

Set No. _____

**Specifications, Proposal,
and Contract Documents for:**

**NORTH ROSE HILL STORMWATER
INFILTRATION WELL PROJECT**

CIP No. SDC-1320000

Job No. 31-23-PW

February 2024

BID DOCUMENT



**City of Kirkland
Department of Public Works
123 Fifth Avenue
Kirkland, Washington 98033**

This Project is Funded in Part by the Washington State Department of Ecology

CITY OF KIRKLAND

DEPARTMENT OF PUBLIC WORKS

North Rose Hill Stormwater Infiltration Well Project

Job No. 31-23-PW

Certificate of Engineer:

The Special Provisions and drawings contained herein have been prepared by or under the direction of the undersigned, whose seal as a Professional Engineer licensed to practice in the State of Washington, is affixed below.



2/26/2024

Terry Wright, P.E.

Approved for Construction:

A handwritten signature in black ink, appearing to read "Rod Steitzer", written over a horizontal line.

Rod Steitzer, P.E.
Capital Projects Manager



**CITY OF KIRKLAND
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INVITATION TO BID

Notice is hereby given that the City of Kirkland will receive sealed bids in the office of the Purchasing Agent, City Hall, 123 Fifth Avenue, Kirkland, Washington, at 2:00PM, local time on March 21, 2024, for the project hereinafter referred to as:

North Rose Hill Stormwater Infiltration Well Project
CIP NO. SDC-1320000
JOB NO. 31-23-PW

At said time all bids will be opened and publicly read aloud. Each bid shall be accompanied by a bid proposal deposit in the form of a cashier's check or a bond issued on a form acceptable to your surety made payable to the City of Kirkland for a sum of not less than five percent (5%) of the total bid amount. No bid shall be considered unless accompanied by such bid proposal deposit. Incomplete proposals and proposals received after the time stated above will not be considered. Faxed or emailed responses are not acceptable.

The work to be performed under these specifications consists of furnishing all labor, tools, materials, and equipment necessary for construction of the **North Rose Hill Stormwater Infiltration Well Project**. Specific work includes, but is not limited to, infiltration wells and associated equipment, a storm filter vault, and roadway restoration. The estimates cost for this project is in a range of \$450,000.00 to \$550,000.

The City will not sell bid packages. Plans, specifications, and addenda may be viewed and obtained online at www.bxwa.com. Click on: "Posted Projects"; "Public Works", "City of Kirkland". The Bidders List is maintained by the Builder's Exchange of Washington, Inc. Registration for the bidder's list may be made online, by phoning (425) 258-1303, or at Builder's Exchange of Washington located at 2607 Wetmore Ave, Everett, WA.

Questions regarding this project shall be submitted **in writing** to Scott Gonsar, P.E. via fax (425) 587-3844. **Questions via phone or email will not be accepted.** Bidders shall submit questions no later than March 18, 2024 at 4:00PM.

The City reserves the right to reject any and all bids, and to waive any informalities in the bidding, and to make the award to the lowest, responsive, responsible bidder as best serves the interests of the City.

It is anticipated that this project will be funded in part by the Washington State Department of Ecology. Neither the State of Washington nor any of its departments or employees are, or shall be, a party to any contract or any subcontract resulting from this solicitation for bids.

No bids may be withdrawn within forty-five (45) days after the actual date of the bid opening.

Published: Daily Journal of Commerce – February 29, 2024; March 7, 2024

GENERAL INFORMATION, PROPOSAL & CONTRACT



CITY OF KIRKLAND

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CITY OF KIRKLAND INFORMATION FOR BIDDERS

Bidders must bid on all items contained in the proposal.

The omission or deletion of any bid item will be considered non-responsive and shall be cause for rejection of the bid.

Submit your proposal on the Bid Proposal and other forms which are enclosed, or make a copy of the required forms and submit these documents.

It is anticipated that this project will be funded in part by the Washington State Department of Ecology. Neither the State of Washington nor any of its departments or employees are, or shall be, a party to this contract or any subcontract.

The following forms must be executed in full with submittal of the bid:

1. BIDDER RESPONSIBILITY CRITERIA CHECKLIST
2. SUBCONTRACTOR RESPONSIBILITY CRITERIA CHECKLIST
3. PROPOSAL

The lump sum or unit prices must be shown in the spaces provided on the bid schedule.
Show total bid price in both words and figures on the Proposal.
The Proposal form must be completed in full, signed and dated.
4. BID BOND

A surety issued bid bond must be executed by the bidder and its surety company. The amount of the bid bond shall be not less than five percent (5%) of the total amount bid and may be shown in dollars or on a percentage basis. (A cashier's check payable to the City of Kirkland and issued for an amount not less than 5% of the total bid may be submitted in lieu of a bid bond.)
5. NON-COLLUSION AFFIDAVIT - Notarized
6. STATEMENT OF BIDDER'S QUALIFICATIONS

This form must be filled in and signed. The owner reserves the right to check all statements and to judge the adequacy of the bidder's qualifications.
7. SUBCONTRACTOR IDENTIFICATION LIST

This form must be completed for HVAC, plumbing, and electrical subcontractors if the estimate exceeds \$1,000,000.
8. CONTRACTOR CERTIFICATION WAGE LAW COMPLIANCE

This form must be filled out by contractor.

The following forms are to be executed after the contract is awarded:

1. CONTRACT

This agreement is to be executed by the successful bidder.

2. PERFORMANCE AND PAYMENT BOND

To be executed by the successful bidder and its surety company.

3. LABOR, MATERIALS, AND TAXES PAYMENT BOND

4. CONTRACTOR'S DECLARATION OF OPTION FOR MANAGEMENT OF STATUTORY
RETAINED PERCENTAGE; RETAINED PERCENTAGE ESCROW AGREEMENT

To be executed by the successful bidder based on bidder's selection of option.

5. CERTIFICATES OF INSURANCE

To be executed by the successful bidder and by an acceptable insurance company. The City of Kirkland must be named as an additional insured.

6. STATEMENT(S) OF INTENT TO PAY PREVAILING WAGES

Affidavit certifying all employees of Contractor and Subcontractor shall be paid no less than the Prevailing Wage Rate(s) as determined by the Industrial Statistician of the Washington State Department of Labor and Industries.

SPECIAL NOTE: Prior to commencing work, the contractor and all subcontractors must have applied and paid for a City of Kirkland business license

CITY OF KIRKLAND BIDDER RESPONSIBILITY CRITERIA

It is the intent of City 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 City 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. Have:
 - a. Industrial Insurance (workers' compensation) coverage for the bidder's employees working in Washington, as required in Title 51 RCW;
 - b. A Washington Employment Security Department number, as required in Title 50 RCW;
 - c. A Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW;
- ☐ 4. Not be disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065(3). **Meet responsibility criteria in RCW 39.04.350**
- ☐ 5. Until December 31, 2013, not have violated more than one time the off-site, prefabricated, non-standard, project specific items reporting requirements of RCW 39.04.370.
- ☐ 6. For public works projects subject to the apprenticeship utilization requirements of RCW 39.04.320, 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.

CITY OF KIRKLAND

SUBCONTRACTOR RESPONSIBILITY CRITERIA

- ☐ A. The Contractor shall include the language of this section in each of its first tier subcontracts, and shall require each of its subcontractors to include the same language of this section in each of their subcontracts, adjusting only as necessary the terms used for the contracting parties. Upon request of the Owner, the Contractor shall promptly provide documentation to the Owner demonstrating that the subcontractor meets the subcontractor responsibility criteria below. The requirements of this section apply to all subcontractors regardless of tier.
- ☐ B. At the time of subcontract execution, the Contractor shall verify that each of its first tier subcontractors meets the following bidder responsibility criteria:
 - ☐ 1. Have a current certificate of registration in compliance with chapter 18.27 RCW, which must have been in effect at the time of subcontract bid submittal;
 - ☐ 2. Have a current Washington Unified Business Identifier (UBI) number;
 - ☐ 3. Have:
 - a) Industrial Insurance (workers' compensation) coverage for the subcontractor's employees working in Washington, as required in Title 51 RC
 - b) A Washington Employment Security Department number, as required in Title 50 RCW;
 - c) A Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW;
 - d) An electrical contractor license, if required by Chapter 19.28 RCW;
 - e) An elevator contractor license, if required by Chapter 70.87 RCW.
 - ☐ 4. Not be disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065 (3). **Meet responsibility criteria in RCW 39.04.350**
 - ☐ 5. Until December 31, 2013, not have violated more than one time the off-site, prefabricated, non-standard, project specific items reporting requirements of RCW 39.04.370.
 - ☐ 6. 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.

CITY OF KIRKLAND BID PROPOSAL



North Rose Hill Stormwater Infiltration Well Project JOB NO. 31-23-PW

To: Director of Finance
City of Kirkland
123 Fifth Avenue
Kirkland, Washington 98033

The undersigned, hereinafter called the Bidder, declares that the only persons or parties interested in this proposal are those named herein; that this proposal is in all respects fair and without fraud; that it is made without collusion with any official or employee of the City of Kirkland, hereinafter called the Owner; and that the proposal is made without any connection or collusion with any person making another proposal on this contract.

The bidder further declares that it has carefully examined the contract documents for the construction of the project; that it has personally inspected the site; that it has satisfied itself as to the quantities involved, including materials and equipment and conditions of work involved, including the fact that the description of the quantities of work materials, as included herein, is brief and is intended only to indicate the general nature of the work and to identify the said quantities with the detailed requirements of the contract documents; and that this proposal is made according to the provisions and under the terms of the contract documents, which documents are hereby made a part of this proposal.

The bidder further agrees that it has exercised its own judgment regarding the interpretation of subsurface information and has utilized all data which it believes pertinent from the engineer-architect, owner, and other sources in arriving at its conclusions.

The bidder agrees to hold its bid proposal open for 45 days after the actual date of bid opening and to accept the provisions of the Instructions to Bidders regarding disposition of bid bond.

The bidder agrees that if this proposal is accepted, it will, within ten (10) calendar days after notification of acceptance, execute the contract with the Owner in the form of contract included in the contract documents, and will, at the time of execution of the contract, deliver to the Owner the Performance and Payment Bond and all Certificates of Insurance required therein, and will, to the extent of its proposals, furnish all machinery, tools, apparatus, and other means of construction and do the work in the manner, in the time, and according to the methods as specified in the contract documents and required by the engineer or other project manager designated thereunder.

The bidder further agrees, if awarded the contract, to begin work within ten (10) calendar days after the date of the execution of the contract and to complete the construction within the time specified in Section 1-08.5 of the Special Provisions.

In the event the bidder is awarded the contract and shall fail to complete the work within the time limit or extended time limit agreed upon as more particularly set forth in the contract documents, liquidated damages shall be paid to the Owner per the specifications contained in the contract documents.

The bidder further proposes to accept as full payment for the work proposed herein, the amounts computed under the provisions of the contract documents and based upon the lump sum and unit

MUST BE SUBMITTED WITH PROPOSAL

price amounts entered by the bidder for the various bid items included in the Bid Schedule. The bidder further agrees the lump sum and unit prices entered for the various bid items included in the Bid Schedule include all use taxes, overhead, profit, bond premiums, insurance premiums and all other miscellaneous and incidental expenses as well as all costs of materials, labor, tools and equipment required to perform and complete the work.

Within the three-year period immediately preceding the date of the bid solicitation for this Project, bidder has not been 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 to have willfully violated, as defined in RCW 49.48.082, any provision of chapter 49.46, 49.48, or 49.52 RCW.

Third-Party Beneficiary: All parties agree that the State of Washington shall be, and is hereby, named as an express third-party beneficiary of this contract, with full rights as such

Total Bid Schedule A (*in words*): _____

Receipt of Addenda No(s). _____ is hereby acknowledged.

I certify (or declare) under penalty of perjury under the laws of the State of Washington that the foregoing is true and correct:

CONTRACTOR (Firm Name)

Location or Place Executed: (City, State)

By

Name and title of person signing

(Indicate whether Contractor is Partnership,
Corporation, or Sole Proprietorship)

Date

Washington State Contractor's
Registration Number

Contractor's Industrial Insurance
Account Number

Employment Security Identification
Number

Uniform Business Identification
(UBI) Number

MUST BE SUBMITTED WITH PROPOSAL

Contractor's Address:

Telephone Number

Fax Number

EMAIL

**** Bid proposal to be submitted in a sealed envelope marked "Bid Enclosed" for North Rose Hill Stormwater Infiltration Well Project; Job No. 31-23-PW**

MUST BE SUBMITTED WITH PROPOSAL

North Rose Hill Stormwater Infiltration Well Project
CITY OF KIRKLAND, CIP No. SDC-1320000

BID SCHEDULE

Note: Unit prices for all items, all extensions, and the other total amount of the Bid must be shown. All entries must be typed or entered in ink

Item No.	Item Description	Spec Ref.	Est. Qty.	Unit	Unit Price	Amount
1	Minor Change	1-04	1	EST	\$15,000.00	\$15,000.00
2	Construction Surveying	1-05	1	LS	\$	\$
3	Record Drawings (Min. Bid \$1,000)	1-05	1	LS	\$	\$
4	Mobilization	1-09	1	LS	\$	\$
5	Project Temporary Traffic Control	1-10	1	LS	\$	\$
6	Removal of Structures and Obstructions	2-02	1	LS	\$	\$
7	Sawcut Asphalt Conc. Pavement	2-02	320	LF	\$	\$
8	Asphalt Conc. Pavement Removal	2-02	650	SY	\$	\$
9	Cement Conc. Curb Removal	2-02	150	LF	\$	\$
10	Cement Conc. Sidewalk Removal	2-02	80	SY	\$	\$
11	Shoring or Extra Excavation Cl. B	2-09	1	LS	\$	\$
12	Crushed Surfacing Top Course	4-04	170	TON	\$	\$
13	HMA Cl. 1/2 In. PG 58H-22	5-04	240	TON	\$	\$
14	Contech CDS Hydrodynamic Separator (CDS2015-4-C)	7-03	1	LS	\$	\$
15	Contech StormFilter Vault (8x14)	7-03	1	LS	\$	\$
16	Flow Splitter	7-03	1	LS	\$	\$
17	Ductile Iron Storm Sewer Pipe 12 In. Diam.	7-04	400	LF	\$	\$
18	Catch Basin Type 1	7-05	2	EA	\$	\$
19	Remove and Replace Rectangular Frame and Vaned Grate	7-05	1	EA	\$	\$
20	UIC Well	7-06	5	EA	\$	\$
21	Gate Valve 12 In.	7-12	1	EA	\$	\$
22	Erosion Control and Water Pollution Prevention	8-01	1	LS	\$	\$
23	Cement Conc. Rolled Curb	8-04	150	LF	\$	\$
24	Potholing	8-05	3	EA	\$	\$
25	Cement Conc. Sidewalk - 6"	8-14	60	SY	\$	\$
26	Cement Conc. Curb Ramp	8-14	1	EA	\$	\$
Sub Total (items 1 - 26)=						
10.2% WSST =						
Total Bid (items 1-26 + Sales Tax) =						



BID DEPOSIT

Herewith find deposit in the form of a cashier's check or certified check in the amount of \$_____ which amount is not less than five percent (5%) of the total bid.

SIGN HERE _____

BID BOND

KNOW ALL MEN BY THESE PRESENTS:

That we, _____, as Principal, and
_____, as Surety, are
held and firmly bound unto the City of Kirkland, as Obligee, in the penal sum of _____
_____ dollars, for the payment of which the
Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns,
jointly and severally, by these presents.

The condition of this obligation is such that if the Obligee shall make any award to the Principal for

Project Name

Job Number

according to the terms of the proposal or bid made by the Principal therefor, and the Principal shall duly make and enter into a contract with the Obligee in accordance with the terms of said proposal or bid and award and shall give bond for faithful performance thereof, with Surety or Sureties approved by the Obligee; or if the Principal shall, in case of failure to do so, pay and forfeit to the Obligee the penal amount of the deposit specified in the call for bids, then this obligation shall be null and void; otherwise it shall be and remain in full force and effect and the Surety shall forthwith pay and forfeit to the Obligee, as penalty and liquidated damages, the amount of this bond.

SIGNED, SEALED AND DATED THIS _____ DAY OF _____, 20_____.

PRINCIPAL:

SURETY:

Note: If a Bid Bond is provided, it must be accompanied by a power of attorney which appoints the Surety's true and lawful attorney-in-fact to make, execute, seal and deliver this Bid Bond.

**CITY OF KIRKLAND
NON-COLLUSION AFFIDAVIT**

North Rose Hill Stormwater Infiltration Well Project

JOB NO. 31-23-PW

STATE OF WASHINGTON)
) SS
COUNTY OF KING)

The undersigned, being duly sworn, on oath deposes and says that the person(s), firm, association, partnership or corporation herein named has 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.

Firm Name

Authorized Signature

Type Name

Title

Sworn to before me, this _____ day of _____, 20__.

Notary Public in and for the State of Washington
Residing at _____
My Commission Expires _____

NOTICE TO ALL BIDDERS

To report bid rigging activities call: 1-800-424-9071

The U.S. Department of Transportation (USDOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., ET. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of USDOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the USDOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

**CITY OF KIRKLAND
STATEMENT OF BIDDER'S QUALIFICATIONS**

Contractor Name: _____ Contact: _____

Business Address: _____

Business phone: _____ Fax: _____

Number of years the Contractor has been engaged in the construction business under the present firm name: _____

Describe the general character of work performed by your company: _____

List five projects of a similar nature which Contractor has completed within the last 10 years. Include contract amount and contact information for references:

Project Name	Amount	Owner/Agency	Contact	Phone	Year Completed

List major equipment anticipated to be used on this project; indicate whether Contractor-owned or to be leased from others: _____

Bank reference(s): _____

Washington State Contractor Registration No.: _____

Uniform Business Identification No.: _____

I certify that other contracts now in progress or hereafter obtained will not interfere with timely performance of the City of Kirkland project should I become the successful bidder.

Authorized Signature: _____

Print Name: _____ Title: _____

**CITY OF KIRKLAND
SUBCONTRACTOR IDENTIFICATION FOR CONTRACTS ESTIMATED TO BE
IN EXCESS OF ONE MILLION DOLLARS (\$1,000,000.00)**

RCW 39.30.060 requires the following:

"Every invitation to bid on a prime contract that is **expected** to cost one million dollars or more for the construction, alteration, or repair of any public building or public work of the state or a state agency or municipality as defined under RCW 39.04.010 ... shall require each prime contract bidder to submit as part of the bid, or within one hour after the published bid submittal time [see *note below*], the names of the subcontractors with whom the bidder, if awarded the contract, will subcontract for performance of the work of: HVAC (heating, ventilation, and air conditioning); plumbing as described in chapter 18.106 RCW; and electrical as described in chapter 19.28 RCW, or to name itself for the work. The prime contract bidder shall not list more than one subcontractor for each category of work identified, unless subcontractors vary with bid alternates, in which case the prime contract bidder must indicate which subcontractor will be used for which alternate. Failure of the prime contract bidder to submit as part of the bid the names of such subcontractors or to name itself to perform such work or the naming of two or more subcontractors to perform the same work shall render the prime contract bidder's bid non-responsive and, therefore, void."

NOTE: The City of Kirkland has elected not to allow bidders to submit the information required by RCW 39.30.060 after the published bid submittal time. A proposal will be considered irregular and will be rejected if the bidder does not provide the above list as part of its proposal when submitting its bid.

Each bidder shall submit a list of:

1. HVAC, plumbing, and electrical subcontractors; and
2. The specific items of work those subcontractors will perform on the contract; and
3. The specific items of work that will be performed by the bidder on the contract.

**CITY OF KIRKLAND
SUBCONTRACTOR IDENTIFICATION LIST**

*REQUIRED IF ESTIMATE AMOUNT EXCEEDS \$1,000,000 (*Reference RCW 39.30.060 RCW*)

Proposed Subcontractors and items of work to be performed:

Subcontractor Name: _____

Item Numbers: _____

Subcontractor Name: _____

Item Numbers: _____

Subcontractor Name: _____

Item Numbers: _____

Subcontractor Name: _____

Item Numbers: _____

- make additional pages if necessary -

Work to be performed by Prime Contractor:

Item Numbers: _____



Contractor Certification
Wage Law Compliance - Responsibility Criteria
Washington State Public Works Contracts

**FAILURE TO RETURN THIS CERTIFICATION AS PART OF THE BID PROPOSAL PACKAGE WILL
MAKE THIS BID NONRESPONSIVE AND INELIGIBLE FOR AWARD**

I hereby certify, under penalty of perjury under the laws of the State of Washington, on behalf of the firm identified below that, to the best of my knowledge and belief, this firm has NOT been determined by a final and binding citation and notice of assessment issued by the Washington State Department of Labor and Industries or through a civil judgment entered by a court of limited or general jurisdiction to have willfully violated, as defined in RCW 49.48.082, any provision of RCW chapters 49.46, 49.48, or 49.52 within three (3) years prior to the date of the Call for Bids.

Bidder Name: _____
Name of Contractor/Bidder - Print full legal entity name of firm

By: _____
Signature of authorized person Print Name of person making certifications for firm

Title: _____
Title of person signing certificate **Place:** _____
Print city and state where signed

Date: _____

**CITY OF KIRKLAND
BIDDER'S CHECKLIST**

1. Have you reviewed the Bidder Responsibility and Subcontractor Responsibility Criteria?
2. Have you enclosed a bid bond or certified check with your bid? (Must be at least 5% of the total amount bid)
3. Have you entered a bid amount for all items and all schedules?
4. Do the written amounts of the proposal agree with the amounts shown in the figures?
5. Have you acknowledged receipt of addenda?
6. Has the proposal been properly completed and signed?
7. Have you completed the Statement of Bidder's Qualifications?
8. Have you completed the City of Kirkland Non-collusion Affidavit?
9. Have you completed the Subcontractor Identification List? (This is to be completed for HVAC, plumbing, and electrical subcontractors if the estimate amount exceeds \$1,000,000.)
10. Have you completed the Contractor Certification Wage Law Compliance?
11. Bid proposal to be submitted in a sealed envelope marked "Bid Enclosed" for:
North Rose Hill Stormwater Infiltration Well Project.

INFORMATION ONLY

The following forms must be executed and submitted by the successful bidder within ten (10) calendar days following Notice of Award.



CITY OF KIRKLAND

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CITY OF KIRKLAND PUBLIC WORKS AGREEMENT

North Rose Hill Stormwater Infiltration Well Project
JOB NO. 31-23-PW

This agreement is made and entered into this _____ day of _____, 20____, by and between **CONTRACTOR NAME**, hereinafter called the "Contractor" and the City of Kirkland, hereinafter called the "Owner."

WITNESSETH:

Whereas, pursuant to the invitation of the Owner extended through an officially published "Invitation to Bid," the Contractor did, in accordance therewith, file with the Owner a proposal containing an offer which was invited by said notice, and

Whereas, the Owner has heretofore determined that said offer was the lowest responsible bid submitted; now, therefore, it is agreed:

Section 1. That Contractor shall comply in every way with the requirements of those certain specifications entitled: **"North Rose Hill Stormwater Infiltration Well Project
JOB NO. 31-23-PW"**

The further terms, conditions and covenants of the contract are set forth in the following contract documents which are hereby made a part of this agreement by actual attachment or by this reference thereto as follows:

- A. Any Invitation to Bid, as published by the Owner.
- B. Any Specifications prepared for this project by the Owner and named above by title.
- C. Any detailed Plans listed and described in said Specifications, together with those which may be issued as supplements thereof.
- D. The bid proposals submitted by the Contractor as to those items and/or alternatives accepted by the Owner.
- E. Any change orders, additions or deletions, if any, issued by the Owner.

Section 2. In consideration of faithful compliance with the terms and conditions of this agreement, whether set forth herein or incorporated by reference, the Owner shall pay to the Contractor, at the times and in the manner provided in said specifications, the total sum of _____ dollars (\$_____) which sum is subject, however, to increase or decrease in such proportion as the quantities named in said proposal are so changed, all as in said specifications and proposal provided.

In witness whereof, said Contractor and said Owner have caused this agreement to be executed on the day and year first written above.

CONTRACTOR (Firm Name)

Signature of authorized officer

Name and title of officer (print or type)

WA Contractor's Registration Number

Industrial Insurance Account Number

Uniform Business Identification (UBI) Number

Phone Number

(For corporations, LLC's and other legal entities)

STATE OF WASHINGTON)
) SS
COUNTY OF KING)

On this day before me, the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared _____, to me known to be the _____ of _____, the legal entity that executed the foregoing instrument, and acknowledged the said instrument to be the free and voluntary act and deed of said legal entity, for the uses and purposes therein set forth, and on oath stated that he/she was authorized to sign said instrument.

Given under my hand and official seal this _____ day of _____, 2_____.

Print Name: _____
NOTARY PUBLIC in and for the State of
Washington, residing _____
Commission expires: _____

(For individuals and d/b/a's)

STATE OF WASHINGTON)
) SS
COUNTY OF KING)

On this day before me, the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared _____ and _____ to me known to be the individual(s) described herein and who executed the foregoing instrument, and acknowledged that he/she/they signed the same as his/her/their free and voluntary act and deed, for the uses and purposes therein mentioned.

Given under my hand and official seal this _____ day of _____, 2_____.

Print Name: _____
NOTARY PUBLIC in and for the State of
Washington, residing _____
Commission expires: _____

CITY OF KIRKLAND

BY: _____
Tracey Dunlap, Deputy City Manager



PERFORMANCE BOND

SURETY TO HAVE AN A.M. BEST RATING OF A:-VII OR BETTER.

Bond No. _____

KNOW ALL PERSONS BY THESE PRESENTS, that **CONTRACTOR NAME**, as Principal, and _____, (insert name of surety), as Surety, a corporation duly organized under the laws of the State of _____, (insert Surety's state of incorporation), and authorized to do business as a surety in the State of Washington, are held and firmly bound unto the City of Kirkland (City) in the sum of _____ dollars (\$ _____), lawful money of the United States of America, plus the total amount of extra orders issued by the City to the Principal pursuant to the terms of the Contract referred to in the next succeeding paragraph hereof, for the payment whereof Principal and Surety bind ourselves, and our heirs, executors, administrators, representatives, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has been awarded, and is about to enter into, a written Contract with the City for **North Rose Hill Stormwater Infiltration Well Project**

JOB NO. 31-23-PW

, which is hereby made a part of this bond as if fully set forth herein;

NOW, THEREFORE, the condition of this bond is such that:

1. If the Principal shall completely and faithfully perform all of its obligations under the Contract, including any warranties required thereunder, and all modifications, amendments, additions, and alterations thereto, including modifications which increase the contract price or time for completion, with or without notice to the surety; and
2. If the Principal shall indemnify and hold the City harmless from any and all losses, liability, damages, claims, judgments, liens, costs, and fees of any type that the City may be subject to because of the failure or default of the Principal in the performance of any of the terms, conditions, or obligations of the Contract, including all modifications, amendments, additions, and alterations thereto, and any warranties required thereunder;

THEN THIS obligation shall be null and void; otherwise to remain in full force and effect. If the City shall declare Principal to be in default of the Contract, and shall so notify Surety, Surety shall, within a reasonable time which shall not exceed 14 days, except for good cause shown, notify the City in writing of the manner in which surety will satisfy its obligations under this Bond.

Nonpayment of the Bond premium will not invalidate this Bond nor shall the City be obligated for the payment thereof. The Surety hereby waives notice of any modification of the Contract or extension of time made by the City.

Signed this _____ day of _____, 2____.

Principal: _____

Surety: _____

By: _____

By: _____

Title: _____

Title: _____

Address: _____

Address: _____

City/Zip: _____

City/Zip: _____

Telephone: () _____

Telephone: () _____

Note: A power of attorney must be provided which appoints the Surety's true and lawful attorney-in-fact to make, execute, seal and deliver this performance bond.



LABOR, MATERIAL AND TAXES PAYMENT BOND

Surety to have an A.M. Best rating of A:-VII or better.

Bond No. _____

KNOW ALL PERSONS BY THESE PRESENTS, that, **CONTRACTOR NAME**, as Principal, and _____, (insert name of surety), as Surety, a corporation duly organized under the laws of the State of _____ (insert Surety's state of incorporation), and authorized to do business as a surety in the State of Washington, are held and firmly bound unto the City of Kirkland (City) for the use and benefit of claimants as hereinafter defined, in the sum of _____ **Dollars (\$_____)**, lawful money of the United States of America, plus the total amount of any extra orders issued by the City, for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, representatives, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has been awarded, and is about to enter into, a Contract with City of Kirkland for **North Rose Hill Stormwater Infiltration Well Project**

JOB NO. 31-23-PW, which contract is by this reference made a part hereof;

WHEREAS, the contract is a public works contract, subject to the provisions of RCW Titles 39 and 60;

NOW, THEREFORE, the conditions of this obligation are such that, if the Principal shall promptly make payment to all claimants as hereinafter defined, for (a) all labor and material used or reasonably required for use in the performance of the contract and (b) all taxes, increases, and penalties incurred on the above-referenced contract under Titles 50, 51, and 82 RCW which may be due, then this obligation shall be void; otherwise, it shall remain in full force and effect, subject, however, to the following conditions: A claimant is defined as and includes (a) a person claiming to have supplied labor or materials for the prosecution of the work provided for in the contract, including any person having direct contractual relationship with the contractor furnishing the bond or direct contractual relationship with any subcontractor, or an assignee of such person, (b) the state with respect to taxes incurred on the above-referenced contract under Titles 50, 51, and 82 RCW which may be due and (c) any other person or entity as allowed or required by law.

3. The Principal and Surety hereby jointly and severally agree with the City that every claimant as herein defined, who has not been paid in full prior to Final Acceptance of the project, or materials were furnished by such claimant, has an action on this bond for such sum or sums as may be justly due claimant, and may have execution thereon. The City shall not be liable for the payment of any costs or expenses of any such suit or action.

(Form continues on next page)

4. No suit or action shall be commenced hereunder by any claimant (except the state with respect to taxes, increases, and penalties incurred on the above-referenced contract under Titles 50, 51, and 82 RCW which may be due) unless the claimant has sent the written notice required under RCW Title 39 to the Principal and to the City's Purchasing Agent by registered or certified mail, or by hand delivery, no later than 30 days after Final Acceptance of the Project.

The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens which may be filed of record against the improvement, whether or not claim for the amount of such lien be presented under and against this bond.

The Surety hereby waives notice of any modification of the contract or extension of time made by the City.

Signed this _____ day of _____, 2____

Principal: _____ Surety: _____

By: _____ By: _____

Title: _____ Title: _____

Address: _____ Address: _____

City/Zip: _____ City/Zip: _____

Telephone: () _____ Telephone: () _____

Note: A power of attorney must be provided which appoints the Surety's true and lawful attorney-in-fact to make, execute, seal and deliver this performance bond.

END OF LABOR, MATERIAL AND TAXES PAYMENT BOND FORM



**CITY OF KIRKLAND
CONTRACTOR'S DECLARATION OF OPTION FOR MANAGEMENT
OF STATUTORY RETAINED PERCENTAGE**

North Rose Hill Stormwater Infiltration Well Project
JOB NO. 31-23-PW

Monies reserved under provisions of Chapter 60.28 RCW, at the option of the Contractor, shall be:

Select
One

- ☐ (1) Retained in a fund by the City. No interest will be earned on the retained percentage amount under this election.
- ☐ (2) Retainage Bond
- ☐ (3) Placed in escrow with a bank or trust company by the City. When the monies reserved are to be placed in escrow, the City will issue a check representing the sum of the monies reserved payable to the bank or trust company and the Contractor jointly. Such check shall be converted into bonds and securities chosen by the Contractor and approved by the City and the bonds and securities held in escrow. (For the convenience of those Contractors choosing option (3) a City approved Form of Escrow Agreement is included on the next page and should be completed and submitted with the executed contract.)

The Contractor in choosing option (3) agrees to assume full responsibility to pay all costs which may accrue from escrow services, brokerage charges or both, and further agrees to assume all risks in connection with the investment of the retained percentages in securities.

- ☐ (4) Deposited by the City in an interest-bearing account at the FDIC insured bank currently providing contracted banking services to the City of Kirkland. Interest on such account shall be paid to the contractor. Any fees incurred shall be the responsibility of the contractor.

CONTRACTOR:

Signature: _____

Print or Type Name: _____

Title: _____

Date: _____



RETAINAGE BOND
RETURN THIS FORM IF RETAINAGE BOND OPTION IS SELECTED

Contract Title	_____
Contract Number	_____
Contractor Name	_____

The Undersigned, _____, existing under and by virtue of the laws of the State of Washington and authorized to do business in the State of Washington as Principal, and _____ organized and existing under the laws of the State of _____ and authorized to transact business in the State of Washington as Surety, are jointly and severally held and bound unto _____, hereinafter called Obligee, and are similarly held and bound unto the beneficiaries of the trust fund created by RCW 60.28, in the penal sum of _____ (\$ _____), Which is 5% of the principal's price on Contract ID _____.

WHEREAS, on the _____ day of _____, 2____, the said principal herein executed a contract with the Obligee, for the Contract specified above, Contract ID Number _____.

WHEREAS, said contract and RCW 60.28 require the Obligee to withhold from the Principal the sum of ____% from monies earned on estimates during the progress of the construction, herein after referred to as earned retained funds.

NOW WHEREAS, Principal has requested that the Obligee not retain any earned retained funds as allowed under RCW 60.28.

NOW THEREFORE, the condition of the obligation is such that the Principal and Surety are held and bound unto the beneficiaries of the trust fund created by RCW 60.28 in the penal sum of _____ percent (____%) of the final contract cost which shall include any increases due to change orders, increases in quantities of work or the addition of any new item of work. If the Principal shall use the earned retained funds, which will not be retained, for the trust fund purposes of RCW 60.28, then this obligation shall be null and void; otherwise, it shall remain in full force and effect until release is authorized in writing by the Obligee. This bond and any proceeds therefrom shall be made subject to all claims and liens and in the same manner and priority as set forth for retained percentages in RCW 60.28.

PROVIDED HOWEVER, that:

1. The liability of the surety under this bond shall not exceed 5% or 50% of the total amount earned by the Principal if no monies are retained by the Obligee on estimates during the progress of construction.
2. Any suit under this bond must be instituted within the time provided by applicable law.

Witness our hands this _____ day of _____, 2____.

SURETY

PRINICIPAL

By: _____
Name/Title

By: _____
Name/Title

OF: _____

OF: _____

Surety Name and Local Office of Agent: _____

Surety Address and Phone of Local Office and Agent: _____



CITY OF KIRKLAND
RETAINED PERCENTAGE ESCROW AGREEMENT

North Rose Hill Stormwater Infiltration Well Project
JOB NO. 31-23-PW

Escrow No. _____

City of Kirkland
123 Fifth Avenue
Kirkland, Washington 98033

Contractor: _____

Address: _____

Project Description: _____

TO: Escrow Bank or Trust Company:

Name: _____

Address: _____

Attention: _____

The undersigned, _____, herein referred to as the Contractor, has directed the City of Kirkland to deliver to you its warrants, which shall be payable to you and the Contractor jointly. Such warrants are to be held and disposed of by you in accordance with the following instructions and upon the terms and conditions hereinafter set forth.

INSTRUCTIONS

1. Warrants or checks made payable to you and the Contractor jointly upon delivery to you shall be endorsed by you and forwarded for collection. The moneys will then be used by you to purchase, as directed by the Contractor, bonds or other securities chosen by the Contractor and approved by the City of Kirkland. Attached is a list of such bonds, or other securities approved by the City of Kirkland. Other bonds or securities, except stocks, may be selected by the Contractor, subject to the express written approval of the City of Kirkland. Purchase of such bonds or other securities shall be in a form which shall allow you alone to reconvert such bonds or other securities into money if you are required to do so at the direction of the City of Kirkland and Contractor.
2. When and as interest on the securities held by you pursuant to this agreement accrues

and is paid, you shall collect such interest and forward it to the Contractor at its address designated below unless otherwise directed by the Contractor.

3. You are not authorized to deliver to the Contractor all or any part of the securities held by you pursuant to this agreement (or any moneys derived from the sale of such securities, or the negotiation of the City of Kirkland's warrants) except in accordance with written instructions from the City of Kirkland. Compliance with such instructions shall relieve you of any further liability related thereto. The estimated completion date on the contract underlying this Escrow Agreement is _____.
4. The Contractor agrees to pay you as compensation for your services hereunder as follows:

Payment of all fees shall be the sole responsibility of the Contractor and shall not be deducted from any property placed with you pursuant to this agreement until and unless the City of Kirkland directs the release to the Contractor of the securities and moneys held hereunder whereupon you shall be granted a first lien upon such property released and shall be entitled to reimburse yourself from such property for the entire amount of your fees as provided for hereinabove. In the event that you are made a party to any litigation with respect to the property held by you hereunder, or in the event that the conditions of this escrow are not promptly fulfilled or that you are required to render any service not provided for in these instructions, or that there is any assignment of the interests of this escrow or any modification hereof, you shall be entitled to reasonable compensation for such extraordinary services from the Contractor and reimbursement from the Contractor for all costs and expenses, including attorneys fees occasioned by such default, delay, controversy, or litigation.
5. This agreement shall not be binding until executed by the Contractor and the City of Kirkland and accepted by you.
6. This instrument contains the entire agreement between you, the Contractor and the City of Kirkland, with respect to this escrow and you are not a part nor bound by any instrument or agreement other than this; you shall not be required to take notice of any default or any other matter nor be bound by nor required to give notice or demand, nor required to take any action whatever, except as herein expressly provided; you shall not be liable for any loss or damage not caused by your own negligence or willful misconduct.
7. The foregoing provisions shall be binding upon the assigns, successors, personal representatives, and heirs of the parties hereto.
8. The Contractor's Federal Income Tax Identification number is _____.

** Please note: Written release will be issued by the Director of Finance & Administration. For further information, contact the Purchasing Agent at (425) 587-3123.

The undersigned have read and hereby approve the instructions as given above governing the administration of this escrow and do hereby execute this agreement on this ____ day of _____, 2____.

CONTRACTOR:

CITY OF KIRKLAND:

By: _____
Signature

By: _____
Signature

Print or Type Name

Print or Type Name

Title

Title

Address: _____

123 Fifth Avenue
Kirkland, Washington 98033

The above escrow instructions received and accepted this ____ day of _____, 2____.

ESCROW BANK OR TRUST CO:

By: _____
Authorized Signature

Print or Type Name

Title

Securities Authorized by City of Kirkland (select one):

1. Bills, certificates, notes or bonds of the United States;
2. Other obligations of the United States or its agencies;
3. Obligations of any corporation wholly-owned by the government of the United States;
4. Indebtedness of the Federal National Mortgage Association; and
5. Time deposits in commercial banks.

RETURN THIS SIGNED AGREEMENT TO:

City of Kirkland
Attn: Purchasing Agent
123 Fifth Avenue
Kirkland, Washington 98033



CITY OF KIRKLAND RETAINAGE RELEASE REQUIREMENTS

DOCUMENTS REQUIRED TO BE ON FILE PRIOR TO RELEASE OF RETAINAGE

1. Intent to Pay Prevailing Wage (Contractor must generation including for subcontractors)

Department of Labor/Industries
Employment Standards Division
General Administration Building
Olympia, Washington 98504
(360) 956-5335

2. Notice of Completion of Public Works Contract (City generates)

Department of Revenue
Excise Tax Division
Olympia, Washington 98504

3. Affidavit of Wages Paid (Contractor must generate including for subcontractors)

Department of Labor/Industries

4. Certificate of Release - State Excise Tax by Public Works Contractor (Letter from State to City)

Department of Revenue
Department of Labor and Industries
Employment Security Department

5. Receipt for Payment in full or Release of Lien signed by Lien Claimant and filed with City (Responsibility of Contractor to obtain)

Claims against retainage or Payment Bond filed with City by any such subcontractor, workman, or material supplier.

6. Current insurance certificate through retainage release (Contractor generates)
7. Produce final invoice for retainage if bond is not selected (Contractor generates)

PREVAILING WAGE RATES

State of Washington
Department of Labor & Industries
 Prevailing Wage Section - Telephone 360-902-5335
 PO Box 44540, Olympia, WA 98504-4540

Washington State Prevailing Wage

The PREVAILING WAGES listed here include both the hourly wage rate and the hourly rate of fringe benefits. On public works projects, worker's wage and benefit rates must add to not less than this total. A brief description of overtime calculation requirements are provided on the Benefit Code Key.

Journey Level Prevailing Wage Rates for the Effective Date: 03/21/2024

<u>County</u>	<u>Trade</u>	<u>Job Classification</u>	<u>Wage</u>	<u>Holiday</u>	<u>Overtime</u>	<u>Note</u>	<u>*Risk Class</u>
King	Asbestos Abatement Workers	Journey Level	\$59.07	<u>5D</u>	<u>1H</u>		View
King	Boilermakers	Journey Level	\$74.29	<u>5N</u>	<u>1C</u>		View
King	Brick Mason	Journey Level	\$69.07	<u>7E</u>	<u>1N</u>		View
King	Brick Mason	Pointer-Caulker-Cleaner	\$69.07	<u>7E</u>	<u>1N</u>		View
King	Building Service Employees	Janitor	\$29.33	<u>5S</u>	<u>2F</u>		View
King	Building Service Employees	Traveling Waxer/Shampooer	\$29.78	<u>5S</u>	<u>2F</u>		View
King	Building Service Employees	Window Cleaner (Non-Scaffold)	\$32.93	<u>5S</u>	<u>2F</u>		View
King	Building Service Employees	Window Cleaner (Scaffold)	\$33.93	<u>5S</u>	<u>2F</u>		View
King	Cabinet Makers (In Shop)	Journey Level	\$22.74		<u>1</u>		View
King	Carpenters	Acoustical Worker	\$74.96	<u>15J</u>	<u>4C</u>		View
King	Carpenters	Bridge, Dock And Wharf Carpenters	\$74.96	<u>15J</u>	<u>4C</u>		View
King	Carpenters	Floor Layer & Floor Finisher	\$74.96	<u>15J</u>	<u>4C</u>		View
King	Carpenters	Journey Level	\$74.96	<u>15J</u>	<u>4C</u>		View
King	Carpenters	Scaffold Erector	\$74.96	<u>15J</u>	<u>4C</u>		View
King	Cement Masons	Application of all Composition Mastic	\$72.87	<u>15J</u>	<u>4U</u>		View
King	Cement Masons	Application of all Epoxy Material	\$72.37	<u>15J</u>	<u>4U</u>		View
King	Cement Masons	Application of all Plastic Material	\$72.87	<u>15J</u>	<u>4U</u>		View
King	Cement Masons	Application of Sealing Compound	\$72.37	<u>15J</u>	<u>4U</u>		View
King	Cement Masons	Application of Underlayment	\$72.87	<u>15J</u>	<u>4U</u>		View
King	Cement Masons	Building General	\$72.37	<u>15J</u>	<u>4U</u>		View
King	Cement Masons	Composition or Kalman Floors	\$72.87	<u>15J</u>	<u>4U</u>		View
King	Cement Masons	Concrete Paving	\$72.37	<u>15J</u>	<u>4U</u>		View
King	Cement Masons	Curb & Gutter Machine	\$72.87	<u>15J</u>	<u>4U</u>		View
King	Cement Masons	Curb & Gutter, Sidewalks	\$72.37	<u>15J</u>	<u>4U</u>		View
King	Cement Masons	Curing Concrete	\$72.37	<u>15J</u>	<u>4U</u>		View
King	Cement Masons	Finish Colored Concrete	\$72.87	<u>15J</u>	<u>4U</u>		View

King	Cement Masons	Floor Grinding	\$72.87	15J	4U		View
King	Cement Masons	Floor Grinding/Polisher	\$72.37	15J	4U		View
King	Cement Masons	Green Concrete Saw, self-powered	\$72.87	15J	4U		View
King	Cement Masons	Grouting of all Plates	\$72.37	15J	4U		View
King	Cement Masons	Grouting of all Tilt-up Panels	\$72.37	15J	4U		View
King	Cement Masons	Gunite Nozzleman	\$72.87	15J	4U		View
King	Cement Masons	Hand Powered Grinder	\$72.87	15J	4U		View
King	Cement Masons	Journey Level	\$72.37	15J	4U		View
King	Cement Masons	Patching Concrete	\$72.37	15J	4U		View
King	Cement Masons	Pneumatic Power Tools	\$72.87	15J	4U		View
King	Cement Masons	Power Chipping & Brushing	\$72.87	15J	4U		View
King	Cement Masons	Sand Blasting Architectural Finish	\$72.87	15J	4U		View
King	Cement Masons	Screed & Rodding Machine	\$72.87	15J	4U		View
King	Cement Masons	Spackling or Skim Coat Concrete	\$72.37	15J	4U		View
King	Cement Masons	Troweling Machine Operator	\$72.87	15J	4U		View
King	Cement Masons	Troweling Machine Operator on Colored Slabs	\$72.87	15J	4U		View
King	Cement Masons	Tunnel Workers	\$72.87	15J	4U		View
King	Divers & Tenders	Bell/Vehicle or Submersible Operator (Not Under Pressure)	\$129.71	15J	4C		View
King	Divers & Tenders	Dive Supervisor/Master	\$93.94	15J	4C		View
King	Divers & Tenders	Diver	\$129.71	15J	4C	8V	View
King	Divers & Tenders	Diver On Standby	\$88.94	15J	4C		View
King	Divers & Tenders	Diver Tender	\$80.82	15J	4C		View
King	Divers & Tenders	Hyperbaric Worker - Compressed Air Worker 0-30.00 PSI	\$93.26	15J	4C		View
King	Divers & Tenders	Hyperbaric Worker - Compressed Air Worker 30.01 - 44.00 PSI	\$98.26	15J	4C		View
King	Divers & Tenders	Hyperbaric Worker - Compressed Air Worker 44.01 - 54.00 PSI	\$102.26	15J	4C		View
King	Divers & Tenders	Hyperbaric Worker - Compressed Air Worker 54.01 - 60.00 PSI	\$107.26	15J	4C		View
King	Divers & Tenders	Hyperbaric Worker - Compressed Air Worker 60.01 - 64.00 PSI	\$109.76	15J	4C		View
King	Divers & Tenders	Hyperbaric Worker - Compressed Air Worker 64.01 - 68.00 PSI	\$114.76	15J	4C		View
King	Divers & Tenders	Hyperbaric Worker - Compressed Air Worker 68.01 - 70.00 PSI	\$116.76	15J	4C		View
King	Divers & Tenders	Hyperbaric Worker - Compressed Air Worker 70.01 - 72.00 PSI	\$118.76	15J	4C		View

King	Divers & Tenders	Hyperbaric Worker - Compressed Air Worker 72.01 - 74.00 PSI	\$120.76	15J	4C		View
King	Divers & Tenders	Manifold Operator	\$80.82	15J	4C		View
King	Divers & Tenders	Manifold Operator Mixed Gas	\$85.82	15J	4C		View
King	Divers & Tenders	Remote Operated Vehicle Operator/Technician	\$80.82	15J	4C		View
King	Divers & Tenders	Remote Operated Vehicle Tender	\$75.41	15J	4C		View
King	Dredge Workers	Assistant Engineer	\$79.62	5D	3F		View
King	Dredge Workers	Assistant Mate (Deckhand)	\$79.01	5D	3F		View
King	Dredge Workers	Boatmen	\$79.62	5D	3F		View
King	Dredge Workers	Engineer Welder	\$81.15	5D	3F		View
King	Dredge Workers	Leverman, Hydraulic	\$82.77	5D	3F		View
King	Dredge Workers	Mates	\$79.62	5D	3F		View
King	Dredge Workers	Oiler	\$79.01	5D	3F		View
King	Drywall Applicator	Journey Level	\$75.73	15O	11S		View
King	Drywall Tapers	Journey Level	\$75.73	15O	11S		View
King	Electrical Fixture Maintenance Workers	Journey Level	\$38.69	5L	1E		View
King	Electricians - Inside	Cable Splicer	\$109.35	7C	4E		View
King	Electricians - Inside	Cable Splicer (tunnel)	\$117.52	7C	4E		View
King	Electricians - Inside	Certified Welder	\$105.63	7C	4E		View
King	Electricians - Inside	Certified Welder (tunnel)	\$113.43	7C	4E		View
King	Electricians - Inside	Construction Stock Person	\$51.53	7C	4E		View
King	Electricians - Inside	Journey Level	\$101.92	7C	4E		View
King	Electricians - Inside	Journey Level (tunnel)	\$109.35	7C	4E		View
King	Electricians - Motor Shop	Journey Level	\$48.68	5A	1B		View
King	Electricians - Powerline Construction	Cable Splicer	\$93.00	5A	4D		View
King	Electricians - Powerline Construction	Certified Line Welder	\$85.42	5A	4D		View
King	Electricians - Powerline Construction	Groundperson	\$55.27	5A	4D		View
King	Electricians - Powerline Construction	Heavy Line Equipment Operator	\$85.42	5A	4D		View
King	Electricians - Powerline Construction	Journey Level Lineperson	\$85.42	5A	4D		View
King	Electricians - Powerline Construction	Line Equipment Operator	\$73.35	5A	4D		View
King	Electricians - Powerline Construction	Meter Installer	\$55.27	5A	4D	8W	View
King	Electricians - Powerline Construction	Pole Sprayer	\$85.42	5A	4D		View
King	Electricians - Powerline Construction	Powderperson	\$63.50	5A	4D		View
King	Electronic Technicians	Journey Level	\$65.66	7E	1E		View
King	Elevator Constructors	Mechanic	\$111.26	7D	4A		View
King	Elevator Constructors	Mechanic In Charge	\$120.27	7D	4A		View
King	Fabricated Precast Concrete Products	All Classifications - In-Factory Work Only	\$21.34	5B	1R		View

King	Fence Erectors	Fence Erector	\$50.07	15J	11P	8Y	View
King	Fence Erectors	Fence Laborer	\$50.07	15J	11P	8Y	View
King	Flaggers	Journey Level	\$50.07	15J	11P	8Y	View
King	Glaziers	Journey Level	\$79.16	7L	1Y		View
King	Heat & Frost Insulators And Asbestos Workers	Journey Level	\$87.15	15H	11C		View
King	Heating Equipment Mechanics	Journey Level	\$96.42	7F	1E		View
King	Hod Carriers & Mason Tenders	Journey Level	\$62.49	15J	11P	8Y	View
King	Industrial Power Vacuum Cleaner	Journey Level	\$16.28		1		View
King	Inland Boatmen	Boat Operator	\$61.41	5B	1K		View
King	Inland Boatmen	Cook	\$56.48	5B	1K		View
King	Inland Boatmen	Deckhand	\$57.48	5B	1K		View
King	Inland Boatmen	Deckhand Engineer	\$58.81	5B	1K		View
King	Inland Boatmen	Launch Operator	\$58.89	5B	1K		View
King	Inland Boatmen	Mate	\$57.31	5B	1K		View
King	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Cleaner Operator	\$49.48	15M	11O		View
King	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Foamer Operator	\$49.48	15M	11O		View
King	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Grout Truck Operator	\$49.48	15M	11O		View
King	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Head Operator	\$47.41	15M	11O		View
King	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Technician	\$41.20	15M	11O		View
King	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	TV Truck Operator	\$44.31	15M	11O		View
King	Insulation Applicators	Journey Level	\$74.96	15J	4C		View
King	Ironworkers	Journeyman	\$87.80	15K	11N		View
King	Laborers	Air, Gas Or Electric Vibrating Screed	\$59.07	15J	11P	8Y	View
King	Laborers	Airtrac Drill Operator	\$60.90	15J	11P	8Y	View
King	Laborers	Ballast Regular Machine	\$59.07	15J	11P	8Y	View
King	Laborers	Batch Weighman	\$50.07	15J	11P	8Y	View
King	Laborers	Brick Pavers	\$59.07	15J	11P	8Y	View
King	Laborers	Brush Cutter	\$59.07	15J	11P	8Y	View
King	Laborers	Brush Hog Feeder	\$59.07	15J	11P	8Y	View
King	Laborers	Burner	\$59.07	15J	11P	8Y	View
King	Laborers	Caisson Worker	\$60.90	15J	11P	8Y	View
King	Laborers	Carpenter Tender	\$59.07	15J	11P	8Y	View
King	Laborers	Cement Dumper-paving	\$60.15	15J	11P	8Y	View
King	Laborers	Cement Finisher Tender	\$59.07	15J	11P	8Y	View
King	Laborers	Change House Or Dry Shack	\$59.07	15J	11P	8Y	View

King	Laborers	Chipping Gun (30 Lbs. And Over)	\$60.15	15J	11P	8Y	View
King	Laborers	Chipping Gun (Under 30 Lbs.)	\$59.07	15J	11P	8Y	View
King	Laborers	Choker Setter	\$59.07	15J	11P	8Y	View
King	Laborers	Chuck Tender	\$59.07	15J	11P	8Y	View
King	Laborers	Clary Power Spreader	\$60.15	15J	11P	8Y	View
King	Laborers	Clean-up Laborer	\$59.07	15J	11P	8Y	View
King	Laborers	Concrete Dumper/Chute Operator	\$60.15	15J	11P	8Y	View
King	Laborers	Concrete Form Stripper	\$59.07	15J	11P	8Y	View
King	Laborers	Concrete Placement Crew	\$60.15	15J	11P	8Y	View
King	Laborers	Concrete Saw Operator/Core Driller	\$60.15	15J	11P	8Y	View
King	Laborers	Crusher Feeder	\$50.07	15J	11P	8Y	View
King	Laborers	Curing Laborer	\$59.07	15J	11P	8Y	View
King	Laborers	Demolition: Wrecking & Moving (Incl. Charred Material)	\$59.07	15J	11P	8Y	View
King	Laborers	Ditch Digger	\$59.07	15J	11P	8Y	View
King	Laborers	Diver	\$60.90	15J	11P	8Y	View
King	Laborers	Drill Operator (Hydraulic, Diamond)	\$60.15	15J	11P	8Y	View
King	Laborers	Dry Stack Walls	\$59.07	15J	11P	8Y	View
King	Laborers	Dump Person	\$59.07	15J	11P	8Y	View
King	Laborers	Epoxy Technician	\$59.07	15J	11P	8Y	View
King	Laborers	Erosion Control Worker	\$59.07	15J	11P	8Y	View
King	Laborers	Faller & Bucker Chain Saw	\$60.15	15J	11P	8Y	View
King	Laborers	Fine Graders	\$59.07	15J	11P	8Y	View
King	Laborers	Firewatch	\$50.07	15J	11P	8Y	View
King	Laborers	Form Setter	\$60.15	15J	11P	8Y	View
King	Laborers	Gabian Basket Builders	\$59.07	15J	11P	8Y	View
King	Laborers	General Laborer	\$59.07	15J	11P	8Y	View
King	Laborers	Grade Checker & Transit Person	\$62.49	15J	11P	8Y	View
King	Laborers	Grinders	\$59.07	15J	11P	8Y	View
King	Laborers	Grout Machine Tender	\$59.07	15J	11P	8Y	View
King	Laborers	Groutmen (Pressure) Including Post Tension Beams	\$60.15	15J	11P	8Y	View
King	Laborers	Guardrail Erector	\$59.07	15J	11P	8Y	View
King	Laborers	Hazardous Waste Worker (Level A)	\$60.90	15J	11P	8Y	View
King	Laborers	Hazardous Waste Worker (Level B)	\$60.15	15J	11P	8Y	View
King	Laborers	Hazardous Waste Worker (Level C)	\$59.07	15J	11P	8Y	View
King	Laborers	High Scaler	\$60.90	15J	11P	8Y	View
King	Laborers	Jackhammer	\$60.15	15J	11P	8Y	View
King	Laborers	Laserbeam Operator	\$60.15	15J	11P	8Y	View
King	Laborers	Maintenance Person	\$59.07	15J	11P	8Y	View
King	Laborers	Manhole Builder-Mudman	\$60.15	15J	11P	8Y	View

King	Laborers	Material Yard Person	\$59.07	15J	11P	8Y	View
King	Laborers	Mold Abatement Worker	\$59.07	15J	11P	8Y	View
King	Laborers	Motorman-Dinky Locomotive	\$62.59	15J	11P	8Y	View
King	Laborers	nozzleman (concrete pump, green cutter when using combination of high pressure air & water on concrete & rock, sandblast, gunite, shotcrete, water blaster, vacuum blaster)	\$62.49	15J	11P	8Y	View
King	Laborers	Pavement Breaker	\$60.15	15J	11P	8Y	View
King	Laborers	Pilot Car	\$50.07	15J	11P	8Y	View
King	Laborers	Pipe Layer (Lead)	\$62.49	15J	11P	8Y	View
King	Laborers	Pipe Layer/Tailor	\$60.15	15J	11P	8Y	View
King	Laborers	Pipe Pot Tender	\$60.15	15J	11P	8Y	View
King	Laborers	Pipe Reliner	\$60.15	15J	11P	8Y	View
King	Laborers	Pipe Wrapper	\$60.15	15J	11P	8Y	View
King	Laborers	Pot Tender	\$59.07	15J	11P	8Y	View
King	Laborers	Powderman	\$60.90	15J	11P	8Y	View
King	Laborers	Powderman's Helper	\$59.07	15J	11P	8Y	View
King	Laborers	Power Jacks	\$60.15	15J	11P	8Y	View
King	Laborers	Railroad Spike Puller - Power	\$60.15	15J	11P	8Y	View
King	Laborers	Raker - Asphalt	\$62.49	15J	11P	8Y	View
King	Laborers	Re-timberman	\$60.90	15J	11P	8Y	View
King	Laborers	Remote Equipment Operator	\$60.15	15J	11P	8Y	View
King	Laborers	Rigger/Signal Person	\$60.15	15J	11P	8Y	View
King	Laborers	Rip Rap Person	\$59.07	15J	11P	8Y	View
King	Laborers	Rivet Buster	\$60.15	15J	11P	8Y	View
King	Laborers	Rodder	\$60.15	15J	11P	8Y	View
King	Laborers	Scaffold Erector	\$59.07	15J	11P	8Y	View
King	Laborers	Scale Person	\$59.07	15J	11P	8Y	View
King	Laborers	Sloper (Over 20")	\$60.15	15J	11P	8Y	View
King	Laborers	Sloper Sprayer	\$59.07	15J	11P	8Y	View
King	Laborers	Spreader (Concrete)	\$60.15	15J	11P	8Y	View
King	Laborers	Stake Hopper	\$59.07	15J	11P	8Y	View
King	Laborers	Stock Piler	\$59.07	15J	11P	8Y	View
King	Laborers	Swinging Stage/Boatswain Chair	\$50.07	15J	11P	8Y	View
King	Laborers	Tamper & Similar Electric, Air & Gas Operated Tools	\$60.15	15J	11P	8Y	View
King	Laborers	Tamper (Multiple & Self-propelled)	\$60.15	15J	11P	8Y	View
King	Laborers	Timber Person - Sewer (Lagger, Shorer & Cribber)	\$60.15	15J	11P	8Y	View
King	Laborers	Toolroom Person (at Jobsite)	\$59.07	15J	11P	8Y	View
King	Laborers	Topper	\$59.07	15J	11P	8Y	View
King	Laborers	Track Laborer	\$59.07	15J	11P	8Y	View
King	Laborers	Track Liner (Power)	\$60.15	15J	11P	8Y	View
King	Laborers	Traffic Control Laborer	\$53.54	15J	11P	9C	View
King	Laborers	Traffic Control Supervisor	\$56.73	15J	11P	9C	View

King	Laborers	Truck Spotter	\$59.07	15J	11P	8Y	View
King	Laborers	Tugger Operator	\$60.15	15J	11P	8Y	View
King	Laborers	Tunnel Work-Compressed Air Worker 0-30 psi	\$175.79	15J	11P	9B	View
King	Laborers	Tunnel Work-Compressed Air Worker 30.01-44.00 psi	\$180.82	15J	11P	9B	View
King	Laborers	Tunnel Work-Compressed Air Worker 44.01-54.00 psi	\$184.50	15J	11P	9B	View
King	Laborers	Tunnel Work-Compressed Air Worker 54.01-60.00 psi	\$190.20	15J	11P	9B	View
King	Laborers	Tunnel Work-Compressed Air Worker 60.01-64.00 psi	\$192.32	15J	11P	9B	View
King	Laborers	Tunnel Work-Compressed Air Worker 64.01-68.00 psi	\$197.42	15J	11P	9B	View
King	Laborers	Tunnel Work-Compressed Air Worker 68.01-70.00 psi	\$199.32	15J	11P	9B	View
King	Laborers	Tunnel Work-Compressed Air Worker 70.01-72.00 psi	\$201.32	15J	11P	9B	View
King	Laborers	Tunnel Work-Compressed Air Worker 72.01-74.00 psi	\$203.32	15J	11P	9B	View
King	Laborers	Tunnel Work-Guage and Lock Tender	\$62.59	15J	11P	8Y	View
King	Laborers	Tunnel Work-Miner	\$62.59	15J	11P	8Y	View
King	Laborers	Vibrator	\$60.15	15J	11P	8Y	View
King	Laborers	Vinyl Seamer	\$59.07	15J	11P	8Y	View
King	Laborers	Watchman	\$45.51	15J	11P	8Y	View
King	Laborers	Welder	\$60.15	15J	11P	8Y	View
King	Laborers	Well Point Laborer	\$60.15	15J	11P	8Y	View
King	Laborers	Window Washer/Cleaner	\$45.51	15J	11P	8Y	View
King	Laborers - Underground Sewer & Water	General Laborer & Topman	\$59.07	15J	11P	8Y	View
King	Laborers - Underground Sewer & Water	Pipe Layer	\$60.15	15J	11P	8Y	View
King	Landscape Construction	Landscape Construction/ Landscaping Or Planting Laborers	\$45.51	15J	11P	8Y	View
King	Landscape Construction	Landscape Operator	\$82.25	15J	11G	8X	View
King	Landscape Maintenance	Groundskeeper	\$17.87		1		View
King	Lathers	Journey Level	\$75.73	15O	11S		View
King	Marble Setters	Journey Level	\$69.07	7E	1N		View
King	Metal Fabrication (In Shop)	Fitter/Certified Welder	\$42.17	15I	11E		View
King	Metal Fabrication (In Shop)	General Laborer	\$30.07	15I	11E		View
King	Metal Fabrication (In Shop)	Mechanic	\$43.63	15I	11E		View
King	Metal Fabrication (In Shop)	Welder/Burner	\$39.28	15I	11E		View
King	Millwright	Journey Level	\$76.51	15J	4C		View
King	Modular Buildings	Cabinet Assembly	\$16.28		1		View
King	Modular Buildings	Electrician	\$16.28		1		View
King	Modular Buildings	Equipment Maintenance	\$16.28		1		View
King	Modular Buildings	Plumber	\$16.28		1		View
King	Modular Buildings	Production Worker	\$16.28		1		View
King	Modular Buildings	Tool Maintenance	\$16.28		1		View

King	Modular Buildings	Utility Person	\$16.28		<u>1</u>		View
King	Modular Buildings	Welder	\$16.28		<u>1</u>		View
King	Painters	Journey Level	\$51.71	<u>6Z</u>	<u>11J</u>		View
King	Pile Driver	Crew Tender	\$80.82	<u>15J</u>	<u>4C</u>		View
King	Pile Driver	Journey Level	\$75.41	<u>15J</u>	<u>4C</u>		View
King	Plasterers	Journey Level	\$70.91	<u>7Q</u>	<u>1R</u>		View
King	Plasterers	Nozzleman	\$74.91	<u>7Q</u>	<u>1R</u>		View
King	Playground & Park Equipment Installers	Journey Level	\$16.28		<u>1</u>		View
King	Plumbers & Pipefitters	Journey Level	\$103.19	<u>6Z</u>	<u>1G</u>		View
King	Power Equipment Operators	Asphalt Plant Operators	\$83.62	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Assistant Engineer	\$78.65	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Barrier Machine (zipper)	\$82.88	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Batch Plant Operator: concrete	\$82.88	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Boat Operator	\$83.95	<u>7A</u>	<u>11H</u>	<u>8X</u>	View
King	Power Equipment Operators	Bobcat	\$78.65	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Brokk - Remote Demolition Equipment	\$78.65	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Brooms	\$78.65	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Bump Cutter	\$82.88	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Cableways	\$83.62	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Chipper	\$82.88	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Compressor	\$78.65	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Concrete Finish Machine - Laser Screed	\$78.65	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Concrete Pump - Mounted Or Trailer High Pressure Line Pump, Pump High Pressure	\$82.25	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Concrete Pump: Truck Mount With Boom Attachment Over 42 M	\$83.62	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Concrete Pump: Truck Mount With Boom Attachment Up To 42m	\$82.88	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Conveyors	\$82.25	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Cranes Friction: 200 tons and over	\$86.48	<u>7A</u>	<u>11H</u>	<u>8X</u>	View
King	Power Equipment Operators	Cranes, A-frame: 10 tons and under	\$78.95	<u>7A</u>	<u>11H</u>	<u>8X</u>	View
King	Power Equipment Operators	Cranes: 100 tons through 199 tons, or 150' of boom (including jib with attachments)	\$84.77	<u>7A</u>	<u>11H</u>	<u>8X</u>	View
King	Power Equipment Operators	Cranes: 20 tons through 44 tons with attachments	\$83.20	<u>7A</u>	<u>11H</u>	<u>8X</u>	View
King	Power Equipment Operators	Cranes: 200 tons- 299 tons, or 250' of boom including jib with attachments	\$85.66	<u>7A</u>	<u>11H</u>	<u>8X</u>	View
King	Power Equipment Operators	Cranes: 300 tons and over or 300' of boom including jib with attachments	\$86.48	<u>7A</u>	<u>11H</u>	<u>8X</u>	View

King	Power Equipment Operators	Cranes: 45 tons through 99 tons, under 150' of boom(including jib with attachments)	\$83.95	7A	11H	8X	View
King	Power Equipment Operators	Cranes: Friction cranes through 199 tons	\$85.66	7A	11H	8X	View
King	Power Equipment Operators	Cranes: through 19 tons with attachments, a-frame over 10 tons	\$82.56	7A	11H	8X	View
King	Power Equipment Operators	Crusher	\$82.88	15J	11G	8X	View
King	Power Equipment Operators	Deck Engineer/Deck Winches (power)	\$82.88	15J	11G	8X	View
King	Power Equipment Operators	Derricks, On Building Work	\$83.62	15J	11G	8X	View
King	Power Equipment Operators	Dozers D-9 & Under	\$82.25	15J	11G	8X	View
King	Power Equipment Operators	Drill Oilers: Auger Type, Truck Or Crane Mount	\$82.25	15J	11G	8X	View
King	Power Equipment Operators	Drilling Machine	\$84.46	15J	11G	8X	View
King	Power Equipment Operators	Elevator and man-lift: permanent and shaft type	\$78.65	15J	11G	8X	View
King	Power Equipment Operators	Finishing Machine, Bidwell And Gamaco & Similar Equipment	\$82.88	15J	11G	8X	View
King	Power Equipment Operators	Forklift: 3000 lbs and over with attachments	\$82.25	15J	11G	8X	View
King	Power Equipment Operators	Forklifts: under 3000 lbs. with attachments	\$78.65	15J	11G	8X	View
King	Power Equipment Operators	Grade Engineer: Using Blue Prints, Cut Sheets, Etc	\$82.88	15J	11G	8X	View
King	Power Equipment Operators	Gradechecker/Stakeman	\$78.65	15J	11G	8X	View
King	Power Equipment Operators	Guardrail Punch	\$82.88	15J	11G	8X	View
King	Power Equipment Operators	Hard Tail End Dump Articulating Off- Road Equipment 45 Yards. & Over	\$83.62	15J	11G	8X	View
King	Power Equipment Operators	Hard Tail End Dump Articulating Off-road Equipment Under 45 Yards	\$82.88	15J	11G	8X	View
King	Power Equipment Operators	Horizontal/Directional Drill Locator	\$82.25	15J	11G	8X	View
King	Power Equipment Operators	Horizontal/Directional Drill Operator	\$82.88	15J	11G	8X	View
King	Power Equipment Operators	Hydralifts/Boom Trucks Over 10 Tons	\$82.56	7A	11H	8X	View
King	Power Equipment Operators	Hydralifts/boom trucks: 10 tons and under	\$78.95	7A	11H	8X	View
King	Power Equipment Operators	Leverman	\$85.33	15J	11G	8X	View
King	Power Equipment Operators	Loader, Overhead, 6 Yards. But Not Including 8 Yards	\$83.62	15J	11G	8X	View
King	Power Equipment Operators	Loaders, Overhead Under 6 Yards	\$82.88	15J	11G	8X	View
King	Power Equipment Operators	Loaders, Plant Feed	\$82.88	15J	11G	8X	View
King	Power Equipment Operators	Loaders: Elevating Type Belt	\$82.25	15J	11G	8X	View
King	Power Equipment Operators	Locomotives, All	\$82.88	15J	11G	8X	View
King	Power Equipment Operators	Material Transfer Device	\$82.88	15J	11G	8X	View

King	Power Equipment Operators	Mechanics: All (Leadmen - \$0.50 per hour over mechanic)	\$84.46	15J	11G	8X	View
King	Power Equipment Operators	Motor Patrol Graders	\$83.62	15J	11G	8X	View
King	Power Equipment Operators	Mucking Machine, Mole, Tunnel Drill, Boring, Road Header And/or Shield	\$83.62	15J	11G	8X	View
King	Power Equipment Operators	Oil Distributors, Blower Distribution & Mulch Seeding Operator	\$78.65	15J	11G	8X	View
King	Power Equipment Operators	Outside Hoists (Elevators and Manlifts), Air Tuggers, Strato	\$82.25	15J	11G	8X	View
King	Power Equipment Operators	Overhead, bridge type Crane: 20 tons through 44 tons	\$83.20	7A	11H	8X	View
King	Power Equipment Operators	Overhead, bridge type: 100 tons and over	\$84.77	7A	11H	8X	View
King	Power Equipment Operators	Overhead, bridge type: 45 tons through 99 tons	\$83.95	7A	11H	8X	View
King	Power Equipment Operators	Pavement Breaker	\$78.65	15J	11G	8X	View
King	Power Equipment Operators	Pile Driver (other Than Crane Mount)	\$82.88	15J	11G	8X	View
King	Power Equipment Operators	Plant Oiler - Asphalt, Crusher	\$82.25	15J	11G	8X	View
King	Power Equipment Operators	Posthole Digger, Mechanical	\$78.65	15J	11G	8X	View
King	Power Equipment Operators	Power Plant	\$78.65	15J	11G	8X	View
King	Power Equipment Operators	Pumps - Water	\$78.65	15J	11G	8X	View
King	Power Equipment Operators	Quad 9, Hd 41, D10 And Over	\$83.62	15J	11G	8X	View
King	Power Equipment Operators	Quick Tower: no cab, under 100 feet in height base to boom	\$82.88	15J	11G	8X	View
King	Power Equipment Operators	Remote Control Operator On Rubber Tired Earth Moving Equipment	\$83.62	15J	11G	8X	View
King	Power Equipment Operators	Rigger and Bellman	\$78.95	7A	11H	8X	View
King	Power Equipment Operators	Rigger/Signal Person, Bellman(Certified)	\$82.56	7A	11H	8X	View
King	Power Equipment Operators	Rollagon	\$83.62	15J	11G	8X	View
King	Power Equipment Operators	Roller, Other Than Plant Mix	\$78.65	15J	11G	8X	View
King	Power Equipment Operators	Roller, Plant Mix Or Multi-lift Materials	\$82.25	15J	11G	8X	View
King	Power Equipment Operators	Roto-mill, Roto-grinder	\$82.88	15J	11G	8X	View
King	Power Equipment Operators	Saws - Concrete	\$82.25	15J	11G	8X	View
King	Power Equipment Operators	Scraper, Self Propelled Under 45 Yards	\$82.88	15J	11G	8X	View
King	Power Equipment Operators	Scrapers - Concrete & Carry All	\$82.25	15J	11G	8X	View
King	Power Equipment Operators	Scrapers, Self-propelled: 45 Yards And Over	\$83.62	15J	11G	8X	View
King	Power Equipment Operators	Service Engineers: Equipment	\$82.25	15J	11G	8X	View
King	Power Equipment Operators	Shotcrete/Gunite Equipment	\$78.65	15J	11G	8X	View
King	Power Equipment Operators	Shovel, Excavator, Backhoe, Tractors Under 15 Metric Tons	\$82.25	15J	11G	8X	View

King	Power Equipment Operators	Shovel, Excavator, Backhoe: Over 30 Metric Tons To 50 Metric Tons	\$83.62	15J	11G	8X	View
King	Power Equipment Operators	Shovel, Excavator, Backhoes, Tractors: 15 To 30 Metric Tons	\$82.88	15J	11G	8X	View
King	Power Equipment Operators	Shovel, Excavator, Backhoes: Over 50 Metric Tons To 90 Metric Tons	\$84.46	15J	11G	8X	View
King	Power Equipment Operators	Shovel, Excavator, Backhoes: Over 90 Metric Tons	\$85.33	15J	11G	8X	View
King	Power Equipment Operators	Slipform Pavers	\$83.62	15J	11G	8X	View
King	Power Equipment Operators	Spreader, Topsider & Screedman	\$83.62	15J	11G	8X	View
King	Power Equipment Operators	Subgrader Trimmer	\$82.88	15J	11G	8X	View
King	Power Equipment Operators	Tower Bucket Elevators	\$82.25	15J	11G	8X	View
King	Power Equipment Operators	Tower Crane: over 175' through 250' in height, base to boom	\$85.66	7A	11H	8X	View
King	Power Equipment Operators	Tower crane: up to 175' in height base to boom	\$84.77	7A	11H	8X	View
King	Power Equipment Operators	Tower Cranes: over 250' in height from base to boom	\$86.48	7A	11H	8X	View
King	Power Equipment Operators	Transporters, All Track Or Truck Type	\$83.62	15J	11G	8X	View
King	Power Equipment Operators	Trenching Machines	\$82.25	15J	11G	8X	View
King	Power Equipment Operators	Truck Crane Oiler/Driver: 100 tons and over	\$83.20	7A	11H	8X	View
King	Power Equipment Operators	Truck crane oiler/driver: under 100 tons	\$82.56	7A	11H	8X	View
King	Power Equipment Operators	Truck Mount Portable Conveyor	\$82.88	15J	11G	8X	View
King	Power Equipment Operators	Vac Truck (Vactor Guzzler, Hydro Excavator)	\$82.88	15J	11G	8X	View
King	Power Equipment Operators	Welder	\$83.62	15J	11G	8X	View
King	Power Equipment Operators	Wheel Tractors, Farmall Type	\$78.65	15J	11G	8X	View
King	Power Equipment Operators	Yo Yo Pay Dozer	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Asphalt Plant Operators	\$83.62	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Assistant Engineer	\$78.65	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Barrier Machine (zipper)	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Batch Plant Operator, Concrete	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Boat Operator	\$83.95	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Bobcat	\$78.65	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Brokk - Remote Demolition Equipment	\$78.65	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Brooms	\$78.65	15J	11G	8X	View

King	Power Equipment Operators-Underground Sewer & Water	Bump Cutter	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Cableways	\$83.62	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Chipper	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Compressor	\$78.65	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Concrete Finish Machine - Laser Screed	\$78.65	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Concrete Pump - Mounted Or Trailer High Pressure Line Pump, Pump High Pressure	\$82.25	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Concrete Pump: Truck Mount With Boom Attachment Over 42 M	\$83.62	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Concrete Pump: Truck Mount With Boom Attachment Up To 42m	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Conveyors	\$82.25	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Cranes Friction: 200 tons and over	\$86.48	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Cranes, A-frame: 10 tons and under	\$78.95	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Cranes: 100 tons through 199 tons, or 150' of boom (including jib with attachments)	\$84.77	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Cranes: 20 tons through 44 tons with attachments	\$83.20	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Cranes: 200 tons- 299 tons, or 250' of boom including jib with attachments	\$85.66	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Cranes: 300 tons and over or 300' of boom including jib with attachments	\$86.48	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Cranes: 45 tons through 99 tons, under 150' of boom(including jib with attachments)	\$83.95	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Cranes: Friction cranes through 199 tons	\$85.66	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Cranes: through 19 tons with attachments, a-frame over 10 tons	\$82.56	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Crusher	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Deck Engineer/Deck Winches (power)	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Derricks, On Building Work	\$83.62	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Dozers D-9 & Under	\$82.25	15J	11G	8X	View

King	Power Equipment Operators-Underground Sewer & Water	Drill Oilers: Auger Type, Truck Or Crane Mount	\$82.25	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Drilling Machine	\$84.46	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Elevator and man-lift: permanent and shaft type	\$78.65	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Finishing Machine, Bidwell And Gamaco & Similar Equipment	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Forklift: 3000 lbs and over with attachments	\$82.25	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Forklifts: under 3000 lbs. with attachments	\$78.65	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Grade Engineer: Using Blue Prints, Cut Sheets, Etc	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Gradechecker/Stakeman	\$78.65	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Guardrail Punch	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Hard Tail End Dump Articulating Off- Road Equipment 45 Yards. & Over	\$83.62	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Hard Tail End Dump Articulating Off-road Equipment Under 45 Yards	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Horizontal/Directional Drill Locator	\$82.25	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Horizontal/Directional Drill Operator	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Hydralifts/boom trucks: 10 tons and under	\$78.95	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Hydralifts/boom trucks: over 10 tons	\$82.56	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Leverman	\$85.33	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Loader, Overhead, 6 Yards. But Not Including 8 Yards	\$83.62	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Loaders, Overhead Under 6 Yards	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Loaders, Plant Feed	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Loaders: Elevating Type Belt	\$82.25	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Locomotives, All	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Material Transfer Device	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Mechanics: All (Leadmen - \$0.50 per hour over mechanic)	\$84.46	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Motor Patrol Graders	\$83.62	15J	11G	8X	View

King	Power Equipment Operators-Underground Sewer & Water	Mucking Machine, Mole, Tunnel Drill, Boring, Road Header And/or Shield	\$83.62	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Oil Distributors, Blower Distribution & Mulch Seeding Operator	\$78.65	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Outside Hoists (Elevators and Manlifts), Air Tuggers, Strato	\$82.25	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Overhead, bridge type Crane: 20 tons through 44 tons	\$83.20	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Overhead, bridge type: 100 tons and over	\$84.77	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Overhead, bridge type: 45 tons through 99 tons	\$83.95	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Pavement Breaker	\$78.65	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Pile Driver (other Than Crane Mount)	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Plant Oiler - Asphalt, Crusher	\$82.25	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Posthole Digger, Mechanical	\$78.65	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Power Plant	\$78.65	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Pumps - Water	\$78.65	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Quad 9, Hd 41, D10 And Over	\$83.62	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Quick Tower: no cab, under 100 feet in height base to boom	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Remote Control Operator On Rubber Tired Earth Moving Equipment	\$83.62	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Rigger and Bellman	\$78.95	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Rigger/Signal Person, Bellman(Certified)	\$82.56	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Rollagon	\$83.62	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Roller, Other Than Plant Mix	\$78.65	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Roller, Plant Mix Or Multi-lift Materials	\$82.25	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Roto-mill, Roto-grinder	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Saws - Concrete	\$82.25	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Scraper, Self Propelled Under 45 Yards	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Scrapers - Concrete & Carry All	\$82.25	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Scrapers, Self-propelled: 45 Yards And Over	\$83.62	15J	11G	8X	View

King	Power Equipment Operators-Underground Sewer & Water	Shotcrete/Gunite Equipment	\$78.65	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Shovel, Excavator, Backhoe, Tractors Under 15 Metric Tons	\$82.25	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Shovel, Excavator, Backhoe: Over 30 Metric Tons To 50 Metric Tons	\$83.62	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Shovel, Excavator, Backhoes, Tractors: 15 To 30 Metric Tons	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Shovel, Excavator, Backhoes: Over 50 Metric Tons To 90 Metric Tons	\$84.46	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Shovel, Excavator, Backhoes: Over 90 Metric Tons	\$85.33	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Slipform Pavers	\$83.62	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Spreader, Topsider & Screedman	\$83.62	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Subgrader Trimmer	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Tower Bucket Elevators	\$82.25	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Tower Crane: over 175' through 250' in height, base to boom	\$85.66	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Tower crane: up to 175' in height base to boom	\$84.77	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Tower Cranes: over 250' in height from base to boom	\$86.48	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Transporters, All Track Or Truck Type	\$83.62	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Trenching Machines	\$82.25	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Truck Crane Oiler/Driver: 100 tons and over	\$83.20	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Truck crane oiler/driver: under 100 tons	\$82.56	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Truck Mount Portable Conveyor	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Vac Truck (Vactor Guzzler, Hydro Excavator)	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Welder	\$83.62	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Wheel Tractors, Farmall Type	\$78.65	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Yo Yo Pay Dozer	\$82.88	15J	11G	8X	View
King	Power Line Clearance Tree Trimmers	Journey Level In Charge	\$57.22	5A	4A		View
King	Power Line Clearance Tree Trimmers	Spray Person	\$54.32	5A	4A		View
King	Power Line Clearance Tree Trimmers	Tree Equipment Operator	\$57.22	5A	4A		View

King	Power Line Clearance Tree Trimmers	Tree Trimmer	\$51.18	5A	4A		View
King	Power Line Clearance Tree Trimmers	Tree Trimmer Groundperson	\$38.99	5A	4A		View
King	Refrigeration & Air Conditioning Mechanics	Journey Level	\$95.89	6Z	1G		View
King	Residential Brick Mason	Journey Level	\$69.07	7E	1N		View
King	Residential Carpenters	Journey Level	\$36.44		1		View
King	Residential Cement Masons	Journey Level	\$46.64		1		View
King	Residential Drywall Applicators	Journey Level	\$74.96	15J	4C		View
King	Residential Drywall Tapers	Journey Level	\$36.36		1		View
King	Residential Electricians	Journey Level	\$48.80		1		View
King	Residential Glaziers	Journey Level	\$28.93		1		View
King	Residential Insulation Applicators	Journey Level	\$28.18		1		View
King	Residential Laborers	Journey Level	\$29.73		1		View
King	Residential Marble Setters	Journey Level	\$27.38		1		View
King	Residential Painters	Journey Level	\$23.47		1		View
King	Residential Plumbers & Pipefitters	Journey Level	\$45.40		1		View
King	Residential Refrigeration & Air Conditioning Mechanics	Journey Level	\$96.42	7F	1E		View
King	Residential Sheet Metal Workers	Journey Level	\$96.42	7F	1E		View
King	Residential Soft Floor Layers	Journey Level	\$57.11	5A	3J		View
King	Residential Sprinkler Fitters (Fire Protection)	Journey Level	\$63.61		1		View
King	Residential Stone Masons	Journey Level	\$69.07	7E	1N		View
King	Residential Terrazzo Workers	Journey Level	\$62.36	7E	1N		View
King	Residential Terrazzo/Tile Finishers	Journey Level	\$24.39		1		View
King	Residential Tile Setters	Journey Level	\$21.04		1		View
King	Roofers	Journey Level	\$64.45	5A	3H		View
King	Roofers	Using Irritable Bituminous Materials	\$67.39	5A	3H		View
King	Sheet Metal Workers	Journey Level (Field or Shop)	\$96.42	7F	1E		View
King	Shipbuilding & Ship Repair	New Construction Boilermaker	\$51.85	7X	4J		View
King	Shipbuilding & Ship Repair	New Construction Carpenter	\$51.85	7X	4J		View
King	Shipbuilding & Ship Repair	New Construction Crane Operator	\$43.16	7V	1		View
King	Shipbuilding & Ship Repair	New Construction Electrician	\$51.85	7X	4J		View
King	Shipbuilding & Ship Repair	New Construction Heat & Frost Insulator	\$87.15	15H	11C		View
King	Shipbuilding & Ship Repair	New Construction Laborer	\$51.85	7X	4J		View
King	Shipbuilding & Ship Repair	New Construction Machinist	\$51.85	7X	4J		View
King	Shipbuilding & Ship Repair	New Construction Operating Engineer	\$43.16	7V	1		View
King	Shipbuilding & Ship Repair	New Construction Painter	\$51.95	7X	4J		View
King	Shipbuilding & Ship Repair	New Construction Pipefitter	\$51.85	7X	4J		View
King	Shipbuilding & Ship Repair	New Construction Rigger	\$51.85	7X	4J		View

King	Shipbuilding & Ship Repair	New Construction Sheet Metal	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	New Construction Shipwright	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	New Construction Warehouse/ Teamster	\$43.16	<u>7V</u>	<u>1</u>		View
King	Shipbuilding & Ship Repair	New Construction Welder / Burner	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Boilermaker	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Carpenter	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Crane Operator	\$45.06	<u>7Y</u>	<u>4K</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Electrician	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Heat & Frost Insulator	\$87.15	<u>15H</u>	<u>11C</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Laborer	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Machinist	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Operating Engineer	\$45.06	<u>7Y</u>	<u>4K</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Painter	\$51.95	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Pipefitter	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Rigger	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Sheet Metal	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Shipwright	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Warehouse / Teamster	\$45.06	<u>7Y</u>	<u>4K</u>		View
King	Sign Makers & Installers (Electrical)	Journey Level	\$58.04	<u>0</u>	<u>1</u>		View
King	Sign Makers & Installers (Non- Electrical)	Journey Level	\$37.08	<u>0</u>	<u>1</u>		View
King	Soft Floor Layers	Journey Level	\$66.32	<u>15J</u>	<u>4C</u>		View
King	Solar Controls For Windows	Journey Level	\$16.28		<u>1</u>		View
King	Sprinkler Fitters (Fire Protection)	Journey Level	\$95.49	<u>5C</u>	<u>1X</u>		View
King	Stage Rigging Mechanics (Non Structural)	Journey Level	\$16.28		<u>1</u>		View
King	Stone Masons	Journey Level	\$69.07	<u>7E</u>	<u>1N</u>		View
King	Street And Parking Lot Sweeper Workers	Journey Level	\$19.09		<u>1</u>		View
King	Surveyors	Assistant Construction Site Surveyor	\$82.56	<u>7A</u>	<u>11H</u>	<u>8X</u>	View
King	Surveyors	Chainman	\$78.95	<u>7A</u>	<u>11H</u>	<u>8X</u>	View
King	Surveyors	Construction Site Surveyor	\$83.95	<u>7A</u>	<u>11H</u>	<u>8X</u>	View
King	Surveyors	Drone Operator (when used in conjunction with survey work only)	\$78.95	<u>7A</u>	<u>11H</u>	<u>8X</u>	View
King	Surveyors	Ground Penetrating Radar Operator	\$78.95	<u>7A</u>	<u>11H</u>	<u>8X</u>	View
King	Telecommunication Technicians	Journey Level	\$65.66	<u>7E</u>	<u>1E</u>		View
King	Telephone Line Construction - Outside	Cable Splicer	\$40.36	<u>5A</u>	<u>2B</u>		View
King	Telephone Line Construction - Outside	Hole Digger/Ground Person	\$26.92	<u>5A</u>	<u>2B</u>		View

King	Telephone Line Construction - Outside	Telephone Equipment Operator (Light)	\$33.74	5A	2B		View
King	Telephone Line Construction - Outside	Telephone Lineperson	\$38.15	5A	2B		View
King	Terrazzo Workers	Journey Level	\$62.36	7E	1N		View
King	Tile Setters	Journey Level	\$62.36	7E	1N		View
King	Tile, Marble & Terrazzo Finishers	Finisher	\$53.19	7E	1N		View
King	Traffic Control Stripers	Journey Level	\$89.54	15L	1K		View
King	Truck Drivers	Asphalt Mix Over 16 Yards	\$74.95	15J	11M	8L	View
King	Truck Drivers	Asphalt Mix To 16 Yards	\$74.02	15J	11M	8L	View
King	Truck Drivers	Dump Truck	\$74.02	15J	11M	8L	View
King	Truck Drivers	Dump Truck & Trailer	\$74.95	15J	11M	8L	View
King	Truck Drivers	Other Trucks	\$74.95	15J	11M	8L	View
King	Truck Drivers - Ready Mix	Transit Mix	\$74.95	15J	11M	8L	View
King	Well Drillers & Irrigation Pump Installers	Irrigation Pump Installer	\$17.71		1		View
King	Well Drillers & Irrigation Pump Installers	Oiler	\$16.28		1		View
King	Well Drillers & Irrigation Pump Installers	Well Driller	\$18.00		1		View

Washington State Department of Labor and Industries
Policy Statement
(Regarding the Production of "Standard" or "Non-standard" Items)

Below is the department's (State L&I's) list of criteria to be used in determining whether a prefabricated item is "standard" or "non-standard". For items not appearing on WSDOT's predetermined list, these criteria shall be used by the Contractor (and the Contractor's subcontractors, agents to subcontractors, suppliers, manufacturers, and fabricators) to determine coverage under RCW 39.12. The production, in the State of Washington, of non-standard items is covered by RCW 39.12, and the production of standard items is not. The production of any item outside the State of Washington is not covered by RCW 39.12.

1. Is the item fabricated for a public works project? If not, it is not subject to RCW 39.12. If it is, go to question 2.
2. Is the item fabricated on the public works jobsite? If it is, the work is covered under RCW 39.12. If not, go to question 3.
3. Is the item fabricated in an assembly/fabrication plant set up for, and dedicated primarily to, the public works project? If it is, the work is covered by RCW 39.12. If not, go to question 4.
4. Does the item require any assembly, cutting, modification or other fabrication by the supplier? If not, the work is not covered by RCW 39.12. If yes, go to question 5.
5. Is the prefabricated item intended for the public works project typically an inventory item which could reasonably be sold on the general market? If not, the work is covered by RCW 39.12. If yes, go to question 6.
6. Does the specific prefabricated item, generally defined as standard, have any unusual characteristics such as shape, type of material, strength requirements, finish, etc? If yes, the work is covered under RCW 39.12.

Any firm with questions regarding the policy, WSDOT's Predetermined List, or for determinations of covered and non-covered workers shall be directed to State L&I at (360) 902-5330.

**WSDOT's
Predetermined List for
Suppliers - Manufactures - Fabricator**

Below is a list of potentially prefabricated items, originally furnished by WSDOT to Washington State Department of Labor and Industries, that may be considered non-standard and therefore covered by the prevailing wage law, RCW 39.12. Items marked with an X in the "YES" column should be considered to be non-standard and therefore covered by RCW 39.12. Items marked with an X in the "NO" column should be considered to be standard and therefore not covered. Of course, exceptions to this general list may occur, and in that case shall be evaluated according to the criteria described in State and L&I's policy statement.

ITEM DESCRIPTION	YES	NO
1. Metal rectangular frames, solid metal covers, herringbone grates, and bi-directional vaned grates for Catch Basin Types 1, 1L, 1P, and 2 and Concrete Inlets. See Std. Plans		X
2. Metal circular frames (rings) and covers, circular grates, and prefabricated ladders for Manhole Types 1, 2, and 3, Drywell Types 1, 2, and 3 and Catch Basin Type 2. See Std. Plans		X
3. Prefabricated steel grate supports and welded grates, metal frames and dual vaned grates, and Type 1, 2, and 3 structural tubing grates for Drop Inlets. See Std. Plans.		X
4. Concrete Pipe - Plain Concrete pipe and reinforced concrete pipe Class 2 to 5 sizes smaller than 60 inch diameter.		X
5. Concrete Pipe - Plain Concrete pipe and reinforced concrete pipe Class 2 to 5 sizes larger than 60 inch diameter.		X
6. Corrugated Steel Pipe - Steel lock seam corrugated pipe for culverts and storm sewers, sizes 30 inch to 120 inches in diameter. May also be treated, 1 thru 5.		X
7. Corrugated Aluminum Pipe - Aluminum lock seam corrugated pipe for culverts and storm sewers, sizes 30 inch to 120 inches in diameter. May also be treated, #5.		X

ITEM DESCRIPTION	YES	NO
8. Anchor Bolts & Nuts - Anchor Bolts and Nuts, for mounting sign structures, luminaries and other items, shall be made from commercial bolt stock. See Contract Plans and Std. Plans for size and material type.		X
9. Aluminum Pedestrian Handrail - Pedestrian handrail conforming to the type and material specifications set forth in the contract plans. Welding of aluminum shall be in accordance with Section 9-28.14(3).	X	
10. Major Structural Steel Fabrication - Fabrication of major steel items such as trusses, beams, girders, etc., for bridges.	X	
11. Minor Structural Steel Fabrication - Fabrication of minor steel Items such as special hangers, brackets, access doors for structures, access ladders for irrigation boxes, bridge expansion joint systems, etc., involving welding, cutting, punching and/or boring of holes. See Contact Plans for item description and shop drawings.	X	
12. Aluminum Bridge Railing Type BP - Metal bridge railing conforming to the type and material specifications set forth in the Contract Plans. Welding of aluminum shall be in accordance with Section 9-28.14(3).		X
13. Concrete Piling--Precast-Prestressed concrete piling for use as 55 and 70 ton concrete piling. Concrete to conform to Section 9-19.1 of Std. Spec..	X	
14. Precast Manhole Types 1, 2, and 3 with cones, adjustment sections and flat top slabs. See Std. Plans.		X
15. Precast Drywell Types 1, 2, and with cones and adjustment Sections. See Std. Plans.		X
16. Precast Catch Basin - Catch Basin type 1, 1L, 1P, and 2 With adjustment sections. See Std. Plans.		X

ITEM DESCRIPTION	YES	NO
17. Precast Concrete Inlet - with adjustment sections, See Std. Plans		X
18. Precast Drop Inlet Type 1 and 2 with metal grate supports. See Std. Plans.		X
19. Precast Grate Inlet Type 2 with extension and top units. See Std. Plans		X
20. Metal frames, vaned grates, and hoods for Combination Inlets. See Std. Plans		X
21. Precast Concrete Utility Vaults - Precast Concrete utility vaults of various sizes. Used for in ground storage of utility facilities and controls. See Contract Plans for size and construction requirements. Shop drawings are to be provided for approval prior to casting		X
22. Vault Risers - For use with Valve Vaults and Utilities X Vaults.		X
23. Valve Vault - For use with underground utilities. See Contract Plans for details.		X
24. Precast Concrete Barrier - Precast Concrete Barrier for use as new barrier or may also be used as Temporary Concrete Barrier. Only new state approved barrier may be used as permanent barrier.		X
25. Reinforced Earth Wall Panels – Reinforced Earth Wall Panels in size and shape as shown in the Plans. Fabrication plant has annual approval for methods and materials to be used. See Shop Drawing. Fabrication at other locations may be approved, after facilities inspection, contact HQ. Lab.	X	
26. Precast Concrete Walls - Precast Concrete Walls - tilt-up wall panel in size and shape as shown in Plans. Fabrication plant has annual approval for methods and materials to be used	X	

ITEM DESCRIPTION	YES	NO
27. Precast Railroad Crossings - Concrete Crossing Structure Slabs.	X	
28. 12, 18 and 26 inch Standard Precast Prestressed Girder – Standard Precast Prestressed Girder for use in structures. Fabricator plant has annual approval of methods and materials to be used. Shop Drawing to be provided for approval prior to casting girders. See Std. Spec. Section 6-02.3(25)A	X	
29. Prestressed Concrete Girder Series 4-14 - Prestressed Concrete Girders for use in structures. Fabricator plant has annual approval of methods and materials to be used. Shop Drawing to be provided for approval prior to casting girders. See Std. Spec. Section 6-02.3(25)A	X	
30. Prestressed Tri-Beam Girder - Prestressed Tri-Beam Girders for use in structures. Fabricator plant has annual approval of methods and materials to be used. Shop Drawing to be provided for approval prior to casting girders. See Std. Spec. Section 6-02.3(25)A	X	
31. Prestressed Precast Hollow-Core Slab – Precast Prestressed Hollow-core slab for use in structures. Fabricator plant has annual approval of methods and materials to be used. Shop Drawing to be provided for approval prior to casting girders. See Std. Spec. Section 6-02.3(25)A.	X	
32. Prestressed-Bulb Tee Girder - Bulb Tee Prestressed Girder for use in structures. Fabricator plant has annual approval of methods and materials to be used. Shop Drawing to be provided for approval prior to casting girders. See Std. Spec. Section 6-02.3(25)A	X	
33. Monument Case and Cover See Std. Plan.		X

ITEM DESCRIPTION	YES	NO
34. Cantilever Sign Structure - Cantilever Sign Structure fabricated from steel tubing meeting AASHTO-M-183. See Std. Plans, and Contract Plans for details. The steel structure shall be galvanized after fabrication in accordance with AASHTO-M-111.	X	
35. Mono-tube Sign Structures - Mono-tube Sign Bridge fabricated to details shown in the Plans. Shop drawings for approval are required prior to fabrication.	X	
36. Steel Sign Bridges - Steel Sign Bridges fabricated from steel tubing meeting AASHTO-M-138 for Aluminum Alloys. See Std. Plans, and Contract Plans for details. The steel structure shall be galvanized after fabrication in accordance with AASHTO-M-111.	X	
37. Steel Sign Post - Fabricated Steel Sign Posts as detailed in Std Plans. Shop drawings for approval are to be provided prior to fabrication		X
38. Light Standard-Prestressed - Spun, prestressed, hollow concrete poles.	X	
39. Light Standards - Lighting Standards for use on highway illumination systems, poles to be fabricated to conform with methods and materials as specified on Std. Plans. See Special Provisions for pre-approved drawings.	X	
40. Traffic Signal Standards - Traffic Signal Standards for use on highway and/or street signal systems. Standards to be fabricated to conform with methods and material as specified on Std. Plans. See Special Provisions for pre-approved drawings	X	
41. Precast Concrete Sloped Mountable Curb (Single and DualFaced) See Std. Plans.		X

ITEM DESCRIPTION	YES	NO
42. Traffic Signs - Prior to approval of a Fabricator of Traffic Signs, the sources of the following materials must be submitted and approved for reflective sheeting, legend material, and aluminum sheeting. NOTE: *** Fabrication inspection required. Only signs tagged "Fabrication Approved" by WSDOT Sign Fabrication Inspector to be installed	X	X
	Custom Message	Std Signing Message
43. Cutting & bending reinforcing steel		X
44. Guardrail components	X	X
	Custom End Sec	Standard Sec
45. Aggregates/Concrete mixes	Covered by WAC 296-127-018	
46. Asphalt	Covered by WAC 296-127-018	
47. Fiber fabrics		X
48. Electrical wiring/components		X
49. treated or untreated timber pile		X
50. Girder pads (elastomeric bearing)	X	
51. Standard Dimension lumber		X
52. Irrigation components		X

ITEM DESCRIPTION	YES	NO
53. Fencing materials		X
54. Guide Posts		X
55. Traffic Buttons		X
56. Epoxy		X
57. Cribbing		X
58. Water distribution materials		X
59. Steel "H" piles		X
60. Steel pipe for concrete pile casings		X
61. Steel pile tips, standard		X
62. Steel pile tips, custom	X	

Prefabricated items specifically produced for public works projects that are prefabricated in a county other than the county wherein the public works project is to be completed, the wage for the offsite prefabrication shall be the applicable prevailing wage for the county in which the actual prefabrication takes place.

It is the manufacturer of the prefabricated product to verify that the correct county wage rates are applied to work they perform.

See RCW [39.12.010](#)

(The definition of "locality" in RCW [39.12.010](#)(2) contains the phrase "wherein the physical work is being performed." The department interprets this phrase to mean the actual work site.

WSDOT's List of State Occupations not applicable to Heavy and Highway Construction Projects

This project is subject to the state hourly minimum rates for wages and fringe benefits in the contract provisions, as provided by the state Department of Labor and Industries.

The following list of occupations, is comprised of those occupations that are not normally used in the construction of heavy and highway projects.

When considering job classifications for use and / or payment when bidding on, or building heavy and highway construction projects for, or administered by WSDOT, these Occupations will be excepted from the included "Washington State Prevailing Wage Rates For Public Work Contracts" documents.

- Building Service Employees
- Electrical Fixture Maintenance Workers
- Electricians - Motor Shop
- Heating Equipment Mechanics
- Industrial Engine and Machine Mechanics
- Industrial Power Vacuum Cleaners
- Inspection, Cleaning, Sealing of Water Systems by Remote Control
- Laborers - Underground Sewer & Water
- Machinists (Hydroelectric Site Work)
- Modular Buildings
- Playground & Park Equipment Installers
- Power Equipment Operators - Underground Sewer & Water
- Residential *** ALL ASSOCIATED RATES ***
- Sign Makers and Installers (Non-Electrical)
- Sign Makers and Installers (Electrical)
- Stage Rigging Mechanics (Non Structural)

The following occupations may be used only as outlined in the preceding text concerning "WSDOT's list for Suppliers - Manufacturers - Fabricators"

- Fabricated Precast Concrete Products
- Metal Fabrication (In Shop)

Definitions for the Scope of Work for prevailing wages may be found at the Washington State Department of Labor and Industries web site and in WAC Chapter 296-127.

Washington State Department of Labor and Industries
Policy Statements
(Regarding Production and Delivery of Gravel, Concrete, Asphalt, etc.)

WAC 296-127-018 Agency filings affecting this section

Coverage and exemptions of workers involved in the production and delivery of gravel, concrete, asphalt, or similar materials.

(1) The materials covered under this section include but are not limited to: Sand, gravel, crushed rock, concrete, asphalt, or other similar materials.

(2) All workers, regardless of by whom employed, are subject to the provisions of chapter 39.12 RCW when they perform any or all of the following functions:

(a) They deliver or discharge any of the above-listed materials to a public works project site:

(i) At one or more point(s) directly upon the location where the material will be incorporated into the project; or

(ii) At multiple points at the project; or

(iii) Adjacent to the location and coordinated with the incorporation of those materials.

(b) They wait at or near a public works project site to perform any tasks subject to this section of the rule.

(c) They remove any materials from a public works construction site pursuant to contract requirements or specifications (e.g., excavated materials, materials from demolished structures, clean-up materials, etc.).

(d) They work in a materials production facility (e.g., batch plant, borrow pit, rock quarry, etc.) which is established for a public works project for the specific, but not necessarily exclusive, purpose of supplying materials for the project.

(e) They deliver concrete to a public works site regardless of the method of incorporation.

(f) They assist or participate in the incorporation of any materials into the public works project.

(3) All travel time that relates to the work covered under subsection (2) of this section requires the payment of prevailing wages. Travel time includes time spent waiting to load, loading, transporting, waiting to unload, and delivering materials. Travel time would include all time spent in travel in support of a public works project whether the vehicle is empty or full. For example, travel time spent returning to a supply source to obtain another load of material for use on a public works site or returning to the public works site to obtain another load of excavated material is time spent in travel that is subject to prevailing wage. Travel to a supply source, including travel from a public works site, to obtain materials for use on a private project would not be travel subject to the prevailing wage.

(4) Workers are not subject to the provisions of chapter 39.12 RCW when they deliver materials to a stockpile.

(a) A "stockpile" is defined as materials delivered to a pile located away from the site of incorporation such that the stockpiled materials must be physically moved from the stockpile and transported to another location on the project site in order to be incorporated into the project.

(b) A stockpile does not include any of the functions described in subsection (2)(a) through (f) of this section; nor does a stockpile include materials delivered or distributed to multiple locations upon the project site; nor does a stockpile include materials dumped at the place of incorporation, or adjacent to the location and coordinated with the incorporation.

(5) The applicable prevailing wage rate shall be determined by the locality in which the work is performed. Workers subject to subsection (2)(d) of this section, who produce such materials at an off-site facility shall be paid the applicable prevailing wage rates for the county in which the off-site facility is located. Workers subject to subsection (2) of this section, who deliver such materials to a public works project site shall be paid the applicable prevailing wage rates for the county in which the public works project is located.

[Statutory Authority: Chapter 39.12 RCW, RCW 43.22.051 and 43.22.270. 08-24-101, § 296-127-018, filed 12/2/08, effective 1/2/09. Statutory Authority: Chapters 39.04 and 39.12 RCW and RCW 43.22.270. 92-01-104 and 92-08-101, § 296-127-018, filed 12/18/91 and 4/1/92, effective 8/31/92.]

Benefit Code Key – Effective 8/31/2023 thru 3/1/2024

Overtime Codes

Overtime calculations are based on the hourly rate actually paid to the worker. On public works projects, the hourly rate must be not less than the prevailing rate of wage minus the hourly rate of the cost of fringe benefits actually provided for the worker.

1. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.
 - B. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
 - C. The first two (2) hours after eight (8) regular hours Monday through Friday and the first ten (10) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other overtime hours and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
 - D. The first two (2) hours before or after a five-eight (8) hour workweek day or a four-ten (10) hour workweek day and the first eight (8) hours worked the next day after either workweek shall be paid at one and one-half times the hourly rate of wage. All additional hours worked and all worked on Sundays and holidays shall be paid at double the hourly rate of wage.
 - E. The first two (2) hours after eight (8) regular hours Monday through Friday and the first eight (8) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other hours worked Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
 - F. The first two (2) hours after eight (8) regular hours Monday through Friday and the first ten (10) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other overtime hours worked, except Labor Day, shall be paid at double the hourly rate of wage. All hours worked on Labor Day shall be paid at three times the hourly rate of wage.
 - G. The first ten (10) hours worked on Saturdays and the first ten (10) hours worked on a fifth calendar weekday in a four-ten hour schedule, shall be paid at one and one-half times the hourly rate of wage. All hours worked in excess of ten (10) hours per day Monday through Saturday and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
 - H. All hours worked on Saturdays (except makeup days if work is lost due to inclement weather conditions or equipment breakdown) shall be paid at one and one-half times the hourly rate of wage. All hours worked Monday through Saturday over twelve (12) hours and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
 - I. All hours worked on Sundays and holidays shall also be paid at double the hourly rate of wage.
 - J. The first two (2) hours after eight (8) regular hours Monday through Friday and the first ten (10) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked over ten (10) hours Monday through Saturday, Sundays and holidays shall be paid at double the hourly rate of wage.
 - K. All hours worked on Saturdays and Sundays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at double the hourly rate of wage.
 - M. All hours worked on Saturdays (except makeup days if work is lost due to inclement weather conditions) shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
 - N. All hours worked on Saturdays (except makeup days) shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

Overtime Codes Continued

1. O. The first ten (10) hours worked on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays, holidays and after twelve (12) hours, Monday through Friday and after ten (10) hours on Saturday shall be paid at double the hourly rate of wage.
- P. All hours worked on Saturdays (except makeup days if circumstances warrant) and Sundays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at double the hourly rate of wage.
- Q. The first two (2) hours after eight (8) regular hours Monday through Friday and up to ten (10) hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked in excess of ten (10) hours per day Monday through Saturday and all hours worked on Sundays and holidays (except Christmas day) shall be paid at double the hourly rate of wage. All hours worked on Christmas day shall be paid at two and one-half times the hourly rate of wage.
- R. All hours worked on Sundays and holidays shall be paid at two times the hourly rate of wage.
- U. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays (except Labor Day) shall be paid at two times the hourly rate of wage. All hours worked on Labor Day shall be paid at three times the hourly rate of wage.
- V. All hours worked on Sundays and holidays (except Thanksgiving Day and Christmas day) shall be paid at one and one-half times the hourly rate of wage. All hours worked on Thanksgiving Day and Christmas day shall be paid at double the hourly rate of wage.
- W. All hours worked on Saturdays and Sundays (except make-up days due to conditions beyond the control of the employer)) shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at double the hourly rate of wage.
- X. The first four (4) hours after eight (8) regular hours Monday through Friday and the first twelve (12) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked over twelve (12) hours Monday through Saturday, Sundays and holidays shall be paid at double the hourly rate of wage. When holiday falls on Saturday or Sunday, the day before Saturday, Friday, and the day after Sunday, Monday, shall be considered the holiday and all work performed shall be paid at double the hourly rate of wage.
- Y. All hours worked outside the hours of 5:00 am and 5:00 pm (or such other hours as may be agreed upon by any employer and the employee) and all hours worked in excess of eight (8) hours per day (10 hours per day for a 4 x 10 workweek) and on Saturdays and holidays (except labor day) shall be paid at one and one-half times the hourly rate of wage. (except for employees who are absent from work without prior approval on a scheduled workday during the workweek shall be paid at the straight-time rate until they have worked 8 hours in a day (10 in a 4 x 10 workweek) or 40 hours during that workweek.) All hours worked Monday through Saturday over twelve (12) hours and all hours worked on Sundays and Labor Day shall be paid at double the hourly rate of wage.
- Z. All hours worked on Saturdays and Sundays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid the straight time rate of pay in addition to holiday pay.

Overtime Codes Continued

2. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.
- B. All hours worked on holidays shall be paid at one and one-half times the hourly rate of wage.
- F. The first eight (8) hours worked on holidays shall be paid at the straight hourly rate of wage in addition to the holiday pay. All hours worked in excess of eight (8) hours on holidays shall be paid at double the hourly rate of wage.
- M. This code appears to be missing. All hours worked on Saturdays, Sundays and holidays shall be paid at double the hourly rate of wage.
- R. All hours worked on Sundays and holidays and all hours worked over sixty (60) in one week shall be paid at double the hourly rate of wage.
- U. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked over 12 hours in a day or on Sundays and holidays shall be paid at double the hourly rate of wage.
3. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.
- F. All hours worked on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sunday shall be paid at two times the hourly rate of wage. All hours worked on paid holidays shall be paid at two and one-half times the hourly rate of wage including holiday pay.
- H. All work performed on Sundays between March 16th and October 14th and all Holidays shall be compensated for at two (2) times the regular rate of pay. Work performed on Sundays between October 15th and March 15th shall be compensated at one and one half (1-1/2) times the regular rate of pay.
- J. All hours worked between the hours of 10:00 pm and 5:00 am, Monday through Friday, and all hours worked on Saturdays shall be paid at a one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
- K. Work performed in excess of eight (8) hours of straight time per day, or ten (10) hours of straight time per day when four ten (10) hour shifts are established, or forty (40) hours of straight time per week, Monday through Friday, or outside the normal 5 am to 6pm shift, and all work on Saturdays shall be paid at one and one-half times the hourly rate of wage. All work performed after 6:00 pm Saturday to 5:00 am Monday and Holidays, and all hours worked in excess of twelve (12) hours in a single shift shall be paid at double the hourly rate of wage.
- After an employee has worked eight (8) hours at an applicable overtime rate, all additional hours shall be at the applicable overtime rate until such time as the employee has had a break of eight (8) hours or more. When an employee returns to work without at least eight (8) hours time off since their previous shift, all such time shall be a continuation of shift and paid at the applicable overtime rate until he/she shall have the eight (8) hours rest period.

Overtime Codes Continued

4. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.

- A. All hours worked in excess of eight (8) hours per day or forty (40) hours per week shall be paid at double the hourly rate of wage. All hours worked on Saturdays, Sundays and holidays shall be paid at double the hourly rate of wage
- C. On Monday through Friday, the first four (4) hours of overtime after eight (8) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay, unless a four (4) day ten (10) hour workweek has been established. On a four (4) day ten (10) hour workweek scheduled Monday through Thursday, or Tuesday through Friday, the first two (2) hours of overtime after ten (10) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay. On Saturday, the first twelve (12) hours of work shall be paid at one and one half (1-1/2) times the straight time rate of pay, except that if the job is down on Monday through Friday due to weather conditions or other conditions outside the control of the employer, the first ten (10) hours on Saturday may be worked at the straight time rate of pay. All hours worked over twelve (12) hours in a day and all hours worked on Sunday and Holidays shall be paid at two (2) times the straight time rate of pay.
- D. All hours worked in excess of eight (8) hours per day or forty (40) hours per week shall be paid at double the hourly rate of wage. All hours worked on Saturday, Sundays and holidays shall be paid at double the hourly rate of pay. Rates include all members of the assigned crew.

EXCEPTION:

On all multipole structures and steel transmission lines, switching stations, regulating, capacitor stations, generating plants, industrial plants, associated installations and substations, except those substations whose primary function is to feed a distribution system, will be paid overtime under the following rates:

The first two (2) hours after eight (8) regular hours Monday through Friday of overtime on a regular workday, shall be paid at one and one-half times the hourly rate of wage. All hours in excess of ten (10) hours will be at two (2) times the hourly rate of wage. The first eight (8) hours worked on Saturday will be paid at one and one-half (1-1/2) times the hourly rate of wage. All hours worked in excess of eight (8) hours on Saturday, and all hours worked on Sundays and holidays will be at the double the hourly rate of wage.

All overtime eligible hours performed on the above described work that is energized, shall be paid at the double the hourly rate of wage.

- E. The first two (2) hours after eight (8) regular hours Monday through Friday and the first eight (8) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other hours worked Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

On a four-day, ten-hour weekly schedule, either Monday thru Thursday or Tuesday thru Friday schedule, all hours worked after ten shall be paid at double the hourly rate of wage. The Monday or Friday not utilized in the normal four-day, ten hour work week, and Saturday shall be paid at one and one half (1½) times the regular shift rate for the first eight (8) hours. All other hours worked Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
- G. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked Monday through Saturday over twelve (12) hours and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
- I. The First eight (8) hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked in excess of eight (8) per day on Saturdays shall be paid at double the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

Overtime Codes Continued

4. J. The first eight (8) hours worked on a Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked in excess of eight (8) hours on a Saturday shall be paid at double the hourly rate of wage. All hours worked over twelve (12) in a day, and all hours worked on Sundays and Holidays shall be paid at double the hourly rate of wage.
- K. All hours worked on a Saturday shall be paid at one and one-half times the hourly rate of wage, so long as Saturday is the sixth consecutive day worked. All hours worked over twelve (12) in a day Monday through Saturday, and all hours worked on Sundays and Holidays shall be paid at double the hourly rate of wage.
- L. The first twelve (12) hours worked on a Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked on a Saturday in excess of twelve (12) hours shall be paid at double the hourly rate of pay. All hours worked over twelve (12) in a day Monday through Friday, and all hours worked on Sundays shall be paid at double the hourly rate of wage. All hours worked on a holiday shall be paid at one and one-half times the hourly rate of wage, except that all hours worked on Labor Day shall be paid at double the hourly rate of pay.
- S. On a four (4) day ten (10) hour workweek scheduled Monday through Thursday, or Tuesday through Friday, work performed in excess of (10) hours shall be paid at one and one half (1-1/2) times the hourly rate of pay. On Monday through Friday, work performed outside the normal work hours of 6:00 a.m. and 6:00 p.m. shall be paid at one and one-half (1-1/2) times the straight time rate, (except for special shifts or multiple shift operations).
- All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All work performed on Sundays and holidays shall be paid at double the hourly rate of wage. When an employee returns to work without at least eight (8) hours time off since their previous shift, all such time shall be a continuation of shift and paid at the applicable overtime rate until such time as the employee has had a break of eight (8) hours.
- Multiple Shift Operations: When the first shift of a multiple shift (a two or three shift) operation is started at the basic straight time rate or at a specific overtime rate, all shifts of that day's operation shall be completed at that rate. Special Shifts: The Special Shift Premium is the basic hourly rate of pay plus \$2.00 an hour. When due to conditions beyond the control of the employer or when an owner (not acting as the contractor), a government agency or the contract specifications require more than four (4) hours of a special shift can only be performed outside the normal 6am to 6pm shift then the special shift premium will be applied to the basic straight time for the entire shift. When an employee works on a special shift, they shall be paid the special shift premium for each hour worked unless they are in overtime or double-time status. (For example, the special shift premium does not waive the overtime requirements for work performed on Saturday or Sunday).
- U. The first four (4) hours after eight (8) regular hours Monday through Friday and the first twelve (12) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. (Except on makeup days if work is lost due to inclement weather, then the first eight (8) hours on Saturday may be paid the regular rate.) All hours worked over twelve (12) hours Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

Overtime Codes Continued

4. V. Work performed in excess of ten (10) hours of straight time per day when four ten (10) hour shifts are established or outside the normal shift (5 am to 6pm), and all work on Saturdays, except for make-up days shall be paid at time and one-half (1 ½) the straight time rate.

In the event the job is down due to weather conditions, then Saturday may, be worked as a voluntary make-up day at the straight time rate. However, Saturday shall not be utilized as a make-up day when a holiday falls on Friday. All work performed on Sundays and holidays and work in excess of twelve (12) hours per day shall be paid at double (2x) the straight time rate of pay.

After an employee has worked eight (8) hours at an applicable overtime rate, all additional hours shall be at the applicable overtime rate until such time as the employee has had a break of eight (8) hours.

When an employee returns to work without a break of eight (8) hours since their previous shift, all such time shall be a continuation of shift and paid at the applicable overtime rate until such time as the employee has had a break of eight (8) hours.

- X. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage. Work performed outside the normal shift of 6 am to 6pm shall be paid at one and one-half the straight time rate, (except for special shifts or three shift operations). All work performed on Sundays and holidays shall be paid at double the hourly rate of wage. Shifts may be established when considered necessary by the Employer.

The Employer may establish shifts consisting of eight (8) or ten (10) hours of work (subject to WAC 296-127-022), that shall constitute a normal forty (40) hour work week. The Employer can change from a 5-eight to a 4-ten hour schedule or back to the other. All hours of work on these shifts shall be paid for at the straight time hourly rate. Work performed in excess of eight hours (or ten hours per day (subject to WAC 296-127-022) shall be paid at one and one-half the straight time rate.

When due to conditions beyond the control of the Employer, or when contract specifications require that work can only be performed outside the regular day shift, then by mutual agreement a special shift may be worked at the straight time rate, eight (8) hours work for eight (8) hours pay. The starting time shall be arranged to fit such conditions of work.

When an employee returns to work without at a break of eight (8) hours since their previous shift, all such time shall be a continuation of shift and paid at the applicable overtime rate until such time as the employee has had a break of eight (8) hours.

11. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.

- B After an employee has worked eight (8) hours, all additional hours worked shall be paid at the applicable overtime rate until such time as the employee has had a break of eight (8) hours or more.

- C The first two (2) hours after eight (8) regular hours Monday through Friday and the first eight (8) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other overtime hours worked, except Labor Day, and all hours on Sunday shall be paid at double the hourly rate of wage. All hours worked on Labor Day shall be paid at three times the hourly rate of wage. All non-overtime and non-holiday hours worked between 4:00 pm and 5:00 am, Monday through Friday, shall be paid at a premium rate of 15% over the hourly rate of wage.

Overtime Codes Continued

11. D. All hours worked on Saturdays and holidays shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays shall be paid at double the hourly rate of wage.
- After an employee has worked eight (8) hours, all additional hours worked shall be paid at the applicable overtime rate until such time as the employee has had a break of eight (8) hours or more.
- E. The first two (2) hours after eight (8) regular hours Monday through Friday, the first ten (10) hours on Saturday, and the first ten (10) hours worked on Holidays shall be paid at one and one-half times the hourly rate of wage. All hours worked over ten (10) hours Monday through Saturday, and Sundays shall be paid at double the hourly rate of wage.
- After an employee has worked eight (8) hours, all additional hours worked shall be paid at the applicable overtime rate until such time as the employee has had a break of eight (8) hours or more.
- F. The first two (2) hours after eight (8) regular hours Monday through Friday and the first eight (8) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other hours worked Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
- On a four-day, ten-hour weekly schedule, either Monday thru Thursday or Tuesday thru Friday schedule, all hours worked after ten shall be paid at double the hourly rate of wage. The Monday or Friday not utilized in the normal four-day, ten hour work week, and Saturday shall be paid at one-half times the hourly rate of wage for the first eight (8) hours. All other hours worked Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
- G. Work performed in excess of eight (8) hours of straight time per day, or ten (10) hours of straight time per day when four ten (10) hour shifts are established, or forty (40) hours of straight time per week, Monday through Friday, or outside the normal 5 am to 6pm shift, and all work on Saturdays shall be paid at one and one-half times the hourly rate of wage.
- All work performed after 6:00 pm Saturday to 5:00 am Monday and Holidays, and all hours worked in excess of twelve (12) hours in a single shift shall be paid at double the hourly rate of wage.
- After an employee has worked eight (8) hours at an applicable overtime rate, all additional hours shall be at the applicable overtime rate until such time as the employee has had a break of nine (9) hours or more. When an employee returns to work without at least nine (9) hours time off since their previous shift, all such time shall be a continuation of shift and paid at the applicable overtime rate until he/she shall have the nine (9) hours rest period.
- H. Work performed in excess of eight (8) hours of straight time per day, or ten (10) hours of straight time per day when four ten (10) hour shifts are established, or forty (40) hours of straight time per week, Monday through Friday, or outside the normal 5 am to 6pm shift, and all work on Saturdays shall be paid at one and one-half times the hourly rate of wage.
- All work performed after 6:00 pm Saturday to 5:00 am Monday and Holidays, and all hours worked in excess of twelve (12) hours in a single shift shall be paid at double the hourly rate of wage.
- After an employee has worked eight (8) hours at an applicable overtime rate, all additional hours shall be at the applicable overtime rate until such time as the employee has had a break of ten (10) hours or more. When an employee returns to work without at least ten (10) hours time off since their previous shift, all such time shall be a continuation of shift and paid at the applicable overtime rate until he/she shall have the ten (10) hours rest period.

Overtime Codes Continued

11. J. All hours worked on holidays shall be paid at double the hourly rate of wage.
- K. On Monday through Friday hours worked outside 4:00 am and 5:00 pm, and the first two (2) hours after eight (8) hours worked shall be paid at one and one-half times the hourly rate. All hours worked over 10 hours per day Monday through Friday, and all hours worked on Saturdays, Sundays, and Holidays worked shall be paid at double the hourly rate of wage.
- L. An employee working outside 5:00 am and 5:00 pm shall receive an additional two dollar (\$2.00) per hour for all hours worked that shift. All hours worked on holidays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at one and one-half times the hourly rate of wage.
- M. On Monday through Friday, the first four (4) hours of overtime after eight (8) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay, unless a four (4) day ten (10) hour workweek has been established. On a four (4) day ten (10) hour workweek scheduled Monday through Thursday, or Tuesday through Friday, the first two (2) hours of overtime after ten (10) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay.
- Work performed outside the normal work hours of 5:00 a.m. and 6:00 p.m. shall be paid at one and one-half (1-1/2) times the straight time rate, (except for special shifts or multiple shift operations). When the first shift of a multiple shift (a two or three shift) operation is started at the basic straight time rate or at a specific overtime rate, all shifts of that day's operation shall be completed at that rate. When due to conditions beyond the control of the Employer or when contract specifications require that work can only be performed outside the regular day shift of 5:00 am to 6:00 pm, then a special shift may be worked at the straight time rate, plus the shift pay premium when applicable. The starting time of work will be arranged to fit such conditions of work. Such shift shall consist of eight (8) hours work for eight (8) hours pay or ten (10) hours work for ten (10) hours pay for four ten shifts.
- On Saturday, the first twelve (12) hours of work shall be paid at one and one half (1-1/2) times the straight time rate of pay. All work performed after 6:00 pm Saturday to 5:00 am Monday, all work performed over twelve (12) hours, and all work performed on holidays shall be paid at double the straight time rate of pay.
- Shift Pay Premium: In an addition to any overtime already required, all hours worked between the hours of 6:00 pm and 5:00 am shall receive an additional two dollars (\$2.00) per hour.
- N. All work performed over twelve hours in a shift and all work performed on Sundays and Holidays shall be paid at double the straight time rate.
- Any time worked over eight (8) hours on Saturday shall be paid double the straight time rate, except employees assigned to work six 10-hour shifts per week shall be paid double the straight time rate for any time worked on Saturday over 10 hours.
- O. All work performed on Saturdays, Sundays, and Holidays shall be paid at one and one half (1-1/2) times the straight time rate of pay.

Benefit Code Key – Effective 8/31/2023 thru 3/1/2024

Holiday Codes

5. A. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, and Christmas Day (7).
- B. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, the day before Christmas, and Christmas Day (8).
- C. Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8).
- D. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8).
- H. Holidays: New Year's Day, Memorial Day, Independence Day, Thanksgiving Day, the Day after Thanksgiving Day, And Christmas (6).
- I. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day (6).
- K. Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday After Thanksgiving Day, The Day Before Christmas, And Christmas Day (9).
- L. Holidays: New Year's Day, Martin Luther King Jr. Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, And Christmas Day (8).
- N. Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, The Friday After Thanksgiving Day, And Christmas Day (9).
- P. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday And Saturday After Thanksgiving Day, The Day Before Christmas, And Christmas Day (9). If A Holiday Falls On Sunday, The Following Monday Shall Be Considered As A Holiday.
- Q. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day (6).
- R. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Day After Thanksgiving Day, One-Half Day Before Christmas Day, And Christmas Day. (7 1/2).
- S. Paid Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, And Christmas Day (7).
- Z. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8).
6. G. Paid Holidays: New Year's Day, Martin Luther King Jr. Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and Christmas Eve Day (11).
- H. Paid Holidays: New Year's Day, New Year's Eve Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday After Thanksgiving Day, Christmas Day, The Day After Christmas, And A Floating Holiday (10).

Holiday Codes Continued

6. T. Paid Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, The Friday After Thanksgiving Day, The Last Working Day Before Christmas Day, And Christmas Day (9).
- Z. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, And Christmas Day (7). If a holiday falls on Saturday, the preceding Friday shall be considered as the holiday. If a holiday falls on Sunday, the following Monday shall be considered as the holiday.
7. A. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8). Any Holiday Which Falls On A Sunday Shall Be Observed As A Holiday On The Following Monday. If any of the listed holidays falls on a Saturday, the preceding Friday shall be a regular work day.
- B. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- C. Holidays: New Year's Day, Martin Luther King Jr. Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- D. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8). Unpaid Holidays: President's Day. Any paid holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any paid holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- E. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- F. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, the last working day before Christmas day and Christmas day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- G. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day (6). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday.
- H. Holidays: New Year's Day, Martin Luther King Jr. Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, the Last Working Day before Christmas Day and Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- I. Holidays: New Year's Day, President's Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day, The Friday After Thanksgiving Day, The Day Before Christmas Day And Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

Holiday Codes Continued

7. J. Holidays: New Year's Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day and Christmas Day (6). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- K. Holidays: New Year's Day, Memorial Day, Independence Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- L. Holidays: New Year's Day, Memorial Day, Labor Day, Independence Day, Thanksgiving Day, the Last Work Day before Christmas Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- N. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. When Christmas falls on a Saturday, the preceding Friday shall be observed as a holiday.
- P. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday.
- Q. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, the Last Working Day before Christmas Day and Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. If any of the listed holidays falls on a Saturday, the preceding Friday shall be a regular work day.
- S. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, Christmas Day, the Day after Christmas, and A Floating Holiday (9). If any of the listed holidays falls on a Sunday, the day observed by the Nation shall be considered a holiday and compensated accordingly.
- V. Holidays: New Year's Day, President's Birthday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, the day before or after Christmas, and the day before or after New Year's Day. If any of the above listed holidays falls on a Sunday, the day observed by the Nation shall be considered a holiday and compensated accordingly.
- W. Holidays: New Year's Day, Day After New Year's, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Eve Day, Christmas Day, the day after Christmas, the day before New Year's Day, and a Floating Holiday.
- X. Holidays: New Year's Day, Day before or after New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and the day before or after Christmas day. If a holiday falls on a Saturday or on a Friday that is the normal day off, then the holiday will be taken on the last normal workday. If the holiday falls on a Monday that is the normal day off or on a Sunday, then the holiday will be taken on the next normal workday.
- Y. Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, and Christmas Day. (8) If the holiday falls on a Sunday, then the day observed by the federal government shall be considered a holiday and compensated accordingly.
- Z. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, Christmas Eve, and Christmas Day (9). Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday. Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday.

Holiday Codes Continued

15. G. New Year's Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, The Friday After Thanksgiving Day, the last scheduled workday before Christmas, and Christmas Day (9). If any of the listed holidays falls on a Sunday, the day observed by the Nation shall be considered a holiday and compensated accordingly.
- H. Holidays: New Year's Day, Martin Luther King Jr. Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, the Last Working Day before Christmas Day and Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- I. Holidays: New Year's Day, President's Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day, The Friday After Thanksgiving Day, The Day Before Christmas Day And Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- J. Holidays: New Year's Day, Martin Luther King Jr. Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, and Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. If any of the listed holidays falls on a Saturday, the preceding Friday shall be a regular work day.
- K. Holidays: New Year's Day, Memorial Day, Independence Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
- L. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the Friday after Thanksgiving Day, and Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. If any of the listed holidays falls on a Saturday, the preceding Friday shall be a regular work day.
- M. Holidays: New Year's Day, Martin Luther King Jr. Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Eve Day and Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. If any of the listed holidays falls on a Saturday, the preceding Friday shall be a regular work day.
- N. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the Friday after Thanksgiving Day, and Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday.

Note Codes

8. D. Workers working with supplied air on hazmat projects receive an additional \$1.00 per hour.
- L. Workers on hazmat projects receive additional hourly premiums as follows -Level A: \$0.75, Level B: \$0.50, And Level C: \$0.25.
- M. Workers on hazmat projects receive additional hourly premiums as follows: Levels A & B: \$1.00, Levels C & D: \$0.50.
- N. Workers on hazmat projects receive additional hourly premiums as follows -Level A: \$1.00, Level B: \$0.75, Level C: \$0.50, And Level D: \$0.25.

Note Codes Continued

8. S. Effective August 31, 2012 – A Traffic Control Supervisor shall be present on the project whenever flagging or spotting or other traffic control labor is being utilized. Flaggers and Spotters shall be posted where shown on approved Traffic Control Plans or where directed by the Engineer. All flaggers and spotters shall possess a current flagging card issued by the State of Washington, Oregon, Montana, or Idaho. This classification is only effective on or after August 31, 2012.
- T. Effective August 31, 2012 – A Traffic Control Laborer performs the setup, maintenance and removal of all temporary traffic control devices and construction signs necessary to control vehicular, bicycle, and pedestrian traffic during construction operations. Flaggers and Spotters shall be posted where shown on approved Traffic Control Plans or where directed by the Engineer. All flaggers and spotters shall possess a current flagging card issued by the State of Washington, Oregon, Montana, or Idaho. This classification is only effective on or after August 31, 2012.
- U. Workers on hazmat projects receive additional hourly premiums as follows – Class A Suit: \$2.00, Class B Suit: \$1.50, And Class C Suit: \$1.00. Workers performing underground work receive an additional \$0.40 per hour for any and all work performed underground, including operating, servicing and repairing of equipment. The premium for underground work shall be paid for the entire shift worked. Workers who work suspended by a rope or cable receive an additional \$0.50 per hour. The premium for work suspended shall be paid for the entire shift worked. Workers who do “pioneer” work (break open a cut, build road, etc.) more than one hundred fifty (150) feet above grade elevation receive an additional \$0.50 per hour.
- V. In addition to the hourly wage and fringe benefits, the following depth and enclosure premiums shall be paid. The premiums are to be calculated for the maximum depth and distance into an enclosure that a diver reaches in a day. The premiums are to be paid one time for the day and are not used in calculating overtime pay.
- Depth premiums apply to depths of fifty feet or more. Over 50' to 100' - \$2.00 per foot for each foot over 50 feet. Over 101' to 150' - \$3.00 per foot for each foot over 101 feet. Over 151' to 220' - \$4.00 per foot for each foot over 220 feet. Over 221' - \$5.00 per foot for each foot over 221 feet.
- Enclosure premiums apply when divers enter enclosures (such as pipes or tunnels) where there is no vertical ascent and is measured by the distance travelled from the entrance. 25' to 300' - \$1.00 per foot from entrance. 300' to 600' - \$1.50 per foot beginning at 300'. Over 600' - \$2.00 per foot beginning at 600'.
- W. Meter Installers work on single phase 120/240V self-contained residential meters. The Lineman/Groundmen rates would apply to meters not fitting this description.
- X. Workers on hazmat projects receive additional hourly premiums as follows - Class A Suit: \$2.00, Class B Suit: \$1.50, Class C Suit: \$1.00, and Class D Suit: \$0.50. Special Shift Premium: Basic hourly rate plus \$2.00 per hour.
- When due to conditions beyond the control of the Employer or when an owner (not acting as the contractor), a government agency or the contract specifications requires that work can only be performed outside the normal 5 am to 6pm shift, then the special shift premium will be applied to the basic hourly rate. When an employee works on a special shift, they shall be paid a special shift premium for each hour worked unless they are in OT or Double-time status. (For example, the special shift premium does not waive the overtime requirements for work performed on Saturday or Sunday.)
- Y. Tide Work: When employees are called out between the hours of 6:00 p.m. and 6:00 a.m. to work on tide work (work located in the tide plane) all time worked shall be at one and one-half times the hourly rate of pay.
- Swinging Stage/Boatswains Chair: Employees working on a swinging state or boatswains chair or under conditions that require them to be tied off to allow their hands to be free shall receive seventy-five cents (\$0.75) per hour above the classification rate.

Note Codes Continued

8. Z. Workers working with supplied air on hazmat projects receive an additional \$1.00 per hour.

Special Shift Premium: Basic hourly rate plus \$2.00 per hour. When due to conditions beyond the control of the Employer or when an owner (not acting as a contractor), a government agency or the contract specifications require that more than (4) hours of a special shift can only be performed outside the normal 6 am to 6pm shift, then the special shift premium will be applied to the basic straight time for the entire shift. When an employee works on a special shift, they will be paid a special shift premium for each hour worked unless they are in overtime or double-time status. (For example, the special shift premium does not waive the overtime requirements for work performed on Saturday or Sunday.)

9. A. Workers working with supplied air on hazmat projects receive an additional \$1.00 per hour.

Special Shift Premium: Basic hourly rate plus \$2.00 per hour. When due to conditions beyond the control of the Employer or when an owner (not acting as the contractor), a government agency or the contract specifications require that more than four (4) hours of a special shift can only be performed outside the normal 6 am to 6pm shift, then the special shift premium will be applied to the basic straight time for the entire shift. When an employee works on a special shift, they shall be paid a special shift premium for each hour worked unless they are in overtime or double-time status. (For example, the special shift premium does not waive the overtime requirements for work performed on Saturday or Sunday.)

Certified Crane Operator Premium: Crane operators requiring certifications shall be paid \$0.50 per hour above their classification rate.

Boom Pay Premium: All cranes including tower shall be paid as follows based on boom length:

(A) – 130' to 199' – \$0.50 per hour over their classification rate.

(B) – 200' to 299' – \$0.80 per hour over their classification rate.

(C) – 300' and over – \$1.00 per hour over their classification rate.

- B. The highest pressure registered on the gauge for an accumulated time of more than fifteen (15) minutes during the shift shall be used in determining the scale paid.

Tide Work: When employees are called out between the hours of 6:00 p.m. and 6:00 a.m. to work on tide work (work located in the tide plane) all time worked shall be at one and one-half times the hourly rate of pay. Swinging Stage/Boatswains Chair: Employees working on a swinging stage or boatswains chair or under conditions that require them to be tied off to allow their hands to be free shall receive seventy-five cents (\$0.75) per hour above the classification rate.

- C. Tide Work: When employees are called out between the hours of 6:00 p.m. and 6:00 a.m. to work on tide work (work located in the tide plane) all time worked shall be at one and one-half times the hourly rate of pay. Swinging Stage/Boatswains Chair: Employees working on a swinging stage or boatswains chair or under conditions that require them to be tied off to allow their hands to be free shall receive seventy-five cents (\$0.75) per hour above the classification rate.

Effective August 31, 2012 – A Traffic Control Supervisor shall be present on the project whenever flagging or spotting or other traffic control labor is being utilized. A Traffic Control Laborer performs the setup, maintenance and removal of all temporary traffic control devices and construction signs necessary to control vehicular, bicycle, and pedestrian traffic during construction operations. Flaggers and Spotters shall be posted where shown on approved Traffic Control Plans or where directed by the Engineer. All flaggers and spotters shall possess a current flagging card issued by the State of Washington, Oregon, Montana, or Idaho. These classifications are only effective on or after August 31, 2012.

- D. Industrial Painter wages are required for painting within industrial facilities such as treatment plants, pipelines, towers, dams, bridges, power generation facilities and manufacturing facilities such as chemical plants, etc., or anywhere abrasive blasting is necessary to prepare surfaces, or hazardous materials encapsulation is required.

Note Codes Continued

- 9. E. Heavy Construction includes construction, repair, alteration or additions to the production, fabrication or manufacturing portions of industrial or manufacturing plants, hydroelectric or nuclear power plants and atomic reactor construction. Workers on hazmat projects receive additional hourly premiums as follows -Level A: \$1.00, Level B: \$0.75, Level C: \$0.50, And Level D: \$0.25.
- F. Industrial Painter wages are required for painting within industrial facilities such as treatment plants, pipelines, towers, dams, power generation facilities and manufacturing facilities such as chemical plants, etc., or anywhere abrasive blasting is necessary to prepare surfaces, or hazardous materials encapsulation is required.
- H. One (1) person crew shall consist of a Party Chief. (Total Station or similar one (1) person survey system). Two (2) person survey party shall consist of a least a Party Chief and a Chain Person. Three (3) person survey party shall consist of at least a Party Chief, an Instrument Person, and a Chain Person.

SPECIAL PROVISIONS

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INTRODUCTION

The work on this project shall be accomplished in accordance with the Standard Specifications for Road, Bridge and Municipal Construction, 2023 edition, as issued by the Washington State Department of Transportation (WSDOT) and the American Public Works Association (APWA), Washington State Chapter (hereafter "Standard Specifications"). The Standard Specifications, as modified or supplemented by these Special Provisions, all of which are made a part of the Contract Documents, shall govern all of the Work.

These Special Provisions supersede any conflicting provisions of the Standard Specifications.

The accompanying Plans and these Specifications and any Addenda thereto, show and describe the location and type of work to be performed under the North Rose Hill Stormwater Infiltration Wells Project.

These Special Provisions are made up of both General Special Provisions (GSPs) from various sources, which may have project-specific fill-ins; and project-specific Special Provisions. Each Provision supplements, modifies, or replaces the comparable Standard Specification, or is a new Provision. The deletion, amendment, alteration, or addition to any subsection or portion of the Standard Specifications is meant to pertain only to that particular portion of the section, and in no way should it be interpreted that the balance of the section does not apply.

The titles of headings of the Sections and subsections herein are intended for convenience or reference and shall not be considered as having any bearing on their interpretation.

Several types of Special Provisions are included in this contract and are differentiated as follows:

General Special Provisions (GSPs) are similar to Standard Specifications in that they typically apply to many public works projects. These can include:

- **Local Agency/APWA Approved GSPs** are modifications to the Standard Specifications prepared by the APWA Division 1 subcommittee, which is comprised of representatives of local agencies throughout the State of Washington. These GSPs are generally used throughout the state. APWA GSPs replace what was formerly referred to as "Division 1-99 APWA Supplement" in previous editions of the Standard Specifications for Road, Bridge and Municipal Construction. Denoted as: *(date APWA GSP)*
- **City of Kirkland GSPs** are modifications to the Standard Specifications prepared by the City of Kirkland Public Works Department, and commonly applicable to City of Kirkland projects. Denoted as: *(date COK GSP)*

Project-Specific Special Provisions normally appear only in the contract for which they were developed. Denoted as: *(*****)*

Also incorporated into the Contract Documents by reference are:

- Manual on Uniform Traffic Control Devices for Streets and Highways, currently adopted edition, with Washington State modifications, if any
- Standard Plans for Road, Bridge and Municipal Construction, WSDOT/APWA, current edition
- City of Kirkland Public Works Department Pre-Approved Plans and Policies, current year edition.

Contractor shall obtain copies of these publications, at Contractor's own expense.

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DIVISION 1 GENERAL REQUIREMENTS

DESCRIPTION OF WORK

This Contract provides for the construction of the City of Kirkland North Rose Hill Stormwater Infiltration Well Project on NE 111th Pl; a stormwater retrofit project that includes five infiltration wells and associated equipment, a storm filter vault, control vaults and roadway restoration; and all related Work, all in accordance with the Contract Plans, these Contract Special Provisions, and the Standard Specifications.

1-01 DEFINITIONS AND TERMS

1-01.3 Definitions

(January 19, 2022 APWA GSP)

Delete the heading Completion Dates and the three paragraphs that follow it, and replace them with the following:

Dates

Bid Opening Date

The date on which the Contracting Agency publicly opens and reads the Bids.

Award Date

The date of the formal decision of the Contracting Agency to accept the lowest responsible and responsive Bidder for the Work.

Contract Execution Date

The date the Contracting Agency officially binds the Agency to the Contract.

Notice to Proceed Date

The date stated in the Notice to Proceed on which the Contract time begins.

Substantial Completion Date

The day the Engineer determines the Contracting Agency has full and unrestricted use and benefit of the facilities, both from the operational and safety standpoint, any remaining traffic disruptions will be rare and brief, and only minor incidental work, replacement of temporary substitute facilities, plant establishment periods, or correction or repair remains for the Physical Completion of the total Contract.

Physical Completion Date

The day all of the Work is physically completed on the project. All documentation required by the Contract and required by law does not necessarily need to be furnished by the Contractor by this date.

Completion Date

The day all the Work specified in the Contract is completed and all the obligations of the Contractor under the contract are fulfilled by the Contractor. All documentation required by the Contract and required by law must be furnished by the Contractor before establishment of this date.

Final Acceptance Date

The date on which the Contracting Agency accepts the Work as complete.

Supplement this Section with the following:

All references in the Standard Specifications or WSDOT General Special Provisions, to the terms “Department of Transportation”, “Washington State Transportation Commission”, “Commission”,

“Secretary of Transportation”, “Secretary”, “Headquarters”, and “State Treasurer” shall be revised to read “Contracting Agency”.

All references to the terms “State” or “state” shall be revised to read “Contracting Agency” unless the reference is to an administrative agency of the State of Washington, a State statute or regulation, or the context reasonably indicates otherwise.

All references to “State Materials Laboratory” shall be revised to read “Contracting Agency designated location”.

All references to “final contract voucher certification” shall be interpreted to mean the Contracting Agency form(s) by which final payment is authorized, and final completion and acceptance granted.

Additive

A supplemental unit of work or group of bid items, identified separately in the Bid Proposal, which may, at the discretion of the Contracting Agency, be awarded in addition to the base bid.

Alternate

One of two or more units of work or groups of bid items, identified separately in the Bid Proposal, from which the Contracting Agency may make a choice between different methods or material of construction for performing the same work.

Business Day

A business day is any day from Monday through Friday except holidays as listed in Section 1-08.5.

Contract Bond

The definition in the Standard Specifications for “Contract Bond” applies to whatever bond form(s) are required by the Contract Documents, which may be a combination of a Payment Bond and a Performance Bond.

Contract Documents

See definition for “Contract”.

Contract Time

The period of time established by the terms and conditions of the Contract within which the Work must be physically completed.

Notice of Award

The written notice from the Contracting Agency to the successful Bidder signifying the Contracting Agency’s acceptance of the Bid Proposal.

Notice to Proceed

The written notice from the Contracting Agency or Engineer to the Contractor authorizing and directing the Contractor to proceed with the Work and establishing the date on which the Contract time begins.

Traffic

Both vehicular and non-vehicular traffic, such as pedestrians, bicyclists, wheelchairs, and equestrian traffic.

1-02 BID PROCEDURES AND CONDITIONS

1-02.1 Prequalification of Bidders

Delete this Section and replace it with the following:

1-02.1 Qualifications of Bidder

Before award of a public works contract, a bidder must meet at least the minimum qualifications of RCW 39.04.350(1) to be considered a responsible bidder and qualified to be awarded a public works project.

Refer to Section 7-06.1(4) of these special provisions for UCI Well installer requirements.
Information required under this Section shall be provided as described below.

Add the following new section:

1-02.1(1) Supplemental Qualifications Criteria

(January 1, 2016 COK GSP)

Bidders shall complete and sign the Statement of Bidder's Qualification contained in the Proposal. Said form must be submitted with the bid proposal.

After bids are opened, Contracting Agency may request that a bidder or all bidders provide supplemental information concerning responsibility in accordance with RCW 39.04.350(2). Such supplemental information shall be provided to Contracting Agency in writing within two (2) business days of the request. Whether bidder supplies this supplemental information within the time and manner specified or not, in addition to consideration of this additional information, Contracting Agency may also base its determination of responsibility on any available information related to the supplemental criteria.

If Contracting Agency determines that a bidder is not responsible, Contracting Agency will provide, in writing, the reasons for such determination at which point the contractor will be deemed disqualified in accordance with WSDOT Standard Specification 1-02.14(10) and the proposal rejected. The bidder may appeal the determination within two (2) business days after receipt of the determination by presenting additional information to Contracting Agency. Contracting Agency will consider the additional information before issuing its final decision. If Contracting Agency's final decision affirms that the bidder is not responsible, Contracting Agency will not execute a contract with any other bidder until two (2) business days after the bidder determined to be not responsible has received Contracting Agency's final determination. The failure or omission of a bidder to receive or examine any form, instrument, addendum or other document shall in no way relieve any bidder from obligations with respect to the bid or to the contract.

Any bidder may, within five (5) business days before the bid submittal deadline, request that Contracting Agency modify the supplemental criteria. Contracting Agency will evaluate the information submitted by the bidder and respond before the submittal deadline. If the evaluation results in a change of the criteria, the Contracting Agency will issue an Addendum to the bidding documents identifying the new criteria.

Supplemental Criteria. Contracting Agency acknowledges that Change Orders (changes, extra work, requests for equitable adjustment and claims (defined as including demands for money or time in excess of the contract amount or contract time)) are ubiquitous on public works construction projects. The expeditious resolution of Change Orders is critical to the on budget and on time successful completion

of a public works project. Thus, the City has established the following relevant supplemental bidder responsibility criteria applicable for the project:

1. Criterion. The bidder must demonstrate a record of successful and timely resolution of Change Orders including compliance with public contract Change Order resolution procedures (e.g. timely notice of event giving rise to the Change Order, timely submission of a statement of the cost and/or impact of the Change Order unless the bidder is able to show extenuating circumstances that explain bidder's failure to timely provide such information to the satisfaction of Contracting Agency.
2. Documentation. As evidence that the bidder meets the supplemental responsibility criteria, after bids are opened and within two (2) business days of the public notice of Contracting Agency's tabulation of bids, the lowest responsive bidder must submit the following documentation of public works projects completed within the previous three (3) years and include for each project the following:
 - a. The Owner and contact information for the Owner;
 - b. A listing of Change Orders and a signed statement from the bidder that the project timelines concerning resolution of Change Orders was complied with, and if not, provide a written explanation of what the bidder believes to be the extenuating circumstances excusing compliance with the Contract Change Order notice and claim provisions.

Contracting Agency may contact owners listed by the bidders to validate the information provided by a bidder.

1-02.2 Plans and Specifications

(*****)

Delete this section and replace it with the following:

Information as to where Bid Documents can be obtained or reviewed can be found in the Call for Bids (~~Advertisement~~ **Invitation** for Bids) for the work.

After award of the Contract, Plans and Specifications will be issued to the Contractor at no cost as detailed below:

To Prime Contractor	No. of Sets	Basis of Distribution
Reduced plans (11" x 17")	4	4 Hard Copies furnished automatically upon award.
Contract Provisions	4	4 Hard Copies furnished automatically upon award.
Large plans (e.g., 22" x 34")	1	PDF furnished upon request, reproduction by Contractor.

Additional Plans and Contract Provisions may be obtained by the Contractor from the source stated in the Call for Bids, at the Contractor's own expense.

1-02.4(1) General

(December 30, 2022 APWA GSP Option B)

The first sentence of the ninth paragraph, beginning with “Prospective Bidder desiring...”, is revised to read:

Prospective Bidders desiring an explanation or interpretation of the Bid Documents, shall request the explanation or interpretation in writing by close of business 5 business days preceding the bid opening to allow a written reply to reach all prospective Bidders before the submission of their Bids.

1-02.5 Proposal Forms

(July 31, 2017 APWA GSP)

Delete this section and replace it with the following:

The Proposal Form will identify the project and its location and describe the work. It will also list estimated quantities, units of measurement, the items of work, and the materials to be furnished at the unit bid prices. The bidder shall complete spaces on the proposal form that call for, but are not limited to, unit prices; extensions; summations; the total bid amount; signatures; date; and, where applicable, retail sales taxes and acknowledgment of addenda; the bidder’s name, address, telephone number, and signature; the bidder’s UDBE/DBE/M/WBE commitment, if applicable; a State of Washington Contractor’s Registration Number; and a Business License Number, if applicable. Bids shall be completed by typing or shall be printed in ink by hand, preferably in black ink. The required certifications are included as part of the Proposal Form.

The Contracting Agency reserves the right to arrange the proposal forms with alternates and additives, if such be to the advantage of the Contracting Agency. The bidder shall bid on all alternates and additives set forth in the Proposal Form unless otherwise specified.

1-02.6 Preparation of Proposal

(December 10, 2020 APWA GSP Option B)

Supplement the second paragraph with the following:

4. If a minimum bid amount has been established for any item, the unit or lump sum price must equal or exceed the minimum amount stated.
5. Any correction to a bid made by interlineation, alteration, or erasure, shall be initialed by the signer of the bid.

Delete the last two paragraphs, and replace them with the following:

The Bidder shall submit with their Bid a completed Contractor Certification Wage Law Compliance form, provided by the Contracting Agency. Failure to return this certification as part of the Bid Proposal package will make this Bid Nonresponsive and ineligible for Award. A Contractor Certification of Wage Law Compliance form is included in the Proposal Forms.

The Bidder shall make no stipulation on the Bid Form, nor qualify the bid in any manner.

A bid by a corporation shall be executed in the corporate name, by the president or a vice president (or other corporate officer accompanied by evidence of authority to sign).

A bid by a partnership shall be executed in the partnership name, and signed by a partner. A copy of the partnership agreement shall be submitted with the Bid Form if any UDBE requirements are to be satisfied through such an agreement.

A bid by a joint venture shall be executed in the joint venture name and signed by a member of the joint venture. A copy of the joint venture agreement shall be submitted with the Bid Form if any UDBE requirements are to be satisfied through such an agreement.

1-02.7 Bid Deposit

(March 8, 2013 APWA GSP)

Supplement this section with the following:

Bid bonds shall contain the following:

1. Contracting Agency-assigned number for the project;
2. Name of the project;
3. The Contracting Agency named as obligee;
4. The amount of the bid bond stated either as a dollar figure or as a percentage which represents five percent of the maximum bid amount that could be awarded;
5. Signature of the bidder's officer empowered to sign official statements. The signature of the person authorized to submit the bid should agree with the signature on the bond, and the title of the person must accompany the said signature;
6. The signature of the surety's officer empowered to sign the bond and the power of attorney.

If so stated in the Contract Provisions, bidder must use the bond form included in the Contract Provisions.

If so stated in the Contract Provisions, cash will not be accepted for a bid deposit.

1-02.8 Noncollusion Declaration and Lobbying Certification

(January 1, 2016 COK GSP)

The following new paragraph is inserted at the end of Section 1-02.8:

Conflict of Interest

The bidder affirms that it presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of its services hereunder. The Contractor further covenants that in the performance of this contract, no person having any conflicting interest shall be employed. Any interest on the part of the Contractor or its employees must be disclosed forthwith to the City of Kirkland. If this contract is within the scope of a Federal Housing and Community Development Block Grant program, the Contractor further covenants that no person who presently exercises any functions or responsibilities in connection with the block grant program has any personal financial interest, direct or indirect, in this contract.

1-02.9 Delivery of Proposal

(January 19, 2022 APWA GSP, Option A)

Delete this section and replace it with the following:

Each Proposal shall be submitted in a sealed envelope, with the Project Name and Project Number as stated in the Call for Bids clearly marked on the outside of the envelope, or as otherwise required in the Bid Documents, to ensure proper handling and delivery.

To be considered responsive on a FHWA-funded project, the Bidder may be required to submit the following items, as required by Section 1-02.6:

- DBE Utilization Certification (WSDOT 272-056)

- DBE Written Confirmation Document (WSDOT 422-031) from each DBE firm listed on the Bidder's completed DBE Utilization Certification
- Good Faith Effort (GFE) Documentation
- DBE Bid Item Breakdown (WSDOT 272-054)
- DBE Trucking Credit Form (WSDOT 272-058)

DBE Utilization Certification

The DBE Utilization Certification shall be received at the same location and no later than the time required for delivery of the Proposal. The Contracting Agency will not open or consider any Proposal when the DBE Utilization Certification is received after the time specified for receipt of Proposals or received in a location other than that specified for receipt of Proposals. The DBE Utilization Certification may be submitted in the same envelope as the Bid deposit.

DBE Written Confirmation and/or GFE Documentation

The DBE Written Confirmation Documents and/or GFE Documents are not required to be submitted with the Proposal. The DBE Written Confirmation Document(s) and/or GFE (if any) shall be received either with the Bid Proposal or as a Supplement to the Bid. The documents shall be received no later than 48 hours (not including Saturdays, Sundays and Holidays) after the time for delivery of the Proposal. To be considered responsive, Bidders shall submit Written Confirmation Documentation from each DBE firm listed on the Bidder's completed DBE Utilization Certification and/or the GFE as required by Section 1-02.6.

DBE Bid Item Breakdown and DBE Trucking Credit Form

The DBE Bid Item Breakdown and the DBE Trucking Credit Forms (if applicable) shall be received either with the Bid Proposal or as a Supplement to the Bid. The documents shall be received no later than 48 hours (not including Saturdays, Sundays and Holidays) after the time for delivery of the Proposal. To be considered responsive, Bidders shall submit a completed DBE Bid Item Breakdown and a DBE Trucking Credit Form for each DBE Trucking firm listed on the DBE Utilization Certification, however, minor errors and corrections to DBE Bid Item Breakdown or DBE Trucking Credit Forms will be returned for correction for a period up to five calendar days (not including Saturdays, Sundays and Holidays) after the time for delivery of the Proposal. A DBE Bid Item Breakdown or DBE Trucking Credit Forms that are still incorrect after the correction period will be determined to be non-responsive.

Proposals that are received as required will be publicly opened and read as specified in Section 1-02.12. The Contracting Agency will not open or consider any Bid Proposal that is received after the time specified in the Call for Bids for receipt of Bid Proposals, or received in a location other than that specified in the Call for Bids. The Contracting Agency will not open or consider any "Supplemental Information" (DBE confirmations, or GFE documentation) that is received after the time specified above, or received in a location other than that specified in the Call for Bids.

If an emergency or unanticipated event interrupts normal work processes of the Contracting Agency so that Proposals cannot be received at the office designated for receipt of bids as specified in Section 1-02.12 the time specified for receipt of the Proposal will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which the normal work processes of the Contracting Agency resume.

1-02.10 Withdrawing, Revising, or Supplementing Proposal

(July 23, 2015 APWA GSP)

Delete this section and replace it with the following:

After submitting a physical Bid Proposal to the Contracting Agency, the Bidder may withdraw, revise, or supplement it if:

1. The Bidder submits a written request signed by an authorized person and physically delivers it to the place designated for receipt of Bid Proposals, and
2. The Contracting Agency receives the request before the time set for receipt of Bid Proposals, and
3. The revised or supplemented Bid Proposal (if any) is received by the Contracting Agency before the time set for receipt of Bid Proposals.

If the Bidder's request to withdraw, revise, or supplement its Bid Proposal is received before the time set for receipt of Bid Proposals, the Contracting Agency will return the unopened Proposal package to the Bidder. The Bidder must then submit the revised or supplemented package in its entirety. If the Bidder does not submit a revised or supplemented package, then its bid shall be considered withdrawn.

Late revised or supplemented Bid Proposals or late withdrawal requests will be date recorded by the Contracting Agency and returned unopened. Mailed, emailed, or faxed requests to withdraw, revise, or supplement a Bid Proposal are not acceptable.

1-02.13 Irregular Proposals

(December 30, 2022 APWA GSP)

Delete this section and replace it with the following:

1. A Proposal will be considered irregular and will be rejected if:
 - a. The Bidder is not prequalified when so required;
 - b. The authorized Proposal form furnished by the Contracting Agency is not used or is altered;
 - c. The completed Proposal form contains any unauthorized additions, deletions, alternate Bids, or conditions;
 - d. The Bidder adds provisions reserving the right to reject or accept the award, or enter into the Contract;
 - e. A price per unit cannot be determined from the Bid Proposal;
 - f. The Proposal form is not properly executed;
 - g. The Bidder fails to submit or properly complete a subcontractor list (WSDOT Form 271-015), if applicable, as required in Section 1-02.6;
 - h. The Bidder fails to submit or properly complete a Disadvantaged Business Enterprise Certification (WSDOT Form 272-056), if applicable, as required in Section 1-02.6;
 - i. The Bidder fails to submit Written Confirmations (WSDOT Form 422-031) from each DBE firm listed on the Bidder's completed DBE Utilization Certification that they are in agreement with the bidder's DBE participation commitment, if applicable, as required in Section 1-02.6, or if the written confirmation that is submitted fails to meet the requirements of the Special Provisions;
 - j. The Bidder fails to submit DBE Good Faith Effort documentation, if applicable, as required in Section 1-02.6, or if the documentation that is submitted fails to demonstrate that a Good Faith Effort to meet the Condition of Award was made;

- k. The Bidder fails to submit a DBE Bid Item Breakdown (WSDOT Form 272-054), if applicable, as required in Section 1-02.6, or if the documentation that is submitted fails to meet the requirements of the Special Provisions;
 - l. The Bidder fails to submit DBE Trucking Credit Forms (WSDOT Form 272-058), if applicable, as required in Section 1-02.6, or if the documentation that is submitted fails to meet the requirements of the Special Provisions;
 - m. The Bid Proposal does not constitute a definite and unqualified offer to meet the material terms of the Bid invitation; or
 - n. More than one Proposal is submitted for the same project from a Bidder under the same or different names.
2. A Proposal may be considered irregular and may be rejected if:
- a. The Proposal does not include a unit price for every Bid item;
 - b. Any of the unit prices are excessively unbalanced (either above or below the amount of a reasonable Bid) to the potential detriment of the Contracting Agency;
 - c. Receipt of Addenda is not acknowledged;
 - d. A member of a joint venture or partnership and the joint venture or partnership submit Proposals for the same project (in such an instance, both Bids may be rejected); or
 - e. If Proposal form entries are not made in ink.

1-02.14 Disqualification of Bidders

(May 17, 2018 APWA GSP, Option C)

Delete this section and replace it with the following:

A Bidder will be deemed not responsible if the Bidder does not meet the mandatory bidder responsibility criteria in RCW 39.04.350(1), as amended; or does not meet Supplemental Criteria 1-8 in this Section:

The Contracting Agency will verify that the Bidder meets the mandatory bidder responsibility criteria in RCW 39.04.350(1), and Supplemental Criteria 1-2. Evidence that the Bidder meets Supplemental Criteria 3-8 shall be provided by the Bidder as stated later in this Section.

1. Delinquent State Taxes

- A. Criterion: The Bidder shall not owe delinquent taxes to the Washington State Department of Revenue without a payment plan approved by the Department of Revenue.
- B. Documentation: The Bidder, if and when required as detailed below, shall sign a statement (on a form to be provided by the Contracting Agency) that the Bidder does not owe delinquent taxes to the Washington State Department of Revenue, or if delinquent taxes are owed to the Washington State Department of Revenue, the Bidder must submit a written payment plan approved by the Department of Revenue, to the Contracting Agency by the deadline listed below.

2. Federal Debarment

- A. Criterion: The Bidder shall not currently be debarred or suspended by the Federal government.
- B. Documentation: The Bidder shall not be listed as having an “active exclusion” on the U.S. government’s “System for Award Management” database (www.sam.gov).

3. **Subcontractor Responsibility**

- A. **Criterion:** The Bidder's standard subcontract form shall include the subcontractor responsibility language required by RCW 39.06.020, and the Bidder shall have an established procedure which it utilizes to validate the responsibility of each of its subcontractors. The Bidder's subcontract form shall also include a requirement that each of its subcontractors shall have and document a similar procedure to determine whether the sub-tier subcontractors with whom it contracts are also "responsible" subcontractors as defined by RCW 39.06.020.
- B. **Documentation:** The Bidder, if and when required as detailed below, shall submit a copy of its standard subcontract form for review by the Contracting Agency, and a written description of its procedure for validating the responsibility of subcontractors with which it contracts.

4. **Claims Against Retainage and Bonds**

- A. **Criterion:** The Bidder shall not have a record of excessive claims filed against the retainage or payment bonds for public works projects in the three years prior to the bid submittal date, that demonstrate a lack of effective management by the Bidder of making timely and appropriate payments to its subcontractors, suppliers, and workers, unless there are extenuating circumstances and such circumstances are deemed acceptable to the Contracting Agency.
- B. **Documentation:** The Bidder, if and when required as detailed below, shall submit a list of the public works projects completed in the three years prior to the bid submittal date that have had claims against retainage and bonds and include for each project the following information:
- Name of project
 - The owner and contact information for the owner;
 - A list of claims filed against the retainage and/or payment bond for any of the projects listed;
 - A written explanation of the circumstances surrounding each claim and the ultimate resolution of the claim.

5. **Public Bidding Crime**

- A. **Criterion:** The Bidder and/or its owners shall not have been convicted of a crime involving bidding on a public works contract in the five years prior to the bid submittal date.
- B. **Documentation:** The Bidder, if and when required as detailed below, shall sign a statement (on a form to be provided by the Contracting Agency) that the Bidder and/or its owners have not been convicted of a crime involving bidding on a public works contract.

6. **Termination for Cause / Termination for Default**

- A. Criterion: The Bidder shall not have had any public works contract terminated for cause or terminated for default by a government agency in the five years prior to the bid submittal date, unless there are extenuating circumstances and such circumstances are deemed acceptable to the Contracting Agency.
- B. Documentation: The Bidder, if and when required as detailed below, shall sign a statement (on a form to be provided by the Contracting Agency) that the Bidder has not had any public works contract terminated for cause or terminated for default by a government agency in the five years prior to the bid submittal date; or if Bidder was terminated, describe the circumstances.

7. **Lawsuits**

- A. Criterion: The Bidder shall not have lawsuits with judgments entered against the Bidder in the five years prior to the bid submittal date that demonstrate a pattern of failing to meet the terms of contracts, unless there are extenuating circumstances and such circumstances are deemed acceptable to the Contracting Agency.
- B. Documentation: The Bidder, if and when required as detailed below, shall sign a statement (on a form to be provided by the Contracting Agency) that the Bidder has not had any lawsuits with judgments entered against the Bidder in the five years prior to the bid submittal date that demonstrate a pattern of failing to meet the terms of contracts, or shall submit a list of all lawsuits with judgments entered against the Bidder in the five years prior to the bid submittal date, along with a written explanation of the circumstances surrounding each such lawsuit. The Contracting Agency shall evaluate these explanations to determine whether the lawsuits demonstrate a pattern of failing to meet of terms of construction related contracts.

8. **Well Installer**

- A. Criterion: Well driller shall be licensed in the State of Washington experienced in the installation and development of deep UCI wells similar to those required in this project. To be considered experienced the licensed well driller shall have at least five (5) deep underground injection control wells on a single or multiple projects.
- B. Documentation: a single or multiple projects can be used to meet the minimum number of deep well requirements.
 - For each project provide: Agency's name, address, Agency contact information (PM name, email, and phone).
 - For each well provide: Casing Diameter, type, depth, production capacity, specific capacity, sand production and well development procedures and methods.

As evidence that the Bidder meets the Supplemental Responsibility Criteria stated above, the apparent low Bidder must submit to the Contracting Agency by 12:00 P.M. (noon) of the second business day following the bid submittal deadline, a written statement verifying that the Bidder meets the Supplemental Criteria together with supporting documentation (sufficient in the sole judgment of the Contracting Agency) demonstrating compliance with the Supplemental Responsibility Criteria. The Contracting Agency reserves the right to request further documentation as needed from the low bidder and documentation from other Bidders as well to assess Bidder responsibility and compliance with all bidder responsibility criteria. The Contracting Agency also reserves the right to obtain information

from third-parties and independent sources of information concerning a Bidder's compliance with the mandatory and supplemental criteria, and to use that information in their evaluation. The Contracting Agency may consider mitigating factors in determining whether the Bidder complies with the requirements of the Supplemental Criteria.

The basis for evaluation of Bidder compliance with these mandatory and Supplemental Criteria shall include any documents or facts obtained by Contracting Agency (whether from the Bidder or third parties) including but not limited to: (i) financial, historical, or operational data from the Bidder; (ii) information obtained directly by the Contracting Agency from others for whom the Bidder has worked, or other public agencies or private enterprises; and (iii) any additional information obtained by the Contracting Agency which is believed to be relevant to the matter.

If the Contracting Agency determines the Bidder does not meet the bidder responsibility criteria above and is therefore not a responsible Bidder, the Contracting Agency shall notify the Bidder in writing, with the reasons for its determination. If the Bidder disagrees with this determination, it may appeal the determination within two (2) business days of the Contracting Agency's determination by presenting its appeal and any additional information to the Contracting Agency. The Contracting Agency will consider the appeal and any additional information before issuing its final determination. If the final determination affirms that the Bidder is not responsible, the Contracting Agency will not execute a contract with any other Bidder until at least two business days after the Bidder determined to be not responsible has received the Contracting Agency's final determination.

Request to Change Supplemental Bidder Responsibility Criteria Prior To Bid: Bidders with concerns about the relevancy or restrictiveness of the Supplemental Bidder Responsibility Criteria may make or submit requests to the Contracting Agency to modify the criteria. Such requests shall be in writing, describe the nature of the concerns, and propose specific modifications to the criteria. Bidders shall submit such requests to the Contracting Agency no later than five (5) business days prior to the bid submittal deadline and address the request to the Project Engineer or such other person designated by the Contracting Agency in the Bid Documents.

1-02.15 Pre-Award Information

(December 30, 2022 APWA GSP)

Revise this section to read:

Before awarding any contract, the Contracting Agency may require one or more of these items or actions of the apparent lowest responsible bidder:

1. A complete statement of the origin, composition, and manufacture of any or all materials to be used,
2. Samples of these materials for quality and fitness tests,
3. A progress schedule (in a form the Contracting Agency requires) showing the order of and time required for the various phases of the work,
4. A breakdown of costs assigned to any bid item,
5. Attendance at a conference with the Engineer or representatives of the Engineer,
6. Obtain, and furnish a copy of, a business license to do business in the city or county where the work is located.
7. Any other information or action taken that is deemed necessary to ensure that the bidder is the lowest responsible bidder.

1-03 AWARD AND EXECUTION OF CONTRACT

1-03.1 Consideration of Bids

(December 30, 2022 APWA GSP)

Revise the first paragraph to read:

Before awarding any contract, the Contracting Agency may require one or more of these items or actions of the apparent lowest responsible bidder:

1. A complete statement of the origin, composition, and manufacture of any or all materials to be used,
2. Samples of these materials for quality and fitness tests,
3. A progress schedule (in a form the Contracting Agency requires) showing the order of and time required for the various phases of the work,
4. A breakdown of costs assigned to any bid item,
5. Attendance at a conference with the Engineer or representatives of the Engineer,
6. Obtain, and furnish a copy of, a business license to do business in the city or county where the work is located.
7. Any other information or action taken that is deemed necessary to ensure that the bidder is the lowest responsible bidder.

1-03.3 Execution of Contract

(January 19, 2022 APWA GSP)

Revise this section to read:

Within 3 calendar days of Award date (not including Saturdays, Sundays and Holidays), the successful Bidder shall provide the information necessary to execute the Contract to the Contracting Agency. The Bidder shall send the contact information, including the full name, email address, and phone number, for the authorized signer and bonding agent to the Contracting Agency.

Copies of the Contract Provisions, including the unsigned Form of Contract, will be available for signature by the successful bidder on the first business day following award. The number of copies to be executed by the Contractor will be determined by the Contracting Agency.

Within 10 calendar days after the award date, the successful bidder shall return the signed Contracting Agency-prepared contract, an insurance certification as required by Section 1-07.18, a satisfactory bond as required by law and Section 1-03.4, the Transfer of Coverage form for the Construction Stormwater General Permit with sections I, III, and VIII completed when provided. Before execution of the contract by the Contracting Agency, the successful bidder shall provide any pre-award information the Contracting Agency may require under Section 1-02.15.

Until the Contracting Agency executes a contract, no proposal shall bind the Contracting Agency nor shall any work begin within the project limits or within Contracting Agency-furnished sites. The Contractor shall bear all risks for any work begun outside such areas and for any materials ordered before the contract is executed by the Contracting Agency.

If the bidder experiences circumstances beyond their control that prevents return of the contract documents within the calendar days after the award date stated above, the Contracting Agency may grant up to a maximum of 10 additional calendar days for return of the documents, provided the Contracting Agency deems the circumstances warrant it.

Supplement this Section with the following:
(*****)

It is anticipated that this project will be funded in part by the Washington State Department of Ecology. Neither the State of Washington nor any of its departments or employees are, or shall be, a party to this contract or any subcontract.

1-03.4 Contract Bond

(January 1, 2016 COK GSP)

Revise the first paragraph to read:

The successful bidder shall provide executed payment and performance bond(s) for the full contract amount. Separate payment and performance bonds are required and each shall be for the full contract amount. The bond(s) shall:

1. Be on Contracting Agency-furnished form(s);
2. Be signed by an approved surety (or sureties) that:
 - a. Is registered with the Washington State Insurance Commissioner, and
 - b. Appears on the current Authorized Insurance List in the State of Washington published by the Office of the Insurance Commissioner, and
 - c. Have an A.M. best rating of A:VII or better.
3. Guarantee that the Contractor will perform and comply with all obligations, duties, and conditions under the Contract, including but not limited to the duty and obligation to indemnify, defend, and protect the Contracting Agency against all losses and claims related directly or indirectly from any failure:
 - a. Of the Contractor (or any of the employees, subcontractors, or lower tier subcontractors of the Contractor) to faithfully perform and comply with all contract obligations, conditions, and duties, or
 - b. Of the Contractor (or the subcontractors or lower tier subcontractors of the Contractor) to pay all laborers, mechanics, subcontractors, lower tier subcontractors, material person, or any other person who provides supplies or provisions for carrying out the work;
4. Be conditioned upon the payment of taxes, increases, and penalties incurred on the project under titles 50, 51, and 82 RCW; and
5. Be accompanied by a power of attorney for the Surety's officer empowered to sign the bond; and
6. Be signed by an officer of the Contractor empowered to sign official statements (sole proprietor or partner). If the Contractor is a corporation, the bond(s) must be signed by the president or vice president, unless accompanied by written proof of the authority of the individual signing the bond(s) to bind the corporation (i.e., corporate resolution, power of attorney, or a letter to such effect signed by the president or vice president).

1-03.7 Judicial Review

(December 30, 2022 APWA GSP)

Revise this section to read:

All decisions made by the Contracting Agency regarding the Award and execution of the Contract or Bid rejection shall be conclusive subject to the scope of judicial review permitted under Washington Law. Such review, if any, shall be timely filed in the Superior Court of the county where the Contracting

Agency headquarters is located, provided that where an action is asserted against a county, RCW 36.01.050 shall control venue and jurisdiction.

(April 25, 2019 COK GSP)

Add the following new section:

1-03.8 Escrow Bid Documentation Preservation

Scope and Purpose

The purpose of this specification is to preserve the Contractor's Bid documents for use by the Contracting Agency in any litigation between the Contracting Agency and Contractor arising out of this Contract.

The Contractor shall submit a legible copy of all documentation used to prepare the Bid for this Contract to a banking institution designated by the Contracting Agency. Such documentation shall be placed in escrow with the banking institution and preserved by that institution as specified in the following sections of this specification.

Definition: Bid Documentation

The term "Bid documentation" as used in this specification means any writings, working papers, computer printouts, charts, and any other data compilations which contain or reflect all information, data, and calculations used by the Contractor to determine the Bid in bidding for this project. The term "Bid documentation" includes but is not limited to Contractor equipment rates, Contractor overhead rates, labor rates, efficiency or productivity factors, arithmetic extensions, and quotations from Subcontractors and materialmen to the extent that such rates and quotations were used by the Contractor in formulating and determining the amount of the Bid. The term "Bid documentation" also includes any manuals which are standard to the industry used by the Contractor in determining the Bid for this project. Such manuals may be included in the Bid documentation by reference. The term does not include Bid documents provided by the Contracting Agency for use by the Contractor in bidding on this project.

Submittal of Bid Documentation

The Contractor shall submit the Bid documentation, as defined in this section, to the banking institution. The Bid documentation shall be submitted to the banking institution within seven calendar days after the Contract for this project has been executed by the Contracting Agency. The Bid documentation shall be submitted in a sealed container. The container shall be clearly marked "Bid Documentation" and shall also show on the face of the container the Contractor's name, the date of submittal, the project title, and the Contract number.

Affidavit

The sealed container shall contain, in addition to the Bid documentation, an affidavit signed under oath by an individual authorized by the Contractor to execute bidding Proposals. The affidavit shall list each Bid document with sufficient specificity so a comparison can be made between the list and the Bid documentation to ensure that all of the Bid documentation listed in the affidavit has been enclosed in the sealed container. The affidavit shall show that the affiant has personally examined the Bid documentation and that the affidavit lists all of the documents used by the Contractor to determine the Bid for this project and that all such Bid documentation has been enclosed in the sealed container.

Verification

The banking institution upon receipt of the sealed container shall place the container in a safety deposit box, vault, or other secure place, and immediately notify the Contracting Agency in writing that the container has been received. Upon receipt of such notice, the Contracting Agency will promptly notify the Contractor in writing that the Contracting Agency will open the sealed container to verify that the affidavit has been enclosed and to compare the Bid documents listed in the affidavit with the Bid documents enclosed in the container to ensure that all of the Bid documentation has been submitted and that the copies are legible. The notification will advise the Contractor of the date and time the container will be opened and the name of the Contracting Agency employee who will verify the contents of the container.

The employee verifying the contents of the escrow container will not be involved or connected with the review, evaluation, or resolution of any claim by the Contractor made to the Contracting Agency in connection with the Contract for which the verification was made. The Contractor may have representatives present at the opening.

Supplementation

Documents listed in the affidavit but not enclosed in the sealed container through error or oversight shall be submitted in a sealed container within five calendar days after the opening of the original container. Also, any Bid documentation that is illegible shall be replaced with legible copies and furnished within five calendar days after the opening of the original container. The face of the container shall show the same information as the original container except the container shall be marked "Supplemental Bid Documentation". The same procedure used in verifying the contents of the original container shall be used in verifying the contents of the supplemental submittal.

Duration and Use

The Bid documentation and affidavit shall remain in escrow during the life of the Contract and will be returned to the Contractor by the banking institution, provided that the Contractor has signed the final Contract voucher certification and has not reserved any claims on the final Contract voucher certification against the Contracting Agency arising out of the Contract. In the event that claims against the Contracting Agency are reserved on the final Contract voucher certification, the Bid documentation and affidavit shall remain in escrow.

If the claims are not resolved and litigation ensues, the Contracting Agency may serve a request upon the Contractor to authorize the banking institution, in writing, to release the Bid documentation and affidavit in escrow to the Contracting Agency. The Contractor shall respond to the request within 20 days after service of the request. If the Contractor objects or does not respond to the request within 20 days after service of the request, the Contracting Agency may file a motion under the Civil Rules requesting the court to enter an order directing the banking institution to deliver the Bid documentation and affidavit in escrow to the Contracting Agency.

The Contractor shall respond to the request within the time required by the then applicable Civil Court Rules for the Superior Court of the Contracting Agency of Washington. If the Contractor objects or does not respond to the request within the time required by the then applicable Civil Rules, the Contracting Agency may file a motion pursuant to such rules requesting the court to enter an order directing the banking institution to deliver the Bid documentation and affidavit in escrow to the Contracting Agency.

The banking institution shall release the Bid documentation and affidavit as follows:

1. To the Contracting Agency upon receipt of a letter from the Contractor authorizing the release;
2. To the Contracting Agency upon receipt of a certified copy of a court order directing the release of the documents;
3. To the court for an in camera examination pursuant to a certified copy of a court order;
4. The Bid documentation and affidavit shall be returned to the Contractor if litigation is not commenced within the time period prescribed by law.

The Contractor agrees that the sealed container placed in escrow and any supplemental sealed container placed in escrow contain all of the Bid documentation used to determine the Bid and that no other Bid documentation shall be utilized by the Contractor in litigation over claims brought by the Contractor arising out of this Contract unless otherwise ordered by the court.

Remedies for Refusal or Failure to Provide Bid Documentation

Failure or refusal to provide Bid documentation shall be deemed a material breach of this Contract. The Contracting Agency may at its option refuse to make payment for progress estimates under Section 1-09.9 until the Contractor has submitted the Bid documentation required by this specification. The Contracting Agency may at its option terminate the Contract for default under Section 1-08.10. These remedies are not exclusive and the Contracting Agency may take such other action as is available to it under the law.

Confidentiality of Bid Documentation

The Bid documentation and affidavit in escrow are and will remain the property of the Contractor. The Contracting Agency has no interest in or right to the Bid documentation and affidavit other than to verify the contents and legibility of the Bid documentation unless litigation ensues between the Contracting Agency and Contractor over claims brought by the Contractor arising out of this Contract. In the event of such litigation, the Bid documentation and affidavit may become the property of the Contracting Agency for use in the litigation as may be appropriate subject to the provisions of any court order limiting or restricting the use or dissemination of the Bid documentation and affidavit as provided in the preceding section entitled Duration and Use.

Cost and Escrow Instructions

The cost of the escrow will be borne by the Contracting Agency. The Contracting Agency will provide escrow instructions to the banking institution consistent with this specification.

1-04 SCOPE OF THE WORK

1-04.1 Intent of the Contract

(January 1, 2016 COK GSP)

Supplement this Section with the following:

All materials, tools, labor, and guarantees thereof of required to complete the work shall be furnished and supplied in accordance with the Plans, these Special Provisions, the Standard Specifications, and City of Kirkland Pre-Approved (Standard) Plans and Policies. The Contractor shall include all costs of doing this work within the contract bid item prices.

1-04.2 Coordination of Contract Documents, Plans, Special Provisions, Specifications, and Addenda

(December 30, 2022 APWA GSP)

Revise the second paragraph to read:

Any inconsistency in the parts of the contract shall be resolved by following this order of precedence (e.g., 1 presiding over 2, 2 over 3, 3 over 4, and so forth):

1. Addenda,
2. Proposal Form,
3. Special Provisions,
4. Contract Plans,
5. Standard Specifications,
6. Contracting Agency's Standard Plans or Details (if any), and
7. WSDOT Standard Plans for Road, Bridge, and Municipal Construction.

1-04.4 Changes

(January 19, 2022 APWA GSP)

The first two sentences of the last paragraph of Section 1-04.4 are deleted.

1-04.4(1) Minor Changes

(May 30, 2019 APWA GSP)

Delete the first paragraph and replace it with the following:

Payments or credits for changes amounting to \$15,000 or less may be made under the Bid item "Minor Change". At the discretion of the Contracting Agency, this procedure for Minor Changes may be used in lieu of the more formal procedure as outlined in Section 1-04.4, Changes. All "Minor Change" work will be within the scope of the Contract Work and will not change Contract.

1-04.5 Procedure, Protest, and Dispute by the Contractor

(January 19, 2022 APWA GSP)

Revise item 1 of the first paragraph to read:

1. Give a signed written notice of protest to the Engineer or the Engineer's field Inspectors within **5** calendar days of receiving a change order or an Engineer's Written Determination.

1-04.6 Variation in Estimated Quantities

(December 30, 2022 APWA GSP, Option B)

Revise the first paragraph to read:

Payment to the Contractor will be made only for the actual quantities of Work performed and accepted in conformance with the Contract. When the accepted quantity of Work performed under a unit item varies from the original Proposal quantity, payment will be at the unit Contract price for all Work unless the total accepted quantity of the Contract item, adjusted to exclude added or deleted amounts included in change orders accepted by both parties, increases or decreases by more than 25 percent from the original Proposal quantity, and if the total extended bid price for that item at time of award is equal to or greater than 10 percent of the total contract price at time of award. In that case, payment for contract work may be adjusted as described herein:

1-04.11 Final Cleanup

(January 1, 2016 COK GSP)

Section 1-04.11 is deleted in its entirety and replaced with the following:

The Contractor shall perform final cleanup as provided in this Section. The Engineer will not establish the Physical Completion Date until this is done. All public and private property the Contractor occupied to do the Work, including but not limited to the Street Right of Way, material sites, borrow and waste sites, and construction staging area shall be left neat and presentable. Immediately after completion of the Work, the Contractor shall cleanup and remove all refuse and unused materials of any kind resulting from the Work. Failure to do the final cleanup may result in the final cleanup being done by the Owner and the cost thereof charged to the Contractor and deducted from the Contractor's final progress estimate.

The Contractor shall:

1. Remove all rubbish, surplus materials, discarded materials, falsework, piling, camp buildings, temporary structures, equipment, and debris;
2. Remove from the Project, all unneeded, oversized rock left from grading, surfacing, or paving unless the Contract specifies otherwise or the Engineer approves otherwise;
3. On all concrete and asphalt pavement work, flush the pavement clean and remove the wash water and debris;
4. Sweep and flush structure decks and remove wash water and debris;
5. Clean out from all open culverts and drains, inlets, catch basins, manholes and water main valve chambers, within the limits of the Project Site, all dirt and debris of any kind that is the result of the Contractor's operations;
6. Level and fine grade all excavated material not used for backfill where the Contract requires;
7. Fine grade all slopes;
8. Upon completion of grading and cleanup operations at any privately-owned site for which a written agreement between the Contractor and property owner is required, the Contractor shall obtain and furnish to the Engineer a written release from all damages, duly executed by the property owner, stating that the restoration of the property has been satisfactorily accomplished.;

All costs associated with cleanup shall be incidental to the Work and shall be included in the various Bid items in the Bid, and shall be at no additional cost to the Owner.

*(*****)*

Supplement this section with the following:

Contractor shall follow all procedures established in the approved and updated SPCC Plan and SWPPP to remove from the site and properly dispose of materials, rubbish and debris including wash water.

(January 27, 2021 COK GSP)

Add new Section 1-04.12

1-04.12 Water, Electrical Power, Telecommunications, and Sanitary Sewer Requirements

Except where specifically indicated otherwise in the Contract Documents, the Contractor shall make all necessary arrangements and bear all costs as incidental to the Contract for permits, temporary hook-ups, usage fees, and decommissioning of temporary services for all water, electrical power, telecommunications, and/or sanitary sewer services necessary for performance of the Work.

1-05 CONTROL OF WORK

1-05.1 Authority of the Engineer

(January 27, 2021 COK GSP)

Section 1-05.1 is supplemented with the following:

When directed by the Engineer for purposes such as (but not limited to) maintaining unrestricted public access and use outside the Work area, maintaining an appropriate construction site appearance, and/or allowing full access to the Work by the Engineer or other City personnel, the Contractor shall cleanup and remove debris, refuse, and discarded materials of any kind resulting from the Work to meet those purposes. These activities shall be incidental to the bid items associated with the Work that generated the debris, refuse, and discarded materials. Failure to do so may result in cleanup done by the Owner and the cost thereof charged to the Contractor by either deducting from the next Progress Payment to the Contractor or direct billing from the City.

1-05.4 Conformity With and Deviations From Plans and Stakes

(January 1, 2016 COK GSP)

Add new Section 1-05.4(1).

1-05.4(1) Roadway and Utility Surveys

The Contractor shall be responsible for setting, maintaining, and resetting all alignment stakes, slope stakes, and grades necessary for the construction of the improvements under this contract. Except for the survey control data furnished by the Owner, calculations, surveying, and measuring required for setting and maintaining the necessary lines and grades shall be the Contractor's responsibility.

The Owner may spot-check the Contractor's surveying. These spot-checks will not change the requirements for normal checking by the Contractor.

To facilitate the establishment of lines and elevations, the Owner will provide the Contractor with primary survey control information consisting of descriptions of two primary control points used for the horizontal and vertical control. Primary control points will be described and shown on the right-of-way Plans. The Contractor shall check all control points for horizontal and vertical locations prior to use and report any discrepancy to the Engineer. Errors resulting from using control points which have not been verified, shall be the Contractors responsibility.

At a minimum the Contractor shall provide following survey staking shall be required:

1. Construction centerline or an offset to construction centerline shall be staked at all angle points and 100-foot intervals on tangents.
2. Offset stakes of JUT Centerline at all angle points and at 50-foot intervals on tangents
 - a. Cut/fill shall reference the elevations of the lowest conduit.
 - b. Offset shall reference the location of the center of trench and list the width of the trench section.
3. Offset stakes of all structure control/location points shown on the undergrounding Plans.
 - a. Each vault, handhold, and junction box shall have a sets of off-set points provided each location point shown in the location tables Cut/Fill shall reference elevations of the finish grade of the top lid of the structure.
 - b. Each pole riser and stub up, shall have at least one set of off-set hubs provided with cut/fills to finish ground elevations.

- c. Finish grade elevations of all structures shall be determined by the Contractor based on the typical sections and details provide on the Contract Drawings.
4. Offset stakes at face or walls.
5. Offset staking of all drainage structures and drainage pipes at 50-foot intervals.
6. Location of all right-of-way and easements adjacent to the work area as shown on the right-of-way Plans.
7. Offset of all permanent concrete sidewalks, curb ramps, and driveways.

Each stake shall have the following information: Hub elevation, offset distance to items being staked, cut/fill to proposed elevations, design elevation of items being staked.

The above information shall also be shown on a written Cut Sheet and provided to the City inspector 48-hours prior to installation of the items being staked.

The Contractor shall establish all secondary survey controls, both horizontal and vertical, as necessary to assure proper placement of all project elements based on the primary control points provided by the Engineer. Survey work shall be within the following tolerances:

Stationing	+0.01 foot
Alignment	+0.01 foot (between successive points)
Superstructure Elevations	+0.01 foot (from plan elevations)
Substructure Elevations	+0.05 foot (from plan elevations)
Sidewalk and Curb Ramp Elevations	+0.01 foot (from plan elevations)

During the progress of the work, the Contractor shall make available to the Engineer all field books including survey information, footing elevations, cross sections and quantities.

The Contractor shall be fully responsible for the close coordination of field locations and measurements with appropriate dimensions of structural members being fabricated.

(*****)

Supplement the COK GSP above with the following:

Payment

Payment will be made for the following bid item when included in the proposal:

"Construction Surveying", lump sum.

The lump sum contract price for "Construction Surveying" shall be full pay for all labor, equipment, materials, and supervision utilized to perform the Work specified, including any resurveying, checking, correction of errors, replacement of missing or damaged stakes, and coordination efforts.

1-05.7 Removal of Defective and Unauthorized Work

(October 1, 2005 APWA GSP)

Supplement this section with the following:

If the Contractor fails to remedy defective or unauthorized work within the time specified in a written notice from the Engineer, or fails to perform any part of the work required by the Contract Documents,

the Engineer may correct and remedy such work as may be identified in the written notice, with Contracting Agency forces or by such other means as the Contracting Agency may deem necessary.

If the Contractor fails to comply with a written order to remedy what the Engineer determines to be an emergency situation, the Engineer may have the defective and unauthorized work corrected immediately, have the rejected work removed and replaced, or have work the Contractor refuses to perform completed by using Contracting Agency or other forces. An emergency situation is any situation when, in the opinion of the Engineer, a delay in its remedy could be potentially unsafe, or might cause serious risk of loss or damage to the public.

Direct or indirect costs incurred by the Contracting Agency attributable to correcting and remedying defective or unauthorized work, or work the Contractor failed or refused to perform, shall be paid by the Contractor. Payment will be deducted by the Engineer from monies due, or to become due, the Contractor. Such direct and indirect costs shall include in particular, but without limitation, compensation for additional professional services required, and costs for repair and replacement of work of others destroyed or damaged by correction, removal, or replacement of the Contractor's unauthorized work.

No adjustment in contract time or compensation will be allowed because of the delay in the performance of the work attributable to the exercise of the Contracting Agency's rights provided by this section.

The rights exercised under the provisions of this section shall not diminish the Contracting Agency's right to pursue any other avenue for additional remedy or damages with respect to the Contractor's failure to perform the work as required.

1-05.9 Equipment

(January 1, 2016 COK GSP)

The following new paragraph is inserted between the second and third paragraphs:

Use of equipment with metal tracks will not be permitted on concrete or asphalt surfaces unless otherwise authorized by the Engineer.

*(*****)*

Supplement the COK GSP above with the following:

Contractor shall repair damage to concrete or asphalt surfaces at its own expense. The cost of completion of such repairs by the Owner, if not completed by the Contractor where and when directed by the Owner, shall be deducted from the final amounts due for the Work. Contractor shall protect existing concrete and asphalt surfaces from damage from equipment with metal tracks, including unloading and loading of equipment. If the Contractor intends to use equipment with metal tracks, the Contractor shall prepare and submit a surface protection plan to the Engineer for approval 14 calendar days prior to mobilization of equipment.

1-05.10 Guarantees

(January 1, 2016 COK GSP)

Section 1-05.10 is supplemented as follows:

Guarantees and maintenance bonds shall be in accordance with City of Kirkland, State of Washington, Public Works Performance and Payment Bond forms and requirements. The performance bond shall be in the full amount of contract. The Contractor guarantees all items of material, equipment, and workmanship against mechanical, structural, or other defects for which the Contractor is responsible that may develop or become evident within a period of one year from and after acceptance of the work

by the Owner. This guarantee shall be understood to require prompt remedy of defects upon written notification to the Contractor. If the Owner determines the defect requires immediate repair, the Owner may, without further notice to the Contractor, make the necessary corrections, the cost of which shall be borne by the Contractor. To support the above guarantee, the Contractor's performance bond shall remain in full force and effect for one year following the acceptance of the project by the Owner.

1-05.11 Final Inspection

Delete this section and replace it with the following:

1-05.11 Final Inspections and Operational Testing

(October 1, 2005 APWA GSP)

1-05.11(1)Substantial Completion Date

When the Contractor considers the work to be substantially complete, the Contractor shall so notify the Engineer and request the Engineer establish the Substantial Completion Date. The Contractor's request shall list the specific items of work that remain to be completed in order to reach physical completion. The Engineer will schedule an inspection of the work with the Contractor to determine the status of completion. The Engineer may also establish the Substantial Completion Date unilaterally.

If, after this inspection, the Engineer concurs with the Contractor that the work is substantially complete and ready for its intended use, the Engineer, by written notice to the Contractor, will set the Substantial Completion Date. If, after this inspection the Engineer does not consider the work substantially complete and ready for its intended use, the Engineer will, by written notice, so notify the Contractor giving the reasons therefore.

Upon receipt of written notice concurring in or denying substantial completion, whichever is applicable, the Contractor shall pursue vigorously, diligently and without unauthorized interruption, the work necessary to reach Substantial and Physical Completion. The Contractor shall provide the Engineer with a revised schedule indicating when the Contractor expects to reach substantial and physical completion of the work.

The above process shall be repeated until the Engineer establishes the Substantial Completion Date and the Contractor considers the work physically complete and ready for final inspection.

1-05.11(2)Final Inspection and Physical Completion Date

When the Contractor considers the work physically complete and ready for final inspection, the Contractor, by written notice, shall request the Engineer to schedule a final inspection. The Engineer will set a date for final inspection. The Engineer and the Contractor will then make a final inspection and the Engineer will notify the Contractor in writing of all particulars in which the final inspection reveals the work incomplete or unacceptable. The Contractor shall immediately take such corrective measures as are necessary to remedy the listed deficiencies. Corrective work shall be pursued vigorously, diligently, and without interruption until physical completion of the listed deficiencies. This process will continue until the Engineer is satisfied the listed deficiencies have been corrected.

If action to correct the listed deficiencies is not initiated within 7 days after receipt of the written notice listing the deficiencies, the Engineer may, upon written notice to the Contractor, take whatever steps are necessary to correct those deficiencies pursuant to Section 1-05.7.

The Contractor will not be allowed an extension of contract time because of a delay in the performance of the work attributable to the exercise of the Engineer's right hereunder.

Upon correction of all deficiencies, the Engineer will notify the Contractor and the Contracting Agency, in writing, of the date upon which the work was considered physically complete. That date shall constitute the Physical Completion Date of the contract, but shall not imply acceptance of the work or that all the obligations of the Contractor under the contract have been fulfilled.

1-05.11(3)Operational Testing

It is the intent of the Contracting Agency to have at the Physical Completion Date a complete and operable system. Therefore when the work involves the installation of machinery or other mechanical equipment; street lighting, electrical distribution or signal systems; irrigation systems; buildings; or other similar work it may be desirable for the Engineer to have the Contractor operate and test the work for a period of time after final inspection but prior to the physical completion date. Whenever items of work are listed in the Contract Provisions for operational testing they shall be fully tested under operating conditions for the time period specified to ensure their acceptability prior to the Physical Completion Date. During and following the test period, the Contractor shall correct any items of workmanship, materials, or equipment which prove faulty, or that are not in first class operating condition. Equipment, electrical controls, meters, or other devices and equipment to be tested during this period shall be tested under the observation of the Engineer, so that the Engineer may determine their suitability for the purpose for which they were installed. The Physical Completion Date cannot be established until testing and corrections have been completed to the satisfaction of the Engineer.

The costs for power, gas, labor, material, supplies, and everything else needed to successfully complete operational testing, shall be included in the unit contract prices related to the system being tested, unless specifically set forth otherwise in the proposal.

Operational and test periods, when required by the Engineer, shall not affect a manufacturer's guaranties or warranties furnished under the terms of the contract.

Add the following new Section:

1-05.12(1) One-Year Guarantee Period

(March 8, 2013 APWA GSP)

The Contractor shall return to the project and repair or replace all defects in workmanship and material discovered within one year after Final Acceptance of the Work. The Contractor shall start work to remedy any such defects within 7 calendar days of receiving Contracting Agency's written notice of a defect, and shall complete such work within the time stated in the Contracting Agency's notice. In case of an emergency, where damage may result from delay or where loss of services may result, such corrections may be made by the Contracting Agency's own forces or another contractor, in which case the cost of corrections shall be paid by the Contractor. In the event the Contractor does not accomplish corrections within the time specified, the work will be otherwise accomplished and the cost of same shall be paid by the Contractor.

When corrections of defects are made, the Contractor shall then be responsible for correcting all defects in workmanship and materials in the corrected work for one year after acceptance of the corrections by Contracting Agency.

This guarantee is supplemental to and does not limit or affect the requirements that the Contractor's work comply with the requirements of the Contract or any other legal rights or remedies of the Contracting Agency.

1-05.13 Superintendents, Labor, and Equipment of Contractor

(August 14, 2013 APWA GSP)

Delete the sixth and seventh paragraphs of this section.

1-05.14 Cooperation with Other Contractors

*(*****)*

Supplement this Section with the following:

The Contractor shall coordinate the work with other Contractors and Franchise utility companies, which also have facilities in the project area that are to be adjusted to grade or relocated where in conflict with proposed improvements. See Section 1-07.17 of these Special Provisions for more information.

All costs associated with coordination and cooperation with other contractors shall be considered incidental and shall not be grounds for additional payment or claims of any kind.

Underground communication lines near the back of sidewalk and PSE gas line near the rolled curb will be relocated by others during construction.

The Contractor shall be responsible for coordinating directly with affected utilities responsible for utility relocation. Contractor shall coordinate all required relocations such that no delay in work occurs. Delay caused by Contractor's failure to coordinate work with utilities shall not be just cause for a claim, dispute, or suspension. At a minimum coordination shall include:

- Providing each utility with an overall project schedule showing private utility impacts requiring coordination.
- Providing each utility with a three week look ahead showing any private utility work required that could impact the Critical Path of the project schedule.
- All phone conversations and emails between the Contractor and utilities in regards to schedules and coordination shall be documented on a record of communication and provided to the Owner along with each pay request.

All cost associated with coordination and cooperation with utility companies and other contractors as required by these Contract documents shall be incidental and included within the unit Bid prices provided in the Proposal.

1-05.15 Method of Serving Notices

(December 30, 2022 APWA GSP)

Revise the second paragraph to read:

All correspondence from the Contractor shall be directed to the Project Engineer. All correspondence from the Contractor constituting any notification, notice of protest, notice of dispute, or other correspondence constituting notification required to be furnished under the Contract, must be in paper format, hand delivered or sent via mail delivery service to the Project Engineer's office. Electronic copies such as e-mails or electronically delivered copies of correspondence will not constitute such notice and will not comply with the requirements of the Contract.

Add the following new section:

1-05.16 Water and Power

(October 1, 2005 APWA GSP)

The Contractor shall make necessary arrangements, and shall bear the costs for power and water necessary for the performance of the work, unless the contract includes power and water as a pay item.

Add the following new section:

1-05.17 Oral Agreements

*(*****)*

No oral agreement or conversation with any officer, agent, or employee of the Contracting Agency, either before or after execution of the contract, shall affect or modify any of the terms or obligations contained in any of the documents comprising the contract. Such oral agreement or conversation shall be considered as unofficial information and in no way binding upon the Contracting Agency, unless subsequently put in writing and signed by the Contracting Agency.

Add the following new section:

1-05.18 Record Drawings

*(*****)*

The Contractor shall maintain one set of electronic PDF or hardcopy full size plans for Record Drawings, updated with clear and accurate red-lined field revisions on a daily basis, and within 2 business days after receipt of information that a change in Work has occurred. The Contractor shall not conceal any work until the required information is recorded.

This Record Drawing set shall be used for this purpose alone, shall be kept separate from other Plan sheets, and shall be clearly marked as Record Drawings. These Record Drawings shall be kept on site at the Contractor's field office, and shall be available for review by the Contracting Agency at all times. The Contractor shall bring the Record Drawings to each progress meeting for review.

The preparation and upkeep of the Record Drawings is to be the assigned responsibility of a single, experienced, and qualified individual. The quality of the Record Drawings, in terms of accuracy, clarity, and completeness, is to be adequate to allow the Contracting Agency to modify the computer-aided drafting (CAD) Contract Drawings to produce a complete set of Record Drawings for the Contracting Agency without further investigative effort by the Contracting Agency.

The Record Drawing markups shall document all changes in the Work, both concealed and visible. Items that must be shown on the markups include but are not limited to:

- Actual dimensions, arrangement, and materials used when different than shown in the Plans.
- Changes made by Change Order or Field Order.
- Changes made by the Contractor.
- Accurate locations of storm sewer, sanitary sewer, water mains and other water appurtenances, structures, conduits, light standards, vaults, width of roadways, sidewalks, landscaping areas, building footprints, channelization and pavement markings, etc. Include pipe invert elevations, top of castings (manholes, inlets, etc.).

The Contract requires the Contractor to perform surveying/staking; the applicable tolerance limits include, but are not limited to the following:

	Vertical	Horizontal
As-built sanitary & storm invert and grate elevations	± 0.01 foot	± 0.01 foot
As-built monumentation	± 0.001 foot	± 0.001 foot
As-built waterlines, inverts, valves, hydrants	± 0.10 foot	± 0.10 foot
As-built ponds/swales/water features	± 0.10 foot	± 0.10 foot
As-built buildings (fin. Floor elev.)	± 0.01 foot	± 0.10 foot
As-built gas lines, power, TV, Tel, Com	± 0.10 foot	± 0.10 foot
As-built signs, signals, etc.	N/A	± 0.10 foot

Making Entries on the Record Drawings:

- Use color for all markings on the Record Drawings, conforming to the following color code:
- Additions - Red
- Deletions - Green
- Comments - Blue
- Dimensions - Graphite
- Provide the applicable reference for all entries, such as the change order number, the request for information (RFI) number, or the approved shop drawing number.
- Date all entries.
- Clearly identify all items in the entry with notes similar to those in the Contract Drawings (such as pipe symbols, centerline elevations, materials, pipe joint abbreviations, etc.).

The Contractor shall certify on the Record Drawings that said drawings are an accurate depiction of built conditions, and in conformance with the requirements detailed above. The Contractor shall submit final Record Drawings to the Contracting Agency. Contracting Agency acceptance of the Record Drawings is one of the requirements for achieving Physical Completion.

Payment will be made for the following bid item:

“Record Drawings (Min. Bid \$1,000)”, lump sum.

Payment for this item will be made on a prorated monthly basis for work completed in accordance with this section up to 75% of the lump sum bid. The final 25% of the lump sum item will be paid upon submittal and approval of the completed Record Drawings set prepared in conformance with these Special Provisions.

A minimum bid amount has been entered in the Bid Proposal for this item. The Contractor must bid at least that amount.

Add the following new section:

1-05.19 Daily Construction Report

(November 19, 2019 COK GSP)

The Contractor and Subcontractors shall maintain daily, a Daily Construction Report of the Work. The Diary must be kept and maintained by Contractor's designated project superintendent(s). Entries must

be made on a daily basis and must accurately represent all of the project activities on each day. Contractor shall provide signed copies of diary sheets from the previous week to Engineer at each Weekly Coordination Meeting.

Every single diary sheet/page must have:

- Project name & number;
- Consecutive numbering of pages, and
- Typed or printed name, signature, and date of the person making the entry.

At a minimum the diary shall, for each day, have a separate entry detailing each of the following:

1. Day and date.
2. Weather conditions, including changes throughout the day.
3. Complete description of work accomplished during the day, with adequate references to the Plans and Contract Provisions so the reader can easily and accurately identify said work on the Plans. Identify location/description of photographs or videos taken that day.
4. Each and every changed condition, dispute or potential dispute, incident, accident, or occurrence of any nature whatsoever which might affect Contractor, Contracting Agency, or any third party in any manner. This shall be provided on a separate page for other information.
5. List all materials received and stored on- or off-site by Contractor that day for future installation, including the manner of storage and protection of the same.
6. List materials installed that day.
7. List all Subcontractors working on-site that day.
8. List the number of Contractor's employees working during each day, by category of employment.
9. List Contractor's equipment on the site that day; showing which were in use, and which idle.
10. Notations to explain inspections, testing, stake-out, and all other services furnished by Contracting Agency or other party during the day.
11. Verify the daily (including non-work days) inspection and maintenance of traffic control devices and condition of the traveled roadway surfaces.
12. Any other information that serves to give an accurate and complete record of the nature, quantity, and quality of Contractor's progress on each day.
13. Add; Officials and visitors onsite
14. Change Orders
15. Occurrence of testing, staking or special inspections

It is expressly agreed between Contractor and Contracting Agency that the Daily Diary maintained by Contractor shall be the "Contractor's Book of Original Entry" for the documentation of any potential claims or disputes that might arise during this Contract. Failure of Contractor to maintain this Diary in the manner described above will constitute a waiver of any such claims or disputes by Contractor.

Preparation of the Daily Diary by the contractor shall be incidental to the unit prices for applicable bid items. No separate payment shall be made for preparation and maintaining the Daily Diary.

Engineer or the Engineer's representative on the job site will also complete a Daily Construction Report.

Add the following new section:

1-05.20 Preconstruction Photos or Video

(*****)

The Contractor shall take a preconstruction photos or video immediately prior to initiating construction in order to provide a substantiated record of the condition of existing improvement of the existing site and all existing abutting improvements. The photos or video shall be considered as indicative of the nature of the original improvements in determining the adequacy or inadequacy, of the sole opinion of the Engineer, of restoration. The photos or video file shall be provided electronically.

A full set of photos, or video, shall be provided to:

- The City of Kirkland
- KPG Psomas

All costs associated with the work specified above in this Section shall be not measured for separate payment, but shall be considered incidental to and included in "Mobilization".

1-06 CONTROL OF MATERIAL

Section 1-06 is supplemented with the following:

1-06.1 Approval of Materials Prior to Use

(April 3, 2017 WSDOT GSP)

Section 1-06.1 is supplemented with the following:

For each proposed material that is required to be submitted for approval using either the QPL or RAM process the Contractor will be allowed to submit for approval two material sources or manufacturers per material type at no cost. Additional material sources or manufacturers may be submitted for approval and will be processed at a cost of \$125.00 per material source or manufacturer submitted by QPL submittal and \$400.00 per material submitted by RAM. All costs for processing additional material sources or manufacturers will be deducted from monies due or that may come due to the Contractor. Subject to a request by the Contractor and a determination by the Engineer the costs for processing may be waived.

(January 1, 2016 COK GSP)

Section 1-06.1 is supplemented as follows:

Approval of a Material source shall not mean acceptance of the Material. The Material shall meet the requirements of the Contract.

1-06.1(2) Request for Approval of Materials (RAM)

(February 17, 2022 COK GSP)

Revise the first paragraph to read:

The RAM shall be used for all submittals unless directed otherwise by the Engineer. The RAM shall be prepared by the Contractor in accordance with the instructions on Form 350-071 and submitted to the Engineer for approval before the material is incorporated into the Work.

1-06.1(4) Fabrication Inspection Expense

(June 27, 2011 AWPW GSP)

Delete this section in its entirety.

1-06.6 Recycled Materials

(January 4, 2016 APWA GSP)

Delete this section, including its subsections, and replace it with the following:

The Contractor shall make their best effort to utilize recycled materials in the construction of the project. Approval of such material use shall be as detailed elsewhere in the Standard Specifications.

Prior to Physical Completion the Contractor shall report the quantity of recycled materials that were utilized in the construction of the project for each of the items listed in Section 9-03.21. The report shall include hot mix asphalt, recycled concrete aggregate, recycled glass, steel furnace slag and other recycled materials (e.g. utilization of on-site material and aggregates from concrete returned to the supplier). The Contractor's report shall be provided on DOT form 350-075 Recycled Materials Reporting.

*(*****)*

Add the following new section:

1-06.7 Shop Drawings and Submittals

1-06.7(1) General

Shop drawing and submittal review by the Owner or Owner's representative will be limited to general design requirements only and shall not relieve the Contractor from responsibility for errors or omissions or responsibility for consequences due to deviations from the Contract Documents. No changes may be made in any submittal after it has been reviewed except with written notice and approval from the Owner.

The Contractor shall review each submittal and provide approval in writing or by stamping, with a statement indicating that he has reviewed and approved the submittal, verified dimensional information, materials, catalog numbers, and similar data, confirmed that specified criteria has been met, and acknowledges that the product, method, or information will function as intended.

Shop drawing and submittal data for each item shall contain sufficient information on each item to determine if it is in compliance with the contract requirements.

Shop drawing and submittal items that have been installed in the work but have not been approved through the review process shall be removed, and an approved product shall be furnished, all at the Contractor's expense. Under no circumstances shall payment be made to the Contractor for materials not approved by the submittal process.

1-06.7(2) Required Information

Submittals shall be submitted in PDF format via email. If hard copies are required, five (5) copies of each submittal shall be delivered to:

City of Kirkland
Public Works Department
Attn: North Rose Hill Stormwater Infiltration Wells Project
Scott Gonsar
123 5th Ave.
Kirkland, WA 98033

Shop drawings and submittals shall contain the following information for all items, as applicable or as required by the Engineer:

1. Project Name.
2. Contractor.
3. Engineer.
4. Owner.
5. Applicable specification and drawing reference.
6. A stamp showing that the Contractor has checked the material or equipment for conformance with the contract requirements, coordination with other work on the job, and dimensional suitability.
7. A blank space for the Engineer to place a 3-inch by 4-inch review stamp.
8. Dimensions and weights.
9. Catalog information.
10. Manufacturer's specifications.
11. Special handling instructions.
12. Maintenance requirements.
13. Wiring and control diagrams.
14. List of contract exceptions.
15. Other information as required by the Engineer.
16. Installation and Operating Instructions.

1-06.7(3) Review Schedule

Shop drawings and submittals will be reviewed as promptly as possible and transmitted to Contractor not later than 10 Working Days after receipt by the Engineer. The Contractor shall revise and resubmit previously rejected submittals as necessary to obtain approval. Delays caused by the need for resubmittal may not be a basis for an extension of contract time or delay damages at the discretion of the Owner. One set of electronic shop drawings will be returned to the Contractor via email after review.

1-06.7(4) Substitutions

Any product or construction method that does not meet these specifications will be considered a substitution. Substitutions must be approved prior to their installation or use on this project, as specified below.

1-06.7(5) After Contract Execution

Within 10 Working Days after the date of the Notice of Award of Contract, Owner will consider formal requests from Contractor for substitution of product in place of those specified. Contractor shall submit one electronic copy of request for substitution to the email address specified above. Data shall include the necessary change in construction methods, including a detailed description of proposed method and related drawings illustrating methods. An itemized comparison of proposed substitution with product or method shall be provided.

In making a request for substitution, Contractor represents that he has personally investigated the proposed product or method and has determined that it is equal or superior to, in all respects, the product specified. All substitutions shall be reviewed and approved by the City prior to incorporation into the project. Upon review and acceptance by the Owner, Contractor shall coordinate installation of accepted substitutions into the work, making changes that may be required for work to be completed. Contractor waives all claims for additional costs related to substitutions that consequently become apparent.

1-06.7(6) Equivalent Materials

Mention of equipment or materials by brand name and/or model number is occasionally made in order to establish a basis of quality for certain items of material, equipment, or processes. Such mention is intended to include products of other manufacturers that will meet the design standards of the product mentioned.

If the Contractor desires to use products other than those specified under this “or approved equivalent” provision, he shall obtain the approval of the Owner and the Engineer before entering an order therefore. All substitutions or products to be used under the “or approved equivalent” provision shall be reviewed and approved by the City prior to incorporation into the project.

Wherever mention is made of a specific manufacturer, such references shall be treated as if the phrase “or approved equivalent” appears thereafter whether or not in fact it does. The terms “or equal” and/or “or approved equivalent” shall be considered synonymous.

Cost of all work under this Section shall be included in the lump sum contract bid item of “Mobilization”.

1-07 LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLIC

1-07.1 Laws to be Observed

(October 1, 2005 APWA GSP)

Supplement this section with the following:

In cases of conflict between different safety regulations, the more stringent regulation shall apply.

The Washington State Department of Labor and Industries shall be the sole and paramount administrative agency responsible for the administration of the provisions of the Washington Industrial Safety and Health Act of 1973 (WISHA).

The Contractor shall maintain at the project site office, or other well known place at the project site, all articles necessary for providing first aid to the injured. The Contractor shall establish, publish, and make known to all employees, procedures for ensuring immediate removal to a hospital, or doctor’s care, persons, including employees, who may have been injured on the project site. Employees should not be permitted to work on the project site before the Contractor has established and made known procedures for removal of injured persons to a hospital or a doctor’s care.

The Contractor shall have sole responsibility for the safety, efficiency, and adequacy of the Contractor's plant, appliances, and methods, and for any damage or injury resulting from their failure, or improper maintenance, use, or operation. The Contractor shall be solely and completely responsible for the conditions of the project site, including safety for all persons and property in the performance of the work. This requirement shall apply continuously, and not be limited to normal working hours. The required or implied duty of the Engineer to conduct construction review of the Contractor's performance does not, and shall not, be intended to include review and adequacy of the Contractor's safety measures in, on, or near the project site.

(January 1, 2021 COK GSP)

Section 1-07.1 is supplemented with the following:

The Contractor shall at all times eliminate noise to the maximum practicable extent. Air compressing plants shall be equipped with silencers, and the exhaust of all gasoline motors or other power equipment shall be provided with mufflers. Special care shall be used to avoid noise or other nuisances, and the Contractor shall strictly observe all federal, state, and local regulations concerning noise.

The Contractor shall make an effort to reduce carbon emissions by turning off engines on construction equipment not in active use, and on trucks that are idling while waiting to load or unload material for five minutes or more.

Compliance with Laws

The Contractor shall comply with the requirements of all other City ordinances, state statutes, laws, and regulations, whether or not stated herein, which are specifically applicable to the public improvements and work to be performed.

The Contractor shall be subject to City of Kirkland Code enforcement, as required by Kirkland Municipal Code (KMC) Chapter 1.12. The Contractor shall fully comply with and satisfy all fines and costs assessed by code enforcement(s) prior to the Completion Date, unless otherwise authorized by the City of Kirkland in writing.

(January 1, 2016 COK GSP)

Section this section with the following:

Contractor's Safety Responsibilities

These construction documents and the joint and several phases of construction hereby contemplated are to be governed at all times by applicable provisions of the federal law(s), including but not limited to the latest amendments of the following:

Williams-Steiger Occupational Safety and Health Act of 1980, Public Law 91-596.

Part 1910 - Occupational Safety and Health Standards, Chapter XVII of Title 29, Code of Federal Regulations.

This project, the Contractor and its Subcontractors, shall, at all times, be governed by Chapter XIII of Title 29, Code of Federal Regulations, Part 1518 - Safety and Health Regulations for Construction (35 CFR 75), as amended to date.

To implement the program, and to provide safe and healthful working conditions for all persons, the construction superintendent or his/her designated safety officer shall conduct general project safety meetings at the site at least once each month during the course of construction.

The prime Contractor and all Subcontractors shall immediately report all accidents, injuries, and health hazards to the Manager, in writing. This shall not obviate any mandatory reporting under the provisions of the Occupational Safety and Health Act of 1970. This program shall become a part of the Contract documents and the Contract between the Owner and the Contractor, and all Subcontractors, as though fully written therein.

Where the location of the work is in proximity to overhead wires and power lines, the Contractor shall coordinate all work with the utility and shall provide for such measures as may be necessary for the protection of the workers.

(April 3, 2006 WSDOT GSP)

Section 1-07.1 is supplemented with the following:

Confined Space

Confined spaces are known to exist at the following locations:

- Proposed vaults, manholes, and excavations.

The Contractor shall be fully responsible for the safety and health of all on-site workers and compliant with Washington Administrative Code (WAC 296-809).

The Contractor shall prepare and implement a confined space program for each of the confined spaces identified above. The Contractor's Confined Space program shall be sent to the contracting agency at least 30 days prior to the Contractor beginning work in or adjacent to the confined space. No work shall be performed in or adjacent to the confined space until the plan is submitted to the Engineer as required. The Contractor shall communicate with the Project Engineer to ensure a coordinated effort for providing and maintaining a safe worksite for both the Contracting Agency's and Contractor's workers when working in or near a confined space.

All costs to prepare and implement the confined space program shall be included in the bid prices for the various items associated with the confined space work.

1-07.2 State Taxes

Delete this section, including its subsections, in its entirety and replace it with the following:

1-07.2 State Sales Tax

(June 27, 2011 APWA GSP)

The Washington State Department of Revenue has issued special rules on the State sales tax. Sections 1-07.2(1) through 1-07.2(3) are meant to clarify those rules. The Contractor should contact the Washington State Department of Revenue for answers to questions in this area. The Contracting Agency will not adjust its payment if the Contractor bases a bid on a misunderstood tax liability.

The Contractor shall include all Contractor-paid taxes in the unit bid prices or other contract amounts. In some cases, however, state retail sales tax will not be included. Section 1-07.2(2) describes this exception.

The Contracting Agency will pay the retained percentage (or release the Contract Bond if a FHWA-funded Project) only if the Contractor has obtained from the Washington State Department of Revenue a certificate showing that all contract-related taxes have been paid (RCW 60.28.051). The Contracting Agency may deduct from its payments to the Contractor any amount the Contractor may owe the

Washington State Department of Revenue, whether the amount owed relates to this contract or not. Any amount so deducted will be paid into the proper State fund.

1-07.2(1) State Sales Tax — Rule 171

WAC 458-20-171, and its related rules, apply to building, repairing, or improving streets, roads, etc., which are owned by a municipal corporation, or political subdivision of the state, or by the United States, and which are used primarily for foot or vehicular traffic. This includes storm or combined sewer systems within and included as a part of the street or road drainage system and power lines when such are part of the roadway lighting system. For work performed in such cases, the Contractor shall include Washington State Retail Sales Taxes in the various unit bid item prices, or other contract amounts, including those that the Contractor pays on the purchase of the materials, equipment, or supplies used or consumed in doing the work.

1-07.2(2) State Sales Tax — Rule 170

WAC 458-20-170, and its related rules, apply to the constructing and repairing of new or existing buildings, or other structures, upon real property. This includes, but is not limited to, the construction of streets, roads, highways, etc., owned by the state of Washington; water mains and their appurtenances; sanitary sewers and sewage disposal systems unless such sewers and disposal systems are within, and a part of, a street or road drainage system; telephone, telegraph, electrical power distribution lines, or other conduits or lines in or above streets or roads, unless such power lines become a part of a street or road lighting system; and installing or attaching of any article of tangible personal property in or to real property, whether or not such personal property becomes a part of the realty by virtue of installation.

For work performed in such cases, the Contractor shall collect from the Contracting Agency, retail sales tax on the full contract price. The Contracting Agency will automatically add this sales tax to each payment to the Contractor. For this reason, the Contractor shall not include the retail sales tax in the unit bid item prices, or in any other contract amount subject to Rule 170, with the following exception.

Exception: The Contracting Agency will not add in sales tax for a payment the Contractor or a subcontractor makes on the purchase or rental of tools, machinery, equipment, or consumable supplies not integrated into the project. Such sales taxes shall be included in the unit bid item prices or in any other contract amount.

1-07.2(3) Services

The Contractor shall not collect retail sales tax from the Contracting Agency on any contract wholly for professional or other services (as defined in Washington State Department of Revenue Rules 138 and 244).

1-07.5 Environmental Regulations

(*****)

Supplement this section with the following:

Protection of the Environment: No construction related activity shall contribute to the degradation of the environment, allow material to enter surface or ground waters, or allow particulate emissions to the atmosphere, which exceed state or federal standards. Any actions that potentially allow a discharge to state waters must have prior approval of the Washington State Department of Ecology.

1-07.5(2) State Department of Fish and Wildlife

(January 1, 2021 COK GSP)

Supplement this section with the following:

New Zealand mud snails are an aquatic invasive species of concern for the Puget Sound region, as they have already invaded waterways near the City of Kirkland. Contractors working in-water (e.g. natural stream, small ponds and lakes, wetlands, etc.), including all construction equipment and vehicles used in-water, shall follow the Level 1 decontamination protocols and implement all Special Protocols for personnel and equipment as described in the “Invasive Species Management Protocols” published by the Washington State Department of Fish and Wildlife (WDFW) (Draft Version 3, February 2016). This document can be found on the WDFW website.

For Work that will be performed in-water in the City of Kirkland, all Contractor vehicles and/or heavy equipment previously used for in-water work outside the City of Kirkland shall be cleaned by the Contractor as indicated for “Boats and other Large Aquatic Conveyances Transported Overland”, as described in the “Invasive Species Management Protocols” published by the Washington State Department of Fish and Wildlife (WDFW) (Draft Version 3, February 2016).

The Contractor is only required to follow Level 2 Decontamination Protocols in the Work area when indicated in the Contract documents.

All labor and materials required for completing decontamination and cleaning protocols shall be incidental to the Contract bid items, unless otherwise indicated in the Contract Documents.

1-07.5(3) State Department of Ecology

*(*****)*

Supplement this section with the following:

Land disturbance for this project is under 1 Acre as designed. Should the Contractor extend limits of disturbance beyond 1 acre without Owners approval it will be the Contractors responsibility to obtain a Construction Storm Water General Permit. Compliance with the permit shall be at the no additional cost to the owner.

1-07.5(3) State Department of Ecology

(January 1, 2021 COK GSP)

Supplement this section with the following:

Contractor shall comply with all requirements of the Construction Stormwater General Permit (CSWGP), if this permit has been issued for this Work. Additionally, Contractor shall comply with all applicable requirement of Kirkland Municipal Code KMC 15.52, as this local code has been adopted to meet Washington State Department of Ecology requirements for city stormwater management.

CSWGP Permit Number (if issued): None Required

CSWGP coverage is typically only issued by the State Department of Ecology in the event the disturbed area for the Work is greater than one (1) acre. In the event CSWGP coverage has been issued for this Work, Contractor shall coordinate the Transfer of the permit from the Contracting Agency to the Contractor prior to any ground disturbance commencing in the Work area.

Unless identified otherwise in the Contract Documents, compliance with all requirements of this Section, the CSWGP, and the Kirkland Municipal Code KMC 15.52 shall be incidental to Contract pay items.

Revise the paragraph 6 to read:

6. When a violation of the Construction Stormwater General Permit (CSWGP) and/or Kirkland Municipal Code KMC 15.52 occurs, Contractor shall immediately notify the City of Kirkland Spill Hotline (425) 587-3900. Contractor shall also report to the Engineer and other agencies as identified in the Contractor's Spill Prevention, Control, and Countermeasures (SPCC) Plan (prepared in accordance with Section 1-07.15(1)).

Revise the paragraph 8 to read:

8. If directed by the Contracting Agency and instead of or in partial conjunction with a Notice of Completion, transfer the CSWGP coverage to the Contracting Agency when Physical Completion has been given and the Engineer has determined that the project site is not destabilized from erosion.

1-07.5(6) U.S. Fish and Wildlife Service and National Marine Fisheries Service

(January 1, 2021 COK GSP)

Delete this section and replace it with the following:

The Contractor shall provide all required fish exclusion and handling services required by the Work, unless otherwise indicated in the Contract Documents. If the Contractor discovers any fish stranded by the project, they shall immediately transfer and release the fish alive into a flowing stream or open water outside the Work area.

1-07.6 Permits and Licenses

(January 1, 2021 COK GSP)

Add new Section 1-07.6(1):

1-07.6(1) Permits for Sanitary Sewer Discharge for Construction Dewatering

The Contracting Agency has not obtained a King County Authorization for Construction Dewatering or local sanitary sewer operating permits for this Work. Contractor proposals for this method of construction stormwater disposal will be supported by the Contracting Agency only if, as determined by the Engineer, the proposal meets all the requirements indicated in Section 1-07.6 and this Section.

Contractors proposing to use sanitary sewer methods for construction dewatering and discharge are directed to the King County web page for "Construction Dewatering" for applications and information on the application process.

In addition to the requirements of Section 1-07.6, Contractor shall provide to the Engineer the written permission obtained by the Contractor from the local sanitary sewer operating agency for use of the sanitary sewer for construction dewatering discharge in advance of the Contractor applying for either general or individual King County Authorization for Construction Dewatering.

Unless otherwise indicated in the Contract Documents or by the Engineer in writing, no claims for equitable adjustment of Contract Time will be approved in order to obtain King County Authorizations and/or local sanitary sewer operating permits.

(January 1, 2021 COK GSP)

Add new Section 1-07.6(2):

1-07.6(2) Permits for Off-site Staging and Storage Areas

The Contracting Agency has not obtained any City of Kirkland Temporary Use Permits for temporary use(s) of off-site areas or properties in the City of Kirkland for the purposes of staging, materials

storage, and/or any other Contractor-desired temporary uses during the Work. A City of Kirkland Temporary Use Permit must be obtained by the Contractor for temporary use for the Work of any off-site areas or properties not located in a City of Kirkland right-of-way (ROW). This requirement is in addition to any permissions and/or agreements reached between the Contractor and the property owner(s) as required in Section 1-07.24.

“Off-site” will be taken to mean any area not designated as part of the Work in the Plans or other Contract Documents.

A City of Kirkland Temporary Use Permit is not required for additional use of areas located in a City of Kirkland right-of-way (ROW) and not indicated in the Plans or other Contract Documents. However, the Contractor shall not occupy additional City of Kirkland ROW not shown as part of the Work without advance written approval by the Engineer. Contractor shall photograph and/or video document the existing conditions of ROW used. Any damage or degradation of the existing conditions in these areas shall be repaired and/or replaced by the Contractor at no additional cost to the City of Kirkland.

Contractor shall apply for a City of Kirkland Temporary Use Permit from the City of Kirkland Planning and Building Department through <http://mybuildingpermit.com> . Contractor shall also notify the Engineer when the Temporary Use Permit application has been submitted.

Unless otherwise indicated in the Contract Documents or by the Engineer in writing, no claims for equitable adjustment of Contract Time will be allowed requesting additional time required for the Contractor to obtain a City of Kirkland Temporary Use Permit for temporary use of any off-site area or property not designated as part of the Work area in the Plans.

1-07.7 Load Limits

*Section 1-07.7 is supplemented with the following:
(March 13, 1995 WSDOT GSP)*

If the sources of materials provided by the Contractor necessitates hauling over roads other than State Highways, the Contractor shall, at the Contractor’s expense, make all arrangements for the use of the haul routes.

1-07.9 Wages

1-07.9(5) Required Documents

1-07.9(5)A General

*(December 30, 2022 APWA GSP)
This section is revised to read:*

All Statements of Intent to Pay Prevailing Wages, Affidavits of Wages Paid and Certified Payrolls, including a signed Statement of Compliance for Federal-aid projects, shall be submitted to the Engineer and to the State L&I online Prevailing Wage Intent & Affidavit (PWIA) system.

1-07.14 Responsibility for Damage

*(January 1, 2016 COK GSP)
Section 1-07.14 is supplemented with the following:*

The Contractor further agrees that it is waiving immunity under Industrial Insurance Law Title 51 RCW for any claims brought against the City by its employees. In the event Contractor fails, after receipt of

timely notice from the City, to appear, defend, or pay as required by the first paragraph of this section, then in that event and in that event only, the City may in its sole discretion, deduct from the progress payments to the Contractor and pay any amount sufficient to pay any claim, of which the City may have knowledge and regardless of the informalities of notice of such claim, arising out of the performance of this contract, provided the City has theretofore given notice of receipt of such claim to the Contractor and the Contractor has failed to act thereon.

1-07.15 Temporary Water Pollution/Erosion Control

1-07.15(1) Spill Prevention, Control, and Countermeasures Plan

(January 10, 2019 COK GSP)

Add the following paragraph under the second paragraph of this section:

In the event the Contractor uses an SPCC Plan template that either follows the WSDOT SPCC Plan Template or contains the same or similar content and/or format, the following changes shall be required:

1. Replace all references to “WSDOT” as either the Contracting Agency or project owner with “City of Kirkland”, except where indicated in this Section.
2. Add into all Spill Reporting and related section(s): “The City of Kirkland Spill Response Hotline at (425) 587-3900 shall be the first point of contact in the event of a spill. Notification to the City of Kirkland Spill Response Hotline shall precede the spill notifications to federal and state agencies.”
3. Delete all references to the “WSDOT Environmental Compliance Assurance Procedure” (ECAP) in the SPCC.

Supplement the following referenced SPCC Plan Element Requirements in this Section as follows:

For SPCC Plan Element Requirement Number 2, add the following: “The City of Kirkland Spill Response Hotline at (425) 587-3900 shall be the first point of contact in the event of a spill.”

For SPCC Plan Element Requirement Number 8, add the following: “As part of Contractor spill response procedure, the Contractor shall contact the City of Kirkland Spill Response Hotline at (425) 587-3900 to report the spill regardless of whether or not the Contractor has fully contained, controlled, and/or cleaned up the spill.”

1-07.16 Protection and Restoration of Property

1-07.16(2) Vegetation Protection and Restoration

Section 1-07.16(2) is supplemented with the following:

(August 2, 2010 WSDOT GSP)

Vegetation and soil protection zones for trees shall extend out from the trunk to a distance of 1 foot radius for each inch of trunk diameter at breast height.

Vegetation and soil protection zones for shrubs shall extend out from the stems at ground level to twice the radius of the shrub.

Vegetation and soil protection zones for herbaceous vegetation shall extend to encompass the diameter of the plant as measured from the outer edge of the plant.

1-07.16(3) Fences, Mailboxes, Incidentals

(January 1, 2016 COK GSP)

Section 1-07.16(3) is supplemented with the following:

U.S. Postal Service Collection Boxes, Mail Receptacles, and other Structures: U.S. Postal Service collection boxes and other Structures requiring temporary relocation to accommodate construction, the Contractor shall contact the Kirkland Postmaster at least 5 Working Days in advance for coordination. Only the U.S. Post Office will move Postal Service-owned property.

1-07.17 Utilities and Similar Facilities

(January 1, 2020 COK GSP)

Section 1-07.17 is supplemented with the following:

Locations and dimensions shown in the Plans for existing facilities are in accordance with available information obtained without uncovering, measuring, or other verification.

The Contractor is alerted to the existence of Chapter 19.122 RCW, a law relating to underground utilities. Any cost to the Contractor incurred as a result of this law shall be at the Contractor's expense.

No excavation shall begin until all known facilities in the vicinity of the excavation area have been located and marked.

The Contractor shall give advance notice to all utility companies involved where work is to take place and in all other respects comply with the provisions of Chapter 19.122 RCW. Notice shall include, but not be limited to, the following utility companies:

1. Water, sewer, storm, streets – minimum two working days in advance
2. Power (Electric and Natural Gas) – minimum 48 hours in advance
3. Telephone – minimum 30 days in advance
4. Natural Gas – minimum 48 hours in advance
5. Cable Television – minimum 48 hours in advance
6. Transit – minimum 21 days in advance

The following is a list of some utilities serving the Kirkland area. This is not intended or represented to be a complete list and is provided for the Contractor's convenience.

Utility	Agency/Company	Address	Contact	Phone
Water/Sewer	City of Kirkland	123 Fifth Avenue Kirkland, WA 98033	Josh Pantzke	(425) 587-3900
Storm Drainage	City of Kirkland	123 Fifth Avenue Kirkland, WA 98033	Josh Pantzke	(425) 587-3900
Street	City of Kirkland	123 Fifth Avenue Kirkland, WA 98033	Ryan Fowler	(425) 587-3900
Natural Gas	Puget Sound Energy	P.O. Box 97034 EST-11W Bellevue, WA 98009- 9734	Kiara Skye	(425) 213-9205

Electric	Puget Sound Energy	35131 SE Center St Snoqualmie, WA 98065	Kiara Skye	(425) 213-9205
Telephone/ FIOS	Ziply Fiber	P.O. Box 1127 Everett, WA 98206	Micah Comer	(830) 513-2366
Cable Television	Comcast Cable	1525 - 75th St SW, Suite 200 Everett, WA 98203	Bianca Crawford	(253) 303-2723

Note that most utility companies may be contacted for locations through the “One Call” system, 1-800-424-5555. In the event of a gas emergency, call 911 and then the PSE hotline at 1-888-225-5773 (1-888-CALL-PSE).

The Contractor shall coordinate the work with these utilities and shall notify the Engineer in advance of any conflicts affecting the work schedule. The utility companies shall witness or perform all shutdowns, connections or disconnections.

Wherever in the course of the construction operation it becomes necessary to cause an outage of utilities, it shall be the Contractor's responsibility to notify the affected users not less than twenty-four (24) hours in advance of the creation of such outage. The Contractor shall make reasonable effort to minimize the duration of outages.

The Contractor shall be responsible for any breakage of utilities or services resulting from its operations and shall hold the City and its agents harmless from any claims resulting from disruption of, or damage to, same.

Other Notifications

Service Area Turn Off: All service area turn off notices must be distributed to affected parties two working days in advance of any scheduled shut off. City to provide door hangers and affected service area map. The contractor shall fill in all required information prior to hanging door hanger.

Entry onto Private Property: Each property owner shall be given two working days advance Written Notice prior to entry by the Contractor.

Loop Detection Systems: Where an excavation is to take place through a signal loop detector system, the Contractor shall provide at least five (5) Working Days advance notice to the City Signal Shop at (425) 587-3920 to coordinate temporary signal wire disconnect and installation of temporary signal detection equipment.

Survey Monuments: When proposed pavement removal is close to existing survey monumentation, or proposed pavement removal includes existing survey monumentation, the Contractor shall provide a minimum 4 Working Days advance notice to the Engineer to allow survey crews to tie the monument out and reset the monument after pavement installation.

1-07.17(2) Utility Construction, Removal or Relocation by Others

(January 1, 2016 COK GSP)

Section 1-07.17(2) is supplemented with the following:

Under no circumstances will discrepancies in location or incompleteness in description of existing utilities or improvements, whether they are visible from the surface, buried, or otherwise obscured, be considered as a basis for additional compensation to the Contractor.

1-07.18 Public Liability and Property Damage Insurance

(December 30, 2022 APWA GSP)

Delete this Section in its entirety, and replace it with the following:

Third-Party Beneficiary: All parties agree that the State of Washington shall be, and is hereby, named as an express third-party beneficiary of this Contract, with full rights as such.

1-07.18 Insurance

1-07.18(1) General Requirements

- A. The Contractor shall procure and maintain the insurance described in all subsections of section 1-07.18 of these Special Provisions, from insurers with a current A. M. Best rating of not less than A-: VII and licensed to do business in the State of Washington. The Contracting Agency reserves the right to approve or reject the insurance provided, based on the insurer's financial condition.
- B. The Contractor shall keep this insurance in force without interruption from the commencement of the Contractor's Work through the term of the Contract and for thirty (30) days after the Physical Completion date, unless otherwise indicated below.
- C. If any insurance policy is written on a claims-made form, its retroactive date, and that of all subsequent renewals, shall be no later than the effective date of this Contract. The policy shall state that coverage is claims made and state the retroactive date. Claims-made form coverage shall be maintained by the Contractor for a minimum of 36 months following the Completion Date or earlier termination of this Contract, and the Contractor shall annually provide the Contracting Agency with proof of renewal. If renewal of the claims made form of coverage becomes unavailable, or economically prohibitive, the Contractor shall purchase an extended reporting period ("tail") or execute another form of guarantee acceptable to the Contracting Agency to assure financial responsibility for liability for services performed.
- D. The Contractor's Automobile Liability, Commercial General Liability and Excess or Umbrella Liability insurance policies shall be primary and non-contributory insurance as respects the Contracting Agency's insurance, self-insurance, or self-insured pool coverage. Any insurance, self-insurance, or self-insured pool coverage maintained by the Contracting Agency shall be excess of the Contractor's insurance and shall not contribute with it.
- E. The Contractor shall provide the Contracting Agency and all additional insureds with written notice of any policy cancellation, within two business days of their receipt of such notice.
- F. The Contractor shall not begin work under the Contract until the required insurance has been obtained and approved by the Contracting Agency
- G. Failure on the part of the Contractor to maintain the insurance as required shall constitute a material breach of contract, upon which the Contracting Agency may, after giving five business days' notice to

the Contractor to correct the breach, immediately terminate the Contract or, at its discretion, procure or renew such insurance and pay any and all premiums in connection therewith, with any sums so expended to be repaid to the Contracting Agency on demand, or at the sole discretion of the Contracting Agency, offset against funds due the Contractor from the Contracting Agency.

- H. All costs for insurance shall be incidental to and included in the unit or lump sum prices of the Contract and no additional payment will be made.

1-07.18(2) Additional Insured

All insurance policies, with the exception of Workers Compensation, and of Professional Liability and Builder's Risk (if required by this Contract) shall name the following listed entities as additional insured(s) using the forms or endorsements required herein:

- the Contracting Agency and its officers, elected officials, employees, agents, and volunteers

The above-listed entities shall be additional insured(s) for the full available limits of liability maintained by the Contractor, irrespective of whether such limits maintained by the Contractor are greater than those required by this Contract, and irrespective of whether the Certificate of Insurance provided by the Contractor pursuant to 1-07.18(4) describes limits lower than those maintained by the Contractor.

For Commercial General Liability insurance coverage, the required additional insured endorsements shall be at least as broad as ISO forms CG 20 10 10 01 for ongoing operations and CG 20 37 10 01 for completed operations.

1-07.18(3) Subcontractors

The Contractor shall cause each subcontractor of every tier to provide insurance coverage that complies with all applicable requirements of the Contractor-provided insurance as set forth herein, except the Contractor shall have sole responsibility for determining the limits of coverage required to be obtained by subcontractors.

The Contractor shall ensure that all subcontractors of every tier add all entities listed in 1-07.18(2) as additional insureds, and provide proof of such on the policies as required by that section as detailed in 1-07.18(2) using an endorsement as least as broad as ISO CG 20 10 10 01 for ongoing operations and CG 20 37 10 01 for completed operations.

Upon request by the Contracting Agency, the Contractor shall forward to the Contracting Agency evidence of insurance and copies of the additional insured endorsements of each subcontractor of every tier as required in 1-07.18(4) Verification of Coverage.

1-07.18(4) Verification of Coverage

The Contractor shall deliver to the Contracting Agency a Certificate(s) of Insurance and endorsements for each policy of insurance meeting the requirements set forth herein when the Contractor delivers the signed Contract for the work. Failure of Contracting Agency to demand such verification of coverage with these insurance requirements or failure of Contracting Agency to identify a deficiency from the insurance documentation provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

Verification of coverage shall include:

1. An ACORD certificate or a form determined by the Contracting Agency to be equivalent.

2. Copies of all endorsements naming Contracting Agency and all other entities listed in 1-07.18(2) as additional insured(s), showing the policy number. The Contractor may submit a copy of any blanket additional insured clause from its policies instead of a separate endorsement.
3. Any other amendatory endorsements to show the coverage required herein.
4. A notation of coverage enhancements on the Certificate of Insurance shall not satisfy these requirements – actual endorsements must be submitted.

Upon request by the Contracting Agency, the Contractor shall forward to the Contracting Agency a full and certified copy of the insurance policy(s). If Builders Risk insurance is required on this Project, a full and certified copy of that policy is required when the Contractor delivers the signed Contract for the work.

1-07.18(5) Coverages and Limits

The insurance shall provide the minimum coverages and limits set forth below. Contractor's maintenance of insurance, its scope of coverage, and limits as required herein shall not be construed to limit the liability of the Contractor to the coverage provided by such insurance, or otherwise limit the Contracting Agency's recourse to any remedy available at law or in equity.

All deductibles and self-insured retentions must be disclosed and are subject to approval by the Contracting Agency. The cost of any claim payments falling within the deductible or self-insured retention shall be the responsibility of the Contractor. In the event an additional insured incurs a liability subject to any policy's deductibles or self-insured retention, said deductibles or self-insured retention shall be the responsibility of the Contractor.

1-07.18(5)A Commercial General Liability

Commercial General Liability insurance shall be written on coverage forms at least as broad as ISO occurrence form CG 00 01, including but not limited to liability arising from premises, operations, stop gap liability, independent contractors, products-completed operations, personal and advertising injury, and liability assumed under an insured contract. There shall be no exclusion for liability arising from explosion, collapse or underground property damage.

The Commercial General Liability insurance shall be endorsed to provide a per project general aggregate limit, using ISO form CG 25 03 05 09 or an equivalent endorsement.

Contractor shall maintain Commercial General Liability Insurance arising out of the Contractor's completed operations for at least three years following Substantial Completion of the Work.

Such policy must provide the following minimum limits:

\$1,000,000	Each Occurrence
\$2,000,000	General Aggregate
\$2,000,000	Products & Completed Operations Aggregate
\$1,000,000	Personal & Advertising Injury each offence
\$1,000,000	Stop Gap / Employers' Liability each accident

1-07.18(5)B Automobile Liability

Automobile Liability shall cover owned, non-owned, hired, and leased vehicles; and shall be written on a coverage form at least as broad as ISO form CA 00 01. If the work involves the transport of pollutants, the automobile liability policy shall include MCS 90 and CA 99 48 endorsements.

Such policy must provide the following minimum limit:

\$1,000,000 Combined single limit each accident

1-07.18(5)C Workers' Compensation

The Contractor shall comply with Workers' Compensation coverage as required by the Industrial Insurance laws of the State of Washington.

1-07.23 Public Convenience and Safety

(January 1, 2016 COK GSP)

Section 1-07.23 is supplemented with the following:

No road or street shall be closed to the public except as permitted in these plans and specifications or with the approval of the Engineer and proper governmental authority. Fire hydrants on or adjacent to the work shall be kept accessible to fire fighting equipment at all times. Provision shall be made by the Contractor to ensure the proper functioning of all gutters, sewer inlets, drainage ditches and culverts, irrigation ditches and natural water courses, and storm sewer facilities throughout the project. Temporary interruption of service will be allowed only with the permission of the Engineer.

The Kirkland Police Department and Kirkland Fire Department shall be notified at least four (4) hours in advance of any actions by the Contractor that may affect the functions of either the Police Department or Fire Department.

The Contractor shall conduct its work and take preventative measures so that dust or other particulate matter in the project area shall not become objectionable to the adjacent property owners or general public. Should the Owner determine the Contractor is not fulfilling its obligation in this regard; the Owner reserves the right to take such action as may be necessary to remedy the objectionable condition and to charge the Contractor with any cost that may be incurred in such remedial action. All work shall be carried on with due regard for the safety of the public. No driveway, whether public, commercial, or private, may be closed without prior approval of the Owner, project supervisor, or Engineer unless written authority has been given by the affected property owner. The Contractor shall be responsible for notifying the affected property owners 24 hours in advance of scheduled interruptions to access.

Pedestrian Control and Protection

When the work area encroaches upon a sidewalk, walkway or crosswalk area, special consideration must be given to pedestrian safety. Maximum effort must be made to separate pedestrians from the work area. Protective barricades, fencing, and bridges, together with warning and guidance devices and signs, shall be utilized so that the passageway for pedestrians is safe and well defined. Whenever pedestrian walkways are provided across excavations, they shall be provided with suitable handrails. Footbridges shall be safe, strong, free of bounce and sway, have a slip resistant coating, and be free of cracks, holes, and irregularities that could cause tripping. Ramps shall be provided at the entrance and exit of all raised footbridges, again to prevent tripping. Adequate illumination and reflectorization shall be provided during hours of darkness. All walkways shall be maintained with at least 4 feet clear width.

Where walks are closed by construction, an alternate walkway shall be provided, preferably within the planting strip.

Where it is necessary to divert pedestrians into the roadway, barricading or channeling devices shall be provided to separate the pedestrian walkway from the adjacent vehicular traffic lane. At no time shall pedestrians be diverted into a portion of a street used concurrently by moving vehicular traffic.

At locations where adjacent alternate walkways cannot be provided, appropriate signs shall be posted at the limits of construction and in advance of the closure at the nearest crosswalk or intersection to divert pedestrians across the street.

Physical barricades shall be installed to prevent visually impaired people from inadvertently entering a closed area. Pedestrian walkways shall be wheelchair accessible at all times. Pedestrian access shall be maintained to all properties adjacent to the construction site.

1-07.23(2) Construction and Maintenance of Detours

(*****)

Supplement this section with the following:

Measurement and Payment

All costs related to equipment, labor and materials required to complete work described in Section 1-07.23 including but not limited to pedestrian access and safety, developing an approved Traffic Control Plan with pedestrian elements; construction, maintenance, and removal of pathways, protective barricades, fencing, and bridges; warning guidance devices; signing; temporary striping or structures; traffic control labor; and providing and maintaining temporary driveway access, alternative, or existing pedestrian routes and access points will not be measured for separate payment, but shall be included in the lump sum Bid item "Project Temporary Traffic Control."

(*****)

Add the following new Section:

1-07.23(3) Communication/Dissemination of Information

The Contractor shall attend a weekly construction meeting throughout the duration of the project. Information regarding schedule specifics, traffic disruptions, and water and sewer service disruptions shall be provided by the Contractor and reviewed at such meetings.

The Contractor shall provide and distribute adequate (as determined by the Engineer) written notice (two Working Days at a minimum) to all property owners prior to driveway demolition and construction.

1-07.24 Rights of Way

(July 23, 2015 APWA GSP)

Delete this Section and replace it with the following:

Street Right of Way lines, limits of easements, and limits of construction permits are indicated in the Plans. The Contractor's construction activities shall be confined within these limits, unless arrangements for use of private property are made.

Generally, the Contracting Agency will have obtained, prior to bid opening, all rights of way and easements, both permanent and temporary, necessary for carrying out the work. Exceptions to this are noted in the Bid Documents or will be brought to the Contractor's attention by a duly issued Addendum.

Whenever any of the work is accomplished on or through property other than public Right of Way, the Contractor shall meet and fulfill all covenants and stipulations of any easement agreement obtained by the Contracting Agency from the owner of the private property. Copies of the easement agreements may be included in the Contract Provisions or made available to the Contractor as soon as practical after they have been obtained by the Engineer.

Whenever easements or rights of entry have not been acquired prior to advertising, these areas are so noted in the Plans. The Contractor shall not proceed with any portion of the work in areas where right of way, easements or rights of entry have not been acquired until the Engineer certifies to the Contractor that the right of way or easement is available or that the right of entry has been received. If the Contractor is delayed due to acts of omission on the part of the Contracting Agency in obtaining easements, rights of entry or right of way, the Contractor will be entitled to an extension of time. The Contractor agrees that such delay shall not be a breach of contract.

Each property owner shall be given 48 hours' notice prior to entry by the Contractor. This includes entry onto easements and private property where private improvements must be adjusted.

The Contractor shall be responsible for providing, without expense or liability to the Contracting Agency, any additional land and access thereto that the Contractor may desire for temporary construction facilities, storage of materials, or other Contractor needs. However, before using any private property, whether adjoining the work or not, the Contractor shall file with the Engineer a written permission of the private property owner, and, upon vacating the premises, a written release from the property owner of each property disturbed or otherwise interfered with by reasons of construction pursued under this contract. The statement shall be signed by the private property owner, or proper authority acting for the owner of the private property affected, stating that permission has been granted to use the property and all necessary permits have been obtained or, in the case of a release, that the restoration of the property has been satisfactorily accomplished. The statement shall include the parcel number, address, and date of signature. Written releases must be filed with the Engineer before the Completion Date will be established.

(January 1, 2021 COK GSP)

Section 1-07.24 is supplemented with the following:

In addition to all agreements and releases between the Contractor and private property owner(s) described in this Section and as required in Section 1-07.6(2), the Contractor shall apply for a City of Kirkland Temporary Use Permit from the City of Kirkland Planning and Building Department for any temporary uses of real property (including both private property and City-owned real property) for temporary construction facilities, storage of materials, or other Contractor needs.

The Contractor shall file with the Engineer signed property release forms (in the format as detailed below) for all properties disturbed or damaged by the Contractor's operations.

PROPERTY RELEASE

(Contractor's name and address)

DATE: _____

I, _____, owner of
_____, hereby release _____,
(Contractor's name)
from any property damage or personal injury resulting from construction on or adjacent to my property
located at _____
during construction of the _____. My signature below is my
acknowledgment and acceptance that my property, as identified above, was returned to a satisfactory
condition.

Signed: _____

Name: _____

Address: _____

Phone: _____

(*****)

Supplement this Section with the following:

All equipment and materials shall be staged at an off-site location provided by the Contractor. Staging of equipment and materials within right of way or easements will not be allowed unless approved by the Owner.

1-08 PROSECUTION AND PROGRESS

Add the following new section:

1-08.0 Preliminary Matters

(May 25, 2006 APWA GSP)

1-08.0(1) Preconstruction Conference

(October 10, 2008 APWA GSP)

Prior to the Contractor beginning the work, a preconstruction conference will be held between the Contractor, the Engineer and such other interested parties as may be invited. The purpose of the preconstruction conference will be:

1. To review the initial progress schedule;
2. To establish a working understanding among the various parties associated or affected by the work;
3. To establish and review procedures for progress payment, notifications, approvals, submittals, etc.;
4. To establish normal working hours for the work;
5. To review safety standards and traffic control; and
6. To discuss such other related items as may be pertinent to the work.

The Contractor shall prepare and submit at the preconstruction conference the following:

1. A breakdown of all lump sum items;
2. A preliminary schedule of working drawing submittals; and
3. A list of material sources for approval if applicable.

(January 1, 2021 COK GSP)

Add the following new section:

1-08.0(2) Hours of Work

Except in the case of emergency, unless otherwise indicated in the Contract Documents, or unless otherwise approved by the Contracting Agency in advance, the allowable working hours for this Contract Work shall be any consecutive 8-hour period between 7:00 a.m. and 6:00 p.m. of a working day. A maximum 1-hour lunch break is allowable between 7:00 a.m. and 6:00 p.m. and does not count for purposes of the 8-hour working period. The Contract assumes a 5-day work week, exclusive of weekends and holidays observed by the City of Kirkland and identified in Section 1-08.5 of the Standard Specifications.

The normal straight time 8-hour working period for the contract shall be established at the preconstruction conference or prior to the Contractor commencing the Work.

Except in the event of an emergency, unless otherwise indicated in the Contract Documents, or unless otherwise approved in advance by the Contracting Agency (including the Contractor obtaining approval for all applicable City of Kirkland permits as required by the City of Kirkland Zoning Code), no Work shall be allowed between the hours of 6:00 p.m. and 7:00 a.m., during weekends (except driveway construction), or during holidays observed by the City of Kirkland and identified in Section 1-08.5 of the Standard Specifications.

The Contracting Agency may consider specific and limited requests by the Contractor to allow Work during one or more periods in which Work is not allowed by this Section, but approval of these requests is solely at the discretion of the Contracting Agency as a benefit to the general public. Contractor shall submit a request in writing to the Engineer, including a full and accurate explanation of the type(s) of work to be performed, the period or periods of time outside normal Work hours, and the explanation(s) for why this work cannot be performed during the allowable Work hours.

The Engineer will consider requests and determine conditions and limitations as the Engineer deems necessary, in conformance with the conditions of support for local permitting described in Section 1-07.6 of the Standard Specifications and these Special Provisions. These conditions and limitations are additional to any conditions or limitations that may be required by Contracting Agency permits and/or variances. These conditions may include, but are not limited to:

1. Require the Engineer or such assistants as the Engineer may deem necessary to be present during the Work, including (but not limited to):
 - a. Survey crews
 - b. Personnel from the Contracting Agency's material testing laboratory
 - c. Inspectors
 - d. City operations and maintenance staff
 - e. Police, fire, or other public safety officials
 - f. Any other Contracting Agency employees who, in the opinion of the Engineer, are a necessary presence for the Work outside of the allowable working hours;
2. Require the Contractor to reimburse the Contracting Agency for all additional costs and expenses in excess of straight-time costs incurred for Contracting Agency employees and expenses during such times;
3. Measure Work performed on nights, weekend days, and holidays as working days with regards to the Contract Time; and/or,
4. Consider multiple work shifts (such as a sequential 8-hour day period followed by an 8-hour night period) as multiple working days with respect to Contract Time, even if those multiple shifts occur in a single 24-hour period.

If the Engineer approves the Contractor's written request and all conditions and/or restrictions the Engineer applies to that approval are acceptable by the Contractor, the Contractor shall be responsible for obtaining work hours and noise variances as required by Section 1-07.6. The Contractor shall apply to the City of Kirkland Planning and Building Department using <http://mybuildingpermit.com>. The Engineer can provide supporting documentation, as deemed appropriate by the Engineer, to the Contractor for submission with this application.

Unless otherwise indicated in the Contract Documents or indicated by the Engineer in writing, no claims for equitable adjustments of Contract will be allowed for review and approval time frames for the Contractor to obtain approval for requests to Work outside the approved working hours in this Section. No claims for equitable adjustments of the Contract will be allowed for requirements,

including limitations, in approvals to work outside of the allowed working hours in this Section.

Approved Work outside the allowable working hours in this Section is subject to additional noise control requirements. Approval to continue work during these hours may be revoked at any time the Contractor exceeds the Contracting Agency's noise control regulations or complaints are received from the public or adjoining property owners regarding the noise from the Contractor's operations. The Contractor shall have no claim for damages or delays should such permission be revoked for these reasons.

Arterial Streets

No work will be performed on arterial streets during the peak traffic hours of 7:00 a.m. – 9:00 a.m. and 3:00 p.m. – 6:00 p.m., except emergency work to restore services, unless a City-approved traffic control plan allows work during the peak hours. The following streets are classified as arterials:

<i>STREET</i>	<i>FROM</i>	<i>TO</i>
Central Way/NE 85th St	Market St	132nd Ave NE
Juanita Dr NE /NE Juanita Dr	NE 143 rd St (City Limits)	98th Ave NE
Juanita Woodinville Way	100 th Ave NE	NE 145 th St (City Limits)
Lake St/Lake Washington Blvd/Northup Wy	Central Way	Northup Way (City Limits)
Kirkland Ave/Kirkland Way	Lake St	NE 85 th St
Lakeview Dr /NE 68th St/NE 70th St	Lake Washington Blvd	132nd Ave NE
Market St/98th Ave NE/100th Ave NE	Central Way	NE 145 th St (City Limits)
NE 116th St	98th Ave NE	Slater Ave NE
NE 120th St/132nd Ave NE	Slater Ave NE	NE 60th St (City Limits)
NE 124th St	100th Ave NE	East City Limits
NE 128th St	116 th Ave NE/116 th Way NE	120 th Ave NE
Simonds Rd NE	92 nd Ave NE (City Limits)	100 th Ave NE
Slater Ave NE	NE 116 th St	NE 124 th St
Totem Lake Blvd	NE 132nd St	124th Ave NE
3 rd Street/State Street	Central Way	NE 68 th Street/Lakeview Dr.
6 th St/6 th St S/108 th Ave NE	Central Way/NE 85 th St	South City Limits
90 th Ave NE/NE 131st Way/NE 132nd St	NE 134 th St	132nd Ave NE
120 th Ave NE/116 th Ave NE/116 th Way NE	NE 112 th St	NE 132 nd St
124th Ave NE	NE 85th St	NE 124th St
124th Ave NE	NE 132 nd St	NE 145 th Pl (City Limits)

1-08.1 Subcontracting

(January 1, 2016 COK GSP)

Section 1-08.1 is supplemented with the following:

A Subcontractor or an Agent to the Subcontractor will not be permitted to perform any work under the contract until the following documents have been completed and submitted to the Engineer:

1. Request to Sublet Work (form 421-012).

2. Statement of Intent to Pay Prevailing Wages (Form 700-029-000).

The Contractor's records pertaining to the requirements of this Special Provision shall be open to inspection or audit by representatives of the Department during the life of the contract and for a period of not less than three years after the date of acceptance of the contract. The Contractor shall retain these records for that period. The Contractor shall also guarantee that these records of all Subcontractors and Agents shall be open to similar inspection or audit for the same period.

1-08.3 Progress Schedule

(January 1, 2016 COK GSP)

Supplement this section with the following:

The order of work will be at the Contractor's option, in keeping with good construction practice and the terms of the contract. All work shall be carried out in accordance with the requirements of the City of Kirkland in compliance with the plans and specifications. However, the Contractor shall so schedule the work within the time constraints noted in the various contract documents, including any permits. The Contractor is cautioned to review said documents and permits and schedule the work appropriately as no additional compensation will be made to the Contractor due to the time constraints imposed by such documents.

1-08.3(2)A Type A Progress Schedule

(December 30, 2022 APWA GSP)

Revise this Section to read:

The Contractor shall submit 3 copies of a Type A Progress Schedule no later than at the preconstruction conference, or some other mutually agreed upon submittal time. The schedule may be a critical path method (CPM) schedule, bar chart, or other standard schedule format. Regardless of which format used, the schedule shall identify the critical path. The Engineer will evaluate the Type A Progress Schedule and approve or return the schedule for corrections within 15 calendar days of receiving the submittal.

*(*****)*

Add the following new section:

1-08.3(3)A Project-Specific Scheduling Requirements

The order of work shall be at the Contractor's option, with the exceptions noted below, and shall be in keeping with good construction practice and the terms of the Contract. Schedules shall be submitted in color hard copy, PDF, and in the electronic format of the program used to create the schedule, if requested by the owner.

Working Days

The project schedule shall be based on total allowed contract Working Days, with 5 days of float to account for unexpected site changes, Minor Changes and Force Account work.

Traffic Control Plans

The Contractor shall prepare and submit a project specific Traffic Control Plan (TCP) to the City. Review and revision of the TCP may take up to two (2) weeks. The Contractor is alerted that no work affecting traffic operations, including clear zones, may be performed until the TCP is approved.

Notifications

All notifications required by the contract which affect the critical path shall be shown as milestones on the project schedule.

Coordination With Other Contractors

All work required by Franchise Utilities or other Contractors which affect the critical path shall be shown on the project schedule. For additional schedule requirements refer to Section 1-05.14 Cooperation with Other Contractors.

1-08.4 Prosecution of Work

Delete this section and replace it with the following:

1-08.4 Notice to Proceed and Prosecution of Work

(August 3, 2015)

The Contractor shall commence onsite work on or before July 5th, 2024 and shall notify the Engineer in writing a minimum of 10 calendar days in advance of the date on which the Contractor intends to begin work.

1-08.5 Time for Completion

The third paragraph of Section 1-08.5 is revised to read:

This project shall be physically completed within 50 working days.

Contract time shall begin on the first working day the Contractor starts onsite work or 30 working days after notice to proceed, whichever occurs first.

Revise the sixth paragraph to read:

The Engineer will give the Contractor written notice of the completion date of the contract after all the Contractor's obligations under the contract have been performed by the Contractor. The following events must occur before the Completion Date can be established:

1. The physical work on the project must be complete; and
2. The Contractor must furnish all documentation required by the contract and required by law, to allow the Contracting Agency to process final acceptance of the contract. The following documents must be received by the Project Engineer prior to establishing a completion date:
 - a. Certified Payrolls (per Section 1-07.9(5)).
 - b. Material Acceptance Certification Documents
 - c. Monthly Reports of Amounts Credited as DBE Participation, as required by the Contract Provisions.
 - d. Final Contract Voucher Certification
 - e. Copies of the approved "Affidavit of Prevailing Wages Paid" for the Contractor and all Subcontractors
 - f. A copy of the Notice of Termination sent to the Washington State Department of Ecology (Ecology); the elapse of 30 calendar days from the date of receipt of the Notice of Termination by Ecology; and no rejection of the Notice of Termination by Ecology. This requirement will not apply if the Construction Stormwater General Permit is transferred back to the Contracting Agency in accordance with Section 8-01.3(16).
 - g. Property owner releases per Section 1-07.24

1-08.9 Liquidated Damages

(January 1, 2016 COK GSP)

The third paragraph of Section 1-08.9 is revised to read as follows:

Accordingly, the Contractor agrees:

1. To pay (according to the following formula) liquidated damages for each Working Day beyond the number of Working Days established for Physical Completion, and
2. To authorize the Engineer to deduct these liquidated damages from any money due or coming to the Contractor.

LIQUIDATED DAMAGES FORMULA

For $C > \$50,000 \rightarrow LD = 0.15 \times C \div T$, and

For $C \leq \$50,000 \rightarrow LD = 0.30 \times C \div T$.

Where:

LD = liquidated damages per Working Day (rounded to the nearest dollar)

C = original Contract amount

T = original time for Physical Completion

1-09 MEASUREMENT AND PAYMENT

1-09.2 Weighing Equipment

1-09.2(1) General Requirements for Weighing Equipment

(December 30, 2022 APWA GSP, Option 2)

Revise item 4 of the fifth paragraph to read:

1. Test results and scale weight records for each day's hauling operations are provided to the Engineer daily. Reporting shall utilize WSDOT form 422-027, Scaleman's Daily Report, unless the printed ticket contains the same information that is on the Scaleman's Daily Report Form. The scale operator must provide AM and/or PM tare weights for each truck on the printed ticket.

1-09.2(5) Measurement

(December 30, 2022 APWA GSP)

Revise the first paragraph to read:

Scale Verification Checks – At the Engineer's discretion, the Engineer may perform verification checks on the accuracy of each batch, hopper, or platform scale used in weighing contract items of Work.

1-09.6 Force Account

(December 30, 2022 APWA GSP)

Supplement this section with the following:

The Contracting Agency has estimated and included in the Proposal, dollar amounts for all items to be paid per force account, only to provide a common proposal for Bidders. All such dollar amounts are to become a part of Contractor's total bid. However, the Contracting Agency does not warrant expressly

or by implication, that the actual amount of work will correspond with those estimates. Payment will be made on the basis of the amount of work actually authorized by the Engineer.

1-09.7 Mobilization

(December 30, 2022 APWA GSP)

Delete this Section and replace it with the following:

Mobilization consists of preconstruction expenses and the costs of preparatory Work and operations performed by the Contractor typically occurring before 10 percent of the total original amount of an individual Bid Schedule is earned from other Contract items on that Bid Schedule. Items which are not to be included in the item of Mobilization include but are not limited to:

1. Portions of the Work covered by the specific Contract item or incidental Work which is to be included in a Contract item or items.
2. Profit, interest on borrowed money, overhead, or management costs.
3. Costs incurred for mobilizing equipment for force account Work.

Based on the lump sum Contract price for "Mobilization", partial payments will be made as follows:

1. When 5 percent of the total original Bid Schedule amount is earned from other Contract items on that original Bid Schedule, excluding amounts paid for materials on hand, 50 percent of the Bid Item for mobilization on that original Bid Schedule, 5 percent of the total of that original Bid Schedule, or 5 percent of the total original Contract amount, whichever is the least, will be paid.
2. When 10 percent of the total original Bid Schedule amount is earned from other Contract items on that original Bid Schedule, excluding amounts paid for materials on hand, 100 percent of the Bid Item for mobilization on that original Bid Schedule, 10 percent of the total of that original Bid Schedule, or 10 percent of the total original Contract amount, whichever is the least, will be paid.
3. When the Substantial Completion Date has been established for the project, payment of any remaining amount Bid for mobilization will be paid.

Nothing herein shall be construed to limit or preclude partial payments otherwise provided by the Contract.

1-09.7 Mobilization

*(*****)*

Supplement this section with the following:

All cost associated with Project Outreach Sign (Section 8-05) shall also be included in the Lump Sum item "Mobilization".

1-09.9 Payments

(December 30, 2022 APWA GSP)

Section 1-09.9 is revised to read:

The basis of payment will be the actual quantities of Work performed according to the Contract and as specified for payment.

The Contractor shall submit a breakdown of the cost of lump sum bid items at the Preconstruction Conference, to enable the Project Engineer to determine the Work performed on a monthly basis. A breakdown is not required for lump sum items that include a basis for incremental payments as part of

the respective Specification. Absent a lump sum breakdown, the Project Engineer will make a determination based on information available. The Project Engineer's determination of the cost of work shall be final.

Progress payments for completed work and material on hand will be based upon progress estimates prepared by the Engineer. A progress estimate cutoff date will be established at the preconstruction conference.

The initial progress estimate will be made not later than 30 days after the Contractor commences the work, and successive progress estimates will be made every month thereafter until the Completion Date. Progress estimates made during progress of the work are tentative, and made only for the purpose of determining progress payments. The progress estimates are subject to change at any time prior to the calculation of the final payment.

The value of the progress estimate will be the sum of the following:

1. Unit Price Items in the Bid Form — the approximate quantity of acceptable units of work completed multiplied by the unit price.
2. Lump Sum Items in the Bid Form — based on the approved Contractor's lump sum breakdown for that item, or absent such a breakdown, based on the Engineer's determination.
3. Materials on Hand — 100 percent of invoiced cost of material delivered to Job site or other storage area approved by the Engineer.
4. Change Orders — entitlement for approved extra cost or completed extra work as determined by the Engineer.

Progress payments will be made in accordance with the progress estimate less:

1. Retainage per Section 1-09.9(1), on non FHWA-funded projects;
2. The amount of progress payments previously made; and
3. Funds withheld by the Contracting Agency for disbursement in accordance with the Contract Documents.

Progress payments for work performed shall not be evidence of acceptable performance or an admission by the Contracting Agency that any work has been satisfactorily completed. The determination of payments under the contract will be final in accordance with Section 1-05.1.

Failure to perform obligations under the Contract by the Contractor may be decreed by the Contracting Agency to be adequate reason for withholding any payments until compliance is achieved.

Upon completion of all Work and after final inspection (Section 1-05.11), the amount due the Contractor under the Contract will be paid based upon the final estimate made by the Engineer and presentation of a Final Contract Voucher Certification to be signed by the Contractor. The Contractor's signature on such voucher shall be deemed a release of all claims of the Contractor unless a Certified Claim is filed in accordance with the requirements of Section 1-09.11 and is expressly excepted from the Contractor's certification on the Final Contract Voucher Certification. The date the Contracting Agency signs the Final Contract Voucher Certification constitutes the final acceptance date (Section 1-05.12).

If the Contractor fails, refuses, or is unable to sign and return the Final Contract Voucher Certification or any other documentation required for completion and final acceptance of the Contract, the Contracting Agency reserves the right to establish a Completion Date (for the purpose of meeting the requirements of RCW 60.28) and unilaterally accept the Contract. Unilateral final acceptance will occur only after the Contractor has been provided the opportunity, by written request from the Engineer, to voluntarily submit such documents. If voluntary compliance is not achieved, formal notification of the impending establishment of a Completion Date and unilateral final acceptance will be provided by email with delivery confirmation from the Contracting Agency to the Contractor, which will provide 30 calendar days for the Contractor to submit the necessary documents. The 30 calendar day period will begin on the date the email with delivery confirmation is received by the Contractor. The date the Contracting Agency unilaterally signs the Final Contract Voucher Certification shall constitute the Completion Date and the final acceptance date (Section 1-05.12). The reservation by the Contracting Agency to unilaterally accept the Contract will apply to Contracts that are Physically Completed in accordance with Section 1-08.5, or for Contracts that are terminated in accordance with Section 1-08.10. Unilateral final acceptance of the Contract by the Contracting Agency does not in any way relieve the Contractor of their responsibility to comply with all Federal, State, tribal, or local laws, ordinances, and regulations that affect the Work under the Contract.

Payment to the Contractor of partial estimates, final estimates, and retained percentages shall be subject to controlling laws.

(January 1, 2016 COK GSP)

Section 1-09.9 is supplemented with the following:

Unless otherwise agreed to by both parties, the work period shall coincide with the calendar month. A check will be mailed or made available to the Contractor no later than thirty (30) days following the last day of the work period.

1-09.11 Disputes and Claims

1-09.11(3) Time Limitation and Jurisdiction

(December 30, 2022 APWA GSP)

Revise this section to read:

For the convenience of the parties to the Contract it is mutually agreed by the parties that all claims or causes of action which the Contractor has against the Contracting Agency arising from the Contract shall be brought within 180 calendar days from the date of final acceptance (Section 1-05.12) of the Contract by the Contracting Agency; and it is further agreed that all such claims or causes of action shall be brought only in the Superior Court of the county where the Contracting Agency headquarters is located, provided that where an action is asserted against a county, RCW 36.01.050 shall control venue and jurisdiction. The parties understand and agree that the Contractor's failure to bring suit within the time period provided, shall be a complete bar to all such claims or causes of action. It is further mutually agreed by the parties that when claims or causes of action which the Contractor asserts against the Contracting Agency arising from the Contract are filed with the Contracting Agency or initiated in court, the Contractor shall permit the Contracting Agency to have timely access to all records deemed necessary by the Contracting Agency to assist in evaluating the claims or action.

1-09.13 Claims Resolution

1-09.13(3)A Arbitration General

(January 19, 2022 APWA GSP)

Revise the third paragraph to read:

The Contracting Agency and the Contractor mutually agree to be bound by the decision of the arbitrator, and judgment upon the award rendered by the arbitrator may be entered in the Superior Court of the county in which the Contracting Agency's headquarters is located, provided that where claims subject to arbitration are asserted against a county, RCW 36.01.050 shall control venue and jurisdiction of the Superior Court. The decision of the arbitrator and the specific basis for the decision shall be in writing. The arbitrator shall use the Contract as a basis for decisions.

1-09.13(4) Venue for Litigation

(December 30, 2022 APWA GSP)

Revise this section to read:

Litigation shall be brought in the Superior Court of the county in which the Contracting Agency's headquarters is located, provided that where claims are asserted against a county, RCW 36.01.050 shall control venue and jurisdiction of the Superior Court. It is mutually agreed by the parties that when litigation occurs, the Contractor shall permit the Contracting Agency to have timely access to all records deemed necessary by the Contracting Agency to assist in evaluating the claims or action.

1-10 TEMPORARY TRAFFIC CONTROL

1-10.2 Traffic Control Management

1-10.2(1) General

(October 3, 2022 WSDOT GSP)

Section 1-10.2(1) is supplemented with the following:

The Traffic Control Supervisor shall be certified by one of the following:

The Northwest Laborers-Employers Training Trust
27055 Ohio Ave.
Kingston, WA 98346
(360) 297-3035
<https://www.nwlett.edu>

Evergreen Safety Council
12545 135th Ave. NE
Kirkland, WA 98034-8709
1-800-521-0778
<https://www.esc.org>

The American Traffic Safety Services Association
15 Riverside Parkway, Suite 100
Fredericksburg, Virginia 22406-1022
Training Dept. Toll Free (877) 642-4637
Phone: (540) 368-1701
<https://altssa.com/training>

Integrity Safety
13912 NE 20th Ave.
Vancouver, WA 98686
(360) 574-6071
<https://www.integritysafety.com>

US Safety Alliance
(904) 705-5660
<https://www.ussafetyalliance.com>

K&D Services Inc.
2719 Rockefeller Ave.
Everett, WA 98201
(800) 343-4049
<https://www.kndservices.net>

1-10.2(2) Traffic Control Plans

(*****)

Delete the first paragraph and replace it with the following:

The Contractor shall submit a Traffic Control Plan or Plans showing a method of handling traffic. All construction signs, flaggers, spotters and other traffic control devices shall be shown on the Traffic Control Plan(s). Generic WSDOT plans will not be acceptable. The Contractor's proposed Traffic Control Plans shall show the necessary lane closures, lane shifts, construction signs, flaggers, spotters, and other traffic control devices required to support each phase of the construction. A separate plan shall be prepared for each major construction phase. The Traffic Control Plans shall be prepared by the Contractor's Traffic Control Supervisor or an engineer licensed in the State of Washington and shall conform to the requirements contained in the latest version of the Manual on Uniform Traffic Control Devices (MUTCD) and the latest version of the Work Zone Traffic Control Guidelines published by WSDOT.

Each temporary traffic control plan shall include two (2) flaggers which shall be present at all times construction activities occur.

Traffic Control Plans shall also specify how accessible pedestrian routes shall be maintained through the project site as discussed in Section 1-07.23, and how existing driveway access will be maintained throughout the duration of construction. A specific plan shall be provided for each driveway.

Prior to submitting the initial Traffic Control Plans for review by the Engineer, the Contractor shall meet with the Engineer and provide a detailed explanation of his proposed construction schedule, construction phasing, and associated temporary traffic control implementation. The plan must be acceptable to the Engineer prior to the Contractor submitting the initial set of Traffic Control Plans. No construction will be allowed until the Traffic Control Plans are acceptable to and approved by the Engineer.

Payment for developing approved Traffic Control Plans shall be considered incidental to the lump sum price in the Proposal for "Project Temporary Traffic Control" and no additional compensation will be made.

1-10.3 Traffic Control Labor, Procedures and Devices

1-10.3(2) Traffic Control Procedures

(*****)

Supplement this section with the following:

In all cases, local and emergency access must be maintained at all times.

All excavation(s) outside of the lane closures allowed during peak traffic hours shall be restored sufficiently by the Contractor (as judged solely by the Engineer) to allow unobstructed flow of traffic during peak flow hours.

All other traffic lanes will remain in use with direction of traffic as approved by the City based on the Contractor-provided Traffic Control Plans.

Excavations will not be allowed to remain open during non-working hours. All open excavation within the driving surface shall be backfilled and covered with a 2-inch temporary HMA patch, permanently restored per the Plans, or covered with steel sheets with appropriate traffic warning signs. Steel sheets shall not remain in place over weekends within 100 feet of any intersection as measured from the mainline stop bar. Cold mix will not be allowed for temporary trench restoration. All work described in this section shall be included in the Lump Sum Contract price for "Project Temporary Traffic Control".

1-10.3(3)C Portable Changeable Message Sign

(*****)

Supplement this section with the following:

Portable Changeable Message Signs (PCMS) will not be required for this project.

1-10.5 Payment

1-10.5(1) Lump Sum Bid for Project (No Unit Items)

(May 16, 2006 COK GSP)

Supplement this Section with the following:

"Project Temporary Traffic Control", lump sum.

Costs for layout, installation, removal, and transport of project signage shall be included with the Contract lump sum price for "Project Temporary Traffic Control." This Bid item shall also constitute full compensation for all labor, tools, equipment, and materials necessary and incidental to maintaining temporary driving surface as required by Section 1-07.23(1), traffic and pedestrian control as required throughout the project duration in compliance with the MUTCD including, but not limited to, reflective signage, barricades, lights, traffic cones, and temporary pavement markings. Providing a minimum of two (2) flaggers and one (1) Traffic Control Supervisor during all periods of construction activities shall be included in the lump sum Bid item "Project Temporary Traffic Control".

No separate payment will be made for preparation of the Traffic Control or Detour Plans. All costs for developing, updating, and implementing Traffic Control or Detour Plans shall be included in "Project Temporary Traffic Control".

No separate payment will be made for materials used to maintain temporary traffic that are not incorporated into the final improvements. Such materials shall be included in and considered incidental to "Project Temporary Traffic Control".

All costs for minimizing drop-offs and maintaining access to existing streets and driveways including, but not limited to, steel sheeting, and channelization devices, shall be included by the Contractor in the lump sum Bid price for "Project Temporary Traffic Control". No additional or separate compensation will be allowed.

The Lump Sum bid item for "Project Temporary Traffic Control" shall cover the cost to provide temporary traffic control for the for each and every working day (the entire contract duration) allowed as defined in Section 1-08.5 of these Special Provisions. The total allowable working days defined for this contract includes sufficient time to complete all work associated with items paid as "Minor Change" and/or as other Force Account items. Should the Contractor complete the work in fewer working days than allowed the Contract Lump Sum item will be paid in full and shall be consider an incentive to the Contractor for early completion.

For additional working days approved via a change order for work that is not identified to be paid by force account, the daily cost for Project Temporary Traffic Control shall be determined by dividing the lump sum Contract price for "Project Temporary Traffic Control" by the original allowed contract working days as defined in Section 1-08.5 of these Special Provisions.

END OF DIVISION 1

DIVISION 2 EARTHWORK

2-01 CLEARING, GRUBBING, AND ROADSIDE CLEANUP

2-01.1 Description

This section is supplemented with the following:

The Contractor shall consider the clearing and grubbing limits for this project to be 1-foot beyond the proposed improvements.

2-01.2 Disposal of Usable Material and Debris

This section is supplemented with the following:

The Contractor shall dispose of all debris in accordance with Disposal Method No. 2 per Section 2-01.2(2).

2-01.2(2) Disposal Method No. 2 – Waste Site

This section is supplemented with the following:

No waste site has been provided for the disposal of excess or excavated materials. The Contractor shall make his or her own arrangements for obtaining waste sites in accordance with Section 2-03.3(7)C of the Standard Specifications.

2-01.3 Construction Requirements

2-01.3(4) Roadside Cleanup

Delete this section and replace it with the following:

2-01.3(4) Cleanup and Restoration

From time to time throughout the progress of the work, the Contractor, when directed by the Owner's Representative, shall clean up and remove all refuse and unwanted or unused materials resulting from the work, at the Contractor's expense. If the Contractor fails to do so within 24 hours after the request by the Owner's Representative, the work may be done by the City and the cost thereof be charged to the Contractor and deducted from monies due to the Contractor.

All cleanup shall be performed as specified in the various sections of these Specifications. Final cleanup shall be in accordance with Section 1-04.11.

2-01.3(4) Roadside Cleanup

Delete Section 2-01.3(4) in its entirety and replace it with the following:

2-01.3(4) Cleanup and Restoration

From time to time throughout the progress of the work, the Contractor, when directed by the Owner's Representative, shall clean up and remove all refuse and unwanted or unused materials resulting from the work, at the Contractor's expense. If the Contractor fails to do so within 24 hours after the request by the Owner's Representative, the work may be done by the City and the cost thereof be charged to the Contractor and deducted from monies due to the Contractor.

All cleanup shall be performed as specified in the various sections of these Specifications. Final cleanup shall be in accordance with Section 1-04.11.

2-01.4 Measurement

Delete and replace this Section with the following:

No unit of measure shall apply to work required under section 2-01.

2-01.5 Measurement

Delete and replace this Section with the following:

All work required under Section 2-01 shall be incidental to and include in other bid item provided within the Proposal, no other compensation will be made.

2-02 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

2-02.1 Description

This section is supplemented with the following:

This work shall consist of removing all materials noted in this section of the Special Provisions as well as any other materials designated for removal on the Plans or necessary for the construction of this project for which a specific Bid item is not provided in the Proposal. The following items shall be included under "Removal of Structures and Obstructions", as well as other items noted on the Plans:

1. Remove wooden fence posts – If private property owner wish to retain post, contractor to neatly stack post along property line. If property owner does not wish to maintain contractor shall dispose of an off-site location provided by the Contractor.
2. Protect existing monitoring wells and adjust casting to finish grade.
3. Remove approximately 80 LF of cement concrete storm pipe.
4. Remove catch basin.

Items to be removed, abandoned, or relocated that are identified on the Plans but not specifically called out above shall also be paid for under the lump sum bid item for "Removal of Structures and Obstructions".

In general, the Contractor shall remove and dispose, relocate, or abandon existing items which conflict with the new improvements. Where not in conflict, or where not specified for demolition or removal, Contractor shall protect all private and public improvements.

2-02.3 Construction Requirements

Supplement this section with the following:

Prior to relocating or realigning any feature, the Contractor shall mark the proposed location in the field and obtain approval from the Engineer.

All portions of abandoned utility systems (previously abandoned or abandoned by this project) noted specifically for removal on the Plans shall be removed and disposed of.

Voids left by the removal or abandonment of items within the right-of-way shall be backfilled with CSTC voids outside of the right-of-way may be backfilled with select native materials as approved by the Engineer and compacted to 95 percent of maximum density as specified in Section 2-03.3(14)D of the Standard Specifications.

All material removed for the construction of the project shall be hauled off-site to a legal disposal site by the Contractor, except for materials specifically noted for salvage, reinstallation, or relocation. The Contractor shall determine the requirements of his selected disposal site related to accepting the

material to be deposited on the site. Testing of the material by the disposal site or refusal of the site to accept the material shall not be the basis for additional payment or for an extension of the Contract time. The cost of all such requirements shall be included in the various Bid prices in the Proposal.

2-02.3(3) Removal of Pavement, Sidewalks, Curbs, and Gutters

Supplement this section with the following:

Any pavement, sidewalk, or curb and gutter that is damaged and not designated for removal on the Plans or preapproved by the Owner shall be repaired or replaced entirely at the Contractor's expense.

Existing pavement, sidewalk, and curb and gutter shall be sawcut full depth along all edges abutting hard surface to remain before commencing removal. These items shall be removed as required for construction, and to the limits shown in the Plans or approved by the Engineer. Pavement, sidewalk, and curb and gutter thickness, type, and extent may vary.

The location of sawcuts shall be marked in the field by the Contractor and approved by the Engineer prior to cutting of pavement, sidewalk, or curb and gutter.

Removal shall be accomplished by making a neat longitudinal vertical full depth cut along the boundaries of the area to be removed. All cuts shall be continuous and shall be made with saws specifically equipped for this purpose. No skip cutting will be allowed. Existing sidewalk or curb and gutter shall be removed in full panel sections and removed or sawcut at expansion/contraction joints only, unless directed otherwise by the Engineer or noted otherwise on the Plans.

Wheel cutting or jack hammering will not be considered an acceptable means of pavement, sidewalk, or curb and gutter "cutting," and will not be measured for payment.

Add the following new sections:

2-02.3(4) Salvage

All salvageable materials not named in the Special Provisions, identified on the Plans, or otherwise identified by the Contracting Agency as City property shall become the property of the Contractor.

2-02.3(5) Adjust Utility to Finished Grade

All existing utilities within or abutting new improvements, including but not limited to storm and sewer structures, manholes, and valve cans, shall be adjusted to finished grade. The Contractor shall, prior to beginning any work, familiarize himself with the existing utility locations. The Contractor shall mark the location of all utilities prior to paving the new surface. Final adjustment shall be smooth and flush with finished grade.

Existing boxes, rings, grates, and covers shall be inspected by the Owner of the utility prior to reuse. Materials determined to be in satisfactory condition, and noted in the Plans for reinstallation, shall be reset in a careful and workmanlike manner to conform to the new grade. Materials determined to be in satisfactory condition, but not noted in the Plans for reinstallation, shall be salvaged to the Owner or removed and disposed of, as directed by the Owner.

Materials determined by the Owner to be in unsatisfactory or poor condition shall be removed and disposed of by the Contractor, and replaced as noted in the Plans or with new materials directed by the Owner.

Any damage occurring due to the Contractor's operations shall be repaired at the Contractor's own expense. All materials to be reused or salvaged shall be thoroughly cleaned. The Contractor shall be

responsible for referencing and keeping a record of all structures and appurtenances encountered and shall submit a copy of these references to the Engineer.

Adjustment section, pick holes, joints, and other penetrations shall be grouted inside and out to provide a water-tight seal.

Manholes and catch basins shall be adjusted with pre-cast grade rings and mortar, or rubber Cretex adjustment rings, with maximum 2-inch thickness. Metal adjustment rings shall not be used. The use of bricks will only be allowed if approved by the Engineer on a case-by-case basis where a full adjustment ring cannot be used. Rings and frames shall be securely grouted to the structure.

Structures and appurtenances shall be adjusted to finished grade per City of Kirkland Standard Plans and as specified in the Plans.

2-02.4 Measurement

Supplement this Section with the following:

No specific unit of measure shall apply to the lump sum item for "Removal of Structures and Obstructions".

"Sawcut Asphalt conc. Pavement" will be measured per linear foot along the final sawcut line, regardless of depth. Sawcutting will only be measured once for payment at each location, for each material. Sawcuts throughout construction which are for interim construction purposes will not be measured for payment. A clean, vertical butt joint shall be provided between any surface that is to remain and the portion to be removed. Edges of pavement that becomes damaged after initial sawcutting shall be recut by the Contractor to provide a clean, vertical joint. This recut will not be measured for payment.

Sawcutting of cement concrete sidewalk and curbs shall be considered incidental to the Bid item it is associated with and will not be measured for payment.

"Asphalt Conc. Pavement Removal" will be measured per square yard, regardless of depth. Only pavement designated for removal on the Plans or approved by the Engineer will be measured for payment.

"Cement Conc. Curb Removal" will be measured per linear foot, regardless of type and depth. Only curb designated for removal on the Plans or approved by the Engineer will be measured for payment.

"Cement Conc. Sidewalk Removal" will be measured per square yard, regardless of depth. Only cement concrete sidewalk designated for removal on the Plans or approved by the Engineer will be measured for payment.

2-02.5 Payment

Supplement this Section with the following:

"Removal of Structures and Obstructions", lump sum.

All items noted for removal, relocation, protect and adjust to finish grade, reinstallation, or salvage on the Plans or specified herein, to which other Bid items do not apply, shall be considered included in the lump sum Bid item "Removal of Structures and Obstructions".

"Sawcut Asphalt Conc. Pavement", per linear foot.

The unit Contract price for “Sawcut Asphalt conc. Pavement” shall be full compensation for all costs necessary and incidental to performing the sawcut in the final location, regardless of depth.

“Asphalt Conc. Pavement Removal”, per square yard.

The unit Contract price for “Asphalt Conc. Pavement Removal” shall be full compensation for all costs necessary and incidental to completely removing and disposing of asphalt concrete pavement, regardless of depth.

“Cement Conc. Curb Removal”, per linear foot.

The unit Contract price for “Cement Conc. Curb Removal” shall be full compensation for all costs necessary and incidental to completely removing and disposing of concrete curbs, including but not limited to saw cutting.

“Cement Conc. Sidewalk Removal”, per square yard.

The unit Contract price for “Cement Conc. Sidewalk Removal” shall be full compensation for all costs necessary and incidental to completely removing and disposing of concrete sidewalks, regardless of depth, including but not limited to saw cutting.

2-03 ROADWAY EXCAVATION AND EMBANKMENT

2-03.1 Description

Supplement this section with the following:

The work shall include all excavation for the roadway, curbs, sidewalks, and excavation for all other work unless specifically paid for under other Bid items included in the Proposal.

2-03.3 Construction Requirements

Supplement this section with the following:

Any excavation beyond that necessary for construction, unless otherwise directed by the Engineer in writing, will be considered unauthorized and will not be measured for payment. Unauthorized over-excavated areas shall be filled with Gravel Borrow to be furnished, placed, and compacted at the Contractor’s expense.

2-03.3(7) Disposal of Surplus Material

Supplement this section with the following:

Disposal of surplus material shall be considered incidental to the project and as such, included in the various unit prices bid in the Proposal.

2-03.4 Measurement

Delete this Section:

2-03.5 Payment

Delete this section and replace with the following:

All cost associated with Section 2-03 shall be considered incidental to and included in other bid items of work provided within the Proposal, no separate measurement or payment will be made.

2-04 HAUL

Add the following new section:

2-04.2 Hauling on Other Than State Highways

If the sources of materials provided by the Contractor necessitate hauling over roads other than City streets, the Contractor shall, at the Contractor's expense, make all arrangements for the use and cleaning, if necessary, of the haul routes.

2-04.5 Payment

Delete this section and replace with the following:

All cost associated with Section 2-04 shall be considered incidental to and included in other bid items of work provided within the Proposal, no separate measurement or payment will be made.

2-06 SUBGRADE PREPARATION

2-06.3 Construction Requirements

Supplement this Section with the following:

The subgrade must be suitable, as determined by the Engineer, prior to placement of crushed rock. All costs for protection of the subgrade, including replacing all material that becomes unsuitable while the subgrade is exposed, shall be incidental to the Contract and no additional compensation shall be made.

Preparation and compaction of the subgrade shall be considered incidental to the construction and all costs thereof shall be included by the Contractor in other pay items of the Contract. The subgrade shall be shaped and maintained to drain at all times during construction, including temporary ditches and modifications to drainage structures necessary to eliminate standing water on the subgrade.

2-06.5 Measurement and Payment

Delete this section and replace with the following:

All cost associated with Section 2-06 shall be considered incidental to and included in other bid items of work provided within the Proposal, no separate measurement or payment will be made.

2-07 WATER

2-07.3 Construction Requirements

Supplement this Section with the following:

The hauling and applying water for testing, compacting embankments, constructing subgrade, placing of crushed surfacing, dust control, and as the Engineer requires, will be incidental to the various bid items and no additional compensation shall be considered.

The Contractor will be required to obtain water meter and permit from the City of Kirkland. Actual water required for the UIC well testing will be provided at no cost to the contractor.

2-07.4 Measurement

Delete this Section.

2-07.5 Payment

Delete this section and replace with the following:

All cost associated with Section 2-07 shall be considered incidental to and included in other bid items of work provided within the Proposal, no separate measurement or payment will be made.

2-09 STRUCTURE EXCAVATION

2-09.3 Construction Requirements

2-09.3(1) General Requirements

Supplement this section with the following:

Where excavation is required new right-of-way/property lines the Contractor shall employ a shoring system that will prevent disturbance outside right-of-way or easement (when shown on the plans) provide for construction.

2-09.3(1)D Disposal of Excavated Material

Supplement this section with the following:

All costs associated with disposing of, hauling, or stockpiling excavated material shall be considered incidental to the various bid items and no additional compensation will be considered.

2-09.4 Measurement

Delete this section and replace with the following:

No specific unit of measurement shall apply to the lump sum item “Shoring or Extra Excavation Cl. B”.

No measurement will be made for any class of structure excavation. Structure excavation shall be considered incidental to the improvement being installed.

2-09.5 Payment

Delete this section and replace with the following:

“Shoring or Extra Excavation Cl. B”, lump sum.

The lump sum Contract price for “Shoring or Extra Excavation Cl. B” shall be full compensation for all costs necessary and incidental to designing, furnishing, installing, and removing shoring systems required for all excavations on the project. When extra excavation is used in lieu of constructing the shoring, cofferdam, sheet piles, or caisson, the lump sum contract price shall be full pay for all excavation, backfill, compaction, and other work required for Extra Excavation Cl. B.

2-11 TRIMMING AND CLEANUP

2-11.1 Description

Supplement this section with the following:

During construction, and then upon completion of the work, the Contractor shall thoroughly comb and search the surrounding area and remove any construction material or garbage thrown or discarded amongst the trees, bushes, ditches, etc., such as paint cans, cartons, broken pipe, pavement pieces, paper, bottles, etc., and shall tidy up the surrounding general area to make it neat in appearance, including removal of debris that may or may not have been deposited by Contractor's operation.

Paved surfaces, existing and new, shall be thoroughly cleaned (i.e. by street sweeper) upon completion of work within the area, and shall require daily cleaning if dust or mud exists. Prior to Physical Completion, all hard surfaces shall be clean.

2-11.3 Construction Requirements

Add the following new subsections:

2-11.3(1) Routine Cleaning

General

1. Retain all stored materials and equipment in an orderly fashion allowing maximum access, not impeding drainage or traffic, and providing protection.
2. Do not allow the accumulation of scrap, debris, waste material, and other items not required for this work.
3. At least once a week, and more often if necessary or as directed by the Construction Inspector, the Contractor shall completely remove all scrap, debris, and waste material from the project site.
4. Provide adequate storage for all materials awaiting removal from the project site, observing all requirements for fire protection and protection of the environment.

Site

1. Daily and more often if necessary or as directed, inspect the site and pick up all scrap, debris, and waste material. Remove all such items to the place designated for their storage until it can be disposed of.
2. Weekly, and more often if necessary or directed, inspect all arrangements of materials stored on the site, restack, tidy, or otherwise service all arrangements to meet the requirements above.
3. Maintain the site in a neat and orderly condition at all times so as to meet the approval of the Owner.

2-11.3(2) Final Cleaning

Prior to final inspection for Physical Completion, remove from the job site all tools, surplus materials, equipment, scrap, debris, and waste.

2-11.4 Measurement

Delete this section and replace with the following:

Trimming and cleanup shall be considered incidental to the lump sum Contract price for "Erosion Control and Water Pollution Prevention " and will not be measured for separate payment.

END OF DIVISION 2

DIVISION 3
AGGREGATE PRODUCTION AND ACCEPTANCE

3-01 PRODUCTION FROM QUARRY AND PIT SITES

3-01.4 Contractor Furnished Material Sources

Supplement this section with the following:

No source has been provided for any imported materials necessary for the construction of this improvement.

The Contractor shall make arrangements to obtain the necessary materials at no expense to the City, and all costs of acquiring, producing, and placing this material in the finished work shall be included in the unit Contract prices for the various items involved.

If the source of materials provided by the Contractor necessitates hauling over roads other than City streets, the Contractor at its own expense shall make all arrangements for the use of haul routes.

3-01.5 Measurement

Delete this Section.

3-01.6 Payment

Delete this section and replace with the following:

All cost associated with Section 3-01 shall be considered incidental to and included in other bid items of work provided within the Proposal, no separate measurement or payment will be made.

END OF DIVISION 3

DIVISION 4 BASES

4-04 BALLAST AND CRUSHED SURFACING

4-04.1 Description

Supplement this section with the following:

Crushed surfacing shall be placed in accordance with the Standard Specifications and the Plans, or as directed by the Engineer.

4-04.2 Materials

Supplement this section with the following:

Crushed Surfacing Top Course per Section 9-03.9(3) shall be used under concrete and paved surfaces, for trench backfill and pipe bedding, structure backfill, and as specified herein and shown on the Plans.

4-04.4 Measurement

Supplement this section with the following:

When used directly under HMA, curbs, and sidewalks Crushed surfacing top course will be measured as "Crushed Surfacing Top Course" per ton based on certified truck tickets collected by the inspector at the end of each working day.

Truck tickets for Crushed Surfacing Top Course to be paid under this item per Ton (not incidental to other items) **shall be provided to the Inspector on the day of delivery**. If not provided on the day of delivery, the CSTC will be considered incidental to other Bid items.

Crushed Surfacing Top Course used for trench backfill, pipe bedding, structure backfill, and other items as shown on the Plans and described herein will not be measured for payment and is considered incidental to and included in other Bid items in the Contract.

Crushed surfacing material used for temporary purposes, including but not limited to driving surfaces, will not be measured for payment unless it is incorporated into construction of the final improvements as required by the Plans.

Should the Contractor **not** prepare subgrade to the correct line and grades and crushed surfacing materials are placed in excess of the depths required by the Plans, the excess depth will not be measured for payment. The crushed surfacing in these areas will instead be measured by neat line to be converted to tons for deduction in quantities accepted based on the certified truck tickets.

Water used in placing and compacting surfacing materials shall be considered incidental to the material being placed.

4-04.5 Payment

Supplement this section with the following:

"Crushed Surfacing Top Course", per ton.

The unit Contract price for "Crushed Surfacing Top Course" shall be full compensation for all costs necessary and incidental to satisfactorily completing the work as defined in the Plans, Standard Specifications and these Special Provisions.

It is the Contractor's responsibility to track crushed surfacing materials measured per ton separately from crushed surfacing materials incidental to other Bid items by providing separate stockpiles or another method acceptable by the Engineer. Should the Contractor not provide separate stockpiles or other method as approved by the engineer, crushed surfacing material paid for per ton will not be based on certified truck tickets, but instead be measured by neat line and converted to tons based neat line measurements in the field and on the cross sections/depths provided in the Plans.

END OF DIVISION 4

DIVISION 5 SURFACE TREATMENTS AND PAVEMENTS

(*****)

Delete Section 5-04 and all amendments and replace it with the following Section 5-04:

5-04 HOT MIX ASPHALT

5-04.1 Description

This Work shall consist of providing and placing one or more layers of plant-mixed hot mix asphalt (HMA) on a prepared foundation or base in accordance with these Specifications and the lines, grades, thicknesses, and typical cross-sections shown in the Plans. The manufacture of HMA may include warm mix asphalt (WMA) processes in accordance with these Specifications. WMA processes include organic additives, chemical additives, and foaming.

HMA shall be composed of asphalt binder and mineral materials as may be required, mixed in the proportions specified to provide a homogeneous, stable, and workable mixture.

5-04.2 Materials

Materials shall meet the requirements of the following sections:

Asphalt Binder	9-02.1(4)
Cationic Emulsified Asphalt	9-02.1(6)
Anti-Stripping Additive	9-02.4
HMA Additive	9-02.5
Aggregates	9-03.8
Recycled Asphalt Pavement	9-03.8(3)B
Mineral Filler	9-03.8(5)
Recycled Material	9-03.21
Portland Cement	9-01
Sand	9-03.1(2)

(As noted in 5-04.3(5)C for crack sealing)

Joint Sealant	9-04.2
Foam Backer Rod	9-04.2(3)A

The Contract documents may establish that the various mineral materials required for the manufacture of HMA will be furnished in whole or in part by the Contracting Agency. If the documents do not establish the furnishing of any of these mineral materials by the Contracting Agency, the Contractor shall be required to furnish such materials in the amounts required for the designated mix. Mineral materials include coarse and fine aggregates, and mineral filler.

The Contractor may choose to utilize recycled asphalt pavement (RAP) in the production of HMA. The RAP may be from pavements removed under the Contract, if any, or pavement material from an existing stockpile.

The Contractor may use up to 20 percent RAP by total weight of HMA with no additional sampling or testing of the RAP. The RAP shall be sampled and tested at a frequency of one sample for every 1,000 tons produced and not less than ten samples per project. The asphalt content and gradation test data shall be reported to the Contracting Agency when submitting the mix design for approval on the QPL. The Contractor shall include the RAP as part of the mix design as defined in these Specifications.

The grade of asphalt binder shall be as required by the Contract. Blending of asphalt binder from different sources is not permitted.

The Contractor may only use warm mix asphalt (WMA) processes in the production of HMA with 20 percent or less RAP by total weight of HMA. The Contractor shall submit to the Engineer for approval the process that is proposed and how it will be used in the manufacture of HMA.

Production of aggregates shall comply with the requirements of Section 3-01.

Preparation of stockpile site, the stockpiling of aggregates, and the removal of aggregates from stockpiles shall comply with the requirements of Section 3-02.

5-04.2(1) How to Get an HMA Mix Design on the QPL

If the contractor wishes to submit a mix design for inclusion in the Qualified Products List (QPL), please follow the WSDOT process outlined in Standard Specification 5-04.2(1).

5-04.2(1)A Vacant

5-04.2(2) Mix Design – Obtaining Project Approval

No paving shall begin prior to the approval of the mix design by the Engineer.

Nonstatistical evaluation will be used for all HMA not designated as Commercial HMA in the contract documents.

Commercial evaluation will be used for Commercial HMA and for other classes of HMA in the following applications: sidewalks, road approaches, ditches, slopes, paths, trails, gores, prelevel, and pavement repair. Other nonstructural applications of HMA accepted by commercial evaluation shall be as approved by the Project Engineer. Sampling and testing of HMA accepted by commercial evaluation will be at the option of the Project Engineer. The Proposal quantity of HMA that is accepted by commercial evaluation will be excluded from the quantities used in the determination of nonstatistical evaluation.

Nonstatistical Mix Design. Fifteen days prior to the first day of paving the contractor shall provide one of the following mix design verification certifications for Contracting Agency review;

- The WSDOT Mix Design Evaluation Report from the current WSDOT QPL, or one of the mix design verification certifications listed below.
- The proposed HMA mix design on WSDOT Form 350-042 with the seal and certification (stamp & sig-nature) of a valid licensed Washington State Professional Engineer.
- The Mix Design Report for the proposed HMA mix design developed by a qualified City or County laboratory that is within one year of the approval date.**

The mix design shall be performed by a lab accredited by a national authority such as Laboratory Accreditation Bureau, L-A-B for Construction Materials Testing, The Construction Materials Engineering Council (CMEC's) ISO 17025 or AASHTO Accreditation Program (AAP) and shall supply evidence of participation in the AASHTO: resource proficiency sample program.

Mix designs for HMA accepted by Nonstatistical evaluation shall;

- Have the aggregate structure and asphalt binder content determined in accordance with WSDOT Standard Operating Procedure 732 and meet the requirements of Sections 9-03.8(2), except that Hamburg testing for ruts and stripping are at the discretion of the Engineer, and 9-03.8(6).
- Have anti-strip requirements, if any, for the proposed mix design determined in accordance with AASHTO T 283 or T 324, or based on historic anti-strip and aggregate source compatibility from previous WSDOT lab testing.

At the discretion of the Engineer, agencies may accept verified mix designs older than 12 months from the original verification date with a certification from the Contractor that the materials and sources are the same as those shown on the original mix design.

Commercial Evaluation Approval of a mix design for “Commercial Evaluation” will be based on a review of the Contractor’s submittal of WSDOT Form 350-042 (For commercial mixes, AASHTO T 324 evaluation is not required) or a Mix Design from the current WSDOT QPL or from one of the processes allowed by this section. Testing of the HMA by the Contracting Agency for mix design approval is not required.

For the Bid Item Commercial HMA, the Contractor shall select a class of HMA and design level of Equivalent Single Axle Loads (ESAL’s) appropriate for the required use.

5-04.2(2)B Using Warm Mix Asphalt Processes

The Contractor may elect to use additives that reduce the optimum mixing temperature or serve as a compaction aid for producing HMA. Additives include organic additives, chemical additives and foaming processes. The use of Additives is subject to the following:

- Do not use additives that reduce the mixing temperature more than allowed in Section 5-04.3(6) in the production of mixtures.
- Before using additives, obtain the Engineer’s approval using WSDOT Form 350-076 to describe the proposed additive and process.

5-04.3 Construction Requirements

5-04.3(1) Weather Limitations

Do not place HMA for wearing course on any Traveled Way beginning October 1st through March 31st of the following year without written concurrence from the Engineer.

Do not place HMA on any wet surface, or when the average surface temperatures are less than those specified below, or when weather conditions otherwise prevent the proper handling or finishing of the HMA.

Minimum Surface Temperature for Paving

Compacted Thickness (Feet)	Wearing Course	Other Courses
Less than 0.10	55°F	45°F
0.10 to .20	45°F	35°F
More than 0.20	35°F	35°F

5-04.3(2) Paving Under Traffic

When the Roadway being paved is open to traffic, the requirements of this Section shall apply.

The Contractor shall keep intersections open to traffic at all times except when paving the intersection or paving across the intersection. During such time, and provided that there has been an advance warning to the public, the intersection may be closed for the minimum time required to place and compact the mixture. In hot weather, the Engineer may require the application of water to the pavement to accelerate the finish rolling of the pavement and to shorten the time required before reopening to traffic.

Before closing an intersection, advance warning signs shall be placed and signs shall also be placed marking the detour or alternate route.

During paving operations, temporary pavement markings shall be maintained throughout the project. Temporary pavement markings shall be installed on the Roadway prior to opening to traffic. Temporary pavement markings shall be in accordance with Section 8-23.

All costs in connection with performing the Work in accordance with these requirements, except the cost of temporary pavement markings, shall be included in the unit Contract prices for the various Bid items involved in the Contract.

5-04.3(3) Equipment

5-04.3(3)A Mixing Plant

Plants used for the preparation of HMA shall conform to the following requirements:

1. **Equipment for Preparation of Asphalt Binder** – Tanks for the storage of asphalt binder shall be equipped to heat and hold the material at the required temperatures. The heating shall be accomplished by steam coils, electricity, or other approved means so that no flame shall be in contact with the storage tank. The circulating system for the asphalt binder shall be designed to ensure proper and continuous circulation during the operating period. A valve for the purpose of sampling the asphalt binder shall be placed in either the storage tank or in the supply line to the mixer.
2. **Thermometric Equipment** – An armored thermometer, capable of detecting temperature ranges expected in the HMA mix, shall be fixed in the asphalt binder feed line at a location near the charging valve at the mixer unit. The thermometer location shall be convenient and safe for access by Inspectors. The plant shall also be equipped with an approved dial-scale

thermometer, a mercury actuated thermometer, an electric pyrometer, or another approved thermometric instrument placed at the discharge chute of the drier to automatically register or indicate the temperature of the heated aggregates. This device shall be in full view of the plant operator.

3. **Heating of Asphalt Binder** – The temperature of the asphalt binder shall not exceed the maximum recommended by the asphalt binder manufacturer nor shall it be below the minimum temperature required to maintain the asphalt binder in a homogeneous state. The asphalt binder shall be heated in a manner that will avoid local variations in heating. The heating method shall provide a continuous supply of asphalt binder to the mixer at a uniform average temperature with no individual variations exceeding 25°F. Also, when a WMA additive is included in the asphalt binder, the temperature of the asphalt binder shall not exceed the maximum recommended by the manufacturer of the WMA additive.
4. **Sampling and Testing of Mineral Materials** – The HMA plant shall be equipped with a mechanical sampler for the sampling of the mineral materials. The mechanical sampler shall meet the requirements of Section 1-05.6 for the crushing and screening operation. The Contractor shall provide for the setup and operation of the field testing facilities of the Contracting Agency as provided for in Section 3-01.2(2).
5. **Sampling HMA** – The HMA plant shall provide for sampling HMA by one of the following methods:
 - a. A mechanical sampling device attached to the HMA plant.
 - b. Platforms or devices to enable sampling from the hauling vehicle without entering the hauling vehicle.

5-04.3(3)B Hauling Equipment

Trucks used for hauling HMA shall have tight, clean, smooth metal beds and shall have a cover of canvas or other suitable material of sufficient size to protect the mixture from adverse weather. Whenever the weather conditions during the work shift include, or are forecast to include, precipitation or an air temperature less than 45°F or when time from loading to unloading exceeds 30 minutes, the cover shall be securely attached to protect the HMA.

The contractor shall provide an environmentally benign means to prevent the HMA mixture from adhering to the hauling equipment. Excess release agent shall be drained prior to filling hauling equipment with HMA. Petroleum derivatives or other coating material that contaminate or alter the characteristics of the HMA shall not be used. For live bed trucks, the conveyor shall be in operation during the process of applying the release agent.

5-04.3(3)C Pavers

HMA pavers shall be self-contained, power-propelled units, provided with an internally heated vibratory screed and shall be capable of spreading and finishing courses of HMA plant mix material in lane widths required by the paving section shown in the Plans.

The HMA paver shall be in good condition and shall have the most current equipment available from the manufacturer for the prevention of segregation of the HMA mixture installed, in good condition, and in working order. The equipment certification shall list the make, model, and year of the paver and any equipment that has been retrofitted.

The screed shall be operated in accordance with the manufacturer's recommendations and shall effectively produce a finished surface of the required evenness and texture without tearing, shoving, segregating, or gouging the mixture. A copy of the manufacturer's recommendations shall be provided upon request by the Contracting Agency. Extensions will be allowed provided they produce the same results, including ride, density, and surface texture as obtained by the primary screed. Extensions without augers and an internally heated vibratory screed shall not be used in the Traveled Way.

When specified in the Contract, reference lines for vertical control will be required. Lines shall be placed on both outer edges of the Traveled Way of each Roadway. Horizontal control utilizing the reference line will be permitted. The grade and slope for intermediate lanes shall be controlled automatically from reference lines or by means of a mat referencing device and a slope control device. When the finish of the grade prepared for paving is superior to the established tolerances and when, in the opinion of the Engineer, further improvement to the line, grade, cross-section, and smoothness can best be achieved without the use of the reference line, a mat referencing device may be substituted for the reference line. Substitution of the device will be subject to the continued approval of the Engineer. A joint matcher may be used subject to the approval of the Engineer. The reference line may be removed after the completion of the first course of HMA when approved by the Engineer. Whenever the Engineer determines that any of these methods are failing to provide the necessary vertical control, the reference lines will be reinstalled by the Contractor.

The Contractor shall furnish and install all pins, brackets, tensioning devices, wire, and accessories necessary for satisfactory operation of the automatic control equipment.

If the paving machine in use is not providing the required finish, the Engineer may suspend Work as allowed by Section 1-08.6. Any cleaning or solvent type liquids spilled on the pavement shall be thoroughly removed before paving proceeds.

5-04.3(3)D Material Transfer Device or Material Transfer Vehicle

A Material Transfer Device/Vehicle (MTD/V) shall only be used with the Engineer's approval, unless other-wise required by the contract.

Where an MTD/V is required by the contract, the Engineer may approve paving without an MTD/V, at the request of the Contractor. The Engineer will determine if an equitable adjustment in cost or time is due.

When used, the MTD/V shall mix the HMA after delivery by the hauling equipment and prior to laydown by the paving machine. Mixing of the HMA shall be sufficient to obtain a uniform temperature throughout the mixture. If a windrow elevator is used, the length of the windrow may be limited in urban areas or through intersections, at the discretion of the Engineer.

To be approved for use, an MTV:

1. Shall be self-propelled vehicle, separate from the hauling vehicle or paver.
2. Shall not be connected to the hauling vehicle or paver.
3. May accept HMA directly from the haul vehicle or pick up HMA from a windrow.

4. Shall mix the HMA after delivery by the hauling equipment and prior to placement into the paving machine.
5. Shall mix the HMA sufficiently to obtain a uniform temperature throughout the mixture.

To be approved for use, an MTD:

1. Shall be positively connected to the paver.
2. May accept HMA directly from the haul vehicle or pick up HMA from a windrow.
3. Shall mix the HMA after delivery by the hauling equipment and prior to placement into the paving machine.
4. Shall mix the HMA sufficiently to obtain a uniform temperature throughout the mixture.

5-04.3(3)E Rollers

Rollers shall be of the steel wheel, vibratory, oscillatory, or pneumatic tire type, in good condition and capable of reversing without backlash. Operation of the roller shall be in accordance with the manufacturer's recommendations. When ordered by the Engineer for any roller planned for use on the project, the Contractor shall provide a copy of the manufacturer's recommendation for the use of that roller for compaction of HMA. The number and weight of rollers shall be sufficient to compact the mixture in compliance with the requirements of Section 5-04.3(10). The use of equipment that results in crushing of the aggregate will not be permitted. Rollers producing pickup, washboard, uneven compaction of the surface, displacement of the mixture or other undesirable results shall not be used.

5-04.3(4) Preparation of Existing Paved Surfaces

When the surface of the existing pavement or old base is irregular, the Contractor shall bring it to a uniform grade and cross-section as shown on the Plans or approved by the Engineer.

Preleveling of uneven or broken surfaces over which HMA is to be placed may be accomplished by using an asphalt paver, a motor patrol grader, or by hand raking, as approved by the Engineer.

Compaction of preleveling HMA shall be to the satisfaction of the Engineer and may require the use of small steel wheel rollers, plate compactors, or pneumatic rollers to avoid bridging across preleveled areas by the compaction equipment. Equipment used for the compaction of preleveling HMA shall be approved by the Engineer.

Before construction of HMA on an existing paved surface, the entire surface of the pavement shall be clean. All fatty asphalt patches, grease drippings, and other objectionable matter shall be entirely removed from the existing pavement. All pavements or bituminous surfaces shall be thoroughly cleaned of dust, soil, pavement grindings, and other foreign matter. All holes and small depressions shall be filled with an appropriate class of HMA. The surface of the patched area shall be leveled and compacted thoroughly. Prior to the application of tack coat, or paving, the condition of the surface shall be approved by the Engineer.

A tack coat of asphalt shall be applied to all paved surfaces on which any course of HMA is to be placed or abutted; except that tack coat may be omitted from clean, newly paved surfaces at the discretion of the Engineer. Tack coat shall be uniformly applied to cover the existing pavement with a thin film of residual asphalt free of streaks and bare spots at a rate between 0.02 and 0.10 gallons per square yard

of retained asphalt. The rate of application shall be approved by the Engineer. A heavy application of tack coat shall be applied to all joints. For Roadways open to traffic, the application of tack coat shall be limited to surfaces that will be paved during the same working shift. The spreading equipment shall be equipped with a thermometer to indicate the temperature of the tack coat material.

Equipment shall not operate on tacked surfaces until the tack has broken and cured. If the Contractor's operation damages the tack coat it shall be repaired prior to placement of the HMA.

The tack coat shall be CSS-1, or CSS-1h emulsified asphalt. The CSS-1 and CSS-1h emulsified asphalt may be diluted once with water at a rate not to exceed one part water to one part emulsified asphalt. The tack coat shall have sufficient temperature such that it may be applied uniformly at the specified rate of application and shall not exceed the maximum temperature recommended by the emulsified asphalt manufacturer.

5-04.3(4)A Crack Sealing

5-04.3(4)A1 General

When the Proposal includes a pay item for crack sealing, seal all cracks ¼ inch in width and greater.

Cleaning: Ensure that cracks are thoroughly clean, dry and free of all loose and foreign material when filling with crack sealant material. Use a hot compressed air lance to dry and warm the pavement surfaces within the crack immediately prior to filling a crack with the sealant material. Do not overheat pavement. Do not use direct flame dryers. Routing cracks is not required.

Sand Slurry: For cracks that are to be filled with sand slurry, thoroughly mix the components and pour the mixture into the cracks until full. Add additional CSS-1 cationic emulsified asphalt to the sand slurry as needed for workability to ensure the mixture will completely fill the cracks. Strike off the sand slurry flush with the existing pavement surface and allow the mixture to cure. Top off cracks that were not completely filled with additional sand slurry. Do not place the HMA overlay until the slurry has fully cured.

The sand slurry shall consist of approximately 20 percent CSS-1 emulsified asphalt, approximately 2 percent portland cement, water (if required), and the remainder clean Class 1 or 2 fine aggregate per section 9-03.1(2). The components shall be thoroughly mixed and then poured into the cracks and joints until full. The following day, any cracks or joints that are not completely filled shall be topped off with additional sand slurry. After the sand slurry is placed, the filler shall be struck off flush with the existing pavement surface and allowed to cure. The HMA overlay shall not be placed until the slurry has fully cured. The requirements of Section 1-06 will not apply to the portland cement and sand used in the sand slurry.

In areas where HMA will be placed, use sand slurry to fill the cracks.

In areas where HMA will not be placed, fill the cracks as follows:

1. Cracks ¼ inch to 1 inch in width - fill with hot poured sealant.
2. Cracks greater than 1 inch in width – fill with sand slurry.

Hot Poured Sealant: For cracks that are to be filled with hot poured sealant, apply the material in accordance with these requirements and the manufacturer's recommendations. Furnish a Type 1 Working Drawing of the manufacturer's product information and recommendations to the Engineer prior to the start of work, including the manufacturer's recommended heating time and temperatures, allowable storage time and temperatures after initial heating, allowable reheating criteria, and application temperature range. Confine hot poured sealant material within the crack. Clean any overflow of sealant from the pavement surface. If, in the opinion of the Engineer, the Contractor's method of sealing the cracks with hot poured sealant results in an excessive amount of material on the pavement surface, stop and correct the operation to eliminate the excess material.

5-04.3(4)A2 Crack Sealing Areas Prior to Paving

In areas where HMA will be placed, use sand slurry to fill the cracks.

5-04.3(4)A3 Crack Sealing Areas Not to be Paved

In areas where HMA will not be placed, fill the cracks as follows:

- A. Cracks ¼ inch to 1 inch in width - fill with hot poured sealant.
- B. Cracks greater than 1 inch in width – fill with sand slurry.

5-04.3(4)B Vacant

5-04.3(4)C Pavement Repair

The Contractor shall excavate pavement repair areas and shall backfill these with HMA in accordance with the details shown in the Plans and as marked in the field. The Contractor shall conduct the excavation operations in a manner that will protect the pavement that is to remain. Pavement not designated to be removed that is damaged as a result of the Contractor's operations shall be repaired by the Contractor to the satisfaction of the Engineer at no cost to the Contracting Agency. The Contractor shall excavate only within one lane at a time unless approved otherwise by the Engineer. The Contractor shall not excavate more area than can be completely finished during the same shift, unless approved by the Engineer.

Unless otherwise shown in the Plans or determined by the Engineer, excavate to a depth of 1.0 feet. The Engineer will make the final determination of the excavation depth required. The minimum width of any pavement repair area shall be 40 inches unless shown otherwise in the Plans. Before any excavation, the existing pavement shall be sawcut or shall be removed by a pavement grinder. Excavated materials will become the property of the Contractor and shall be disposed of in a Contractor-provided site off the Right of Way or used in accordance with Sections 2-02.3(3) or 9-03.21.

Asphalt for tack coat shall be required as specified in Section 5-04.3(4). A heavy application of tack coat shall be applied to all surfaces of existing pavement in the pavement repair area.

Placement of the HMA backfill shall be accomplished in lifts not to exceed 0.35-foot compacted depth. Lifts that exceed 0.35-foot of compacted depth may be accomplished with the approval of the Engineer. Each lift shall be thoroughly compacted by a mechanical tamper or a roller.

5-04.3(5) Producing/Stockpiling Aggregates and RAP

Aggregates and RAP shall be stockpiled according to the requirements of Section 3-02. Sufficient storage space shall be provided for each size of aggregate and RAP. Materials shall be removed from

stockpile(s) in a manner to ensure minimal segregation when being moved to the HMA plant for processing into the final mixture. Different aggregate sizes shall be kept separated until they have been delivered to the HMA plant.

5-04.3(5)A Vacant

5-04.3(6) Mixing

After the required amount of mineral materials, asphalt binder, recycling agent and anti-stripping additives have been introduced into the mixer the HMA shall be mixed until complete and uniform coating of the particles and thorough distribution of the asphalt binder throughout the mineral materials is ensured.

When discharged, the temperature of the HMA shall not exceed the optimum mixing temperature by more than 25°F as shown on the reference mix design report or as approved by the Engineer. Also, when a WMA additive is included in the manufacture of HMA, the discharge temperature of the HMA shall not exceed the maximum recommended by the manufacturer of the WMA additive. A maximum water content of 2 percent in the mix, at discharge, will be allowed providing the water causes no problems with handling, stripping, or flushing. If the water in the HMA causes any of these problems, the moisture content shall be reduced as directed by the Engineer.

Storing or holding of the HMA in approved storage facilities will be permitted with approval of the Engineer, but in no event shall the HMA be held for more than 24 hours. HMA held for more than 24 hours after mixing shall be rejected. Rejected HMA shall be disposed of by the Contractor at no expense to the Contracting Agency. The storage facility shall have an accessible device located at the top of the cone or about the third point. The device shall indicate the amount of material in storage. No HMA shall be accepted from the storage facility when the HMA in storage is below the top of the cone of the storage facility, except as the storage facility is being emptied at the end of the working shift.

Recycled asphalt pavement (RAP) utilized in the production of HMA shall be sized prior to entering the mixer so that a uniform and thoroughly mixed HMA is produced. If there is evidence of the recycled asphalt pavement not breaking down during the heating and mixing of the HMA, the Contractor shall immediately suspend the use of the RAP until changes have been approved by the Engineer. After the required amount of mineral materials, RAP, new asphalt binder and asphalt rejuvenator have been introduced into the mixer the HMA shall be mixed until complete and uniform coating of the particles and thorough distribution of the asphalt binder throughout the mineral materials, and RAP is ensured.

5-04.3(7) Spreading and Finishing

The mixture shall be laid upon an approved surface, spread, and struck off to the grade and elevation established. HMA pavers complying with Section 5-04.3(3) shall be used to distribute the mixture. Unless otherwise directed by the Engineer, the nominal compacted depth of any layer of any course shall not exceed the following:

HMA Class 1"	0.35 feet
HMA Class ¾" and HMA Class ½"	
wearing course	0.30 feet
other courses	0.35 feet

HMA Class $\frac{3}{8}$ "

0.15 feet

On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical, the paving may be done with other equipment or by hand.

When more than one JMF is being utilized to produce HMA, the material produced for each JMF shall be placed by separate spreading and compacting equipment. The intermingling of HMA produced from more than one JMF is prohibited. Each strip of HMA placed during a work shift shall conform to a single JMF established for the class of HMA specified unless there is a need to make an adjustment in the JMF.

5-04.3(8) Aggregate Acceptance Prior to Incorporation in HMA

For HMA accepted by nonstatistical evaluation the aggregate properties of sand equivalent, uncompacted void content and fracture will be evaluated in accordance with Section 3-04. Sampling and testing of aggregates for HMA accepted by commercial evaluation will be at the option of the Engineer.

5-04.3(9) HMA Mixture Acceptance

Acceptance of HMA shall be as provided under nonstatistical, or commercial evaluation.

Nonstatistical evaluation will be used for the acceptance of HMA unless Commercial Evaluation is specified.

Commercial evaluation will be used for Commercial HMA and for other classes of HMA in the following applications: sidewalks, road approaches, ditches, slopes, paths, trails, gores, prelevel, temporary pavement, and pavement repair. Other nonstructural applications of HMA accepted by commercial evaluation shall be as approved by the Engineer. Sampling and testing of HMA accepted by commercial evaluation will be at the option of the Engineer.

The mix design will be the initial JMF for the class of HMA. The Contractor may request a change in the JMF. Any adjustments to the JMF will require the approval of the Engineer and may be made in accordance with this section.

HMA Tolerances and Adjustments

1. **Job Mix Formula Tolerances** – The constituents of the mixture at the time of acceptance shall be within tolerance. The tolerance limits will be established as follows:

For Asphalt Binder and Air Voids (Va), the acceptance limits are determined by adding the tolerances below to the approved JMF values. These values will also be the Upper Specification Limit (USL) and Lower Specification Limit (LSL) required in Section 1-06.2(2)D2

Property	Non-Statistical Evaluation	Commercial Evaluation
Asphalt Binder	+/- 0.5%	+/- 0.7%
Air Voids, Va	2.5% min. and 5.5% max	N/A

For Aggregates in the mixture:

- a. First, determine preliminary upper and lower acceptance limits by applying the following tolerances to the approved JMF.

Aggregate Percent Passing	Non-Statistical Evaluation	Commercial Evaluation
1", ¾", ½", and 3/8" sieves	+/- 6%	+/- 8%
No. 4 sieve	+/-6%	+/- 8%
No. 8 Sieve	+/- 6%	+/-8%
No. 200 sieve	+/- 2.0%	+/- 3.0%

- b. Second, adjust the preliminary upper and lower acceptance limits determined from step (a) the minimum amount necessary so that none of the aggregate properties are outside the control points in Section 9-03.8(6). The resulting values will be the upper and lower acceptance limits for aggregates, as well as the USL and LSL required in Section 1-06.2(2)D2.
2. Job Mix Formula Adjustments – An adjustment to the aggregate gradation or asphalt binder content of the JMF requires approval of the Engineer. Adjustments to the JMF will only be considered if the change produces material of equal or better quality and may require the development of a new mix design if the adjustment exceeds the amounts listed below.
 - a. **Aggregates** –2 percent for the aggregate passing the 1½", 1", ¾", ½", ⅜", and the No. 4 sieves, 1 percent for aggregate passing the No. 8 sieve, and 0.5 percent for the aggregate passing the No. 200 sieve. The adjusted JMF shall be within the range of the control points in Section 9-03.8(6).
 - b. **Asphalt Binder Content** – The Engineer may order or approve changes to asphalt binder content. The maximum adjustment from the approved mix design for the asphalt binder content shall be 0.3 percent

5-04.3(9)A Vacant

5-04.3(9)B Vacant

5-04.3(9)C Mixture Acceptance – Nonstatistical Evaluation

HMA mixture which is accepted by Nonstatistical Evaluation will be evaluated by the Contracting Agency by dividing the HMA tonnage into lots.

5-04.3(9)C1 Mixture Nonstatistical Evaluation – Lots and Sublots

A lot is represented by randomly selected samples of the same mix design that will be tested for acceptance. A lot is defined as the total quantity of material or work produced for each Job Mix Formula placed. Only one lot per JMF is expected. A subplot shall be equal to one day's production or 800 tons, whichever is less except that the final subplot will be a minimum of 400 tons and may be increased to 1200 tons.

All of the test results obtained from the acceptance samples from a given lot shall be evaluated collectively. If the Contractor requests a change to the JMF that is approved, the material produced after the change will be evaluated on the basis of the new JMF for the remaining sublots in the current lot and for acceptance of subsequent lots. For a lot in progress with a CPF less than 0.75, a new lot will begin at the Contractor's request after the Engineer is satisfied that material conforming to the Specifications can be produced.

Sampling and testing for evaluation shall be performed on the frequency of one sample per subplot.

5-04.3(9)C2 Mixture Nonstatistical Evaluation Sampling

Samples for acceptance testing shall be obtained by the Contractor when ordered by the Engineer. The Contractor shall sample the HMA mixture in the presence of the Engineer and in accordance with AASH-TO T 168. A minimum of three samples should be taken for each class of HMA placed on a project. If used in a structural application, at least one of the three samples shall to be tested.

Sampling and testing HMA in a Structural application where quantities are less than 400 tons is at the discretion of the Engineer.

For HMA used in a structural application and with a total project quantity less than 800 tons but more than 400 tons, a minimum of one acceptance test shall be performed. In all cases, a minimum of 3 samples will be obtained at the point of acceptance, a minimum of one of the three samples will be tested for conformance to the JMF:

- If the test results are found to be within specification requirements, additional testing will be at the Engineer's discretion.
- If test results are found not to be within specification requirements, additional testing of the remaining samples to determine a Composite Pay Factor (CPF) shall be performed.

5-04.3(9)C3 Mixture Nonstatistical Evaluation – Acceptance Testing

Testing of HMA for compliance of V_a will at the option of the Contracting Agency. If tested, compliance of V_a will use WSDOT SOP 731.

Testing for compliance of asphalt binder content will be by WSDOT FOP for AASHTO T 308.

Testing for compliance of gradation will be by FOP for WAQTC T 27/T 11.

5-04.3(9)C4 Mixture Nonstatistical Evaluation – Pay Factors

For each lot of material falling outside the tolerance limits in 5-04.3(9), the Contracting Agency will determine a Composite Pay Factor (CPF) using the following price adjustment factors:

Table of Price Adjustment Factors	
Constituent	Factor “f”
All aggregate passing: 1½", 1", ¾", ½", ⅜" and No.4 sieves	2
All aggregate passing No. 8 sieve	15
All aggregate passing No. 200 sieve	20
Asphalt binder	40

Air Voids (Va) (where applicable)	20
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Each lot of HMA produced under Nonstatistical Evaluation and having all constituents falling within the tolerance limits of the job mix formula shall be accepted at the unit Contract price with no further evaluation. When one or more constituents fall outside the nonstatistical tolerance limits in the Job Mix Formula shown in Table of Price Adjustment Factors, the lot shall be evaluated in accordance with Section 1-06.2 to determine the appropriate CPF. The nonstatistical tolerance limits will be used in the calculation of the CPF and the maximum CPF shall be 1.00. When less than three sublots exist, backup samples of the existing sublots or samples from the Roadway shall be tested to provide a minimum of three sets of results for evaluation.

5-04.3(9)C5 Vacant

5-04.3(9)C6 Mixture Nonstatistical Evaluation – Price Adjustments

For each lot of HMA mix produced under Nonstatistical Evaluation when the calculated CPF is less than 1.00, a Nonconforming Mix Factor (NCMF) will be determined. The NCMF equals the algebraic difference of CPF minus 1.00 multiplied by 60 percent. The total job mix compliance price adjustment will be calculated as the product of the NCMF, the quantity of HMA in the lot in tons, and the unit Contract price per ton of mix.

If a constituent is not measured in accordance with these Specifications, its individual pay factor will be considered 1.00 in calculating the Composite Pay Factor (CPF).

5-04.3(9)C7 Mixture Nonstatistical Evaluation - Retests

The Contractor may request a subplot be retested. To request a retest, the Contractor shall submit a written request within 7 calendar days after the specific test results have been received. A split of the original acceptance sample will be retested. The split of the sample will not be tested with the same tester that ran the original acceptance test. The sample will be tested for a complete gradation analysis, asphalt binder content, and, at the option of the agency, V_a . The results of the retest will be used for the acceptance of the HMA in place of the original subplot sample test results. The cost of testing will be deducted from any monies due or that may come due the Contractor under the Contract at the rate of \$500 per sample.

5-04.3 (9)D Mixture Acceptance – Commercial Evaluation

If sampled and tested, HMA produced under Commercial Evaluation and having all constituents falling within the tolerance limits of the job mix formula shall be accepted at the unit Contract price with no further evaluation. When one or more constituents fall outside the commercial tolerance limits in the Job Mix Formula shown in 5-04.3(9), the lot shall be evaluated in accordance with Section 1-06.2 to determine the appropriate CPF. The commercial tolerance limits will be used in the calculation of the CPF and the maximum CPF shall be 1.00. When less than three sublots exist, backup samples of the existing sublots or samples from the street shall be tested to provide a minimum of three sets of results for evaluation.

For each lot of HMA mix produced and tested under Commercial Evaluation when the calculated CPF is less than 1.00, a Nonconforming Mix Factor (NCMF) will be determined. The NCMF equals the algebraic difference of CPF minus 1.00 multiplied by 60 percent. The Job Mix Compliance Price

Adjustment will be calculated as the product of the NCMF, the quantity of HMA in the lot in tons, and the unit Contract price per ton of mix.

If a constituent is not measured in accordance with these Specifications, its individual pay factor will be considered 1.00 in calculating the Composite Pay Factor (CPF).

5-04.3(10) HMA Compaction Acceptance

HMA mixture accepted by nonstatistical evaluation that is used in traffic lanes, including lanes for intersections, ramps, truck climbing, weaving, and speed change, and having a specified compacted course thickness greater than 0.10-foot, shall be compacted to a specified level of relative density. The specified level of relative density shall be a Composite Pay Factor (CPF) of not less than 0.75 when evaluated in accordance with Section 1-06.2, using a LSL of 92.0 (minimum of 92 percent of the maximum density). The maximum density shall be determined by WSDOT FOP for AASHTO T 729. The specified level of density attained will be determined by the evaluation of the density of the pavement. The density of the pavement shall be determined in accordance with WSDOT FOP for WAQTC TM 8, except that gauge correlation will be at the discretion of the Engineer, when using the nuclear density gauge and WSDOT SOP 736 when using cores to determine density.

Tests for the determination of the pavement density will be taken in accordance with the required procedures for measurement by a nuclear density gauge or roadway cores after completion of the finish rolling.

If the Contracting Agency uses a nuclear density gauge to determine density the test procedures FOP for WAQTC TM 8 and WSDOT SOP T 729 will be used on the day the mix is placed and prior to opening to traffic.

Roadway cores for density may be obtained by either the Contracting Agency or the Contractor in accordance with WSDOT SOP 734. The core diameter shall be 4-inches minimum, unless otherwise approved by the Engineer. Roadway cores will be tested by the Contracting Agency in accordance with WSDOT FOP for AASHTO T 166.

If the Contract includes the Bid item "Roadway Core" the cores shall be obtained by the Contractor in the presence of the Engineer on the same day the mix is placed and at locations designated by the Engineer. If the Contract does not include the Bid item "Roadway Core" the Contracting Agency will obtain the cores.

For a lot in progress with a CPF less than 0.75, a new lot will begin at the Contractor's request after the Engineer is satisfied that material conforming to the Specifications can be produced.

HMA mixture accepted by commercial evaluation and HMA constructed under conditions other than those listed above shall be compacted on the basis of a test point evaluation of the compaction train. The test point evaluation shall be performed in accordance with instructions from the Engineer. The number of passes with an approved compaction train, required to attain the maximum test point density, shall be used on all subsequent paving.

HMA for preleveling shall be thoroughly compacted. HMA that is used for preleveling wheel rutting shall be compacted with a pneumatic tire roller unless otherwise approved by the Engineer.

Test Results

For a sublot that has been tested with a nuclear density gauge that did not meet the minimum of 92 percent of the reference maximum density in a compaction lot with a CPF below 1.00 and thus subject to a price reduction or rejection, the Contractor may request that a core be used for determination of the relative density of the sublot. The relative density of the core will replace the relative density determined by the nuclear density gauge for the sublot and will be used for calculation of the CPF and acceptance of HMA compaction lot.

When cores are taken by the Contracting Agency at the request of the Contractor, they shall be requested by noon of the next workday after the test results for the sublot have been provided or made available to the Contractor. Core locations shall be outside of wheel paths and as determined by the Engineer. Traffic control shall be provided by the Contractor as requested by the Engineer. Failure by the Contractor to provide the requested traffic control will result in forfeiture of the request for cores. When the CPF for the lot based on the results of the HMA cores is less than 1.00, the cost for the coring will be deducted from any monies due or that may become due the Contractor under the Contract at the rate of \$200 per core and the Contractor shall pay for the cost of the traffic control.

5-04.3(10)A HMA Compaction – General Compaction Requirements

Compaction shall take place when the mixture is in the proper condition so that no undue displacement, cracking, or shoving occurs. Areas inaccessible to large compaction equipment shall be compacted by other mechanical means. Any HMA that becomes loose, broken, contaminated, shows an excess or deficiency of asphalt, or is in any way defective, shall be removed and replaced with new hot mix that shall be immediately compacted to conform to the surrounding area.

The type of rollers to be used and their relative position in the compaction sequence shall generally be the Contractor's option, provided the specified densities are attained. Unless the Engineer has approved otherwise, rollers shall only be operated in the static mode when the internal temperature of the mix is less than 175°F. Regardless of mix temperature, a roller shall not be operated in a mode that results in checking or cracking of the mat. Rollers shall only be operated in static mode on bridge decks.

5-04.3(10)B HMA Compaction – Cyclic Density

Low cyclic density areas are defined as spots or streaks in the pavement that are less than 90 percent of the theoretical maximum density. At the Engineer's discretion, the Engineer may evaluate the HMA pavement for low cyclic density, and when doing so will follow WSDOT SOP 733. A \$500 Cyclic Density Price Adjustment will be assessed for any 500-foot section with two or more density readings below 90 percent of the theoretical maximum density.

5-04.3(10)C Vacant

5-04.3(10)D HMA Nonstatistical Compaction

5-04.3(10)D1 HMA Nonstatistical Compaction – Lots and Sublots

HMA compaction which is accepted by nonstatistical evaluation will be based on acceptance testing performed by the Contracting Agency dividing the project into compaction lots.

A lot is represented by randomly selected samples of the same mix design that will be tested for acceptance. A lot is defined as the total quantity of material or work produced for each Job Mix Formula placed. Only one lot per JMF is expected. A subplot shall be equal to one day's production or 400 tons, whichever is less except that the final subplot will be a minimum of 200 tons and may be increased to 800 tons. Testing for compaction will be at the rate of 5 tests per subplot per WSDOT T 738.

The subplot locations within each density lot will be determined by the Engineer. For a lot in progress with a CPF less than 0.75, a new lot will begin at the Contractor's request after the Engineer is satisfied that material conforming to the Specifications can be produced.

HMA mixture accepted by commercial evaluation and HMA constructed under conditions other than those listed above shall be compacted on the basis of a test point evaluation of the compaction train. The test point evaluation shall be performed in accordance with instructions from the Engineer. The number of passes with an approved compaction train, required to attain the maximum test point density, shall be used on all subsequent paving.

HMA for preleveling shall be thoroughly compacted. HMA that is used to prelevel wheel ruts shall be compacted with a pneumatic tire roller unless otherwise approved by the Engineer.

5-04.3(10)D2 HMA Compaction Nonstatistical Evaluation – Acceptance Testing

The location of the HMA compaction acceptance tests will be randomly selected by the Engineer from within each subplot, with one test per subplot.

5-04.3(10)D3 HMA Nonstatistical Compaction – Price Adjustments

For each compaction lot with one or two sublots, having all sublots attain a relative density that is 92 percent of the reference maximum density the HMA shall be accepted at the unit Contract price with no further evaluation. When a subplot does not attain a relative density that is 92 percent of the reference maximum density, the lot shall be evaluated in accordance with Section 1-06.2 to determine the appropriate CPF. The maximum CPF shall be 1.00, however, lots with a calculated CPF in excess of 1.00 will be used to offset lots with CPF values below 1.00 but greater than 0.90. Lots with CPF lower than 0.90 will be evaluated for compliance per 5-04.3(11). Additional testing by either a nuclear moisture-density gauge or cores will be completed as required to provide a minimum of three tests for evaluation.

For compaction below the required 92% a Non-Conforming Compaction Factor (NCCF) will be determined. The NCCF equals the algebraic difference of CPF minus 1.00 multiplied by 40 percent. The Compaction Price Adjustment will be calculated as the product of CPF, the quantity of HMA in the compaction control lot in tons, and the unit Contract price per ton of mix.

5-04.3(11) Reject Work

5-04.3(11)A Reject Work General

Work that is defective or does not conform to Contract requirements shall be rejected. The Contractor may propose, in writing, alternatives to removal and replacement of rejected material. Acceptability of such alternative proposals will be determined at the sole discretion of the Engineer. HMA that has been rejected is subject to the requirements in Section 1-06.2(2) and this specification, and the Contractor shall submit a corrective action proposal to the Engineer for approval.

5-04.3(11)B Rejection by Contractor

The Contractor may, prior to sampling, elect to remove any defective material and replace it with new material. Any such new material will be sampled, tested, and evaluated for acceptance.

5-04.3(11)C Rejection Without Testing (Mixture or Compaction)

The Engineer may, without sampling, reject any batch, load, or section of Roadway that appears defective. Material rejected before placement shall not be incorporated into the pavement. Any rejected section of Roadway shall be removed.

No payment will be made for the rejected materials or the removal of the materials unless the Contractor requests that the rejected material be tested. If the Contractor elects to have the rejected material tested, a minimum of three representative samples will be obtained and tested. Acceptance of rejected material will be based on conformance with the nonstatistical acceptance Specification. If the CPF for the rejected material is less than 0.75, no payment will be made for the rejected material; in addition, the cost of sampling and testing shall be borne by the Contractor. If the CPF is greater than or equal to 0.75, the cost of sampling and testing will be borne by the Contracting Agency. If the material is rejected before placement and the CPF is greater than or equal to 0.75, compensation for the rejected material will be at a CPF of 0.75. If rejection occurs after placement and the CPF is greater than or equal to 0.75, compensation for the rejected material will be at the calculated CPF with an addition of 25 percent of the unit Contract price added for the cost of removal and disposal.

5-04.3(11)D Rejection - A Partial Sublot

In addition to the random acceptance sampling and testing, the Engineer may also isolate from a normal sublot any material that is suspected of being defective in relative density, gradation or asphalt binder content. Such isolated material will not include an original sample location. A minimum of three random samples of the suspect material will be obtained and tested. The material will then be statistically evaluated as an independent lot in accordance with Section 1-06.2(2).

5-04.3(11)E Rejection - An Entire Sublot

An entire sublot that is suspected of being defective may be rejected. When a sublot is rejected a minimum of two additional random samples from this sublot will be obtained. These additional samples and the original sublot will be evaluated as an independent lot in accordance with Section 1-06.2(2).

5-04.3(11)F Rejection - A Lot in Progress

The Contractor shall shut down operations and shall not resume HMA placement until such time as the Engineer is satisfied that material conforming to the Specifications can be produced:

1. When the Composite Pay Factor (CPF) of a lot in progress drops below 1.00 and the Contractor is taking no corrective action, or
2. When the Pay Factor (PF) for any constituent of a lot in progress drops below 0.95 and the Contractor is taking no corrective action, or
3. When either the PFi for any constituent or the CPF of a lot in progress is less than 0.75.

5-04.3(11)G Rejection - An Entire Lot (Mixture or Compaction)

An entire lot with a CPF of less than 0.75 will be rejected.

5-04.3(12) Joints

5-04.3(12)A HMA Joints

5-04.3(12)A1 Transverse Joints

The Contractor shall conduct operations such that the placing of the top or wearing course is a continuous operation or as close to continuous as possible. Unscheduled transverse joints will be allowed and the roller may pass over the unprotected end of the freshly laid mixture only when the placement of the course must be discontinued for such a length of time that the mixture will cool below compaction temperature. When the Work is resumed, the previously compacted mixture shall be cut back to produce a slightly beveled edge for the full thickness of the course.

A temporary wedge of HMA constructed on a 20H:1V shall be constructed where a transverse joint as a result of paving or planing is open to traffic. The HMA in the temporary wedge shall be separated from the permanent HMA by strips of heavy wrapping paper or other methods approved by the Engineer. The wrapping paper shall be removed and the joint trimmed to a slightly beveled edge for the full thickness of the course prior to resumption of paving.

The material that is cut away shall be wasted and new mix shall be laid against the cut. Rollers or tamping irons shall be used to seal the joint.

5-04.3(12)A2 Longitudinal Joints

The longitudinal joint in any one course shall be offset from the course immediately below by not more than 6 inches nor less than 2 inches. All longitudinal joints constructed in the wearing course shall be located at a lane line or an edge line of the Traveled Way. A notched wedge joint shall be constructed along all longitudinal joints in the wearing surface of new HMA unless otherwise approved by the Engineer. The notched wedge joint shall have a vertical edge of not less than the maximum aggregate size or more than ½ of the compacted lift thickness and then taper down on a slope not steeper than 4H:1V. The sloped portion of the HMA notched wedge joint shall be uniformly compacted.

5-04.3(12)B Bridge Paving Joint Seals

5-04.3(12)B1 HMA Sawcut and Seal

Prior to placing HMA on the bridge deck, establish sawcut alignment points at both ends of the bridge paving joint seals to be placed at the bridge ends, and at interior joints within the bridge deck when and where shown in the Plans. Establish the sawcut alignment points in a manner that they remain functional for use in aligning the sawcut after placing the overlay.

Submit a Type 1 Working Drawing consisting of the sealant manufacturer's application procedure.

Construct the bridge paving joint seal as specified on the Plans and in accordance with the detail shown in the Standard Plans. Construct the sawcut in accordance with the detail shown in the Standard Plan. Construct the sawcut in accordance with Section 5-05.3(8)B and the manufacturer's application procedure.

5-04.3(12)B2 Paved Panel Joint Seal

Construct the paved panel joint seal in accordance with the requirements specified in section 5-04.3(12)B1 and the following requirement:

1. Clean and seal the existing joint between concrete panels in accordance with Section 5-01.3(8) and the details shown in the Standard Plans.

(April 20, 2012 COK GSP)

5-04.3(13) Surface Smoothness

The completed surface of all courses shall be of uniform texture, smooth, uniform as to crown and grade, and free from defects of all kinds. The completed surface of the wearing course shall not vary more than 1/8 inch from the lower edge of a 10-foot straightedge placed on the surface parallel to the centerline. The transverse slope of the completed surface of the wearing course shall vary not more than 1/4 inch in 10 feet from the rate of transverse slope shown in the Plans.

When deviations in excess of the above tolerances are found that result from a high place in the HMA, the pavement surface shall be corrected by one of the following methods:

1. Removal of material from high places by grinding with an approved grinding machine, or
2. Removal and replacement of the wearing course of HMA, or
3. By other method approved by the Project Engineer.

Correction of defects shall be carried out until there are no deviations anywhere greater than the allowable tolerances.

Deviations in excess of the above tolerances that result in a low place in the HMA and deviations resulting from a high place where corrective action, in the opinion of the Project Engineer, will not produce satisfactory results will be removed and replaced at the contractor's expense.

When Portland cement concrete pavement is to be placed on HMA, the surface tolerance of the HMA shall be such that no surface elevation lies above the plan grade minus the specified plan depth of Portland cement concrete pavement. Prior to placing the Portland cement concrete pavement, any such irregularities shall be brought to the required tolerance by grinding or other means approved by the Project Engineer.

When utility appurtenances such as manhole covers and valve boxes are located in the traveled way, the roadway shall be paved before the utility appurtenances are adjusted to the finished grade.

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5-04.3(14) Planing (Milling) Bituminous Pavement

The planing plan must be approved by the Engineer and a pre planing meeting must be held prior to the start of any planing. See Section 5-04.3(14)B2 for information on planing submittals.

Locations of existing surfacing to be planed are as shown in the Drawings.

Where planing an existing pavement is specified in the Contract, the Contractor must remove existing surfacing material and to reshape the surface to remove irregularities. The finished product must be a prepared surface acceptable for receiving an HMA overlay.

Use the cold milling method for planing unless otherwise specified in the Contract. Do not use the planer on the final wearing course of new HMA.

Conduct planing operations in a manner that does not tear, break, burn, or otherwise damage the surface which is to remain. The finished planed surface must be slightly grooved or roughened and must be free from gouges, deep grooves, ridges, or other imperfections. The Contractor must repair any damage to the surface by the Contractor's planing equipment, using an Engineer approved method.

Repair or replace any metal castings and other surface improvements damaged by planing, as determined by the Engineer.

A tapered wedge cut must be planed longitudinally along curb lines sufficient to provide a minimum of 4 inches of curb reveal after placement and compaction of the final wearing course. The dimensions of the wedge must be as shown on the Drawings or as specified by the Engineer.

A tapered wedge cut must also be made at transitions to adjoining pavement surfaces (meet lines) where butt joints are shown on the Drawings. Cut butt joints in a straight line with vertical faces 2 inches or more in height, producing a smooth transition to the existing adjoining pavement.

After planing is complete, planed surfaces must be swept, cleaned, and if required by the Contract, patched and preleveled.

The Engineer may direct additional depth planing. Before performing this additional depth planing, the Contractor must conduct a hidden metal in pavement detection survey as specified in Section 5-04.3(14)A.

5-04.3(14)A Pre-Planing Metal Detection Check

Before starting planing of pavements, and before any additional depth planing required by the Engineer, the Contractor must conduct a physical survey of existing pavement to be planed with equipment that can identify hidden metal objects.

Should such metal be identified, promptly notify the Engineer.

See Section 1-07.16(1) regarding the protection of survey monumentation that may be hidden in pavement.

The Contractor is solely responsible for any damage to equipment resulting from the Contractor's failure to conduct a pre-planing metal detection survey, or from the Contractor's failure to notify the Engineer of any hidden metal that is detected.

5-04.3(14)B Paving and Planing Under Traffic

5-04.3(14)B1 General

In addition the requirements of Section 1-07.23 and the traffic controls required in Section 1-10, unless otherwise specified by the Contract Documents or approved by the Engineer in writing, the Contractor shall comply with the following:

1. Intersections:

- a. Keep intersections open to traffic at all times, except when paving or planing operations through an intersection requires closure. Such closure must be kept to the minimum time required to place and compact the HMA mixture, or plane as appropriate. For paving, schedule such closure to individual lanes or portions thereof that allows the traffic volumes and schedule of traffic volumes required in the approved traffic control plan. Schedule work so that adjacent intersections are not impacted at the same time and comply with the traffic control restrictions required by the Traffic Engineer. Each individual intersection closure or partial closure, must be addressed in the traffic control plan, which must be submitted to and accepted by the Engineer, see Section 1-10.2(2).
 - b. When planing or paving and related construction must occur in an intersection, consider scheduling and sequencing such work into quarters of the intersection, or half or more of an intersection with side street detours. Be prepared to sequence the work to individual lanes or portions thereof.
 - c. Should closure of the intersection in its entirety be necessary, and no trolley service is impacted, keep such closure to the minimum time required to place and compact the HMA mixture, plane, remove asphalt, tack coat, and as needed.
 - d. Any work in an intersection requires advance warning in both signage and a number of Working Days advance notice as determined by the Engineer, to alert traffic and emergency services of the intersection closure or partial closure.
 - e. Allow new compacted HMA asphalt to cool to ambient temperature before any traffic is allowed on it. Traffic is not allowed on newly placed asphalt until approval has been obtained from the Engineer.
2. Temporary centerline marking, post-paving temporary marking, temporary stop bars, and maintaining temporary pavement marking must comply with Section 8-23.
3. Permanent pavement marking must comply with Section 8-22.

5-04.3(14)B2 Submittals – Planing Plan and HMA Paving Plan

The Contractor must submit a separate planing plan and a separate paving plan to the Engineer at least 5 Working Days in advance of each operation's activity start date. These plans must show how the moving operation and traffic control are coordinated, as they will be discussed at the pre-planing briefing and pre-paving briefing. When requested by the Engineer, the Contractor must provide each operation's traffic control plan on 24 x 36 inch or larger size Shop Drawings with a scale showing both the area of operation and sufficient detail of traffic beyond the area of operation where detour traffic may be required. The scale on the Shop Drawings is 1 inch = 20 feet, which may be changed if the Engineer agrees sufficient detail is shown.

The planing operation and the paving operation include, but are not limited to, metal detection, removal of asphalt and temporary asphalt of any kind, tack coat and drying, staging of supply trucks, paving trains, rolling, scheduling, and as may be discussed at the briefing.

When intersections will be partially or totally blocked, provide adequately sized and noticeable signage alerting traffic of closures to come, a minimum 2 Working Days in advance. The traffic control plan must show where police officers will be stationed when signalization is or may be, countermanded, and show areas where flaggers are proposed.

At a minimum, the planing and the paving plan must include:

1. A copy of the accepted traffic control plan, see Section 1-10.2(2), detailing each day's traffic control as it relates to the specific requirements of that day's planing and paving. Briefly describe the sequencing of traffic control consistent with the proposed planing and paving sequence, and scheduling of placement of temporary pavement markings and channelizing devices after each day's planing, and paving.
2. A copy of each intersection's traffic control plan.
3. Haul routes from Supplier facilities, and locations of temporary parking and staging areas, including return routes. Describe the complete round trip as it relates to the sequencing of paving operations.
4. Names and locations of HMA Supplier facilities to be used.
5. List of all equipment to be used for paving.
6. List of personnel and associated job classification assigned to each piece of paving equipment.
7. Description (geometric or narrative) of the scheduled sequence of planing and of paving, and intended area of planing and of paving for each day's work, must include the directions of proposed planing and of proposed paving, sequence of adjacent lane paving, sequence of skipped lane paving, intersection planing and paving scheduling and sequencing, and proposed notifications and coordinations to be timely made. The plan must show HMA joints relative to the final pavement marking lane lines.
8. Names, job titles, and contact information for field, office, and plant supervisory personnel.
9. A copy of the approved Mix Designs.
10. Tonnage of HMA to be placed each day.
11. Approximate times and days for starting and ending daily operations.

5-04.3(14)B3 Pre-Paving and Pre-Planing Briefing

At least 2 Working Days before the first paving operation and the first planing operation, or as scheduled by the Engineer for future paving and planing operations to ensure the Contractor has adequately prepared for notifying and coordinating as required in the Contract, the Contractor must be prepared to discuss that day's operations as they relate to other entities and to public safety and convenience, including driveway and business access, garbage truck operations, Metro transit operations and working around energized overhead wires, school and nursing home and hospital and other accesses, other contractors who may be operating in the area, pedestrian and bicycle traffic, and emergency services. The Contractor, and Subcontractors that may be part of that day's operations, must meet with the Engineer and discuss the proposed operation as it relates to the submitted planing plan and paving plan, approved traffic control plan, and public convenience and safety. Such discussion includes, but is not limited to:

1. General for both Paving Plan and for Planing Plan:
 - a. The actual times of starting and ending daily operations.

- b. In intersections, how to break up the intersection, and address traffic control and signalization for that operation, including use of peace officers.
 - c. The sequencing and scheduling of paving operations and of planing operations, as applicable, as it relates to traffic control, to public convenience and safety, and to other contractors who may operate in the Project Site.
 - d. Notifications required of Contractor activities, and coordinating with other entities and the public as necessary.
 - e. Description of the sequencing of installation and types of temporary pavement markings as it relates to planning and to paving.
 - f. Description of the sequencing of installation of, and the removal of, temporary pavement patch material around exposed castings and as may be needed
 - g. Description of procedures and equipment to identify hidden metal in the pavement, such as survey monumentation, monitoring wells, street car rail, and castings, before planning, see Section 5-04.3(14)B2.
 - h. Description of how flaggers will be coordinated with the planing, paving, and related operations.
 - i. Description of sequencing of traffic controls for the process of rigid pavement base repairs.
 - j. Other items the Engineer deems necessary to address.
2. Paving – additional topics:
- a. When to start applying tack and coordinating with paving.
 - b. Types of equipment and numbers of each type equipment to be used. If more pieces of equipment than personnel are proposed, describe the sequencing of the personnel operating the types of equipment. Discuss the continuance of operator personnel for each type equipment as it relates to meeting Specification requirements.
 - c. Number of JMFs to be placed, and if more than one JMF how the Contractor will ensure different JMFs are distinguished, how pavers and MTVs are distinguished if more than one JMF is being placed at the time, and how pavers and MTVs are cleaned so that one JMF does not adversely influence the other JMF.
 - d. Description of contingency plans for that day's operations such as equipment breakdown, rain out, and Supplier shutdown of operations.
 - e. Number of sublots to be placed, sequencing of density testing, and other sampling and testing.

5-04.3(15) Sealing Pavement Surfaces

Apply a fog seal where shown in the plans. Construct the fog seal in accordance with Section 5-02.3. Unless otherwise approved by the Engineer, apply the fog seal prior to opening to traffic.

5-04.3(16) HMA Road Approaches

HMA approaches shall be constructed at the locations shown in the Plans or where staked by the Engineer. The Work shall be performed in accordance with Section 5-04.

5-04.4 Measurement

“HMA Cl. ½ In. PG 58H-22 2” will be measured by the ton.

Measurement of all HMA will in accordance with Section 1-09.2, with no deduction being made for the weight of asphalt binder, mineral filler, or any other component of the mixture. If the Contractor elects to remove and replace mix as allowed by Section 5-04.3(11), the material removed will not be measured.

Cold Mix, if used by the Contractor, will not be measured for separate payment and shall be considered incidental to the lump sum bid item "Project Temporary Traffic Control".

HMA used for temporary patching will not be measured for separate payment and shall be considered included in the lump sum item "Project Temporary Traffic Control".

HMA shall be measured based on certified truck tickets collected on the day of paving, should tickets not be provide at the time of paving HMA will be measured in place based on neatlines and converted to Tons for payment.

No measurement will be made for asphalt used in conjunction with adjusting utilities to finished grade or used for any temporary purposes.

5-04.5 Payment

Payment will be made for each of the following Bid items that are included in the Proposal:

"HMA Cl. ½ In. PG 58H-22" per ton.

The unit Contract price per ton for "HMA Cl. ½ In. PG 58H-22-_____" shall be full compensation for all costs, including anti-stripping additive, incurred to carry out the requirements of Section 5-04 except for those costs included in other items which are included in this Subsection and which are included in the Proposal.

All costs for minimizing drop-offs and maintaining access to existing streets and driveways including, but not limited to steel sheeting, cold mix, and channelization devices, shall be included in the lump sum bid item "Project Temporary Traffic Control". No additional or separate compensation will be considered.

END OF DIVISION 5

DIVISION 7
DRAINAGE STRUCTURES, STORM SEWERS, SANITARY SEWERS, WATER
MAINS, AND CONDUITS

Add the following new section:

7-03 STORMWATER TREATMENT VAULTS

7-03.1 Description

This work shall consist of installing Contech vaults for separation and water quality treatment, and flow splitter as shown on the Plans.

7-03.1(1) Submittals

A. Submittals for the stormwater filters shall include the following items in accordance with Division 1, GENERAL REQUIREMENTS.

1. Shop Drawings for each stormwater media filter system installation including size, location, inlet and outlet inverts, appurtenant piping; bedding, backfill, concrete top slab, lid details, and anchorage tiedown system details. The concrete top slab design shall provide H-20 loading for each system.
2. Complete materials list.
3. Manufacturer's recommended installation and maintenance procedures.
4. Manufacturer's certificate of satisfactory installation and warranty.

7-03.2 Materials

7-03.2(1) StormFilter Units

StormFilter stormwater media filter units shall be as shown on plans and consist of precast units, as manufactured by Contech Engineered Solutions LLC, 9100 Centre Pointe Drive, West Chester, Ohio 45069 (800) 338-1122.

StormFilter units shall have a General Use Level Designation (GULD) for Basic treatment from the State of Washington Department of Ecology through the TAPE program.

Supplied StormFilter units shall include inspection and maintenance by the supplier, or a supplier-approved contractor, for a minimum period of one year, consisting of two scheduled visits. The maintenance visits shall include the following tasks:

1. StormFilter unit inspection.
2. Foreign debris, silt, mulch & trash removal.
3. Filter media evaluation and recharge as necessary.
4. Plant health evaluation and pruning or replacement as necessary.
5. Replacement of mulch.
6. Disposal of all maintenance refuse items.

7. Maintenance records updated, stored, and submitted to the City of Kirkland.

Prior to each maintenance visit, the City of Kirkland Public Works' Storm & Surface Water Division shall be notified and allowed to inspect the facility and observe the maintenance of the StormFilter Bioretention System by the supplier or supplier-approved contractor. A non-slip access hatch shall be installed as shown on the plans.

7-03.2(3) StormFilter Unit Bedding and Backfill

- A. Bedding and backfill materials for StormFilter unit installation shall be CSTC in accordance with Section 7-05.3.

7-03.2(4) Warranties

- A. Manufacturer shall warrant all products to be free from defects in materials and workmanship for a minimum of 1 year from the date of installation. Manufacturer shall inspect and repair or replace defective parts during warranty period at no additional cost to Owner.

7-03.3 Construction Requirements

7-03.3(1) StormFilter Unit Installation

StormFilter units shall be constructed as detailed in the Plans and in accordance with these Special Provisions and the manufacturer's installation instructions.

Each unit shall be constructed at the locations and elevations according to the sizes shown on the approved Plans. Any modifications to the elevation or location shall be at the direction of and approved by the Engineer.

If the unit is stored before installation, the top slab shall be placed on the box using the 2x4 wood provided, to prevent any contamination from the site. All internal fittings supplied (if any), must be left in place as per the delivery.

The unit shall be placed on a compacted sub-grade with a minimum 6-inch CSTC. The unit shall be placed such that the unit and top slab match the grade of the curb in the area of the unit. Compact undisturbed sub-grade materials to 95% of maximum density at +1- 2% of optimum moisture. Unsuitable material below sub-grade shall be replaced to the site Engineer's approval.

Once the unit is set, the internal wooden forms and protective mesh cover shall be left intact. Remove only the temporary wooden shipping blocks between the box and top slab. The top lid shall be sealed onto the box section before backfilling, using a non-shrink grout, butyl rubber or similar waterproof seal. The boards on top of the lid and boards sealed in the unit's throat must NOT be removed. The Supplier (Contech or its authorized dealer) will remove these sections at the time of activation. Backfilling shall be performed in a careful manner, bringing the appropriate fill material up in 6-inch lifts on all sides. Precast sections shall be set in a manner that will result in a watertight joint. Installation of unit shall conform to ASTM specification C891 "Standard Practice for Installation of Underground Precast Utility Structures".

The contractor is responsible for inlet protection/sediment control and cleaning around each unit.

It is the contractor's responsibility to source acceptable plant and have them available for Contech Activation crews after installation of the unit has been completed.

7-03.3(3) Installation Warranty

Manufacturer's representative shall observe installation of the stormwater filters and shall provide a certificate of satisfactory installation to Owner prior to operation.

7-03.3(4) Operational Testing

The manufacturer's representative shall participate in and observe operational testing of the stormwater treatment systems for design performance. All observed problems shall be rectified prior to Owner acceptance.

7-03.4 Measurement

No specific unit of measure shall apply to the Lump Sum bid item for "Contech CDS Hydrodynamic Separator (CDS2015-4-C)", "Contech StormFilter Vault (8x14)", and "Flow Splitter"

7-03.5 Payment

Payment will be made in accordance with Section 1-04.1 for the following bid items when included in the proposal:

"Contech CDS Hydrodynamic Separator (CDS2015-4-C)" per Lump Sum.

The lump sum Contract price for "Contech CDS Hydrodynamic Separator (CDS2015-4-C) shall be full compensation for all costs necessary and incidental to installation of the vaults and all appurtenances as indicated on the Plans in accordance with the Plans and Specifications, including facility activation, and one year of inspection and maintenance by supplier.

"Contech StormFilter Vault (8x14)" per Lump Sum.

The lump sum Contract price for "Contech StormFilter Vault (8x14) shall be full compensation for all costs necessary and incidental to installation of the vaults and all appurtenances as indicated on the Plans in accordance with the Plans and Specifications, including facility activation, and one year of inspection and maintenance by supplier.

"Flow Splitter" per Lump Sum.

The lump sum Contract price for "Flow Splitter" shall be full compensation for all costs necessary and incidental to installation of the vaults and all appurtenances as indicated on the Plans in accordance with the Plans and Specifications

In addition to that listed above the Lump Sum bid for each of the items listed above shall include but not be limited to hatches, covers, excavations, CSTC backfill, CSTC foundation, compaction, and all other items required to make each item complete and operational for which there is not another specific bid item provided in the Proposal.

7-04 STORM SEWERS

7-04.2 Materials

Supplement this section with the following:

Trench backfill and pipe bedding shall be Crushed Surfacing Top Course per Section 9-03.9(3).

Storm pipe shall be as shown on the Plans: Solid Wall PVC SDR 35 per Section 9-05.12(1), or Ductile Iron Pipe CL 50 per Section 9-30.1(1).

7-04.3 Construction Requirements

7-04.3(1) Cleaning and Testing

(*****)

Supplement this section with the following:

Cleaning and testing of the storm sewer system is required prior to placing the new section into service and shall be incidental to the storm sewer pipe and structures, unless otherwise specified under bid items herewith. Such tests shall be conducted in accordance with the reference material specification for the material being used. Tests on the completed installation shall be made as specified below.

Cleaning and Flushing

All gravity sewer pipes shall be cleaned and flushed after installation and after backfilling and compaction. The pipe shall be cleaned and flushed by passing an inflatable rubber ball through the completed section or using a flush truck. Any obstruction, such as cemented grout or debris found in the completed section, shall be removed. Wells shall be sealed until completion cleaning and testing, all water/debris/sediment shall be removed from the UCI structure and approved prior to removing well seals.

Alignment and Grade

Alignment and grade will be inspected by lamping each completed section. Any section which appears to exceed the allowance for variance in line or grade shall be further inspected by an approved video monitoring system (TV inspection). If this inspection confirms that the section does not meet the specified requirements for the line and grade, the sections or portion not in compliance shall be re-excavated and re-laid at Contractor's expense.

All costs incurred for TV inspection shall be considered incidental to and included in various related bid item included in the proposal.

Deflection Test for Gravity Sewer Pipe

All gravity sewer pipes shall be tested for deflection at least 30 days after completion of trench backfill and compaction in accordance with requirements of Section 7-17.3(2)G of the Standard Specifications.

Leakage Tests

All gravity sewers shall be tested for water tightness in accordance with the provisions of Section 7-17.3(2)F (Low Pressure Air Test) of the Standard Specifications.

Acceptable water tightness testing criteria is revised as follows: Air testing will require a minimum pressure of 4 psi for 15 minutes with no pressure drop. No other test procedures will be allowed except by written approval of the Project Engineer. Whenever ground water is encountered in the sewer construction, an approved water level monitoring device shall be installed at each manhole. The device shall be used in the conduct of the sewer testing to determine the water pressure above the sewer being tested.

(*****)

Add the following new Sub-Sections:

7-04.3(2) Existing Utilities

Existing utilities of record are shown on the Plans. These are shown for convenience only, and the Engineer assumes no responsibility for improper locations or failure to show utility locations on the Plans. When utility services occupy the same space as the new storm sewer main, the Contractor shall complete necessary excavation to fully expose such services. The Contractor shall protect said services, and work around them during excavating and pipe laying operations. Any damages to services resulting from the Contractor's operation shall be reported to the appropriate utility. Such damage shall be repaired at the Contractor's expense.

The Contractor shall anticipate the potential for crossing over or under an occasional shallow existing side sewers and roof drains that are not part of the one-call utility locate. If such a side sewer or drain is encountered, the Contractor shall immediately notify the Owner's on-site representative and then take the necessary steps to determine whether or not the side sewer is active. If a side sewer is damaged by construction activity, the Contractor is responsible for repairing the side sewer. All costs associated with determining the viability and repair of the existing side sewer shall be considered incidental to the cost of the storm sewer pipe and no additional payment will be made.

7-04.3(2)A Potholing

The Contractor shall pothole to determine the exact horizontal and vertical location of existing utilities and determine if a conflict exists. If a conflict should exist, the Engineer shall be notified prior to any change in storm sewer line grade. All costs associated with adjustments in depth to avoid conflicts with existing utilities shall be considered incidental to the cost of the storm sewer pipe and no additional payment will be made.

The Engineer shall approve the potholing prior to the Contractor performing the potholing. Potholing done without prior to approval from the Engineer will not be paid. See Section 8-05 herein for potholing measurement and payment.

7-04.4 Measurement

Supplement this section with the following:

"Ductile Iron Storm Sewer Pipe 12 In. Diam.", will be measured per linear foot of installed pipe along the invert, from inside face of structure to inside face of structure.

Pipe placed in excess of the length shown on the Plans, unless approved by the Engineer, will not be measured for payment.

7-04.5 Payment

Supplement this section with the following:

"Ductile Iron Storm Sewer Pipe 12 In. Diam.", per linear foot.

The unit Contract price for "Ductile Iron Storm Sewer Pipe _ In. Diam." shall be full compensation for all costs necessary and incidental to storm sewer pipe installation, including but not limited to trench excavation and dewatering; disposal of excavated materials; CSTC pipe bedding and CSTC trench backfill; compaction; fittings; connection to new and existing drainage structures; and procuring, hauling, placing, cleaning, and testing pipe.

7-05 MANHOLES, INLETS, CATCH BASINS, AND DRYWELLS

7-05.2 Materials

Supplement this section with the following:

Backfill for all excavations required for catch basins, manholes, vaults, and structures shall be Crushed Surfacing Top Course per 9-03.9(3)

7-05.3 Construction Requirements

Supplement this section with the following:

All storm pipe penetrations to catch storm structures shall be grouted inside and out to produce a watertight seal. If necessary, new pipe inlets and outlets for existing drainage structures shall be formed by core drilling or other means.

All Type 1 Catch Basins and Curb Inlets in the flowline shall have a vaned grate per C.O.K. Standard Plan CK-D.14, unless noted otherwise on the Plans.

Temporary diversion of surface flow may be necessary if this work is performed during a rain event. Surface flow may be diverted by pumping or providing an overland flow pipe within the gutter to low points outside of the work area. No turbid runoff shall be allowed to enter the storm drainage system. This work, if necessary, shall be considered included in the Bid item "Erosion Control and Water Pollution Prevention" in Section 8-01.

Add the following new Sub-Sections:

7-05.3(5) Connection to Drainage Structure

The locations, type, and size of the existing catch basins and storm lines have been determined from available records and are approximate; however, it is anticipated that connections to these existing facilities may be made, in general, as shown on the Plans.

It shall be the responsibility of the Contractor to determine the exact location, type, and size of the existing facilities prior to starting work on each connection, and to provide any alterations, as required at no additional cost to the Owner.

The Contractor shall clean and re-grout existing structures where connections are made.

When connecting to a structure, openings must be core drilled, unless an existing knockout is available. Connections shall be made with watertight rubber boots, sand collars, manhole adapter, or other approved watertight connections, except for concrete, ductile iron or corrugated metal pipe for which connections shall be made with non-shrink Portland cement grout to make a watertight fit.

7-05.3(6) Connection to Existing Pipe

The location, type and size of existing storm sewer pipe has been determined from available records, and are approximate. However, it is anticipated that connection may be made, in general, as shown on the Plans.

It shall be the responsibility of the Contractor to determine the exact location, type, and size of the existing facilities prior to starting work on each connection, and to provide any alterations, as required at no additional cost to the City.

Connect existing pipe to a new concrete structure using a knockout, if available, or by core drilling the structure. Connections shall be made with watertight rubber boots, sand collars, manhole adapter, or

other approved watertight connections, except for concrete, ductile iron or corrugated metal pipe. For concrete, ductile iron, or corrugated metal pipe the connections shall be made with non-shrink Portland cement grout to make a watertight fit.

Connections/couplings to existing corrugated metal pipe shall be made with dimpled repair band, as approved by the Owner.

7-05.4 Measurement

Supplement this section with the following:

“Remove and Replace Rectangular Frame and Vaned Grate”, will be measured per each.

Connecting to existing pipe or structure will not be measured for separate payment and shall be included in the cost of the new structure or pipe being installed.

Shoring or Extra Excavation Class B will be measured as specified in Section 2-09.4.

7-05.5 Payment

Supplement this section with the following:

“Catch Basin Type 1”, per each.

The unit Contract price for “Catch Basin Type 1”, shall be full compensation for all costs necessary and incidental to storm structure installation, including but not limited to excavation, foundation material, CSTC structure backfill, compaction, grouting of inlet and outlet pipes, and ladders.

“Remove and Replace Rectangular Frame and Vaned Grate” per each.

The unit Contract price for “Remove and Replace Rectangular Frame and Vaned Grate” shall be full compensation for all costs necessary and incidental to installing new castings on new or existing drainage structures as shown on the Plans, including but not limited to removing and disposal/salvage of existing castings, new castings, all new adjustment sections, grouting and CDF, adjustment to finished grade, and restoration of surrounding surface.

All cost of interim adjustments of structures required through out construction shall be included in the unit Contract price for the item being adjusted. Interim adjustments shall not be measured for payment.

Add the following new section:

7-06 UNDERGROUND INJECTION CONTROL (UIC) WELLS (NEW SECTION)

7-06.1 Description

This Section specifies UIC well construction and testing. The UIC wells are an integral component of the stormwater management system for the Project Site. Work included in this Section includes, but is not limited to:

Provide design, materials, manufacture and construction of Underground Injection Control (UIC) Wells in compliance with these Specifications and in conformance with the lines, grades, design, and dimensions shown on the Drawings.

- Submit for and secure well drilling permit from the Washington State Department of Ecology (Ecology)

- Assist the Engineer with flow testing of the completed UIC wells.

7-06.1(1) References

This Section incorporates by reference the latest revision of the following documents. These references are a part of this Section as specified and modified. In case of conflict between the requirements of this Section and those of a listed document, the requirements of this Section prevail.

Reference Title

WAC 173-160 Washington Administrative Code (WAC) 173-160 Minimum Standards for Construction and Maintenance of Wells

WAC 173-218 Washington Administrative Code (WAC) 173-218 Underground Injection Control Program

Ecology 2006 Washington State Department of Ecology 2006 Guidance for UIC Wells that Manage Stormwater

7-06.1(2) Submittals

1. Procedures: Section 1-05.3.
2. Certification of the installers' qualifications as specified in this Section.
3. Product data from the following:
 - a. UIC Well steel casing.
 - b. UIC Well stainless steel screen.
 - c. UIC Well sump pipe stainless steel screen.
 - d. UIC Well monitoring port.
 - e. UIC Well discharge (drop) pipe.
 - f. Bentonite surface seal material.
 - g. Sand pack material.
 - h. Energy dissipation backfill.
4. Shop Drawings
 - a. Provide Shop Drawing of UIC well and maintenance hole. Shop Drawing must be prepared and stamped by a Washington State licensed Structural Engineer for the maintenance hole and full apparatus of the UIC well in coordination with a licensed well driller.
5. Material Certificates: Must comply with Division 2 - Earthwork requirements.
6. Permits
 - a. Contractor to prepare application, submit, and secure well drilling permit from the Washington State Department of Ecology (Ecology). See Section 1-07.6.
7. UIC Well Construction Plan identifying, method, equipment, schedule and procedures for well installation. The plan and schedule must include the following:
 - a. Identify equipment to be used during well construction.
 - b. Well installation schedules and how it relates to the Contractor's overall schedule.
 - c. Identify controls and protection of wells during construction.
 - d. Procedures for well installation, including temporary well construction for flow testing.
8. Test Results
 - a. Flow Testing.
 - b. Video Inspection.
9. As-builts

- a. Refer to Section 1-05.3(13)

7-06.1(3) Job Conditions

1. Existing conditions
 - a. Document the actual condition of each location for installation as it affects this portion of work. The Contractor is responsible to inspect each well site prior to submitting a Bid and commencing construction activities.
2. Protection
 - a. Do not damage structures, landscaping, or vegetation adjacent to the well site.
 - b. Repair or replace property damaged by Contractor's activities.
 - c. The Contractor must haul away all drill cuttings and drilling fluids for proper disposal. Drill cuttings must not be spread on the well site area.
 - d. The Contractor must keep the Engineer continuously informed of the on-site work schedule so that drilling, construction and testing activities can be monitored as required by the Engineer.

7-06.1(4) Qualifications

The UIC Well installer must be a water well driller, licensed in the State of Washington, experienced in the installation and development of deep UIC wells similar to those identified in this Section. Provide documentation of well construction of at least 5 deep underground injection control wells similar to the Specifications of this Section and as shown on the Drawings. The documentation must include (as applicable) the owner's name and address, casing diameter, type, depth, production capacity, specific capacity, sand production and well development procedures and methods.

7-06.1(5) Geotechnical Design Report

Contractor is responsible for reviewing available data for the site. Reports available for review without warranty, expressed or implied, as to its accuracy are referenced in Section 1-02.4(2).

7-06.2 Materials

7-06.2(1) Casing and Backfill Materials

UIC Well casing: Conform to size shown on Drawings. Casing must be high carbon steel casing per ASTM A53B.

- UIC Well sand pack: Sand pack material must conform to the following: A 10-20 silica sand that is clean, rounded to well-rounded, hard, composed of insoluble particles of siliceous composition, of a gradation that passes a standard #10 size mesh and is retained on a #20 mesh.
- UIC Well stainless steel screen: Conform to the size shown on Drawings and constructed out of continuous wire wrapped around an array of equally spaced support rods of the same material. Each junction of wire/rod contact must be resistance welded. The screens and end fittings must be made of stainless steel. Slots must be of the size shown on the Drawings.
- UIC Well stainless steel sump (Sump): Conform to details on the Drawings.
- Sump Energy dissipation backfill: Conform to Mineral Aggregate Type 4 as specified in Section 9-03.14.
- Temporary flow test monitoring casing: Must be a schedule 80 PVC with threaded connections, and containing a minimum of 20 feet of machine slotted well screen with threaded end cap. Slots must be of the size shown on the Drawings. The temporary PVC casing must be installed in each UIC well prior to flow testing. The temporary PVC casing may be re-used in other UIC wells for flow testing purposes, but sufficient PVC casing must be supplied by the Contractor to facilitate multiple flow tests if needed.
- UIC Well Drop Pipe: Conform to size shown on Drawings and be Schedule 80 PVC with threaded connections.

- UIC Well monitoring casing: Conform to size shown on Drawings and be Schedule 80 PVC with threaded connections.
- Temporary Above ground locking well monument: Must be high carbon steel casing per ASTM A53B with locking cap or box and protected according to state requirements.
- UIC Maintenance Hole: See Section 7-05.

7-06.3 Construction Requirements

7-06.3(1) UIC well construction

7-06.3(1)A General

This Section provides recommendations for the construction and development of the UIC well, construction monitoring requirements, and flow testing performance requirements. The design Specifications are based on preliminary subsurface information, and may require modification in the field at the time of construction depending on conditions encountered. Monitoring during the construction of each UIC well, and performance testing of each UIC well will be performed by the Engineer. However, the Contractor is fully responsible for the construction, development and performance of all UIC wells.

Each UIC well must be approved by the Engineer as meeting the requirements for construction and flow capacity to be considered a completed work product. The construction and flow capacity performance requirements are shown on the Drawings.

UIC wells must be drilled, developed and tested prior to installation of the UIC well head maintenance holes and energy dissipation backfill.

7-06.3(1)B Drilling

The method of drilling must include air-rotary, air-hammer, or sonic methods. Mud-rotary methods must not be used.

Use the drill rig to drill and drive 12-inch-minimum-diameter temporary steel casing to the total UIC well depth. The UIC wells will vary in depth and screen length depending on depth to the receptor horizon, water table constraints, and design flow capacity shown on the Drawings. Due to the variable nature of subsurface conditions, the final minimum depth of each UIC well will be determined in the field by review of the drill cuttings and drilling action at the time of construction by the Engineer. The Contractor must provide pricing on a per foot basis for drilling depths that exceed the base assumption.

During drilling, cuttings must be conveyed away from the borehole through a discharge line in a manner that allows for regular sample collection at a minimum 2-foot increment by the Engineer. The Contractor is responsible for cuttings storage and disposal. Cuttings must be managed to minimize neighborhood impact, such as daily cutting disposal. Hydraulic jetting to remove cuttings from the bottom of the borehole is not allowed. Air lifting of cuttings is permitted.

Once total depth is achieved, remove all cuttings from the 12-inch-minimum-diameter casing. Install UIC well casing/screen/sump assembly, and fill annular space with sand pack and surface seal material in accordance with WAC 173-160-450. The sand pack must extend at least 5 feet above the top of the well screen. The bentonite surface seal must consist of a 2 to 3 feet bentonite chip plug, and then bentonite grout that must extend to the ground surface. The sand pack and surface seal materials must be installed in the annulus using a tremie pipe. Placement of the sand pack and surface seal materials must occur in a manner that will prevent exposure of the native formation during the casing extraction process. The casing must be pulled back incrementally so that the top of the backfill material is always above the bottom of the casing.

Upon completion, the Contractor must allow sufficient time (i.e. minimum of 24 hours) for the bentonite seals to hydrate and setup before beginning well development.

UIC Well development must consist of a combination of surging, jetting and vactoring incremental segments of the screen, while maintaining an inflow of potable water to maintain a water level inside the well casing that is above the well screen. Potable water must be from a fire hydrant and is the responsibility of the Contractor. The selected fire hydrant must be on the same block as the UIC well (i.e. the conveyance hose or pipe from the hydrant to the UIC well must not cross a street). As sediment is produced during well development, the sediment must be removed from the well with a vactor truck or equivalent method. The number of passes up and down the well screen and the amount of sediment produced or developed into the well must be monitored and recorded during the course of well development. The process must be repeated as needed to achieve a developed condition prior to flow testing. Final well development must be determined by the results of flow testing.

Install the temporary flow test monitoring casing in each UIC well prior to flow testing. The top of the PVC casing must be fitted with a lockable compression cap. The temporary PVC casing may be re-used in other UIC wells for flow testing purposes.

7-06.3(1)E UIC Well Flow Testing

7-06.3(1)E1 Flow Testing

Following completion of UIC well construction, each UIC well must be flow tested by the Contractor to confirm the level of performance. The Engineer must be present for all flow testing conducted by the Contractor. Coordinate well testing procedure with the Engineer.

The UIC well testing procedure must generally consist of stepped rate and constant rate inflow tests. Flows must be monitored by the Engineer with an in-line digital flow meter that provides instantaneous and total volumes. Potable water must be from a fire hydrant and is the responsibility of the Contractor. The selected fire hydrant must on the same block as the UIC well (i.e. the conveyance hose or pipe from the hydrant to the UIC well must not cross a street). Water level data collection will be facilitated by installation of a pressure transducer (to be provided by the Engineer) in the temporary flow test monitoring PVC casing during flow testing. The duration of the testing will be determined by the Engineer, and is expected to require a minimum of 10 hours per well. Following completion of the inflow phase, falling head measurements must be recorded.

The Contractor is responsible for obtaining fire hydrant permits from the City of Kirkland and assisting the Engineer with the necessary labor and materials to successfully complete the flow testing. Assume a maximum flow rate of 100 gallons per minute. All fire hydrant materials as required by the permit and conveyance equipment must be supplied by the Contractor, and the Contractor must flush all hoses and other conveyance equipment prior to use in the well testing. The Engineer will supply inflow metering and water level measuring equipment.

7-06.3(1)E2 Performance Requirements

Flow test results will be evaluated by the Engineer following completion of each flow test. Each UIC well has a minimum required flow capacity specified on the Drawings that must be met. If flow capacity is not met, then additional well development may be required to achieve design flow rate. If well capacity was compromised during construction of the well by the Contractor as determined by the Engineer then a second well with maintenance hole and underdrain connection pipe must be constructed at no additional cost to the Owner, including additional design, SDOT review and permit fees. If well capacity was not compromised during construction of the well, as determined by the Engineer then the Engineer will determine if modification to plan is required.

7-06.3(1)E3 Cleaning and Video Survey of UIC Well

Following flow testing, the Contractor must complete a downhole video survey of the UIC well for review by the Engineer. The downhole video survey should include equipment that allows for the well image to be observed on a video monitor and simultaneously recorded, with the depth that the camera is currently at superimposed onto the video image and also recorded. The camera must be able to switch from a downhole view to a side scan view. The downhole video survey must confirm that the well screen is clean and fines have not accumulated, and must confirm the as-built construction of the well. The downhole video survey must also inspect for damage such as well screen plugging, pipe corrosion, casing breaks, holes, splits, and other deformities. If fines have accumulated in the sump, the Contractor must remove them from the UIC well, and repeat the video survey after cleaning to assess the effectiveness of the cleaning.

7-06.4 Measurement

“UCI Well” shall be measured per each for each complete UCI well installed, tested, and accepted.

7-06.5 Payment

The per each unit contract price for “UCI Well” per each shall be full compensation for all equipment, labor, materials required for complete installation and testing of the UCI Well including but not limited to compliance with WAC, excavation, foundation materials, CSTC backfill, compaction, permits, testing, and all items as shown on the UCI Well Detail sheet for which another specific bid items is not provided within the Proposal.

7-07 CLEANING EXISTING DRAINAGE STRUCTURES

7-07.5 Payment

Delete this Section and replace with the following:

All costs associated with cleaning existing drainage structures shall be considered incidental to and included in the Bid items for storm sewer pipe or structure being installed and no additional payment shall be made.

7-08 GENERAL PIPE INSTALLATION REQUIREMENTS

7-08.3 Construction Requirements

7-08.3(1)B Shoring

Supplement this Section with the following:

Shoring design shall be the responsibility of the Contractor. No implication of methods, means, or materials is implied within the Bid Documents.

7-08.3(3) Backfilling

Supplement this Section with the following:

Backfilling and surface restoration shall closely follow the installation of the pipe, so that not more than 50 feet of the trench line is left open at any one time without approval of the City. When public safety concerns exist, the City may require more stringent backfilling standards.

All trenches shall be fully backfilled at the end of each work shift. Steel Plates will not be allowed over the weekend. Up to two steel plates may remain within the roadway during a week overnight, if property secured and will not create any noise under traffic.

Trench backfill and pipe bedding material shall be:

Crushed Surfacing Top Course: 9-03.9(3)

7-08.4 Measurement

Delete this Section.

7-08.5 Payment

Delete this section and replace with the following:

All cost associated with Section 7-08 shall be considered incidental to and included in other bid items of work provided within the Proposal, no separate measurement or payment will be made.

END OF DIVISION 7

**DIVISION 8
MISCELLANEOUS CONSTRUCTION**

8-01 EROSION CONTROL AND WATER POLLUTION CONTROL

8-01.1 Description

Supplement this section with the following:

The Contractor shall install and maintain all temporary and permanent erosion control measures and Best Management Practices (BMPs) in accordance with the Contract Documents, Standard Specifications, Permit Conditions, the Contractors “Stormwater Pollution Prevention Plan” (SWPPP) and as directed by the Engineer or the City. Such measures shall include, but are not necessarily limited to:

- Commercial construction entrances per City of Kirkland Standard Plan CK-E.02.
- Quarry spill outfall pads for temporary erosion control
- Rock, wattle, compost sock check dams
- Straw mulch, netting and tackifier
- Concrete wash
- Baker tanks and/or Settling ponds
- Inlet protection on existing and proposed drainage structures
- Reinforced silt fencing
- Plastic covering
- Temporary pipe slope drains
- Temporary HMA curb
- Disposal of sediments and materials
- TESC seeding
- Maintenance of BMPs including in the event of emergencies and as weather and field conditions dictate; and also including installation of additional BMPs which may become required as field and weather conditions evolve
- Street sweeping and cleaning
- ESC Lead per 8-01 of the Standard Specifications
- All materials, tools and equipment necessary to meet these requirements

The Contractor shall provide erosion control as required for all stockpiled materials at no cost to the City. The Engineer, in the event of an emergency, and as weather and field conditions dictate, may require additional erosion controls and BMPs.

Site Specific BMPs and SWPPP Plan

The Contractor shall submit his or her own Storm Water Pollution Prevention Plan (SWPPP) to the City for review and approval prior to the commencement of clearing, grubbing, or grading activities.

Water quality testing and discharge volume reporting required by the project permits shall be performed by the Contractor and is a condition of approval of the SWPPP. The reporting data shall be provided to the Engineer as soon as practical, at regular intervals and prior to reporting deadlines established in the permits. The Contractor shall provide a copy of the reporting information within 24 hours of a request to do so by the Engineer. All costs to perform these reporting requirements are to be included in the lump sum Contract price for “Erosion Control and Water Pollution Prevention”.

All fines for non-compliance with applicable stormwater-related permits shall be the sole responsibility of the Contractor. No payment will be made to the Contractor for fines resulting from permit violations.

8-01.3 Construction Requirements

Supplement this section with the following:

The Contractor shall bear sole responsibility for damage to completed portions of the project and to property located off the project caused by erosion, siltation, runoff, or other related items during the construction of the project. The Contractor shall also bear sole responsibility for any pollution of rivers, streams, groundwater, or other water that may occur as a result of construction operations.

Any area not covered with established, stable vegetation where no further work is anticipated for a period of 15 days, shall be immediately stabilized with the approved erosion and sedimentation control methods (e.g., seeding and mulching, straw). Where seeding for temporary erosion control is required, fast germinating grasses shall be applied at an appropriate rate (e.g., perennial rye applied at approximately 80 pounds per acre).

At no time shall more than 1 foot of sediment be allowed to accumulate within a catch basin. All catch basins and conveyance lines shall be cleaned at a time designated by the City Construction Inspector. The cleaning operation shall not flush sediment-laden water into the downstream system. The cleaning shall be conducted using an approved vacuum truck capable of jet rodding the lines. The collection and disposal of the sediment shall be the responsibility of the Contractor at no cost to the City.

8-01.3(1) General

8-01.3(1)A Submittals

Supplement this section with the following:

Stormwater Pollution Prevention Plan

The Contractor shall prepare a Stormwater Pollution Prevention Plan (SWPPP) in accordance with Department of Ecology requirements.

The Contractor shall incorporate the SWPPP implementation schedule into the Contractor's progress schedule. The SWPPP and implementation schedule shall be submitted in accordance with 1-05.3 and 1-08.3.

The Ecology template can be found at the following link:

<http://www.ecy.wa.gov/programs/wq/stormwater/construction/>

The SWPPP is considered a "living" document that shall be revised to account for additional erosion control/pollution prevention BMPs as they become necessary and are implemented in the field during project construction. A copy of the most current SWPPP shall remain on-site at all times and an additional copy shall be forwarded to the Engineer. At the Contractor's preference, revisions to the SWPPP may be forwarded to the Engineer rather than submitting a complete document. Revisions to the SWPPP may be kept on-site in a file along with the original SWPPP document.

8-01.3(1)C Water Management

Supplement this section with the following:

The Contractor will be responsible for meeting the SWPPP requirements.

The Bid Item “Erosion Control and Water Pollution Prevention” shall include the cost of providing temporary detention/retention facilities as illustrated in the Contractor’s SWPPP Plan as well as modifications, additions and removals of such facility as dictated by the Contractor’s sequence of work and may include, but are not limited to:

1. Temporary detention/retention facilities such as ponds, Baker Tanks, or other facilities.
2. If any permanent stormwater facilities are utilized, such as the detention vault, for SWPPP compliance, the Contractor shall remove accumulated sediment and clean the facility prior to final acceptance at no additional cost to the City.
3. Temporary facilities such as wheel wash stations or similar
4. Temporary construction entrances.

No additional compensation shall be made for construction, alteration, removal, maintenance, and any additional requirements necessary for “Erosion Control and Water Pollution Prevention”. No additional compensation shall be made for conflicts with existing or proposed improvements or construction sequencing of work when facilities are utilized to meet permit requirements.

8-01.3(8) Street Cleaning

Supplement this section with the following:

The Contractor shall provide for cleaning all surfaced roadways that have become dirty as a result of the execution of this project. This shall be done at the completion of each day's activities or more often if directed by the Engineer. Street sweepers with a vacuum function shall be the only acceptable method for street cleaning. Flushing will not be permitted.

Contractor shall have a vacuum sweeper available, full-time, for the duration of the project. Not having a full-time vacuum sweeper available and/or sufficient additional materials to react in a timely manner to changes may be grounds for the City to issue a Stop Work Order until the Contractor remedies the deficiency, or the City may elect to have complete the street sweeping and deduct the cost from monies due to the Contractor. Time spent under a Stop Work Order in this situation shall not be grounds for a claim for additional payment or additional Working Days.

Roadway sweeping and cleaning shall be considered included in the lump sum Contract price for “Erosion Control and Water Pollution Prevention”.

8-01.3(9)D Inlet Protection

Supplement this Section with the following:

Inlet protection can be in the form of internal devices and shall be installed prior to clearing, grubbing or earthwork activities. Inlet protection shall be installed on existing catch basins, new catch basins, and those immediately downstream of the project site that could possibly receive sediment laden runoff from the site. Inlet protection shall meet the requirements of City of Kirkland Standard Plan CK-E.11.

When the depth of accumulated sediment and debris reaches approximately one-half the height of an internal device or one-third the height of the external device (or less if specified by the manufacturer), the deposits shall be removed. Contractor shall be responsible for removing catch basin inserts upon completion of the project.

8-01.3(16) Removal

Supplement this section with the following:

Removing Temporary Erosion / Water Pollution Control BMPs

The Contractor shall removal all Temporary Erosion / Water Pollution Control BMPs within twenty (20) days after final stabilization, landscape restoration, or after the BMPs are no longer needed. Trapped sediment shall be removed or stabilized on site.

Add the following new Sections:

8-01.3(18) Suspension of Work

If at any time during the life of this Contract the Contractor requests to suspend work due to weather conditions or other constraints, it shall be the Contractor's responsibility to meet the Erosion Control and Water Pollution Prevention requirements of the Bid Documents, including maintenance and repair of BMPs already installed, at all times during suspension.

8-01.5 Payment

8-01.5(1) Lump Sum Bid for Project (No Unit Items)

Supplement this section with the following:

“Erosion Control and Water Pollution Prevention”, lump sum.

The lump sum Contract price for “Erosion Control and Water Pollution Prevention” shall be full compensation for all costs necessary and incidental to installation, maintenance, repair, and removal of erosion control facilities, and removal and disposal of sediment, as specified on the Plans and Standard Specifications for which specific Bid items are not provided, including but not limited to preparation and implementation of trimming and cleanup, SWPPP, ESC lead, inlet protection, all temporary erosion control measures described within special provisions, standard specifications, and shown on the Plans, cleaning and rehabilitating the site after BMPs are removed, street sweeping, and other incidental items of works necessary to establish and maintain TESC measures.

8-02 ROADSIDE RESTORATION

8-02.2 Materials

Supplement this section with the following:

Topsoil Type A and Sod Lawn shall be provided from a local commercial source.

8-02.3 Construction Requirements

8-02.3(1) Responsibility During Construction

Supplement this Section with the following:

Grass restoration is anticipated to be required along the back side of removed and replaced sidewalk. Restoration shall include 4” topsoil type A and sod provide from a local commercial source.

The Contractor is responsible for watering and maintain the grass until final acceptance.

8-04 CURBS, GUTTERS, AND SPILLWAYS

8-04.3 Construction Requirements

8-04.3(1) Cement Concrete Curbs, Gutters, and Spillways

Replace the first paragraph of this Section with the following:

Cement concrete curbs shall be constructed with air-entrained Class 4000 Portland Cement Concrete per Standard Specifications Section 6-02.

All curbs shall be poured separately and prior to sidewalks and curb ramps.

Curbs shall be replaced to match existing configuration.

Supplement this section with the following:

Curbs shall be protected against damage or defacement of any kind until it has been accepted by the Engineer. Work that is not acceptable to the Engineer because of damage or defacement shall be removed and replaced by the Contractor at his own expense.

Pigmented curing compounds shall not be used on curbs and gutters. Only clear curing compounds will be permitted.

The Contractor shall have the subgrade prepared and the line or formwork for curbs placed at least 24 hours prior to installing curbs. Compliance shall be checked by the Contractor when forms are set and when concrete is poured. Any modification of grading from that shown on the Plans as required for ADA compliance shall be approved by the Engineer. Minor adjustment shall be considered changes to the Plan elevations of three inches or less. The work to revise the lines, formwork and subgrade for minor adjustments shall be considered incidental to the bid price for the type of curb being installed. If the lines and formwork are not in conformance with the Plans, all adjustments, regardless of size, shall be at the sole expense of the Contractor. Adjustments to the lines and grades shall not constitute a basis for claims for additional contract time or expenses.

Install curb expansion joints at maximum 10' spacing; ensure curb expansion joints are in alignment with sidewalk joints.

8-04.4 Measurement

Supplement this section with the following:

“Cement Conc. Rolled Curb” will be measured per linear foot, including transitions to other curb types.

8-04.5 Payment

Supplement this section with the following:

“Cement Conc. Rolled Curb”, per linear foot.

The unit Contract price for “Cement Conc. Rolled Curb” shall be full compensation for all costs necessary and incidental to completely install curbs to lines and grades specified on the Plans, including but not limited to forming, form adjustments, procuring and pouring concrete, joint materials, finishing, curing, and stripping forms.

Add the following new section:

8-05 MISCELLANEOUS WORK

8-05.1 Description

This work shall consist of providing miscellaneous construction work and documentation as described herein and includes potholing of existing utilities and installation of a project outreach sign.

8-05.3 Construction Requirements

8-05.3(1) Potholing

Potholing has been included in the Proposal for the use in the determination of the location of existing utilities in advance of the Contractor's operations. The Engineer shall approve all potholing requests from the Contractor prior to potholing. Additionally, the Contractor shall provide potholes at Engineer's request. The Contractor shall review the utility markings in the field after construction staking has been provided but prior to starting of installation of and utilities or foundations for signal or light poles.

When potholing is performed the Contractor shall:

1. Receive prior written approval from the Engineer for the location of the proposed pothole.
2. Contact on-call utility services prior to performing potholes.
3. Excavate down to the existing utility.
4. Record the horizontal (station and offset) and vertical location (elevation) of the found utility.
5. Provide the Engineer an Information Data sheet showing the location of the existing utility and location of the proposed utility, and note if a conflict exists between the proposed and existing utility.

Should a conflict exist, the Contractor shall notify the Engineer in as soon as possible. The Engineer will provide a revised design within seven (7) working days upon the receipt of the written notification of a utility conflict.

To be considered for payment, potholing must be done prior to starting trenching, excavation work, or foundation construction.

8-05.3(2) Project Outreach Sign

The Contractor shall install and maintain, for the duration of the project, City provided informational sign for this project.

The City-provided chloroplast or aluminum sign shall be maximum 4 feet by 8 feet in size. The Contractor will mount chloroplast signs to plywood sheets of the same size. This mounting can be skipped for aluminum signs. Contractor will install signs by furnishing and setting two 4 x 4 posts (per sign) minimum of 36 inches below grade, set apart consistent with the width of the sign, and backfilling with soil at the location agreed upon by the City and the Contractor. Secure the sign so the top is 7 feet above ground level. Contractor shall remove at substantial completion.

8-05.4 Measurement

“Potholing” will be measured per each for each pothole location approved in writing by the Engineer, regardless of the type or number of utilities, depth, and location of the potholing being performed.

No specific measurement or payment shall apply to Project Outreach Sign.

8-05.5 Payment

Payment will be made for each of the following Bid items that are included in the Proposal:

“Potholing”, per each.

The unit Contract price for “Potholing” shall be full compensation for all costs necessary and incidental to completely perform each pothole, including but not limited to exposing the locations of existing utilities, recording vertical and horizontal locations, recording the size, material and depth of the existing utility, CSTC backfill, determining if a conflict exists, providing a data sheet, and compacting excavated areas per City of Kirkland Policies and as described herein. This unit price shall also include the cost for rescheduling work as required to allow the City time (up to seven working days) to issue any design modifications that may be required.

For the purposes of bidding equality, the Contracting Agency has furnished an estimated quantity for Potholing. Actual payment for this work will be made only for the actual amount of work performed as authorized and deemed necessary by the Engineer and may differ from the estimated amount provided.

All cost associated with installing City-provided sign including but not limited to mounting hardware, plywood, mounting post, installation, maintenance and removal upon substantial completion shall be included into the lump sum contract price for “Mobilization”.

8-14 CEMENT CONCRETE SIDEWALKS

8-14.1 Description

Supplement this section with the following:

This work shall also include grass restoration behind the back of sidewalk.

8-14.2 Materials

Supplement this section with the following:

Cement concrete sidewalk shall be constructed with air-entrained Class 4000 Portland Cement Concrete per Standard Specifications Section 6-02.

8-14.3 Construction Requirements

Replace this Section with the following:

The Contractor shall have the subgrade prepared and the line or formwork for sidewalk placed at least 24 hours prior to installing cement concrete sidewalks. Compliance shall be checked by the prime contractor when forms are set and when concrete is poured. Any modification of grading from that shown on the Plans as required for ADA compliance shall be approved by the Engineer. Minor adjustment shall be considered changes the Plan elevations or offsets of 3 inches or less. The work to revise the lines, formwork and subgrade for minor adjustments shall be considered incidental to the bid

price for cement concrete sidewalk. If the lines and formwork are not in conformance with the Plans all adjustments, regardless of size, shall be at the sole expense of the Contractor. Adjustments to the lines and grades shall not constitute a basis for claims for additional contract time or expenses.

Sidewalk cross slope shall be 1.5% maximum.

Add the following new sections:

8-14.3(6) Curb Ramps

Curb ramps must comply with all current ADA standards; minor modifications to the grades and dimensions shown on the Plans may be required to meet current standards. Ramps which do not meet the current ADA standards shall be removed and replaced at the Contractor's expense.

Per the Standard Specifications, detectable warning surfaces shall be furnished and installed on each curb ramp. Detectable warning surface shall be per City of Kirkland Standard Plan CK-R.25B.

8-14.4 Measurement

Supplement this Section with the following:

"Cement Conc. Sidewalk – 6" will be measured per square yard across finished sidewalk surface.

"Cement Conc. Curb Ramp" will be measured per each.

8-14.5 Payment

Supplement this Section with the following:

"Cement Conc. Sidewalk – 6", per square yard.

The unit Contract price for "Cement Conc. Sidewalk – 6" shall be full compensation for all costs necessary and incidental to the complete installation of cement concrete sidewalk, including but not limited to forms and form adjustments, procuring and placing concrete, thickened edge, jointing, finishing, grubbing behind sidewalk, and sodded lawn restoration behind sidewalk.

"Cement Conc. Curb Ramp", per each.

The unit Contract price for "Cement Conc. Curb Ramp" shall be full compensation for all costs necessary and incidental to the complete installation of cement concrete curb ramps, including but not limited to landings, ramps up to 15 feet long, transition panels, curb transitions to rolled curb, pedestrian curb, detectable warning surfaces, forms, form adjustments, procuring and placing concrete, joint materials, finishing, excavation, spoils haul and disposal.

END OF DIVISION 8

APPENDIX A

GEOTECHNICAL REPORT

REPORT OF GEOTECHNICAL ENGINEERING SERVICES

City of Kirkland
North Rose Hill Basin Retrofit Planning
Kirkland, Washington

For
KPG-PSOMAS
June 3, 2022

Project: KPG-135-01



June 3, 2022

KPG-PSOMAS
2502 Jefferson Avenue
Tacoma, WA 98402

Attention: Terry Wright, P.E.

Report of Infiltration Testing Services
City of Kirkland
North Rose Hill Basin Retrofit Planning
Site 2: NE 111th Place and 127th Place NE
Kirkland, Washington
Project: KPG-135-01

NV5 is pleased to submit this report of geotechnical engineering services for the proposed North Rose Hill Basin Retrofit Planning project located in Kirkland, Washington. This report has been prepared in accordance with the Subcontract for Professional Services dated February 28, 2022.

We appreciate the opportunity to be of service to you. Please contact us if you have questions regarding this report.

Sincerely,

NV5

Kevin J. Lamb, P.E.
Principal Engineer

EIL:KJL:kt

Attachments

One copy submitted (via email only)

Document ID: KPG-135-01-XXXX22-geor-2.docx

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ACRONYMS AND ABBREVIATIONS

ACP	asphalt concrete pavement
BGS	below ground surface
BMP	best management practice
DOE	Washington State Department of Ecology
GPS	global positioning system
HMA	hot mix asphalt
KCSWDM	King County Surface Water Design Manual
LID	low-impact development
meq	milliequivalent

1.0 INTRODUCTION

This report presents the results of NV5's geotechnical engineering services to support design evaluation of stormwater management through infiltration as a part of the North Rose Hill Basin Retrofit Planning project. We understand that the City of Kirkland (City) has acquired a DOE grant to improve stormwater management using infiltration elements in the North Rose Hill basin that drains to Forbes Creek.

Forbes Creek begins near the intersection of NE 108th Place and 124th Avenue NE, west of the project area, and eventually flows into Lake Washington at Juanita Bay Park in Kirkland, Washington. The goal of the project is to reduce stormwater flow into Forbes Creek

The site location relative to surrounding physical features is shown on Figure 1. The approximate locations of our explorations and previous explorations completed by AESI are shown on Figure 2. Figure 3 presents a geologic cross section of the interpreted geology underlying the site. Figure 4 presents a summary of groundwater level monitoring. Figure 5 presents Geologically Critical Areas as shown on the City of Kirkland online GIS application for the project area.

Acronyms and abbreviations used herein are defined above, immediately following the Table of Contents.

2.0 BACKGROUND

Preliminary work for the project was completed by Jacobs Engineers and their subconsultant, Associated Earth Sciences Inc. (AESI). The results of their work are presented in the following reports and a plan set, which we reviewed:

- AESI, 2019 – “Technical Memorandum, Preliminary Infiltration Feasibility Summary”, dated April 20, 2019.
- CH2M, 2019 – “Forbes Creek/N. Rose Hill Basin, Stormwater Retrofit Project, 30% Design Memorandum”, dated April 29, 2019
- Jacobs, 2019 – Preliminary Plan Set, “Forbes Creek North Rose Hill, Stormwater Project, Treatment, and Infiltration @ NE 11th PL (SITE 2), dated March 2019.

AESI completed boring EB2-1 within the proposed Site 2 facility location along NE 111th Place between 127th Avenue NE and 127th Place and completed EB5-1, approximately 500 feet to the west on 126th Avenue NE, at another proposed infiltration facility, identified as Site 5. Site 5 is located along 126th Avenue NE downslope and west of the Site 2 location on NE 111th Place.

Boring EB2-1 encountered dense glacial till to a depth of 17 feet below ground surface (BGS) (elevation 297 feet) underlain by very dense glacial advance outwash. The boring was terminated within the outwash at a depth of 36.5 feet BGS (elevation 278 feet) without encountering groundwater or a low permeability unit (aquitard).

Boring EB5-1, completed at Site 5, encountered granular fill to a depth of 8 feet BGS (elevation 281) underlain by fine grain deposits of silt, sandy silt. The boring was terminated at a depth of 31.5 feet BGS (elevation 257.5 feet) within the fine grain material. Groundwater was encountered in EB5-1 at a depth of 5 feet BGS (elevation 284 feet).

Based on the results of the borings, a series of underground injection control wells (UICs) were identified as a feasible infiltration method for Site 2 on NE 111th Place between 127th Ave NE and 127 Place NE , and the facility at EB5-1 was not considered viable. AESI provided a preliminary range of infiltration rates for UIC wells at Site 2 of between 25 to 50 gpm. The preliminary rates were provided along with a recommendation that additional investigation be conducted to evaluate subsurface conditions and to determine a suitable design infiltration rate.

The 30% design memorandum (CH2M, 2019) identified a system using an in-line series of five UIC wells to meet the stormwater infiltration flowrate goal of 0.34 cfs (152 gpm), which corresponds to water quality treatment and infiltration for 10.1 acres of the North Rose Hill Sub-basin (Jacobs, 2019). The additional subsurface investigation was planned for the next design phase. We understand that KPG has revised the anticipated flow rate for the project to 172 gpm based on updated basin modeling.

The DOE grant identified Underground Injection Control Wells (UIC's) as the proposed infiltration element, however, we understand that the city is concerned with project feasibility based on the limited subsurface information on which the current design is based, reservations with UIC wells, long-term maintenance requirements, and project costs. The city has requested additional information regarding alternative infiltration systems that will meet the stormwater infiltration flowrate goal.

3.0 SCOPE OF SERVICES

The purpose of our geotechnical engineering services was to provide geotechnical support to evaluate the feasibility of UIC's and other alternative infiltration systems for managing stormwater flows in the Forbes Creek North Rose Hill Basin. Our specific scope of services is summarized as follows:

- Review available design reports, preliminary plans, and geotechnical information for the project.
- Coordinate and manage the field explorations, including public utility locates and scheduling contractors and NV5 staff.
- Complete four borings between 50 and 120 feet BGS, using rotosonic drilling methods.
- Installed three 2-inch diameter PVC groundwater monitoring wells, and one 4-inch diameter PVC well in the borings.
- Subcontract with Richard Martin Groundwater, LLC to assist with:
- Performing an in-situ infiltration test within the 4-inch diameter well
 - Evaluating infiltration feasibility and treatment capacity
 - Identifying alternative Infiltration systems Groundwater mounding potential
 - Evaluating potential for seepage to develop in areas downslope of the infiltration area
 - Estimating aquifer parameters

- Provide this report summarizing our findings, conclusion , and recommendations addressing:
 - Subsurface soil and groundwater conditions
 - Feasibility of infiltrating stormwater
 - Infiltration systems
 - Long-term design infiltration rate
 - Groundwater mounding associated with a trench
 - Potential impact of infiltration
 - Slope stability impacts
 - Impacts on adjacent/downstream properties

4.0 SITE CONDITIONS

We observed the existing conditions during site visits to mark the boring locations, to check utility locates, and to complete the subsurface explorations. Subsurface conditions were evaluated through a review of the existing information contained in the AESI, 2019 report and by completing four subsurface explorations within the project area.

4.1 SURFACE CONDITIONS

The project alignment extends northwest southeast along NE 111th PI between 126th Avenue NE and 127th PI NE in Kirkland, WA . The area is within a residential neighborhood composed of single-family residential properties with individual driveways. The pavement consists of HMA, which is generally in good condition. The road width is approximately 30 feet and is bordered by rolled concrete curb/gutter and adjacent sidewalks along both sides.

Main utilities marked within the NE 111th PI ROW include:

- Gas and storm drain along the southern edge of the road
- Sewer along the east bound drive lane
- Water along the northern edge of the road
- Power and communications along the sidewalk area on the north side of the road.

The ground surface slopes along NE 111th Place from elevation 320 feet to approximately 304 feet between 127th PI NE at the east end of the project areas and 127th Ave Avenue at the west end of the project area.

4.2 SUBSURFACE CONDITIONS

Subsurface conditions were explored within the project area by completing four roto sonic borings to depths between 50 and 120 feet BGS and performing in-situ well testing. As indicated above AESI performed borings in the area, EB2-1 within the project area extended to a depth of 36.5 feet and EB5-1, completed about 500-feet west of the project area extended to a depth of 31.5 feet. The boring locations are shown on Figure 2. A description of the field explorations and the exploration logs are presented in Appendix A. The results of the in-situ well testing is provided in Richard Martin Groundwater LLC report which is included in Appendix B. Laboratory test results for CEC and Organic Matter Content tests, completed by Specialty Analytical, are provided in Appendix C. A copy of AESI's Technical Memorandum, including the exploration logs, is presented in Appendix D.

All of the borings were completed through the HMA pavement on either NE 111th PI or 127th Ave NE. Groundwater monitoring wells 2-inch in diameter were constructed in borings EB2-2, EB2-4, and EB2-5. A 4-inch diameter well was constructed in boring EB2-3 for the purpose of in-situ infiltration testing. Generally, subsurface conditions encountered during our field investigation and those reported by AESI are consistent with available geologic mapping of the area (Minard 1983 and Brooks 2017).

The subsurface conditions are described below, and an interpretive cross section of the conditions encountered is provided in Figure 4.

4.2.1 AC

Asphalt concrete pavement is present at the ground surface at each of our boring locations. The pavement ranges in thickness from 2.5 to 3.5 inches. Aggregate base varying in thickness from 6 to 7 inches is present below the pavement in borings EB2-3, EB2-4, and EB2-5.

4.2.2 Fill

Fill is present beneath the pavement structure in all exploratory borings ranging in depth from 1.6 to 4 feet BGS. The fill consists of moist, brown to gray silty sand and sandy silt with gravel. The sand and gravel within the deposit varies from fine to coarse.

AESI encountered fill at the surface of boring EB5-1 to a depth of 8 feet BGS. Fill encountered was generally composed of wet, brown gravel with sand.

4.2.3 Glacial Till

Glacial till is present beneath the fill in borings EB2-2, EB2-3, and EB2-5, ranging in depth from 7.5 to 21 feet BGS. The glacial till encountered in the explorations generally consists of medium dense to dense deposits of silty sand with gravel with varying amounts of sand and gravel.

AESI encountered glacial till within boring EB2-1 beneath the pavement structure and extending to a depth of 17 feet BGS. AESI described glacial till predominately light brown to gray silty sand with fine gravel.

4.2.4 Advance Outwash

Glacial advance outwash is present beneath the glacial till borings EB2-2, EB2-3, and EB2-5, ranging in depth from 35.5 to 40 feet BGS. The glacial advance outwash encountered in the explorations generally consists of medium dense to dense deposits of sand with variable silt and gravel content. Glacial advance outwash was generally brown and gray with fine to coarse sand and gravel.

AESI encountered advance outwash beneath glacial till in boring EB2-1 and extending to the termination depth of the boring. AESI described advanced outwash generally as light brown sand with variable silt content.

4.2.5 Transitional Beds

Transitional beds are non-glacial pre-Fraser glaciation deposits composed of interbedded lenses to layers of light brown to gray silt, sandy silt, silty sand, and fine to medium grain sand. It is

characterized by its brown to light gray color and scattered organics. It is present below the glacial outwash in borings EB2-2, EB2-3, EB2-5, and below the surficial fill encountered at EB2-4. All of the borings were terminated within this material.

AESI identified the fine grain soils below the surficial fill in EB5-1 as Possession Glaciomarine Drift. As described, the deposit is composed of moist brown to gray silt with variable sand content and occasional gravel and charcoal fragments. These deposits are interpreted to be consistent with the Transitional Beds identified within NV5's explorations and as mapped in the area to the west and east of the site by Minard, 1983.

4.3 GROUNDWATER

Groundwater monitoring wells were installed in borings EB2-2, EB2-4, and EB2-5 consisting of 2-inch diameter PVC. Monitoring well construction details are presented with the boring logs provided in Appendix A. A 4-inch diameter PVC well was installed in boring EB2-3 for the purpose of infiltration testing performed by Richard Martin Groundwater, LLC.

Groundwater was encountered during drilling of boring EB2-5 at a depth of 88 feet BGS.

Initial groundwater observations during drilling of the borings and prior to placement of groundwater monitoring instruments placed in the three monitoring wells on March 11, 2022, are summarized in Table 1 along with two additional manual measurements that were completed.

Table 1. Groundwater Observations

Location	Ground Surface Elevation	Bottom of Boring Elevation	Groundwater Depth (Feet BGS)		
			During Drilling ¹	March 11, 2022	April 14, 2022
EB2-2	320	240	NE	NE	NE
EB2-3	311	261	NE	NE	NE
EB2-4	301	221	NE	72.3	72.3
EB2-5	306	186	88	63.8	63.9

1. Groundwater levels measured during drilling may be inaccurate.
2. NE = Not encountered or observed

Pressure transducers with dataloggers were placed in EB2-4 and EB2-5 to collect automated groundwater measurements. The groundwater measurements are consistent with the manual measurements completed after drilling and are summarized in Figure 4.

4.4 IN-SITU TESTING

An infiltration test was performed in EB2-3, in which a 4-inch diameter standpipe piezometer (well) was installed (DOE Well Tag ID BNL 828). The boring was completed to a depth of 50 feet and was terminated within the Transitional Beds that underlie the glacial advance outwash. The well construction is shown on the log and summarized below:

- Bottom of well 50 feet
- Well screen 0.010-inch slot installed between 29.5 and 49.5 feet BGS
- Filter sand pack 12/20 grain size between 25 to 50 feet BGS

A hydrant permit was acquired for the test and the nearest fire hydrant was used to supply water for the test. The test consisted of a controlled filling of the well with water. The goal of the test is to establish a flow rate that maintains a steady water level in the well. The test was performed with two steps, an initial step where water level was maintained near the top of the screen and second test that maintained the water level approximately 10 feet above the top of the screen. Additional details on the infiltration test procedures along with test results and analyses are presented in Appendix B along with the summary report.

5.0 LABORATORY TESTING

Laboratory tests were conducted on select soil samples from the explorations to assist in the characterization of certain physical parameters of the soil. Index tests that were performed included the determination of natural water content, fines content analysis, and grain-size distribution analysis. All tests were conducted in general accordance with appropriate ASTM standards (ASTM, 2016). A discussion of laboratory test methodology and the test results are presented in Appendix A. Test results are also displayed where appropriate on the exploration logs presented in Appendix A.

5.1 CEC AND ORGANIC CONTENT

CEC and organic content tests were completed on samples of the glacial outwash deposits where infiltration is being proposed to occur to help evaluate soil capacity for water quality treatment. The CEC tests and organic content tests were performed by Specialty Analytical. The test results are summarized in Table 2.

Table 2. CEC and Organic Content Analytical Results Summary ¹

Exploration	Sample Depth (feet BGS)	Soil Type	CEC (meq per 100 grams)	Organic Content (percent)
EB2-3	21	Advance Outwash	26.4	1.7
EB2-3	26	Advance Outwash	19.5	0.63
EB2-3	31	Advance Outwash	18.8	0.65
EB2-3	37	Advance Outwash	23.7	0.80

1. Suitability for Water Quality Treatment: CEC greater than or equal to 5 meq per 100 grams and organic content at least 1 percent (SWMMWW, 2019)

The analytical laboratory test report of the CEC and organic content test results is presented in Appendix C.

6.0 CONCLUSIONS

The project alignment along NE 111th Place between 127 Ave NE and 127th Place NE is underlain by glacial till overlying glacial advance outwash and transition bed deposits. Infiltration of stormwater into the glacial advance outwash is feasible. The primary receptor unit is the glacial outwash material. The glacial advance outwash is overlain by glacial till and the depth to the top of the outwash is expected to vary from 22 feet at the east end of the alignment to 8 feet at the west, Figure 3. The thickness of the deposit is expected to vary from 20 to 35 feet within the project alignment.

The transition bed deposits that underlie the glacial advance outwash will also support infiltration but at a slower rate.

The results of the infiltration test, completed in the 4-inch diameter test well installed in EB2-3, indicate a short-term steady state flow rate of approximately 23 gpm for the initial phase of the test that tested infiltration in the lower portion of the glacial advance outwash and the upper portion of the transition bed deposits. The second phase of the test consisted of raising the water level in the well to explore the additional capacity by including the upper portion of the glacial advance outwash deposit and using a higher hydrostatic level in the well. A steady state flow rate of approximately 50 gpm was measured. Based on the infiltration test completed in EB2-3 infiltration systems can be designed to achieve the design flow rate of 0.38 cfs or 172 gpm.

The Richard Martin Groundwater LLC report provided in Appendix B provides a summary of the infiltration testing and groundwater mounding analysis, recommended long-term infiltration

rates and flow rates for use in design of UIC's and identifies alternative infiltration methods that can be used.

6.1 INFILTRATION METHODS

UIC's, were previously recommended for infiltration of stormwater in the previous engineering study (Jacobs, 2019). As part of our scope of work we have identified other methods for infiltrating stormwater based on the subsurface conditions. In addition to UIC's, the alternative infiltration systems that are feasible for the site conditions are described below.

6.1.1 UIC's

UIC's are small diameter wells, typically varying from 8 to 12-inches in diameter, constructed similar to a water well, with a well screen and filter pack within the identified receptor unit. Ecology requires that the base of the UIC has to be a minimum of 15 feet above the seasonal high groundwater level based on subsurface conditions. The preliminary design completed by Jacobs (2019) identified a system using 5 UIC's, spaced 50-feet apart, to support a flow rate of 0.38 cfs (172 gallons per minute, approximate average rate per UIC or 40 gpm, which includes a safety factor of 2). These recommendations were preliminary and additional investigation was required to determine depth, final spacing, and design flow rate for each well.

Construction of UIC's is similar to water well construction and the small diameter of the wells reduces impacts and risks associated with methods requiring larger diameter excavations. Installation of the UIC's can be completed with a sonic or air rotary drill rig commonly used in water well construction, and production would likely be around 1 to 2 days per UIC.

6.1.2 Drilled Drains

Drilled Drains consist of large diameter borings completed within the receptor unit and backfilled with a vertical carrier pipe surrounded with porous filter media. Drilled drains can be installed as a separate infiltration method or can be combined and installed within an infiltration trench to provide additional infiltration area.

Drilled drains are typically 2 to 3-feet in diameter, which can be completed with a bucket type or auger drill rig. Larger diameter drains are feasible but require equipment similar to that used to construct drilled shafts. A well screen or perforated pipe is used to vertically route flow to the bottom of the drain and the annular space between the pipe and the sidewall is backfilled with porous filter media. Hole stability and changing ground conditions may require the use of temporary steel casing to complete the hole to the required depth and to support construction of the drain.

The larger diameter of the drilled drains, as compared to UIC's will support a higher flow rate. It is estimated that a 2-foot diameter drilled drain will have a flow rate of 50 gpm, which includes a safety factor of 2. Four drilled drains, spaced approximately 90-feet apart, are expected to support the original design flow rate of 172 gpm. The depth of the wells will be approximately 45-feet deep to maintain a vertical separation of 15-feet from groundwater. With a length of 45 feet the drains will extend through the glacial outwash and a few feet into the transition bed deposits.

Construction impacts could be similar to installation of UIC's although risks associated with hole stability and changing ground conditions are higher. A drilled drain, 2-feet in diameter, installed to a depth of 45 feet, could likely be completed in 1 to 2-days. Equipment used to install drilled drains typically includes truck mounted bucket auger drill rigs or track mounted auger drills. Hole stability issues, if encountered, will require additional equipment and temporary casing increasing impacts, project duration, and costs. Sloughing and caving conditions are expected within 10-feet of the ground surface and likely can be managed with short sections of temporary casing. Below 15-feet, soils are dense to very dense, we anticipate hole stability will be less of an issue.

6.1.3 Infiltration Trench

Infiltration trenches consist of an excavation that extends into the receptor soil, and is constructed using a perforated pipe, half round culvert, or open bottom vault structure, to transmit water to the trench. Porous filter media, such as drain rock or permeable ballast is then used to backfill the trench. Infiltration trenches are common structures used to infiltrate Stormwater, where receptor soils are relatively shallow.

The depth to the top of the glacial advance outwash varies along the alignment from 20 feet at the east end approximately 8 feet at the west end. Based on the infiltration test, it is estimated that an infiltration trench approximately 340-feet in length, with a width of 6-feet and average depth of 15 feet, would be required to support a design flow rate of 172 gpm, which includes a safety factor of 2.

Installation of an infiltration trench for the project is feasible, but given the anticipated depth of excavation, an anticipated trench width of approximately 6 feet, construction impacts on the road and existing utility conflicts and crossings, and limited width of the ROW, an infiltration trench is unlikely to be economically feasible and have an undesirable long construction schedule.

6.1.4 Proprietary Dry Well System – MaxWell Plus

Dry wells consist of a large diameter excavation in which an open bottom structure, such as a manhole, is installed into the receptor material and is used to infiltrate stormwater. They are similar to drilled drains, but typically have a large 6 to 10-foot diameter, and depth of installation is limited to the excavator reach and hole stability.

Proprietary dry well systems, such as the Maxwell Plus system from Torrent Resources, are feasible and their benefit over a standard dry well or drilled drain is that they are engineered to provide water quality treatment at each unit above the section that provides infiltration. They are available locally from Oldcastle.

The Maxwell system requires a 6-foot diameter drilled shaft to a depth of about 18-feet, below 18 feet a 4-foot diameter shaft extends into the receptor unit to the design depth of the well. The upper section of the unit is the settling chamber where water quality treatment occurs, and the lower 4-foot diameter shaft is for infiltration. We anticipate a bottom of well installation depth of 45-feet, to extend the infiltration area to the base of the glacial advance outwash, and

will have a flow rate of 60 gpm, which includes a safety factor of 2. Three units, with a spacing of approximately 100 feet, would be required to meet the design flow rate of 172 gpm.

Construction of the Maxwell system at the project location would be difficult given the size of the equipment, the limited ROW width, and adjacent residential properties. Drilled shaft construction carries significant risks associated with hole stability and changing ground conditions. The use of temporary casing would likely be required to maintain hole stability and to prepare the base for inserting the upper water quality chamber section.

6.2 INFILTRATION IMPACTS

Infiltration of stormwater can potentially impact adjacent properties, through unwanted seepage, which can impact below grade structures and reduce slope stability. All of the proposed infiltration methods identified above will infiltrate stormwater below an approximate elevation of 290 feet, below the base of the glacial till material, Figure 3. Associated potential impacts of the infiltration measures identified above are expected to be similar.

6.2.1 Seepage

Flow from the UIC's or other alternative infiltration systems will extend outwards from the system below the glacial till. Infiltration below elevation 290 will result in both horizontal and vertical flow away from the facility into the glacial advance outwash material, into the underlying transition bed deposits where it will flow into groundwater.

Lateral flow is not expected to impact downslope properties based on existing topography, depth to groundwater, and distance from the infiltration source. A groundwater mounding analysis can be completed for confirmation that seepage will not impact areas downslope of the facility once an infiltration method has been selected.

6.2.2 Slope Stability

We reviewed the topography of the areas identified on Figure 5, within 400 feet of the proposed infiltration location. The project area along NE 111th Place slopes to the west with grades typically less than 10%. Slopes on adjacent private properties are similar, except for small-isolated sections of steeper slope areas that are less than 10-feet in height east of 126th Ave NE, as shown on Figure 5. No landslides are mapped along or near the project area.

The proposed infiltration within the glacial advance outwash material will occur below the glacial till material that mantles the surface of the adjacent uplands areas and will occur at depths of 15 to 35 feet BGS (approximate elevations 260 to 290). Flow is expected to have a lateral and vertical component as it flows from the facility to the underlying groundwater table at approximate elevation 229 (EB-2-4). Infiltration from the facility is not expected to emanate from the ground surface, based on the surrounding topography, and a preliminary mounding analysis.

The proposed infiltration will not impact slope stability in the area.

6.2.3 Separation

Groundwater is present at a depth of approximately 65 feet below the project area and a minimum separation of 15-feet is required below the base of UIC's and drilled drains. Limiting installation of infiltration system installation depth to approximately 40 to 45 feet BGS will satisfy groundwater separation requirements.

6.2.4 Soil Suitability for Treatment

The water quality treatment capability of the Advance Outwash soil, in which infiltration is proposed was evaluated through the CEC and organic matter content testing; the results of which are provided in Appendix C. A CEC of at least 5 meq per 100 grams and a minimum organic content of 1.0 percent are required for the soil to be considered to provide water quality treatment.

Samples of the Advance Outwash encountered in EB2-3 from 21 to 37, meet the CEC requirement of a minimum of 5 meq per 100 grams, however, only the sample collected at a depth of 21 feet has an organic content greater than 1.0, samples below 21-feet BGS, all have organic contents less than 1%. Soils below a depth of 21 feet do not meet the DOE criteria to be considered capable of providing water quality treatment.

6.2.5 Groundwater Mounding

A groundwater mounding analysis was completed by our subcontractor Richard Martin Groundwater LLC, the groundwater mounding report is presented in Appendix B along with the report summarizing the in situ testing. The proposed UIC facility will have a 15-foot separation between the bottom of the facility and the seasonal high groundwater elevation. The analysis indicates that 12-foot mound will develop below the infiltration facility and will not impact the facility. The analysis indicates that mounding may result in a 6-inch rise in groundwater levels at a distance of 1,200 feet but will not result in the development of any surficial springs or seeps.

6.3 CRITICAL AREAS: GEOLOGICALLY HAZARDOUS AREAS

6.3.1 Steep Slopes

Slope areas that KZC Chapter 5 identifies as "Geological Hazardous Areas" include: High Landslide Hazardous Areas and Moderate Landslide Hazardous Areas, that are defined as:

High Landslide Hazard Area:

1. *Areas that have shown movement during the Holocene epoch (from 10,000 years ago to the present) or that are underlain or covered by mass wastage debris of that epoch; or*
2. *Areas with both of the following characteristics:*
 - a. *Slopes steeper than 15 percent that intersect geologic contacts with a relatively permeable sediment overlying a relatively impermeable sediment, and*
 - b. *Springs; or*
3. *Areas potentially unstable because of rapid stream incision, stream bank erosion, or undercutting by wave action; or*
4. *Any area with a slope of 40 percent or steeper over a height of at least 10-feet.*

5. *For areas meeting the criteria of subsections (1) through (4) of this definition, the high landslide area also includes the area within a horizontal distance “H” equal to either the height of the slope or 50 feet, whichever is greater.*

Moderate Landslide Hazard Area: Areas with slopes between 15 percent and 40 percent which do not meet the definition of high landslide hazard area.

Slope areas that the City of Kirkland has identified that may potentially meet the City of Kirkland definition of “Geologically Critical Areas” are shown on Figure 5. These areas are identified by the City GIS software that calculates the slope percentage based on contour information, and does not account for vertical elevation drop across the area or the size of the area. With regards to the requirements of KZC Chapter 85-Critical Areas: Geologically Hazardous Areas, we reviewed the City of Kirkland online geologic hazard maps of the area to identify areas that meet the /KZC definition of High or Moderate Landslide Hazard Areas. Based on our review, the proposed project alignment is not within or adjacent to any sloped areas that meet the City of Kirkland Zoning Code Chapter 5 definition of “High Landslide Hazard Areas”. The areas identified as “High Landslide Hazard Areas” by the City of Kirkland online GIS map of the area as shown on Figure 5, do not have sufficient vertical relief and do not have the geologic conditions that meet the KZC definition.

The KZC definition for “Moderate Landslide Hazard Area” is broad, such that all sloped areas between 15 to 40 percent in Kirkland meet the KZC definition. The proposed facility along NE 111th St is adjacent to areas that meet the “Moderate Landslide Hazard Area” definition.

The groundwater mounding analysis indicates that groundwater levels may be increased up to 6-inches up to a distance of approximately 1,200 feet at the end of the wet season. The analysis also indicates that mounding will not result in the development of surficial springs or seeps in the area. The proposed infiltration facility will not adversely impact the areas identified as “Moderate” or “High” Landslide Hazard areas, based on the proposed depth of infiltration from the facility, the mounding analysis, and existing topography.

6.3.2 Liquefaction

The City of Kirkland online geologic hazard map identifies the project and surrounding areas as an area with a “Medium or Mixed Liquefaction Potential”, as shown on Figure 5.

Liquefaction is caused by a rapid increase in pore water pressure that reduces the effective stress between soil particles to near zero. Granular soil, which relies on interparticle friction for strength, is susceptible to liquefaction until the excess pore pressures can dissipate. In general, loose, saturated sand with low silt and clay content is most susceptible to liquefaction. Silty soil with low plasticity is also susceptible to liquefaction or strain softening under higher levels of ground shaking.

The project and surrounding areas are underlain by very dense glacial deposits. The groundwater table is 70 feet BGS, and is within dense glacially consolidated deposits. The mounding analysis indicates a rise in water level up to approximately 12-feet above existing

groundwater levels immediately below the facility. The rise and water level will be within dense glacial deposits. The project and surrounding area are not susceptible to liquefaction.

6.4 CONSTRUCTION AND MAINTENANCE CONSIDERATIONS

As discussed briefly for each of the infiltration methods described above construction impacts are expected to vary between them, along with operation, and long-term maintenance requirements. Construction impacts, potential risk, and general cost information are summarized in Table 3.

TABLE 3 . Infiltration Method Considerations

Infiltration Method	Size	Estimated Long-Term Flow Rate¹	Number of Units	Construction Impacts	Risks	Maintenance Regards to Maintaining Infiltration	Comparable Cost
UIC	8-inch Dia. Well Screen 12-inch Dia. Hole 45-feet deep	40	4	Smallest foot print - Equipment similar to that used in our investigation.	Low	Easy maintenance able to clean out and rehab Easy to add another well	\$10K to \$15k per well
Drilled Drains	3-feet Dia. 45-feet deep 6-inch Well Screen	50	3	Small footprint slightly larger than UIC's	Medium	Easy maintenance able to clean out and rehab	\$20K to \$25k per well
Infiltration Trench	Length = 300-feet Width = 5-feet Depth = 18-feet	150	1	Largest Footprint and Biggest impacts	High	Nothing	\$\$\$\$
Proprietary Dry Well MaxWell Plus	6-feet Dia. to 18-feet BGS, 4-feet Dia to 40-feet BGS	60	3	Large due to size of excavation required	Med- High	Infiltration - Nothing if treatment performs as expected. Treatment portion yearly to clean out floatable debris and replace oil absorbent pillows.	\$\$\$

1. Estimated Flow Rate is based on the results of in-situ testing and a factor of safety of 2 has been applied to the field measured rates.

7.0 LIMITATIONS

We have prepared this report for use by KPG-PSOMAS, the City of Kirkland and members of their design and construction team for the proposed project. The data and report can be used for bidding or estimating purposes, but our report, conclusions, and interpretations should not be construed as warranty of the subsurface conditions and are not applicable to other sites. Exploration observations indicate soil conditions only at specific locations and only to the depths penetrated. They do not necessarily reflect soil strata or water level variations that may exist between exploration locations. If subsurface conditions differing from those described are noted during excavation and construction, re-evaluation will be necessary.

The site development plans, and design details were preliminary at the time this report was prepared. If design changes are made, we request that we be retained to review our conclusions and recommendations and to provide a written modification or verification.

The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in this report for consideration in design.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with generally accepted practices in this area at the time this report was prepared. No warranty, express or implied, should be understood.



We appreciate the opportunity to be of continued service to you. Please call if you have questions concerning this report or if we can provide additional services.

Sincerely,

NV5

Eric I. Larson, E.I.T.
Geotechnical Staff

Kevin J. Lamb, P.E.
Principal Engineer

REFERENCES

AESI, 2019, *Preliminary Infiltration Feasibility Summary Technical Memorandum; Forbes Creek/Rose Hill Basin Retrofit Planning*; Kirkland, Washington, dated April 30, 2019.

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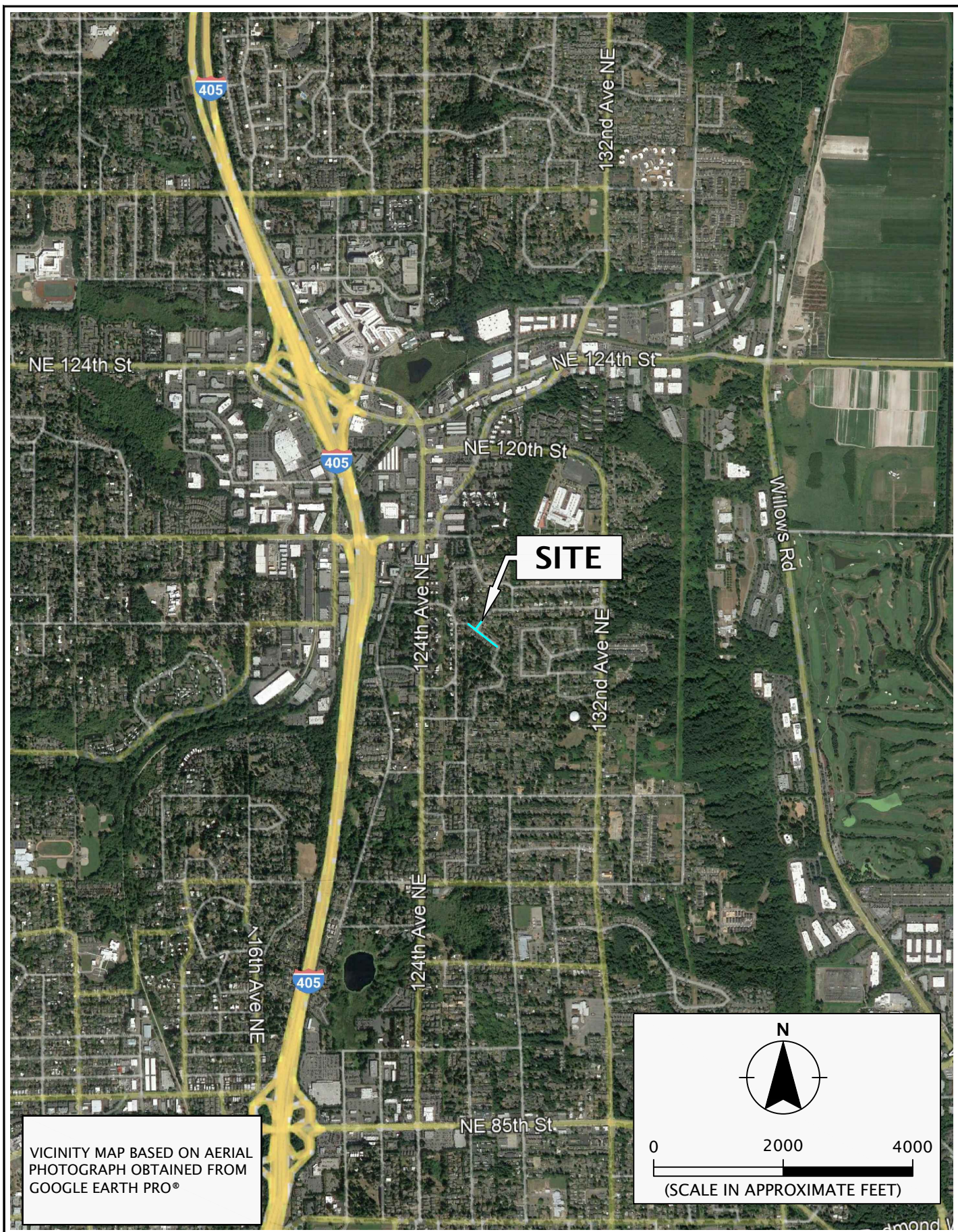
DOE, 2019, *Stormwater Management Manual for Western Washington*, July 2019, Washington State Department of Ecology Water Quality Program, Publication number 19-10-021, P. 1108.

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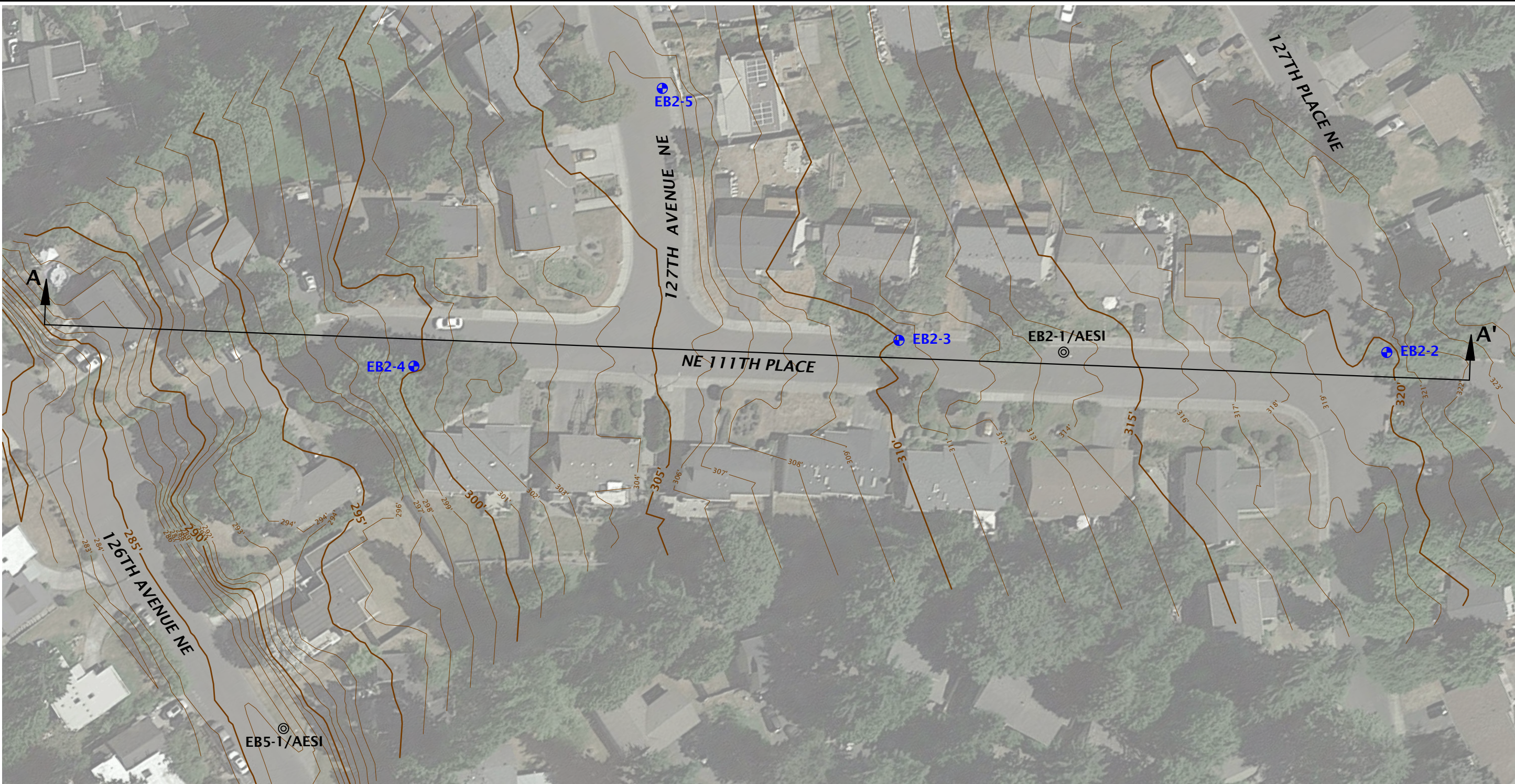
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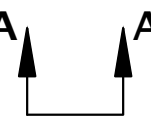
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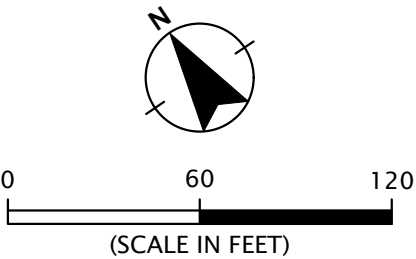


	KPG-135-01	VICINITY MAP	
	JUNE 2022	NORTH ROSE HILL BASIN RETROFIT PLANNING KIRKLAND, WA	FIGURE 1




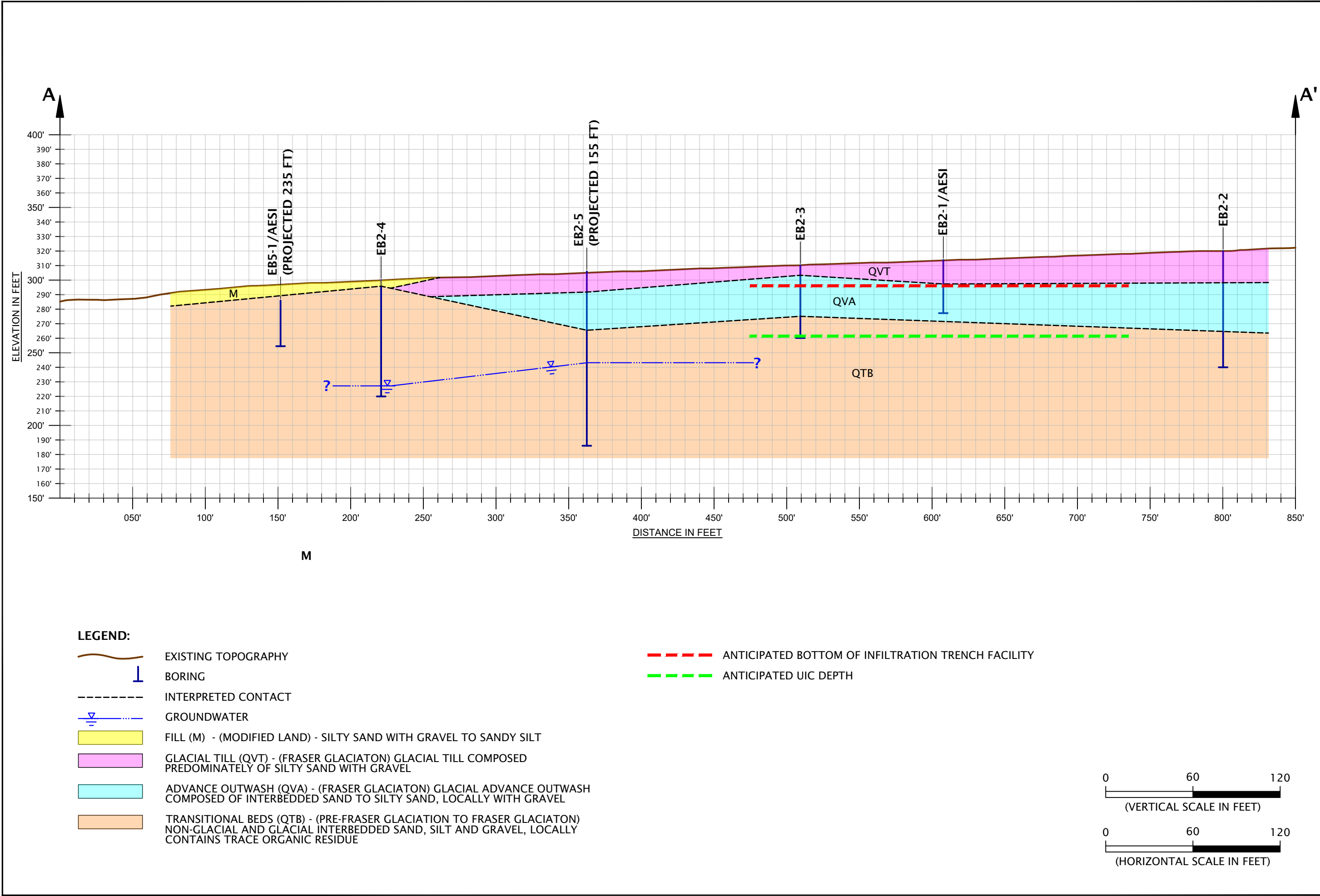
LEGEND:

- EB2-2**  BORING (NV5)
- EB2-1/AESI**  BORING (AESI)
-  **310** EXISTING TOPOGRAPHY (1-FOOT INTERVALS; 5-FOOT INDEX CONTOURS)
-  CROSS SECTION

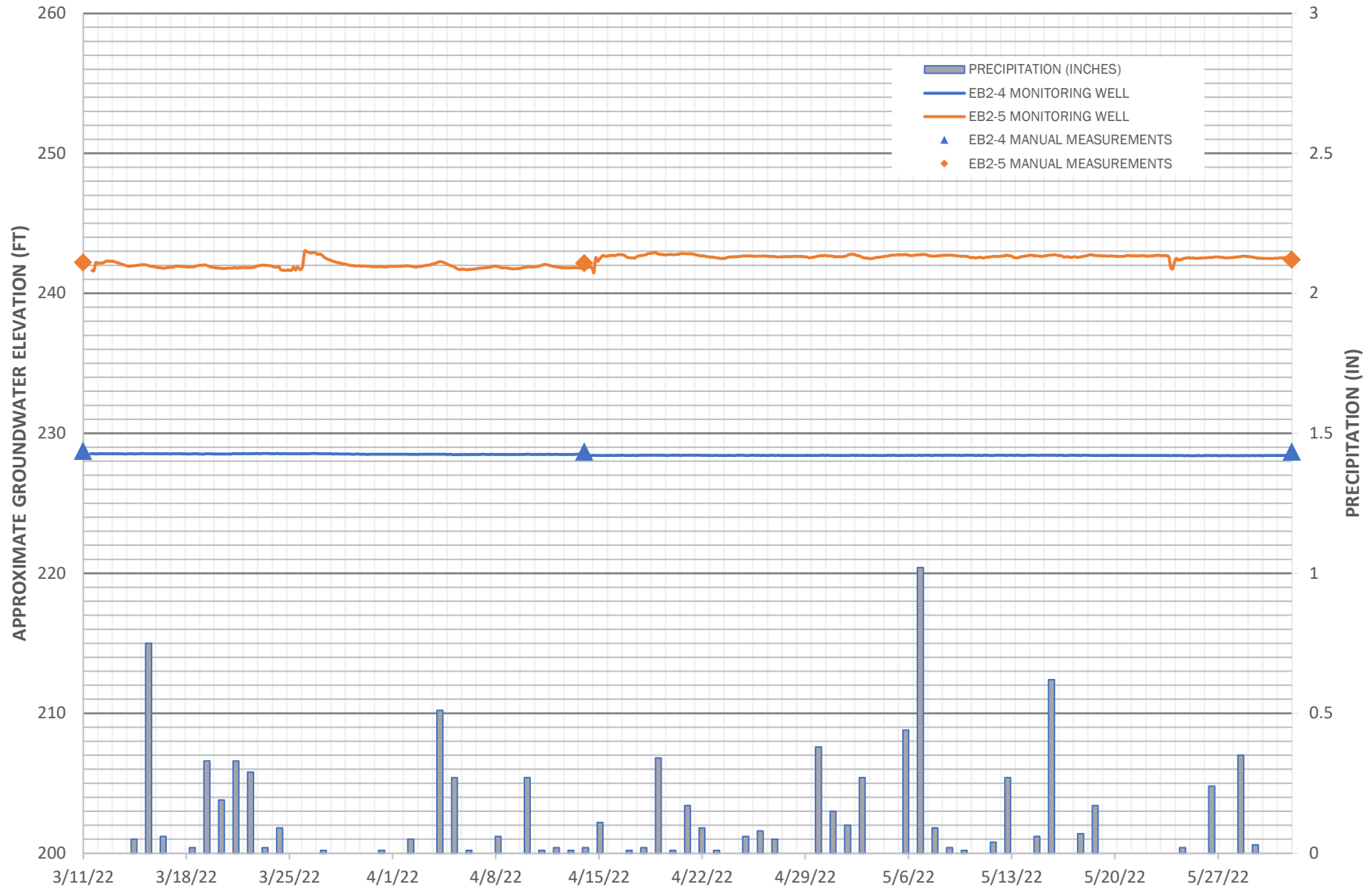


- NOTES:**
1. SITE PLAN BASED ON AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO MARCH 22, 2022.
 2. EXISTING TOPOGRAPHY OBTAINED ONLINE FROM CITY OF KIRKLAND.

	KPG-135-01	SITE PLAN	
	JUNE 2022	NORTH ROSE HILL BASIN RETROFIT PLANNING KIRKLAND, WA	
		FIGURE 2	



KPG-135-01 SUMMARY OF GROUNDWATER ELEVATION MONITORING WELLS



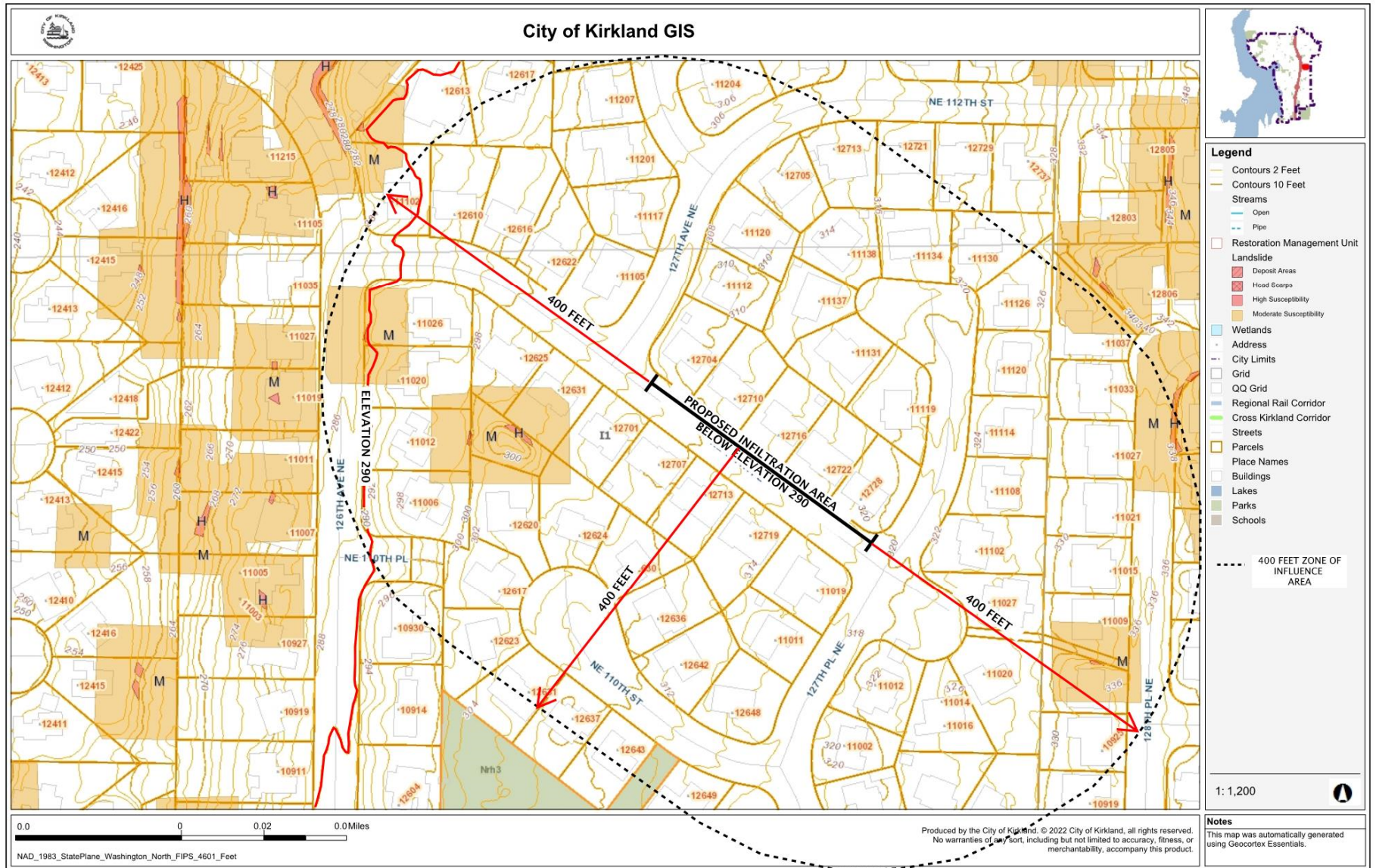
KPG-135-01

JUNE 2022

GROUNDWATER MONITORING SUMMARY

NORTH ROSE HILL BASIN RETROFIT PLANNING
KIRKLAND, WA

FIGURE 4



APPENDIX A

FIELD EXPLORATIONS

GENERAL

Subsurface conditions at the site were explored by drilling four borings (EB-2 through EB-5) to depths between 50 and 80 feet BGS between March 8 to March 11, 2022. The borings were drilled by Holt Drilling Services with a track-mounted drill rig using roto-sonic drilling techniques. The exploration logs are presented in this appendix. The locations of the explorations were determined based on existing conditions, field measurements and hand-held GPS. This information should be considered accurate to the degree implied by the methods used.

LABORATORY TESTING

SOIL SAMPLING

A member of our geology staff observed the explorations. We collected representative samples of the various soil encountered in the explorations for geotechnical laboratory testing. A 20-foot long core barrel was drilled into the formation. The soil was then extracted from the core barrel in 2.5-foot increments and placed in plastic bags for logging and laboratory sample collection. Disturbed soil samples were collected from the samplers at 2.5-foot intervals.

SOIL CLASSIFICATION

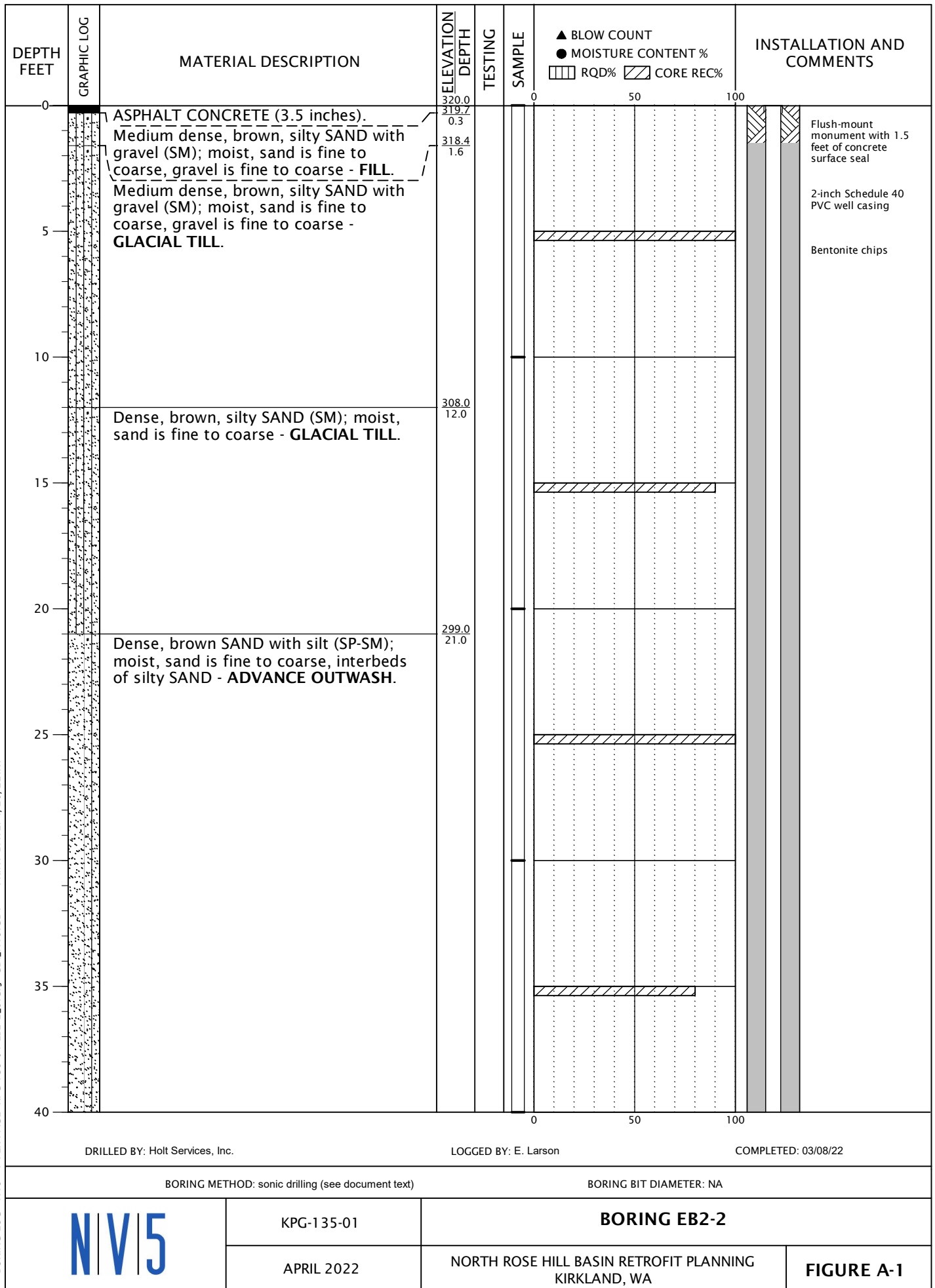
The soil samples were classified in accordance with the “Exploration Key” (Table A-1) and “Soil Classification System” (Table A-2), which are presented in this appendix. The exploration logs indicate the depths at which the soil or their characteristics change, although the change could be gradual. If the change occurred between sample locations, the depth was interpreted. Classifications are shown on the exploration logs.

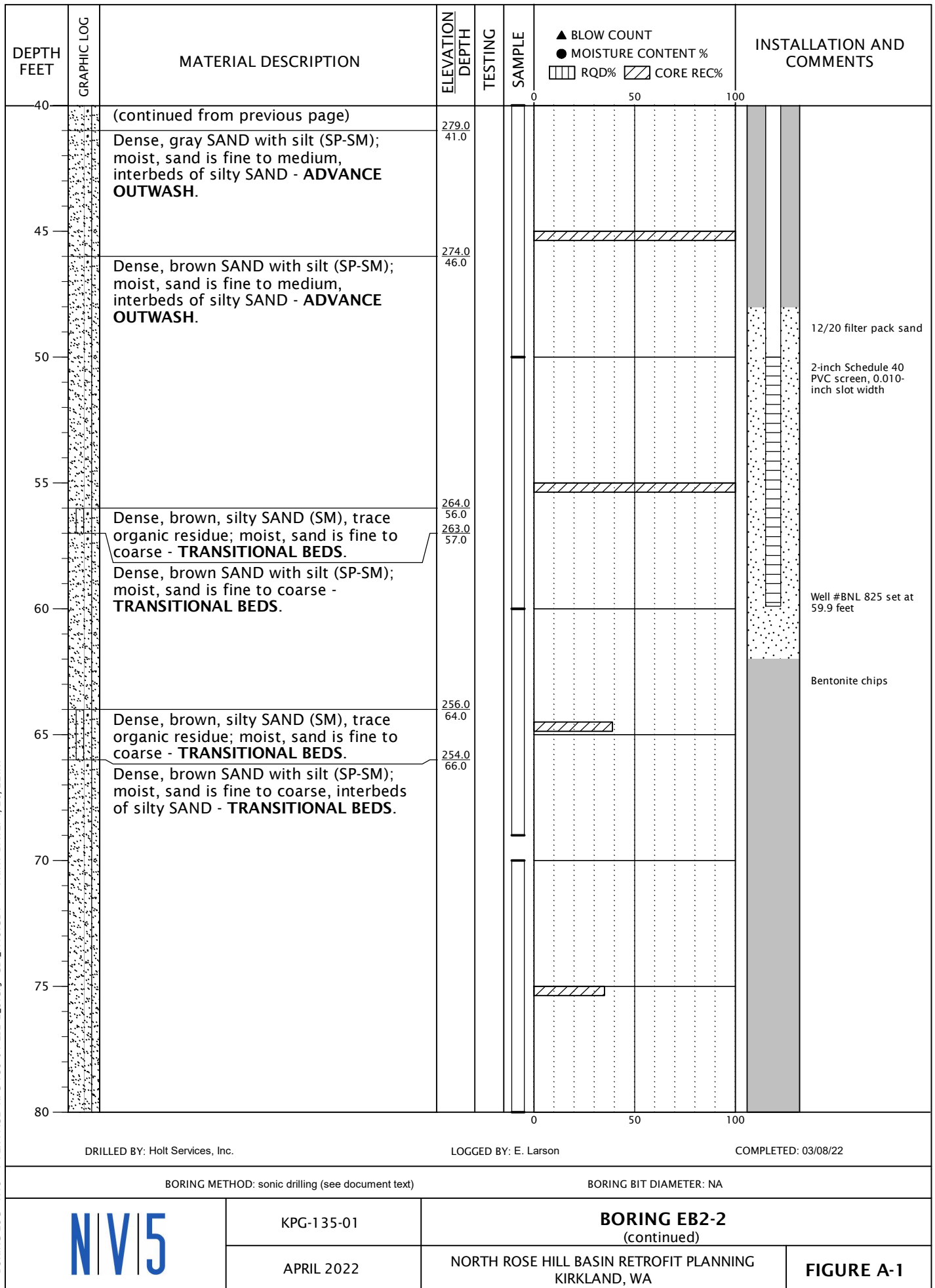
MOISTURE CONTENT


Moisture content determinations were completed on select soil samples in general accordance with ASTM D2216. The moisture content is a ratio of the weight of the water to soil in a test sample and is expressed as a percentage. The test results are presented in this appendix.

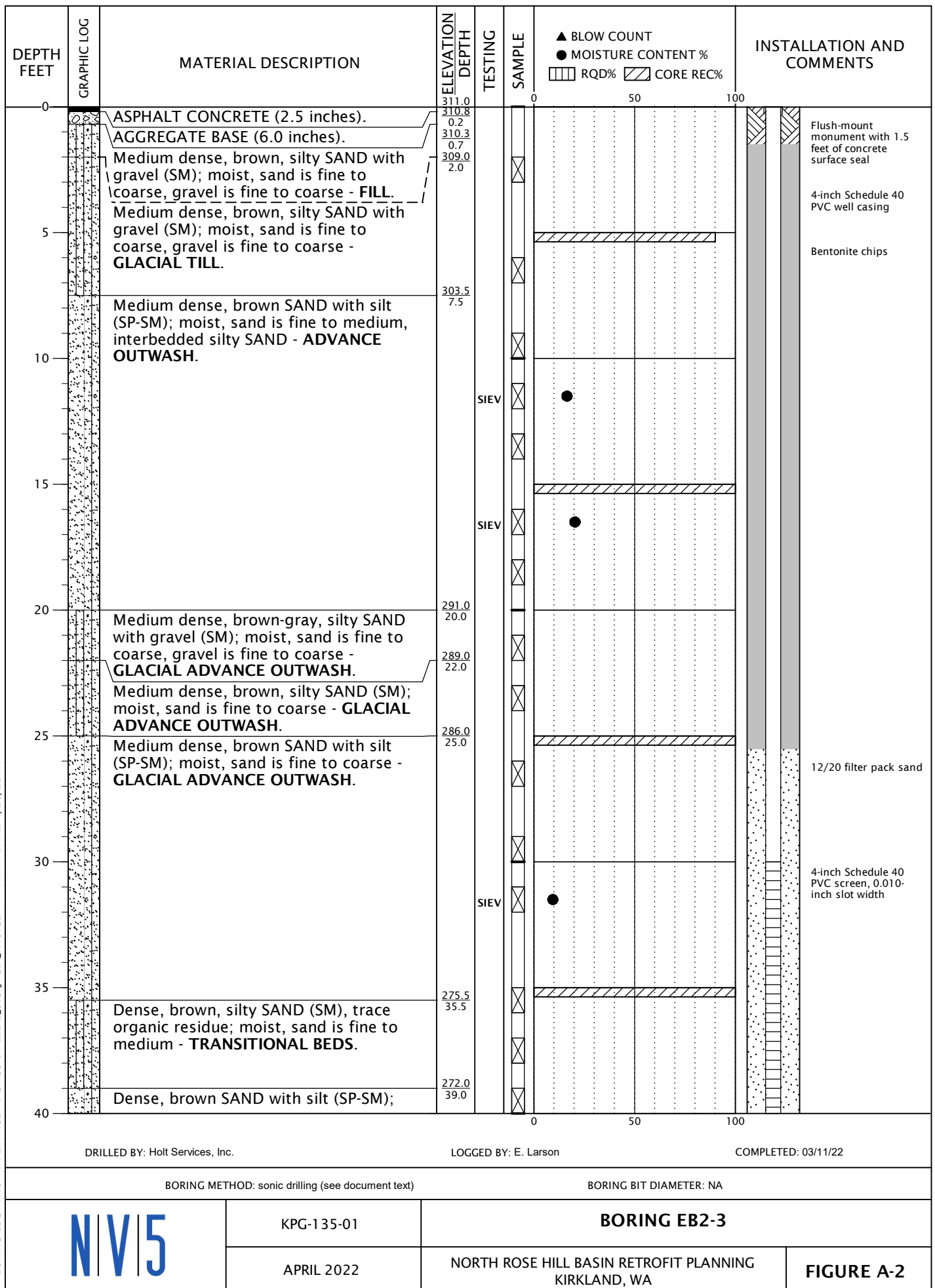
GRAIN-SIZE ANALYSIS

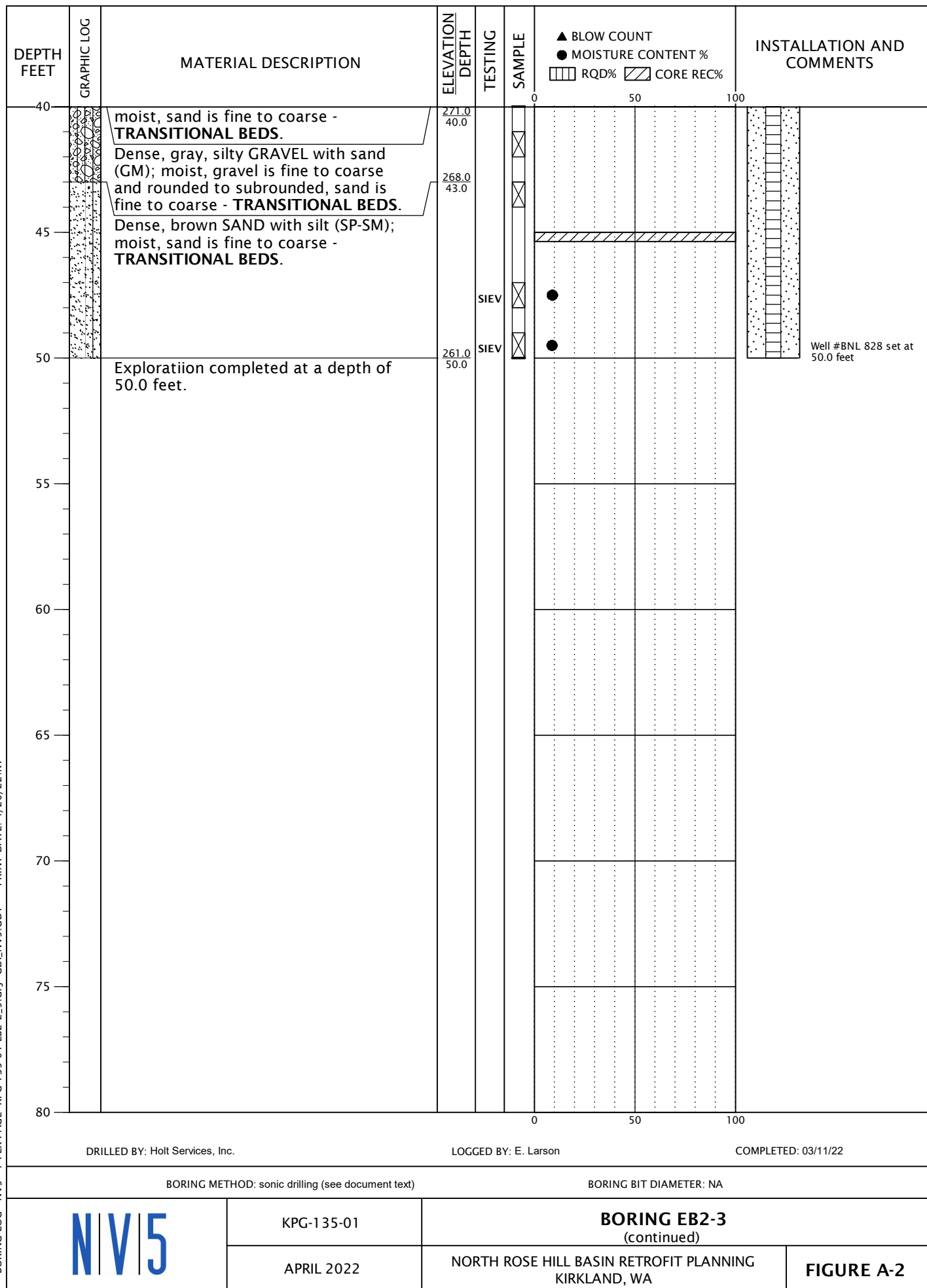
We completed grain-size analyses on select soil samples in order to determine the distribution of soil particle sizes. The testing was completed in general accordance with ASTM C117/ASTM C136 or ASTM D1140 (P200). The test results are presented in this appendix.

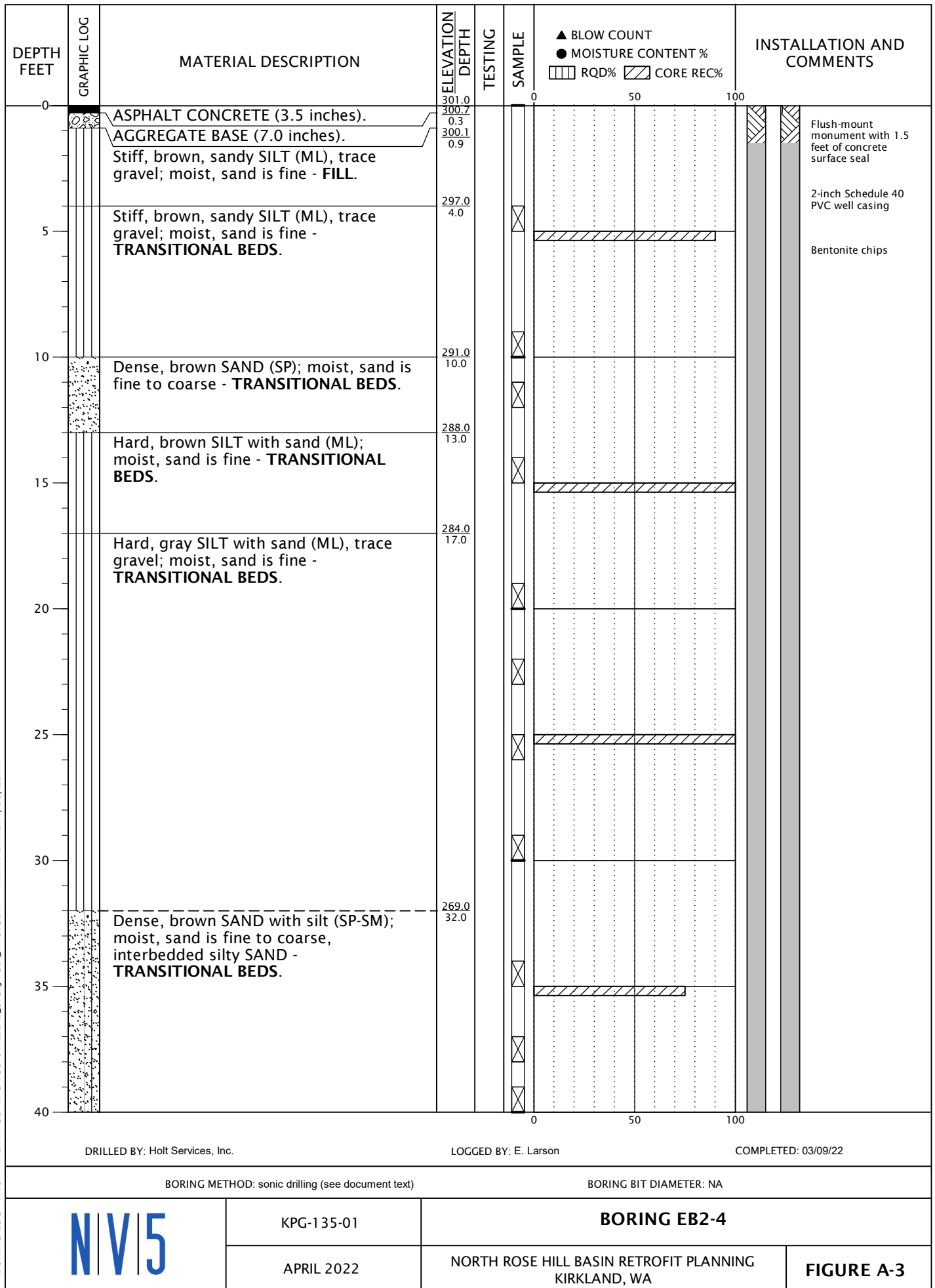


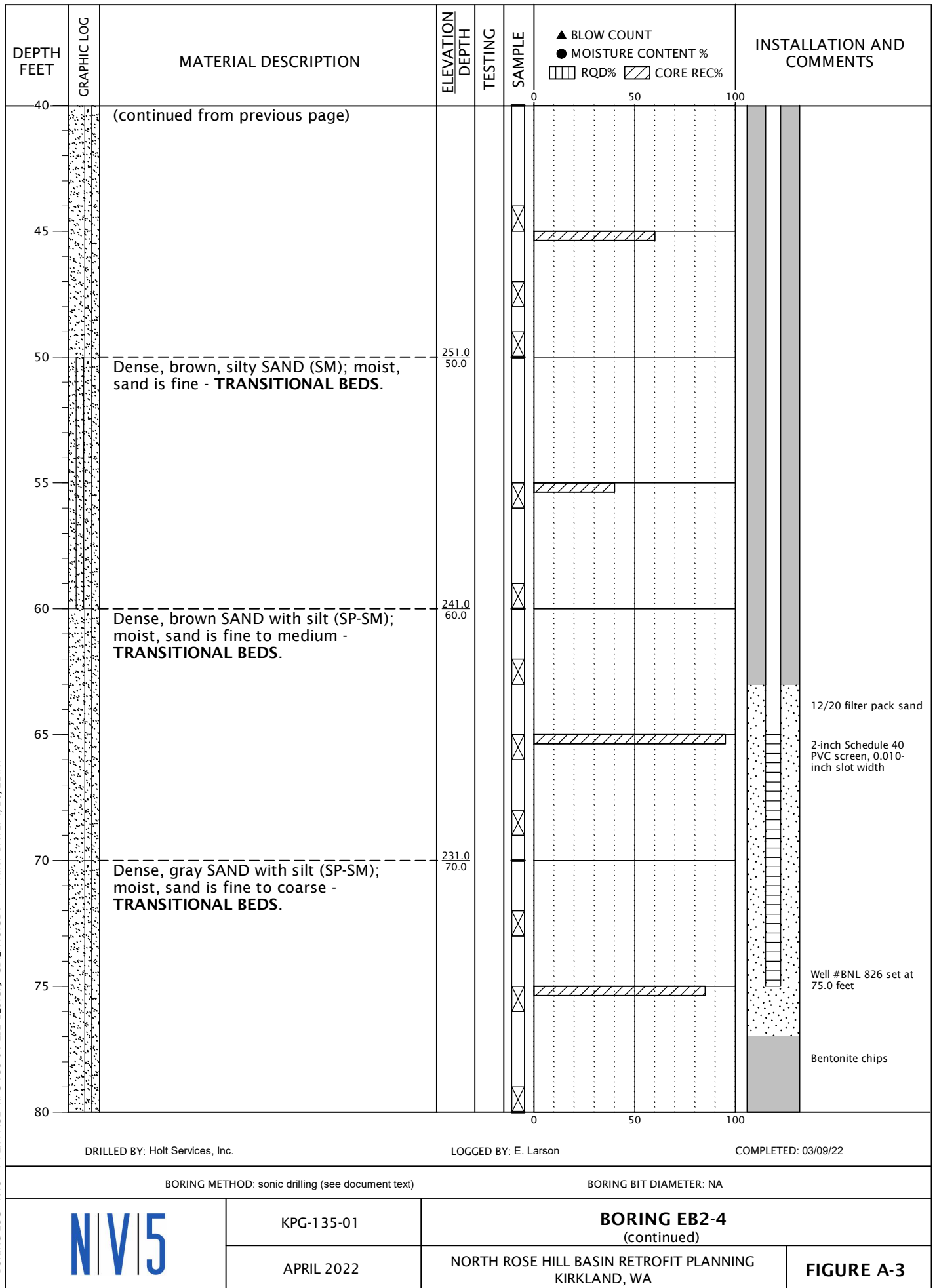


DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	BLOW COUNT		MOISTURE CONTENT %		RQD% CORE REC%	INSTALLATION AND COMMENTS	
80		Exploration completed at a depth of 80.0 feet.	240.0 80.0			0	50	100				
85												
90												
95												
100												
105												
110												
115												
120												
DRILLED BY: Holt Services, Inc. LOGGED BY: E. Larson COMPLETED: 03/08/22												
BORING METHOD: sonic drilling (see document text)						BORING BIT DIAMETER: NA						
			KPG-135-01	BORING EB2-2 (continued)								
		APRIL 2022	NORTH ROSE HILL BASIN RETROFIT PLANNING KIRKLAND, WA							FIGURE A-1		










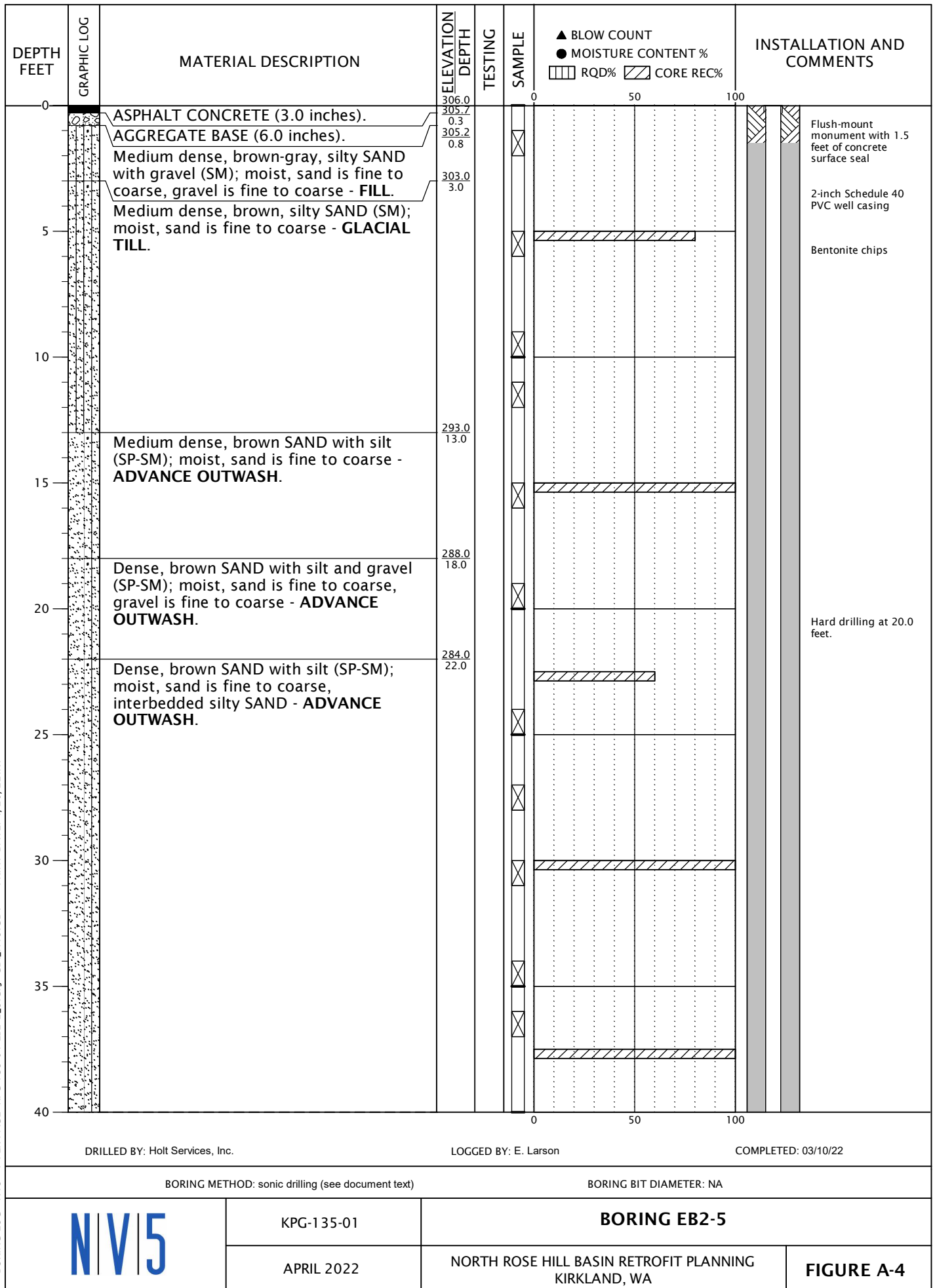
12/20 filter pack sand

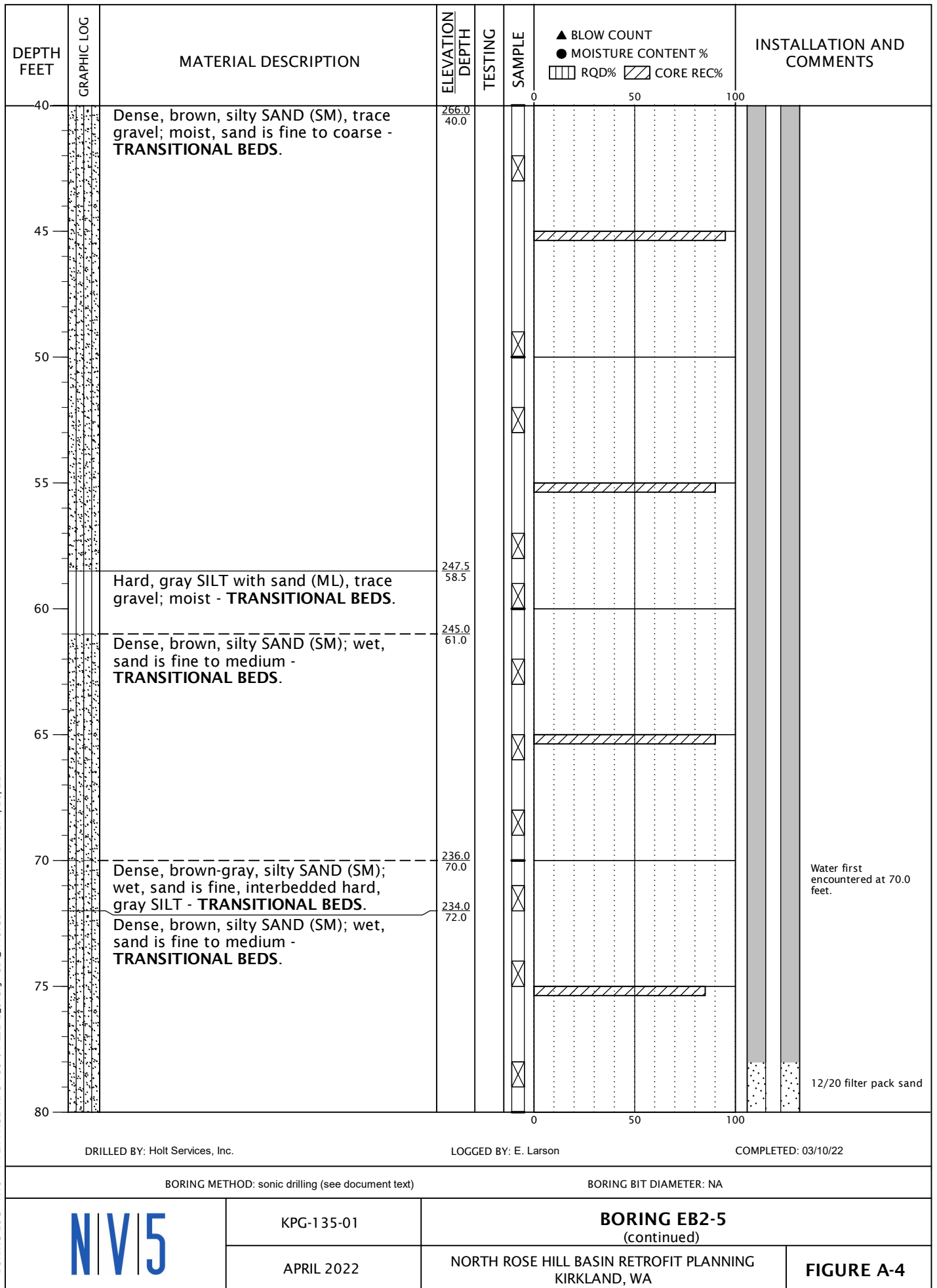
2-inch Schedule 40
PVC screen, 0.010-
inch slot width

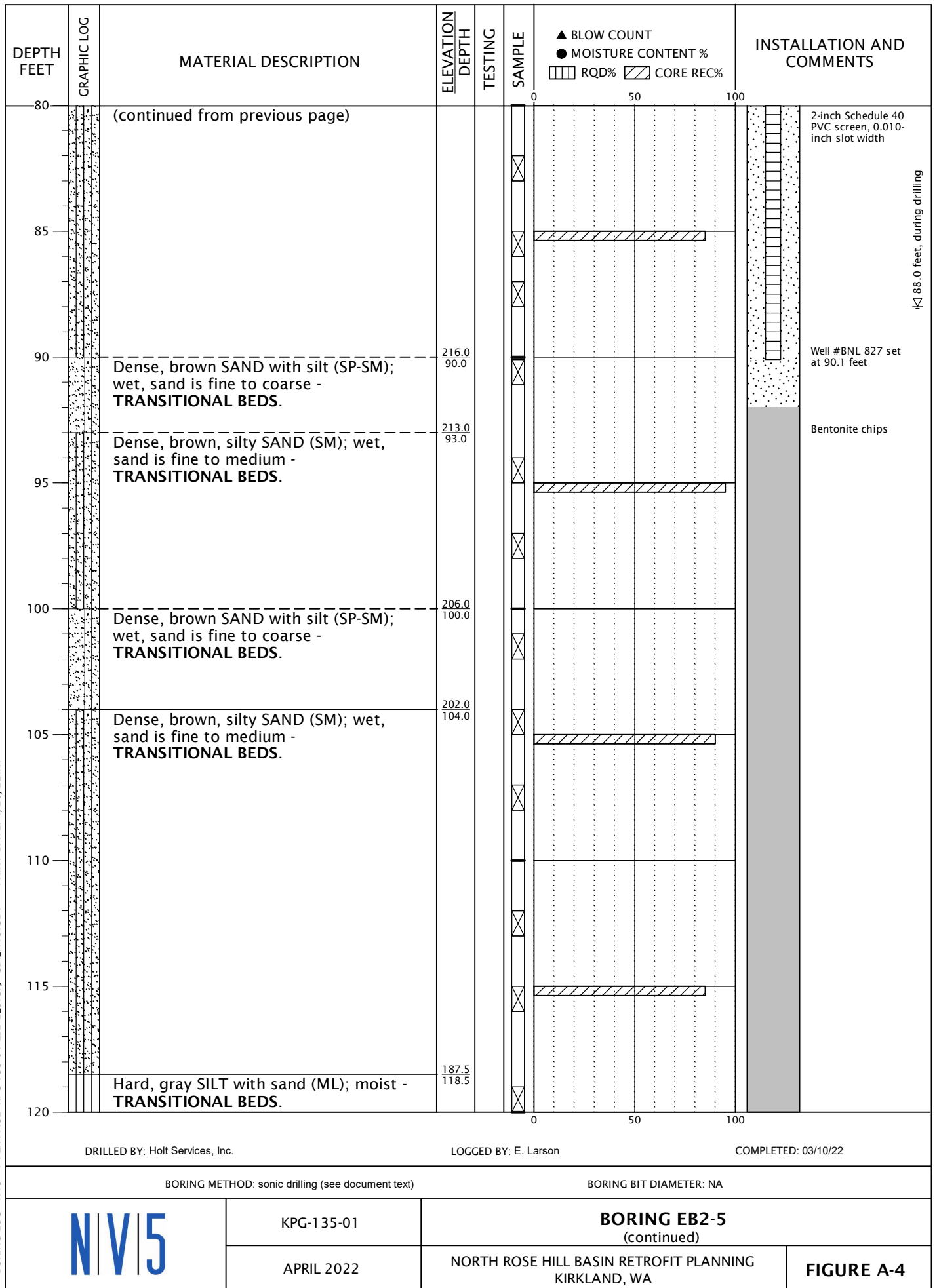
Well #BNL 826 set at
75.0 feet

Bentonite chips


DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	▲ BLOW COUNT ● MOISTURE CONTENT % RQD% CORE REC%	INSTALLATION AND COMMENTS
80		Exploration completed at a depth of 80.0 feet.	221.0 80.0		0	50100	
85							
90							
95							
100							
105							
110							
115							
120					0	50100	
DRILLED BY: Holt Services, Inc.		LOGGED BY: E. Larson		COMPLETED: 03/09/22			
BORING METHOD: sonic drilling (see document text)				BORING BIT DIAMETER: NA			
		KPG-135-01	BORING EB2-4 (continued)				
		APRIL 2022	NORTH ROSE HILL BASIN RETROFIT PLANNING KIRKLAND, WA			FIGURE A-3	








88.0 feet, during drilling

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	▲ BLOW COUNT ● MOISTURE CONTENT % RQD% CORE REC%	INSTALLATION AND COMMENTS
120		Exploration completed at a depth of 120.0 feet.	186.0 120.0		0	50100	
125							
130							
135							
140							
145							
150							
155							
160							
DRILLED BY: Holt Services, Inc. LOGGED BY: E. Larson COMPLETED: 03/10/22							
BORING METHOD: sonic drilling (see document text) BORING BIT DIAMETER: NA							
		KPG-135-01	BORING EB2-5 (continued)				
		APRIL 2022	NORTH ROSE HILL BASIN RETROFIT PLANNING KIRKLAND, WA				FIGURE A-4

SAMPLE INFORMATION			MOISTURE CONTENT (PERCENT)	DRY DENSITY (PCF)	SIEVE			ATTERBERG LIMITS		
EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	ELEVATION (FEET)			GRAVEL (PERCENT)	SAND (PERCENT)	P200 (PERCENT)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
EB2-3	11.0	300.0	16		0	85	15			
EB2-3	16.0	295.0	20		0	83	17			
EB2-3	31.0	280.0	9		0	91	9			
EB2-3	47.0	264.0	9		0	83	17			
EB2-3	49.0	262.0	9		0	77	23			
			KPG-135-01		SUMMARY OF LABORATORY DATA					
			APRIL 2022		NORTH ROSE HILL BASIN RETROFIT PLANNING KIRKLAND, WA				FIGURE A-6	

APPENDIX B

RICHARD MARTIN GROUNDWATER, LLC

HYDROGEOLOGIC REPORTS



Richard Martin Groundwater LLC

June 8, 2022

Kevin Lamb
NV5
19201 120th Avenue SE, Suite 201
Bothell, WA 98011

RE: City of Kirkland Infiltration Testing and Evaluation, North Rose Hill Stormwater Infiltration Project, Kirkland, Washington

This letter presents our evaluation of infiltration capacity and recommendations for potential deep infiltration facility design for the North Rose Hill Stormwater Infiltration project in Kirkland, Washington. It is our understanding that the City of Kirkland has an agreement with the Washington State Department of Ecology to improve water quality in Forbes Creek. The project has proposed the use of infiltration to better manage stormwater in the Forbes Creek basin. Initially, the project proposed the use of UICs wells but the use of an infiltration trench is also being evaluated. In addition, drilled drains were evaluated as an alternative to typical UIC wells.

Initial explorations were performed by AESI (2019) as part of the preliminary infiltration feasibility, and as part of the current scope to support design NV5 performed an additional 4 explorations. The recent explorations included installation of two monitoring wells and a 4-inch test well on NE 111th Place between 126th Avenue NE and 127th Place NE. We performed infiltration testing on the 4-inch test well, with the testing procedures, data collected during testing, and evaluation of the infiltration feasibility and capacity described in this letter.

The scope of services included:

- Review existing soil and groundwater information;
- Perform infiltration testing on the new 4-inch test well;
- Evaluate infiltration feasibility and capacity;
- Perform slug testing;
- Develop preliminary mounding analysis;
- Prepare a brief letter report summarizing the results of the testing and evaluation; and
- Support the design team for infiltration facilities.

A preliminary mounding analysis has been performed and is summarized in our letter report, *PRELIMINARY DRAFT Groundwater Mounding Analysis, City of Kirkland North Rose Hill Stormwater Infiltration Project, Kirkland, Washington*, dated June 1, 2022. The final mounding analysis will be performed following infiltration facility design and final location of the facilities. These services were performed in general accordance with our proposal dated December 9, 2021.

This letter report will be included as an appendix to the Geotechnical Report prepared by NV5.

SUBSURFACE CONDITIONS

Site soil and groundwater conditions are described in the main section of the Geotechnical Report.

In general, the soils consist of varying thickness of Glacial Till underlain by Advance Outwash, which is underlain by Transitional Beds. The Glacial Till ranges in thickness from approximately 8 to 20 feet. The exception is the west end of the project where fill was observed at groundwater surface and directly overlying Transitional Beds.

The underlying Advance Outwash is generally fine to coarse sand with varying amounts of silt and interbedded with silty sand. Some layers of silty sand were observed in the borings. Grain size analyses indicate fines content ranging from about 9 to 17 percent. Below the Advance Outwash, the Transitional Beds were observed to the bottom of the explorations. The Transitional Beds was similar to the overlying Advance Outwash consisting of fine to coarse sand with varying amounts of silt, although the silt content tends to be slightly higher. In the west end, the upper portion of the Transitional Beds consists of silt with sand.

Groundwater was encountered during drilling of boring EB2-5 at a depth of approximately 88 feet bgs. Groundwater was not observed in the other borings during drilling. Monitoring wells were installed borings EB2-2, EB2-4, and EB2-5, while a 4-inch test wells was installed in EB2-3. Groundwater has been observed in monitoring wells EB2-4 and EB2-5 following drilling. The location of the wells is shown in the Geotechnical Report.

The unsaturated Advance Outwash and sandy Transitional Beds are the target soils for deep infiltration. The following table summarizes the subsurface conditions:

Boring	Depth (feet)	Depth to Groundwater (feet)	Thickness of Fill and Till (feet)	Thickness of Unsaturated Zone (feet)
EB2-2	80	NO*	21	>59
EB2-3	50	NO*	7.5	>42.5
EB2-4	80	72.5	32**	40.5
EB2-5	120	64	13	51

* NO = not observed during drilling

** Thickness includes silt transitional beds

NV5 has been monitoring groundwater levels in monitoring wells EB2-4 and EB2-5. The groundwater elevation data is provided in the Geotechnical Report.

The groundwater elevation at EB2-4 is approximately 228.5 feet, or approximately 72 feet bgs with less than 1 foot of fluctuation to date. The groundwater elevation at EB2-5 is approximately 242 feet, or approximately 64 feet bgs with less than 2 feet of natural fluctuation to date. On approximately March 26, 2022, the groundwater elevation at EB2-5 shows a sharp spike in elevation of approximately 1 foot with slow decline over the following few days. It is unclear the cause of the spike although it could potentially be related to rainfall over the previous weeks.

A monitoring well was also installed at EB2-2, but groundwater has not been observed to date. The bottom of the monitoring well screen is at approximately elevation 260 feet.

INFILTRATION TESTING PROCEDURES

Infiltration testing was performed in the 4-inch EB2-3 test well to estimate potential infiltration rates and capacity for proposed deep infiltration UIC facilities and a shallow infiltration trench. There are currently no testing requirements for deep infiltration facilities in the City of Kirkland stormwater regulations or in the King County Surface Drainage Manual; however testing requirements for deep infiltration facilities are provided in Appendix D of the Seattle Stormwater Manual. The infiltration testing was performed in general accordance with the Seattle Stormwater Manual testing requirements.

A description of the test well installation is provided in the main text of the Geotechnical Report and on the boring logs. The well consists of feet of 4-inch PVC screens (10-slot). A filter pack consisting of 12-20 silica sand was installed in the annulus between the well screen and the 8-inch borehole to approximately 5 feet above the screen portion of the well. Above the filter pack, the well was completed with a bentonite chip seal and a steel monument installed flush with the asphalt.

Deep infiltration testing is similar to shallow infiltration whereby potable water is added to the test well at a measured rate and the water level in the well is observed. The test is performed until “steady-state” conditions are achieved or a minimum of 4 hours. For the purposes of these tests, “steady-state” was assumed when the change in water level and rate is less than 10 percent for a minimum of 1 hour. At the end of testing, the water is turned off and rate of the falling water level is observed.

Because of the volume of water needed for testing, a fire hydrant permit was obtained for a hydrant located at the north-northwest corner of NE 111th Place and 127th Avenue NE. Per the permit requirements, a hydrant meter was obtained from the City of Kirkland Public Works and outfitted with a reduced pressure backflow assembly. Water was conveyed to the test wells using fire hose. Because the fire hose had to cross 127th Avenue NE, hose ramps were used to protect the fire hose.

A 20-foot, 2-inch, PVC drop pipe was used to deliver the water into the test well to reduce turbulent flow and air entrapment. The water flow rate was measured and controlled using Flomec digital flow meter and a ball valve to control the flow. The water level in the well was measured using a pressure transducer/datalogger system, with the water level recorded on 1-minute intervals. The target water level for the first half of the test was approximately the bottom 10-feet of the well screen to target the lower sand. For the second half of the test, the top of the well screen was the target water level to assess potential infiltration feasibility of the upper sand.

EB2-3 Infiltration Test

The infiltration testing for test well EB2-3 was performed on March 22, 2022. Approximately 200 feet of fire hose was used to convey the water from the hydrant to the flow control assembly used for testing.

The testing was initiated at 09:32, with an initial flow rate of approximately 36 gallons per minute (gpm) to the test well based on our observation of soil conditions during drilling. The initial portion of the test was to achieve a water level to saturate approximately the bottom half of the test well screen to test the lower sand. The water level rise was relatively rapid and the flow rate was slowly decreased over the next half hour to steady-state rate of approximately 23 gpm. After 1.5 hours, the flow rate was increased to saturate the upper portion of the screen. The flow rate was adjusted to maintain the water level near the top of the screen, with the flow rate dropping from approximately 54 gpm to 49 gpm by the end of the test. The second portion of the test was performed for approximately 3.5 hours for a total test time of approximately 5 hours.

After turning the water off, the water level dropped rapidly with the transducer indicating the well was dry within approximately 12 minutes. The water level was checked with an electronic water level tape and it was discovered that there was approximately 8 feet of water still in the well 20 minutes after the water was turned off. This indicated that the pressure transducer somehow got stuck within the well approximately 8 feet above the bottom of the well. The impact of this will be discussed in the following sections.

Figure 1 shows the water level data downloaded from the datalogger along with the flow rate. Note that the water level data was adjusted based on the transducer being stuck approximately 8 feet above the bottom of the well.

INFILTRATION CAPACITY ANALYSIS

An infiltration capacity analysis was performed using an analytical groundwater spreadsheet model based on the borehole permeameter (BP) approach, which provides a relatively simple, closed-form, analytical method for estimating a bulk hydraulic conductivity. This approach, sometimes referred to as the Constant Head Well Permeameter approach, was originally developed by Glover (Zanger 1953) and further refined by others, such as Elrick et al. (1998) and Reynolds (2007). The BP approach assumes steady state infiltration from an open borehole into a homogeneous isotropic soil and is based on the concept that the water infiltrating from the borehole flows radially and downward in response to pressure and gravity gradients. The equations used in the BP approach are provided in Attachment A.

The analysis estimates the bulk hydraulic conductivity based on the borehole/well geometry, the steady-state flow rate to the borehole, the hydraulic head rise, and assumed characteristics of unsaturated flow in specific soil types. The term bulk hydraulic conductivity is used because the testing procedures and analysis approach does not differentiate between the horizontal and vertical components of flow, and the result represents a combination of the two components of the hydraulic conductivity value. Additional information on the specific equations and assumptions are provided in Kindred and Reynolds (2020).

The results of the BP approach provide an estimation of the bulk soil hydraulic conductivity of soil being tested, which can then be used to estimate the potential infiltration capacity of an infiltration facility.

For the test performed in test well EB2-3, the resulting bulk hydraulic conductivity was estimated to be between 8 and 10 feet per day.

The resulting bulk hydraulic conductivity and BP approach can then be used to extrapolate infiltration capacities for different well/drain/trench geometries, as described below.

INFILTRATION CAPACITY AND DESIGN RECOMMENDATIONS

This section provides recommendations for infiltration capacity for deep infiltration facilities and general recommendations for the design, construction, operation, and maintenance of drilled drains, infiltration trenches, and UIC wells. In addition, the proprietary drain developed by Torrent Resources, MaxWell IV was evaluated. Details on each type of facility are provided in the Geotechnical Report.

The Washington State Department of Ecology requires a vertical separation between the base of a UIC facility and the seasonal high groundwater table. Ecology has released the 2019 Stormwater Management Manual for Western Washington that increases the vertical separation from 5-feet to 15-feet, effective October 1, 2019 in cases where a low permeability soil layer (e.g. Glacial Till) is at ground surface and limits the natural downward movement of water. Because of the Till cap in the project area, a 15-foot vertical separation between the bottom of the UIC wells and the seasonal high groundwater level is required.

Design Infiltration Capacity

It is our understanding that the goal of the project is to infiltrate approximately 0.34 cubic feet per second (152 gpm). The bulk hydraulic conductivity values estimated from the test data is converted to a design hydraulic conductivity by applying correction factors including a testing factor based on the test data (0.8), a factor to account for soil variability (0.8), a clogging factor (0.9), and a facility geometry factor (0.9), resulting in a total correction factor of 0.5. The design hydraulic conductivity is then used to estimate infiltration capacity rates for several different diameter drains/wells. The infiltration capacity rates assume that the drains/wells are within the Advance Outwash and/or sandy Transitional Beds and the water level is allowed to rise to within 5 feet of ground surface.

We recommend the following design infiltration capacity rates for the drain/well systems and the number of facilities needed to meet the project goal of 152 gpm:

Type of Facility	Facility Diameter (feet)	Infiltration Capacity (gpm)	Number of Facilities Required
UIC Well	1	40	4
Drilled Drain	3	50	3
MaxWell IV	4	60	3

Actual infiltration capacity will depend on the subsurface conditions encountered during construction, construction methods, and operation and maintenance of the facilities.

In addition to drains/wells, the bulk hydraulic conductivity value was used to estimate the bottom area of a trench needed to meet the project goal. The estimate assumes the trench extends at least 2 feet into the Advance Outwash soil. The estimated area of the bottom are of the trench would need to be approximately 1,500 square feet; i.e. a 5-foot wide trench would need to approximately 300 feet in length.

Infiltration Facility Performance Monitoring and Operation

Careful consideration to surface works should be taken to reduce long-term impacts to the performance of the infiltration facilities. In addition to reducing the potential for sediment to flow into the facilities, surface filtration and treatment systems should be designed to reduce the potential for bacterial growth. In particular, systems should be designed to reduce the amount of organic carbon, nitrites/nitrates, and phosphorous that reaches the infiltration facilities.

Periodic monitoring of water levels in the facilities should be performed to confirm that the water is readily draining into the adjacent soil. Observation of water in the facilities after a period of dry conditions may be an indication that the capacity and performance is degrading.

If reduced capacity or performance of the facilities is observed, maintenance may be required. If sedimentation in the drains or wells is observed, redevelopment may be required to remove sediment and may include surging and pumping, and/or jetting to remove sediment.

ADDITIONAL RECOMMENDATIONS

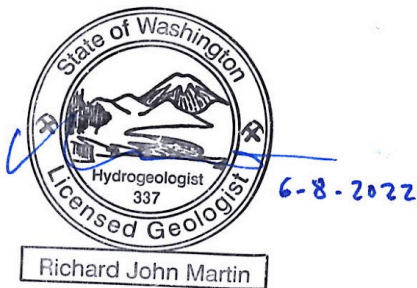
We recommend that RMGW be contracted during drilling and installation activities of infiltration facilities to observe soil and groundwater conditions and provide additional recommendations as needed.

LIMITATIONS

This letter was prepared for the exclusive use of NV5, KPG, and the City of Kirkland. The opinions and conclusions provided in this report are based on review of site soil and groundwater data from project explorations, the results of infiltration testing in project test wells, and our experience with infiltration facility design in King County. This report was prepared in accordance with generally accepted professional principles and practice in this area at this time. No other warranty, either express or implied, is made.

If you have any questions or comments, please contact me at 206-979-1530 or at Richard.martin.gw@gmail.com.

Sincerely,



Richard J. Martin, L.H.G.
Richard Martin Groundwater LLC

Enclosures:

Figure 1 – Test Well EB2-3 Test Data

Attachment A – Equations for the Borehole Permeameter Approach

REFERENCES

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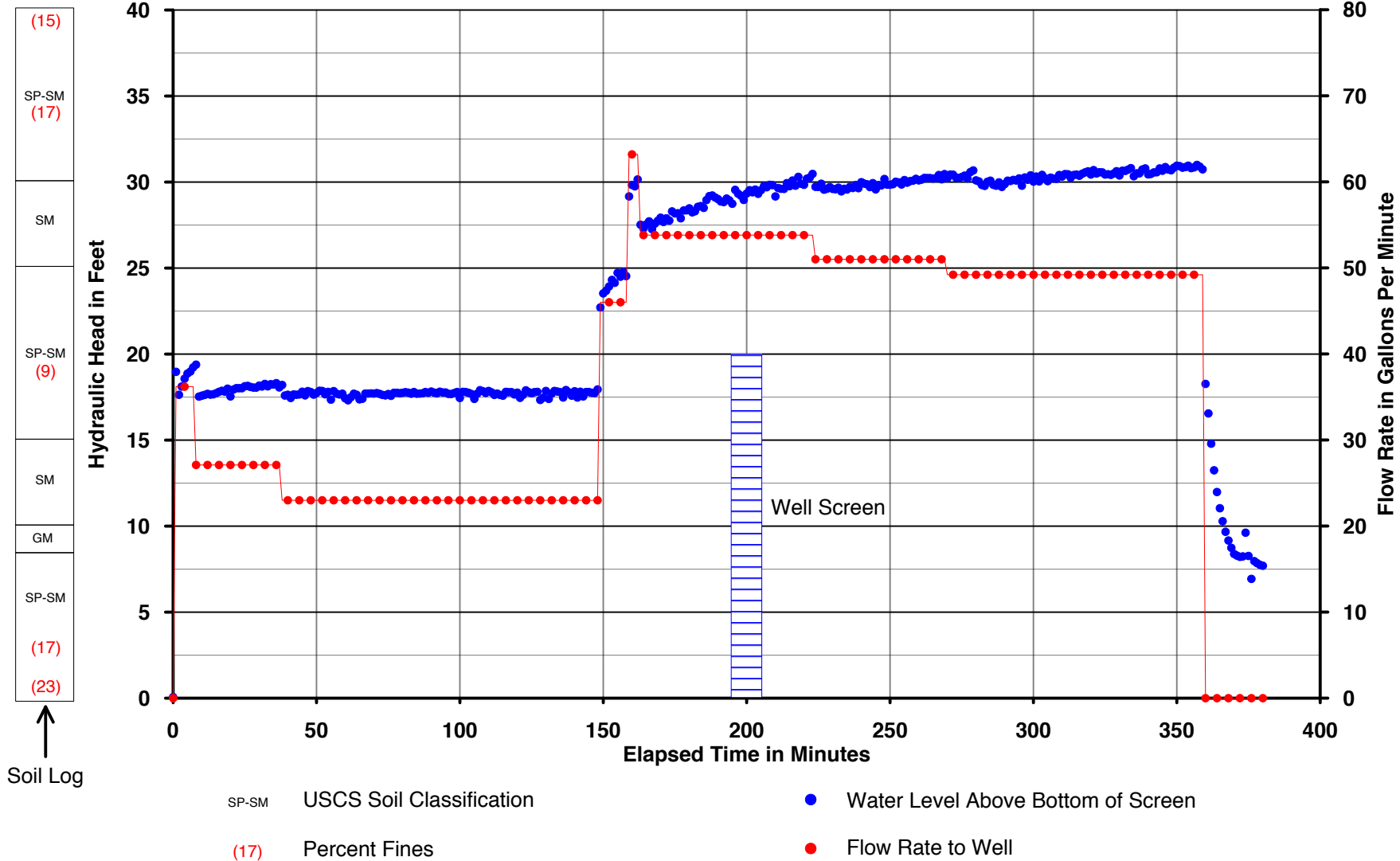
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Zanger, C.N., 1953, *Theory and Problems of Water Percolation*, U.S Department of the Interior, Bureau of Reclamation, Engineering Monogram 8, Denver, Colorado.

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Rose Hill Well EB2-3 Infiltration Testing Data



Richard Martin
Groundwater LLC

Rose Hill Basin Project - City of Kirkland
Kirkland, Washington

April 29, 2022

Figure 1

ATTACHMENT A

Equations for the Borehole Permeameter Approach

Equations for the Borehole Permeameter Approach

The following equations are excerpted from Kindred and Reynolds (2020) and the upcoming Infiltration Guide being prepared by KindredHydro, Inc. for the City of Tacoma under a grant from the Washington State Department of Ecology.

The bulk saturated hydraulic conductivity is estimated using the following equations:

$$K_s = \frac{CQ}{2\pi H^2 + \pi r^2 C + \frac{2\pi H}{\alpha^*}}$$

where,

$$C = \left[\frac{(H/r)}{Z_1 + Z_2(H/r)} \right]^{Z_3}$$

and,

Q = flow rate out of the infiltration facility

H = head in the facility

r = borehole radius

α^* = soil sorptive number

Z1, Z2, Z3 = shape function fitting parameters

The infiltration capacity of a facility is determined using the following equation:

$$Q_T = K_s \left[\frac{2\pi H^2}{C} + \pi r^2 + \frac{2\pi H}{C\alpha^*} \right]$$



Richard Martin Groundwater LLC

June 1, 2022

Kevin Lamb
NV5
19201 120th Avenue SE, Suite 201
Bothell, WA 98011

RE: PRELIMINARY DRAFT Groundwater Mounding Analysis, City of Kirkland North Rose Hill Stormwater Infiltration Project, Kirkland, Washington

This letter describes the mounding analysis performed to evaluate the risk to nearby slopes from stormwater infiltration for the proposed for the North Rose Hill Stormwater Infiltration project in Kirkland, Washington. It is our understanding that the City of Kirkland has an agreement with the Washington State Department of Ecology to improve water quality in Forbes Creek. The project has proposed the use of infiltration to better manage stormwater in the Forbes Creek basin with the use of UICs wells or drilled drains.

As stormwater is infiltrated in to the subsurface, the water will percolate downward to the water table, causing a local buildup of groundwater. The buildup of groundwater results in the hydraulic gradient that will cause groundwater to move laterally away from the area of the infiltration facilities. If sufficient groundwater moves toward slopes, seepage and/or a reduction in slope stability may occur. The mounding analysis is performed to evaluate the development of the groundwater rise and subsequent movement toward the slopes.

This letter will be a supplement to our *Draft City of Kirkland Infiltration Testing and Evaluation, North Rose Hill Stormwater Infiltration Project* letter dated April 29, 2022. These letter reports will be included as an appendix to the Geotechnical Report prepared by NV5.

These services were performed in general accordance with our proposal dated December 9, 2021.

SUBSURFACE CONDITIONS

Site soil and groundwater conditions are described in the main section of the Geotechnical Report.

In general, the soils consist of varying thickness of Glacial Till underlain by Advance Outwash, which is underlain by Transitional Beds. The Glacial Till ranges in thickness from approximately 8 to 20 feet. The exception is the west end of the project where fill was observed at groundwater surface and directly overlying Transitional Beds.

The underlying Advance Outwash is generally fine to coarse sand with varying amounts of silt and interbedded with silty sand. Some layers of silty sand were observed in the borings. Grain size analyses indicate fines content ranging from about 9 to 17 percent. Below the Advance Outwash, the

Transitional Beds were observed to the bottom of the explorations. The Transitional Beds was similar to the overlying Advance Outwash consisting of fine to coarse sand with varying amounts of silt, although the silt content tends to be slightly higher. In the west end, the upper portion of the Transitional Beds consists of silt with sand.

Groundwater Conditions

NV5 has been monitoring groundwater levels in monitoring wells EB2-4 and EB2-5. The groundwater elevation data is provided in the Geotechnical Report.

The groundwater elevation at EB2-4 is approximately 228.5 feet, or approximately 72 feet bgs with less than 1 foot of fluctuation to date. The groundwater elevation at EB2-5 is approximately 242 feet, or approximately 64 feet bgs with less than 2 feet of natural fluctuation to date.

These data were used establish the initial groundwater conditions for the mounding analysis.

MOUNDING ANALYSIS

A groundwater mounding evaluation was performed to assess potential impacts of infiltration from the proposed stormwater facilities on groundwater levels below the site. Lateral spreading of the groundwater mound could impact steep slopes and facilities adjacent to the site.

Conceptual Model

Because of the limited subsurface information other than the project explorations, surface topography, geomorphological features, and surface water features were also used to develop the conceptual model.

The area proposed for infiltration is located in an upland area. Topographically the ground surface drops relatively rapidly to the west and north. To the east, the ground surface rises and then quickly drops into the Sammamish Valley. To the south, the ground surface elevation is relatively flat. There are drainages in all directions, with a stream and wetland area to the west and southwest of the site, a stream to the north of site, and multiple drainages to the west. The headwaters of Forbes Creek are to the south.

We have interpreted the regional groundwater flow system to be from the south and discharging toward the surface water features to the west, north, and east. As a result of drainages to both the west and east, a groundwater divide is likely located the east of the site with groundwater on the west side of the divide discharging to the west and groundwater to the east of the divide discharging to the east.

As noted above, soil conditions consist of Glacial Till overlying Advance Outwash, which in turn overlies coarse-grained Transitional Beds. In some of the borings there is a thin layer of fine-grained Transitional Beds at the base of the Advance Outwash; however, the thickness and nature of the soil is variable. As a

result, it is our opinion the Advance Outwash and coarse-grained Transitional Beds behave as a single aquifer unit.

Groundwater Flow Model

An analytical mounding analysis was performed by simulating stormwater infiltration from the proposed infiltration facilities and the potential rise of the water table using MODFLOW as part of the Groundwater Vistas Version 6 (Environmental Simulations, 2011) groundwater modeling program. MODFLOW was developed by the United States Geological Survey (McDonald and Harbaugh, 1998), and is the most widely used groundwater modeling program in the industry. It is also the recommended program for mounding analysis in the Manual. For the purposes of this model, a conservative approach was used assuming water infiltrating from the facilities is directly to the water table; that is no unsaturated zone was considered that would be normally expected to slow the downward movement of water and allow for lateral spreading of water before reaching the water table or restrictive soil layer.

A 7,000-foot by 11,600-foot model domain was developed based on the conceptual model. The model domain was subdivided into a grid of 350 rows and 247 columns with row and column spacing ranging from 5 feet around the infiltration facilities to 140 feet at the edges of the model domain. The model consisted of one layer representing the infiltration receptor soil layer.

Boundary Conditions

Based on the conceptual model, the regional groundwater system is simulated using constant head boundary condition on the southern border, at approximately Northeast 100th Street, with an initial head value of elevation 260 feet.

As noted in the conceptual model, a groundwater divide bisects the upland area. The groundwater divide is simulated as a no-flow boundary, and is located approximately along 132nd Avenue NE.

Groundwater discharges to surface water features, which are simulated as drain boundaries with an initial elevation of 210 feet based on topography. Three surface water features are included in the model, two on west side of the model domain and one to the north. Between the surface water boundaries are no-flow boundaries. Because of these boundaries, groundwater can only leave the model domain through the three surface water features.

Aquifer Parameters

The two key aquifer parameters for the mounding analysis are hydraulic conductivity and specific yield. Aquifer parameters for the model were developed based on the grain-size distribution from soil samples collected from the borings performed for the project, the results of the infiltration testing performed at boring B2-3, the results of the slug testing, and our experience with similar soil.

Estimated hydraulic conductivity values range from approximately 2 to 50 feet per day. Based on our review of data, the geometric mean value of 12 feet per day was used for the model.

In general, estimating values of specific yield requires performing a pumping test. Because the target soil zone for infiltration is unsaturated, site specific testing cannot be performed. Based on our experience with unconfined aquifers in the King County region in similar soil, we selected specific yield value of 0.25 (dimensionless).

Infiltration Input

The project's target infiltration goal is approximately 172 gallons per minute (gpm). This rate is equivalent to approximately 0.9 inches per day of rainfall assuming a runoff area of approximately 10 acres. The 0.9 inches per day was compared to the highest annual rainfall in the Kirkland area (approximately 55 inches) and a 180-day wet season. The result is the 0.9 inches would need to fall approximately every 3 days to match the highest annual rainfall during the 180-day wet season.

For the infiltration input, the target infiltration goal was divided equally among 5 UIC wells every 3 days for a 180 day wet season. This is relatively conservative because a weir will be used to limit the stormwater runoff to the wells to a total of 172 gpm; that is for rainfall events greater than 0.9 inches per day, the excess rainfall will bypass the wells.

Evaluation of Potential Mounding

An initial water table elevation was developed by running the model in steady-state condition, and comparing the results to the average of the groundwater elevations observed at the monitoring wells, approximately elevation 235 feet. The constant head boundary was adjusted until groundwater elevation was achieved at the location of the site, with the final value of the constant head boundary of 275 feet.

The UIC wells were then added to the model and spaced at approximately 50-foot on center. The model was modified from a steady-state model to transient model by inputting 180 daily time periods and adding infiltration every 3 days as described above.

The simulated peak mounding below the infiltration facilities is approximately 12 feet. At the end of the wet season, 0.5 feet of mounding extends approximately 1,200 feet from the infiltration facilities. Figure 1 shows simulated contours of mounding at the end of the wet season.

CONCLUSIONS AND RECOMMENDATIONS

The potential development of groundwater mounding as a result of infiltration should be anticipated. The height and extent of the groundwater mounding will be affected by the distribution of hydraulic conductivity and specific yield of soil underlying the infiltration facilities. The mounding results indicate that a simulated peak groundwater mounding of up to approximately 12 feet is possible below the infiltration facilities. Because the facilities are required to have a minimum vertical separation of 15 feet between the bottom of the facility and seasonal high groundwater level, the mounding will not impact the performance of the facilities.

The results of the groundwater mounding indicate that 0.5 feet of mounding could occur up to 1,100 feet from the facilities at the end of the wet season.

In our opinion and based on our experience with performing mounding analyses, the results likely represent a worse-case scenario. Because of the limited subsurface data, a number of conservative assumptions are built into the model including:

- The peak annual precipitation year was used to develop the infiltration input.
- All of the precipitation was input to the model whereas the actual volume of stormwater discharging to the infiltration facilities will be limited by a weir.
- All of the infiltration is input during the wet season, i.e. any rainfall that may have occurred during the dry season has been included in the 180 day wet season that was simulated.
- Groundwater discharge is only to the surface water features, which results in greater mounding.

We recommend monitoring of groundwater levels post-construction to verify long-term performance of the facilities.

LIMITATIONS

This letter was prepared for the exclusive use of NV5, KPG, and the City of Kirkland. The opinions and conclusions provided in this report are based on review of site soil and groundwater data from project explorations, the results of infiltration testing in project test wells, and our experience with infiltration facility design in King County. This report was prepared in accordance with generally accepted professional principles and practice in this area at this time. No other warranty, either express or implied, is made.

If you have any questions or comments, please contact me at 206-979-1530 or at Richard.martin.gw@gmail.com.

Sincerely,

Richard J. Martin, L.H.G.
Richard Martin Groundwater LLC

Enclosures:

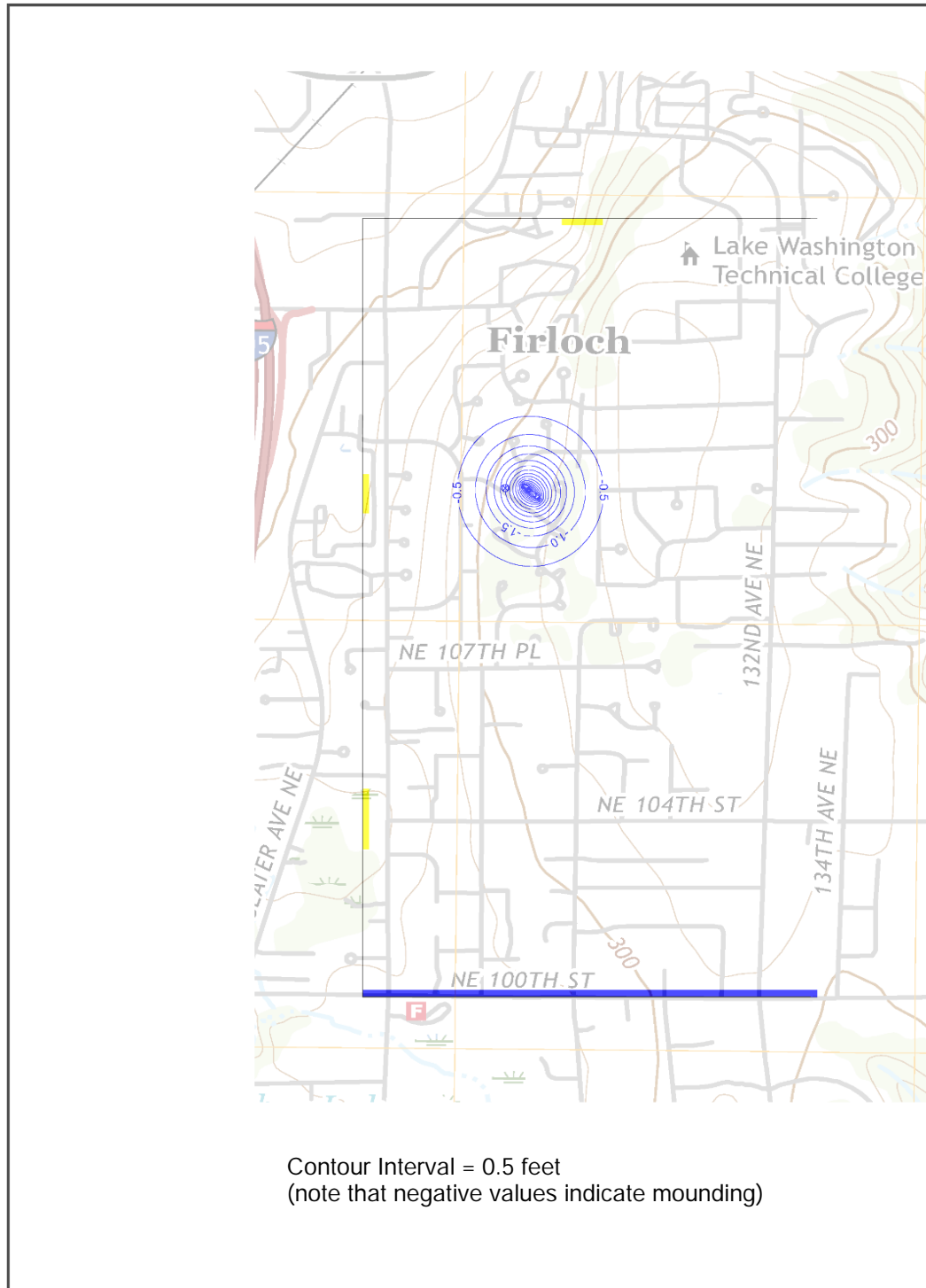
Figure 1 – Results of Mounding Analysis

REFERENCES

Environmental Simulations, Inc. 2011, *Groundwater Vistas – Version 6.89*.
www.groundwatermodels.com.

PRELIMINARY DRAFT

PRELIMINARY DRAFT



↑
N
Not to scale

Preliminary Results



Richard Martin
Groundwater LLC

Rose Hill Basin Project - City of Kirkland
Kirkland, Washington

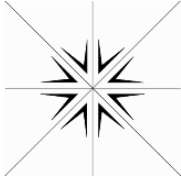
June 1, 2022

Figure 1

APPENDIX C

SPECIALTY ANALYTICAL

CEC AND ORGANIC MATTER TESTING



Specialty Analytical

9011 SE Jannsen Rd
Clackamas, OR 97015
TEL: (503) 607-1331

Website: www.specialtyanalytical.com

May 20, 2022

Scott McDevitt
NV5
9450 SW Commerce Cr
Suite 300
Wilsonville, OR 97070
TEL: (503) 968-8787
FAX:

RE: KPG-135-01

Order No.: 2205109

Dear Scott McDevitt:

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications, except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Marty French
Lab Director

Specialty Analytical

WO#: 2205109

Date Reported: 5/20/2022

CLIENT: NV5
Project: KPG-135-01

Lab ID: 2205109-001
Client Sample ID EB2-3 @21'

Matrix: SOIL
Collection Date: 3/8/2022

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
CATION EXCHANGE CAPACITY				SW9081		Analyst: AC
Cation Exchange Capacity	26.4	2.00		meq/100g	1	5/16/2022 4:11:52 PM
ORGANIC CONTENT				D2974 C		Analyst: NK
Organic Content	1.7	0.10	HT	wt%	1	5/18/2022 3:14:34 PM

Lab ID: 2205109-002
Client Sample ID EB2-3 @26'

Matrix: SOIL
Collection Date: 3/8/2022

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
CATION EXCHANGE CAPACITY				SW9081		Analyst: AC
Cation Exchange Capacity	19.5	2.00		meq/100g	1	5/16/2022 4:15:12 PM
ORGANIC CONTENT				D2974 C		Analyst: NK
Organic Content	0.63	0.10	HT	wt%	1	5/18/2022 3:14:34 PM

Lab ID: 2205109-003
Client Sample ID EB2-3 @31'

Matrix: SOIL
Collection Date: 3/8/2022

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
CATION EXCHANGE CAPACITY				SW9081		Analyst: AC
Cation Exchange Capacity	18.8	2.00		meq/100g	1	5/16/2022 4:18:31 PM
ORGANIC CONTENT				D2974 C		Analyst: NK
Organic Content	0.65	0.10	HT	wt%	1	5/18/2022 3:14:34 PM

Lab ID: 2205109-004
Client Sample ID EB2-3 @37'

Matrix: SOIL
Collection Date: 3/8/2022

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
CATION EXCHANGE CAPACITY				SW9081		Analyst: AC
Cation Exchange Capacity	23.7	2.00		meq/100g	1	5/16/2022 4:21:51 PM
ORGANIC CONTENT				D2974 C		Analyst: NK
Organic Content	0.80	0.10	HT	wt%	1	5/18/2022 3:14:34 PM

Qualifiers: H Holding times for preparation or analysis exceeded

QC SUMMARY REPORT

Specialty Analytical

WO#: 2205109

5/20/2022

Client: NV5
Project: KPG-135-01

TestCode: CEC_S

Sample ID: ICV	SampType: ICV	TestCode: CEC_S	Units: meq/100g	Prep Date:	RunNo: 45007						
Client ID: ICV	Batch ID: R45007	TestNo: SW9081	Analysis Date: 5/16/2022	SeqNo: 577954							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity	ND	2.00	0.5000	0	108	90	110				

Sample ID: MB-CEC	SampType: MBLK	TestCode: CEC_S	Units: meq/100g	Prep Date:	RunNo: 45007						
Client ID: PBS	Batch ID: R45007	TestNo: SW9081	Analysis Date: 5/16/2022	SeqNo: 577956							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity	ND	2.00									

Sample ID: CCV	SampType: CCV	TestCode: CEC_S	Units: meq/100g	Prep Date:	RunNo: 45007						
Client ID: CCV	Batch ID: R45007	TestNo: SW9081	Analysis Date: 5/16/2022	SeqNo: 577961							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity	ND	2.00	0.5000	0	110	90	110				

Qualifiers: H Holding times for preparation or analysis exceeded

QC SUMMARY REPORT

Specialty Analytical

WO#: 2205109

5/20/2022

Client: NV5
Project: KPG-135-01

TestCode: ORG_CONT

Sample ID: 2205109-001ADUP	SampType: DUP	TestCode: ORG_CONT	Units: wt%	Prep Date:	RunNo: 45086						
Client ID: EB2-3 @21'	Batch ID: R45086	TestNo: D2974 C		Analysis Date: 5/18/2022	SeqNo: 578969						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Content	1.5	0.10						1.744	13.9	20	HT

Qualifiers: H Holding times for preparation or analysis exceeded



Specialty Analytical
9011 SE Jannsen Rd
Clackamas, Oregon 97015
TEL: 503-607-1331 FAX: 503-607-1336
Website: www.specialtyanalytical.com

Sample Receipt Checklist

Client Name NV5

Work Order Number 2205109

RcptNo: 1

Date and Time Received 5/10/2022 1:55:56 PM

Received by: Mandy Wehe

Completed by

Reviewed by:

Completed Date:

5/10/2022

Reviewed Date:

5/10/2022 2:08:00 PM

Carrier name: Client

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Are matrices correctly identified on Chain of custody?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Is it clear what analyses were requested?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Were correct preservatives used and noted?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Were container labels complete (ID, Pres, Date)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Was an attempt made to cool the samples?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	NA <input type="checkbox"/>
All samples received at a temp. of > 0° C to 6.0° C?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	NA <input type="checkbox"/>
Response when temperature is outside of range:	Approved by client.		
Preservative added to bottles:			
Sample Temp. taken and recorded upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	To 21.9°C
Water - Were bubbles absent in VOC vials?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No Vials <input checked="" type="checkbox"/>
Water - Was there Chlorine Present?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Are Samples considered acceptable?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Custody Seals present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Traffic Report or Packing Lists present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Airbill or Sticker?	Air Bill <input type="checkbox"/>	Sticker <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Airbill No:			
Sample Tags Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Sample Tags Listed on COC?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Tag Numbers:			
Sample Condition?	Intact <input checked="" type="checkbox"/>	Broken <input type="checkbox"/>	Leaking <input type="checkbox"/>

Case Number:

SDG:

SAS:

Adjusted? _____ Checked by

Any No and/or NA (not applicable) response must be detailed in the comments section be



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Sample Receipt Checklist

Client Contacted? ☐ Yes ☒ No ☐ NA Person Contacted: _____ Comments: _____
Contact Mode: ☐ Phone: ☐ Fax: ☐ Email: ☐ In Person: _____
Client Instructions: _____
Date Contacted: _____ Contacted By: _____
Regarding: _____
CorrectiveAction: _____

<div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> Specialty Analytical 9011 SE Jannsen Rd Clackamas, OR 97015 Phone: 503-607-1331 Fax: 503-607-1336 </div>		Chain of Custody Record											
		Date: <u>5/10/22</u>				Page: <u>1</u> of: <u>1</u>				Laboratory Project No (internal): <u>2205109</u>			
Client: <u>NV5</u>		Project Name: <u>KPG-135-01</u>				Temperature on Receipt: <u>21.9 °C</u>							
Address: <u>450 SW Commerce Circle, Ste 300</u>		Project No: <u>KPG-135-01</u> PO No: _____				Custody Seal: <u>Y (N)</u>							
City, State, Zip: <u>Wilsonville, OR, 97070</u>		Collected by: <u>EL</u>				Notes:							
Telephone: <u>503-968-8787</u>		State Collected: OR <input type="checkbox"/> WA <input checked="" type="checkbox"/> OTHER <input type="checkbox"/>				Shipped Via: <u>Client</u>							
Invoice To:		Report To (PM): <u>Kevin Lamb</u>				Sample Disposal: <input type="checkbox"/> Return to client <input checked="" type="checkbox"/> Disposal by lab (after 60 days)							
		PM Email: <u>Kevin.lamb@NVS.com</u>											

Sample Name	Sample Date	Sample Time	Sample Matrix*	# of Containers	CEC	Organic Matter	Requested Tests										Comments
1 <u>EB2-3 @ 21'</u>	<u>3/8</u>		<u>S</u>	<u>1</u>	<u>1</u>	<u>1</u>										<u>per ASTM standard</u>	
2 <u>EB2-3 @ 26'</u>	<u>"</u>		<u>S</u>	<u>1</u>	<u>1</u>	<u>1</u>										<u>"</u>	
3 <u>EB2-3 @ 31'</u>	<u>"</u>		<u>S</u>	<u>1</u>	<u>1</u>	<u>1</u>										<u>"</u>	
4 <u>EB2-3 @ 37'</u>	<u>"</u>		<u>S</u>	<u>1</u>	<u>1</u>	<u>1</u>										<u>"</u>	
5																	
6																	
7																	
8																	
9																	
10																	

* Matrix: A = Air, AQ = Aqueous, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water ** Metals

Turn-around Time:		Standard (5-7 Business): <input checked="" type="checkbox"/>		3 Day: <input type="checkbox"/>	2 Day: <input type="checkbox"/>	Next Day: <input type="checkbox"/>	Same Day: <input type="checkbox"/>
-------------------	--	--	--	---------------------------------	---------------------------------	------------------------------------	------------------------------------

Relinquished	Date/Time	Received	Date/Time
x <u>hlf</u>	<u>5/10/22 13:50</u>	x <u>Aueke</u>	<u>5/10/22 13:50</u>
Relinquished	Date/Time	Received	Date/Time
x		x	



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Definition Only

WO#: 2205109
Date: 5/20/2022

Definitions:

KEY TO FLAGS

A: This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was qualified against gasoline calibration standards.

A1: This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was qualified against diesel calibration standards.

A2: This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was qualified against lube oil calibration standards.

A3: The results was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.

A4: The product appears to be aged or degraded.

B: The blank exhibited a positive result greater than the reporting limit for this compound.

CN: See Case Narrative.

E: Result exceeds the calibration range for this compound. The result should be considered an estimate.

F: The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.

FS: Follow-up testing is suggested.

G: Result may be biased high due to biogenic interferences. Clean up is recommended.

H: Sample was analyzed outside recommended holding time.

HT: ☐ At client's request, samples was analyzed outside of recommended holding time.

HP: Sample was analyzed outside recommended holding time due to VOA having pH >2.

J: The results for this analyte is between the MDL and the PQL and should be considered an



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Definition Only

WO#: 2205109
Date: 5/20/2022

Definitions:

estimated concentration.

K: Diesel result is biased high due to amount of Oil contained in the sample.

L: Diesel result is biased high due to amount of Gasoline contained in the sample.

M: Oil result is biased high due to amount of Diesel contained in the sample.

N: Gasoline result is biased high due to amount of Diesel contained in the sample.

MC: Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.

MI: Result is outside control limits due to matrix interference.

NH: Sample matrix is non-homogeneous

MSA: Value determined by Method of Standard Addition.

O: Laboratory Control Standard (LCS) exceeded laboratory control limits but meets CCV criteria. Data meets EPA requirements.

Q: Detection levels elevated due to sample matrix.

R: RPD control limits were exceeded

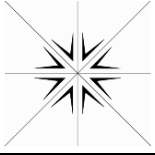
RF: Duplicate failed due to result being at or near the method-reporting limit.

RP: Matrix spike values exceed established QC limits; post digestion spike is in control.

S: Recovery is outside control limits.

SC: CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.

SL: LCS exceeded recovery control limits, but associated MS/MSD passing. Data meets EPA requirements.



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Definition Only

WO#: **2205109**

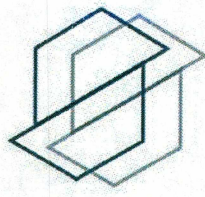
Date: **5/20/2022**

Definitions:

TA: Sample treated with ascorbic acid for the removal of thiocyanates.

APPENDIX D

AESI TECHNICAL MEMORANDUM



Technical Memorandum

Page 1 of 4

Date:	April 30, 2019	From:	Stanley S. Thompson, L.G., L.Hg.
To:	Jacobs Engineering Group	Project Manager:	Curtis J. Koger, L.G., L.E.G., L.Hg.
	1100 112 th Avenue NE, Suite 500	Principal in Charge:	Curtis J. Koger, L.G., L.E.G., L.Hg.
	Bellevue, Washington 98004	Project Name:	Forbes Creek/Rose Hill Basin Retrofit Planning
Attn:	Amy Carlson	Project No:	170664H001
Subject:	Preliminary Infiltration Feasibility Summary		

Associated Earth Sciences, Inc. (AESI) is pleased to present this Preliminary Infiltration Feasibility Summary at three sites in Kirkland, Washington. The three sites are: Site 1, Retention Pond Retrofit @ NE 107th Place; Site 2, Water Quality Treatment and Infiltration @ NE 111th Place/127th Place NE; and Site 5, Bioretention and Infiltration @ 126th Avenue NE. Figure 1 shows the location of the Forbes Creek/Rose Hill Basin study area, and Figure 2 shows the locations of the three sites addressed in this phase of the study.

Exploration was completed to characterize the subsurface conditions and assess the infiltration characteristics at each of the three selected sites. The following sections provide our findings and a discussion of infiltration potential.

Subsurface Exploration

One exploration boring was completed at each site, using a subcontracted rubber-tracked, hollow-stem auger drilling rig (Figure 2). The subcontracted drill rig was used to advance an 8-inch outside-diameter boring. The various types of materials and sediments encountered in the explorations, as well as the depths where characteristics of these materials change, are indicated on the exploration logs. Table 1 provides approximate depths and elevations of the geologic units, groundwater, and boring/well information.

Table 1
Summary of Geology and Boring/Well Information

Boring/Well	Appx GS Elev.	Depths (feet below ground surface)						
		Top of Qvt	Top of Qva	Top of Qp	Top of Screen	Bottom of Screen	Water Level	Bottom of Boring
EB1-1	272	4	50.5	53	50	60	52.5	60
EB2-1	314	0.5	17	n/a	30	35	>35	36.5
EB5-1	289	n/a	n/a	8	5	10	5	31.5

Boring/Well	Appx GS Elev.	Elevation (feet NAVD88)						
		Top of Qvt	Top of Qva	Top of Qp	Top of Screen	Bottom of Screen	GW Elevation	Bottom of Boring
EB1-1	272	268	221.5	219	222	212	219.5	212
EB2-1	314	313.5	297	n/a	284	279	<279	277.5
EB5-1	289	n/a	n/a	281	284	279	284	257.5

Wells not surveyed. Elevations are estimated, based on Light Detection and Ranging (LIDAR; NAVD88).

GS = ground surface; Qvt = Vashon lodgement till; Qva = Vashon advance outwash; Qp = Possession sediments;

GW = groundwater; n/a = not applicable

Samples were collected at 2.5- to 5-foot intervals to the total depth, using the Standard Penetration Test (SPT) procedure in accordance with the *American Society for Testing and Materials* (ASTM D-1586). The SPT testing and sampling procedure consists of driving a standard, 2-inch outside-diameter, split-barrel sampler a distance of 18 inches into the soil with a 140-pound hammer free-falling a distance of 30 inches.

The samples obtained from the split-barrel sampler were classified in the field, and representative portions were placed in watertight containers. The samples were transported to our laboratory for further visual classification and testing.

Three sediment samples from the Site 2 boring (EB2-1W) were tested in accordance with ASTM D-422 procedures. The grain-size analyses were used to provide a range of preliminary infiltration rates for a proposed infiltration facility at Site 2. The particle size distribution reports are attached to this technical memorandum. Infiltration rate discussion is provided later in this technical memorandum.

Monitoring Wells

The exploration borings were completed as monitoring wells, consisting of a 2-inch-diameter polyvinyl chloride (PVC) Schedule-40 well casing with threaded connections. The lower portion of each well consists of slotted (0.020-inch machine slot) well screen to permit groundwater inflow, with a threaded end-cap. The annular space around the well screen was backfilled with graded silica sand and the upper portion of annulus was sealed with bentonite chips and grout. A flush-mounted steel monument was placed over the top of each wellhead for protection. The monitoring wells will be registered with the Washington State Department of Ecology with unique identification numbers. The as-built configuration of the wells is included on the attached exploration logs. All elevations are estimated based on Light Detection and Ranging (LIDAR) (NAVD88) topography (Figure 2).

Site 1: Retention Pond Retrofit @ NE 107th Place

This is the site of an existing stormwater retention pond. It is our understanding that since the facility's installation, significant pooling within the pond has not been observed. The City of Kirkland (City) wishes to reconfigure and enlarge the stormwater retention pond and incorporate infiltration if possible.

The exploration boring (EB1-1W) completed in this facility (Figure 2) encountered approximately 5 feet of fill overlying dense, unsorted, silty sand with variable gravel interpreted to represent Vashon lodgement till,

extending to a depth of 35.5 feet below ground surface (bgs). A thin interval of dense, wet, brown, fine to medium sand with some silt, interpreted to be Vashon advance outwash, was encountered immediately below the lodgement till, and extended to a depth of approximately 38 feet bgs. The Vashon advance outwash was underlain by an unsorted, dense, moist, gray, silty fine sand unit interpreted to represent Possession glaciomarine drift. This unit extended to a depth of 50 feet bgs, and was underlain by dense, wet, gray, fine to medium sand with variable silt and gravel, extending beyond the bottom of the boring, at a depth of 60.9 feet, interpreted to represent Possession-aged advance outwash.

A monitoring well was installed with 10 feet of 2-inch, inside-diameter PVC well screen to a total depth of 60 feet bgs. The well was developed by surging and pumping, and the water level within the well was approximately 52 feet bgs (elevation 220 feet) after well development.

Based on the characteristics of the sediments encountered in this boring, it is our opinion that infiltration is infeasible at this location.

Site 2: Water Quality Treatment and Infiltration @ NE 111th Place/127th Place NE

This proposed facility would be installed in NE 111th Place, northwest of its intersection with 127th Place NE. The exploration boring (EB2-1W) was installed in the asphalt-surfaced road in front of address 12722 NE 111th Place. Immediately below the asphalt and crushed rock base course, the boring encountered unsorted, dense, moist to very moist brown, silty sand with minor gravel, interpreted to represent Vashon lodgement till, to a depth of approximately 17 feet bgs. Immediately below the lodgement till, the boring encountered slightly stratified, dense, moist, fine sand with minor gravel, interpreted to represent Vashon advance outwash. The unsaturated outwash sediments extended beyond the bottom of the boring at 36.5 feet bgs. A monitoring well was installed with 10 feet of 2-inch, inside-diameter PVC well screen to a total depth of 35 feet bgs. The well was developed by adding 10 gallons of water and monitoring the water levels within the well as the water drained out. The well development established a good hydraulic communication with the formation.

Based on the conditions encountered in boring EB2-1W, infiltration at this location may be feasible. Recommendations for additional studies at Site 2 are presented below in the section titled *Preliminary Infiltration Rate - Site 2*.

Site 5: Bioretention and Infiltration @ 126th Avenue NE

This proposed facility was conceived to provide bioretention swales and infiltration wells installed along the east side of 126th Avenue NE. Boring EB5-1W was advanced in the grass within the right-of-way adjacent to address 11012 126th Avenue NE. The boring encountered about 7 feet of fill over wet, moderately oxidized brown, sandy gravel, with minor silt. Beginning at 7 feet bgs and extending beyond the 31.5-foot total boring depth, the boring encountered dense to very dense, gray silt, with minor fine sand, interpreted to represent Possession glaciomarine drift. The upper 13 feet of the unit exhibited a brownish hue attributed to weathering. A monitoring well was installed with 5 feet of 2-inch, inside-diameter PVC well screen to a total depth of 10 feet bgs. This well was installed to characterize near-surface (perched) groundwater, especially as it may relate to proposed bioretention swale construction.

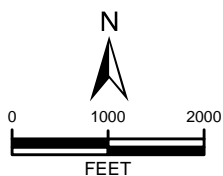
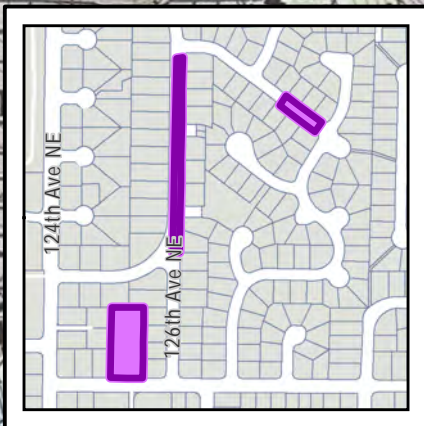
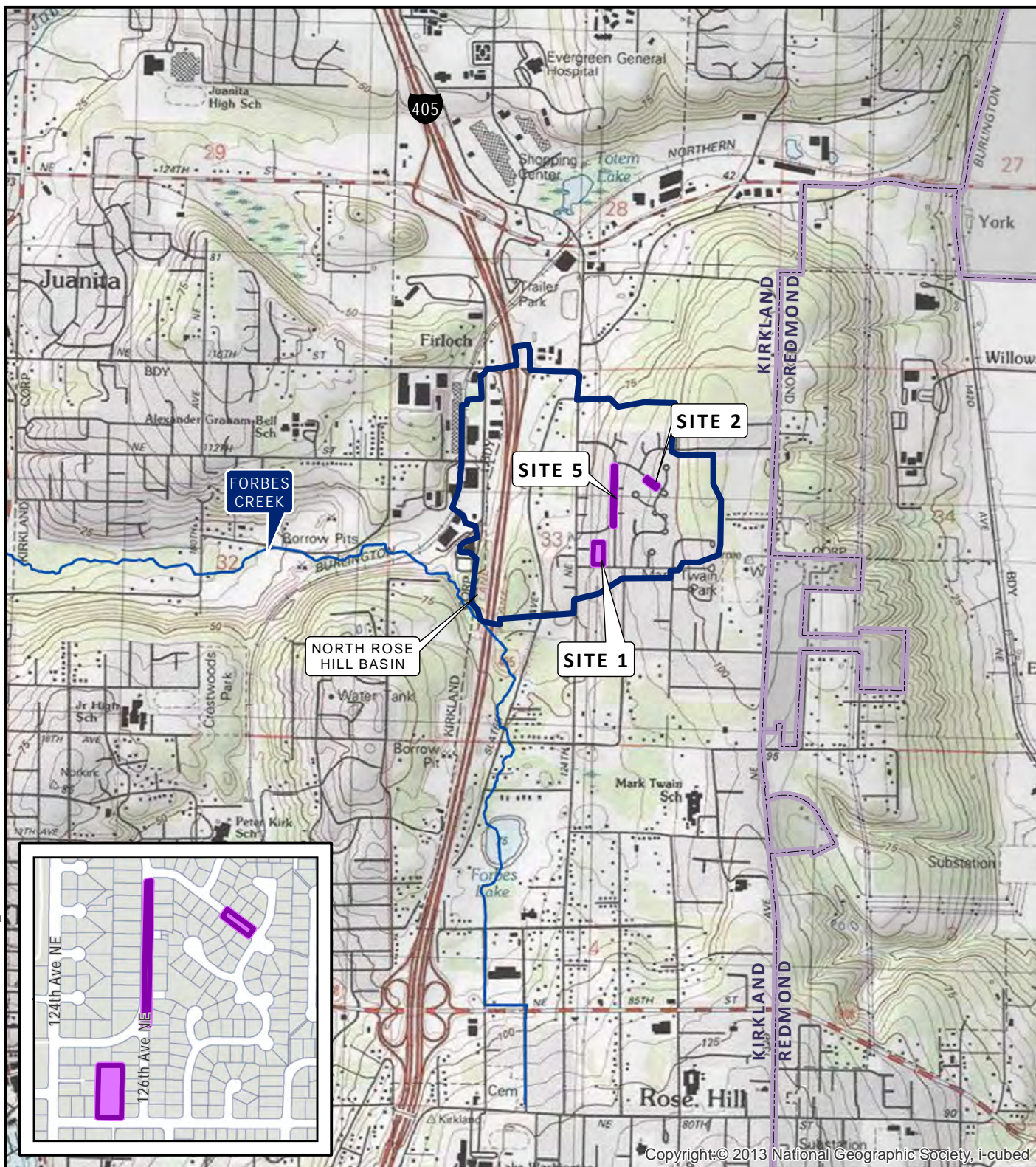
Based on the characteristics of the sediments encountered in this boring, it is our opinion that infiltration is infeasible at this location.

Preliminary Infiltration Rate - Site 2

Based on the subsurface conditions encountered in exploration boring EB2-1W at Site 2, a preliminary flow rate for conceptual site design would be in the range of 25 to 50 gallons per minute per well (gpm/well). These rates are extremely preliminary, based on one boring, and as such, there are many unknowns that must be evaluated. Additional subsurface characterization, testing, and analysis will be needed to determine suitable design infiltration rates. Recommendations for additional activities include:

- 1) Installation of a monitoring well designed to penetrate the full thickness of both the unsaturated zone and underlying aquifer. The boring should extend a minimum of 5 feet into the underlying aquitard.
- 2) Groundwater monitoring to establish seasonal high groundwater elevation.
- 3) Construction of a test/production underground injection control (UIC) well to determine suitable in-situ flow rates.
- 4) Well interference analysis to evaluate well spacing and number of UIC wells.
- 5) Groundwater mounding analysis to simulate the extent and height of mounding, and evaluate potential impacts to off-site infrastructure and slopes.

Attachments: Figure 1 - Vicinity Map
Figure 2 - Site and Exploration Plan
Exploration Logs
Particle Size Distribution Reports



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VICINITY MAP

FORBES CREEK / NORTH ROSE HILL BASIN
KIRKLAND, WASHINGTON

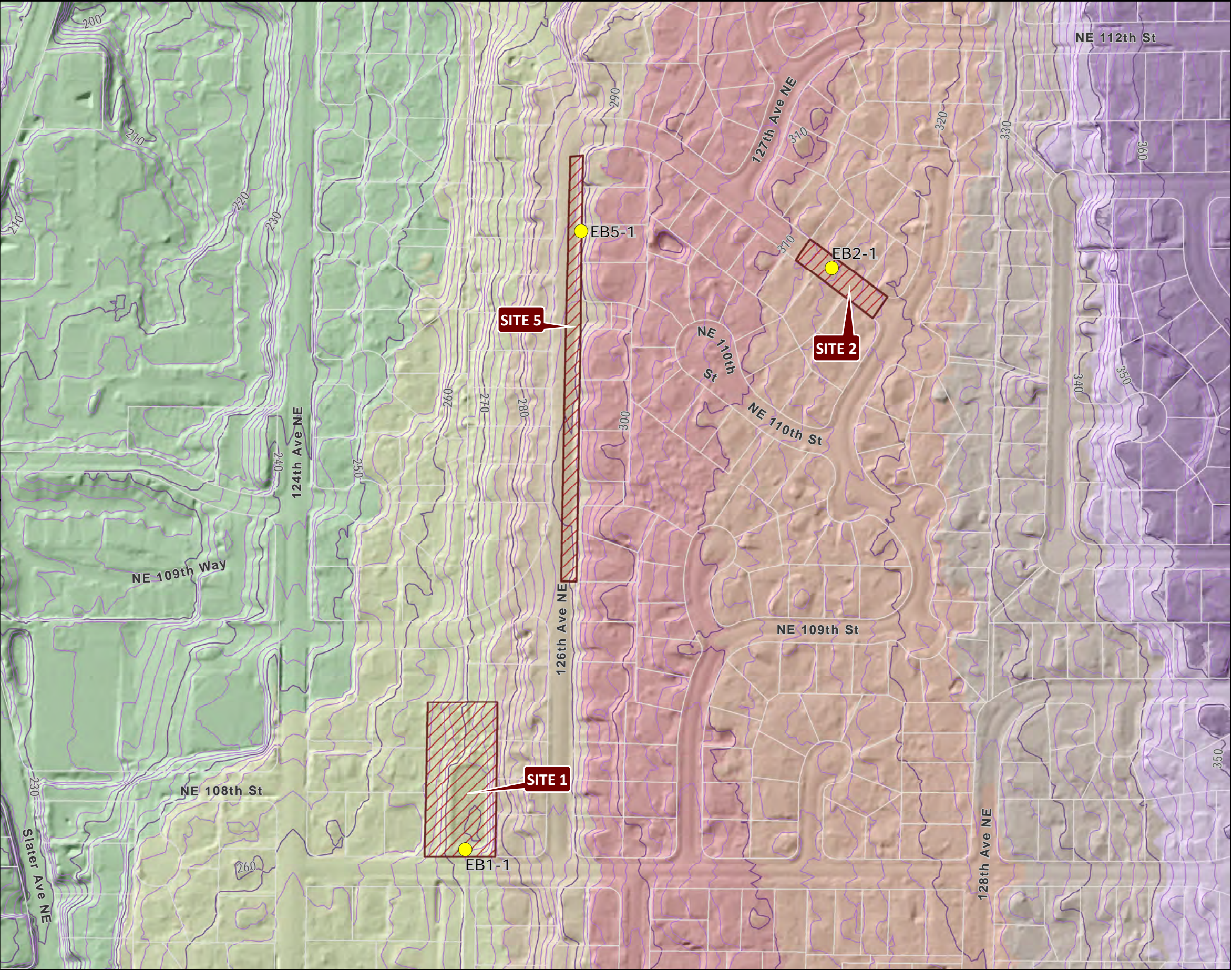
PROJ NO.	170664H001	DATE:	3/19	FIGURE:	1
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DATA SOURCES / REFERENCES:
USGS: 7.5' SERIES TOPOGRAPHIC MAPS, ESRI/I-CUBED/NGS 2013
KING CO: STREETS, CITY LIMITS 1/18, PARCELS 8/18

LOCATIONS AND DISTANCES SHOWN ARE APPROXIMATE

NOTE: BLACK AND WHITE
REPRODUCTION OF THIS COLOR
ORIGINAL MAY REDUCE ITS
EFFECTIVENESS AND LEAD TO
INCORRECT INTERPRETATION

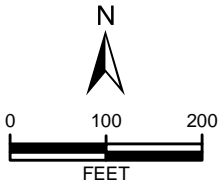
Copyright © 2013 National Geographic Society, i-cubed



- EXPLORATION BORING
- SITE
- PARCEL
- CONTOUR 10 FT
- CONTOUR 2 FT

DATA SOURCES / REFERENCES:
PSLC 2016 KING CO. DELIVERY 1. FLOWN 2/24/16 - 3/28/16
GRID CELL SIZE IS 3'. CONTOURS FROM LIDAR.
WA STATE PLANE NORTH (FIPS 4601), NAD83(HARN)
NAVD88 GEOID03 (GEOID03), US SURVEY FEET.
KING CO: PARCELS, STREETS 1/19

LOCATIONS AND DISTANCES SHOWN ARE APPROXIMATE



BLACK AND WHITE REPRODUCTION OF THIS COLOR ORIGINAL MAY REDUCE ITS EFFECTIVENESS AND LEAD TO INCORRECT INTERPRETATION



**NORTH ROSE HILL BASIN
SITE AND EXPLORATIONS PLAN
FORBES CREEK / NORTH ROSE HILL BASIN
KIRKLAND, WASHINGTON**

PROJ NO.	170664H001	DATE:	3/19	FIGURE:	2
----------	------------	-------	------	---------	---

Coarse-Grained Soils - More than 50% ⁽¹⁾ Retained on No. 200 Sieve				Terms Describing Relative Density and Consistency			
Gravels - More than 50% ⁽¹⁾ of Coarse Fraction Retained on No. 4 Sieve		≤5% Fines ⁽⁵⁾		GW	Well-graded gravel and gravel with sand, little to no fines		<div>Density</div> <div>SPT⁽²⁾ blows/foot</div> <div>Coarse-Grained Soils</div> <div>Very Loose0 to 4</div> <div>Loose4 to 10</div> <div>Medium Dense10 to 30</div> <div>Dense30 to 50</div> <div>Very Dense>50</div> <div>Consistency</div> <div>SPT⁽²⁾ blows/foot</div> <div>Fine-Grained Soils</div> <div>Very Soft0 to 2</div> <div>Soft2 to 4</div> <div>Medium Stiff4 to 8</div> <div>Stiff8 to 15</div> <div>Very Stiff15 to 30</div> <div>Hard>30</div> <div>Test Symbols</div> <div>G = Grain Size</div> <div>M = Moisture Content</div> <div>A = Atterberg Limits</div> <div>C = Chemical</div> <div>DD = Dry Density</div> <div>K = Permeability</div>
		≥12% Fines ⁽⁵⁾		GP	Poorly-graded gravel and gravel with sand, little to no fines		
Sands - 50% ⁽¹⁾ or More of Coarse Fraction Passes No. 4 Sieve		≤5% Fines ⁽⁵⁾		GM	Silty gravel and silty gravel with sand		
		≥12% Fines ⁽⁵⁾		GC	Clayey gravel and clayey gravel with sand		
Sands - 50% ⁽¹⁾ or More of Coarse Fraction Passes No. 4 Sieve		≤5% Fines ⁽⁵⁾		SW	Well-graded sand and sand with gravel, little to no fines		
		≤5% Fines ⁽⁵⁾		SP	Poorly-graded sand and sand with gravel, little to no fines		
		≥12% Fines ⁽⁵⁾		SM	Silty sand and silty sand with gravel		
		≥12% Fines ⁽⁵⁾		SC	Clayey sand and clayey sand with gravel		
Fine-Grained Soils - 50% ⁽¹⁾ or More Passes No. 200 Sieve		Silt and Clays Liquid Limit Less than 50		ML	Silt, sandy silt, gravelly silt, silt with sand or gravel	<div>(3) Estimated Percentage</div> <div>ComponentPercentage by Weight</div> <div>Trace<5</div> <div>Some5 to <12</div> <div>Modifier12 to <30</div> <div>(silty, sandy, gravelly)</div> <div>Very modifier30 to <50</div> <div>(silty, sandy, gravelly)</div> <div>Moisture Content</div> <div>Dry - Absence of moisture, dusty, dry to the touch</div> <div>Slightly Moist - Perceptible moisture</div> <div>Moist - Damp but no visible water</div> <div>Very Moist - Water visible but not free draining</div> <div>Wet - Visible free water, usually from below water table</div>	
				CL	Clay of low to medium plasticity; silty, sandy, or gravelly clay, lean clay		
				OL	Organic clay or silt of low plasticity		
				Silt and Clays Liquid Limit 50 or More			MH
CH	Clay of high plasticity, sandy or gravelly clay, fat clay with sand or gravel						
OH	Organic clay or silt of medium to high plasticity						
PT	Peat, muck and other highly organic soils						
Highly Organic Soils				<div>Component Definitions</div> <div>Descriptive TermSize Range and Sieve Number</div> <div>BouldersLarger than 12"</div> <div>Cobbles3" to 12"</div> <div>Gravel3" to No. 4 (4.75 mm)</div> <div>Coarse Gravel3" to 3/4"</div> <div>Fine Gravel3/4" to No. 4 (4.75 mm)</div> <div>SandNo. 4 (4.75 mm) to No. 200 (0.075 mm)</div> <div>Coarse SandNo. 4 (4.75 mm) to No. 10 (2.00 mm)</div> <div>Medium SandNo. 10 (2.00 mm) to No. 40 (0.425 mm)</div> <div>Fine SandNo. 40 (0.425 mm) to No. 200 (0.075 mm)</div> <div>Silt and ClaySmaller than No. 200 (0.075 mm)</div> <div>Symbols</div> <div>Sampler Type</div> <div>Blows/6" or portion of 6"</div> <div>2.0" OD Split-Spoon Sampler</div> <div>3.0" OD Split-Spoon Sampler</div> <div>3.25" OD Split-Spoon Ring Sampler</div> <div>Bulk sample</div> <div>3.0" OD Thin-Wall Tube Sampler (including Shelby tube)</div> <div>Grab Sample</div> <div>Portion not recovered</div> <div>(1) Percentage by dry weight</div> <div>(2) (SPT) Standard Penetration Test (ASTM D-1586)</div> <div>(3) In General Accordance with Standard Practice for Description and Identification of Soils (ASTM D-2488)</div> <div>(4) Depth of ground water</div> <div>ATD = At time of drilling</div> <div>Static water level (date)</div> <div>(5) Combined USCS symbols used for fines between 5% and 12%</div>			

Classifications of soils in this report are based on visual field and/or laboratory observations, which include density/consistency, moisture condition, grain size, and plasticity estimates and should not be construed to imply field or laboratory testing unless presented herein. Visual-manual and/or laboratory classification methods of ASTM D-2487 and D-2488 were used as an identification guide for the Unified Soil Classification System.



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EXPLORATION LOG KEY

FIGURE A1



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Geologic & Monitoring Well Construction Log

Project Number
170664H001

Well Number
-EB1-1W

Sheet
1 of 2

Project Name **Forbes Creek/North Rose Hill Basin**
Elevation (Top of Well Casing) **~272 ft (Datum NAVD88)**
Water Level Elevation **~219.5 ft (Datum NAVD88)**
Drilling/Equipment **ADT / D50**
Hammer Weight/Drop **140# / 30"**

Location **Kirkland, WA**
Surface Elevation (ft) **272 ft (Datum NAVD88)**
Date Start/Finish **2/8/19, 2/8/19**
Hole Diameter (in) **8 in**

Depth (ft)	Water Level	WELL CONSTRUCTION	ST	Blows/6"	Graphic Symbol	DESCRIPTION
		Flush mount monument with locking J-cap Concrete 0 to 1 foot				Grass / Topsoil - 2 inches Fill Medium dense, moist, brown, silty, fine to medium SAND, some gravel, trace brick debris; scattered cobbles (SM).
5		Bentonite chips 1 to 10 feet				Vashon Lodgment Till Dense, moist, light brown, silty, gravelly, fine to medium SAND (SM). Driller notes minor perched water in upper 10 feet. Dense, moist to very moist, silty, fine to medium SAND, some gravel (SM).
10				10 17 22		Moist, brown, silty, fine SAND, trace gravel; unsorted (SM).
15		2-inch I.D. Sch 40 PVC riser flush thread 0.5 to 50 feet		12 34 50		Moist, olive gray, silty, fine to medium SAND, some gravel; unsorted (SM).
20				50/6"		Moist, olive gray with some oxidation, silty, fine to medium SAND, trace coarse sand, trace gravel; faint lamination; unsorted (SM).
25				25 28 50		Moist, olive gray with some oxidation, silty, fine to medium SAND, trace to some gravel, trace coarse sand; upper 6 inches consist of finer sand; unsorted (SM).
30		Bentonite grout 10 to 45 feet		28 50/5"		Moist, olive gray, silty, fine to medium SAND, some gravel; nonlaminated; unsorted (SM).
35				24 50/4"		Upper 6 inches: moist, olive gray, silty, fine to medium SAND, trace coarse sand, trace to some gravel; unsorted (SM). Vashon Advance Outwash Mid 3 inches: very moist to wet, brown, fine to medium SAND, some silt (SM/SP). Lower 2 inches: as above; more coarse sand (SM).
						Possession Drift Glaciomarine

Sampler Type (ST):



2" OD Split Spoon Sampler (SPT)



No Recovery

M - Moisture

Logged by: SST



3" OD Split Spoon Sampler (D & M)



Ring Sample



Water Level (3/22/19)

Approved by: CJK



Grab Sample



Shelby Tube Sample



Water Level at time of drilling (ATD)



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Geologic & Monitoring Well Construction Log

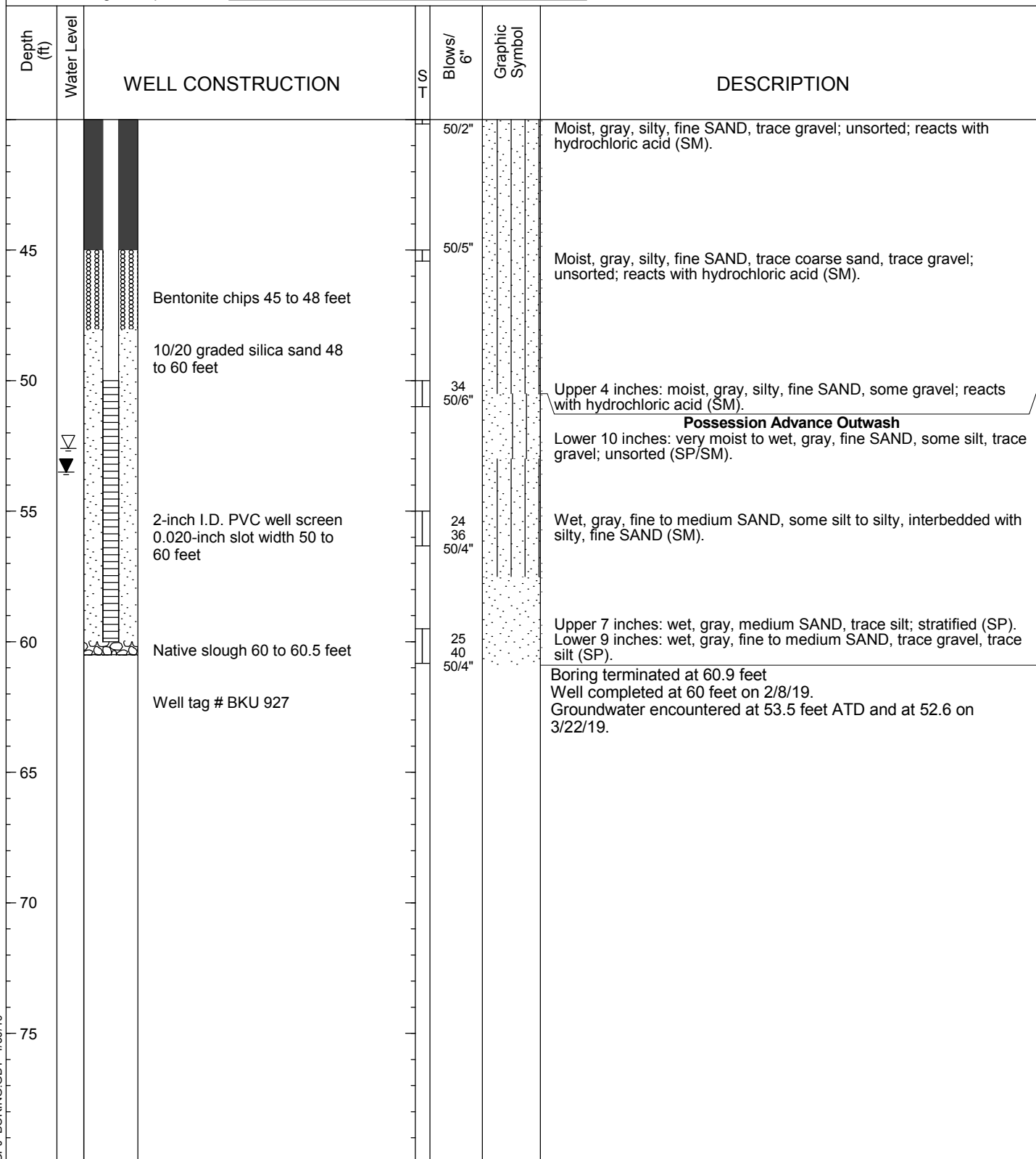
Project Number
170664H001

Well Number
-EB1-1W

Sheet
2 of 2

Project Name **Forbes Creek/North Rose Hill Basin**
Elevation (Top of Well Casing) **~272 ft (Datum NAVD88)**
Water Level Elevation **~219.5 ft (Datum NAVD88)**
Drilling/Equipment **ADT / D50**
Hammer Weight/Drop **140# / 30"**

Location **Kirkland, WA**
Surface Elevation (ft) **272 ft (Datum NAVD88)**
Date Start/Finish **2/8/19, 2/8/19**
Hole Diameter (in) **8 in**



Sampler Type (ST):



2" OD Split Spoon Sampler (SPT)



No Recovery

M - Moisture

Logged by: SST



3" OD Split Spoon Sampler (D & M)



Ring Sample



Water Level (3/22/19)

Approved by: CJK



Grab Sample



Shelby Tube Sample



Water Level at time of drilling (ATD)



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Geologic & Monitoring Well Construction Log

Project Number
170664H001

Well Number
-EB2-1W

Sheet
1 of 1

Project Name **Forbes Creek/North Rose Hill Basin**
Elevation (Top of Well Casing) **314 ft (Datum NAVD88)**
Water Level Elevation **<279 ft (Dry) (Datum NAVD88)**
Drilling/Equipment **ADT / D50**
Hammer Weight/Drop **140# / 30"**

Location **Kirkland, WA**
Surface Elevation (ft) **314 ft (Datum NAVD88)**
Date Start/Finish **2/8/19, 2/8/19**
Hole Diameter (in) **8 in**

Depth (ft)	Water Level	WELL CONSTRUCTION	Blows/6"	Graphic Symbol	DESCRIPTION
		Flush mount monument with locking J-cap Concrete 0 to 1.08 feet			Asphalt / Crushed Rock Vashon Lodgment Till
5			9 8 18		Moist to very moist, slightly oxidized light brown, silty, fine SAND, some gravel; unsorted (SM).
10		Bentonite chips 1.08 to 27 feet	10 22 21		Moist, slightly oxidized grayish light brown, silty, fine SAND, trace gravel ranging to fine SAND, some silt, some gravel (in bottom 3 inches) (SM).
15		2-inch I.D. Sch 40 PVC riser flush thread 0.5 to 30 feet	8 20 30		Upper 4 inches: very moist, slightly oxidized light brown, fine SAND, some silt; massive (SM). Lower 14 inches: moist, slightly oxidized light brown, silty, fine SAND, some gravel; unsorted (SM).
20			15 20 30		Vashon Advance Outwash Driller notes change in drill action.
25			26 16 20		Upper 6 inches: moist, light brown, fine SAND, some silt to silty (SP-SM). Lower 8 inches: moist, light brown, fine SAND, trace to some silt, trace gravel; slightly stratified (SP).
30		10/20 graded silica sand 27 to 35 feet	14 19 25		Moist, light brown with slight oxidation banding, fine SAND, trace silt; slightly stratified (SP).
35		2-inch I.D. Sch 40 PVC well screen 0.020-inch slot width 30 to 35 feet	15 21 31		As above (SP).
		Twist cap Native slough 35 to 36.5 feet	17 29 35		As above; some silt; slight to moderate oxidation banding (SP).
		Well tag # BKU 928	16 25 35		As above; lenses (2 inches thick) of fine sand; thin partings of trace silt (SP).
			20 29 40		Moist, light brown with slight oxidation banding, fine SAND; some silt; occasional mica; slightly stratified (SP).
					Boring terminated at 36.5 feet Well completed at 35 feet on 2/8/19. No groundwater encountered.

Sampler Type (ST):



2" OD Split Spoon Sampler (SPT)



No Recovery

M - Moisture

Logged by: CRC



3" OD Split Spoon Sampler (D & M)



Ring Sample



Water Level ()

Approved by: CJK



Grab Sample



Shelby Tube Sample



Water Level at time of drilling (ATD)



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Geologic & Monitoring Well Construction Log

Project Number
170664H001

Well Number
-EB5-1W

Sheet
1 of 1

Project Name **Forbes Creek/North Rose Hill Basin**

Elevation (Top of Well Casing) **~289 ft (Datum NAVD88)**

Water Level Elevation **~284 ft (Datum NAVD88)**

Drilling/Equipment **ADT / D50**

Hammer Weight/Drop **140# / 30"**

Location **Kirkland, WA**

Surface Elevation (ft) **289 ft (Datum NAVD88)**

Date Start/Finish **3/14/19, 3/14/19**

Hole Diameter (in) **8 in**

Depth (ft)	Water Level	WELL CONSTRUCTION	Blows/6"	Graphic Symbol	DESCRIPTION
5		Flush mount monument Concrete 0 to 2 feet Bentonite chips 2 to 4 feet 2-inch I.D. Sch 40 PVC casing 0 to 4.78 feet 10/20 Silica sand 4 to 12 feet 2-inch I.D. PVC well screen 0.020-inch slot width 4.78 to 9.83 feet End cap	1/18"		Grass / Fill Cuttings are gravelly. Wet, moderately oxidized light brown, sandy, GRAVEL, trace to some silt; occasional rootlets; very poor recovery; suspended water above sample (GP).
10			10 16 20		Weathered Possession Glaciomarine Driller notes increase in drilling difficulty. Moist, slightly oxidized light brownish gray, SILT, trace to some fine sand; lens (1 inch thick) of sandy silt; occasional charcoal fragments; weathered along breakage; stratified; does not react with hydrochloric acid (ML).
15			20 30 50/5"		Moist, light brownish gray, SILT, trace fine sand; occasional dropstones; slightly oxidized along fractures; high angle fracture; unsorted; does not react with hydrochloric acid (ML). Driller notes slightly easier drill action.
20			14 30 43		Possession Glaciomarine Moist, gray, SILT, trace to some fine sand; occasional dropstones; laminated; occasional crystalline white fragments; occasional mica; slight effervescence with hydrochloric acid (ML). Driller notes one gravel (~1 to 2 inches I.D.) As above; less consolidated; effervesces with hydrochloric acid (ML).
25		Bentonite chips 12 to 31.5 feet	6 15 26		
30			17 40 50/4"		As above; effervesces with hydrochloric acid (ML). Boring terminated at 31.5 feet Well completed at 10 feet on 3/14/19. Groundwater encountered at 5 feet.
35		Well tag # BKU 929			

Sampler Type (ST):



2" OD Split Spoon Sampler (SPT)



No Recovery

M - Moisture

Logged by: CRC



3" OD Split Spoon Sampler (D & M)



Ring Sample



Water Level ()

Approved by: CJK



Grab Sample

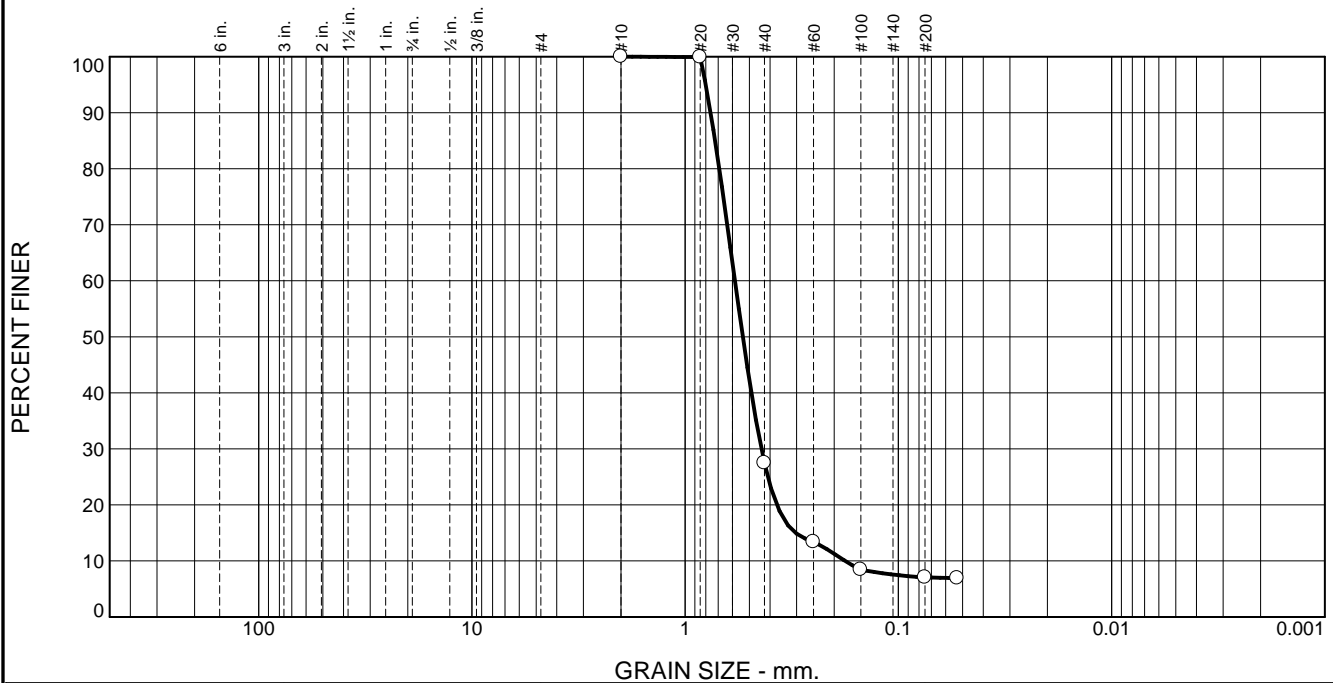


Shelby Tube Sample



Water Level at time of drilling (ATD)

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	72.5	20.4	7.1	

TEST RESULTS			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#10	100.0		
#20	99.9		
#40	27.5		
#60	13.4		
#100	8.4		
#200	7.1		
#270	6.9		

* (no specification provided)

Material Description

SAND Some Silt

Atterberg Limits (ASTM D 4318)

PL= np LL= nv PI=

Classification

USCS (D 2487)= SP-SM AASHTO (M 145)= A-1-b

Coefficients

D₉₀= 0.7596 D₈₅= 0.7239 D₆₀= 0.5840
D₅₀= 0.5363 D₃₀= 0.4392 D₁₅= 0.3039
D₁₀= 0.1777 C_u= 3.29 C_c= 1.86

Remarks

Date Received: 2-15-19 Date Tested: 2-15-19

Tested By: MS

Checked By: CK

Title: _____

Location: Onsite

Sample Number: EB2-1

Depth: 30'

Date Sampled: 2-8-19



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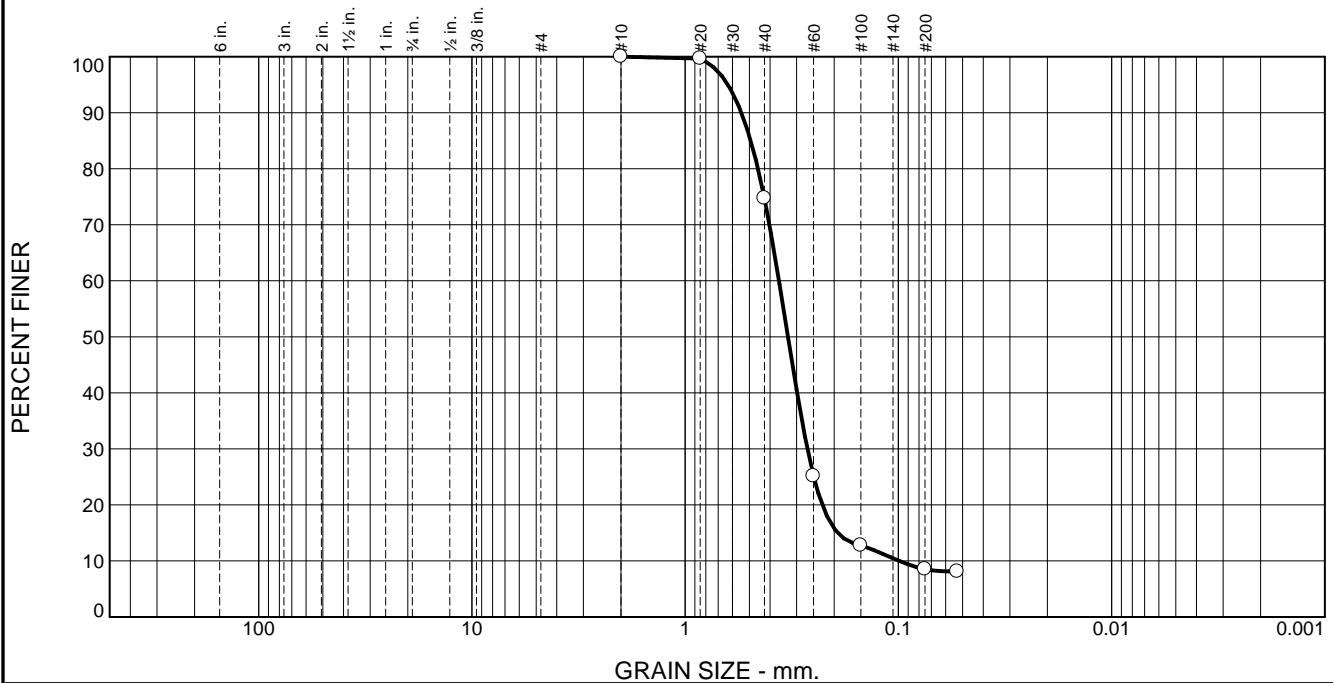
Client: CH2M

Project: Forbes Creek

Project No: 170664 H001

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	25.3	66.2	8.5	

TEST RESULTS			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#10	100.0		
#20	99.7		
#40	74.7		
#60	25.1		
#100	12.8		
#200	8.5		
#270	8.1		

* (no specification provided)

Material Description

SAND Some Silt

Atterberg Limits (ASTM D 4318)

PL= np LL= nv PI=

Classification

USCS (D 2487)= SP-SM AASHTO (M 145)= A-3

Coefficients

D₉₀= 0.5446 D₈₅= 0.4927 D₆₀= 0.3632
D₅₀= 0.3297 D₃₀= 0.2671 D₁₅= 0.1928
D₁₀= 0.0991 C_u= 3.67 C_c= 1.98

Remarks

Date Received: 2-15-19 Date Tested: 2-15-19

Tested By: MS

Checked By: MS

Title: _____

Location: Onsite

Sample Number: EB2-1

Depth: 32.5'

Date Sampled: 2-8-19



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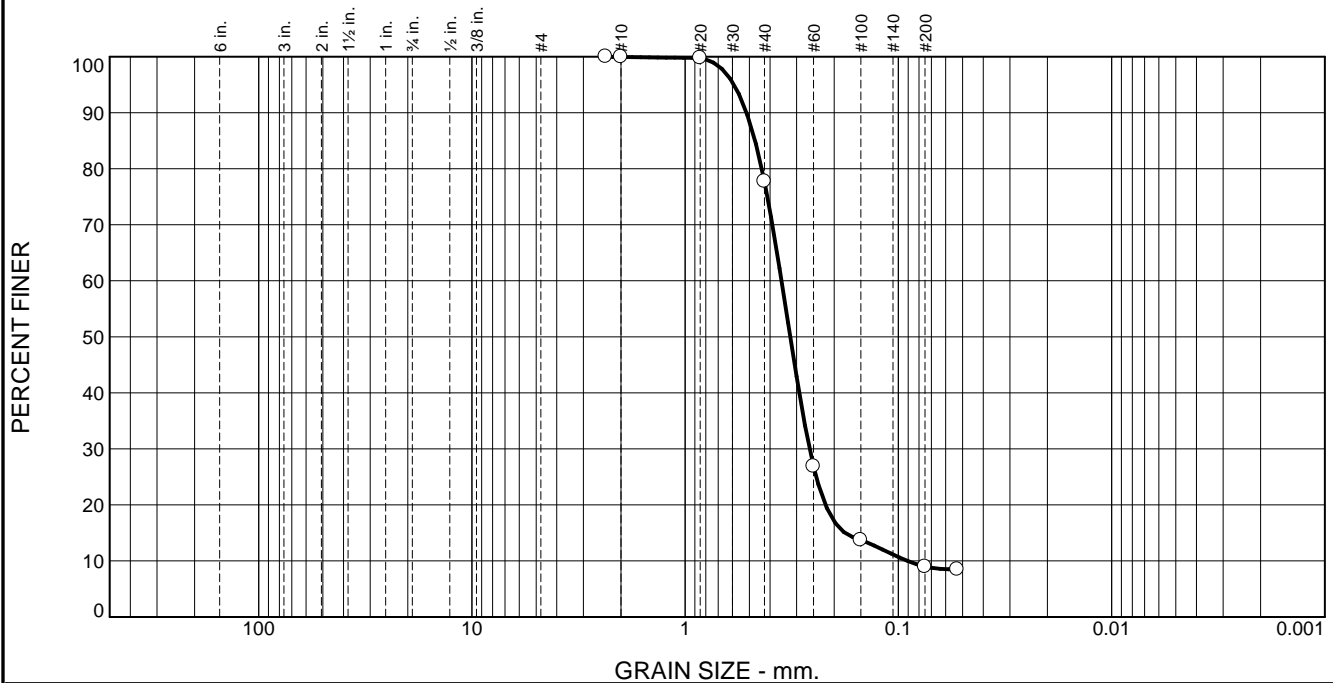
Client: CH2M

Project: Forbes Creek

Project No: 170664 H001

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	22.2	68.7	9.0	

TEST RESULTS			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#8	100.0		
#10	99.9		
#20	99.8		
#40	77.7		
#60	26.9		
#100	13.7		
#200	9.0		
#270	8.5		

* (no specification provided)

Material Description

SAND Some Silt

Atterberg Limits (ASTM D 4318)

PL= np

LL= nv

PI=

Classification

USCS (D 2487)= SP-SM AASHTO (M 145)= A-3

Coefficients

D₉₀= 0.5156

D₈₅= 0.4702

D₆₀= 0.3534

D₅₀= 0.3216

D₃₀= 0.2608

D₁₅= 0.1779

D₁₀= 0.0906

C_u= 3.90

C_c= 2.12

Remarks

Date Received: 2-15-19 Date Tested: 2-15-19

Tested By: MS

Checked By: CK

Title:

Location: Onsite

Sample Number: EB2-1

Depth: 35'

Date Sampled: 2-8-19



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Client: CH2M

Project: Forbes Creek

Project No: 170664 H001

Figure

APPENDIX B

ECOLOGY INSERTS



**WASHINGTON STATE DEPARTMENT OF ECOLOGY
STORMWATER FACILITY
SPECIFICATIONS INSERT**

General

Partial funding of this project is being provided by the Washington State Department of Ecology's (Ecology) Stormwater Grant Program.

Compliance with State and Local Laws

The construction of the project, including all subcontracted work, shall conform to the applicable requirements of state and local laws and ordinances.

State Interest Exclusion

It is anticipated that this project will be funded in part by the Washington State Department of Ecology. Neither the State of Washington nor any of its departments or employees are, or shall be, a party to this contract or any subcontract.

Third Party Beneficiary

Partial funding of this project is being provided through the Washington State Department of Ecology Stormwater Grant Program. All parties agree that the State of Washington shall be, and is hereby, named as an express third-party beneficiary of this contract, with full rights as such.

Access to the construction site and to records

The contractor shall provide for the safe access to the construction site and to the contractor's records by Washington State Department of Ecology personnel.

The Contractor shall maintain accurate records and accounts to facilitate the Owner's audit requirements and shall ensure that all subcontractors maintain auditable records.

These Project records shall be separate and distinct from the Contractor's other records and accounts.

All such records shall be available to the Owner and to Washington State Department of Ecology personnel for examination. All records pertinent to this project shall be retained by the Contractor for a period of three (3) years after the final audit.

Protection of the Environment

No construction related activity shall contribute to the degradation of the environment, allow material to enter surface or ground waters, or allow particulate emissions to the atmosphere, which exceed state or federal standards. Any actions that potentially allow a discharge to state waters must have prior approval of the Washington State Department of Ecology.

Inadvertent Discovery of Archeological Resources

The contractor shall obtain a copy of the Inadvertent Discovery Plan from the Project Owner. The contractor shall keep a copy of the inadvertent discovery plan for the project on the work site at all times. The contractor shall immediately stop all work if human remains, cultural, or archeological resources are discovered in the course of construction. The contractor shall follow the inadvertent discovery plan in dealing with the human remains, cultural, or archeological resources.

Project Signs

The Contractor shall display Ecology's logo in a manner that informs the public that the project received financial assistance from the Washington State Stormwater Grant Program.

Utilization of Minority and Women Business Enterprises

All bidders are encouraged to utilize certified minority-owned and women-owned businesses to the extent possible in the performance of this contract. All prospective bidders or persons submitting qualifications should take the following steps, when possible.

1. Include qualified minority and women's businesses on solicitation lists.
2. Assure that qualified minority and women's businesses are solicited whenever they are potential sources of services or supplies.
3. Divide the total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by qualified minority and women's businesses.
4. Establish delivery schedules, where work requirements permit, which will encourage participation of qualified minority and women's businesses.
5. Use the services and assistance of the State Office of Minority and Women's Business Enterprises (OMWBE) and the Office of Minority Business Enterprises of the U.S. Department of Commerce, as appropriate.

All prospective bidders must provide a list of the MBE/WBE subcontractors they intend to use during the project. This list must be provided with the bid package.



WASHINGTON STATE DEPARTMENT OF ECOLOGY WATER QUALITY FINANCIAL ASSISTANCE

STANDARD CONTRACT CLAUSES

ECOLOGY grant/loan acknowledgment clause

The following acknowledgment should be included on the cover sheet of both the construction plans and the contract documents/specifications:

"Funded in part by the Washington State Department of Ecology"

State interest exclusion clause

The following clause is to be included in the bid advertisement:

See bid advertisement

"It is anticipated that this project will be funded in part by the Washington State Department of Ecology. Neither the State of Washington nor any of its departments or employees are, or shall be, a party to any contract or any subcontract resulting from this solicitation for bids."

The following clause is to be included in the instructions to bidders and the special conditions or provisions of the contract documents/specifications:

See information for Bidders

"It is anticipated that this project will be funded in part by the Washington State Department of Ecology. Neither the State of Washington nor any of its departments or employees are, or shall be, a party to this contract or any subcontract."

Third-party beneficiary clause

The following clause is to be included in the special conditions or provisions of the contract documents/specifications and it is further suggested that this clause also be included in the contract agreement between the RECIPIENT and the contractor:

See Special Provisions 1-07.18

Third-Party Beneficiary: All parties agree that the State of Washington shall be, and is hereby, named as an express third-party beneficiary of this contract, with full rights as such."

Environment protection clause

The following clause is to be included in the special conditions or provisions of the contract documents/specifications and also in the general notes on the construction drawings:

Protection of the Environment: No construction related activity shall contribute to the degradation of the environment, allow material to enter surface or ground waters, or allow particulate emissions to the atmosphere, which exceed state or federal standards. Any actions that potentially allow a discharge to state waters must have prior approval of the Washington State Department of Ecology."

See Special Provisions 1-07.5