
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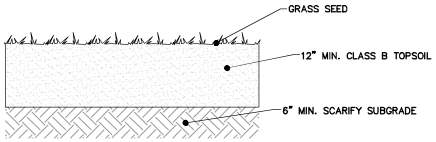
NOTES:

1. SEE PLAN AND PROFILE SHEETS FOR LOCATIONS OF DAMS.
2. MULTIPLE PIPES IN THE TRENCH ARE NOT SHOWN FOR SIMPLICITY.

4 TRENCH DAM DETAIL
NOT TO SCALE



5 HDPE TO DIP TRANSITION DETAIL
NOT TO SCALE



6 GRASS RESTORATION SECTION
NOT TO SCALE

Exhibit 'C'
UF10322CRAM02
Plans Sheets/Maps
Page 12 of 12

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DESIGN DEVELOPMENT

WILSON ENGINEERING
WILSONENGINEERING.COM

JOHNSTON, DANIEL R. 22810 REGISTERED PROFESSIONAL ENGINEER STATE OF WASHINGTON 2-26-25

DESIGNED BY	DRAWN BY	CHECKED BY
DRJ/MDS	MDS	DRJ

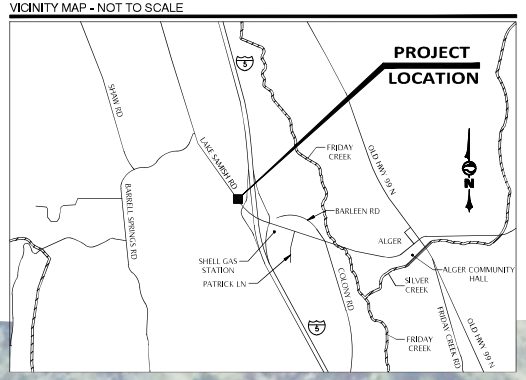
SKAGIT COUNTY PUBLIC UTILITY DISTRICT
WASHINGTON
ALGER
PIPELINE RELOCATION AT ALGER INTERCHANGE
CIVIL DETAILS

DATE	SCALE	JOB NUMBER
02-26-2025	AS SHOWN	2023-065

SHEET C4.3
PAGE 10 OF 13

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VICINITY MAP - NOT TO SCALE

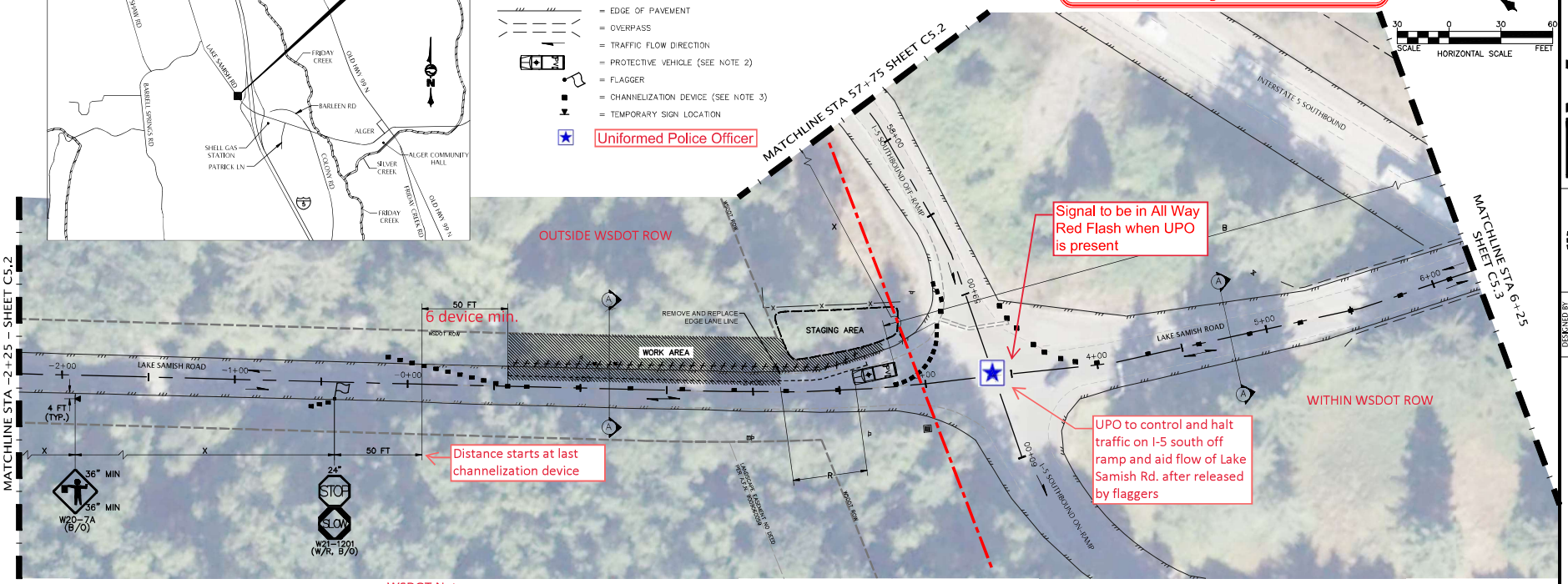


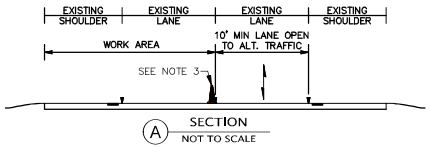
LEGEND:

- = RIGHT-OF-WAY (EXISTING)
- = EXISTING ROAD STRIPING
- = EDGE OF PAVEMENT
- = OVERPASS
- = TRAFFIC FLOW DIRECTION
- = PROTECTIVE VEHICLE (SEE NOTE 2)
- = FLAGGER
- = CHANNELIZATION DEVICE (SEE NOTE 3)
- = TEMPORARY SIGN LOCATION

Uniformed Police Officer

For Traffic Control Plan renewal or modification, send request to: Paul Johansen 360-757-5944 JOHANSP@wsdot.wa.gov





PROTECTIVE VEHICLE ROLL AHEAD DISTANCE = R
STRATEGICALLY POSITION WORK VEHICLE TO PROJECT WORK CREW. 40 FT - 80 FT RECOMMENDED.

RECOMMENDED SIGN SPACING = X (1)		
RURAL ROADS & URBAN ARTERIALS	35-40 MPH	350' ±
RURAL ROADS & URBAN ARTERIALS RESIDENTAL & BUSINESS DISTRICTS	25-30 MPH	200' ± (2)
UBRAN STREETS	25 MPH OR LESS	100' ± (2)
(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS AND DRIVEWAYS.		
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MAXIMUM CHANNELIZATION DEVICE SPACEING (FEET)		
MPH	TAPER	TANGENT
35-40	10-20	60
20-30	10-20	40

OPTIONAL LONGITUDINAL BUFFER SPACE = B					
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B (FEET)	115	155	200	250	305
BUFFER SPACE MAY BE ADJUSTED (±) BASED ON FIELD CONDITIONS					

WSDOT Notes·

1. Notify WSDOT CTCO 5 days before starting Work by contacting (206) 440-4430 OR email Austin.bighorse@wsdot.wa.gov.
2. At time of Work, call WSDOT Radio at (206) 440-4490 when lane/shoulder is closed, and again when lane/shoulder is opened. Leave contact name and mobile phone number with WSDOT Radio
3. Notify Transit Agency(ies) & affected businesses 5 days prior to beginning Work.
4. Pedestrians and bicyclists shall be accommodated through the work zone. Assistance or signed detour shall be provided.
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APPROVAL EXPIRES 6 MONTHS AFTER DATE SIGNED

ACCEPTED AS NOTED
3/18/25
Krissy Kaufman
WSDOT TRAFFIC OPERATIONS
Within WSDOT Right-of-Way/Limited Access Only
Local Agency Shall Also Accept

CONTACT INFORMATION
CIVIL ENGINEER
WILSON ENGINEERING, LLC
805 DUPONT STREET
BELLINGHAM, WA 98225
DANIELLE JOHNSTON, PE
djohnston@wilsonengineering.com
PHONE 360.733.6100 EXT. 1229

Exhibit 'D'
UF10322CRAM02
Traffic Control Plan
Page 1 of 6

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DESIGN DEVELOPMENT

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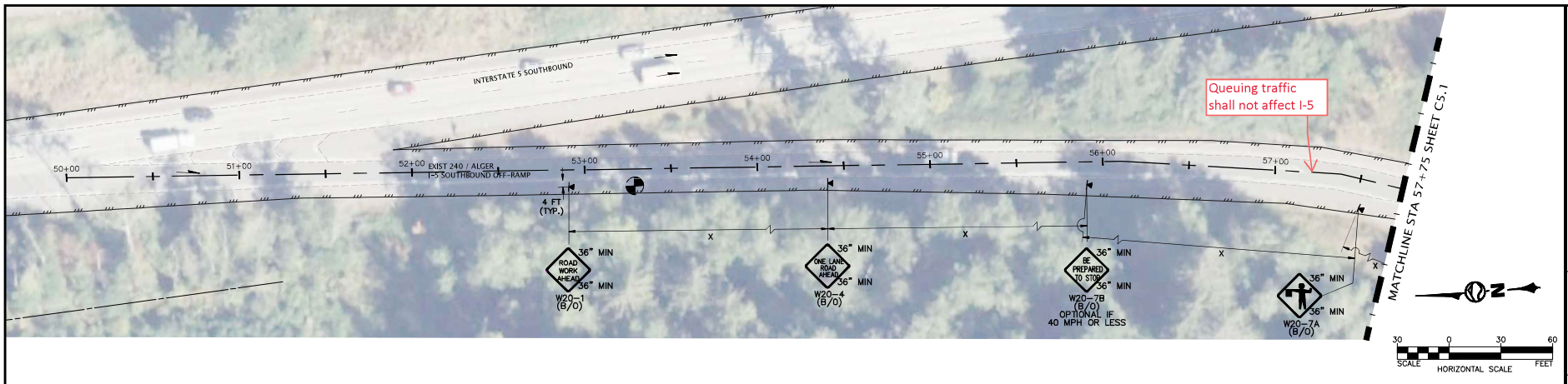
DESIGNED BY KK | DRAWN BY KK | CHECKED BY DRJ

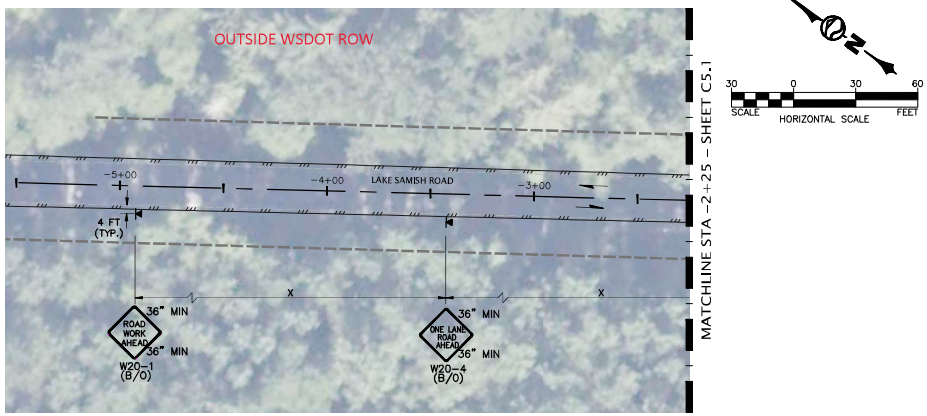
SKAGIT COUNTY PUBLIC UTILITY DISTRICT
ALGER WASHINGTON
PIPELINE RELOCATION AT ALGER INTERCHANGE
TRAFFIC CONTROL PLAN

DATE 02-26-2025 | SCALE AS SHOWN | JOB NUMBER 2023-065

SHEET C5.1 | PAGE 11 OF 13

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ACCEPTED AS NOTED 3/18/25
Krissy Kaufman
WSDOT TRAFFIC OPERATIONS
Within WSDOT Right-of-Way/Limited Access Only
Local Agency Shall Also Accept

CONTACT INFORMATION
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805 DUPONT STREET
BELLINGHAM, WA 98225
DANIELLE JOHNSTON, PE
djohnston@wilsonengineering.com
PHONE 360.733.6100 EXT. 1229

Exhibit 'D'
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Traffic Control Plan
Page 2 of 6

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DESIGN DEVELOPMENT

WILSON ENGINEERING
WILSONENGINEERING.COM

DANIELLE R. JOHNSTON 22000 REGISTERED PROFESSIONAL ENGINEER STATE OF WASHINGTON 2-26-25

DESIGNED BY	DRAWN BY	CHECKED BY
KK	KK	DRJ

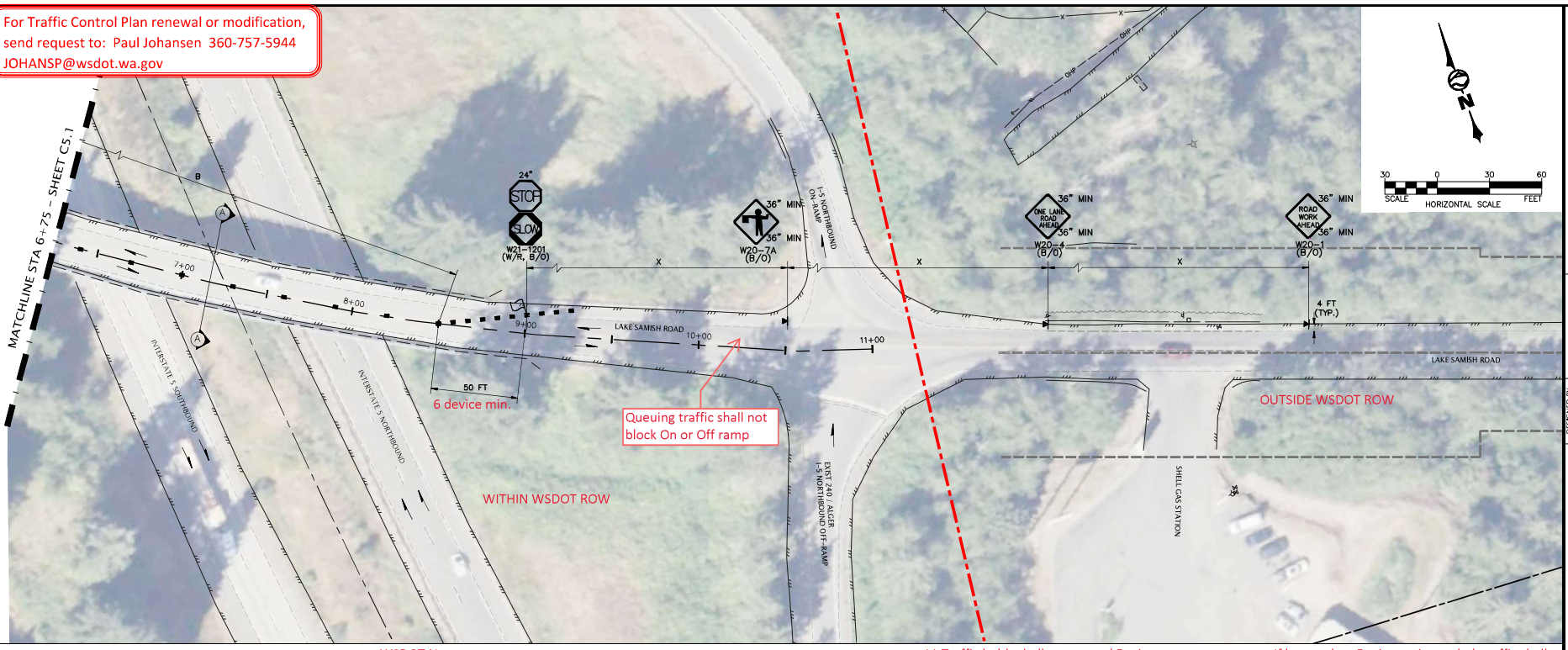
SKAGIT COUNTY PUBLIC UTILITY DISTRICT
WASHINGTON
ALGER
PIPELINE RELOCATION AT ALGER INTERCHANGE
TRAFFIC CONTROL PLAN

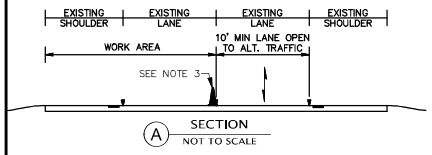
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SHEET C5.2
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RECOMMENDED SIGN SPACING = X (1)		
RURAL ROADS & URBAN ARTERIALS	35-40 MPH	350' ±
RURAL ROADS & URBAN ARTERIALS RESIDENTAL & BUSINESS DISTRICTS	25-30 MPH	200' ± (2)
UBRAN STREETS	25 MPH OR LESS	100' ± (2)
(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS AND DRIVEWAYS.		
(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.		

MAXIMUM CHANNELIZATION DEVICE SPACEING (FEET)		
MPH	TAPER	TANGENT
35-40	10-20	60
20-30	10-20	40

OPTIONAL LONGITUDINAL BUFFER SPACE = B					
SPEED (MPH)	20	25	30	35	40
B (FEET)	115	155	200	250	305
BUFFER SPACE MAY BE ADJUSTED (±) BASED ON FIELD CONDITIONS					

WSDOT Notes·

1. Notify WSDOT CTCO 5 days before starting Work by contacting (206) 440-4430 OR email Austin.bighorse@wsdot.wa.gov.
2. At time of Work, call WSDOT Radio at (206) 440-4490 when lane/shoulder is closed, and again when lane/shoulder is opened. Leave contact name and mobile phone number with WSDOT Radio
3. Notify Transit Agency(ies) & affected businesses 5 days prior to beginning Work.
4. Pedestrians and bicyclists shall be accommodated through the work zone. Assistance or signed detour shall be provided.
5. Only essential equipment and materials shall be on WSDOT R/W during working Hours. No equipment or materials shall be on WSDOT R/W during non-working hours.
6. Channelization devices shall be Traffic Safety Drums with Type C Lights OR 6" Retro reflective bands.
7. During non-Working hours. area shall meet criteria in WSDOT Std Specs. 1-07 23, Including, but not limited to, "drop off" protection.
8. All W-Series signs shall be 48"x48" Black on Orange.
9. All R-Series signs shall be Black on White.
10. Flagging Station shall be visible from W20-7A. Add additional W20-7A if needed due to limited sight distance. Flaggers to be capable of communication over radio for entire duration.
11. Traffic holds shall not exceed 5 minutes per occurrence. If longer than 5 minutes is needed, traffic shall be allowed to clear prior to the next attempt.
12. Closure days and hours shall be 8:00PM through 5:00AM nightly. Allowable traffic hold hours shall be Sunday through Thursday 11:00PM to 4:00AM nightly.

Holiday Impacts:

No closures will be allowed from noon the day prior to a holiday or holiday weekend through noon the day following a holiday or holiday weekend. It is a holiday weekend when the holiday falls on a Friday, Saturday, Sunday, or Monday.

APPROVAL EXPIRES 6 MONTHS AFTER DATE SIGNED

ACCEPTED AS NOTED
3/18/25
Krissy Kaufman
WSDOT TRAFFIC OPERATIONS
Within WSDOT Right-of-Way/Limited Access Only
Local Agency ____ Shall Also Accept

Exhibit 'D'
UF10322CRAM02
Traffic Control Plan
Page 3 of 6

LEGEND:
- = RIGHT-OF-WAY (EXISTING)
- = EXISTING ROAD STRIPING
- = EDGE OF PAVEMENT
- = OVERPASS
- = TRAFFIC FLOW DIRECTION
- = PROTECTIVE VEHICLE (SEE NOTE 2)
- = FLAGGER
- = CHANNELIZATION DEVICE (SEE NOTE 3)
- = TEMPORARY SIGN LOCATION

CONTACT INFORMATION
CIVIL ENGINEER
WILSON ENGINEERING, LLC
805 DUPONT STREET
BELLINGHAM, WA 98225
DANIELLE JOHNSTON, PE
djohnston@wilsonengineering.com
PHONE 360.733.6100 EXT. 1229

811 Call 811 two business days before you dig

DESIGN DEVELOPMENT

WILSON ENGINEERING
WILSONENGINEERING.COM

DANIELLE B. JOHNSTON — REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON — 22800 — 2-26-25

DESIGNED BY	DRAWN BY	CHECKED BY
KK	KK	DRJ

SKAGIT COUNTY PUBLIC UTILITY DISTRICT
WASHINGTON
ALGER
PIPELINE RELOCATION AT ALGER INTERCHANGE
TRAFFIC CONTROL PLAN

DATE	SCALE	JOB NUMBER
02-26-2025	AS SHOWN	2023-065

SHEET C5.3
PAGE 13 OF 13

PLOT SETTINGS: Adobe PDF1.pc3, ANSI full bleed B (17.00 x 11.00 Inches), Portrait, 1:2, WE APWA_UNSCREENED.ctb
W:\2023\2023-065 SKAGIT PUD WATER PIPELINE RELOCATION\DWG\2025_2023-065 C5.X TCP.DWG – 2/26/2025 1:17 PM – Jeff Smith

Pre-Construction Notification

In accordance with Washington State Department of Transportation (WSDOT) Special Provisions for Permits and Franchises, provide requested information to below-designated WSDOT construction contacts prior to the beginning of construction. Use Alternate Contact or surface mail if phone or e-mail are no longer in effect. This form is NOT for maintenance work.

No work shall take place until the Utility has participated in the Pre-Construction conference.

Accommodation No.:	**UF10322CRAM02**	**State Route No:**	**I-5**
Expiration Date:	**3/6/2049**	**From Mile Post:**	**241.00**
WO/Charge Code:	**CP14017 / JZ2610 2**	**To Mile Post:**	**241.00**

WSDOT Construction Contacts

WSDOT Inspector (notify at least five (5) days prior to starting work)

Burlington PEO
1019 Andis Rd
NB82-54
Burlington, WA 98233

NAME: Megan Mosebar
TITLE: PE NWR Burlington
PHONE: 564-900-0708
E-MAIL: Mosbam@wsdot.wa.gov

WSDOT Traffic Control (notify at least five (5) days prior to starting work)

Construction Traffic Coordination Office
15700 Dayton Ave. N.
P.O. BOX 330310, NB82-125
Seattle, WA 98133-9710

NAME: Austin Bighorse
TITLE: WSDOT NWR CTCO Engineer
PHONE: 206-440-4430
E-MAIL: BoghorA@wsdot.wa.gov

Construction Contacts and Schedule

Anticipated Start Date: **Estimated Duration:**

Permit/Franchise Holder

Skagit PUD
COMPANY

STREET ADDRESS

CITY, STATE ZIP

OFFICE PHONE

NAME: _____
TITLE: _____
PHONE: _____
E-MAIL: _____

Contractor

COMPANY

STREET ADDRESS

CITY, STATE ZIP

OFFICE PHONE

NAME: _____
TITLE: _____
PHONE: _____
E-MAIL: _____

THE PERMIT/FRANCHISE HOLDER OR THEIR REPRESENTATIVE SHALL NOTIFY NORTHWEST REGION UTILITIES IMMEDIATELY IF THEY ARE UNABLE TO START CONSTRUCTION ON THE DATE INDICATED ABOVE. FAILURE TO PROVIDE NOTIFICATION MAY RESULT IN INSPECTION CHARGES BEING INCURRED.

Exhibit 'E'
UF10322CRAM02
Pre-Construction Notification
Page 1 of 1

UF10322CRAM02

NEW INSTALLATION ONLY

Maintenance Notification

Update and re-use this form as needed for in-kind repair or replacement of EXISTING primary and secondary facilities associated with the referenced utility permit or franchise number ONLY. Maintenance activities are subject to the general and special provisions of the referenced utility permit or franchise, a WSDOT-approved, site-specific Traffic Control Plan, and submittal of this Notification Form.

This form does NOT apply if there will be an upgrade, change in capacity, location/route, appurtenances, or subcontracted/ outsourced work. Please call the NW Region Utilities Office if you have questions.

No work shall take place until the Utility has received written or verbal authorization from WSDOT to proceed.

Accommodation No.:	**UF10322CRAM02**	**State Route No:**	**I-5**
Accommodation Expiration Date:	**3/6/2049**	**From Mile Post:**	**241.00**
Maintenance Notification No.:		**To Mile Post:**	**241.00**
Maintenance Work Order No.:		**Charge Code:**	

In accordance with Washington State Department of Transportation (WSDOT) Special Provisions for Permits and Franchises, provide the project information below to the following WSDOT representative twenty (20) working days prior to the beginning of construction. **Use Alternate Contact or surface mail if phone or e-mail are no longer in effect.**

WSDOT NW REGION UTILITIES
15700 DAYTON AVE. N., NB82-113
P.O. BOX 330310
SEATTLE, WA 98133-9710

Contact:	Paul Johansen
Phone:	360-757-5944
E-Mail:	To: NWRutilities@WSDOT.WA.GOV Cc: JOHANSP@wsdot.wa.gov
Alt. Contact:	NWR Utilities Office
Alt. Phone:	206.440.4120

Provide Description of Work Activity

Anticipated Start Date: **Estimated Duration:**

Provide Utility Contacts

Permit/Franchise Holder

Skagit PUD
COMPANY
STREET ADDRESS
CITY, STATE ZIP
OFFICE PHONE

CONTACT NAME:
TITLE:
PHONE:
E-MAIL:

Contractor

COMPANY
STREET ADDRESS
CITY, STATE ZIP
OFFICE PHONE

CONTACT NAME:
TITLE:
PHONE:
E-MAIL:

WSDOT Authorization

NWR UTILITIES OFFICE
TITLE

SIGNATURE:
DATE:
MAINTENANCE NOTICE EXPIRATION DATE:

THE PERMIT/FRANCHISE HOLDER OR THEIR REPRESENTATIVE SHALL NOTIFY NORTHWEST REGION UTILITIES IMMEDIATELY IF THEY ARE UNABLE TO START WORK ON THE DATE INDICATED ABOVE.
FAILURE TO PROVIDE NOTIFICATION MAY RESULT IN INSPECTION CHARGES BEING INCURRED.

Exhibit 'F'
UF10322CRAM02
Maintenance Notification
Page 1 of 1

UF10322CRAM02

MAINTENANCE WORK ONLY

Skagit County
1800 Continental Pl
Mount Vernon, WA 98273

Permit

Permit NO.: UTIL-2025-0102
Permit Type: **Utility Permit**
Work Classification: **Utility Permits**
Permit Status: **Issued**

Issue Date: 04/24/2025

Expiration: 08/22/2025

Location Address

Contacts

Public Utility District — **Utility Owner**
1415 Freeway Drive Mount Vernon, WA

Wendy LaRocque — **Applicant**
1415 Freeway Drive Mount Vernon, WA, Mount Vernon, WA 98273
(360)399-5274 larocque@skagitpud.org

Public Utility District No 1 — **General Contractor**
1415 Freeway Dr Mount Vernon WA

Description: *SPECIAL INSPECTIONS REQUIRED FOR WORK WITHIN ROW, SEE DETAILS IN INSPECTION REQUEST PROCEDURE CHECKLIST. Installation of approximately 215 linear feet of water pipeline, including 177 LF of 14-inch HDPE DR11 and 38 LF of CL50 ductile iron pipe, with 40 LF of steel casing at the deepest portion of the installation (will be below a future culvert to be constructed by Others). Project also includes installation of approximately 177 linear feet of 4-inch PVC fiber optic conduit.

Valuation: **$0.00**

Total Sq Feet: **0.00**

Inspection Requests:
Inspections must be requested no later than 3:30 the previous day. Please request your inspections in Civic Access

Fees	Amount
UTIL | Class A	$225.00
UTIL | Class C Adjustment	$226.00
UTIL | Class C Deviation	$563.00
Total:	**$1,014.00**

Payments	Amt Paid
Total Fees	**$1,014.00**
Credit Card	$1,014.00
Amount Due:	**$0.00**

Inspections:	
Inspection Type	
(ROW) Pre-Construction Meeting	
(ROW) Traffic Control	
(ROW) Excavation Inspection	
Compaction Inspection	
(ROW) Final Inspection	

This permit, or a copy of it, shall be kept on site until project completion. Any alterations to the approved documents for this permit require a revised submittal.

Issued By: Paul Erickson — April 24, 2025
Date

Permit_Signature_1 — Date

Permit_Signature_2 — Date

Skagit County
Planning & Development Services

March 12, 2025

To: Wendy LaRocque

From: Caitie Sheban, Associate Natural Resources Planner

Re: Critical Areas Site Visit Follow-up for CAO-2025-0029; PUD Alger Pipeline Relocation

---

County staff have completed the critical areas site visit for your proposed project and have reviewed the Critical Areas Site Assessment report (Feb 2025) submitted with your application. Utility construction may be permitted in wetlands and their buffers per SCC 14.24.240(6)(a) provided:

(i) It is demonstrated to the Director that there are no alternative routes that can be reasonably used to achieve the proposed development; and

(ii) The activity will have minimum adverse impact to the wetland area; and

(iii) The activity will not significantly degrade surface or groundwater; and

(iv) The intrusion into the wetland area and its buffers is fully mitigated.

The report submitted addresses the conditions above. The mitigation measures outlined in the report, including construction BMPs and reseeding disturbed areas with native vegetation, will be added as conditions to the

Please be sure to reference this file number when applying for future development permits.

This review does not authorize any site preparation activities such as clearing, grading, or driveway construction. If you intend to do any site preparation, including septic installation, before obtaining a building permit, please ensure that all activities are permitted in accordance with SCC 14.22 Land Disturbance. For more information, please review the PDS Land Disturbance Handout, and contact the PDS stormwater team with any questions. This determination does not constitute approval under Skagit County's Shoreline Master Program (SCC 14.26), Zoning (SCC 14.16), or any other applicable regulations.

If you have any questions regarding this approval, please contact me at 360-416-1331 or csheban@co.skagit.wa.us.

Appendix B

Geotechnical Data Report and WSDOT Boring Log

GEOTECHNICAL DATA REPORT

Water Main Pipeline Relocation near Alger I-5 Interchange at Friday Creek

Prepared for: Wilson Engineering, LLC and Public Utility District No. 1 of Skagit County

Project No. AS230535 • January 2, 2025 • FINAL

Aspect
A Geosyntec Company

earth + water

GEOTECHNICAL DATA REPORT

Water Main Pipeline Relocation near Alger I-5 Interchange at Friday Creek

Prepared for: Wilson Engineering, LLC and Public Utility District No. 1 of Skagit County

Project No. AS230535 • January 2, 2025 • FINAL

Aspect Consulting



1/2/2025

Erik O. Andersen, PE
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Bodie McCosby, LG
Professional Geologist
J.Bodie.McCosby@aspectconsulting.com

Kevin Ross
Senior Staff Professional
Kevin.Ross@aspectconsulting.com

V:\230535 Skagit PUD_I-5 Alger Interchange Water Main Rplcmnt\Deliverables\Geotechnical Data Report\Final\Skagit PUD water main relocation Alger I-5_GDR_2024.30.12.docx

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2.2 Wetland Areas 2
2.3 Mapped Geologic Conditions 2

3 Subsurface Exploration Program 3

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1 Introduction

This Geotechnical Data Report (GDR) presents the results of the geotechnical data collected and documented by Aspect Consulting, a Geosyntec company (Aspect), as a subconsultant to Wilson Engineering, LLC (Wilson) for the Skagit Public Utility District (Skagit PUD) Water Main Replacement near the Alger and Interstate-5 Interchange (Project; Figure 1).

The purpose of the Project is to relocate Skagit PUD's existing pipeline around a future culvert that will be installed across Lake Samish Road as part of the Washington State Department of Transportation's (WSDOT) project for enhanced fish passage along Friday Creek and its tributaries. The proposed water main relocation will be installed using standard open cut trench excavation to reroute the water main under a future stream section. We understand that a 4-inch diameter high-density polyethylene (HDPE) conduit will be installed using trenchless construction methods below the I-5 mainline and access ramps.

2 Site Background

This section presents background information on the Site including topography, surface conditions, infrastructure, and review of applicable geologic literature. The Site Location Map and Site Exploration Map are shown on Figures 1 and 2, respectively.

2.1 Site Description

The Site is in Skagit County within the town of Alger, Washington (Figure 1). The Site is located on the western flank of the Friday Creek Valley, with steep slopes up and to the west of I-5, and more gently sloping terrain down and to the east of I-5. Tributary creeks flow east-southeast towards Friday Creek. Lake Samish Road crosses over I-5, with steep sloped roadway embankment fill at the bridge abutments and modified land along the interstate (Figure 2).

The existing buried water main parallels Lake Samish Road to the west of I-5 before crossing underneath the interstate and staying north of Lake Samish Road (Figure 2). The water main then trends due south on the east side of the I-5 northbound on-ramp before continuing east, paralleling Lake Samish Road. The existing water main is contained within Skagit County or WSDOT rights-of-way.

Outside of paved roadway and gravel-surfaced shoulder areas, the Site is vegetated with riparian and woodland vegetation including ponderosa pine, willow, alder, cottonwood, grasses, cattails, and ferns. Vegetation indicative of wetland areas was observed on the west and east sides of I-5 through the Site.

2.2 Wetland Areas

Several areas within private properties bordering I-5 to the west and east, and north of the existing water main alignment, contain wetland areas as defined by the Washington State Department of Ecology (Ecology) and the U.S. Department of Fish and Wildlife's National Wetland Inventory (NWI). It is our understanding that these wetland areas were delineated by RH2 Engineering Inc. (RH2) and are being incorporated into the Project recommendations by others.

We understand that the final water main alignment will avoid the wetland areas and/or wetland buffer areas to the extent possible.

2.3 Mapped Geologic Conditions

The geologic map (Dragovich et al, 1998) indicates that the Site is generally underlain by glaciomarine drift ($Qgdm_e$) of the Everson Interstade. This unit is described as clayey silt, silty clay, clay, and clay-rich diamicton; locally, it contains lenses and layers of sandy or gravelly outwash, and contains macrofossils only in the southernmost portion of the mapped area. Vashon Stade glacial till (Qgt_v), considered a moderate to high density glacial deposit consisting of layers and lenses of gravel and sand, is mapped near the Site. Exposed in the steepening terrain immediately west and southwest of the Site is Mesozoic-aged Darrington Phyllite (Jph_d), considered a low-grade layered metamorphic rock of the northwest cascade system, predominantly composed of graphitic quartzose phyllite.

3 Subsurface Exploration Program

Aspect completed subsurface explorations at the Site between December 2023 and March 2024. A total of four geotechnical explorations were completed:

- AB-01 through AB-03 were advanced using mud rotary drilling techniques to depths between 41.5 and 80.1 feet below ground surface (bgs) by Western States Soil Conservation, Inc. (Western) in December 2023.
- AB-04 was advanced using mud rotary and rock coring drilling techniques to a final depth of 30 feet bgs by Holt Services Inc. (Holt) in March 2024.

An Aspect geologist or engineer was present throughout the field exploration program to observe and direct the explorations, collect soil samples, and prepare descriptive logs of each exploration. The approximate locations of our explorations are shown on Figure 2 and exploration logs are presented in Appendix A.

3.1 Subsurface Investigation Procedures

Western and Holt advanced mud rotary explorations using a track-mounted Diedrich D-50 drill rig and a track-mounted Central Mine Equipment Company (CME) 85 drill rig, respectively. Mud rotary drilling uses a tricone drill bit at the end of the drill rods to advance the borehole. As the drill bit rotates, drilling mud is continuously pumped down through the center of the drill rods and out the bottom of the drill bit into the borehole, and back up to the surface through the annular space between the drill rod and the borehole wall. The drilling mud helps to cool the drill bit, to carry drill cuttings to the surface, and to maintain an open hole during drilling. When a target sample depth is reached, the drill bit is retrieved to the surface, and removed and replaced with a sampler that is lowered back down to the bottom of the hole for sampling.

Upon completion, each boring was backfilled with hydrated 3/8-inch bentonite chips in accordance with Ecology requirements. Borings were topped with either soil or concrete patch to match surrounding surface conditions. Excess soil cuttings were drummed and hauled off Site.

3.2 Field Test Procedures

Standard penetration testing (SPT) was performed, and samples were collected at selected intervals within each boring. SPT methods were in accordance with ASTM International (ASTM) Method D1586, *Standard Test Method for Standard Penetration Test and Split-Barrel Sampling of Soils* (ASTM, 2023). The SPT method involved driving a 2-inch-outside-diameter split-barrel sampler with a 140-pound hammer free-falling from 30 inches. The number of blows for each 6-inch interval was recorded. Where soil sample recovery from the 2-inch-outside-diameter split-barrel sampler was inadequate for laboratory analysis, a larger 3.25-inch-diameter split-barrel sampler was driven immediately after to obtain the soil sample.

The number of blows required to drive the 2-inch-outside-diameter sampler the final 12 inches is known as the Standard Penetration Resistance (“N-value”) or blow count, which

provides a measure of the relative density of granular soils or the relative consistency of cohesive soils. If a total of 50 blows was recorded for a single 6-inch interval, the test was terminated, and the blow count was recorded as 50 blows for the total inches of penetration. The number of blows for each 6-inch interval was recorded on the boring logs for the 3.25-inch-diameter sampler, though the final 12 inches of the 2-inch-diameter sampler provides the N-value of the material at that depth in the subsurface. Samples from split spoons were placed in labeled plastic bags and taken to a laboratory for further classification.

3.3 Soil Sampling Procedures

Disturbed and relatively undisturbed soil samples were collected from the geotechnical borings.

3.3.1 Disturbed Geotechnical Samples

In general, soil samples were collected from each geotechnical boring at 2.5-foot intervals for the first 15 feet, and at 2.5- to 10-foot intervals thereafter using the SPT method in accordance with ASTM D1586, *Standard Test Method for Standard Penetration Test and Split-Barrel Sampling of Soils* (ASTM, 2023).

After performing the SPT, the sampler was retrieved to the surface and opened, and the soil was observed and described. The soil sample was removed from the sampler, and placed in a labeled, water-tight bag or jar and transported to the testing laboratory.

3.3.2 Relatively Undisturbed Geotechnical Samples

Relatively undisturbed soil samples were collected in general accordance with ASTM D1587, *Standard Practice for Thin-Walled Tube Sampling of Fine-Grained Soils for Geotechnical Purposes* (ASTM, 2023). The undisturbed samples were collected at selected depths where fine-grained, cohesive soils were encountered in the borings. Samples were collected by slowly, steadily pushing a 3-inch-diameter, 30-inch-long, thin-walled steel tube ("Shelby Tube") attached to the end of the drill rods. The Shelby Tubes were pushed into the ground with downward pressure applied to the drill rods using hydraulics. After several minutes, the Shelby Tube was retrieved to the surface, immediately capped with plastic end caps and sealed with tape, then labelled and transported in an upright position to the testing laboratory.

3.3.3 Rock Coring

NQ wireline rock coring was attempted in the final 5 feet of drilling at AB-04. The letter name, NQ, specifying the dimensions of bits, rock core barrels and drill rods, uses a 3-inch-outer-diameter core barrel attached to the drill rig and advanced into bedrock. The core barrel contains a 1.875-inch hollow inner core barrel that retains a cylindrical rock core sample from drilling. The returned rock core sample is characterized and evaluated for its engineering properties.

3.4 Soil Classification System

Aspect observed and documented the subsurface conditions and presence of groundwater for all borings. Soil types and descriptions were determined using the Unified Soil Classification System (USCS), as defined in ASTM D2488, *Standard Practice for Description and Identification of Soils: Visual-Manual Procedure* (ASTM, 2023). Rock

classification and logging used Chapter 4.3 Rock Classification of the WSDOT *Geotechnical Design Manual* version M46-03.16 (WSDOT, 2022). Terminology used in the soil and rock descriptions is presented in the Exploration Log key in Appendix A, followed by the exploration logs themselves.

3.5 Geologic Unit Nomenclature

Assignment of geologic units to a particular grouping of soil types was based on our interpretation of the depositional environment, stratigraphic relationships, results of engineering property determinations, and laboratory testing. The stratigraphic contacts shown on the exploration logs represent the approximate boundaries between soil types; actual transitions may be more gradual. The subsurface conditions depicted are only for the specific date and location reported, and therefore, are not necessarily representative of other locations and times.

3.6 Laboratory Testing Methods

We selected soil samples from the subsurface explorations for geotechnical laboratory testing of index and engineering properties, including natural moisture content, grain-size distribution, unconsolidated undrained triaxial testing, and Atterberg Limits (plasticity). The complete results of laboratory testing are presented in Appendix B. The results of the tests are also incorporated into the exploration logs in Appendix A.

The following is a summary of geotechnical laboratory testing methods used for the Project.

3.6.1 Moisture Content Determination

Moisture contents were determined for samples recovered in the explorations in general accordance with ASTM D2216. This test method allows for the laboratory determination of the moisture (water) content of a soil sample by measuring and recording the mass of a sample before and after drying.

3.6.2 Grain Size Analysis

Particle-size analyses were performed on select soil samples in general accordance with ASTM C136 and D1140 to determine their grain-size distributions. The Sieve Analysis of Fine and Coarse Aggregates method was performed by wet sieve analyses, determining percentages (by weight) of the sample passing a series of sieves from the 1-inch sieve, down to the No. 200 (0.75 mm) sieve. Test Method for Materials Finer than 75 micrometers (μm) (No. 200) in Mineral Aggregates was performed by washing, determining a percentage (by weight) of the sample passing the No. 200 (0.75 mm) sieve.

3.6.3 Unconsolidated – Undrained Triaxial Test

One subsurface soil sample was submitted for undrained (UU) triaxial testing in accordance with ASTM D2850 to determine the samples' shear strength parameters under undrained conditions and at different confining pressures.

3.6.4 Plasticity Index (Atterberg Limits) Determination

Select samples were submitted for plasticity index analysis (Atterberg Limits) by the ASTM D4318 test method. This test method allows for the laboratory determination of the liquid limit and the plastic limit of the fines in a soil sample.

3.7 Previous Explorations by Others

WSDOT completed six drilled borings near the Site (Figure 2) in July and September of 2021 to inform their I-5/Tributaries Fish Passage culvert replacement project. Two of the WSDOT borings, A-450p-21 and A-453p-21, were drilled along the proposed water main pipeline alignment. The logs of the WSDOT borings are included in Appendix C.

WSDOT boring A-450p-21 was advanced on the east side of I-5, at the corner of the northbound I-5 on-ramp and Lake Samish Road. The boring was drilled and then cored to a final depth of 90.5 feet bgs. The boring was advanced through soils using casing advancer to a depth of 72.5 feet bgs, then using rock coring methods in bedrock (Phyllite) for 18 feet.

WSDOT boring A-453p-21 was advanced on the west side of I-5, at the corner of the southbound I-5 off-ramp and Lake Samish Road. The boring was drilled and cored to a final depth of 59.5 feet bgs using casing advancer in soils to 34.5 feet bgs, then switched to rock coring in bedrock (Phyllite) for the final 25 feet.

4 Subsurface Investigation Results

The following sections present the stratigraphy and groundwater results from the subsurface investigations at the Site. The available subsurface explorations generally agreed with geologic mapping at the Site.

4.1 Stratigraphy

The soils encountered at the Site were native glacial deposits, and the bedrock encountered was graphitic Darrington Phyllite. For engineering purposes, we subdivided the glaciomarine drift deposits into two separate units: Glaciomarine Drift – silt, sand, and gravel facies, and Glaciomarine Drift – clay facies. Fill was encountered along roadway embankments atop glacial soils. The primary engineering geologic materials presented from top to bottom in stratigraphic order at the Site, are pavement (where applicable), fill, glaciomarine drift, then Darrington Phyllite bedrock.

The stratigraphy is described in more detail below and depicted in Figures 3 and 4. Figure 3 provides a geologic cross section that spans across I-5 and includes nearby drilled borings from Aspect and WSDOT. Figure 4 focuses on a portion of the cross section west of I-5, where the proposed water main will be routed below the thalweg elevation of a future relocated segment of the Middle Tributary to Friday Creek.

Pavement

AB-04 was drilled in the northbound drive lane of Lake Samish Road. The pavement thickness measured approximately 10 inches. No other borings were drilled through pavement.

Fill

Fill was encountered in AB-02, AB-03, AB-04, A-453p-21, and A-450p-21, with thicknesses ranging from 3 to 5 feet. Fill was generally encountered in borings drilled through or adjacent to roadway and embankment sections. The materials consisted of loose to medium dense brown sand with silt and gravel. Subtrace organics, including grass and rootlets were observed in some samples.

Glaciomarine Drift – Silt, Sand, and Gravel

The glaciomarine drift encountered on the west side of I-5 was predominantly gravel, sand, and silt, in varying amounts. The materials are dark gray and dark brown, medium dense to very dense, and non-plastic.

Glaciomarine Drift – Clay

The glaciomarine drift encountered on the east side of I-5 was predominantly comprised of gray-brown and olive clay, with varying amounts of gravel, sand, and silt. Where clay was the predominate grain size, the soil generally ranged from very soft to soft, low to high plasticity, and with some iron-oxidation staining.

Darrington Phyllite

The Darrington Phyllite bedrock encountered was predominantly comprised of black marbled with white, fine grained with angular to subangular quartz mineral fragments,

completely weathered (Grade V) to moderately weathered (Grade III), very weak (R1) to moderately strong (R3), thinly foliated dipping up to 45 degrees from horizontal, with discontinuities in very poor to poor condition.

4.2 Groundwater

Groundwater was encountered at the time of drilling in most explorations (Table 1). WSDOT installed piezometers and recorded groundwater measurements in explorations A-450p-21 and A-453p-21 between November 2021 and February 2023. The highest and lowest recorded groundwater depths are provided in Table 1.

Table 1. Groundwater Measurements

Exploration	Ground Surface Elev (feet[1])	Screen Interval Depth (feet bgs)	Groundwater Depth (feet bgs)		
			At Time of Drilling (Date)	Highest Measured[2]	Lowest Measured[2]
A-450p-21	284.6	15 - 35	-[3]	10.0	13.5
A-453p-21	307.1	10 - 30	3.5 (7/28/21)	0.0	9.5
AB-01	324	-	12.5 (12/4/23)	-	-
AB-02	264	-	25.0 (12/6/23)	-	-
AB-03	264	-	12.5 (12/4/23)	-	-
AB-04	315	-	5.0 (3/13/24)	-	-

Notes:
1. Elevations (Elev) are in North American Vertical Datum of 1988 (NAVD88). Depths are in feet below ground surface (feet bgs).
2. Highest and lowest piezometer readings collected by WSDOT between Nov 2021 and Feb 2023.
3. "-" = Not applicable

Groundwater rises and falls with the seasons, with high groundwater levels between the months of November through May and falling/low groundwater between the months of June and September. Groundwater conditions, including the presence of localized seepage or perched groundwater zones, will be variable depending on local subsurface conditions, precipitation, and the time of year.

5 References

ASTM International (ASTM), 2023, 2023 Annual Book of ASTM Standards, West Conshohocken, Pennsylvania.

J.D. Dragovich, Norman, D.K., Grisamer, C.L., Logan, R.L., Anderson, G., (Dragovich et al), 1998, Geologic Map of the Bow and Alger 7.5-minute Quadrangles, Western Skagit County, WA.

Washington State Department of Transportation (WSDOT), 2022, Geotechnical Design Manual, M 46-03.

Washington State Department of Transportation (WSDOT), 2023, Geotechnical Data Report I-5/Tributaries to Friday, Lake, and Chuckanut Creeks – Fish Passage, Tumwater, WA 98512-6951.

6 Limitations

Work for this project was performed for Wilson Engineering, LLC (Client), and this report was prepared consistent with recognized standards of professionals in the same locality and involving similar conditions, at the time the work was performed. No other warranty, expressed or implied, is made by Aspect Consulting, a Geosyntec company (Aspect).

Recommendations presented herein are based on our interpretation of site conditions, geotechnical engineering calculations, and judgment in accordance with our mutually agreed-upon scope of work. Our recommendations are unique and specific to the project, site, and Client. Application of this report for any purpose other than the project should be done only after consultation with Aspect.

Variations may exist between the soil and groundwater conditions reported and those actually underlying the site. The nature and extent of such soil variations may change over time and may not be evident before construction begins. If any soil conditions are encountered at the site that are different from those described in this report, Aspect should be notified immediately to review the applicability of our recommendations. If new information, such as existing levee history and repairs, or levee performance during a significant flood event, the professional opinions, recommendations, and conclusions contained in this report may be modified by Aspect.

Risks are inherent with any site involving levees and flood control structures subject to flooding and geologic hazards and no recommendations, geologic analysis, or engineering design can assure performance. Our observations, findings, and opinions are a means to identify and reduce the inherent risks to the Client.

It is the Client's responsibility to see that all parties to this project, including the designer, contractor, subcontractors, and agents, are made aware of this report in its entirety. At the time of this report, design plans and construction methods have not been finalized, and the recommendations presented herein are based on preliminary project information. If project developments result in changes from the preliminary project information, Aspect should be contacted to determine if our recommendations contained in this report should be revised and/or expanded upon.

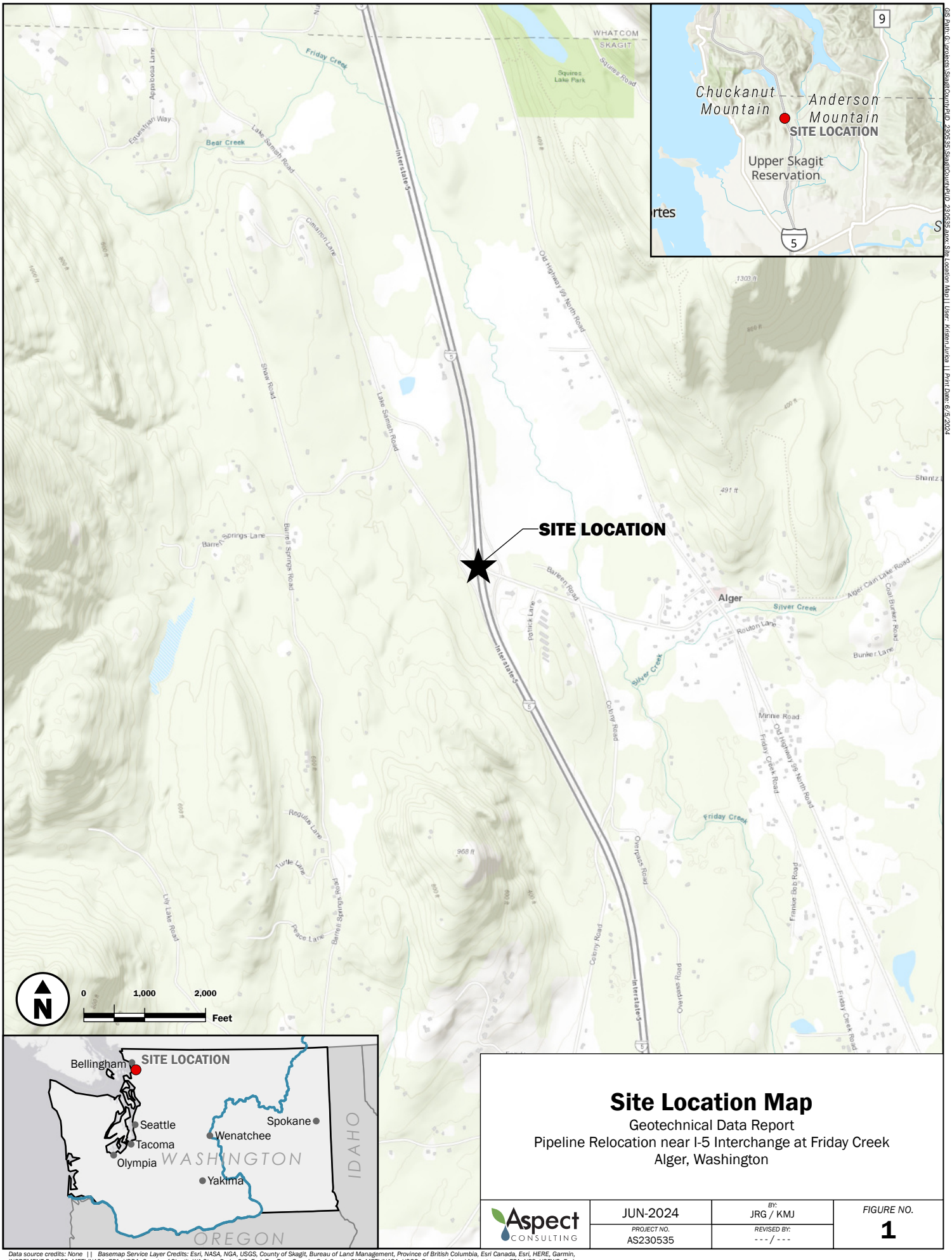
The scope of work does not include services related to construction safety precautions. Site safety is typically the responsibility of the contractor, and our recommendations are not intended to direct the contractor’s site safety methods, techniques, sequences, or procedures. The scope of our work also does not include the assessment of environmental characteristics, particularly those involving potentially hazardous substances in soil or groundwater.

All reports prepared by Aspect for the Client apply only to the services described in the Agreement(s) with the Client. Any use or reuse by any party other than the Client is at the sole risk of that party, and without liability to Aspect. Aspect’s original files/reports shall govern in the event of any dispute regarding the content of electronic documents furnished to others.

Please refer to Appendix D titled "Report Limitations and Guidelines for Use" for additional information governing the use of this report.

We appreciate the opportunity to perform these services. If you have any questions, please call Erik Andersen, PE, Senior Principal Geotechnical Engineer, 360.746.8964.

FIGURES



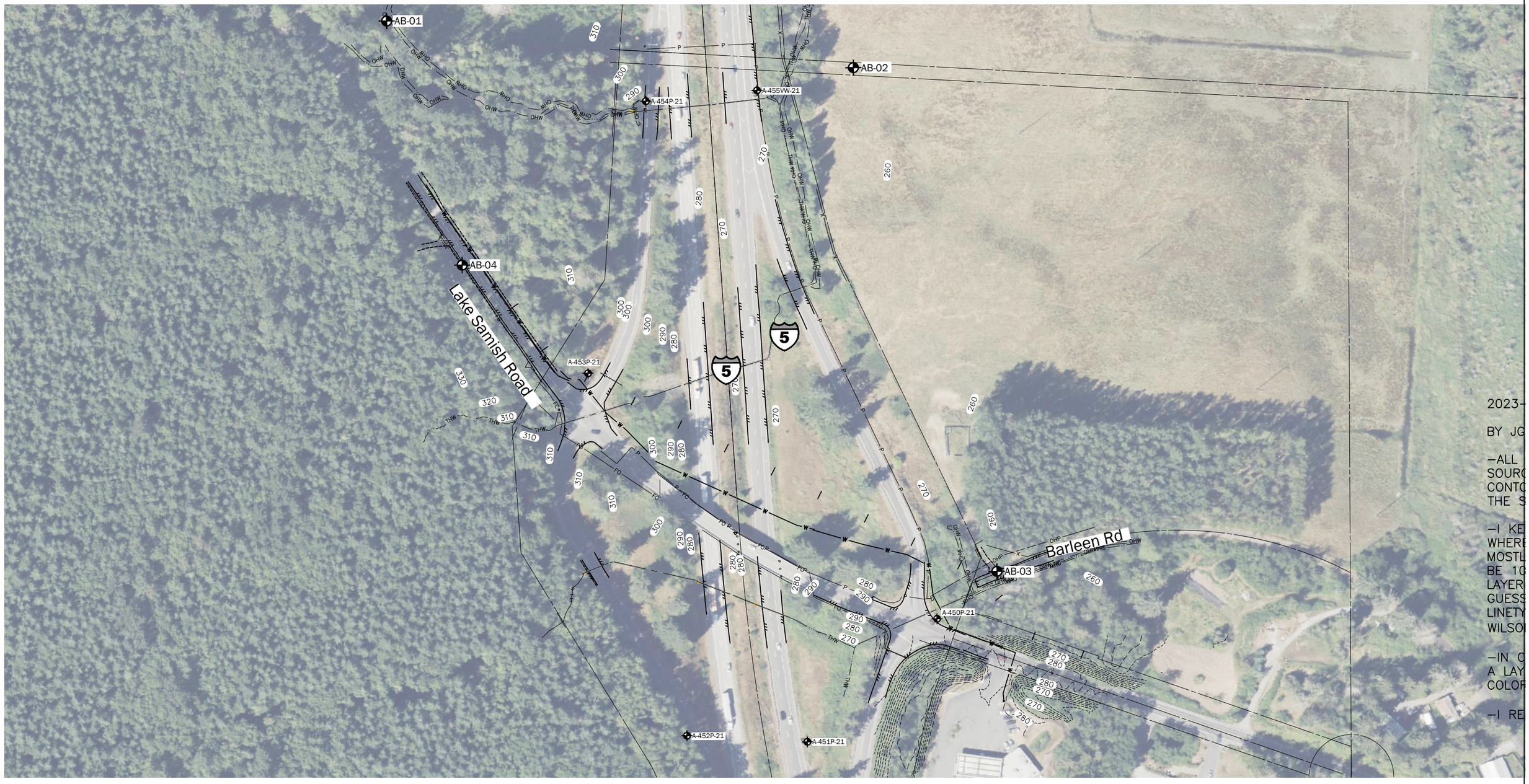
Site Location Map

Geotechnical Data Report
Pipeline Relocation near I-5 Interchange at Friday Creek
Alger, Washington

Aspect CONSULTING	JUN-2024	BY: JRG / KMJ	FIGURE NO. 1
	PROJECT NO. AS230535	REVISED BY: ---/---	

Data source credits: None || Basemap Service Layer Credits: Esri, NASA, NGA, USGS, County of Skagit, Bureau of Land Management, Province of British Columbia, Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA, County of Skagit, WA State Parks GIS, Esri, TomTom, Garmin, SafeGraph, FAO, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USFWS, Esri, HERE, Garmin, USGS, EPA, NPS

GIS Path: G:\projects\Skagit County\PUD 230535 Skagit County PUD 230535.aprx; Site Location Map || User: Kristen Jurras || Print Date: 6/5/2024



Legend

- Aspect Boring Location
- WSDOT Boring Location

0 180 360 Feet

Source: Base map provided by Wilson Engineering, December, 2019.
Aerial imagery by Bing Maps.

Site Exploration Map

Geotechnical Data Report
Pipeline Relocation near I-5 Interchange at Friday Creek
Alger, Washington

Aspect Consulting	Jun-2024	BY: KTR/CMV	FIGURE NO. 2
	PROJECT NO. AS230535	REVISED BY: JPR	

2023-

BY JG

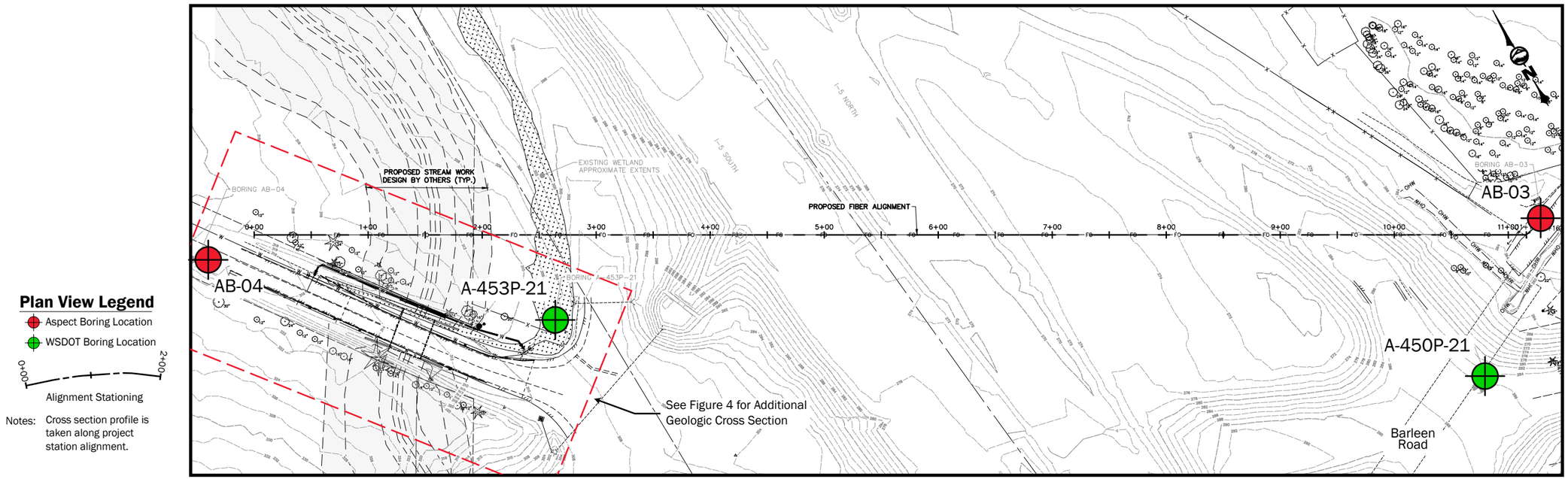
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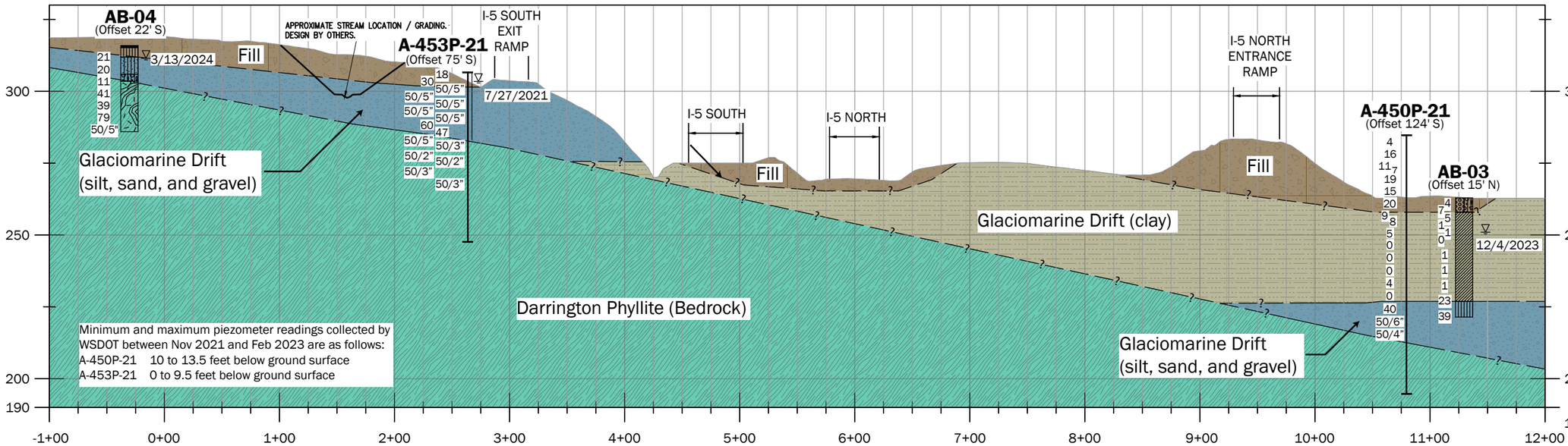
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Plan View Legend

- Aspect Boring Location
- WSDOT Boring Location
- 0+00 — 2+00 Alignment Stationing

Notes: Cross section profile is taken along project station alignment.



Profile Legend

Lithology Graphics

- Fill
- Glaciomarine Drift - Clay Facies
- Glaciomarine Drift - Silt, Sand, and Gravel Facies
- Darrington Phyllite (Bedrock)

Contacts

- Contact - Known
- Contact - Inferred
- Contact - Queried

Aspect Explorations

B-01 (Offset 31' SE) — Borehole ID Offset and direction
SPT Blow Count N Value — 8
Groundwater at time of drilling
Material Type (see Lithology Graphics)
Inferred Geologic Contact

Explorations by Others

B-01 (Offset 31' SE) — Borehole ID Offset and direction
SPT Blow Count N Value — 8

N
0 100 200
Feet

Horizontal Scale 1" = 100'
Vertical Scale 1" = 40'
Vertical Exaggeration 2.5x

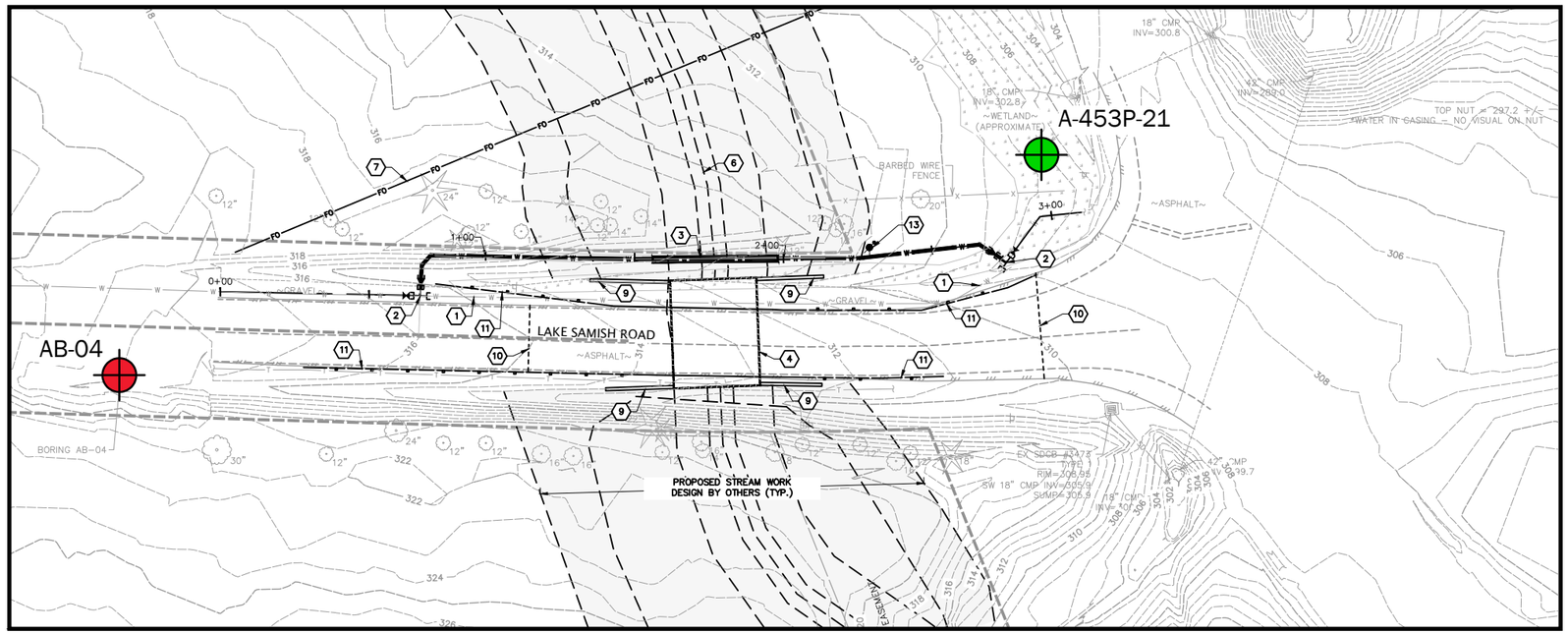
DISCLAIMER: The subsurface conditions presented in this geologic cross section are conceptual. Variations may exist between the soil and groundwater conditions depicted on this figure and those actually underlying the site. Refer to the contents of this report and boring logs for further context.

Notes:
- Cross section surface generated from base CAD files provided by Wilson Engineering dated 11/07/2024.
- Site features are approximate.

Geologic Cross Section - 1

Geotechnical Data Report
Pipeline Relocation near I-5 Interchange at Friday Creek
Alger, Washington

Aspect Consulting	DEC-2024	BY: JBM/JRG/CMV	FIGURE NO. 3
	PROJECT NO. AS230535	REVISED BY: JPR/JBM	



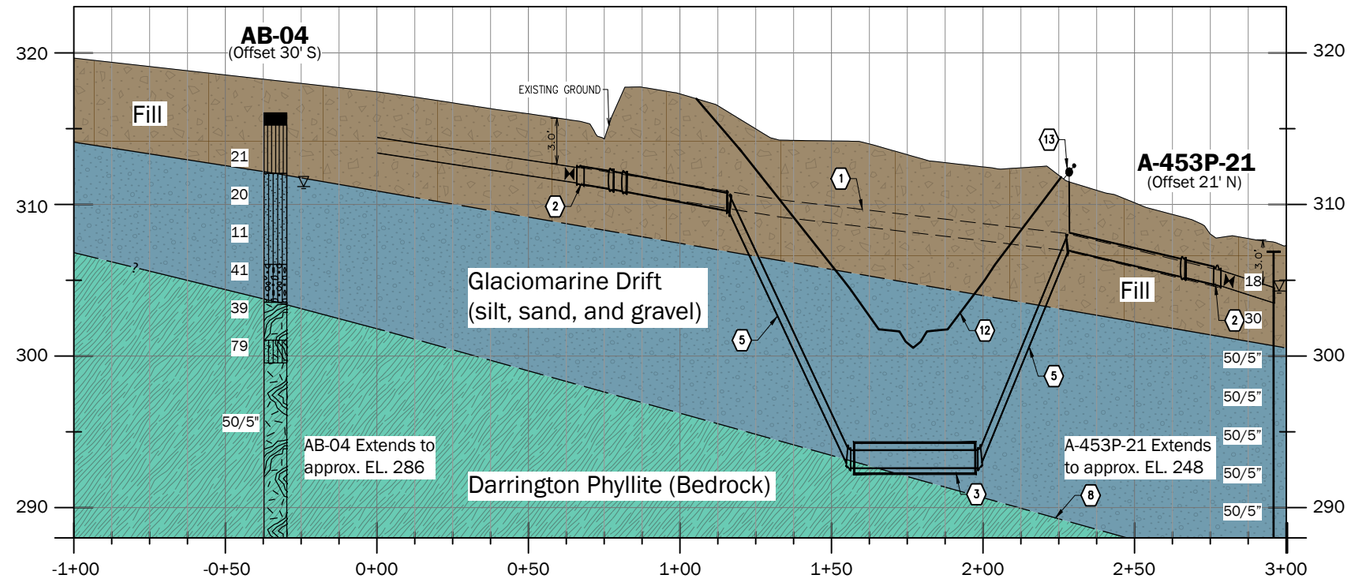
Plan View Legend

- Aspect Boring Location
- WSDOT Boring Location
- 0+00 — 2+00 Alignment Stationing

Notes: Cross section profile is taken along project station alignment.

KEYED NOTES

1. = EXISTING 12" DI WATERMAIN TO REMAIN IN PLACE UNTIL RELOCATION OF 14" HDPE WATERMAIN IS OPERATIONAL.
2. = 12" MJxFLxFL TEE, (1) FLxMJ BUTTERFLY VALVE, AND 12" TO 14" FLxFL REDUCER INSTALLED BY PUD PRIOR TO WATERLINE RELOCATION.
3. = 40LF 24" MIN. STEEL WATERMAIN CASING TOP = 294.5
4. = PRECAST REINFORCED BOX CULVERT OUTLET FOOTING BASE ELEV. = 294.48
5. = 14" HDPE WATERMAIN WITH 22.5° BENDS AND REVERSE THRUST BLOCKS
6. = APPROXIMATE STREAM ALIGNMENT. DESIGN BY OTHERS.
7. = PROPOSED FIBER ALIGNMENT
8. = EXISTING BEDROCK ELEVATION AT CASING = 293'–291'
9. = STEPPED WINGWALL FOOTING
10. = SAWCUT FOR CULVERT INSTALLATION BY WSDOT
11. = GUARDRAIL INSTALLATION BY WSDOT.
12. = STREAM FINISHED GRADE BY WSDOT (APPROXIMATE). THALWEG ELEVATION AT WATER LINE CROSSING = 300.5
13. = AIR RELEASE VALVE



Profile Legend

Lithology Graphics

- Fill
- Darrington Phyllite (Bedrock)
- Glaciomarine Drift - Silt, Sand, and Gravel Facies

Contacts

- Contact - Known
- Contact - Inferred
- Contact - Queried

Aspect Explorations

B-01 (Offset 31' SE) — Borehole ID, Offset and direction
SPT Blow Count N Value — 8
Groundwater at time of drilling
Material Type (see Lithology Graphics)
Inferred Geologic Contact

Explorations by Others

B-01 (Offset 31' SE) — Borehole ID, Offset and direction
SPT Blow Count N Value — 8

0 50 100 Feet

Horizontal Scale 1" = 50'
Vertical Scale 1" = 10'
Vertical Exaggeration 5x

DISCLAIMER: The subsurface conditions presented in this geologic cross section are conceptual. Variations may exist between the soil and groundwater conditions depicted on this figure and those actually underlying the site. Refer to the contents of this report and boring logs for further context.

Notes:
- Cross section surface generated from base CAD files provided by Wilson Engineering dated 11/07/2024.
- Site features are approximate.

Geologic Cross Section - 2

Geotechnical Data Report
Pipeline Relocation near I-5 Interchange at Friday Creek
Alger, Washington

Aspect Consulting	DEC-2024	BY: JBM/JRG/CMV	FIGURE NO. 4
	PROJECT NO. AS230535	REVISED BY: JPR/JBM	

APPENDIX A

Aspect 2023/2024 Subsurface Exploration Logs

Coarse-Grained Soils - More than 50%[1] Retained on No. 200 Sieve	Gravels - More than 50%[1] of Coarse Fraction Retained on No. 4 Sieve	≤5% Fines	GW	Well-graded GRAVEL Well-graded GRAVEL WITH SAND
			GP	Poorly-graded GRAVEL Poorly-graded GRAVEL WITH SAND
		≥15% Fines	GM	SILTY GRAVEL SILTY GRAVEL WITH SAND
			GC	CLAYEY GRAVEL CLAYEY GRAVEL WITH SAND
	Sands - 50%[1] or More of Coarse Fraction Passes No. 4 Sieve	≤5% Fines	SW	Well-graded SAND Well-graded SAND WITH GRAVEL
			SP	Poorly-graded SAND Poorly-graded SAND WITH GRAVEL
		≥15% Fines	SM	SILTY SAND SILTY SAND WITH GRAVEL
			SC	CLAYEY SAND CLAYEY SAND WITH GRAVEL
Fine-Grained Soils - 50%[1] or More Passes No. 200 Sieve	Silts and Clays Liquid Limit Less than 50%		ML	SILT SANDY or GRAVELLY SILT SILT WITH SAND SILT WITH GRAVEL
			CL	LEAN CLAY SANDY or GRAVELLY LEAN CLAY LEAN CLAY WITH SAND LEAN CLAY WITH GRAVEL
			OL	ORGANIC SILT SANDY or GRAVELLY ORGANIC SILT ORGANIC SILT WITH SAND ORGANIC SILT WITH GRAVEL
	Silts and Clays Liquid Limit 50% or More		MH	ELASTIC SILT SANDY or GRAVELLY ELASTIC SILT ELASTIC SILT WITH SAND ELASTIC SILT WITH GRAVEL
			CH	FAT CLAY SANDY or GRAVELLY FAT CLAY FAT CLAY WITH SAND FAT CLAY WITH GRAVEL
			OH	ORGANIC CLAY SANDY or GRAVELLY ORGANIC CLAY ORGANIC CLAY WITH SAND ORGANIC CLAY WITH GRAVEL
Highly Organic Soils			PT	PEAT and other mostly organic soils

"WITH SILT" or "WITH CLAY" means 5 to 15% silt and clay, denoted by a "-" in the group name; e.g., SP-SM • "SILTY" or "CLAYEY" means >15% silt and clay • "WITH SAND" or "WITH GRAVEL" means 15 to 30% sand and gravel. • "SANDY" or "GRAVELLY" means >30% sand and gravel. • "Well-graded" means approximately equal amounts of fine to coarse grain sizes • "Poorly graded" means unequal amounts of grain sizes • Group names separated by "/" means soil contains layers of the two soil types; e.g., SM/ML.

Soils were described and identified in the field in general accordance with the methods described in ASTM D2488. Where indicated in the log, soils were classified using ASTM D2487 or other laboratory tests as appropriate. Refer to the report accompanying these exploration logs for details.

1. Estimated or measured percentage by dry weight
2. (SPT) Standard Penetration Test (ASTM D1586)
3. Determined by SPT, DCPT (ASTM STP399) or other field methods. See report text for details.

GEOTECHNICAL LAB TESTS

MC	=	Natural Moisture Content
PS	=	Particle Size Distribution
FC	=	Fines Content (% < 0.075 mm)
GH	=	Hydrometer Test
AL	=	Atterberg Limits
C	=	Consolidation Test
Str	=	Strength Test
OC	=	Organic Content (% Loss by Ignition)
Comp	=	Proctor Test
K	=	Hydraulic Conductivity Test
SG	=	Specific Gravity Test

CHEMICAL LAB TESTS

Organic Chemicals

BTEX	=	Benzene, Toluene, Ethylbenzene, Xylenes
TPH-Dx	=	Diesel and Oil-Range Petroleum Hydrocarbons
TPH-G	=	Gasoline-Range Petroleum Hydrocarbons
VOCs	=	Volatile Organic Compounds
SVOCs	=	Semi-Volatile Organic Compounds
PAHs	=	Polycyclic Aromatic Hydrocarbon Compounds
PCBs	=	Polychlorinated Biphenyls

Metals

RCRA8	=	As, Ba, Cd, Cr, Pb, Hg, Se, Ag, (d = dissolved, t = total)
MTCA5	=	As, Cd, Cr, Hg, Pb (d = dissolved, t = total)
PP-13	=	Ag, As, Be, Cd, Cr, Cu, Hg, Ni, Pb, Sb, Se, Tl, Zn (d=dissolved, t=total)

FIELD TESTS

PID	=	Photoionization Detector
Sheen	=	Oil Sheen Test
SPT[2]	=	Standard Penetration Test
NSPT	=	Non-Standard Penetration Test
DCPT	=	Dynamic Cone Penetration Test

COMPONENT DEFINITIONS

Descriptive Term		*Size Range and Sieve Number*
Boulders	=	Larger than 12 inches
Cobbles	=	3 inches to 12 inches
Coarse Gravel	=	3 inches to 3/4 inches
Fine Gravel	=	3/4 inches to No. 4 (4.75 mm)
Coarse Sand	=	No. 4 (4.75 mm) to No. 10 (2.00 mm)
Medium Sand	=	No. 10 (2.00 mm) to No. 40 (0.425 mm)
Fine Sand	=	No. 40 (0.425 mm) to No. 200 (0.075 mm)
Silt and Clay	=	Smaller than No. 200 (0.075 mm)

ESTIMATED[1] PERCENTAGE

% by Weight		*Modifier*	*% by Weight*		*Modifier*
<1	=	Subtrace	15 to 25	=	Little
1 to <5	=	Trace	30 to 45	=	Some
5 to 10	=	Few	>50	=	Mostly

MOISTURE CONTENT

Dry	=	Absence of moisture, dusty, dry to the touch
Slightly Moist	=	Perceptible moisture
Moist	=	Damp but no visible water
Very Moist	=	Water visible but not free draining
Wet	=	Visible free water, usually from below water table

RELATIVE DENSITY

Non-Cohesive or Coarse-Grained Soils

Density[3]		*SPT*[2] *Blows/Foot*	*Penetration with 1/2" Diameter Rod*
Very Loose	=	0 to 4	≥ 2'
Loose	=	5 to 10	1' to 2'
Medium Dense	=	11 to 30	3" to 1'
Dense	=	31 to 50	1" to 3"
Very Dense	=	> 50	< 1"

CONSISTENCY

Cohesive or Fine-Grained Soils

Consistency[3]		*SPT*[2] *Blows/Foot*	*Manual Test*
Very Soft	=	0 to 1	Penetrated >1" easily by thumb. Extrudes between thumb & fingers.
Soft	=	2 to 4	Penetrated 1/4" to 1" easily by thumb. Easily molded.
Medium Stiff	=	5 to 8	Penetrated >1/4" with effort by thumb. Molded with strong pressure.
Stiff	=	9 to 15	Indented ~1/4" with effort by thumb.
Very Stiff	=	16 to 30	Indented easily by thumbnail.
Hard	=	> 30	Indented with difficulty by thumbnail.

GEOLOGIC CONTACTS

Observed and Distinct — Observed and Gradual — Inferred

Aspect CONSULTING

Exploration Log Key

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Aspect CONSULTING	Alger Pipeline Relocation at I-5 - 230535		Geotechnical Exploration Log	
	Project Address & Site Specific Location I-5 Interchange at Friday Creek, See Figure 2.		*Coordinates (Lat,Lon WGS84)* 48.6240, -122.3593 (est)	*Exploration Number* **AB-01**
Contractor Western States Soil Conservation	*Equipment* Diedrich D50 Track Rig	*Sampling Method* Autohammer; 140 lb hammer; 30" drop	*Ground Surface Elev. (NAVD88)* 324' (est)	
Operator Damon	*Exploration Method(s)* Mud rotary	*Work Start/Completion Dates* 12/4/2023 to 12/5/2023	*Top of Casing Elev. (NAVD88)* NA	*Depth to Water (Below GS)* 12.5' (ATD)

Depth (feet)	Elev. (feet)	Exploration Notes and Completion Details	Sample Type/ID	Blows/foot ▲ Water Content (%)● 0 10 20 30 40 50	Blows/6"	Tests	Material Type	Description	Depth (ft)
1	323	Boring backfilled with bentonite grout.						**GLACIOMARINE DRIFT - Silt, Sand, and Gravel** SANDY SILT WITH GRAVEL (ML); dense, wet, gray; non-plastic; fine to coarse sand; fine to coarse, angular to subangular gravel.	1
2	322								2
3	321	Mechanical fracture in split spoon. Blowcounts potentially overstated.	S1		43 29 19				3
4	320								4
5	319	Switched to 3.25" sampler due to poor recovery.	S2A		9				5
6	318		S2B		17 11	Blows (non-SPT) =8,13,10		SILTY SAND WITH GRAVEL AND COBBLES (SM); medium dense, wet, gray; fine to coarse sand; fine to coarse, subangular to subrounded gravel; up to 4-inch cobbles.	6
7	317								7
8	316	Soils from 7.5 feet to 35 feet bgs identified as highly weathered, residual Darrington Phyllite.	S3		14 16 14			SANDY SILT WITH GRAVEL (ML); medium dense, moist, gray; non-plastic; fine to coarse sand; fine, subrounded gravel.	8
9	315								9
10	314	Driller noted stiffness in drilling activity.	S4	11	24 46	PS, MC FC=25.5%		SILTY SAND WITH GRAVEL (SM); very dense, wet, gray to dark gray; fine to coarse sand; fine to coarse, angular to subrounded gravel.	10
11	313				36				11
12	312								12
13	311	▽ 12/5/2023 Water level inferred from soil moisture Mechanical fracture in split spoon. Blowcounts potentially overstated.	S5		15 39 50/4"				13
14	310								14
15	309	Driller noted increased difficulty in drilling advancement.	S6		50/3"				15
16	308								16
17	307								17
18	306								18
19	305								19
20	304		S7	11	49 50/2"	FC, MC FC=24.1%			20
21	303								21
22	302								22
23	301								23
24	300								24

Legend

Sample Type
- ◯ No Soil Sample Recovery
- ◪ Split Barrel 2" X 1.375" (SPT)
- ◧ Split Barrel 3.25" X 2.375"

Plastic Limit ⊢⊣ Liquid Limit

Water Level
- ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: BW, KR
Approved by: JG

Exploration Log AB-01
Sheet 1 of 4

NEW STANDARD EXPLORATION LOG TEMPLATE P:\GINTW\PROJECTS\230535 - PIPELINE RELOCATION NEAR ALGER I-5 INTERCHANGE AT FRIDAY CREEK.GPJ June 21, 2024

Aspect CONSULTING	Alger Pipeline Relocation at I-5 - 230535		Geotechnical Exploration Log	
	Project Address & Site Specific Location I-5 Interchange at Friday Creek, See Figure 2.		*Coordinates (Lat,Lon WGS84)* 48.6240, -122.3593 (est)	*Exploration Number* **AB-01**
Contractor Western States Soil Conservation	*Equipment* Diedrich D50 Track Rig	*Sampling Method* Autohammer; 140 lb hammer; 30" drop	*Ground Surface Elev. (NAVD88)* 324' (est)	
Operator Damon	*Exploration Method(s)* Mud rotary	*Work Start/Completion Dates* 12/4/2023 to 12/5/2023	*Top of Casing Elev. (NAVD88)* NA	*Depth to Water (Below GS)* 12.5' (ATD)

Depth (feet)	Elev. (feet)	Exploration Notes and Completion Details	Sample Type/ID	Blows/foot ▲ Water Content (%)● 0 10 20 30 40 50	Blows/6"	Tests	Material Type	Description	Depth (ft)
26	298		S8		50/6"			SILTY SAND WITH GRAVEL (SM); very dense, wet, gray to dark gray; fine to coarse sand; fine to coarse, angular to subrounded gravel. (continued) Becomes moist.	26
27	297								27
28	296								28
29	295								29
30	294		S9		50/2"				30
31	293								31
32	292								32
33	291								33
34	290								34
35	289		S10		35 50/5"			**DARRINGTON PHYLLITE** BANDED METAMORPHIC ROCK; very weak (R1), black, completely weathered (Grade V), fine grained, foliated, dipping 45 degrees, discontinuities poor condition; trace angular to subangular quartz fragments.	35
36	288								36
37	287								37
38	286								38
39	285								39
40	284		S11		50/2"				40
41	283								41
42	282								42
43	281								43
44	280								44
45	279	Driller noted potential issues with rock coring due to potential sloughing in barrel. Continued advancement into bedrock with mud rotary.	S12		50/1"				45
46	278								46
47	277								47
48	276								48
49	275								49

Legend

Sample Type
- No Soil Sample Recovery
- Split Barrel 2" X 1.375" (SPT)
- Split Barrel 3.25" X 2.375"

Plastic Limit ⊢⊣ Liquid Limit

Water Level
- Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: BW, KR
Approved by: JG

Exploration Log AB-01
Sheet 2 of 4

NEW STANDARD EXPLORATION LOG TEMPLATE P:\GINTW\PROJECTS\230535 - PIPELINE RELOCATION NEAR ALGER I-5 INTERCHANGE AT FRIDAY CREEK.GPJ June 21, 2024

Aspect CONSULTING	Alger Pipeline Relocation at I-5 - 230535		Geotechnical Exploration Log	
	Project Address & Site Specific Location I-5 Interchange at Friday Creek, See Figure 2.		*Coordinates (Lat,Lon WGS84)* 48.6240, -122.3593 (est)	*Exploration Number* **AB-01**
Contractor Western States Soil Conservation	*Equipment* Diedrich D50 Track Rig	*Sampling Method* Autohammer; 140 lb hammer; 30" drop	*Ground Surface Elev. (NAVD88)* 324' (est)	
Operator Damon	*Exploration Method(s)* Mud rotary	*Work Start/Completion Dates* 12/4/2023 to 12/5/2023	*Top of Casing Elev. (NAVD88)* NA	*Depth to Water (Below GS)* 12.5' (ATD)

Depth (feet)	Elev. (feet)	Exploration Notes and Completion Details	Sample Type/ID	Blows/foot ▲ Water Content (%)● 0 10 20 30 40 50	Blows/6"	Tests	Material Type	Description	Depth (ft)
51	273		S13		50/1"			**DARRINGTON PHYLLITE** BANDED METAMORPHIC ROCK; very weak (R1), black, completely weathered (Grade V), fine grained, foliated, dipping 45 degrees, discontinuities poor condition; trace angular to subangular quartz fragments. (continued)	51
52	272								52
53	271								53
54	270	Driller noted fine-grained spoils from 53 to 56 feet bgs.							54
55	269								55
56	268								56
57	267								57
58	266								58
59	265								59
60	264	Increase in chip size within spoils suggesting less weathered bedrock.	S14			Blows (non-SPT) =100/2"			60
61	263								61
62	262	Driller increased drill pressure from 60 to 70 feet bgs due to increased bedrock hardness.							62
63	261								63
64	260								64
65	259								65
66	258								66
67	257								67
68	256								68
69	255								69
70	254		S15			Blows (non-SPT) =100/2"		Becomes moderately strong (R3), moderately weathered (Grade III), and thinly foliated	70
71	253								71
72	252	Driller increased drill pressure from 70 to 80 feet bgs due to increased bedrock hardness.							72
73	251								73
74	250								74

Legend

Sample Type
- No Soil Sample Recovery
- Split Barrel 2" X 1.375" (SPT)
- Split Barrel 3.25" X 2.375"

Plastic Limit ⊢⊣ Liquid Limit

Water Level
- Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: BW, KR
Approved by: JG

Exploration Log AB-01
Sheet 3 of 4

NEW STANDARD EXPLORATION LOG TEMPLATE P:\GINTW\PROJECTS\230535 - PIPELINE RELOCATION NEAR ALGER I-5 INTERCHANGE AT FRIDAY CREEK.GPJ June 21, 2024

Aspect CONSULTING	Alger Pipeline Relocation at I-5 - 230535		Geotechnical Exploration Log	
	Project Address & Site Specific Location I-5 Interchange at Friday Creek, See Figure 2.		*Coordinates (Lat,Lon WGS84)* 48.6240, -122.3593 (est)	*Exploration Number* **AB-01**
Contractor Western States Soil Conservation	*Equipment* Diedrich D50 Track Rig	*Sampling Method* Autohammer; 140 lb hammer; 30" drop	*Ground Surface Elev. (NAVD88)* 324' (est)	
Operator Damon	*Exploration Method(s)* Mud rotary	*Work Start/Completion Dates* 12/4/2023 to 12/5/2023	*Top of Casing Elev. (NAVD88)* NA	*Depth to Water (Below GS)* 12.5' (ATD)

Depth (feet)	Elev. (feet)	Exploration Notes and Completion Details	Sample Type/ID	Blows/foot ▲ Water Content (%)● 0 10 20 30 40 50	Blows/6"	Tests	Material Type	Description	Depth (ft)
76	248							**DARRINGTON PHYLLITE** BANDED METAMORPHIC ROCK; very weak (R1), black, completely weathered (Grade V), fine grained, foliated, dipping 45 degrees, discontinuities poor condition; trace angular to subangular quartz fragments. (continued)	76
77	247								77
78	246	Driller noted very difficult drilling.							78
79	245								79
80	244	Boring terminated due to end of daylight.	S16			Blows (non-SPT) =100/1"		Bottom of exploration at 80.1 ft. bgs.	80
81	243								81
82	242								82
83	241								83
84	240								84
85	239								85
86	238								86
87	237								87
88	236								88
89	235								89
90	234								90
91	233								91
92	232								92
93	231								93
94	230								94
95	229								95
96	228								96
97	227								97
98	226								98
99	225								99

Legend

Sample Type
- ◯ No Soil Sample Recovery
- ◪ Split Barrel 2" X 1.375" (SPT)
- ▮ Split Barrel 3.25" X 2.375"

Plastic Limit ⊢⊣ Liquid Limit

Water Level
- ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: BW, KR
Approved by: JG

Exploration Log AB-01
Sheet 4 of 4

NEW STANDARD EXPLORATION LOG TEMPLATE P:\GINTW\PROJECTS\230535 - PIPELINE RELOCATION NEAR ALGER I-5 INTERCHANGE AT FRIDAY CREEK.GPJ June 21, 2024

Aspect CONSULTING	Alger Pipeline Relocation at I-5 - 230535		Geotechnical Exploration Log	
	Project Address & Site Specific Location I-5 Interchange at Friday Creek, See Figure 2.		*Coordinates (Lat,Lon WGS84)* 48.6238, -122.3556 (est)	*Exploration Number* **AB-02**
Contractor Western States Soil Conservation	*Equipment* Diedrich D50 Track Rig	*Sampling Method* Autohammer; 140 lb hammer; 30" drop	*Ground Surface Elev. (NAVD88)* 264' (est)	
Operator Damon	*Exploration Method(s)* Mud rotary	*Work Start/Completion Dates* 12/6/2023	*Top of Casing Elev. (NAVD88)* NA	*Depth to Water (Below GS)* 25' (ATD)

Depth (feet)	Elev. (feet)	Exploration Notes and Completion Details	Sample Type/ID	Blows/foot ▲ Water Content (%) ● 0 10 20 30 40 50	Blows/6"	Tests	Material Type	Description	Depth (ft)
1	263	Boring backfilled with bentonite grout.						**FILL** SAND WITH SILT AND GRAVEL (SP-SM); medium dense, wet, brown; fine to coarse sand; fine to coarse, subrounded gravel.	1
2	262								2
3	261		S1	13.5 ● ▲	7 11 11	PS, MC FC=11.1%			3
4	260								4
5	259				3			**GLACIOMARINE DRIFT - Clay**	5
6	258		S2	▲	5 8			CLAY (CH); stiff, moist, gray brown; medium plasticity; little fine sand.	6
7	257								7
8	256		S3	▲	1 1 2			Becomes soft.	8
9	255								9
10	254								10
11	253		ST1						11
12	252								12
13	251				0	MC, AL		Becomes gray and without sand.; high plasticity.	13
14	250		S4	▲ 43 ●	1 1	LL=50% PL=25%			14
15	249				3				15
16	248		S5	▲	1 1				16
17	247								17
18	246								18
19	245								19
20	244				0			CLAY (CL); very soft, moist, gray; low plasticity.	20
21	243		S6	▲	0 0				21
22	242								22
23	241								23
24	240	▽ 12/6/2023 Water							24

Legend

Sample Type
- ◯ No Soil Sample Recovery
- ◪ Split Barrel 2" X 1.375" (SPT)
- ▣ Thin wall 2" (Shelby)

Plastic Limit ⊢⊣ Liquid Limit

Water Level
- ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: JG
Approved by: JG

Exploration Log AB-02
Sheet 1 of 2

NEW STANDARD EXPLORATION LOG TEMPLATE P:\GINTW\PROJECTS\230535 - PIPELINE RELOCATION NEAR ALGER I-5 INTERCHANGE AT FRIDAY CREEK.GPJ June 21, 2024

Alger Pipeline Relocation at I-5 - 230535

Geotechnical Exploration Log

Project Address & Site Specific Location	Coordinates (Lat,Lon WGS84)	Exploration Number
I-5 Interchange at Friday Creek, See Figure 2.	48.6238, -122.3556 (est)	**AB-02**

Contractor	Equipment	Sampling Method	Ground Surface Elev. (NAVD88)	
Western States Soil Conservation	Diedrich D50 Track Rig	Autohammer; 140 lb hammer; 30" drop	264' (est)	
Operator	**Exploration Method(s)**	**Work Start/Completion Dates**	**Top of Casing Elev. (NAVD88)**	**Depth to Water (Below GS)**
Damon	Mud rotary	12/6/2023	NA	25' (ATD)

Depth (feet)	Elev. (feet)	Exploration Notes and Completion Details	Sample Type/ID	Blows/foot ▲ Water Content (%)● 0 10 20 30 40 50	Blows/6"	Tests	Material Type	Description	Depth (ft)
26	238	level inferred from soil moisture	S7	▲	0 0 1			CLAY (CH); very soft, very moist, gray; high plasticity.	26
27	237								27
28	236								28
29	235								29
30	234					SE, UU, AL, MC LL=25% PL=19%		**GLACIOMARINE DRIFT - Silt, Sand, and Gravel**	30
31	233		ST2	24.7 ●				SILT (ML); medium stiff, very moist, gray; low plasticity; fine sand; few coarse, subangular gravel.	31
32	232								32
33	231	Gravel obstruction in shoe. Blowcounts potentially overstated.	S8		2 3 4				33
34	230			▲					34
35	229		S9		0 1 2			Becomes soft; few fine sand.	35
36	228			▲					36
37	227								37
38	226								38
39	225								39
40	224		S10		6 12 16				40
41	223			▲				SILTY SAND (SM); medium dense, very moist, gray; fine to medium sand; few fine, subangular gravel.	41
42	222							Bottom of exploration at 41.5 ft. bgs.	42
43	221								43
44	220								44
45	219								45
46	218								46
47	217								47
48	216								48
49	215								49

Legend

Sample Type
- ◯ No Soil Sample Recovery
- ◪ Split Barrel 2" X 1.375" (SPT)
- ▣ Thin wall 2" (Shelby)

Plastic Limit ⊢——⊣ Liquid Limit

Water Level
- ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: JG
Approved by: JG

Exploration Log AB-02
Sheet 2 of 2

NEW STANDARD EXPLORATION LOG TEMPLATE P:\GINTW\PROJECTS\230535 - PIPELINE RELOCATION NEAR ALGER I-5 INTERCHANGE AT FRIDAY CREEK.GPJ June 21, 2024

Alger Pipeline Relocation at I-5 - 230535

Geotechnical Exploration Log

Aspect Consulting	Project Address & Site Specific Location	Coordinates (Lat,Lon WGS84)	Exploration Number
	I-5 Interchange at Friday Creek, See Figure 2.	48.6211, -122.3544 (est)	**AB-03**

Contractor	Equipment	Sampling Method	Ground Surface Elev. (NAVD88)	
Western States Soil Conservation	Diedrich D50 Track Rig	Autohammer; 140 lb hammer; 30" drop	264' (est)	
Operator	**Exploration Method(s)**	**Work Start/Completion Dates**	**Top of Casing Elev. (NAVD88)**	**Depth to Water (Below GS)**
Damon	Mud rotary	12/4/2023	NA	12.5' (ATD)

Depth (feet)	Elev. (feet)	Exploration Notes and Completion Details	Sample Type/ID	Blows/foot ▲ Water Content (%) ● 0 10 20 30 40 50	Blows/6"	Tests	Material Type	Description	Depth (ft)
1	263	Boring backfilled with bentonite grout.						**FILL** GRAVEL WITH SILT (GP-GM); very loose, moist, gray; fine to coarse, subangular to rounded gravel; few fine to coarse sand; subtrace organics (roots).	1
2	262								2
3	261		S1	58.9	2 2 2	PS, MC FC=8.1%			3
4	260								4
5	259				1	MC, AL		**GLACIOMARINE DRIFT - Clay**	5
6	258		S2	34.9	3 4	LL=49% PL=28%		CLAY (CL); medium stiff, moist, gray brown; low plasticity; trace fine to coarse sand; trace fine, subangular to rounded gravel; subtrace organics (roots).	6
7	257								7
8	256		S3	47.9 57	1 2 3	MC, AL LL=57% PL=29%		CLAY (CH); medium stiff, moist, gray brown; high plasticity; trace fine to coarse sand; trace fine, subangular to rounded gravel; subtrace organics (roots).	8
9	255								9
10	254				0	MC		Becomes very soft.	10
11	253		S4	61.3	0 1				11
12	252								12
13	251	▽ 12/4/2023 Water level inferred from soil moisture	S5		0 0 1			Becomes wet.	13
14	250								14
15	249				0			Becomes with subtrace coarse, subangular gravel.	15
16	248		S6		0 0				16
17	247								17
18	246								18
19	245								19
20	244				0	AL, MC		CLAY (CL); very soft, wet, gray brown; low plasticity; trace fine to coarse sand; subtrace coarse, subangular gravel; subtrace organics (roots).	20
21	243		S7	40.1	0 1	LL=34% PL=22%			21
22	242								22
23	241								23
24	240								24

Legend

Sample Type
- ◯ No Soil Sample Recovery
- ◪ Split Barrel 2" X 1.375" (SPT)

Plastic Limit ⊢ Liquid Limit

Water Level
- ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: BW
Approved by: JG

Exploration Log AB-03
Sheet 1 of 2

NEW STANDARD EXPLORATION LOG TEMPLATE P:\GINTW\PROJECTS\230535 - PIPELINE RELOCATION NEAR ALGER I-5 INTERCHANGE AT FRIDAY CREEK.GPJ June 21, 2024

Aspect CONSULTING	Alger Pipeline Relocation at I-5 - 230535		Geotechnical Exploration Log	
	Project Address & Site Specific Location I-5 Interchange at Friday Creek, See Figure 2.		*Coordinates (Lat,Lon WGS84)* 48.6211, -122.3544 (est)	*Exploration Number* **AB-03**
Contractor Western States Soil Conservation	*Equipment* Diedrich D50 Track Rig	*Sampling Method* Autohammer; 140 lb hammer; 30" drop	*Ground Surface Elev. (NAVD88)* 264' (est)	
Operator Damon	*Exploration Method(s)* Mud rotary	*Work Start/Completion Dates* 12/4/2023	*Top of Casing Elev. (NAVD88)* NA	*Depth to Water (Below GS)* 12.5' (ATD)

Depth (feet)	Elev. (feet)	Exploration Notes and Completion Details	Sample Type/ID	Blows/foot ▲ Water Content (%)● 0 10 20 30 40 50	Blows/6"	Tests	Material Type	Description	Depth (ft)
26	238		S8		0 0 1			CLAY (CL); very soft, wet, gray brown; low plasticity; trace fine to coarse sand; subtrace coarse, subangular gravel; subtrace organics (roots). (continued) Becomes without organics.	26
27	237								27
28	236								28
29	235								29
30	234		S9		0 0				30
31	233				1				31
32	232								32
33	231								33
34	230								34
35	229		S10A, S10B		2			**GLACIOMARINE DRIFT - Silt, Sand, and Gravel** SILTY SAND WITH GRAVEL (SM); medium dense, wet, gray; fine to coarse sand; fine to coarse, subangular to subrounded gravel.	35
36	228				10 13				36
37	227								37
38	226								38
39	225								39
40	224		S11	11.4	9	PS, MC FC=39.5%		Becomes dense.	40
41	223				20 19				41
42	222							Bottom of exploration at 41.5 ft. bgs.	42
43	221								43
44	220								44
45	219								45
46	218								46
47	217								47
48	216								48
49	215								49

Legend

Sample Type
- ◯ No Soil Sample Recovery
- ◪ Split Barrel 2" X 1.375" (SPT)

Plastic Limit ⊢⊣ Liquid Limit

Water Level
- ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: BW
Approved by: JG

Exploration Log AB-03
Sheet 2 of 2

NEW STANDARD EXPLORATION LOG TEMPLATE P:\GINTW\PROJECTS\230535 - PIPELINE RELOCATION NEAR ALGER I-5 INTERCHANGE AT FRIDAY CREEK.GPJ June 21, 2024

Alger Pipeline Relocation at I-5 - 230535

Geotechnical Exploration Log

Aspect CONSULTING

Project Address & Site Specific Location	Coordinates (Lat,Lon WGS84)	Exploration Number
I-5 Interchange at Friday Creek, See Figure 2.	48.6227, -122.3587 (est)	**AB-04**

Contractor	Equipment	Sampling Method	Ground Surface Elev. (NAVD88)	
Holt Services Inc.	CME 85 Truck Rig #7	Autohammer; 140 lb hammer; 30" drop	315' (est)	
Operator	**Exploration Method(s)**	**Work Start/Completion Dates**	**Top of Casing Elev. (NAVD88)**	**Depth to Water (Below GS)**
John Bennet	Mud rotary, Rock Core	3/13/2024	NA	5' (ATD)

Depth (feet)	Elev. (feet)	Exploration Notes and Completion Details	Sample Type/ID	Blows/foot ▲ Water Content (%) ● 0 10 20 30 40 50	Blows/6"	Tests	Material Type	Description	Depth (ft)
0	315	Boring capped with black dyed concrete.						ASPHALT; Pavement section, 10-inches-thick.	0
								FILL SANDY SILT WITH GRAVEL (ML); very stiff, very moist, brown, low plasticity; fine, subangular gravel.	
1	314								1
2	313	Boring backfilled with bentonite chips.						Sample not representative of subgrade material at 2.5 feet due to presence of partially hydrated bentonite chips from mud rotary drilling seal.	2
3	312		S1		5 10 11				3
4	311							**GLACIOMARINE DRIFT - Silt, Sand, and Gravel** SILTY SAND WITH GRAVEL (SM); medium dense, wet, gray and brown; fine to coarse sand; fine, subangular to subrounded gravel.	4
5	310	▽ 3/13/2024 from soil moisture			10				5
6	309		S2		10 10				6
7	308								7
8	307		S3		5 5 6	PS FC=46.6%			8
9	306								9
10	305				13	PS		SILTY GRAVEL WITH SAND (GM); dense, wet, dark gray; fine to coarse sand; fine, subangular to subrounded gravel.	10
11	304		S4		17 24	FC=19.5%			11
12	303								12
13	302		S5		21 23 16			**DARRINGTON PHYLLITE** BANDED METAMORPHIC ROCK; Very Weak Rock (R1); Joints (12.5 to 14 feet bgs) indistinguishable; black marbled with white; fine grained; highly weathered rock (Grade IV); thinly foliated; discontinuities very poor condition.	13
14	301								14
15	300				21	PS		Moderately Weak Rock (R1); Joints (15 to 16.5 feet bgs) indistinguishable; black marbled with white; fine grained; highly weathered rock (Grade IV); thinly foliated; discontinuities very poor condition.	15
16	299		S6		35 44	FC=21.4%		SILTY SAND WITH GRAVEL (SM); laboratory testing of a highly weathered rock sample: very dense, wet, black marbled with white; non-plastic; fine to coarse sand; fine to coarse, subangular gravel.	16
17	298								17
18	297								18
19	296								19
20	295		S7		50/5"			Moderately Strong Rock (R3); Joints (20 to 20.4 feet bgs) indistinguishable; black marbled with white; fine grained; moderately weathered rock (Grade IV); thinly foliated; discontinuities poor condition.	20
21	294								21
22	293								22
23	292								23
24	291								24

Legend

Sample Type
- ◯ No Soil Sample Recovery
- ◪ Split Barrel 2" X 1.375" (SPT)
- ◧ Rock Core

Plastic Limit ⊢——⊣ Liquid Limit

Water Level
- ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: KR
Approved by: JG

Exploration Log AB-04
Sheet 1 of 2

NEW STANDARD EXPLORATION LOG TEMPLATE P:\GINTW\PROJECTS\230535 - PIPELINE RELOCATION NEAR ALGER I-5 INTERCHANGE AT FRIDAY CREEK.GPJ June 21, 2024

Aspect CONSULTING	Alger Pipeline Relocation at I-5 - 230535		Geotechnical Exploration Log	
	Project Address & Site Specific Location I-5 Interchange at Friday Creek, See Figure 2.		*Coordinates (Lat,Lon WGS84)* 48.6227, -122.3587 (est)	*Exploration Number* **AB-04**
Contractor Holt Services Inc.	*Equipment* CME 85 Truck Rig #7	*Sampling Method* Autohammer; 140 lb hammer; 30" drop	*Ground Surface Elev. (NAVD88)* 315' (est)	
Operator John Bennet	*Exploration Method(s)* Mud rotary, Rock Core	*Work Start/Completion Dates* 3/13/2024	*Top of Casing Elev. (NAVD88)* NA	*Depth to Water (Below GS)* 5' (ATD)

Depth (feet)	Elev. (feet)	Exploration Notes and Completion Details	Sample Type/ID	Blows/foot ▲ Water Content (%)● 0 10 20 30 40 50	Blows/6"	Tests	Material Type	Description	Depth (ft)
26	289					RQD =0		**DARRINGTON PHYLLITE** BANDED METAMORPHIC ROCK; Very Weak Rock (R1); Joints (12.5 to 14 feet bgs) indistinguishable; black marbled with white; fine grained; highly weathered rock (Grade IV); thinly foliated; discontinuities very poor condition. (continued) Moderately Strong Rock (R3); Joints (25 to 30 feet bgs) poor condition; tightly spaced; inclined approximately 25 degrees; highly fragmented.; black marbled with white, quartz and mica minerals visible; fine grained; moderately weathered (Grade III); thinly foliated; discontinuities closely spaced in fair condition.	26
27	288								27
28	287		C1						28
29	286								29
30	285							Bottom of exploration at 30 ft. bgs.	30
31	284								31
32	283								32
33	282								33
34	281								34
35	280								35
36	279								36
37	278								37
38	277								38
39	276								39
40	275								40
41	274								41
42	273								42
43	272								43
44	271								44
45	270								45
46	269								46
47	268								47
48	267								48
49	266								49

Legend

Sample Type
- No Soil Sample Recovery
- Split Barrel 2" X 1.375" (SPT)
- Rock Core

Plastic Limit ⊢⊣ Liquid Limit

Water Level
- Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: KR
Approved by: JG

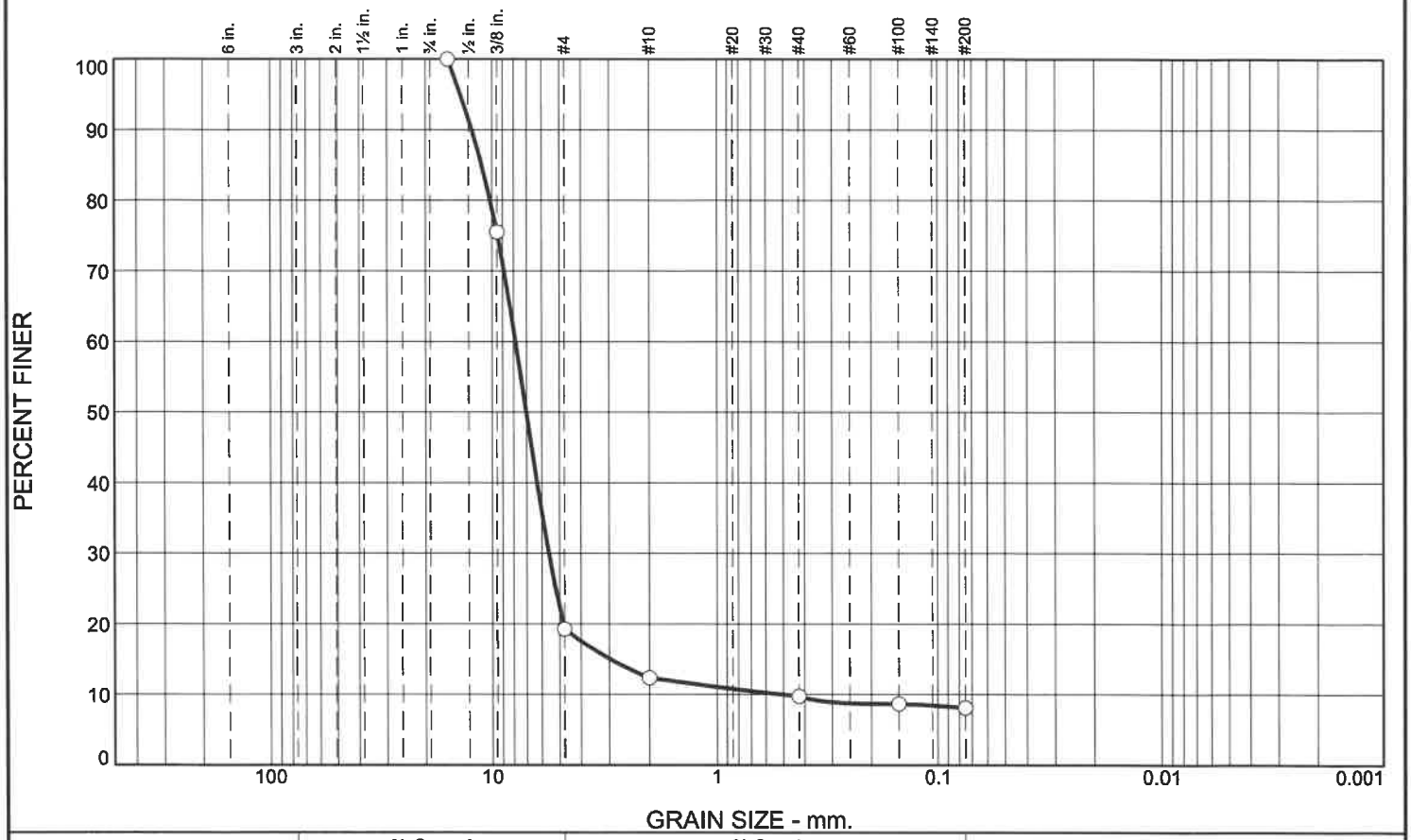
Exploration Log AB-04
Sheet 2 of 2

NEW STANDARD EXPLORATION LOG TEMPLATE P:\GINTW\PROJECTS\230535 - PIPELINE RELOCATION NEAR ALGER I-5 INTERCHANGE AT FRIDAY CREEK.GPJ June 21, 2024

APPENDIX B

Laboratory Testing Results

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	80.7	6.9	2.6	1.7	8.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
5/8"	100.0		
3/8"	75.5		
#4	19.3		
#10	12.4		
#40	9.8		
#100	8.7		
#200	8.1		

* (no specification provided)

Soil Description

Poorly greded GRAVEL with silt

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 12.3168 D_{85}= 11.1180 D_{60}= 7.8574
D_{50}= 7.0277 D_{30}= 5.5707 D_{15}= 2.9540
D_{10}= 0.5052 C_u= 15.55 C_c= 7.82

Classification

USCS= GP-GM AASHTO=

Remarks

Source of Sample: AB-03 / S-1 **Depth:** 2.5
Sample Number: 8750 **Date:** 2/1/24

Hayre McElroy & Associates, LLC

Redmond, WA

Client: Aspect Consulting
Project: Alger Watermain

Project No: 08-175 / 230535 **Figure**

Tested By: MH **Checked By:** JAM

GRAIN SIZE DISTRIBUTION TEST DATA

2/6/2024

Client: Aspect Consulting
Project: Alger Watermain
Project Number: 08-175 / 230535
Location: AB-03 / S-1
Depth: 2.5 **Sample Number:** 8750
Material Description: Poorly greded GRAVEL with silt
Date: 2/1/24
USCS Classification: GP-GM
Tested by: MH **Checked by:** JAM

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 261.60
Tare Wt. = 194.40
Minus #200 from wash = 7.6%

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
267.10	194.40	0.00	5/8"	0.00	100.0
			3/8"	17.80	75.5
			#4	58.70	19.3
			#10	63.70	12.4
			#40	65.60	9.8
			#100	66.40	8.7
			#200	66.80	8.1

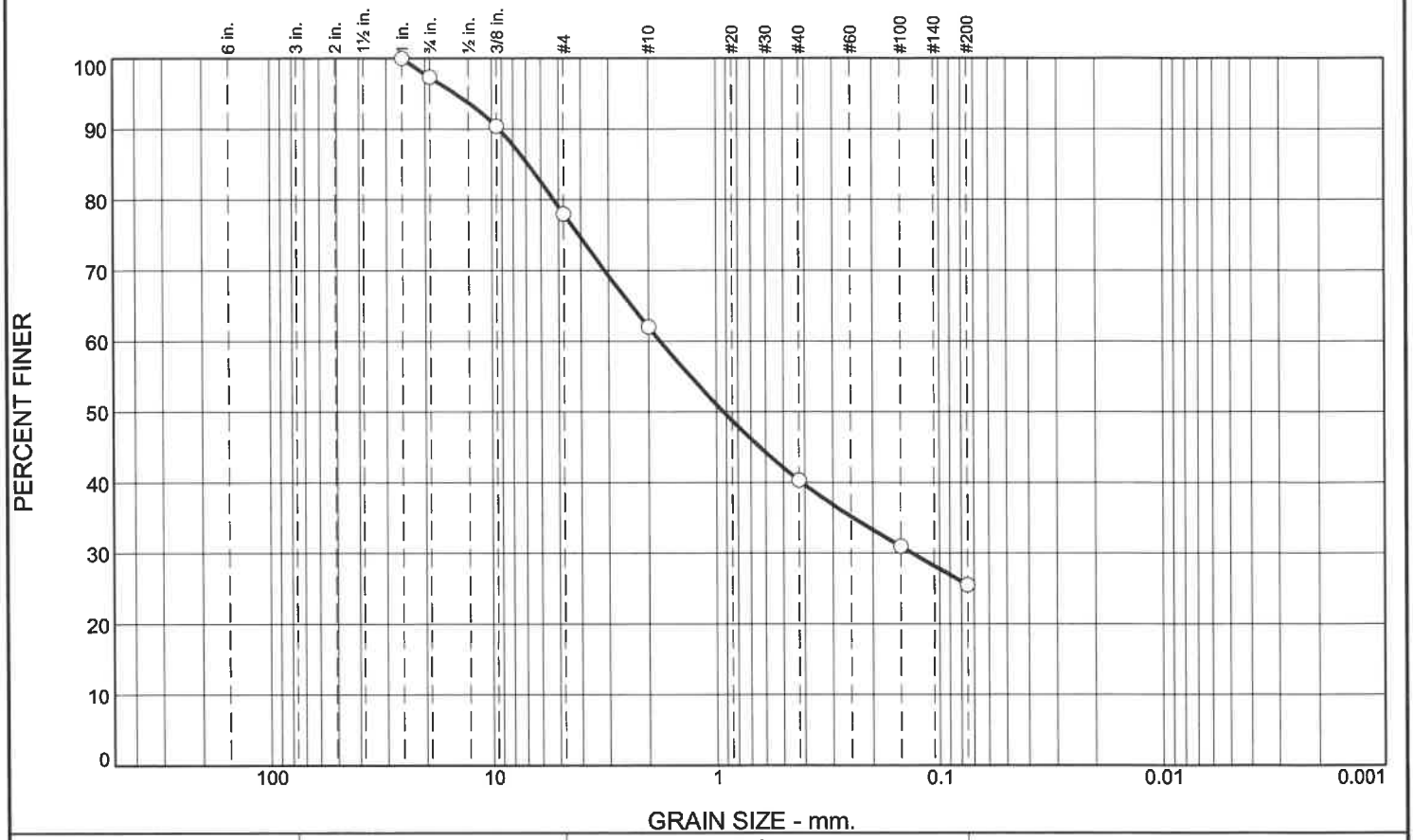
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	80.7	80.7	6.9	2.6	1.7	11.2			8.1

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.5052	2.9540	4.8131	5.5707	6.2833	7.0277	7.8574	10.1918	11.1180	12.3168	13.8877

Fineness Modulus	C_u	C_c
5.53	15.55	7.82

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	2.6	19.4	16.0	21.7	14.8	25.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1"	100.0		
3/4"	97.4		
3/8"	90.4		
#4	78.0		
#10	62.0		
#40	40.3		
#100	31.0		
#200	25.5		

* (no specification provided)

Soil Description

Silty SAND with gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 9.2479 D_{85}= 6.8329 D_{60}= 1.7737
D_{50}= 0.9276 D_{30}= 0.1324 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

Source of Sample: AB-01 / S-4 **Depth:** 10
Sample Number: 8750 **Date:** 2/1/24

Hayre McElroy & Associates, LLC

Redmond, WA

Client: Aspect Consulting
Project: Alger Watermain

Project No: 08-175 / 230535 **Figure**

Tested By: MH **Checked By:** JAM

GRAIN SIZE DISTRIBUTION TEST DATA

2/6/2024

Client: Aspect Consulting
Project: Alger Watermain
Project Number: 08-175 / 230535
Location: AB-01 / S-4
Depth: 10 **Sample Number:** 8750
Material Description: Silty SAND with gravel
Date: 2/1/24
USCS Classification: SM
Tested by: MH **Checked by:** JAM

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 566.80
Tare Wt. = 195.40
Minus #200 from wash = 23.6%

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
681.60	195.40	0.00	1"	0.00	100.0
			3/4"	12.80	97.4
			3/8"	46.60	90.4
			#4	106.90	78.0
			#10	184.60	62.0
			#40	290.20	40.3
			#100	335.50	31.0
			#200	362.10	25.5

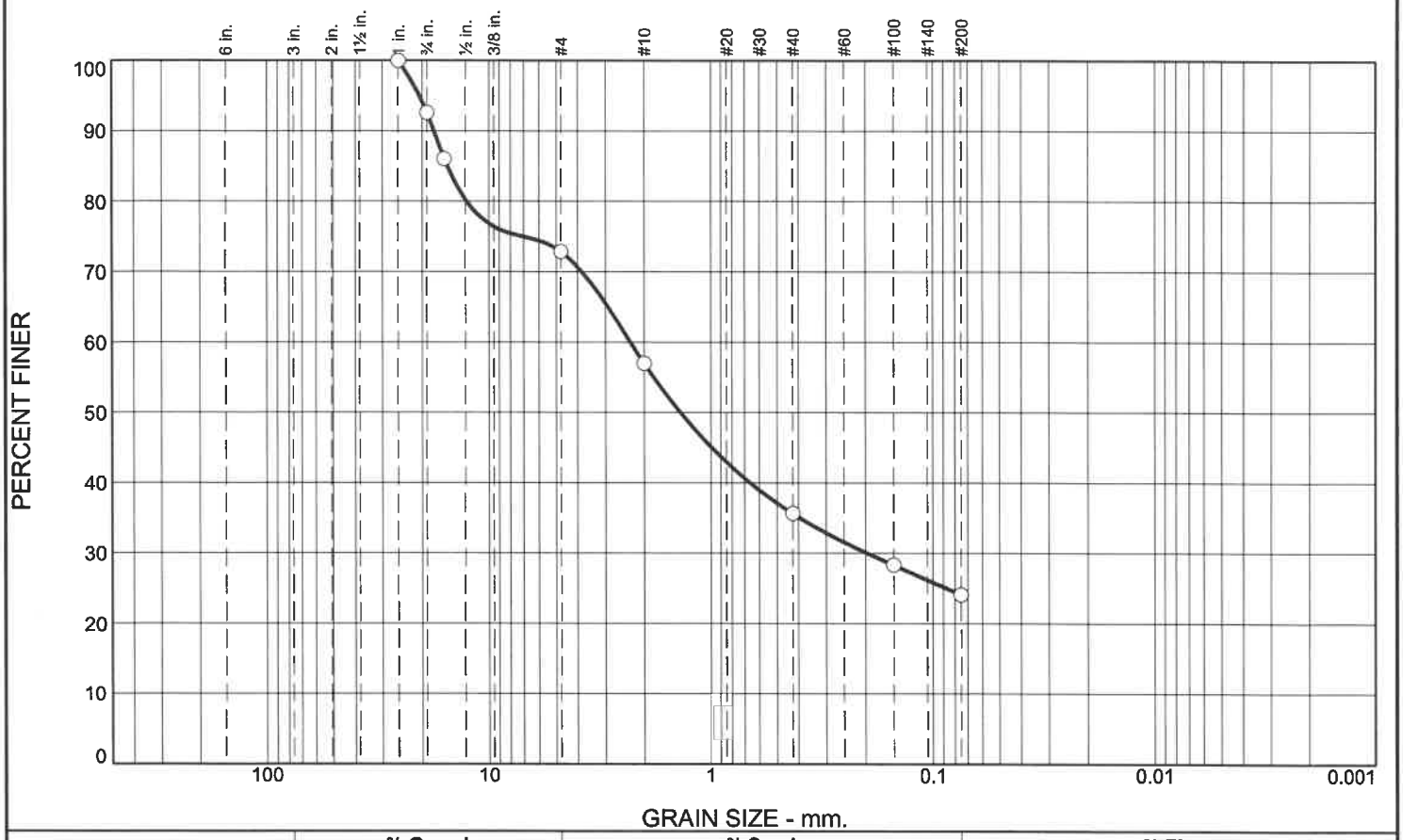
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	2.6	19.4	22.0	16.0	21.7	14.8	52.5			25.5

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.1324	0.4126	0.9276	1.7737	5.2577	6.8329	9.2479	14.4994

Fineness Modulus
3.04

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	7.4	19.7	15.9	21.3	11.6	24.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1"	100.0		
3/4"	92.6		
5/8"	86.1		
#4	72.9		
#10	57.0		
#40	35.7		
#100	28.3		
#200	24.1		

* (no specification provided)

Soil Description

Silty SAND with gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 17.6982 D_{85}= 15.3739 D_{60}= 2.3091
D_{50}= 1.3693 D_{30}= 0.1963 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

Source of Sample: AB-01 / S-7 **Depth:** 20
Sample Number: 8750

Date: 2/1/24

Hayre McElroy & Associates, LLC

Redmond, WA

Client: Aspect Consulting
Project: Alger Watermain

Project No: 08-175 / 230535 **Figure**

Tested By: MH **Checked By:** JAM

GRAIN SIZE DISTRIBUTION TEST DATA

2/6/2024

Client: Aspect Consulting
Project: Alger Watermain
Project Number: 08-175 / 230535
Location: AB-01 / S-7
Depth: 20 **Sample Number:** 8750
Material Description: Silty SAND with gravel
Date: 2/1/24
USCS Classification: SM
Tested by: MH **Checked by:** JAM

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 396.20
Tare Wt. = 197.40
Minus #200 from wash = 23.2%

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
456.20	197.40	0.00	1"	0.00	100.0
			3/4"	19.10	92.6
			5/8"	36.10	86.1
			#4	70.20	72.9
			#10	111.30	57.0
			#40	166.50	35.7
			#100	185.50	28.3
			#200	196.40	24.1

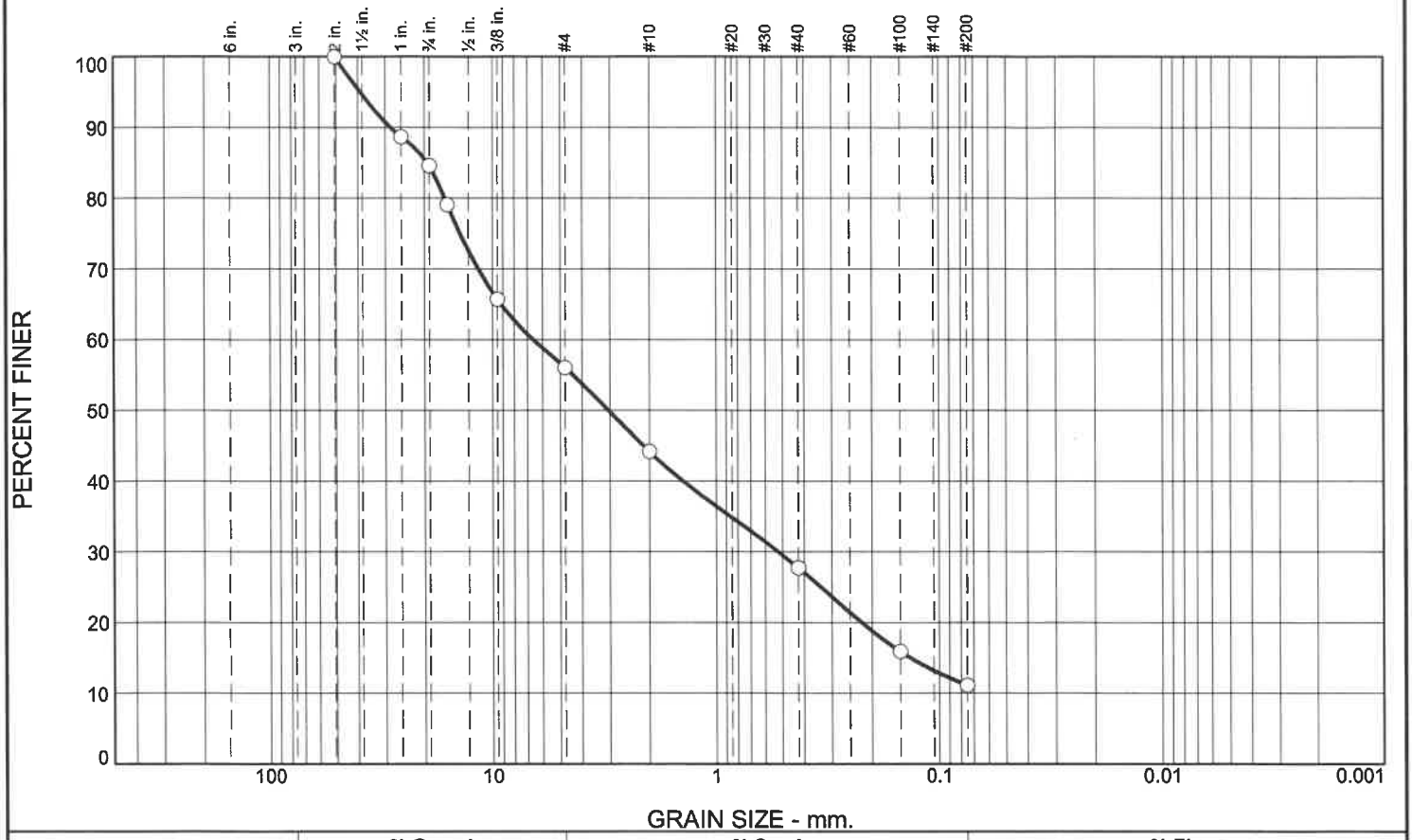
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	7.4	19.7	27.1	15.9	21.3	11.6	48.8			24.1

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.1963	0.6604	1.3693	2.3091	12.5919	15.3739	17.6982	20.5946

Fineness Modulus
3.50

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	15.4	28.5	11.9	16.5	16.6	11.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1"	88.7		
3/4"	84.6		
5/8"	79.1		
3/8"	65.7		
#4	56.1		
#10	44.2		
#40	27.7		
#100	15.9		
#200	11.1		

* (no specification provided)

Soil Description

Poorly graded SAND with silt and gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 28.3599 D_{85}= 19.3935 D_{60}= 6.5838
D_{50}= 3.0475 D_{30}= 0.5233 D_{15}= 0.1349
D_{10}= C_u= C_c=

Classification

USCS= SP-SM AASHTO=

Remarks

Source of Sample: AB-02 / S-1 **Depth:** 2.5
Sample Number: 8750 **Date:** 2/1/24

Hayre McElroy & Associates, LLC

Redmond, WA

Client: Aspect Consulting
Project: Alger Watermain

Project No: 08-175 / 230535 **Figure**

Tested By: MH **Checked By:** JAM

GRAIN SIZE DISTRIBUTION TEST DATA

2/6/2024

Client: Aspect Consulting
Project: Alger Watermain
Project Number: 08-175 / 230535
Location: AB-02 / S-1
Depth: 2.5 **Sample Number:** 8750
Material Description: Poorly graded SAND with silt and gravel
Date: 2/1/24
USCS Classification: SP-SM
Tested by: MH **Checked by:** JAM

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 428.50
Tare Wt. = 192.90
Minus #200 from wash = 10.4%

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
455.70	192.90	0.00	2"	0.00	100.0
			1"	29.80	88.7
			3/4"	40.50	84.6
			5/8"	55.00	79.1
			3/8"	90.10	65.7
			#4	115.50	56.1
			#10	146.70	44.2
			#40	189.90	27.7
			#100	221.00	15.9
			#200	233.60	11.1

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	15.4	28.5	43.9	11.9	16.5	16.6	45.0			11.1

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.1349	0.2218	0.5233	1.4058	3.0475	6.5838	16.3338	19.3935	28.3599	38.8656

Fineness Modulus
4.44

GRAIN SIZE DISTRIBUTION TEST DATA

2/6/2024

Client: Aspect Consulting
Project: Alger Watermain
Project Number: 08-175 / 230535
Location: AB-02 / S-1
Depth: 2.5 **Sample Number:** 8750
Material Description: Poorly graded SAND with silt and gravel
Date: 2/1/24
USCS Classification: SP-SM
Tested by: MH **Checked by:** JAM
Material specification: AASHTO #3

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 428.50
Tare Wt. = 192.90
Minus #200 from wash = 10.4%

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer	Lower Spec. Limit, %	Upper Spec. Limit, %	Deviation From Spec., %
455.70	192.90	0.00	2"	0.00	100.0	90.0	100.0	
			1"	29.80	88.7	0.0	15.0	*+73.7*
			3/4"	40.50	84.6			
			5/8"	55.00	79.1			
			3/8"	90.10	65.7			
			#4	115.50	56.1			
			#10	146.70	44.2			
			#40	189.90	27.7			
			#100	221.00	15.9			
			#200	233.60	11.1			

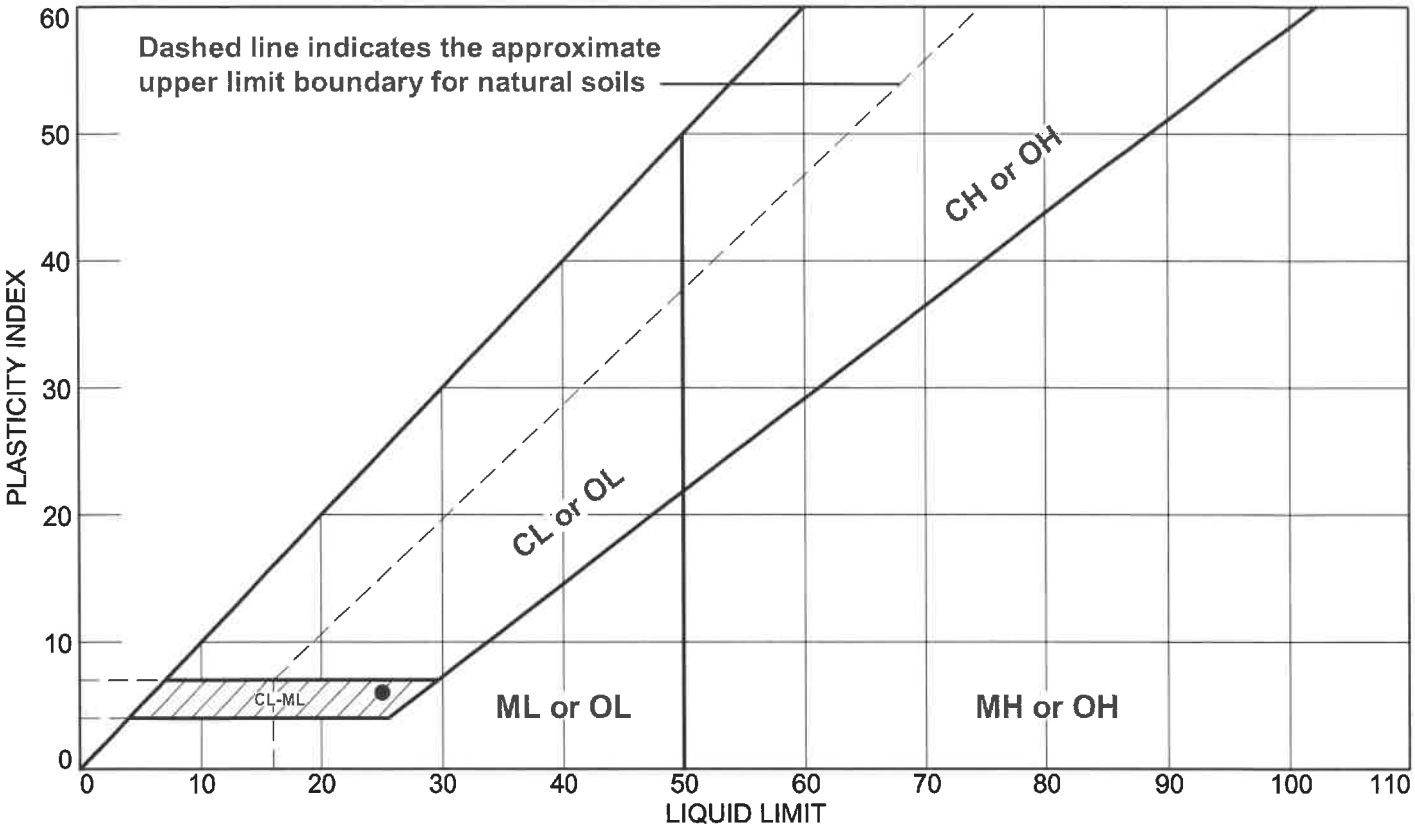
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	15.4	28.5	43.9	11.9	16.5	16.6	45.0			11.1

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.1349	0.2218	0.5233	1.4058	3.0475	6.5838	16.3338	19.3935	28.3599	38.8656

Fineness Modulus
4.44

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA

	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	LIQUIDITY INDEX	USCS
●	AB-02 / ST2	8750	30	24.7	19	25	6	0.9	ML

Hayre McElroy & Associates, LLC

Redmond, WA

Client: Aspect Consulting
Project: Alger Watermain

Project No.: 08-175 / 230535 **Figure**

Tested By: MH **Checked By:** JAM

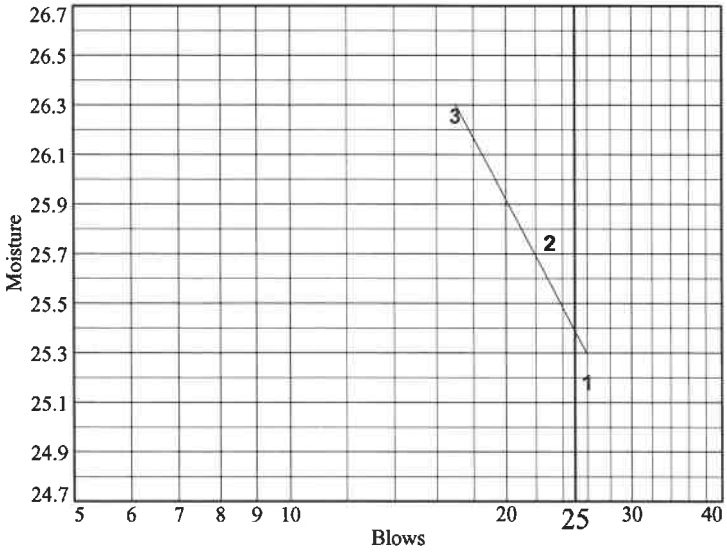
LIQUID AND PLASTIC LIMIT TEST DATA

2/6/2024

Client: Aspect Consulting
Project: Alger Watermain
Project Number: 08-175 / 230535
Location: AB-02 / ST2
Depth: 30 **Sample Number:** 8750
Material Description: SILT
USCS: ML
Tested by: MH **Checked by:** JAM

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	32.26	28.83	32.34			
Dry+Tare	28.48	25.72	28.48			
Tare	13.47	13.64	13.78			
# Blows	26	23	17			
Moisture	25.2	25.7	26.3			



Liquid Limit= 25
Plastic Limit= 19
Plasticity Index= 6
Natural Moisture= 24.7
Liquidity Index= 0.9

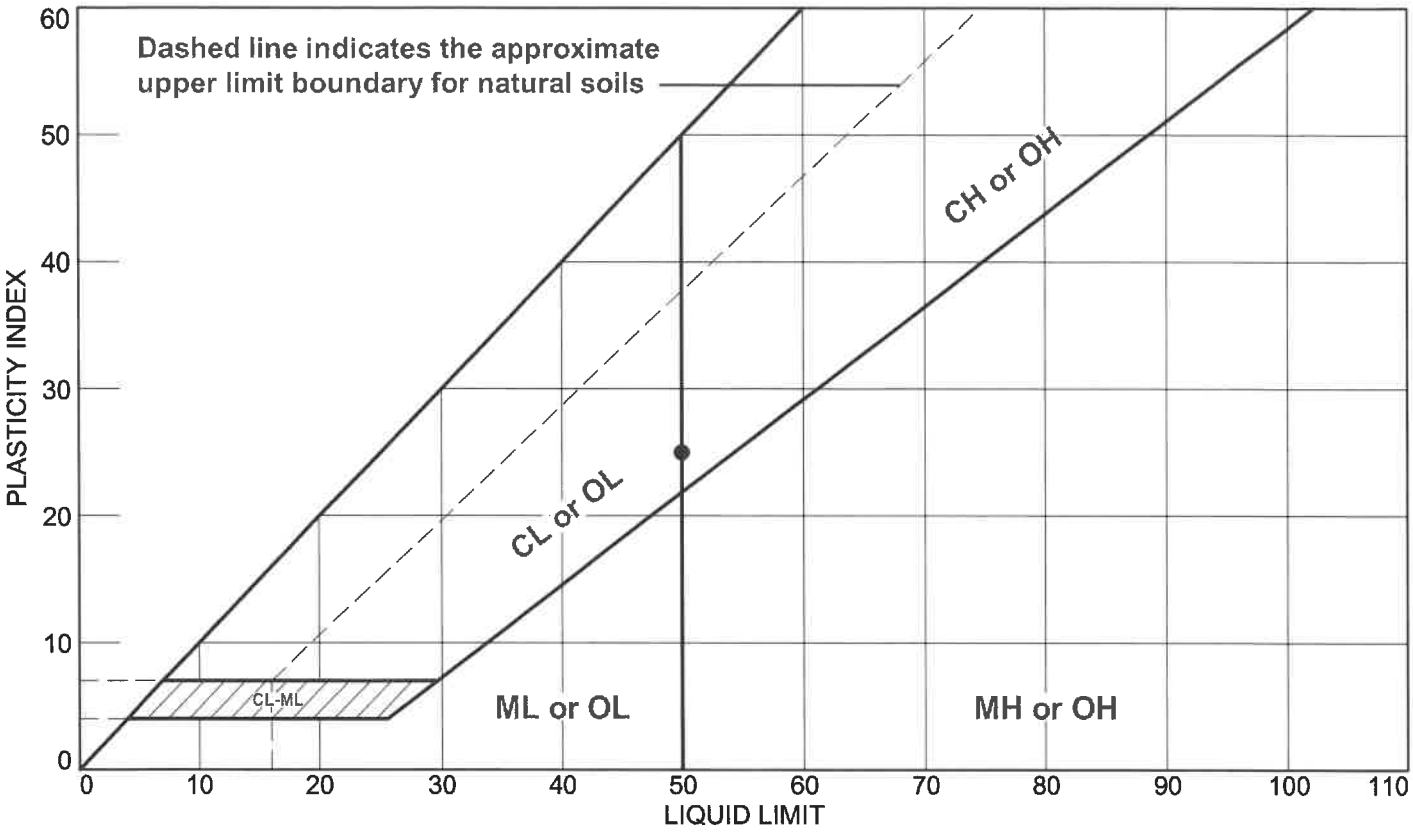
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	21.93				
Dry+Tare	20.65				
Tare	13.75				
Moisture	18.6				

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
189.5	155.9	20.0	24.7

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA

	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	LIQUIDITY INDEX	USCS
●	AB-02 / S-4	8750	13	43.0	25	50	25	0.7	CH

Hayre McElroy & Associates, LLC	**Client:** Aspect Consulting
	Project: Alger Watermain
Redmond, WA	**Project No.:** 08-175 / 230535 **Figure**

Tested By: MH **Checked By:** JAM

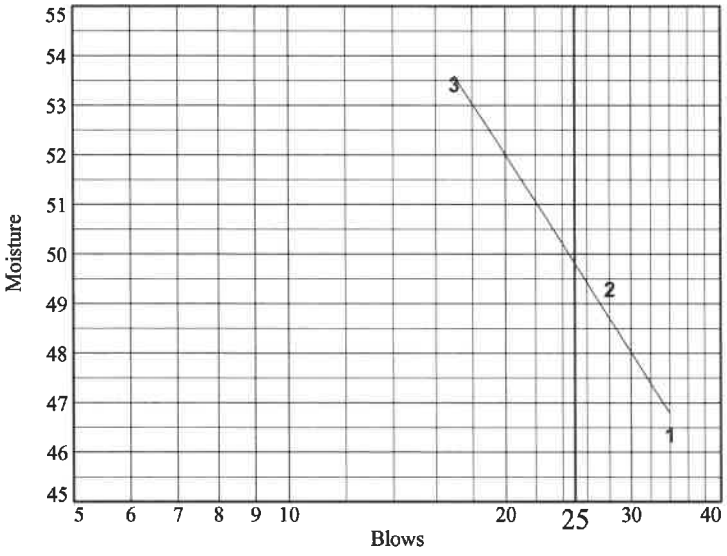
LIQUID AND PLASTIC LIMIT TEST DATA

2/6/2024

Client: Aspect Consulting
Project: Alger Watermain
Project Number: 08-175 / 230535
Location: AB-02 / S-4
Depth: 13 **Sample Number:** 8750
Material Description: Fat CLAY
USCS: CH
Tested by: MH **Checked by:** JAM

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	24.95	25.18	27.06			
Dry+Tare	21.38	21.31	22.39			
Tare	13.68	13.46	13.65			
# Blows	34	28	17			
Moisture	46.4	49.3	53.4			



Liquid Limit= 50
Plastic Limit= 25
Plasticity Index= 25
Natural Moisture= 43.0
Liquidity Index= 0.7

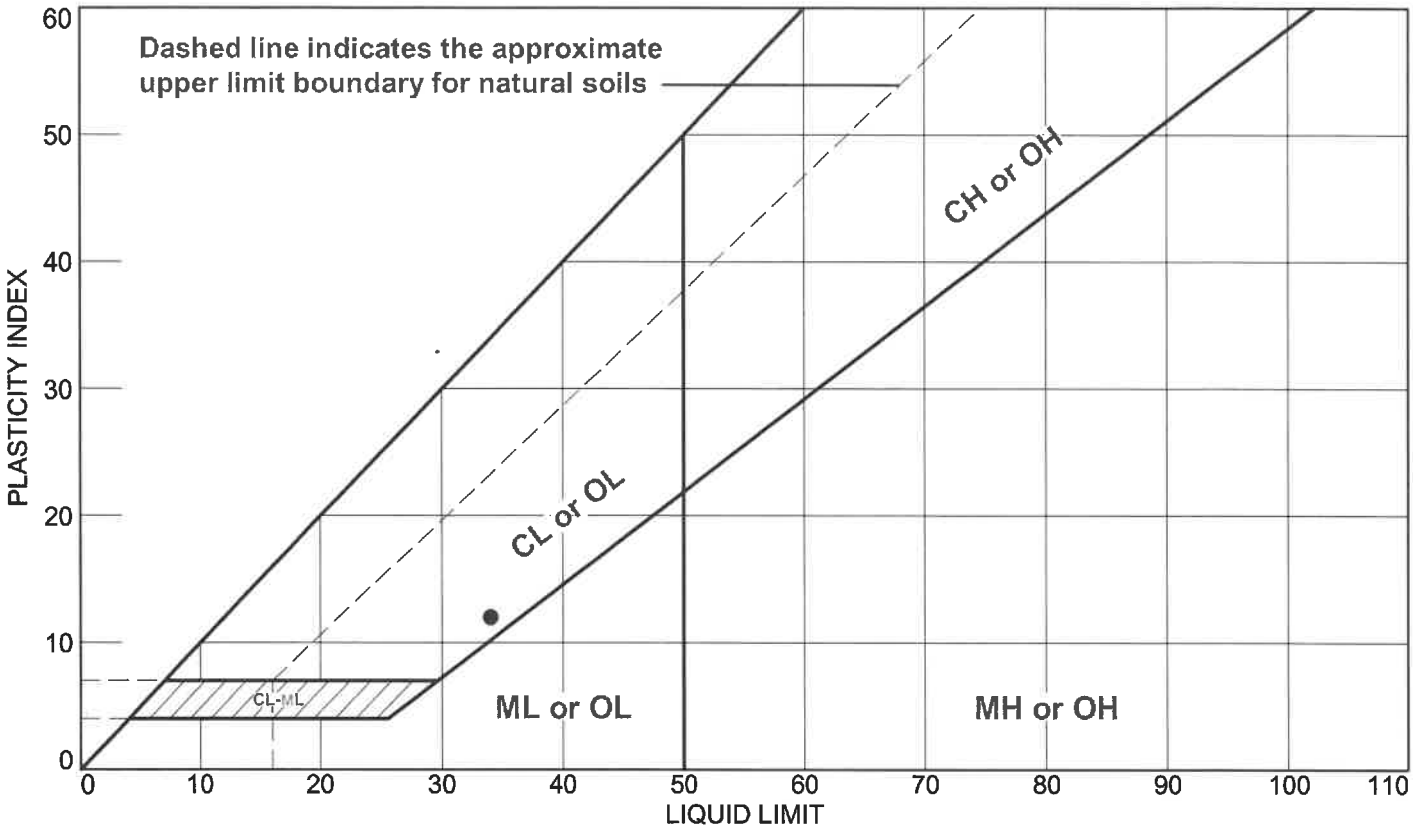
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	21.32				
Dry+Tare	19.77				
Tare	13.66				
Moisture	25.4				

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
35.9	28.5	11.3	43.0

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA

	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	LIQUIDITY INDEX	USCS
●	AB-03 / S-7	8750	20	40.1	22	34	12	1.5	CL

Hayre McElroy & Associates, LLC	**Client:** Aspect Consulting
	Project: Alger Watermain
Redmond, WA	**Project No.:** 08-175 / 230535 **Figure**

Tested By: MH **Checked By:** JAM

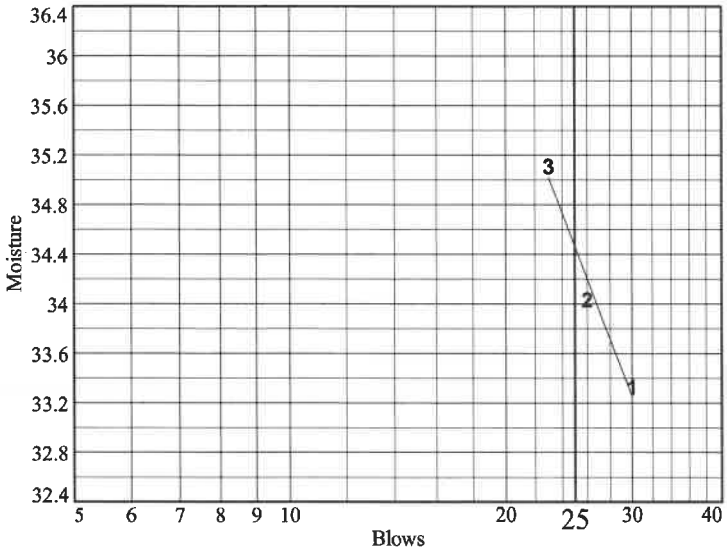
LIQUID AND PLASTIC LIMIT TEST DATA

2/6/2024

Client: Aspect Consulting
Project: Alger Watermain
Project Number: 08-175 / 230535
Location: AB-03 / S-7
Depth: 20 **Sample Number:** 8750
Material Description: Lean CLAY
USCS: CL
Tested by: MH **Checked by:** JAM

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	33.11	34.77	27.91			
Dry+Tare	29.87	30.90	24.42			
Tare	20.15	19.53	14.48			
# Blows	30	26	23			
Moisture	33.3	34.0	35.1			



Liquid Limit= 34
Plastic Limit= 22
Plasticity Index= 12
Natural Moisture= 40.1
Liquidity Index= 1.5

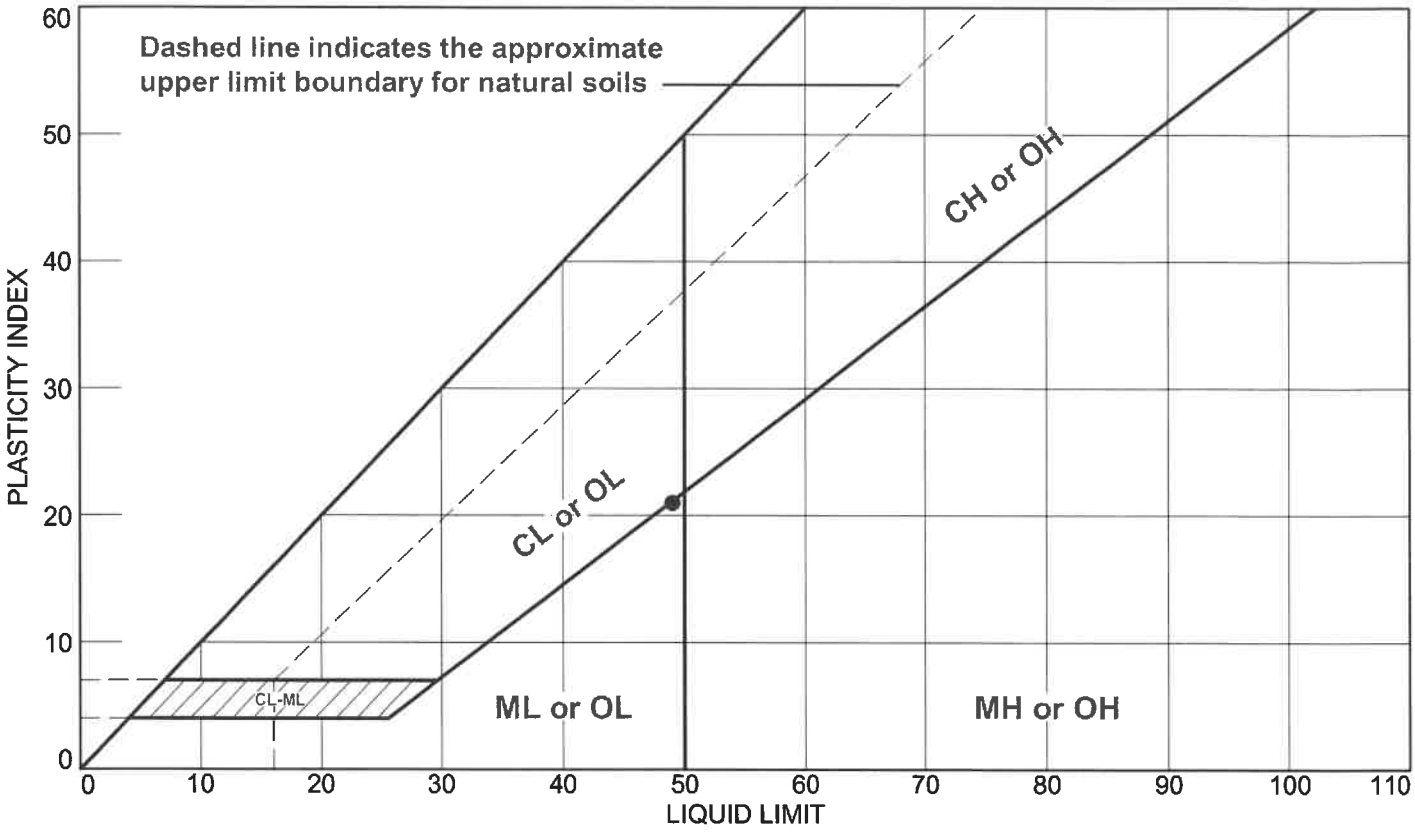
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	30.82				
Dry+Tare	27.72				
Tare	13.67				
Moisture	22.1				

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
51	39.6	11.2	40.1

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA

	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	LIQUIDITY INDEX	USCS
●	AB-03 / S-2	8750	5	34.9	28	49	21	0.3	CL

Hayre McElroy & Associates, LLC **Redmond, WA**	**Client:** Aspect Consulting **Project:** Alger Watermain **Project No.:** 08-175 / 230535 **Figure**

Tested By: MH **Checked By:** JAM

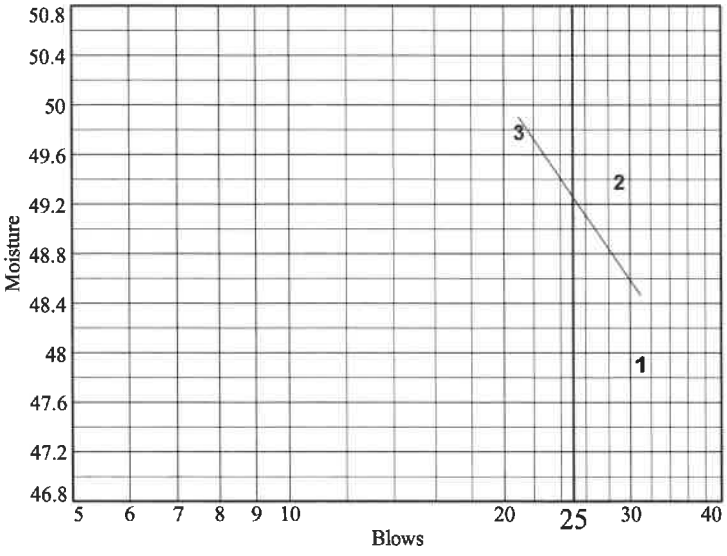
LIQUID AND PLASTIC LIMIT TEST DATA

2/6/2024

Client: Aspect Consulting
Project: Alger Watermain
Project Number: 08-175 / 230535
Location: AB-03 / S-2
Depth: 5 **Sample Number:** 8750
Material Description: Lean CLAY
USCS: CL
Tested by: MH **Checked by:** JAM

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	28.22	26.76	27.63			
Dry+Tare	23.52	22.37	22.98			
Tare	13.71	13.48	13.64			
# Blows	31	29	21			
Moisture	47.9	49.4	49.8			



Liquid Limit= 49
Plastic Limit= 28
Plasticity Index= 21
Natural Moisture= 34.9
Liquidity Index= 0.3

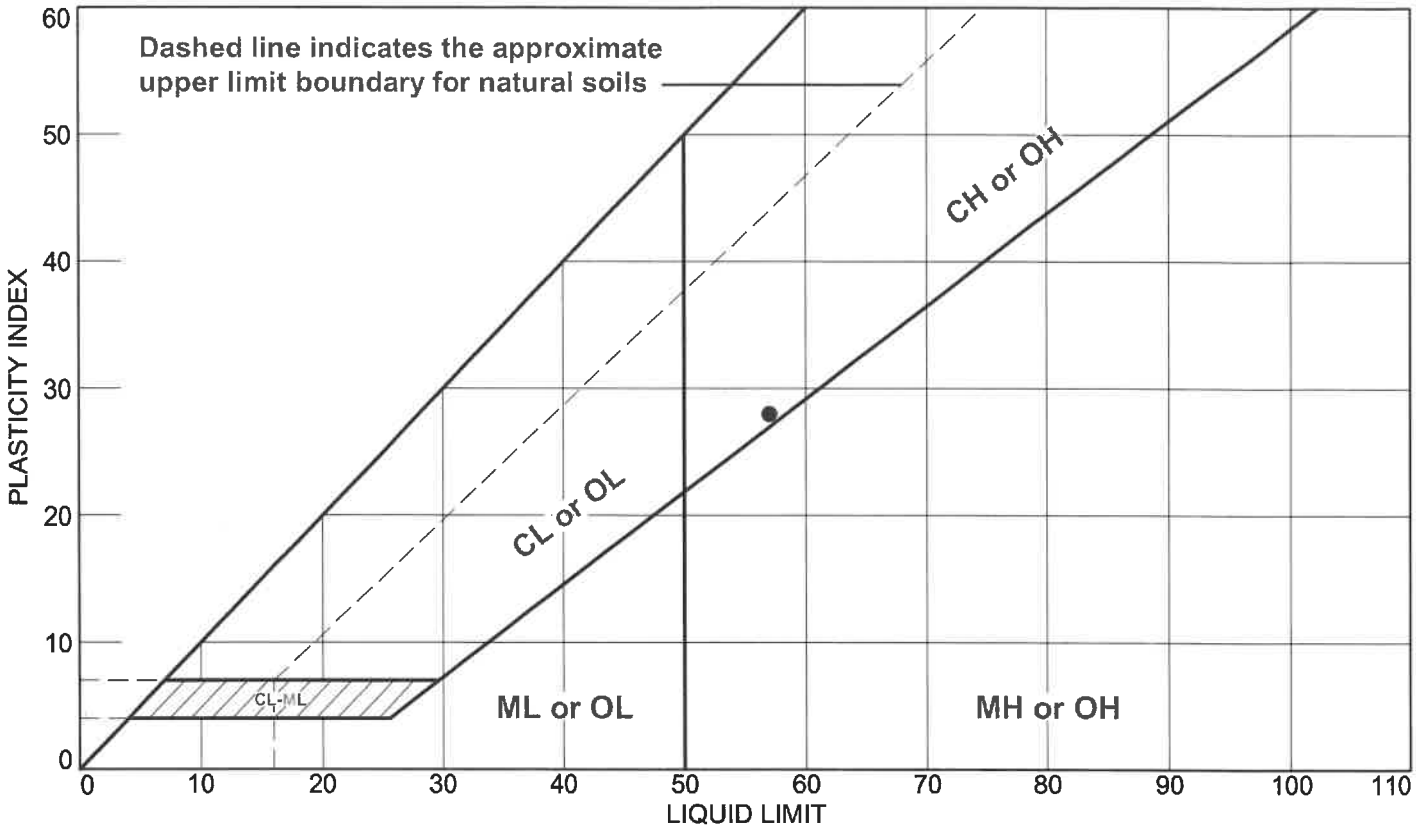
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	26.33				
Dry+Tare	23.53				
Tare	13.68				
Moisture	28.4				

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
39.3	32.0	11.1	34.9

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA

	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	LIQUIDITY INDEX	USCS
●	AB-03 / S-3	8750	7.5	47.9	29	57	28	0.7	CH

Hayre McElroy & Associates, LLC

Redmond, WA

Client: Aspect Consulting
Project: Alger Watermain
Project No.: 08-175 / 230535 **Figure**

Tested By: MH **Checked By:** JAM

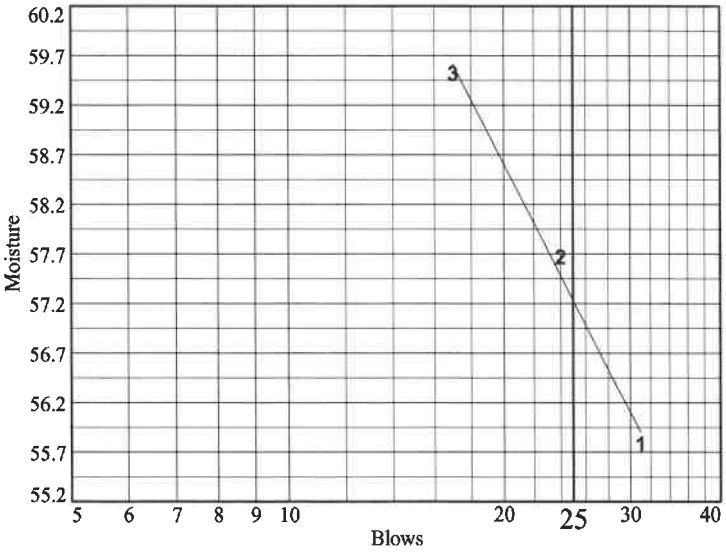
LIQUID AND PLASTIC LIMIT TEST DATA

2/6/2024

Client: Aspect Consulting
Project: Alger Watermain
Project Number: 08-175 / 230535
Location: AB-03 / S-3
Depth: 7.5 **Sample Number:** 8750
Material Description: Fat CLAY
USCS: CH
Tested by: MH **Checked by:** JAM

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	27.77	24.28	27.90			
Dry+Tare	22.76	20.41	22.59			
Tare	13.78	13.70	13.67			
# Blows	31	24	17			
Moisture	55.8	57.7	59.5			



Liquid Limit= 57
Plastic Limit= 29
Plasticity Index= 28
Natural Moisture= 47.9
Liquidity Index= 0.7

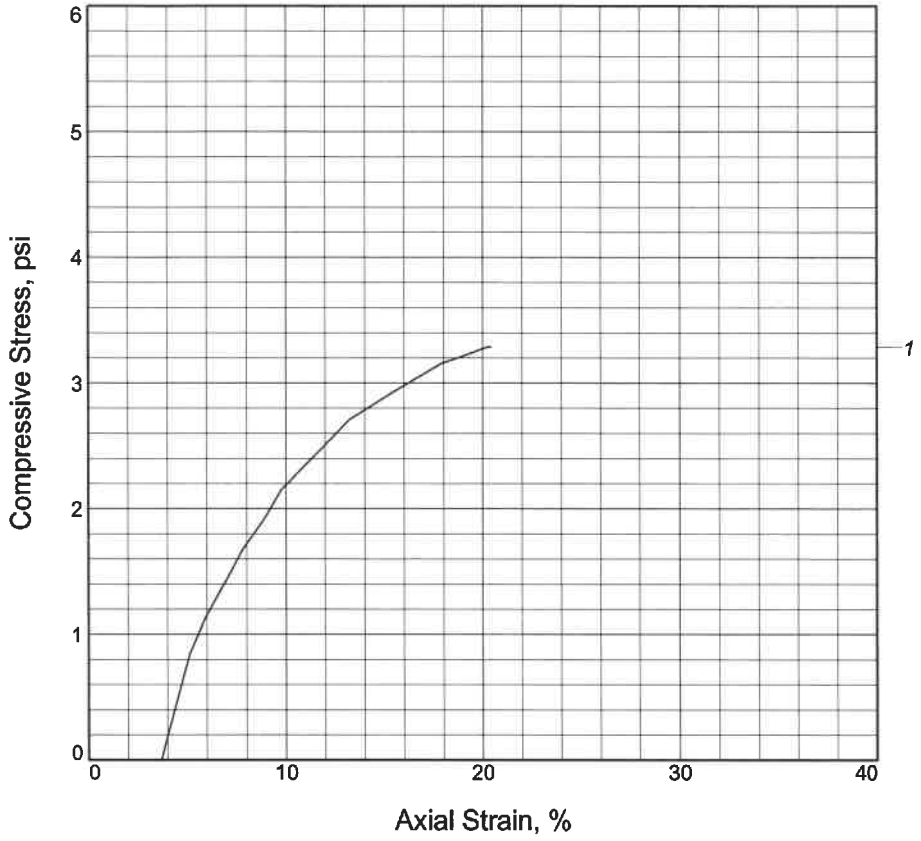
Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	23.87				
Dry+Tare	21.58				
Tare	13.76				
Moisture	29.3				

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
43.4	33.0	11.3	47.9

UNCONSOLIDATED UNDRAINED TEST



Sample No.	1			
Fail. Stress, psi	3.29			
Ult. Stress, psi				
Cell pressure, psi	15.01			
Strain rate, %/min.	1.17			
Water content, %	24.7			
Wet density, pcf	133.8			
Dry density, pcf	107.3			
Saturation, %	99.4			
Void ratio	0.7461			
Specimen diameter, in.	2.85			
Specimen height, in.	5.75			
Height/diameter ratio	2.02			

Description: SILT

LL = 25	**PL =** 19	**PI =** 6	**Assumed GS=** 3.0	**Type:** Shelby Tube Extrude

Project No.: 08-175 / 230535

Date Sampled: 1/31/24

Remarks:

Figure _____

Client: Aspect Consulting

Project: Alger Watermain

Source of Sample: AB-02 / ST2 **Depth:** 30

Sample Number: 8750

UNCONSOLIDATED UNDRAINED TEST
Hayre McElroy & Associates, LLC
Redmond, WA

Tested By: AD **Checked By:** JAM

hayremcelroy & associates, llc

9644 153rd Ave NE
Redmond, WA 98052
425-869-6750

Minus No. 200 Wash

ASTM C117
Method: A

Project Number: 08-175 / 210349
Technician: MH

Project Name: Alger Watermain
Lab Number: 8750
Received: 1/25/2024
Start Date: 1/30/2024
Finish Date: 1/30/2024

HMA LAB NO	Boring No	Sample Number	Depth (ft)	Tare Weight (g)	Tare+Dry Weight Before Wash (g)	Tare+Dry Weight After Wash (g)	% Retained	% PASSING
8750	AB-03	S-11	40	12.8	213.1	134	60.5	**39.5**

hayremcelroy & associates, llc

9644 153rd Ave NE
Redmond, WA 98052
425.869.6750

Moisture Content

ASTM D-2216

Project Number: 08-175 / 210349 **Received Date:** 1/25/2024

Project Name: Alger Watermain **Start Date:** 1/30/2024
Lab Number: 8748 **Finish Date:** 1/30/2024
Technician: MH

HMA Lab #	Boring	Sample	Depth (ft)	Weight of Moist Soil + Tare (g)	Weight of Dry Soil + Tare (g)	Tare Weight (g)	**Moisture Content (%)**
8750	AB-01	S-4	10	735	681.6	195.4	**11.0**
8750	AB-02	S-1	2.5	491.2	455.7	192.9	**13.5**
8750	AB-03	S-1	2.5	309.9	267.1	194.4	**58.9**
8750	AB-03	S-4	10	115.5	76.5	12.9	**61.3**
8750	AB-03	S-7	20	133.8	101.2	12.7	**36.8**
8750	AB-03	S-11	40	236	213.1	12.8	**11.4**
8750	AB-02	ST-2	30	189.5	155.9	20	**24.7**
8750	AB-03	S-7	20	51	39.6	11.2	**40.1**
8750	AB-01	S-7	20	484.7	456.2	197.4	**11.0**
8750	AB-02	S-4	13	35.9	28.5	11.3	**43.0**
8750	AB-03	S2	5	39.3	32	11.1	**34.9**
8750	AB-03	S-3	7.5	43.4	33	11.3	**47.9**

Client:	Aspect Consulting, LLC.	**Date:**	April 3, 2024
Address:	701 2nd Avenue, Suite 550	**Project:**	Q.C. - Alger Watermain - AS230535
	Seattle, WA 98104	**Project #:**	24B007-03
Attn:	Kevin Ross	**Sample #:**	B24-0513, 0514, & 0515
Revised On:		**Date sampled:**	Not Reported
		Control No:	4032024

As requested and authorized by the Client, MTC has performed the following test(s) on the sample number referenced above. The testing was performed in accordance with current, applicable AASHTO, ASTM, and/or WSDOT standards, which are referenced on the correlating test report pages. The results obtained in our laboratory are as detailed below and/or on the following pages:

	Test(s) Performed:	Test Results		Test(s) Performed:	Test Results
X	Sieve Analysis	See Attached Reports		Sulfate Soundness	
	Proctor			Bulk Density & Voids	
	Sand Equivalent			WSDOT Degradation	
	Fracture Count			LA Abrasion	
	Moisture Content			Cation Exchange Capacity	
	Specific Gravity, Coarse			Organic Content	
	Specific Gravity, Fine				
	Hydrometer Analysis				
	Atterberg Limits				

If you have any questions concerning the test results, the procedures used, or if we can be of any further assistance please call the number below and ask to speak with your Project Manager or the Laboratory Manager.

Alex Eifrig

Respectfully Submitted,
Alex Eifrig
WABO Supervising Laboratory Technician

Sieve Report

Project:	Q.C. - Alger Watermain - AS230535	**Date Received:**	29-Mar-24
Project #:	24B007-03	**Sampled By:**	Client
Client:	Aspect Consulting, LLC.	**Date Tested:**	2-Apr-24
Source:	AB-04, S3 @ 7.5 ft	**Tested By:**	R. Bohler
Sample#:	B24-0513	**Control No.:**	4032024

Unified Soil Classification System, ASTM-2487
SM, Silty Sand with Gravel
Sample Color:
Brown

Method(s) ASTM D-2216, ASTM D-2419, ASTM D4318, ASTM D-5281

Specifications
No Specs

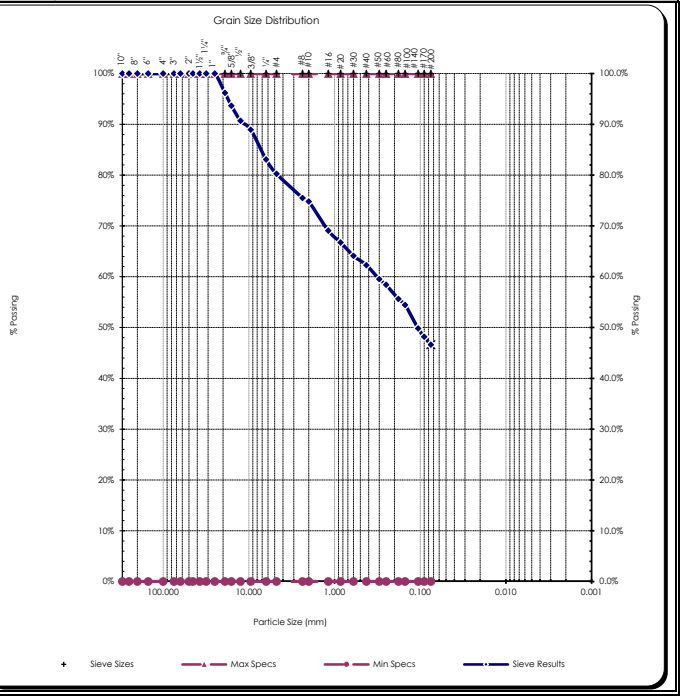
Sample Meets Specs ? N/A

$D_{(5)}$ =	0.008	mm	% Gravel =	19.7%	Coeff. of Curvature, C_C =	0.45
$D_{(10)}$ =	0.016	mm	% Sand =	33.7%	Coeff. of Uniformity, C_U =	20.03
$D_{(15)}$ =	0.024	mm	% Silt & Clay =	46.6%	Fineness Modulus =	2.12
$D_{(30)}$ =	0.048	mm	Liquid Limit =	n/a	Plastic Limit =	n/a
$D_{(50)}$ =	0.108	mm	Plasticity Index =	n/a	Moisture %, as sampled =	n/a
$D_{(60)}$ =	0.322	mm	Sand Equivalent =	n/a	Req'd Sand Equivalent =	
$D_{(90)}$ =	11.305	mm	Fracture %, 1 Face =	n/a	Req'd Fracture %, 1 Face =	
Dust Ratio =	3/4		Fracture %, 2+ Faces =	n/a	Req'd Fracture %, 2+ Faces =	

Method(s) ASTM C-136, ASTM D-6913, ASTM C-117

Sieve Size US	Sieve Size Metric	Actual Cumulative Percent Passing	Interpolated Cumulative Percent Passing	Specs Max	Specs Min
12.00"	300.00		100%	100.0%	0.0%
10.00"	250.00		100%	100.0%	0.0%
8.00"	200.00		100%	100.0%	0.0%
6.00"	150.00		100%	100.0%	0.0%
4.00"	100.00		100%	100.0%	0.0%
3.00"	75.00		100%	100.0%	0.0%
2.50"	63.00		100%	100.0%	0.0%
2.00"	50.00	100%	100%	100.0%	0.0%
1.75"	45.00		100%	100.0%	0.0%
1.50"	37.50		100%	100.0%	0.0%
1.25"	31.50		100%	100.0%	0.0%
1.00"	25.00	100%	100%	100.0%	0.0%
3/4"	19.00	96%	96%	100.0%	0.0%
5/8"	16.00		94%	100.0%	0.0%
1/2"	12.50	91%	91%	100.0%	0.0%
3/8"	9.50	89%	89%	100.0%	0.0%
1/4"	6.30		83%	100.0%	0.0%
#4	4.75	80%	80%	100.0%	0.0%
#8	2.36		76%	100.0%	0.0%
#10	2.00	75%	75%	100.0%	0.0%
#16	1.18		69%	100.0%	0.0%
#20	0.850	67%	67%	100.0%	0.0%
#30	0.600		64%	100.0%	0.0%
#40	0.425	62%	62%	100.0%	0.0%
#50	0.300		60%	100.0%	0.0%
#60	0.250	58%	58%	100.0%	0.0%
#80	0.180		56%	100.0%	0.0%
#100	0.150	54%	54%	100.0%	0.0%
#140	0.106		50%	100.0%	0.0%
#170	0.090		48%	100.0%	0.0%
#200	0.075	46.6%	46.6%	100.0%	0.0%

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Comments:

Reviewed by: Alex Eifrig

Alex Eifrig
WABO Supervising Laboratory Technician

Sieve Report

Project:	Q.C. - Alger Watermain - AS230535	**Date Received:**	29-Mar-24
Project #:	24B007-03	**Sampled By:**	Client
Client:	Aspect Consulting, LLC.	**Date Tested:**	2-Apr-24
Source:	AB-04, S4 @ 10.0 ft	**Tested By:**	R. Bohler
Sample#:	B24-0514	**Control No.:**	4032024

Unified Soil Classification System, ASTM-2487
GM, Silty Gravel with Sand
Sample Color:
Brown

Method(s) ASTM D-2216, ASTM D-2419, ASTM D4318, ASTM D-5281

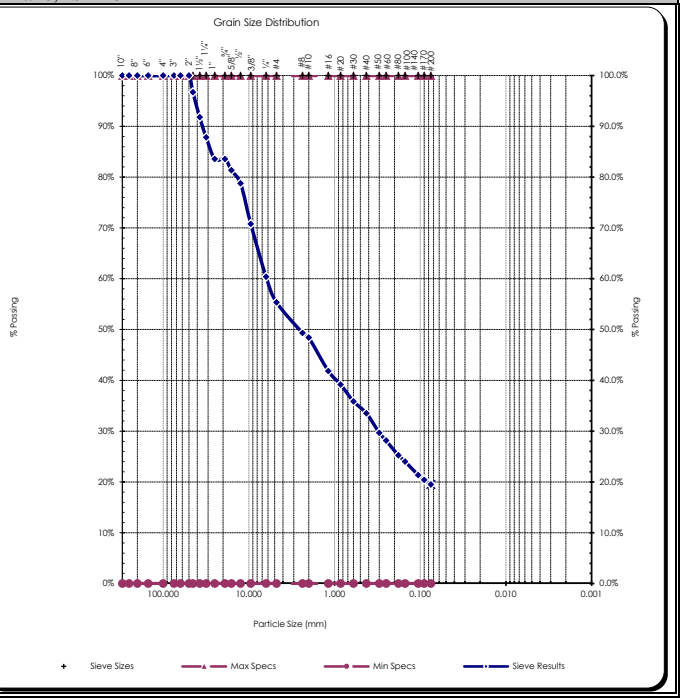
Specifications
No Specs
Sample Meets Specs ? N/A

$D_{(5)}$ =	0.019	mm	% Gravel =	44.7%	Coeff. of Curvature, C_C = 0.41
$D_{(10)}$ =	0.038	mm	% Sand =	35.8%	Coeff. of Uniformity, C_U = 160.75
$D_{(15)}$ =	0.058	mm	% Silt & Clay =	19.5%	Fineness Modulus = 4.10
$D_{(30)}$ =	0.311	mm	Liquid Limit =	n/a	Plastic Limit = n/a
$D_{(50)}$ =	2.633	mm	Plasticity Index =	n/a	Moisture %, as sampled = n/a
$D_{(60)}$ =	6.183	mm	Sand Equivalent =	n/a	Req'd Sand Equivalent =
$D_{(90)}$ =	34.792	mm	Fracture %, 1 Face =	n/a	Req'd Fracture %, 1 Face =
Dust Ratio =	32/55		Fracture %, 2+ Faces =	n/a	Req'd Fracture %, 2+ Faces =

Method(s) ASTM C-136, ASTM D-6913, ASTM C-117

Sieve Size US	Sieve Size Metric	Actual Cumulative Percent Passing	Interpolated Cumulative Percent Passing	Specs Max	Specs Min
12.00"	300.00		100%	100.0%	0.0%
10.00"	250.00		100%	100.0%	0.0%
8.00"	200.00		100%	100.0%	0.0%
6.00"	150.00		100%	100.0%	0.0%
4.00"	100.00		100%	100.0%	0.0%
3.00"	75.00		100%	100.0%	0.0%
2.50"	63.00		100%	100.0%	0.0%
2.00"	50.00	100%	100%	100.0%	0.0%
1.75"	45.00		97%	100.0%	0.0%
1.50"	37.50		92%	100.0%	0.0%
1.25"	31.50		88%	100.0%	0.0%
1.00"	25.00	84%	84%	100.0%	0.0%
3/4"	19.00	84%	84%	100.0%	0.0%
5/8"	16.00		81%	100.0%	0.0%
1/2"	12.50	79%	79%	100.0%	0.0%
3/8"	9.50	71%	71%	100.0%	0.0%
1/4"	6.30		60%	100.0%	0.0%
#4	4.75	55%	55%	100.0%	0.0%
#8	2.36		49%	100.0%	0.0%
#10	2.00	48%	48%	100.0%	0.0%
#16	1.18		42%	100.0%	0.0%
#20	0.850	39%	39%	100.0%	0.0%
#30	0.600		36%	100.0%	0.0%
#40	0.425	34%	34%	100.0%	0.0%
#50	0.300		30%	100.0%	0.0%
#60	0.250	28%	28%	100.0%	0.0%
#80	0.180		25%	100.0%	0.0%
#100	0.150	24%	24%	100.0%	0.0%
#140	0.106		21%	100.0%	0.0%
#170	0.090		20%	100.0%	0.0%
#200	0.075	19.5%	19.5%	100.0%	0.0%

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Comments:

Reviewed by: Alex Eifrig

Alex Eifrig
WABO Supervising Laboratory Technician

Sieve Report

Project:	Q.C. - Alger Watermain - AS230535	**Date Received:**	29-Mar-24
Project #:	24B007-03	**Sampled By:**	Client
Client:	Aspect Consulting, LLC.	**Date Tested:**	2-Apr-24
Source:	AB-04, S6 @ 15.0 ft	**Tested By:**	R. Bohler
Sample#:	B24-0515	**Control No.:**	4032024

Unified Soil Classification System, ASTM-2487
SC-SM, Silty,Clayey Sand with Gravel
Sample Color:
Gray-Brown

Method(s) ASTM D-2216, ASTM D-2419, ASTM D4318, ASTM D-5281

Specifications
No Specs

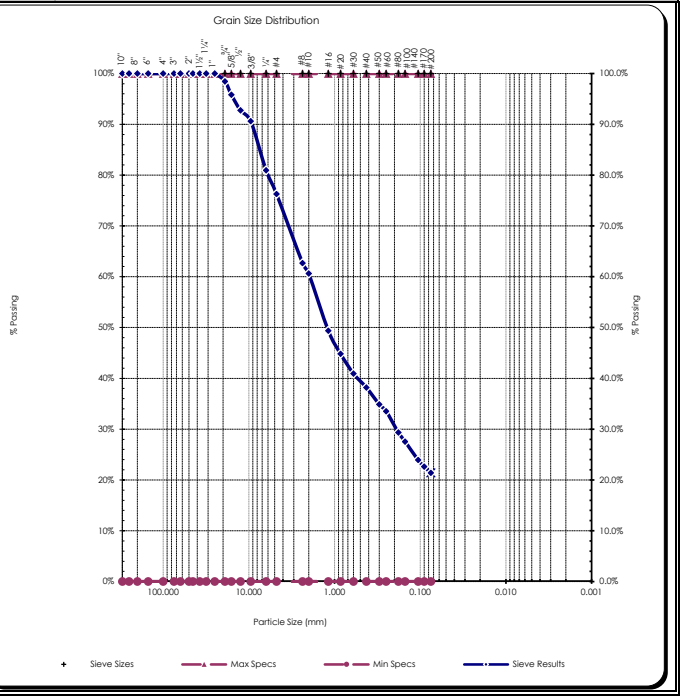
Sample Meets Specs ? N/A

$D_{(5)}$ =	0.018	mm	% Gravel =	23.7%	Coeff. of Curvature, C_C = 0.53
$D_{(10)}$ =	0.035	mm	% Sand =	54.9%	Coeff. of Uniformity, C_U = 55.78
$D_{(15)}$ =	0.053	mm	% Silt & Clay =	21.4%	Fineness Modulus = 3.19
$D_{(30)}$ =	0.191	mm	Liquid Limit =	n/a	Plastic Limit = n/a
$D_{(50)}$ =	1.228	mm	Plasticity Index =	n/a	Moisture %, as sampled = n/a
$D_{(60)}$ =	1.956	mm	Sand Equivalent =	n/a	Req'd Sand Equivalent =
$D_{(90)}$ =	9.295	mm	Fracture %, 1 Face =	n/a	Req'd Fracture %, 1 Face =
Dust Ratio =	14/25		Fracture %, 2+ Faces =	n/a	Req'd Fracture %, 2+ Faces =

Method(s) ASTM C-136, ASTM D-6913, ASTM C-117

Sieve Size US	Sieve Size Metric	Actual Cumulative Percent Passing	Interpolated Cumulative Percent Passing	Specs Max	Specs Min
12.00"	300.00		100%	100.0%	0.0%
10.00"	250.00		100%	100.0%	0.0%
8.00"	200.00		100%	100.0%	0.0%
6.00"	150.00		100%	100.0%	0.0%
4.00"	100.00		100%	100.0%	0.0%
3.00"	75.00		100%	100.0%	0.0%
2.50"	63.00		100%	100.0%	0.0%
2.00"	50.00	100%	100%	100.0%	0.0%
1.75"	45.00		100%	100.0%	0.0%
1.50"	37.50		100%	100.0%	0.0%
1.25"	31.50		100%	100.0%	0.0%
1.00"	25.00	100%	100%	100.0%	0.0%
3/4"	19.00	98%	98%	100.0%	0.0%
5/8"	16.00		96%	100.0%	0.0%
1/2"	12.50	93%	93%	100.0%	0.0%
3/8"	9.50	91%	91%	100.0%	0.0%
1/4"	6.30		81%	100.0%	0.0%
#4	4.75	76%	76%	100.0%	0.0%
#8	2.36		63%	100.0%	0.0%
#10	2.00	61%	61%	100.0%	0.0%
#16	1.18		49%	100.0%	0.0%
#20	0.850	45%	45%	100.0%	0.0%
#30	0.600		41%	100.0%	0.0%
#40	0.425	38%	38%	100.0%	0.0%
#50	0.300		35%	100.0%	0.0%
#60	0.250	34%	34%	100.0%	0.0%
#80	0.180		29%	100.0%	0.0%
#100	0.150	28%	28%	100.0%	0.0%
#140	0.106		24%	100.0%	0.0%
#170	0.090		23%	100.0%	0.0%
#200	0.075	21.4%	21.4%	100.0%	0.0%

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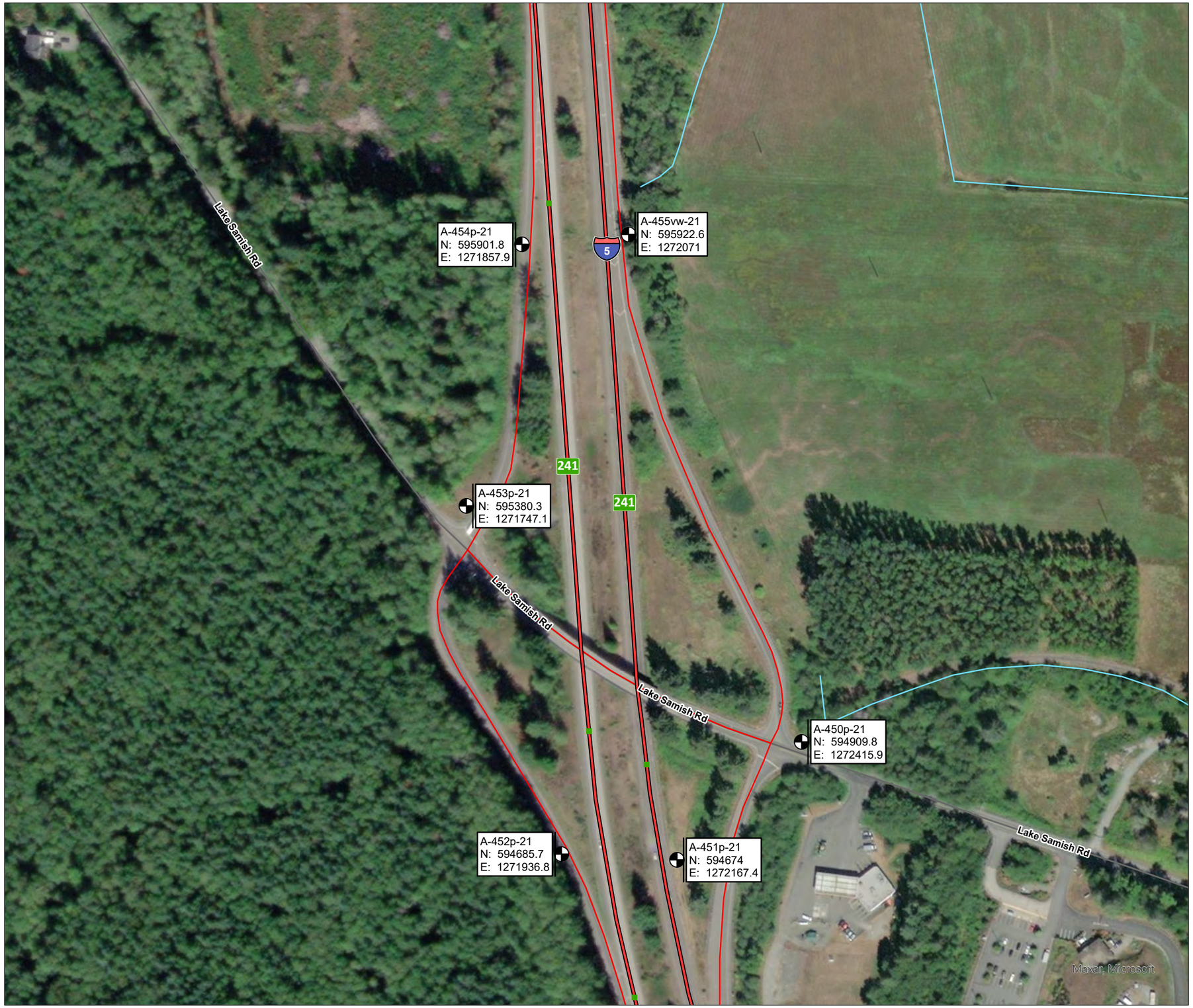
Comments:

Reviewed by: Alex Eifrig

Alex Eifrig
WABO Supervising Laboratory Technician

APPENDIX C

WSDOT 2021 Subsurface Exploration Logs



Legend

- Test Borings
- Milepost - 1/10th Mile
- Milepost - 1 Mile
- U.S. Interstate
- LXs and Frontage Roads - (1:24K)
- Ramps (1:24K)
- Collectors
- NHD Rivers & Streams

N

FEET
0 50 100 200 300 400

1:2,400
1 INCH = 200 FEET

JOB # MS8593 **STATE ROUTE** 005 **MILEPOST(S)** 240.75 to 241.15

FIGURE 2:a SITE EXPLORATION MAP

UNT to Friday Creek
Fish Passage

WSDOT GEOTECHNICAL OFFICE

PREPARED BY TropleT Date: November 2, 2022

File Location: \\mltumfl02\Group\Geotechnical\GEOGIS\Projects\SR-005\SR5-MS8593-VR-SouthSamishCluster\Projects\SR005-MS8593-VR-SouthSamishCluster.aprx

WSDOT EXPLORATION LOG LEGEND

In Situ Sample and Test Symbols

	Standard Penetration Test
	Non-standard Penetration Test
	Shelby Tube
P	Piston Sampler
	WSDOT Undisturbed Sampler
	Core Sample
G	Grab Sample
	California Sampler
	Vane Shear Test
P	Pressuremeter Test

Backfill and Instrument Symbols

	Cement Surface Seal
	Bentonite Chips
	Bentonite Cement Grout (BCM)
	Sand Filter Pack
	Slough (Hole Collapse)
	Pipe (Piezometer or Instrument) in BCM
	Well Screen in Sand Filter Pack
	Vibrating Wire Piezometer in BCM

Water Level Symbols

▽	Water Level During Drilling
I	Water Range in Piezometer

Laboratory Testing Codes

AL	Atterberg Limits Test
CD	Consolidated Drained Triaxial Test
CN	1-Dimensional Consolidation Test
CSS	Cyclic Simple Shear Test
CU	Consolidated Undrained Triaxial Test
DG	Degradation Test
DN	Density Test
DS	Direct Shear Test
DSS	Direct Simple Shear Test
GS	Grain Size Distribution Test
HC	Hydraulic Conductivity Test
HT	Hydrometer Test
JS	Jar Slake Test
LA	LA Abrasion Test
LOI	Loss on Ignition Test
MC	Moisture Content Test
PH	pH Test
PT	Point Load Compressive Test
RES	Resistivity Test
RS	Torsional Ring Shear Test
SG	Specific Gravity Test
SL	Slake Durability Test
UC	Unconfined Compression Test
UU	Unconlidated Undrained Triaxal Test

Soil Stratigraphy Symbols

COARSE GRAINED	FINE GRAINED & ORGANIC
GW: Well-graded Gravel	CL: Lean Clay
GP: Poorly graded Gravel	ML: Silt
GM: Silty Gravel	CH: Fat Clay
GC: Clayey Gravel	MH: Elastic Silt
SW: Well-graded Sand	OL: Organic Silt
SP: Poorly graded Sand	OH: Organic Clay
SM: Silty Sand	CL-ML: Silty Clay (dual symbol)
SC: Clayey Sand	PT: Peat or Highly Organic Soil

Soil classification is per Chapter 4.2 of the WSDOT Geotechnical Design Manual (GDM). The soil groups above contain less than 15% of other constituents. When more than 15% other constituents are observed, the soil group names are modified (e.g. Silty Gravel with Sand; Sandy, Elastic Silt with Gravel) per ASTM 2488. For dual classifications, a split symbol is used (e.g. CL-ML above). Refer to the Material Description column on the log for a complete description of the observed soil conditions.

Soil Density/Consistency

WSDOT GDM 4.2.5

COHESIONLESS SOILS		COHESIVE SOILS	
Blows/Ft	Density Term	Blows/Ft	Consistency Term
< 5	Very Loose	< 2	Very Soft
5 - 10	Loose	2 - 4	Soft
11 - 24	Medium Dense	5 - 8	Medium Stiff
25 - 50	Dense	9 - 15	Stiff
> 50	Very Dense	16 - 30	Very Stiff
		31 - 60	Hard
		> 60	Very Hard

(REF) is indicated on the log for any soil type when the penetration resistance exceeded 100 blows per foot (refusal conditions).

Soil Angularity

WSDOT GDM 4.2.4

Angular	Particles have sharp edges and relatively plane sides with unpolished surfaces
Subangular	Particles are similar to angular description but have rounded edges
Subrounded	Particles have nearly plane sides but have well rounded corners and edges
Rounded	Particles have smoothly curved sides and no edges

Soil Moisture

WSDOT GDM 4.2.7

Dry	Absence of moisture, dusty, dry to touch
Moist	Damp but no visible water
Wet	Visible Free Water

Soil Structure

WSDOT GDM 4.2.8

Stratified	Alternating layers of varying material or color with layers at least 0.25 inch thick
Laminated	Alternating layers of varying material or color with layers less than 0.25 inch thick
Fissured	Breaks along definite planes of fracture with little resistance to fracturing
Slickensided	Fracture planes appear polished or glossy, sometimes striated
Blocky	Cohesive soil that can be broken down into smaller angular lumps which resists further breakdown
Disrupted	Soil structure is broken and mixed. Infers that material has moved substantially - landslide debris
Homogeneous	Same color and appearance throughout
Cemented	Particles are held together by a binding agent

DATUM ABBREVIATIONS: NAD = North American Datum; NAVD = North American Vertical Datum; SPN = State Plane North; SPS = State Plane South

EXPLORATION LOG LEGEND

Rock Grain Size

WSDOT GDM 4.3.1.5

TERM	GRAIN SIZE	DESCRIPTION
Fine Grained	Less than 0.04 inch	Few crystal boundaries/grains distinguishable with the aid of a hand lens
Medium Grained	0.04 to 0.2 inch	Most crystal boundaries/grains distinguishable with the aid of a hand lens
Coarse Grained	Greater than 0.2 inch	Most crystal boundaries/grains distinguishable with the naked eye

Rock Weathered State

WSDOT GDM 4.3.1.6

TERM	DESCRIPTION	GRADE
Fresh	No visible signs of rock material weathering; perhaps slight discoloration in major discontinuity surfaces.	I
Slightly Weathered	Discoloration indicates weathering of rock material and discontinuity surfaces. All the rock material may be discolored by weathering, and may be somewhat weaker externally than in its fresh condition.	II
Moderately Weathered	Less than half of the rock material is decomposed and/or disintegrated to soil. Fresh or discolored rock is present either as a continuous framework or as corestones.	III
Highly Weathered	More than half of the rock material is decomposed and/or disintegrated to soil. Fresh or discolored rock is present either as discontinuous framework or as corestone.	IV
Completely Weathered	All rock material is decomposed and/or disintegrated to soil. The original mass structure is still largely intact.	V
Residual Soil	All rock material is converted to soil. The mass structure and material fabric is destroyed. There is a large change in volume, but the soil has not been significantly transported.	VI

Relative Rock Strength

WSDOT GDM 4.3.1.6

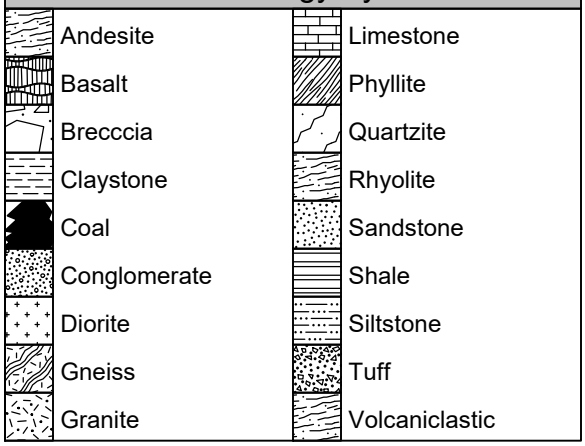
TERM	DESCRIPTION	GRADE	UCS (ksi)
Extremely Weak	Specimen can be indented by thumbnail.	R0	0.04 - 0.14
Very Weak	Specimen crumbles under sharp blow with point of geological hammer, and can be cut with a pocket knife.	R1	0.15 - 3.6
Moderately Weak	Shallow cuts or scrapes can be made in a specimen with a pocket knife. Geological hammer point indents deeply with firm blow.	R2	3.6 - 7.3
Moderately Strong	Specimen cannot be scraped or cut with a pocket knife, shallow indentation can be made under firm blows from a hammer point.	R3	7.3 - 15
Strong	Specimen breaks with one firm blow from the hammer end of a geological hammer.	R4	15 - 29
Very Strong	Specimen requires many blows of a geological hammer to break intact sample.	R5	> 29

Rock Discontinuity Spacing

GDM 4.3.2.1

TERM	SPACING
Very Widely	Greater than 10 feet
Widely	3 feet to 10 feet
Moderately	1 foot to 3 feet
Closely	2 inches to 12 inches
Very Closely	Less than 2 inches

Rock Lithology Symbols



Rock Discontinuity Condition

WSDOT GDM 4.3.2.2

TERM	DESCRIPTION
Excellent Condition	Very rough surfaces, no separation, hard discontinuity wall
Good Condition	Slightly rough surfaces, separation less than 0.05 inch, hard discontinuity wall
Fair Condition	Slightly rough surface, separation greater than 0.05 inch, soft discontinuity wall
Poor Condition	Slickensided surfaces, or soft gouge less than 0.2 inch thick, or open discontinuities 0.05 to 0.2 inch
Very Poor Condition	Soft gouge greater than 0.2 inch, or open discontinuities greater than 0.2 inch

Other Rock Terms and Abbreviations

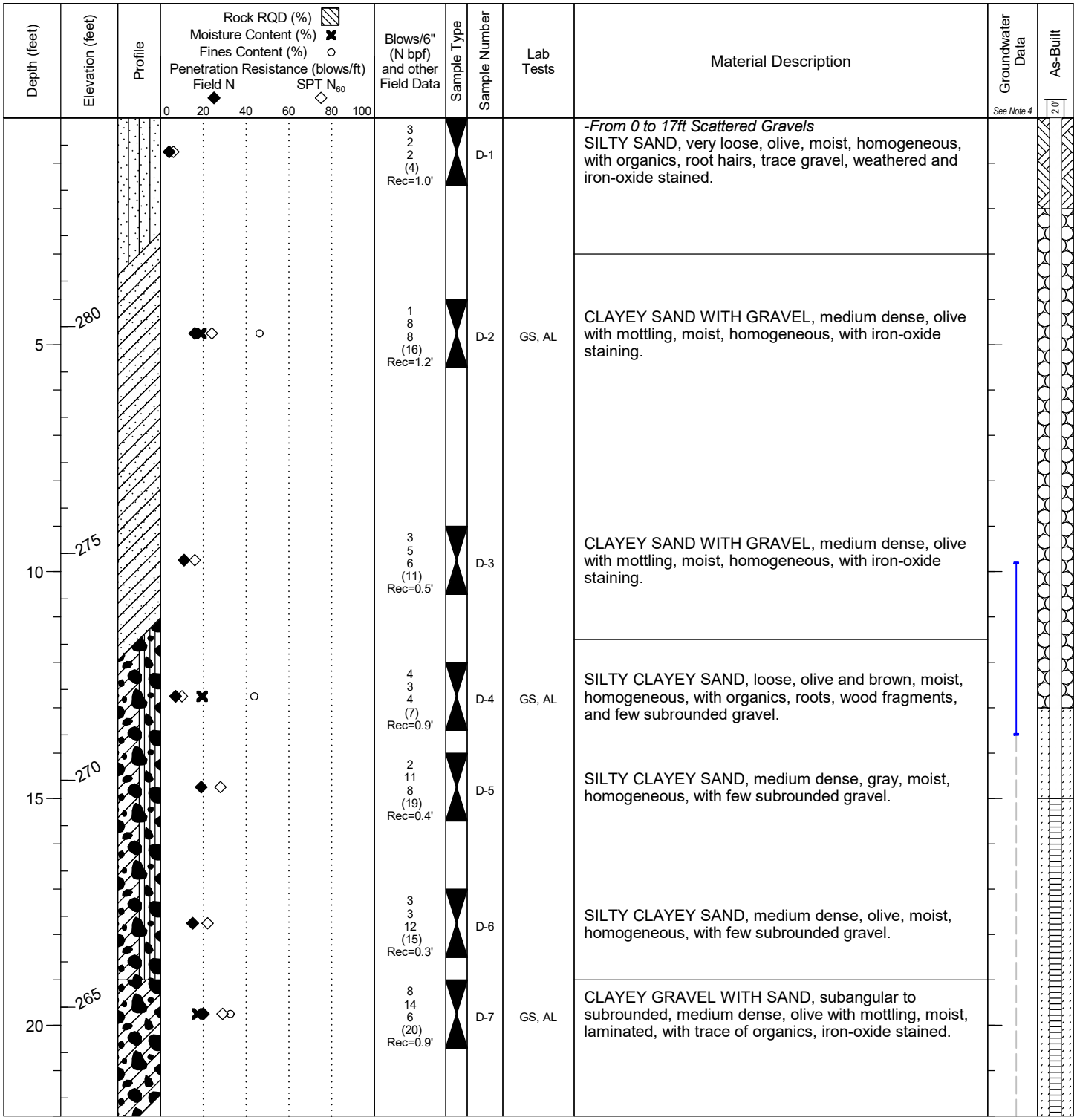
TERM	ABBREV.	DEFINITION
Core Recovery	REC (%)	$\frac{\text{100\% x Length of Core Recovered}}{\text{Length of Core Run}}$
Rock Quality Designation	RQD (%)	$\frac{\text{100\% x Length of Core in Pieces > 4 inches}}{\text{Length of Core Barrel}}$
Fracture Frequency	FF (#/Ft)	Number of natural fractures per unit length of core recovered. Mechanical breaks ignored.

ABBREVIATIONS: ksi = kips per square inch; UCS = Uniaxial Compressive Strength

WSDOT

LOG OF BORING A-450p-21

Project: Unnamed Tributary to Friday Creek Fish Passage
Job Number: XL5949 *Route & MP Range:* SR 005 MP 240.92 - 240.95
Northing: 594,909.8 feet *Latitude:* 48.620895 deg. *Driller/Inspector:* Walker, Robert (#2864) / Haller, Robert (#2779)
Easting: 1,272,415.9 feet *Longitude:* -122.354873 deg. *Start Card:* RE-21255 *Well Tag:* BNQ-702 *Instrument:* 1" PVC
Elevation: 284.6 feet *Collector:* Region Survey *Drilling Method:* Casing Advancer/Coring *Hole Diam.:* 6 in
Horizontal/Vertical Datum: NAD 83 HARN, SPN / NAVD88 *Equipment:* CME 45 (ID:9C4-2) *Rod Type:* HWT
Started: September 21, 2021 *Completed:* September 23, 2021 *Hammer Type:* Autohammer *Historic Efficiency:* 88.3%



STANDARD BORING LOG XL5949-U1 005 UNTRIBTOFRIDAYCR.GPJ 2020 WSDOT GINT TEMPLATE.GDT 9/30/23

CONTINUED NEXT PAGE *(see last page for notes)*

Project: Unnamed Tributary to Friday Creek Fish Passage *Job Number:* XL5949 *Route & MP Range:* SR 005 MP 240.92 - 240.95

Depth (feet)	Elevation (feet)	Blows/6" (N bpf) and other Field Data	Sample Type	Sample Number	Lab Tests	Material Description
		3 4 5 (9) Rec=0.4'		D-8		LEAN CLAY WITH SAND, stiff, gray and brown, moist, homogeneous, with trace organics and wood fragments, trace of gravel.
25	260	1 3 5 (8) Rec=0.4'		D-9		LEAN CLAY, medium stiff, grayish olive, moist, homogeneous, with trace of sand.
		Rec=2.0'		S-10	GS, AL, HT, SG, PH, RES	FAT CLAY, gray with orange mottling, moist, with dessication fractures, iron-oxide staining, and trace of organics and wood debris. *-Pocket Penetrometer qu = 3 to 3.5 tsf.*
30	255	1 2 3 (5) Rec=1.5'		D-11	GS, AL	FAT CLAY, medium stiff, grayish olive and brown with orange mottling, moist, laminated, with iron-oxide staining.
		Rec=2.3'		S-12	AL	FAT CLAY, medium stiff, gray, moist, fissured, locally blocky, with organic laminations and rootlets. *-Pocket Penetrometer qu = 0.5 to 0.75 tsf.*
35	250	0 0 0 (0) Rec=0.4'		D-13		FAT CLAY, very soft, gray, moist, homogeneous.
		Rec=2.0'		S-14	GS, AL, HT, SG	FAT CLAY, very soft, gray, moist. *-Pocket Penetrometer qu < 0.25 tsf.*
40	245	0 0 0 (0) Rec=1.5'		D-15	AL	LEAN CLAY, very soft, gray, moist, homogeneous.
45	240	0 0 0 (0) Rec=1.5'		D-16	GS, AL, HT, SG	LEAN CLAY, very soft, gray, moist, homogeneous.

Rock RQD (%)
Moisture Content (%)
Fines Content (%)
Penetration Resistance (blows/ft)
Field N ◆ SPT N_{60} ◇
0 20 40 60 80 100

Groundwater Data *See Note 4*

As-Built

CONTINUED NEXT PAGE *(see last page for notes)*

STANDARD BORING LOG XL5949-U1 005 UNTRIBTOFRIDAYCR.GPJ 2020 WSDOT GINT TEMPLATE.GDT 3/30/23

Project: Unnamed Tributary to Friday Creek Fish Passage *Job Number:* XL5949 *Route & MP Range:* SR 005 MP 240.92 - 240.95

Depth (feet)	Elevation (feet)	Profile	Rock RQD (%) / Moisture Content (%) / Fines Content (%) / Penetration Resistance (blows/ft) Field N / SPT N_{60} (0 20 40 60 80 100)	Blows/6" (N bpf) and other Field Data	Sample Type	Sample Number	Lab Tests	Material Description	Groundwater Data (See Note 4)	As-Built
50	235			Rec=2.0'		S-17	GS, AL, HT, SG, DN	LEAN CLAY, very soft, gray, moist, with trace of sand.		
				0 2 2 (4) Rec=1.5'		D-18		*-Pocket Penetrometer qu < 0.25 tsf.* LEAN CLAY, soft, gray, moist, homogeneous, with trace of sand.		
55	230			0 0 0 (0) Rec=1.5'		D-19	AL	LEAN CLAY, very soft, gray, moist, homogeneous, with trace of sand.		
60	225			8 15 25 (40) Rec=1.1'		D-20	GS, AL	*-From 58.5ft to 72ft Scattered Gravels* SILTY CLAYEY SAND WITH GRAVEL, dense, dark gray, moist, homogeneous.		
65	220			>> 30 50/6" (REF) Rec=0.8'		D-21		SILTY CLAYEY SAND WITH GRAVEL, very dense, dark gray, moist, homogeneous.		
70	215			>> 39 50/4" (REF) Rec=0.8'		D-22	GS	SILTY SAND, subrounded, very dense, dark gray, moist, homogeneous, with trace rounded gravel.		
75	210			RQD=47% FF=2/ft Rec=2.2'		C-23		PHYLLITE, dark gray marbled with white, medium grained, slightly weathered, moderately strong rock. Discontinuities are closely spaced and in fair condition; graphitic phyllite, fractures approx. 20-40 degrees, most follow foliation but some cross cut, abundant quartz veins.		

STANDARD BORING LOG XL5949-U1 005 UNTRIBTOFRIDAYCR.GPJ 2020 WSDOT GINT TEMPLATE.GDT 3/30/23

CONTINUED NEXT PAGE *(see last page for notes)*

Project: Unnamed Tributary to Friday Creek Fish Passage *Job Number:* XL5949 *Route & MP Range:* SR 005 MP 240.92 - 240.95

Depth (feet)	Elevation (feet)	Profile	Rock RQD (%) / Moisture Content (%) / Fines Content (%) / Penetration Resistance (blows/ft) Field N / SPT N_{60} (0 20 40 60 80 100)	Blows/6" (N bpf) and other Field Data	Sample Type	Sample Number	Lab Tests	Material Description	Groundwater Data (See Note 4)	As-Built
80	205			RQD=13% FF=4/ft Rec=3.0'		C-24		PHYLLITE, dark gray, fine grained, highly weathered, extremely weak to very weak rock. Discontinuities are closely spaced and in poor condition; graphitic phyllite, highly fractured, few quartz veins, 2/3 of core decomposed.		
85	200			RQD=26% FF=4/ft Rec=2.6'		C-25		PHYLLITE, dark gray marbled with white, medium grained, slightly weathered, moderately strong rock. Discontinuities are closely spaced and in fair condition; graphitic phyllite, fractures approx. 20-30 degrees and are irregular and intersecting, abundant quartz veins.		
90	195			RQD=8% FF=5/ft Rec=1.5'		C-26		PHYLLITE, dark gray marbled with white, medium grained, moderately weathered, very weak rock. Discontinuities are closely to very closely spaced and in poor condition; graphitic phyllite, fractures follow foliation but some cross cut, few quartz veins.		

HOLE ENDED AT 90.5 FEET ON 9-23-2021

NOTES:

1. This is a summary log of the boring. Soil/rock descriptions are derived from visual field identifications and laboratory test data (where tested). See exploration log legend for explanation of graphics and abbreviations.
2. The implied accuracy of the location information displayed on this log is typically sub-meter(X,Y) when collected using GPS methods by the Geotechnical Office and sub-centimeter (X,Y,Z) when collected by the Region survey crew.
3. Where oversized samplers were used, a correction was made to the N-value per the AASHTO Manual on Subsurface Investigations, 1988. Blow counts per 6-inch increment have not been corrected.
4. The groundwater level range shown on this log represents data collected between 10/27/2021 and 2/16/2023. The blue line extends between the minimum and maximum readings collected during the monitoring period.

WSDOT

LOG OF BORING A-451p-21

Project: Advanced Work on Fish Barriers: I-5/Unnamed Tributary to Friday Creek (995232)

Job Number: XL5949 *Route & MP Range:* SR 005 MP 240.95 - 240.95

Northing: 594,674.0 feet *Latitude:* 48.620236 deg. *Driller/Inspector:* Walker, Robert (#2864) / Haller, Robert (#2779)

Easting: 1,272,167.4 feet *Longitude:* -122.355881 deg. *Start Card:* RE-21255 *Well Tag:* BNQ-703 *Instrument:* 1" PVC

Elevation: 278.9 feet *Collector:* Region Survey *Drilling Method:* Casing Advancer/Coring *Hole Diam.:* 6 in

Horizontal/Vertical Datum: NAD 83 HARN, SPN / NAVD88 *Equipment:* CME 850 (ID:9C2-5) *Rod Type:* HWT

Started: August 9, 2021 *Completed:* August 10, 2021 *Hammer Type:* Autohammer *Historic Efficiency:* 87.4%

Depth (feet)	Elevation (feet)	Blows/6" (N bpf) and other Field Data	Sample Type	Sample Number	Lab Tests	Material Description
0	275	1 6 5 (11) Rec=1.1'		D-1		SANDY SILT, medium dense, dark grayish brown, moist, homogeneous, with trace gravel, organics, grass, moss, roots, and wood debris.
5		1 1 4 (5) Rec=1.5'		D-2		LEAN CLAY, medium stiff, gray and brown with mottling, moist, homogeneous, with organics, wood debris, and iron oxide staining.
	270	Rec=1.8'		P-3	GS, AL, HT, PH, RES	ELASTIC SILT, gray with mottling, moist, slickensided, blocky, with trace organics and rootlets, dessication slickensides and blocky texture. *-Pocket Penetrometer qu = 1.7 to 2.5 tsf.*
10		0 0 1 (1) Rec=1.5'		D-4	AL	FAT CLAY, very soft, gray, moist, homogeneous, with trace organics and wood debris.
		Rec=0.0'		P-5		NO RECOVERY
	265	0 0 5 (5) Rec=1.5'		D-6	PH, RES	FAT CLAY WITH SAND, medium stiff, gray, wet, homogeneous, with trace gravel.
15		1 1 9 (10) Rec=1.0'		D-7	GS	SILTY SAND, loose, dark gray, wet, homogeneous.
	260	22 9 10 (19) Rec=0.8'		D-8		POORLY GRADED SAND WITH SILT AND GRAVEL, medium dense, gray, wet, homogeneous.
20		3 2 8 (10) Rec=0.8'		D-9	AL	SILTY CLAY, medium stiff, gray, wet, homogeneous, with trace sand and gravel.
	255	1 2 2 (4) Rec=1.5'		D-10	GS, AL	SANDY SILTY CLAY, soft, gray, moist, homogeneous, with trace gravel.
25		7 13 16 (29) Rec=1.2'		D-11		SILTY SAND WITH GRAVEL, dense, gray, moist, homogeneous.
	250					
30						

Rock RQD (%)
Moisture Content (%)
Fines Content (%)
Penetration Resistance (blows/ft)
Field N
SPT N_{60}
0 20 40 60 80 100

Groundwater Data: See Note 4; Bail test: water at 9 ft

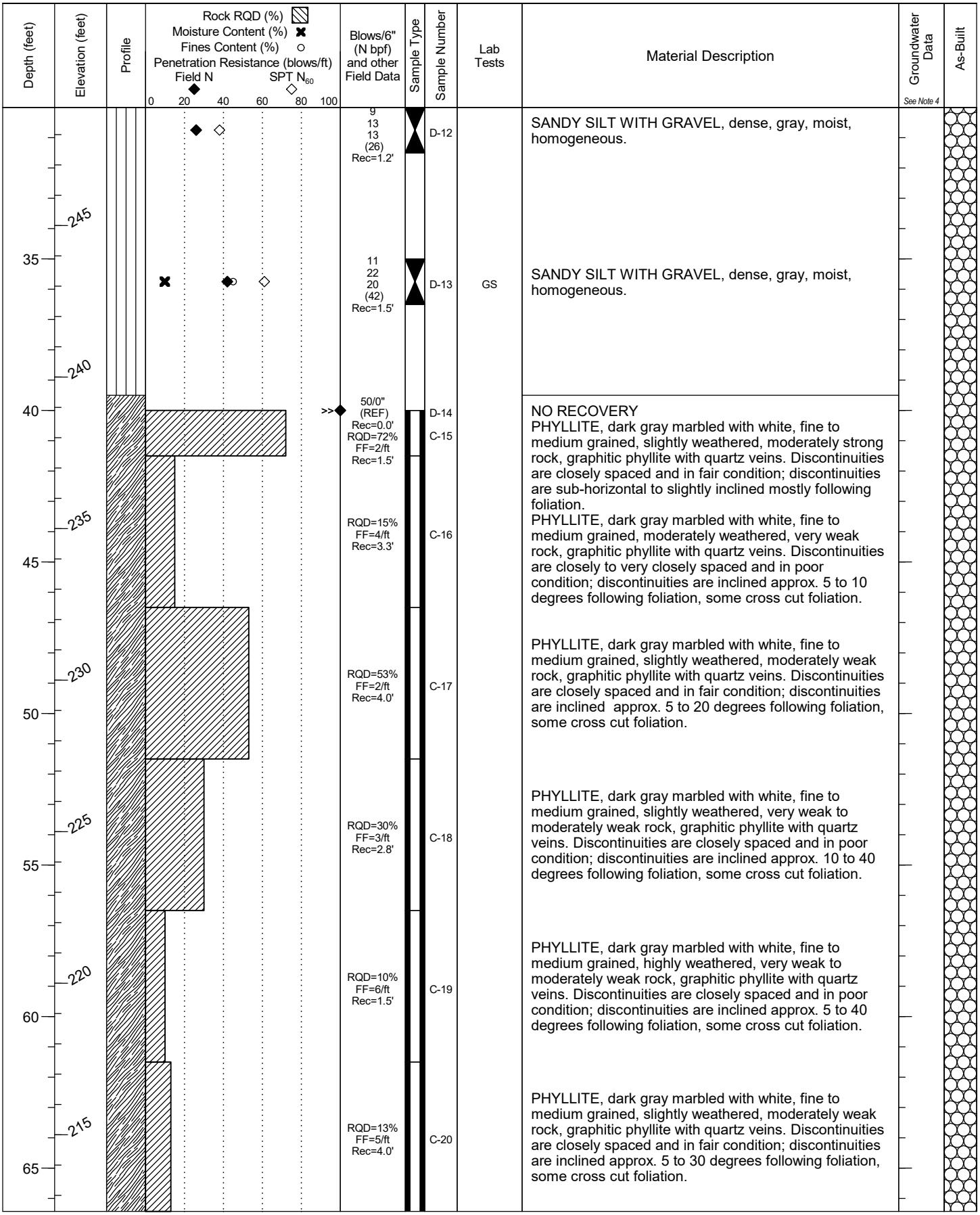
As-Built: 2.0"

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STANDARD BORING LOG XL5949-S4 005 UNTRIBTOFRIDAYCR.GPJ 2020 WSDOT GINT TEMPLATE.GDT 3/30/23

Project: Advanced Work on Fish Barriers: I-5/Unnamed Tributary to Friday Creek (995232)

Job Number: XL5949 *Route & MP Range:* SR 005 MP 240.95 - 240.95



Depth (feet)	Elevation (feet)	Blows/6" (N bpf) and other Field Data	Sample Type	Sample Number	Lab Tests	Material Description	Groundwater Data (See Note 4)	As-Built
		9 13 13 (26) Rec=1.2'		D-12		SANDY SILT WITH GRAVEL, dense, gray, moist, homogeneous.		
35	245	11 22 20 (42) Rec=1.5'		D-13	GS	SANDY SILT WITH GRAVEL, dense, gray, moist, homogeneous.		
40	240	50/0" (REF) Rec=0.0' RQD=72% FF=2/ft Rec=1.5'		D-14 C-15		NO RECOVERY PHYLLITE, dark gray marbled with white, fine to medium grained, slightly weathered, moderately strong rock, graphitic phyllite with quartz veins. Discontinuities are closely spaced and in fair condition; discontinuities are sub-horizontal to slightly inclined mostly following foliation.		
45	235	RQD=15% FF=4/ft Rec=3.3'		C-16		PHYLLITE, dark gray marbled with white, fine to medium grained, moderately weathered, very weak rock, graphitic phyllite with quartz veins. Discontinuities are closely to very closely spaced and in poor condition; discontinuities are inclined approx. 5 to 10 degrees following foliation, some cross cut foliation.		
50	230	RQD=53% FF=2/ft Rec=4.0'		C-17		PHYLLITE, dark gray marbled with white, fine to medium grained, slightly weathered, moderately weak rock, graphitic phyllite with quartz veins. Discontinuities are closely spaced and in fair condition; discontinuities are inclined approx. 5 to 20 degrees following foliation, some cross cut foliation.		
55	225	RQD=30% FF=3/ft Rec=2.8'		C-18		PHYLLITE, dark gray marbled with white, fine to medium grained, slightly weathered, very weak to moderately weak rock, graphitic phyllite with quartz veins. Discontinuities are closely spaced and in poor condition; discontinuities are inclined approx. 10 to 40 degrees following foliation, some cross cut foliation.		
60	220	RQD=10% FF=6/ft Rec=1.5'		C-19		PHYLLITE, dark gray marbled with white, fine to medium grained, highly weathered, very weak to moderately weak rock, graphitic phyllite with quartz veins. Discontinuities are closely spaced and in poor condition; discontinuities are inclined approx. 5 to 40 degrees following foliation, some cross cut foliation.		
65	215	RQD=13% FF=5/ft Rec=4.0'		C-20		PHYLLITE, dark gray marbled with white, fine to medium grained, slightly weathered, moderately weak rock, graphitic phyllite with quartz veins. Discontinuities are closely spaced and in fair condition; discontinuities are inclined approx. 5 to 30 degrees following foliation, some cross cut foliation.		

STANDARD BORING LOG XL5949-S4 005 UNTRIBTOFRIDAYCR.GPJ 2020 WSDOT GINT TEMPLATE.GDT 3/30/23

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Project: Advanced Work on Fish Barriers: I-5/Unnamed Tributary to Friday Creek (995232) *Job Number:* XL5949 *Route & MP Range:* SR 005 MP 240.95 - 240.95

Depth (feet)	Elevation (feet)	Profile	Rock RQD (%) / Moisture Content (%) / Fines Content (%) / Penetration Resistance (blows/ft) Field N / SPT N_{60} (0 20 40 60 80 100)	Blows/6" (N bpf) and other Field Data	Sample Type	Sample Number	Lab Tests	Material Description	Groundwater Data (See Note 4)	As-Built
70	210			RQD=13% FF=4/ft Rec=1.5'		C-21		PHYLLITE, dark gray marbled with white, fine to medium grained, slightly weathered, moderately weak rock, graphitic phyllite with quartz veins. Discontinuities are closely spaced and in fair condition; discontinuities are inclined approx. 10 to 20 degrees following foliation, some cross cut foliation.		

HOLE ENDED AT 71.5 FEET ON 8-10-2021

NOTES:

1. This is a summary log of the boring. Soil/rock descriptions are derived from visual field identifications and laboratory test data (where tested). See exploration log legend for explanation of graphics and abbreviations.
2. The implied accuracy of the location information displayed on this log is typically sub-meter(X,Y) when collected using GPS methods by the Geotechnical Office and sub-centimeter (X,Y,Z) when collected by the Region survey crew.
3. Where oversized samplers were used, a correction was made to the N-value per the AASHTO Manual on Subsurface Investigations, 1988. Blow counts per 6-inch increment have not been corrected.
4. The groundwater level range shown on this log represents data collected between 10/27/2021 and 2/16/2023. The blue line extends between the minimum and maximum readings collected during the monitoring period. Artesian groundwater measurements were noted. See piezometer report for values.

BAIL-RECHARGE TEST RESULTS:

Test Date: August 10, 2021
Hole Depth / Casing Depth: 31.5 feet / 30.0 feet
Water Depth Before Bailing: 4.5 feet
Note: Took out 5 bails with 10ft bailer

ELAPSED TIME (minutes)	WATER DEPTH (feet)
0	23.7
1	20.9
2	19.0
3	18.1
4	17.2
5	16.5
10	14.9
15	13.2
20	12.2
25	11.2
30	10.5
35	9.9
40	9.4
45	9.0
50	9.0

WSDOT

LOG OF BORING A-452p-21

Project: Advanced Work on Fish Barriers: I-5/Unnamed Tributary to Friday Creek (995236)

Job Number: XL5949 *Route & MP Range:* SR 005 MP 240.92 - 240.92

Northing: 594,685.7 feet *Latitude:* 48.620255 deg. *Driller/Inspector:* Walker, Robert (#2864) / Haller, Robert (#2779)

Easting: 1,271,936.8 feet *Longitude:* -122.356835 deg. *Start Card:* RE-21255 *Well Tag:* BNQ-704 *Instrument:* 1" PVC

Elevation: 292.4 feet *Collector:* Region Survey *Drilling Method:* Casing Advancer/Coring *Hole Diam.:* 4 in

Horizontal/Vertical Datum: NAD 83 HARN, SPN / NAVD88 *Equipment:* CME 850 (ID:9C2-5) *Rod Type:* HQ

Started: August 11, 2021 *Completed:* August 12, 2021 *Hammer Type:* Autohammer *Historic Efficiency:* 87.4%

Moisture Content (%) ✖
Fines Content (%) ○
Penetration Resistance (blows/ft)
Field N ◆ SPT N_{60} ◇
0 20 40 60 80 100

Depth (feet)	Elevation (feet)	Blows/6" (N bpf) and other Field Data	Sample Type	Sample Number	Lab Tests	Material Description
						-Asphalt
	290	8 10 12 (22) Rec=1.0'		D-1		SILTY SAND WITH GRAVEL, medium dense, brown, moist, homogeneous, with organics.
5	285	16 25 25 (50) Rec=1.4'		D-2	GS	SILTY SAND WITH GRAVEL, dense, gray, moist, homogeneous.
		>> 38 50/6" (REF) Rec=1.0'		D-3		SILTY SAND WITH GRAVEL, very dense, gray, moist, homogeneous.
10	280	29 27 32 (59) Rec=1.5'		D-4	GS, PH, RES	SILTY SAND WITH GRAVEL, very dense, gray, moist, homogeneous.
		>> 12 50/5" (REF) Rec=1.0'		D-5		SILTY SAND WITH GRAVEL, very dense, gray, moist, homogeneous.
15	275	Rec=0.0'		C-6		NO RECOVERY
		RQD=25% FF=4/ft Rec=2.4'		C-7	SD	PHYLLITE, dark gray marbled with white, fine grained, moderately weathered to highly weathered, very weak rock, graphitic phyllite with quartz veins. Discontinuities are closely to very closely spaced and in poor condition; discontinuities are inclined approx. 10 to 20 degrees following foliation, some cross cut foliation; top 6 inches completely fragmented.
20	270					
		RQD=25% FF=3/ft Rec=3.5'		C-8		PHYLLITE, dark gray marbled with white, fine grained, slightly weathered to moderately weathered, moderately weak rock, graphitic phyllite with quartz veins. Discontinuities are closely spaced and in fair condition; discontinuities are inclined approx. 5 to 20 degrees following foliation, some cross cut foliation.
25	265					
		RQD=0% FF=5/ft Rec=1.5'		C-9		PHYLLITE, dark gray marbled with white, fine grained, highly weathered, very weak rock, graphitic phyllite with quartz veins. Discontinuities are very closely spaced and in poor condition; highly fragmented.
30						

Groundwater Data: See Note 4

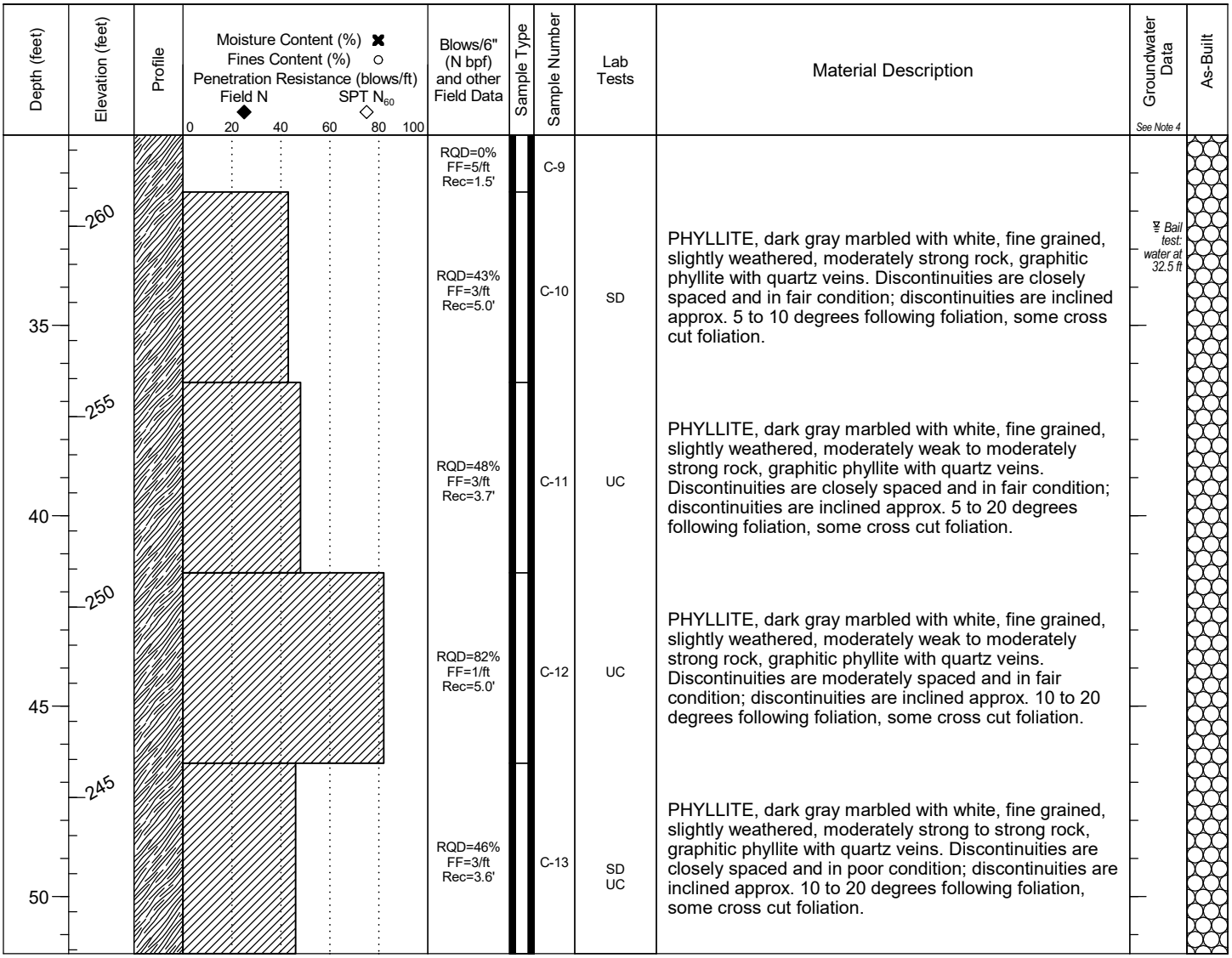
As-Built

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VERSION 1.0
FINAL

STANDARD BORING LOG XL5949-SB 005 UNTRIBTOFRIDAYCR.GPJ 2020 WSDOT GINT TEMPLATE.GDT 3/30/23

Project: Advanced Work on Fish Barriers: I-5/Unnamed Tributary to Friday Creek (995236) *Job Number:* XL5949 *Route & MP Range:* SR 005 MP 240.92 - 240.92



HOLE ENDED AT 51.5 FEET ON 8-12-2021

NOTES:

1. This is a summary log of the boring. Soil/rock descriptions are derived from visual field identifications and laboratory test data (where tested). See exploration log legend for explanation of graphics and abbreviations.
2. The implied accuracy of the location information displayed on this log is typically sub-meter(X,Y) when collected using GPS methods by the Geotechnical Office and sub-centimeter (X,Y,Z) when collected by the Region survey crew.
3. Where oversized samplers were used, a correction was made to the N-value per the AASHTO Manual on Subsurface Investigations, 1988. Blow counts per 6-inch increment have not been corrected.
4. The groundwater level range shown on this log represents data collected between 10/27/2021 and 2/16/2023. The blue line extends between the minimum and maximum readings collected during the monitoring period. Artesian groundwater measurements were noted. See piezometer report for values.

BAIL-RECHARGE TEST RESULTS:

Test Date: August 12, 2021
Hole Depth / Casing Depth: 51.5 feet / 51.5 feet
Water Depth Before Bailing: 2.0 feet
Note: Took out 5 bails with 10ft bailer

ELAPSED TIME (minutes)	WATER DEPTH (feet)
0	38.0
1	37.4
2	37.2
3	36.8
4	36.5
5	36.2
10	35.0
15	34.1
20	33.5
25	33.0
30	32.5

WSDOT

LOG OF BORING A-453p-21

Project: Advanced Work on Fish Barriers: I-5/Unnamed Tributary to Friday Creek (995240)

Job Number: XL5949 *Route & MP Range:* SR 005 MP 240.99 - 240.99

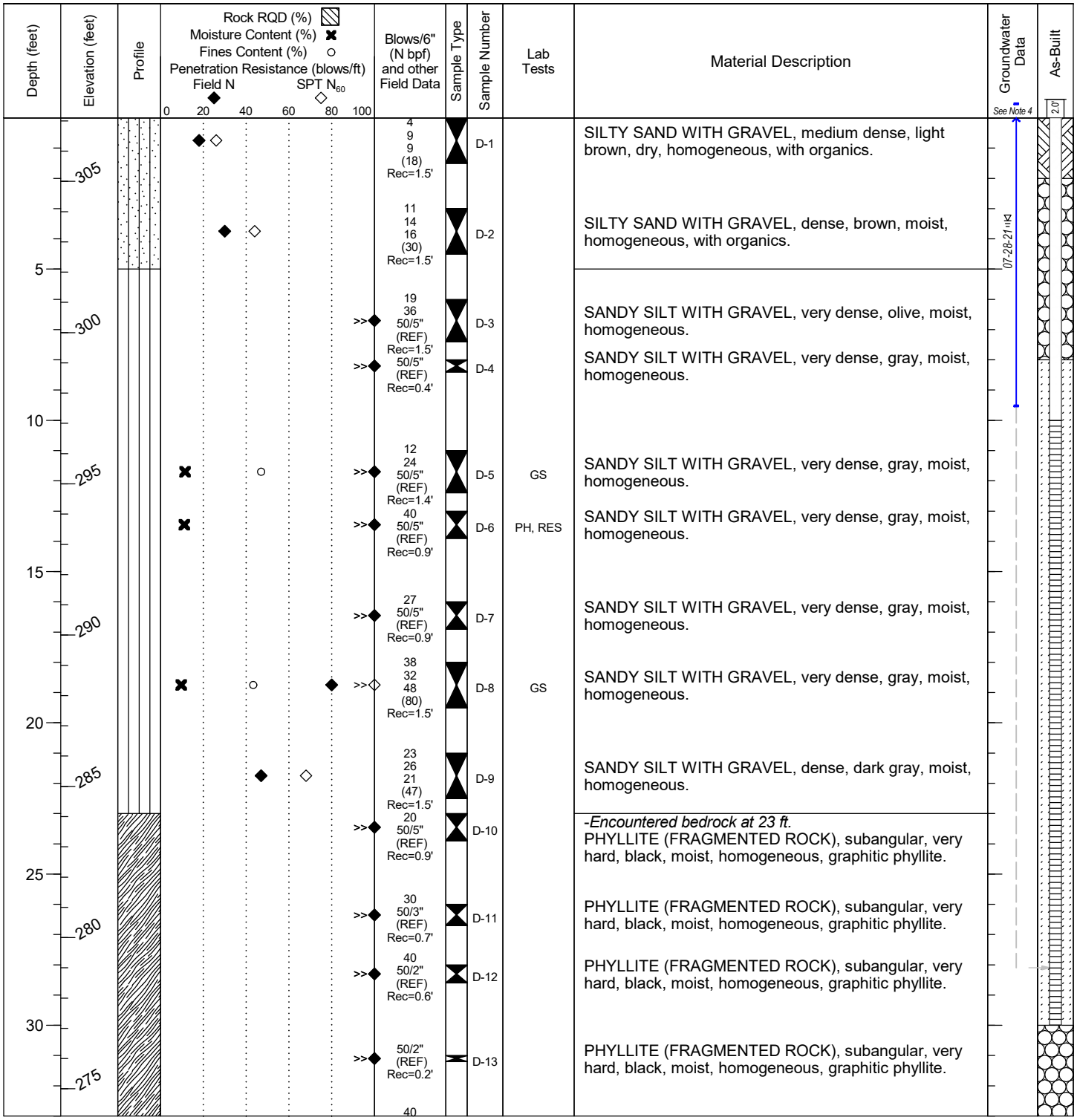
Northing: 595,380.3 feet *Latitude:* 48.622148 deg. *Driller/Inspector:* Underwood, James (#3333T) / Walker, Robert (#2864)

Easting: 1,271,747.1 feet *Longitude:* -122.357676 deg. *Start Card:* RE21255 *Well Tag:* BNQ705 *Instrument:* 1" PVC

Elevation: 307.1 feet *Collector:* Region Survey *Drilling Method:* Casing Advancer/Coring *Hole Diam.:* 4 in

Horizontal/Vertical Datum: NAD 83 HARN, SPN / NAVD88 *Equipment:* CME 850 (ID:9C2-5) *Rod Type:* HQ

Started: July 27, 2021 *Completed:* July 28, 2021 *Hammer Type:* Autohammer *Historic Efficiency:* 87.4%

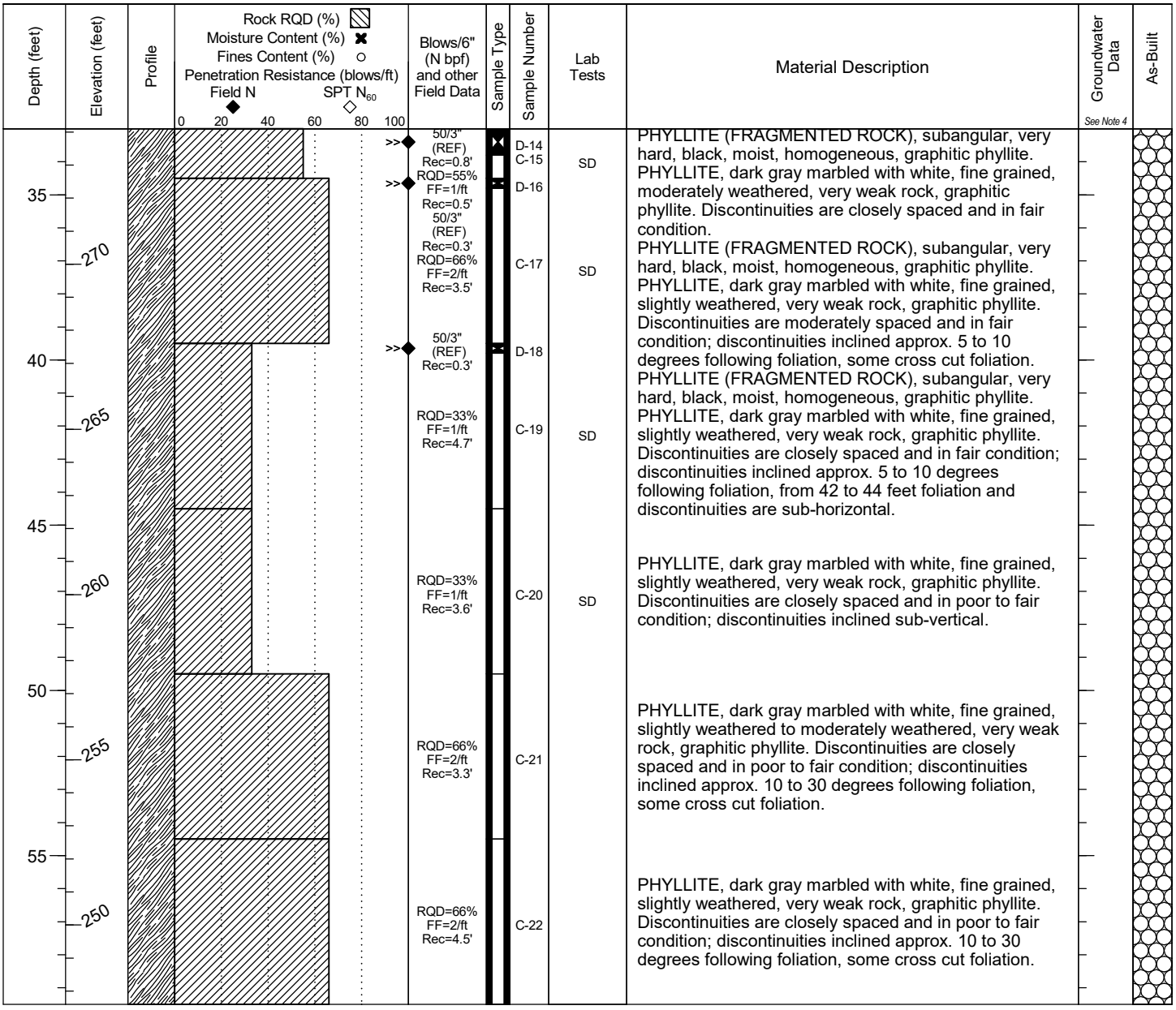


STANDARD BORING LOG XL5949-T3 005 UNTRIBTOFRIDAYCR.GPJ 2020 WSDOT GINT TEMPLATE.GDT 3/30/23

CONTINUED NEXT PAGE *(see last page for notes)*

Project: Advanced Work on Fish Barriers: I-5/Unnamed Tributary to Friday Creek (995240)

Job Number: XL5949 *Route & MP Range:* SR 005 MP 240.99 - 240.99



HOLE ENDED AT 59.5 FEET ON 7-28-2021

NOTES:

1. This is a summary log of the boring. Soil/rock descriptions are derived from visual field identifications and laboratory test data (where tested). See exploration log legend for explanation of graphics and abbreviations.
2. The implied accuracy of the location information displayed on this log is typically sub-meter(X,Y) when collected using GPS methods by the Geotechnical Office and sub-centimeter (X,Y,Z) when collected by the Region survey crew.
3. Where oversized samplers were used, a correction was made to the N-value per the AASHTO Manual on Subsurface Investigations, 1988. Blow counts per 6-inch increment have not been corrected.
4. The groundwater level range shown on this log represents data collected between 11/29/2021 and 2/16/2023. The blue line extends between the minimum and maximum readings collected during the monitoring period. Artesian groundwater measurements were noted. See piezometer report for values.

WSDOT

LOG OF BORING A-454p-21

Project: Advanced Work on Fish Barriers: I-5/Unnamed Tributary to Friday Creek (995259)

Job Number: XL5949 *Route & MP Range:* SR 005 MP 241.10 - 241.10

Northing: 595,901.8 feet *Latitude:* 48.623583 deg. *Driller/Inspector:* Walker, Robert (#2864) / Shepherd, Robert (#2710)

Easting: 1,271,857.9 feet *Longitude:* -122.357261 deg. *Start Card:* RE-21255 *Well Tag:* BNQ-706 *Instrument:* 1" PVC

Elevation: 288.5 feet *Collector:* Region Survey *Drilling Method:* Casing Advancer/Coring *Hole Diam.:* 6 in

Horizontal/Vertical Datum: NAD 83 HARN, SPN / NAVD88 *Equipment:* CME 850 (ID:9C2-5) *Rod Type:* HWT

Started: July 29, 2021 *Completed:* August 5, 2021 *Hammer Type:* Autohammer *Historic Efficiency:* 87.4%

Rock RQD (%) ▨
Moisture Content (%) ✖
Fines Content (%) ○
Penetration Resistance (blows/ft)
Field N ◆ SPT N_{60} ◇
0 20 40 60 80 100

Depth (feet)	Elevation (feet)	Blows/6" (N bpf) and other Field Data	Sample Type	Sample Number	Lab Tests	Material Description	Groundwater Data (See Note 4)
		24 12 16 (28) Rec=0.7'		D-1		*-Asphalt* SILTY SAND WITH GRAVEL, dense, brown, dry, homogeneous, with organics.	
	285						
5		4 7 8 (15) Rec=0.9'		D-2		SILTY SAND WITH GRAVEL, medium dense, olive and gray, moist, homogeneous, with iron oxide staining and organics.	
	280	1 1 2 (3) Rec=1.5'		D-3	GS	SILTY SAND WITH GRAVEL, very loose, brown, moist, homogeneous, with scattered organics, wood fragments, roots, and charcoal.	
10		0 1 3 (4) Rec=1.5'		D-4	GS, AL	SILTY SAND WITH GRAVEL, very loose, dark gray-brown, wet, homogeneous, with organics.	
	275	16 21 23 (44) Rec=1.5'		D-5	GS	*-At approx. 11.5 feet drilling action indicates gravel* SILTY SAND WITH GRAVEL, dense, gray, moist, homogeneous.	08-03-21 ▽
15		13 19 19 (38) Rec=1.5'		D-6		SILTY SAND WITH GRAVEL, dense, gray, moist, homogeneous.	
	270	24 36 >> 33 (69) Rec=0.5'		D-7	PH, RES	SILTY SAND WITH GRAVEL, very dense, gray, moist, homogeneous, with trace sand.	
20		15 27 >> 42 (69) Rec=0.7'		D-8		SILTY SAND WITH GRAVEL, very dense, gray, moist, homogeneous, with trace sand.	
	265						
25		17 25 28 (53) Rec=1.6'		D-9	GS	SILTY SAND WITH GRAVEL, very dense, gray, moist, homogeneous.	
	260						

As-Built

STANDARD BORING LOG XL5949-TB 005 UNTRIBTOFRIDAYCR.GPJ 2020 WSDOT GINT TEMPLATE.GDT 9/30/23

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Project: Advanced Work on Fish Barriers: I-5/Unnamed Tributary to Friday Creek (995259)

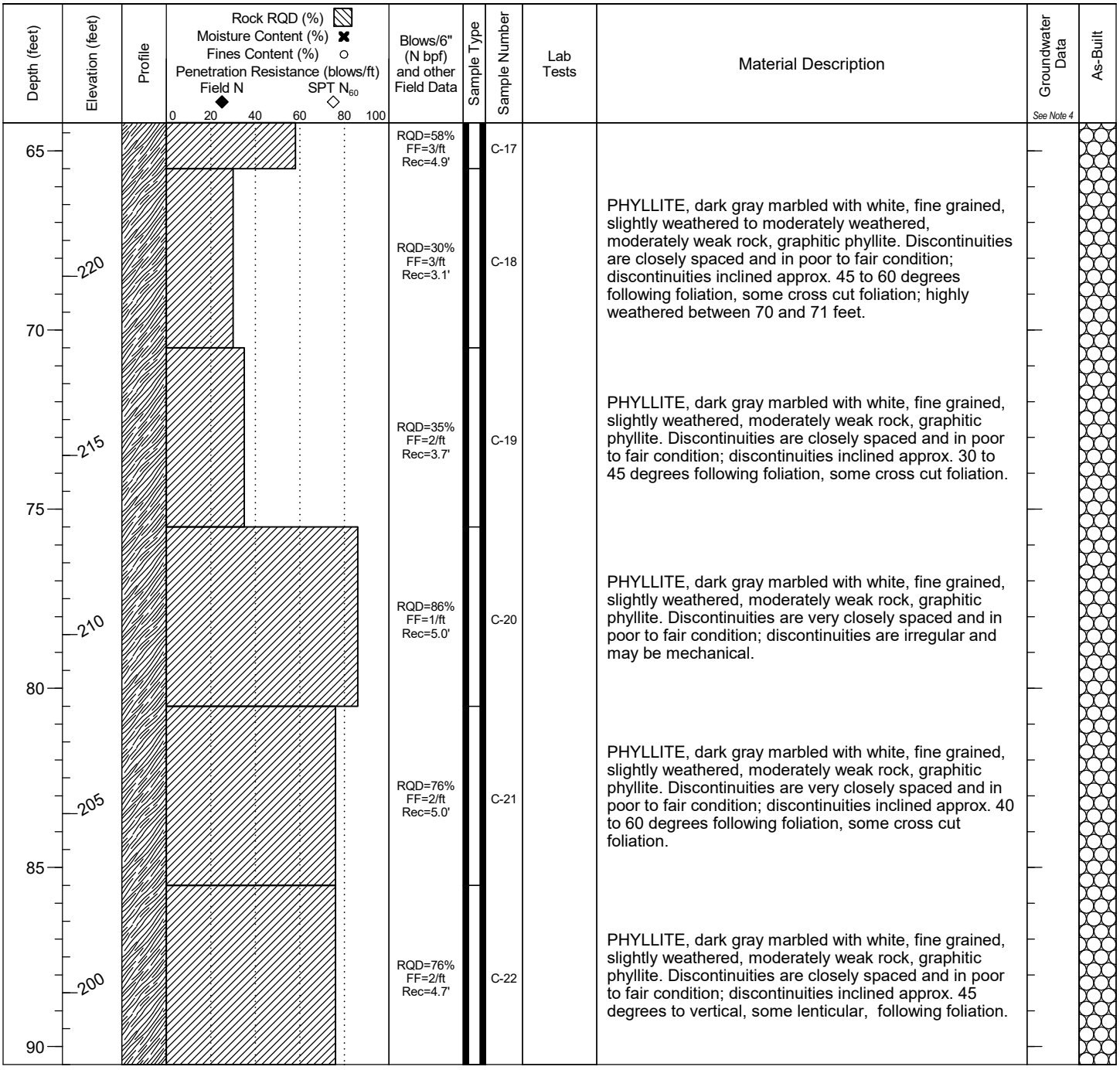
Job Number: XL5949 *Route & MP Range:* SR 005 MP 241.10 - 241.10

Depth (feet)	Elevation (feet)	Profile	Rock RQD (%) / Moisture Content (%) / Fines Content (%) / Penetration Resistance (blows/ft) Field N / SPT N_{60} (0 20 40 60 80 100)	Blows/6" (N bpf) and other Field Data	Sample Type	Sample Number	Lab Tests	Material Description	Groundwater Data (See Note 4)	As-Built
30				16 19 21 (40) Rec=1.3'		D-10		SILTY SAND WITH GRAVEL, dense, gray, moist, homogeneous.		
	255									
35				16 21 22 (43) Rec=0.6'		D-11		SILTY SAND WITH GRAVEL, dense, gray, moist, homogeneous.		
	250									
40				11 13 20 (33) Rec=1.6'		D-12	GS	SILTY SAND WITH GRAVEL, dense, gray, moist, homogeneous.		
	245									
45				9 15 22 (37) Rec=1.4'		D-13		SILTY SAND WITH GRAVEL, dense, gray, moist, homogeneous.		
	240									
50				6 12 14 (26) Rec=1.6'		D-14		SILTY SAND WITH GRAVEL, dense, gray, moist, homogeneous.		
	235									
55				8 13 31 (44) Rec=1.0'		D-15		SILTY SAND WITH GRAVEL, dense, gray, wet, homogeneous, with fragments of phyllite.		
								-At approx. 56 feet drilling indicates bedrock		
	230									
60			>>	50/3" (REF) Rec=0.4'		D-16		SILTY SAND WITH GRAVEL, very dense, dark gray, moist, homogeneous, with fragments of phyllite.		
				RQD=58% FF=3/ft Rec=4.9'		C-17		PHYLLITE, dark gray marbled with white, fine grained, moderately weathered, moderately weak rock, graphitic phyllite. Discontinuities are closely spaced and in poor to fair condition; discontinuities inclined approx. 40 to 50 degrees following foliation, some cross cut foliation.		
	225									

STANDARD BORING LOG XL5949-T8 005 UNTRIBTOFRIDAYCR.GPJ 2020 WSDOT GINT TEMPLATE.GDT 3/30/23

CONTINUED NEXT PAGE *(see last page for notes)*

Project: Advanced Work on Fish Barriers: I-5/Unnamed Tributary to Friday Creek (995259) *Job Number:* XL5949 *Route & MP Range:* SR 005 MP 241.10 - 241.10



HOLE ENDED AT 90.5 FEET ON 8-5-2021

NOTES:

1. This is a summary log of the boring. Soil/rock descriptions are derived from visual field identifications and laboratory test data (where tested). See exploration log legend for explanation of graphics and abbreviations.
2. The implied accuracy of the location information displayed on this log is typically sub-meter(X,Y) when collected using GPS methods by the Geotechnical Office and sub-centimeter (X,Y,Z) when collected by the Region survey crew.
3. Where oversized samplers were used, a correction was made to the N-value per the AASHTO Manual on Subsurface Investigations, 1988. Blow counts per 6-inch increment have not been corrected.
4. The groundwater level range shown on this log represents data collected between 10/27/2021 and 2/16/2023. The blue line extends between the minimum and maximum readings collected during the monitoring period.
5. After install water was at 5.6'

WSDOT

LOG OF BORING A-455vw-21

Project: Advanced Work on Fish Barriers: I-5/Unnamed Tributary to Unnamed Friday Creek Tributary (995245)
Job Number: XL5949 *Route & MP Range:* SR 005 MP 241.10 - 241.10
Northing: 595,922.6 feet *Latitude:* 48.623652 deg. *Driller/Inspector:* Walker, Robert (#2864) / Haller, Robert (#2779)
Easting: 1,272,071.0 feet *Longitude:* -122.356382 deg. *Start Card:* RE-21255 *Well Tag:* BNQ-707 *Instrument:* VWP
Elevation: 273.0 feet *Collector:* Region Survey *Drilling Method:* Casing Advancer/Coring *Hole Diam.:* 6 in
Horizontal/Vertical Datum: NAD 83 HARN, SPN / NAVD88 *Equipment:* CME 850 (ID:9C2-5) *Rod Type:* HWT
Started: August 17, 2021 *Completed:* August 20, 2021 *Hammer Type:* Autohammer *Historic Efficiency:* 87.4%

Depth (feet)	Elevation (feet)	Blows/6" (N bpf) and other Field Data	Sample Type	Sample Number	Lab Tests	Material Description
						-Asphalt
	270	7 10 10 (20) Rec=0.9'		D-1		POORLY GRADED GRAVEL WITH SILT AND SAND, subrounded, medium dense, very dark grayish brown, moist, homogeneous.
5		5 5 2 (7) Rec=0.6'		D-2		SILTY SAND WITH GRAVEL, subrounded, loose, dark grayish brown, wet, homogeneous.
	265	1 2 11 (13) Rec=1.5'		D-3	GS	SILTY SAND, medium dense, brown, moist, homogeneous.
10		1 2 5 (7) Rec=1.5'		D-4	AL	SANDY LEAN CLAY, medium stiff, gray and brown with mottling, moist, homogeneous, with intense iron-oxide staining and trace gravel.
	260	3 5 10 (15) Rec=1.5'		D-5		LEAN CLAY, stiff, gray and olive with mottling, moist, laminated, with intense iron-oxide staining and trace sand.
15		Rec=2.0'		P-6		FAT CLAY, gray and olive, moist, blocky, with iron-oxide staining, dessication slickensides.. *-Pocket Penetrometer qu = 3 to 3.5 tsf.*
	255	1 1 3 (4) Rec=1.5'		D-7	AL	FAT CLAY, soft, gray, moist, homogeneous.
20		Rec=2.0'		P-8	AL, PH, RES, CN, CU	FAT CLAY, medium stiff, gray, moist, with incipient ped development.
	250	0 1 1 (2) Rec=1.5'		D-9		FAT CLAY, soft, gray, moist, homogeneous.

Moisture Content (%) ✖
Fines Content (%) ○
Penetration Resistance (blows/ft)
Field N ◆ SPT N_{60} ◇
0 20 40 60 80 100

Groundwater Data *See Note 4*

As-Built

CONTINUED NEXT PAGE *(see last page for notes)*

STANDARD BORING LOG XL5949-U2 005 UNTRIBTOUNFRIDAYCRTRIB.GPJ 2020 WSDOT GINT TEMPLATE.GDT 3/30/23

Project: Advanced Work on Fish Barriers: I-5/Unnamed Tributary to Unnamed Friday Creek Tributary (995245)

Job Number: XL5949 *Route & MP Range:* SR 005 MP 241.10 - 241.10

Depth (feet)	Elevation (feet)	Profile	Moisture Content (%) ✖ Fines Content (%) ○ Penetration Resistance (blows/ft) Field N ◆ SPT N_{60} ◇ 0 20 40 60 80 100	Blows/6" (N bpf) and other Field Data	Sample Type	Sample Number	Lab Tests	Material Description	Groundwater Data (See Note 4)	As-Built
25			✖	Rec=2.0'	P	P-10	AL	FAT CLAY, soft, gray, moist, with incipient ped development and slight organic odor.		
								-Pocket Penetrometer qu = 0.5 tsf.		
			◆	0 0 2 (2) Rec=1.5'		D-11		FAT CLAY, soft, gray, moist, homogeneous.		
	245									
30				Rec=1.7'	P	P-12		SANDY FAT CLAY, gray, moist, with trace subangular to angular gravel.		
									Bail test: water at 30.7 ft	
			◆ ◇	0 2 20 (22) Rec=1.5'		D-13		CLAYEY SAND WITH GRAVEL, very stiff, gray, moist, homogeneous.		
	240							*-Artesian pressure (4 feet above ground) encountered during drilling while pulling casing. Artesian pressure (4 to 6 feet above ground) indicated by vibrating wire piezometer. Suspected source is silty sand between 33 to 52 feet bgs, and potentially in sandy/silty beds between 52 to 74 feet bgs.*		
35			✖ ◆ ◇	8 12 16 (28) Rec=0.8'		D-14	GS	SILTY SAND WITH GRAVEL, dense, gray, moist, homogeneous.		
	235									
40			◆ ◇	6 10 9 (19) Rec=1.0'		D-15		SILTY SAND WITH GRAVEL, subrounded, medium dense, gray, moist, homogeneous.		
	230									
45			◆ ✖	1 3 6 (9) Rec=1.2'		D-16	AL	SILTY CLAYEY SAND WITH GRAVEL, loose, gray, moist, homogeneous.		
	225									
50			◆ ◇	5 10 10 (20) Rec=1.4'		D-17		SILTY SAND WITH GRAVEL, medium dense, gray, moist, homogeneous.		
	220									

STANDARD BORING LOG XL5949-U2 005 UNTRIBTOUNFRIDAYCRTRIB.GPJ 2020 WSDOT.GINT TEMPLATE.GDT 3/30/23

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Project: Advanced Work on Fish Barriers: I-5/Unnamed Tributary to Unnamed Friday Creek Tributary (995245)

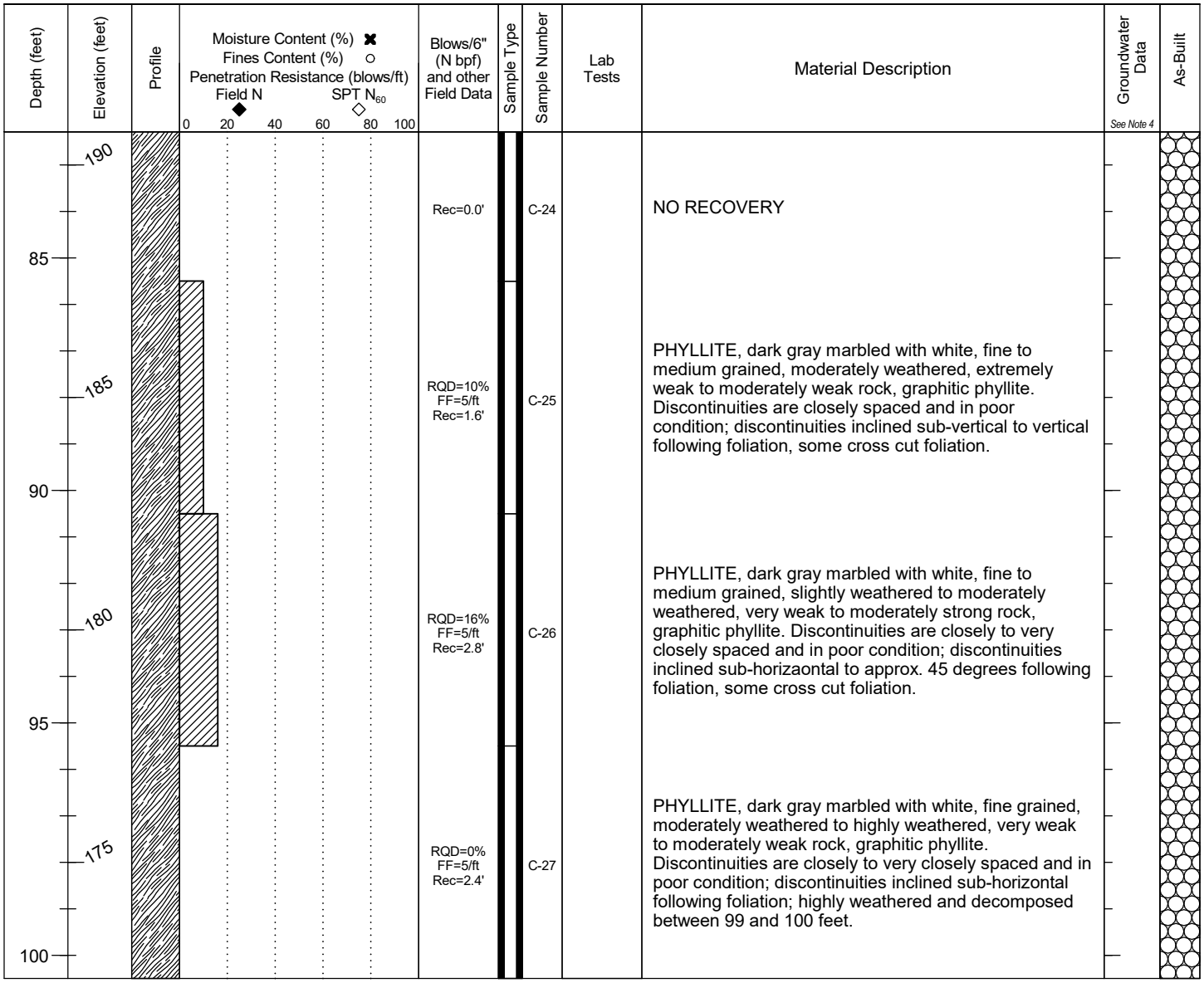
Job Number: XL5949 *Route & MP Range:* SR 005 MP 241.10 - 241.10

Depth (feet)	Elevation (feet)	Profile	Moisture Content (%) ✖ Fines Content (%) ○ Penetration Resistance (blows/ft) Field N ◆ SPT N_{60} ◇ 0 20 40 60 80 100	Blows/6" (N bpf) and other Field Data	Sample Type	Sample Number	Lab Tests	Material Description	Groundwater Data (See Note 4)	As-Built
55	215		✖ ◆ ◇ ○	7 12 19 (31) Rec=1.5'		D-18	GS, AL	SANDY LEAN CLAY, hard, gray, moist, homogeneous.		
60			◆ ◇	11 17 28 (45) Rec=1.4'		D-19		SANDY LEAN CLAY, hard, gray, moist, homogeneous, with trace gravel.		
65	210		✖ ◆ ○ ◇	7 16 23 (39) Rec=1.5'		D-20	GS, AL	SANDY LEAN CLAY WITH GRAVEL, hard, dark gray, moist, homogeneous.		
70	205		✖ ◆ ◇ ○	9 13 19 (32) Rec=1.5'		D-21	GS, AL	SANDY LEAN CLAY WITH GRAVEL, hard, dark gray, moist, homogeneous.		
75	200		>> ◆	50/1" (REF) Rec=0.0'		D-22		*-Drillers indicate encountered bedrock at 74 feet.* NO RECOVERY		
80	195		>> ◆	38 50/5" (REF) Rec=1.0'		D-23		SILT, very dense, dark gray, moist, homogeneous, greasy and platelly, phyllite fragments.		
				Rec=0.0'		C-24		*-Drillers indicate gravel stuck in core bit likely caused no recovery.* NO RECOVERY		

STANDARD BORING LOG XL5949-U2 005 UNTRIBTOUNFRIDAYCRTRIB.GPJ 2020 WSDOT.GINT TEMPLATE.GDT 3/30/23

CONTINUED NEXT PAGE *(see last page for notes)*

Project: Advanced Work on Fish Barriers: I-5/Unnamed Tributary to Unnamed Friday Creek Tributary (995245) *Job Number:* XL5949 *Route & MP Range:* SR 005 MP 241.10 - 241.10



HOLE ENDED AT 100.5 FEET ON 8-20-2021

NOTES:

1. This is a summary log of the boring. Soil/rock descriptions are derived from visual field identifications and laboratory test data (where tested). See exploration log legend for explanation of graphics and abbreviations.
2. The implied accuracy of the location information displayed on this log is typically sub-meter(X,Y) when collected using GPS methods by the Geotechnical Office and sub-centimeter (X,Y,Z) when collected by the Region survey crew.
3. Where oversized samplers were used, a correction was made to the N-value per the AASHTO Manual on Subsurface Investigations, 1988. Blow counts per 6-inch increment have not been corrected.
4. The groundwater level range shown on this log represents data collected between 10/27/2021 and 2/16/2023. The blue line extends between the minimum and maximum readings collected during the monitoring period. Artesian groundwater measurements were noted. See piezometer report for values.

BAIL-RECHARGE TEST RESULTS:

Test Date: August 17, 2021
Hole Depth / Casing Depth: 60.5 feet / 59.0 feet
Water Depth Before Bailing: 6.8 feet
Note: Took out 7 bails with 10ft bailer

ELAPSED TIME (minutes)	WATER DEPTH (feet)
0	46.0
1	45.4
2	44.3
3	43.4
4	42.7
5	41.8
10	38.9
15	35.6
20	33.2
25	31.6
30	30.7

APPENDIX D

Report Limitations and Guidelines for Use

REPORT LIMITATIONS AND GUIDELINES FOR USE

Geoscience is Not Exact

The geoscience practices (geotechnical engineering, geology, and environmental science) are far less exact than other engineering and natural science disciplines. It is important to recognize this limitation in evaluating the content of the report. If you are unclear how these "Report Limitations and Guidelines for Use" apply to your project or property, you should contact Aspect Consulting (Aspect).

This Report and Project-Specific Factors

Aspect's services are designed to meet the specific needs of our clients. Aspect has performed the services in general accordance with our agreement (the Agreement) with the Client (defined under the Limitations section of this project's work product). This report has been prepared for the exclusive use of the Client. This report should not be applied for any purpose or project except the purpose described in the Agreement.

Aspect considered many unique, project-specific factors when establishing the Scope of Work for this project and report. You should not rely on this report if it was:

- Not prepared for you;
- Not prepared for the specific purpose identified in the Agreement;
- Not prepared for the specific subject property assessed; or
- Completed before important changes occurred concerning the subject property, project, or governmental regulatory actions.

If changes are made to the project or subject property after the date of this report, Aspect should be retained to assess the impact of the changes with respect to the conclusions contained in the report.

Reliance Conditions for Third Parties

This report was prepared for the exclusive use of the Client. No other party may rely on the product of our services unless we agree in advance to such reliance in writing. This is to provide our firm with reasonable protection against liability claims by third parties with whom there would otherwise be no contractual limitations. Within the limitations of scope, schedule, and budget, our services have been executed in accordance with our Agreement with the Client and recognized geoscience practices in the same locality and involving similar conditions at the time this report was prepared.

Property Conditions Change Over Time

This report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by events such as a change in property use or occupancy, or by natural events, such as floods,

earthquakes, slope instability, or groundwater fluctuations. If any of the described events may have occurred following the issuance of the report, you should contact Aspect so that we may evaluate whether changed conditions affect the continued reliability or applicability of our conclusions and recommendations.

Geotechnical, Geologic, and Environmental Reports Are Not Interchangeable

The equipment, techniques, and personnel used to perform a geotechnical or geologic study differ significantly from those used to perform an environmental study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually address any environmental findings, conclusions, or recommendations (e.g., about the likelihood of encountering underground storage tanks or regulated contaminants). Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding the subject property.

We appreciate the opportunity to perform these services. If you have any questions, please contact the Aspect Project Manager for this project.

SOILS CLASSIFICATION, CONSISTENCY AND SYMBOLS

CLASSIFICATION

Identification and classification of soil samples is accomplished in general accordance with the ASTM version of the Unified Soil Classification System (USCS) as presented in ASTM Standard D2487. The standard is a qualitative method of classifying soil into the following major divisions (1) coarse grained soil, (2) fine grained soil, and (3) highly organic soils. Classification is performed on a soil sample which passes the 75 mm (3 inch) sieve, oversize material (> 75 mm particles) is noted on the soil logs as well. Classification of oversize material is not always possible because the oversize particles are typically too large to be captured in the sampling equipment. Oversize materials greater than 300 mm (12 inches) are termed boulders, while materials between 75 mm and 300 mm are termed cobbles. Coarse grained soils are described as having 50% or more of the sample retained on the No. 200 sieve (0.075 mm) while fine grained soils will have 50% or more of the sample passing the No. 200 sieve. Coarse samples containing >50% material retained on the No. 4 sieve is classified as gravel. If a majority of the sample is retained on the No. 200 sieve but passes the No. 4 sieve it is classified as a sand. Fine grained soils are those having more than 50% of the sample passing the No. 200 sieve; these may be classified as silt or clay depending their Atterberg limits or observations of field consistency. Refer to the most recent version of ASTM D2487 for a complete discussion of the classification method.

SOIL CONSISTENCY - CRITERIA

Soil consistency as defined below and determined by normal field and laboratory methods applies only to non-frozen material. For these materials, the influence of such factors as soil structure, i.e., Fissure systems, shinkage cracks, slickensides, etc., must be taken into consideration in making any correlation with the consistency values listed below. In permafrost zones, the consistency and strength of frozen soils may vary significantly and unexplainably with ice content, thermal regime and soil type.

STANDARD PENETRATION TEST (BLOWS/FT) RELATIVE TO DENSTIY/CONSISTENCY

N_{60}	Density	Relative Density	N_{60}	Consistency
0-4	Very Loose	0-15%	< 2	Very Soft
4-10	Loose	15-35%	2 - 4	Soft
10-30	Medium Dense	35-65%	4 - 8	Medium Stiff
30-50	Dense	65-85%	8 - 15	Stiff
> 50	Very Dense	>85%	15 - 30	Very Stiff
			> 30	Hard

UNDRAINED SHEAR STRENGTH

psf
< 250
250 - 500
500 - 1000
1000 - 2000
2000 - 4000
> 4000

(*correlations based upon standard 1.4" O.D. split spoon and 140 lb manual hammer dropped from a height of 30 inches)

(*Adjust as required for other sampler types)

Ref: Terzaghi and Peck, Soil Mechanics in Engineering Practice, 3rd Edition, pg 60-63
ASTM D1586 Standard Test Method for Penetration Test and Split-Barrel Sampling of Soils
ASTM D2487 Standard Practice for Classification of Soils for Engineering Purposes (USCS)

LIST OF ABBREVIATIONS

Drill Methods:

AR	Air Rotary
CC60	Continuous Coring (RS-60)
CCm	Continuous Coring (Macro Core)
CD	Case and Drill
CME	Continuous Augering
CWR	Casing with Wash Rotary
DH	Down-hole hammer
DP	Direct Push
HSA	Hollow Stem Auger
HWT	Casing Advance
MC7	MC7 Coring
MR	Mud Rotary
NQ3	NQ3 Triple Tube
SC	Sonic Core
SCC	Sonic Core with Wash Rotary
SSA	Solid Stem Auger
TP	Test Pit

Sample Methods:

AR	Air Rotary
Cc	Continuous Core
Cs	Core Sample
GR	Grab Sample
SC	Sonic Core
Sh	Oversize Split-Spoon
Ss	Standard Split-Spoon
ST	Shelby Tube

Color:

BG	Brownish Gray
BK	Black
BN	Brown
DB	Dark Brown
DG	Dark Gray
G	Gray
GG	Greenish Gray
LB	Light Brown
LG	Light Gray
OG	Olive Gray
P	Pink
R	Reddish
RO	Rusty Orange
TN	Tan
YO	Yellowish Orange

Particle Angularity

A	Angular
R	Rounded
SA	Sub-Angular
SR	Sub-Rounded

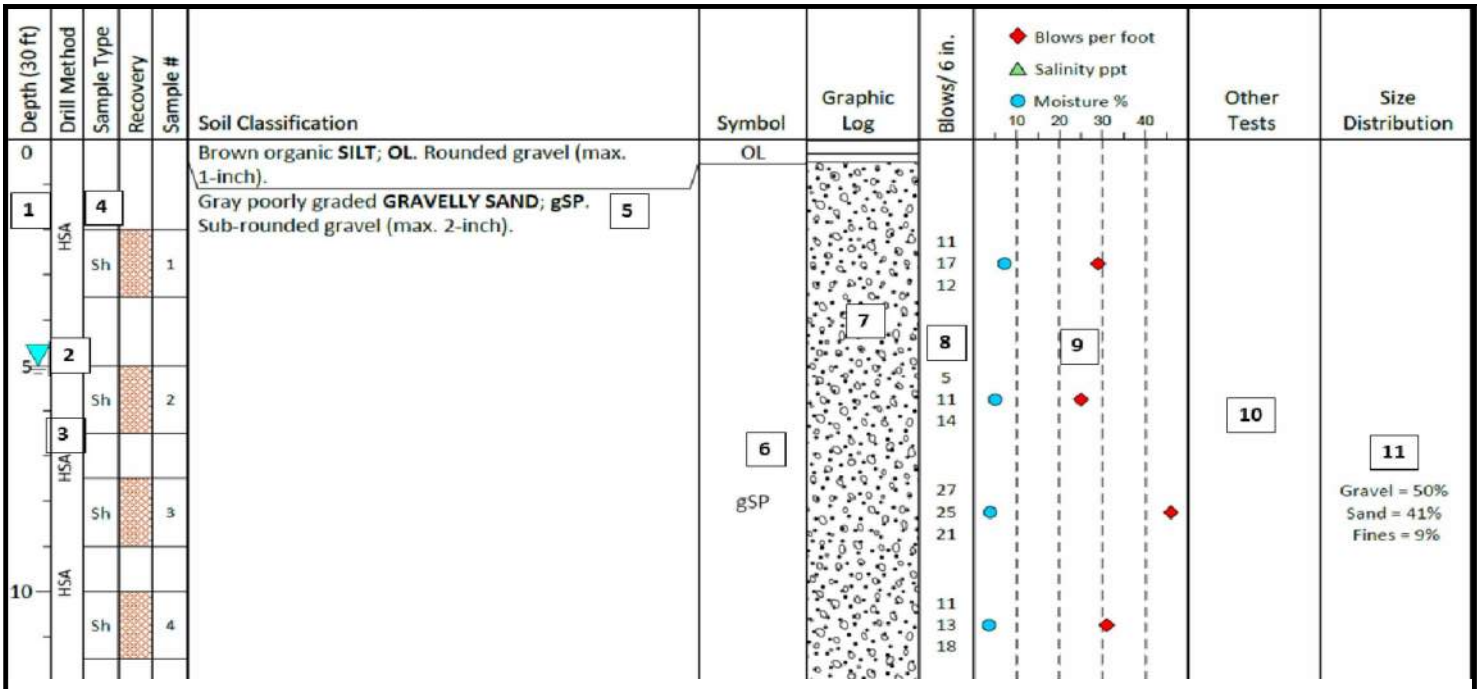
Particle Shape:

E	Elongated
F	Flat

P N D
ENGINEERS, INC.

Designed:	PND
Drawn:	PND
Checked:	PND
Project No.:	XXXXXX
Date:	June 2022

STANDARD GEOTECHNICAL EXPLORATION BOREHOLE LEGEND



1	Depth	Depth (in feet) below the mudline.
2	Water Table	Water Table depth.
3	Drill Method	Drilling methods recorded in depth intervals. Symbols explained on Fig. B-01.
4	Sample Type	Type of soil sample collected at depth interval depicted; symbols explained on Fig. B-04.
5	Material Description - General	General description of soil encountered in a lithological layer.
6	Symbol	Group symbols for soil and ice classification for each specimen.
7	Graphic Log	Graphic depiction of lithological layers encountered. Graphic symbols explained in Fig. B-03 and B-04.
8	Blows/ 6 in	Number of blows to advance sampler each 6-inch interval using sampler type specified with a 30-inch drop.
9	Graphs	Graphic log depicting moisture content and blow count per foot of soil specimens.
10	Other Tests	Results of other tests including hydrometer, Atterberg limits, etc.
11	Size Distribution	Results of particle size distribution analysis.

GENERAL NOTES

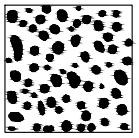
1. Field descriptions may have been modified to reflect laboratory test results.
2. Descriptions on these boring logs apply only at the specific locations at the time the borings were drilled. They are not warranted to be representative of subsurface conditions at other locations or times.
3. Split spoon blow counts shown are uncorrected raw data. Various hammer sizes and split spoon sizes were used and have not been corrected to a Standard Penetration Test (SPT). Blow counts may vary substantially between SPT and these methods.

PND ENGINEERS, INC.

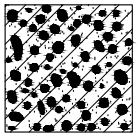
Designed:	PND
Drawn:	PND
Checked:	PND
Project No.:	
Date:	June 2020

STANDARD GEOTECHNICAL EXPLORATION BOREHOLE LEGEND

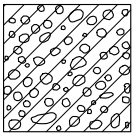
SOIL LEGEND - (1 of 3)



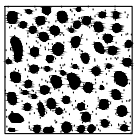
GW
WELL GRADED GRAVEL



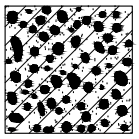
(GW-GC)s
WELL GRADED GRAVEL WITH CLAY AND SAND



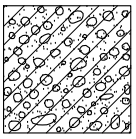
GC
CLAYEY GRAVEL



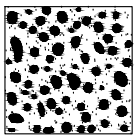
GWs
WELL GRADED GRAVEL WITH SAND



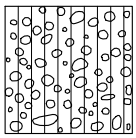
s(GW-GC)
WELL GRADED SANDY GRAVEL WITH CLAY



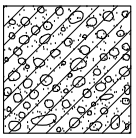
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CLAYEY GRAVEL WITH SAND



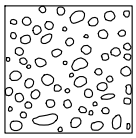
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WELL GRADED SANDY GRAVEL



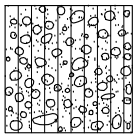
GP-GM
POORLY GRADED GRAVEL WITH SILT



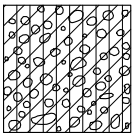
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CLAYEY, SANDY GRAVEL



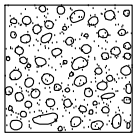
GP
POORLY GRADED GRAVEL



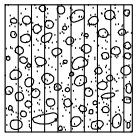
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POORLY GRADED GRAVEL WITH SILT AND SAND



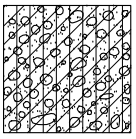
GC-GM
SILTY, CLAYEY GRAVEL



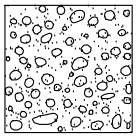
GPs
POORLY GRADED GRAVEL WITH SAND



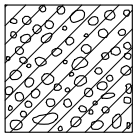
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POORLY GRADED SANDY GRAVEL WITH SILT



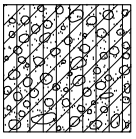
(GC-GM)s
SILTY, CLAYEY GRAVEL WITH SAND



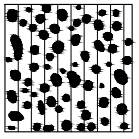
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POORLY GRADED SANDY GRAVEL



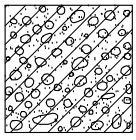
GP-GC
POORLY GRADED GRAVEL WITH CLAY



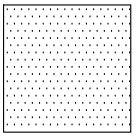
s(GC-GM)
SILTY, CLAYEY, SANDY GRAVEL



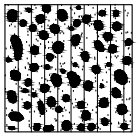
GW-GM
WELL GRADED GRAVEL WITH SILT



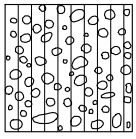
(GP-GC)s
POORLY GRADED GRAVEL WITH CLAY AND SAND



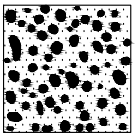
SW
WELL GRADED SAND



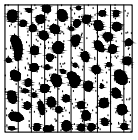
(GW-GM)s
WELL GRADED GRAVEL WITH SILT AND SAND



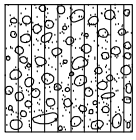
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S*ILTY GRAVEL*



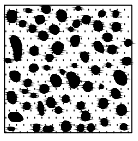
SWg
WELL GRADED SAND WITH GRAVEL



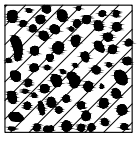
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WELL GRADED SANDY GRAVEL WITH SILT



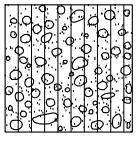
GMs
SILTY GRAVEL WITH SAND



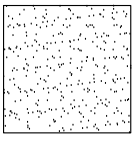
gSW
WELL GRADED GRAVELLY SAND



GW-GC
WELL GRADED GRAVEL WITH CLAY



sGM
SILTY, SANDY GRAVEL



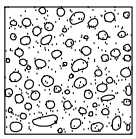
SP
POORLY GRADED SAND

P N D
ENGINEERS, INC.

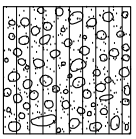
Designed:	PND
Drawn:	PND
Checked:	PND
Project No.:	
Date:	June 2020

STANDARD GEOTECHNICAL EXPLORATION BOREHOLE LEGEND

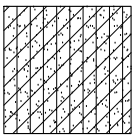
SOIL LEGEND - (2 of 3)



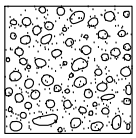
SPg
POORLY GRADED SAND WITH GRAVEL



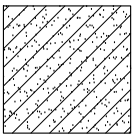
g(SP-SM)
POORLY GRADED GRAVELLY SAND WITH SILT



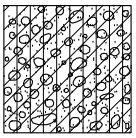
SC-SM
SILTY, CLAYEY SAND



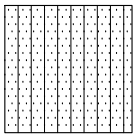
gSP
POORLY GRADED GRAVELLY SAND



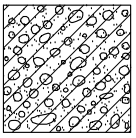
SP-SC
POORLY GRADED SAND WITH CLAY



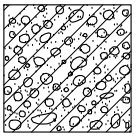
(SC-SM)g
SILTY, CLAYEY SAND WITH GRAVEL



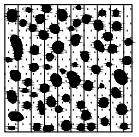
SW-SM
WELL GRADED SAND WITH SILT



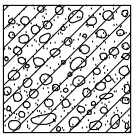
(SP-SC)g
POORLY GRADED SAND WITH CLAY AND GRAVEL



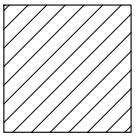
g(SP-SC)
POORLY GRADED GRAVELLY SAND WITH CLAY



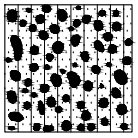
(SW-SM)g
WELL GRADED SAND WITH SILT AND GRAVEL



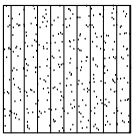
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POORLY GRADED GRAVELLY SAND WITH CLAY



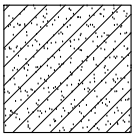
CL
CLAY



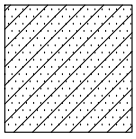
g(SW-SM)
WELL GRADED GRAVELLY SAND WITH SILT



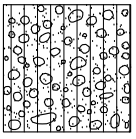
SM
SILTY SAND



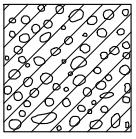
CLs
CLAY WITH SAND



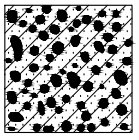
SW-SC
WELL GRADED SAND WITH CLAY



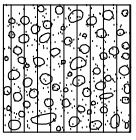
SMg
SILTY SAND WITH GRAVEL



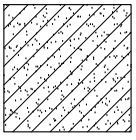
CLg
CLAY WITH GRAVEL



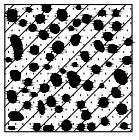
(SW-SC)g
WELL GRADED SAND WITH CLAY AND GRAVEL



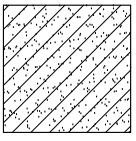
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SILTY, GRAVELLY SAND



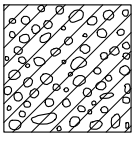
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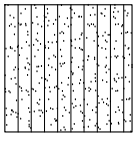
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WELL GRADED GRAVELLY SAND WITH CLAY



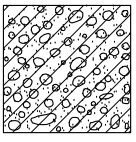
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CLAYEY SAND



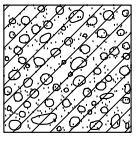
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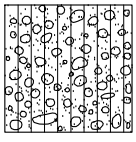
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POORLY GRADED SAND WITH SILT



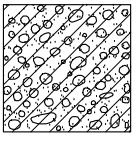
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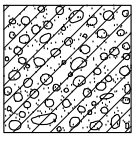
sCLg
SANDY LEAN CLAY WITH GRAVEL



(SP-SM)g
POORLY GRADED SAND WITH SILT AND GRAVEL



gSC
CLAYEY, GRAVELLY SAND



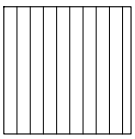
gCLs
GRAVELLY LEAN CLAY WITH SAND

PND ENGINEERS, INC.

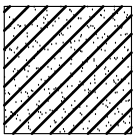
Designed:	PND
Drawn:	PND
Checked:	PND
Project No.:	
Date:	June 2020

STANDARD GEOTECHNICAL EXPLORATION BOREHOLE LEGEND

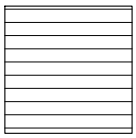
SOIL LEGEND - (3 of 3)



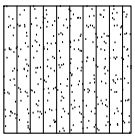
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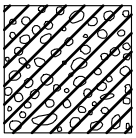
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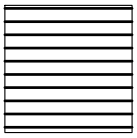
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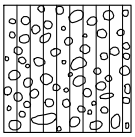
MLs
SILT WITH SAND



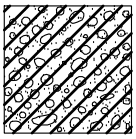
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GRAVELLY FAT CLAY



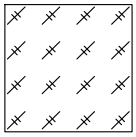
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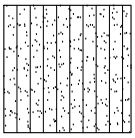
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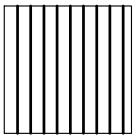
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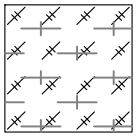
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ICE



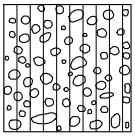
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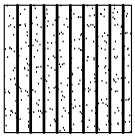
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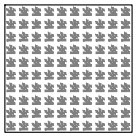
ICE+S
ICE WITH SOIL



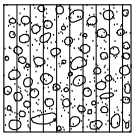
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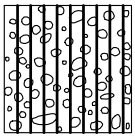
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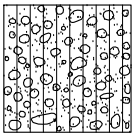
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PEAT



sMLg
SANDY SILT WITH GRAVEL



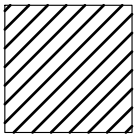
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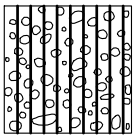
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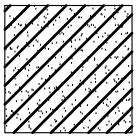
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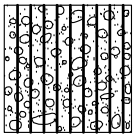
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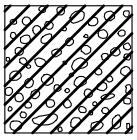
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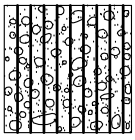
CHs
FAT CLAY WITH SAND



sMHg
SANDY ELASTIC SILT WITH GRAVEL



CHg
FAT CLAY WITH GRAVEL



gMHs
GRAVELLY ELASTIC SILT WITH SAND

P N D
ENGINEERS, INC.

Designed:	PND
Drawn:	PND
Checked:	PND
Project No.:	
Date:	June 2020

STANDARD GEOTECHNICAL EXPLORATION BOREHOLE LEGEND

LOG OF BOREHOLE MUNT-1

Project: I-5 Tributary Fish Passages
Project Number: 231073
Location: Washington

Elevation: 312.6 ft NAVD88
Horizontal Datum: WGS 84
Latitude: 48.62232 °N Longitude: 122.35810 °W

Logged By: FVM
Reviewed By: CJK
Review Date: 11/5/2024

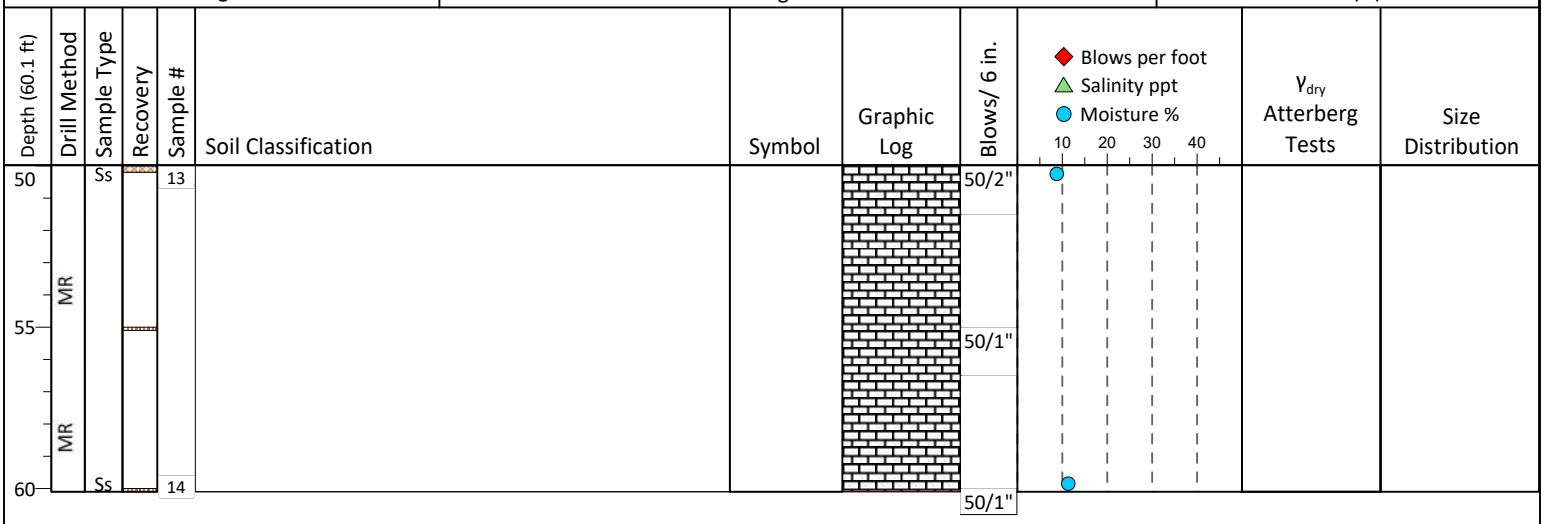
Depth (60.1 ft)	Drill Method	Sample Type	Recovery	Sample #	Soil Classification	Symbol	Graphic Log	Blows/ 6 in.	Blows per foot / Salinity ppt / Moisture % (10 20 30 40)	γ_{dry} Atterberg Tests	Size Distribution
0		Ss		1	Very dense, brown well-graded **SANDY GRAVEL with SILT**; **s(GW-GM)**. Sub-rounded gravel (max. 3/4-inch).	s(GW-GM)		7 36 50/3"			Gravel = 46% Sand = 46% Fines = 8%
	MR	Ss		2	Dense, gray **SILTY SAND with GRAVEL**; **SMg**. Sub-rounded gravel (max. 1/2-inch).	SMg		16 16 22			
5		Ss		3				14 14 16		LL = 17 PL = 16	Fines = 40.7%
	MR	Ss		4	Dense, gray **SILTY, CLAYEY SAND with GRAVEL**; **(SC-SM)g**. Sub-rounded gravel (max. 1/8-inch).			13 17 29			Gravel = 25% Sand = 39% Fines = 36%
10		Ss		5		(SC-SM)g		18 17 27		LL = 19 PL = 14	Fines = 39.1%
	MR										
15		Ss		6	Very dense, dark gray **BEDROCK**; **BR**. With weathered graphitic PHYLLITE and trace 1/8" lenses of white mineralizations.			50/2"			
	MR										
20		Ss		7				23 29 32	61 bpf		
	MR										
25		Ss		8				26 50/3"			
	MR										
30		Ss		9				50/3"			
	MR										
35		Ss		10		BR		50/3"			
	MR										
40		Ss		11				50/6"			
	MR										
45		Ss		12				50/5"			
50	MR										

Borehole terminated at 60.1 ft
Client: Kiewit Engineering Group Inc.
Drill Start: 8/1/2024

Drilling Contractor: Western States Soil Conservation, Inc.
Drill Equipment: CME 75 and CME 850
Driller: RB

LOG OF BOREHOLE MUNT-1

Project: I-5 Tributary Fish Passages Project Number: 231073 Location: Washington	Elevation: 312.6 ft NAVD88 Horizontal Datum: WGS 84 Latitude: 48.62232 °N Longitude: 122.35810 °W	Logged By: FVM Reviewed By: CJK Review Date: 11/5/2024



P N D	**Borehole terminated at 60.1 ft** Client: Kiewit Engineering Group Inc. Drill Start: 8/1/2024	Drilling Contractor: Western States Soil Conservation, Inc. Drill Equipment: CME 75 and CME 850 Driller: RB	Page: 2 of 2

Appendix C

Inadvertent Discovery Plan

Skagit PUD
PUBLIC UTILITY DISTRICT

1415 Freeway Drive
Mount Vernon, WA 98273-1436

tel: (360) 424-7104

www.SkagitPUD.org

"Owned by the people we serve."

Contractor Inadvertent Discovery Plan

I. Protocol

In the event that human remains and/or cultural or archaeological resources (see section II below) are encountered during the course of project construction, the following actions shall be taken:

A. The contractor shall immediately stop work at and adjacent to the site of discovery, call back all haul trucks in transit containing loads of site soils, move any land-altering equipment to a reasonable distance from the discovery, completely secure the site, and contact Skagit PUD.

B. If the discovery consists of cultural or archaeological items that do not include human remains, Skagit PUD shall notify the following parties:

1) A professional archaeologist
2) The Department of Archaeology and Historic Preservation (DAHP) (Rob Whitlam 360-890-2615)
3) Swinomish Indian Tribal Community (Josephine Jefferson, 360-466-7352)
4) Upper Skagit Tribe (Scott Schuyler, 360-982-8218)
5) Samish Indian Nation (Jackie Ferry, 360-726-3399)
6) Stillaguamish Tribe (Kerry Lyste, 360-657-3687 ext. 14)

If the discovery consists of human remains, the District shall immediately contact the following parties:

1) The Skagit County Sheriff's Department (non-emergency line: 360-416-1911) and the Skagit County Coroner, (Hayley L. Thompson 360-416-1996) to determine if the remains are forensic in nature.
2) If the remains are not forensic in nature, Skagit PUD shall contact DAHP (Rob Whitlam 360-890-2615 and Lance Wollwage 360-890-2616); who will take the lead on determining the appropriate method of treatment for the remains and will consult with the affected tribes.

C. Skagit PUD shall issue a written order to the contractor to cease all construction operations at the location of the potential cultural resources find. The order shall contain the following:

1) A clear description of the work to be suspended.
2) Any instructions regarding issuance of further orders by the contractor for material services.
3) Guidance as to action to be taken on the subcontracts.
4) Any suggestions to the contractor as to minimization of its costs.
5) Estimated duration of the temporary suspension.

The work suspension order shall be effective until such time as a qualified archaeologist can be called by Skagit PUD to assess the significance of the potential cultural resources and make recommendations to the State Historical Preservation Officer. If the archaeologist, in consultation with the State Historic Preservation Officer, determines that the potential find is a significant cultural resource, Skagit PUD shall extend the duration of the work suspension order, in writing, and the contractor shall suspend work at the location of the find.

II. Protected Cultural or Archaeological Resources

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

- Buried layers of black soil with layers of shell, charcoal, and fish and/or mammal bones.
- Buried cobbles that may indicate a hearth feature;
- Non-natural sediment or stone deposits that may be related to activity areas of people;
- Stone, bone, shell, horn, or antler tools that may include projectile points, scrapers, cutting tools, wood working wedges or axes, and grinding stones;
- Stone tools or stone flakes;
- 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; and
- Human remains.