Set No. _____

Specifications, Proposal,
and Contract Documents for:

5th / 8th Watermain Replacement

CIP No.: WAC1340000
Job No.: 09-22-PW

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

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CITY OF KIRKLAND
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City of Kirkland

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CITY OF KIRKLAND
DEPARTMENT OF PUBLIC WORKS

5th/8th Watermain Replacement
CIP No.: WAC1340000
Job No.: 09-22-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.

Daniel Williams, P.E.
Senior Water Resources Engineer
DOWL, LLC

Approved for Construction:

Rod Steitzer, P.E.
Capital Projects Manager
City of Kirkland

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INVITATION TO BID

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 2:00 P.M, local time on August 17, 2022, for the project hereinafter referred to as:

5th/8th Watermain Replacement
CIP NO. WAC134000
JOB NO. 09-22-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 constructions of the **5th/8th Watermain Replacement.**

Specific work includes, but is not limited to, traffic control, TESC, installation of approximately 2,200 linear feet of 12-inch and 16-inch ductile iron watermain and appurtenances, approximately 810 linear feet of 12-inch PVC storm drain pipeline and associated drainage structures, sidewalk improvements, pavement overlay, and landscape restoration, as shown in the Plans. The estimated cost for this project is in the range of $2 Million to $2.25 Million based on the base bid, Schedule A+B.

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.

A Site Visit will be on August 09, 2022, at 9:00AM. Site visit will commence at the north parking lot of Everest Park on 8th Street S, Kirkland.

Questions regarding this project shall be submitted in writing to Anne Reese via email at areese@kirklandwa.gov. Questions via phone will not be accepted. Bidders shall submit questions no later than 5:00 P.M. on August 10, 2022.

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.

No bids may be withdrawn within forty-five (45) after the actual date of the bid opening.

Published: Daily Journal of Commerce – July 27, 2022; August 3, 2022

INFORMATION FOR BIDDERS & PROPOSAL

City of Kirkland

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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.

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. NONCOLLUSION 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.

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. 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.

4. 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.

5. 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, 2017, 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, 2017, 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
BID PROPOSAL

5th/8th Watermain Replacement
CIP No.: WAC1340000
Job No.: 09-22-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 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.

The undersigned bids and agrees to complete all construction of the **5th/8th Watermain Replacement; Job No.: 09-22-PW** for the following:

Schedule	**Subtotal Bid Price**	**Sales Tax (10.2%)**	**Total Bid Price**
A – Water Main on 5th Ave S, 8th St S, and Railroad Ave.	$_____	$_____	$_____
B – Storm Drain on 5th Ave S from 6th St S to 8th St S.	$_____	$ N/A	$_____

TOTAL BASE BID *(in figures)* $_____

TOTAL BASE BID *(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

Contractor's Address:

	Telephone Number
	Fax Number
	E-mail

** Bid proposal to be submitted in a **sealed envelope** marked "**Bid Enclosed**" for **5th/8th Watermain Replacement, Job No.: 09-22-PW.**

CITY OF KIRKLAND
BID SCHEDULE

5th/8th Watermain Replacement
Job No.: 09-22-PW

Note: Unit prices for all items, all extensions, and the total amount of the bid must be shown. All entries must be typed or entered in ink. Unit prices, all extensions and the Schedule A subtotal **will not** include sales tax.

SCHEDULE A – Water Main Replacement

Item No.	Item Description	Spec Reference	Est. Qty.	Unit	Unit Price	Amount
A-1	Minor Change	1-04 (SP)	1	FA	$ 20,000	$ 20,000
A-2	Surveying	1-05	1	LS	$	$
A-3	Record Drawings (Min. Bid $2,000)	1-05 (SP)	1	LS	$	$
A-4	SPCC Plan	1-07	1	LS	$	$
A-5	Mobilization	1-09	1	LS	$	$
A-6	Project Temporary Traffic Control (Min. Bid $75,000)	1-10 (SP)	1	LS	$	$
A-7	Removing Cement Conc. Curb	2-02 (SP)	32	LF	$	$
A-8	Removing Cement Conc. Curb and Gutter	2-02 (SP)	276	LF	$	$
A-9	Removing Cement Conc. Sidewalk	2-02 (SP)	100	SY	$	$
A-10	Final Saw Cutting	2-02 (SP)	3,320	LF	$	$
A-11	Removing Hydrant Assembly	2-02 (SP)	3	EA	$	$
A-12	Controlled Density Fill	2-09 (SP)	170	LF	$	$
A-13	Crushed Surfacing Base Course	4-04	660	TON	$	$
A-14	Crushed Surfacing Top Course (For Trench Backfill)	4-04	290	TON	$	$
A-15	Planing Bituminous Pavement	5-04	2,600	SY	$	$
A-16	HMA Cl. 1/2 in. PG 58h-22	5-04 (SP)	1,300	TON	$	$
A-17	Remove And Replace HMA Speed Cushion	5-04 (SP)	2	EA	$	$
A-18	Potholing	7-04 (SP)	5	EA	$	$
A-19	Solid Wall PVC Storm Sewer Pipe 12 in. Diam.	7-04	280	LF	$	$
A-20	Catch Basin Type 1	7-05	3	EA	$	$

Item No.	Item Description	Spec Reference	Est. Qty.	Unit	Unit Price	Amount
A-21	Catch Basin Type 2-48 in. Diam.	7-05	2	EA	$	$
A-22	Connection To Drainage Structure	7-05	3	EA	$	$
A-23	Shoring or Extra Excavation Class B	7-08	2,100	SF	$	$
A-24	Comb. Air Release/Air Vacuum Valve Assembly 2 in.	7-09	2	EA	$	$
A-25	Ductile Iron Pipe For Water Main 6 in. Diam.	7-09	110	LF	$	$
A-26	Ductile Iron Pipe For Water Main 8 in. Diam.	7-09	40	LF	$	$
A-27	Ductile Iron Pipe For Water Main 12 in. Diam.	7-09	640	LF	$	$
A-28	Ductile Iron Pipe For Water Main 16 in. Diam.	7-09	1,550	LF	$	$
A-29	Additional Ductile Iron Fittings	7-09 (SP)	5,000	LB	$	$
A-30	Connection To Existing Main	7-09 (SP)	5	EA	$	$
A-31	Optional Temporary Water Main Connection	7-09 (SP)	1	FA	$	$
A-32	Removal and Replacement Of Unsuitable Material	7-09	200	CY	$	$
A-33	Gate Valve 6 in.	7-12	1	EA	$	$
A-34	Gate Valve 8 in.	7-12	2	EA	$	$
A-35	Gate Valve 12 in.	7-12	3	EA	$	$
A-36	Gate Valve 16 in.	7-12	6	EA	$	$
A-37	Hydrant Assembly	7-14	3	EA	$	$
A-38	Service Connection Up To 1 in. Diam.	7-15 (SP)	21	EA	$	$
A-39	Service Connection 2 in. Diam.	7-15 (SP)	1	EA	$	$
A-40	Ductile Iron Sewer Pipe 8 in. Diam.	7-17	20	LF	$	$
A-41	Inlet Protection	8-01	32	EA	$	$
A-42	Wattle	8-01	660	LF	$	$
A-43	Silt Fence	8-01	1,690	LF	$	$
A-44	High Visibility Fence	8-01	1,400	LF	$	$

Item No.	Item Description	Spec Reference	Est. Qty.	Unit	Unit Price	Amount
A-45	Erosion/Water Pollution Control	8-01	1	EST	$	$
A-46	Landscape Restoration	8-02 (SP)	1	LS	$	$
A-47	Cement Conc. Traffic Curb and Gutter	8-04	280	LF	$	$
A-48	Cement Conc. Traffic Curb	8-04	32	LF	$	$
A-49	Cement Conc. Pedestrian Curb	8-04	35	LF	$	$
A-50	Monument Case and Cover	8-13	1	EA	$	$
A-51	Cement Conc. Sidewalk	8-14	50	SY	$	$
A-52	Cement Conc. Curb Ramp Type Parallel	8-14	3	EA	$	$
A-53	Cement Conc. Driveway Entrance Type CK-R.21	8-14	22	SY	$	$
A-54	Paint Line	8-22	2,500	LF	$	$
A-55	Plastic Crosswalk Line	8-22	300	SF	$	$
A-56	Painted Stop Line	8-22	13	LF	$	$
A-57	Plastic Speed Cushion Symbol	8-22	5	EA	$	$

SCHEDULE A SUBTOTAL BID PRICE (in figures): $_____

SALES TAX (10.2%) (in figures): $_____

SCHEDULE A TOTAL BID PRICE (in figures): $_____

CITY OF KIRKLAND
BID SCHEDULE

5th/8th Watermain Replacement
Job No.: 09-22-PW

Note: Unit prices for all items, all extensions, and the total amount of the bid must be shown. All entries must be typed or entered in ink. Unit prices, all extensions and the Schedule B total **must** include sales tax.

SCHEDULE B – Storm Drain Replacement

Item No.	Item Description	Spec Reference	Est. Qty.	Unit	Unit Price	Amount
B-1	Minor Change	1-04 (SP)	1	FA	$ 10,000	$ 10,000
B-2	Removing Asbestos Concrete Pipe	2-02 (SP)	220	LF	$	$
B-3	Removing Drainage Structure	2-02 (SP)	16	EA	$	$
B-4	Removing Cement Conc. Curb	2-02 (SP)	110	LF	$	$
B-5	Removing Cement Conc. Curb and Gutter	2-02 (SP)	75	LF	$	$
B-6	Removing Cement Conc. Sidewalk	2-02 (SP)	42	SY	$	$
B-7	Final Saw Cutting	2-02 (SP)	390	LF	$	$
B-8	Controlled Density Fill	2-09 (SP)	755	LF	$	$
B-9	Potholing	7-04 (SP)	5	EA	$	$
B-10	Crushed Surfacing Base Course	4-04	130	TON	$	$
B-11	Crushed Surfacing Top Course (For Trench Backfill)	4-04	770	TON	$	$
B-12	HMA Cl. 1/2 in. PG 58h-22	5-04 (SP)	170	TON	$	$
B-13	Solid Wall PVC Storm Sewer Pipe 12 in. Diam.	7-04	840	LF	$	$
B-14	Catch Basin Type 1	7-05	5	EA	$	$
B-15	Catch Basin Type 2-48 in. Diam.	7-05	7	EA	$	$
B-16	Connection To Drainage Structure	7-05	1	EA	$	$
B-17	Shoring or Extra Excavation Class B	7-08	5,400	SF	$	$
B-18	Removal and Replacement Of Unsuitable Material	7-09	130	CY	$	$
B-19	Cement Conc. Traffic Curb and Gutter	8-04	80	LF	$	$
B-20	Cement Conc. Traffic Curb	8-04	87	LF	$	$

Item No.	Item Description	Spec Reference	Est. Qty.	Unit	Unit Price	Amount
B-21	Cement Conc. Pedestrian Curb	8-04	24	LF	$	$
B-22	Cement Conc. Sidewalk	8-14	25	SY	$	$
B-23	Cement Conc. Curb Ramp Type Parallel	8-14	1	EA	$	$

SCHEDULE B TOTAL BID PRICE (in figures): $_____

SCHEDULE A AND SCHEDULE B TOTAL BID PRICE (in figures):

$_____

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
NONCOLLUSION AFFIDAVIT
5th Ave S – 8th St S Water Main Project
CIP NO. WAC1340000
JOB NO. 09-22-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 <u>not</u> 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: _____

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. Bid proposal to be submitted in a sealed envelope marked "Bid Enclosed" for:

5th/8th Watermain Replacement
CIP No.: WAC134000
Job No.: 09-22-PW

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

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CONTRACT DOCUMENTS

City of Kirkland

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CITY OF KIRKLAND
PUBLIC WORKS AGREEMENT
5th/8th Watermain Replacement
Job No.: 09-22-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."

W I T N E S S E T H:

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: "5th/8th Watermain Replacement, Job No.: 09-22-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 **5th/8th Watermain Replacement**, **Job No.: 09-22-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.

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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 **5th/8th Watermain Replacement, Job No.: 09-22-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
5th/8th Watermain Replacement
Job No.: 09-22-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 **PRINCIPAL**

By:_____ By:_____
Name/Title 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
5th/8th Watermain Replacement
Job No.: 09-22-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:

By: _____
Signature

_____
Print or Type Name

_____
Title

Address: _____

_____

CITY OF KIRKLAND:

By: _____
Signature

_____
Print or Type Name

_____
Title

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

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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)

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SPECIAL PROVISIONS

City of Kirkland

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SPECIAL PROVISIONS

Supplement to

2022

WSDOT Standard Specifications

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CITY OF KIRKLAND SPECIAL PROVISIONS

INTRODUCTION

The work on this project shall be accomplished in accordance with the Standard Specifications for Road, Bridge and Municipal Construction, **2022** 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 **5th/8th Watermain Replacement**.

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.

DIVISION 1 – GENERAL REQUIREMENTS

DESCRIPTION OF WORK

This contract provides for traffic control, temporary erosion and sedimentation control, the installation of approximately 2,200 linear feet of 12-inch and 16-inch ductile iron watermain and appurtenances, approximately 810 linear feet of 12-inch PVC storm drain pipeline and associated drainage structures, sidewalk improvements, pavement overlay, landscape 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

(January 4, 2016 APWA GSP)

1-01.3 Definitions

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” in Standard Specifications.

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

(January 24, 2011 APWA GSP)

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.

(July 31, 2017 APWA GSP)

1-02.1(1) Supplemental Qualifications Criteria

Add the following new section:

In addition, the Contracting Agency has established Contracting Agency-specific and/or project-specific supplemental criteria, in accordance with RCW 39.04.350(3), for determining Bidder responsibility, including the basis for evaluation and the deadline for appealing a determination that a Bidder is not responsible. These criteria are contained in Section 1-02.14 Option C of these Special Provisions.

(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.

(June 27, 2011 APWA GSP)

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 (**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")	**3**	Furnished automatically upon award.
Contract Special Provisions	**3**	Furnished automatically upon award.
Large plans (e.g., 22" x 34")	**1**	Furnished only upon request.

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 Examination of Plans, Specifications, and Site of Work

(January 19, 2022 APWA GSP Option A)

1-02.4(1) General

The first sentence of the ninth paragraph, beginning with “Any prospective Bidder desiring…”, is revised to read:

Any prospective Bidder desiring an explanation or interpretation of the Bid Documents, must request the explanation or interpretation in writing soon enough to allow a written reply to reach all prospective Bidders before the submission of their Bids.

(March 8, 2013 APWA GSP)

1-02.4(2) Subsurface Information

The second sentence in the first paragraph is revised to read:

The Summary of Geotechnical Conditions and the boring logs, if and when included as an appendix to the Special Provisions, shall be considered as part of the Contract.

(July 31, 2017 APWA GSP)

1-02.5 Proposal Forms

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.

(December 10, 2020 APWA GSP Option B)

1-02.6 Preparation of Proposal

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.

(March 8, 2013 APWA GSP)

1-02.7 Bid Deposit

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.

(January 1, 2016 COK GSP)

1-02.8 Noncollusion Declaration and Lobbying Certification

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.

(January 19, 2022 APWA GSP, Option A)

1-02.9 Delivery of Proposal

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.

(July 23, 2015 APWA GSP)

1-02.10 Withdrawing, Revising, or Supplementing Proposal

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.

(October 1, 2020 APWA GSP)

1-02.13 Irregular Proposals

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, if applicable, as required in Section 1-02.6;
   h. The Bidder fails to submit or properly complete a Disadvantaged Business Enterprise Certification, if applicable, as required in Section 1-02.6;
   i. The Bidder fails to submit written confirmation 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 form, 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, 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.

(May 17, 2018 APWA GSP, Option C)

1-02.14 Disqualification of Bidders

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.

(******)
Delete items 2 through 7.

~~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. Previous Project Performance

A. Criterion: The Contracting Agency may review Bidder's past performance record to determine Bidder responsibility based upon the following:

a. Quality of work;
b. Timeliness of project completion and delivery;
c. Safety record;
d. Use of skilled personnel;
e. Management of subcontractors;
f. Availability of, and use of appropriate equipment;
g. Management of work changes;
h. Coordination with other entities, including other contractors, the general public, municipal crews, etc., and;
i. Outstanding claims

This review may include both projects provided by Bidder per Documentation requirement below and similar projects completed for Contracting Agency within five (5) years.

B. Documentation: The Bidder shall submit a list of three (3) public works projects completed in the five (5) years prior to the bid submittal date and include for each project the following information:

- Name of project
- The Owner and contact information for the Project Manager

Contracting Agency will, at its discretion, contact some, or all, of the project contacts and discuss the items identified as Criterion.

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.

(August 14, 2013 APWA GSP)

1-02.15 Pre Award Information

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

(January 23, 2006 APWA GSP)

1-03.1 Consideration of Bids

Revise the first paragraph to read:

After opening and reading proposals, the Contracting Agency will check them for correctness of extensions of the prices per unit and the total price. If a discrepancy exists between the price per unit and the extended amount of any bid item, the price per unit will control. If a minimum bid amount has been established for any item and the bidder's unit or lump sum price is less than the minimum specified amount, the Contracting Agency will unilaterally revise the unit or lump sum price, to the minimum specified amount and recalculate the extension. The total of extensions, corrected where necessary, including sales taxes where applicable and such additives and/or alternates as selected by the Contracting Agency, will be used by the Contracting Agency for award purposes and to fix the Awarded Contract Price amount and the amount of the contract bond.

(October 1, 2005 APWA GSP)

1-03.3 Execution of Contract

Revise this section to read:

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 ten (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, and a satisfactory bond as required by law and Section 1-03.4. 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 10 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.

(January 1, 2016 COK GSP)

1-03.4 Contract Bond

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).

(November 30, 2018 APWA GSP)

1-03.7 Judicial Review

Revise this section as follows:

Any decision 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 new Section 1-03.8.

1-03.8 Escrow Bid Document 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

(January 1, 2016 COK GSP)

1-04.1 Intent of the Contract

Section 1-04.1 is supplemented 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.

(December 10, 2020 APWA GSP)

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

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

(May 30, 2019 APWA GSP)

1-04.4(1) Minor Changes

Delete the first paragraph and replace it with the following:

Payments or credits for changes amounting to **$25,000** 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 Time

(July 23, 2015 APWA GSP, Option B)

1-04.6 Variation in Estimated Quantities

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 any 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:

(January 1, 2016 COK GSP)

1-04.11 Final Cleanup

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.

1-05 CONTROL OF WORK

(January 27, 2021 COK GSP)

1-05.1 Authority of the Engineer

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.

(January 1, 2020 COK GSP)

1-05.4 Conformity with and Deviations from Plans and Stakes

Section 1-05.4 is supplemented with the following:

Unless otherwise identified on Plans or in the Special Provisions, Unit Bid prices shall cover all costs for all surveying labor, equipment, materials, and supervision required to perform the Work. This shall include any resurveying, checking, correction of errors, replacement of missing or damaged stakes, and coordination efforts.

(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	+.01 foot
Alignment	+.01 foot (between successive points)
Superstructure Elevations	+.01 foot (from plan elevations)
Substructure Elevations	+.05 foot (from plan elevations)
Sidewalk and Curb Ramp Elevations	+.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.

(July 23, 2015 APWA GSP)

Add new Section 1-05.4(2).

1-05.4(2) Bridge and Structure Surveys

For all structural work such as bridges and retaining walls, the Contractor shall retain as a part of Contractor's organization an experienced team of survey or shall provide all surveys required to complete the structure, except the following primary survey control which will be provided by the Engineer:

1. Centerline or offsets to centerline of the structure.
2. Stations of abutments and pier centerlines.
3. A sufficient number of bench marks for levels to enable the Contractor to set grades at reasonably short distances.
4. Monuments and control points as shown in the Plans.

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)

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.

(October 1, 2005 APWA GSP)

1-05.7 Removal of Defective and Unauthorized Work

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.

(January 1, 2016 COK GSP)

1-05.9 Equipment

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.

(January 1, 2016 COK GSP)

1-05.10 Guarantees

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.

(October 1, 2005 APWA GSP)

1-05.11 Final Inspection

Delete this section and replace it with the following:

1-05.11 Final Inspections and Operational Testing

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 therefor.

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.

(March 8, 2013 APWA GSP)

1-05.12 Final Acceptance

Add new Section 1-05.12(1).

1-05.12(1) One-Year Guarantee Period

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.

(August 14, 2013 APWA GSP)

1-05.13 Superintendents, Labor and Equipment of Contractor

Delete the sixth and seventh paragraph of this section.

(March 25, 2009 APWA GSP)

1-05.15 Method of Serving Notices

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.

(March 8, 2013 APWA GSP)

Add new Section 1-05.18.

1-05.18 Record Drawings

The Contractor shall maintain one set of 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.).

If the Contract calls for the Contracting Agency to do all surveying and staking, the Contracting Agency will provide the elevations at the tolerances the Contracting Agency requires for the Record Drawings.

When the Contract calls for the Contractor to do the 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 erasable colored pencil (not ink) 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 $ **2,000**)	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.

(November 19, 2019 COK GSP)

Add new Section 1-05.19.

1-05.19 Daily Construction Report

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:

1. Project name & number;
2. Consecutive numbering of pages, and
3. 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.

1-06 CONTROL OF MATERIAL

(January 1, 2016 COK GSP)

1-06.1 Approval of Materials Prior to Use

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.

(February 17, 2022 COK GSP)

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

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.

(June 27, 2011 AWPA GSP)

1-06.1(4) Fabrication Inspection Expense

Delete this section in its entirety.

(January 4, 2016 APWA GSP)

1-06.6 Recycled Materials

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 Table 9-03.21(1)E 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.

1-07 LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLIC

(January 1, 2021 COK GSP)

1-07.1 Laws to Be Observed

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.

(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, 2016 COK GSP)

Supplement 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 Contractor and all subcontractors shall immediately report all accidents, injuries, and health hazards to the Owner, 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.

(May 13, 2020 COK GSP)

Supplement this section with the following:

In response to the COVID-19 pandemic and the workplace requirements implemented by the State of Washington for construction projects during the pandemic, the Contractor shall prepare a project-specific COVID-19 health and safety plan (CHSP) in conformance with Section 1-07.4(2) as amended by this Contract's Special Provisions.

(June 27, 2011 APWA GSP)

1-07.2 State Taxes

Delete this section, including its sub-sections, in its entirety and replace it with the following:

1-07.2 State Sales Tax

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).

1-07.4 Sanitation

(February 2, 2021 COK GSP)

1-07.4(2) Health Hazards

Supplement this section with the following:

COVID-19 Health and Safety Plan (CHSP)

The Contractor shall prepare a project specific COVID-19 health and safety plan (CHSP). The CHSP shall be prepared and submitted as a Type 2 Working Drawing prior to beginning physical Work. The CHSP shall be based on the most current State and Federal requirements. If the State or Federal requirements are revised, the CHSP shall be updated as necessary to conform to the current requirements.

The Contractor shall update and resubmit the CHSP as the work progresses and new activities appear on the look ahead schedule required under Section 1-08.3(2)D. If the conditions change on the project, or a particular activity, the Contractor shall update and resubmit the CHSP. Work on any activity shall cease if conditions prevent full compliance with the CHSP.

The CHSP shall address the health and safety of all people associated with the project including State workers in the field, Contractor personnel, consultants, project staff, subcontractors, suppliers, and anyone on the project site, staging areas, or yards.

All labor, materials, and equipment needed to prepare and implement the CHSP shall be incidental to other bid items and shall not the basis for additional compensation to the Contractor. This includes but, is not limited to, a site supervisor to implement the plan, worker daily temperature checks and other required monitoring and documentation, means and methods to achieve safe distancing between workers, labor adjustments in response to workers unable to work on-site, providing masks and handwashing stations, etc.

COVID-19 Health and Safety Plan (CHSP) Inspection

The Contractor shall grant full and unrestricted access to the Engineer for CHSP inspections. The Engineer (or designee) will conduct periodic compliance inspections on the project site, staging areas, or yards to verify that any ongoing work activity is following the CHSP plan. If the Engineer becomes aware of a noncompliance incident either through a site inspection or other means, the Contractor will be notified immediately (within 1 hour). The Contractor shall immediately remedy the noncompliance incident or suspend all or part of the associated work activity. The Contractor shall satisfy the Engineer that the noncompliance incident has been corrected before the suspension will end.

1-07.5 Environmental Regulations

(January 1, 2021 COK GSP)

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

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.

(January 1, 2021 COK GSP)

1-07.5(3) State Department of Ecology

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.

(January 1, 2021 COK GSP)

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

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.

(January 1, 2021 COK GSP)

1-07.6 Permits and Licenses

Replace item 6 of the second paragraph of this section with the following:

6. The permit costs the Contracting Agency nothing. This shall include, but not be limited to, application and initial review fees, costs associated with fulfillment of all permit requirements, additional operational fees assessed during the life of the permit.

Supplement second paragraph of this section with the following:

7. 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)).

(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)

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

Add new Section 1-07.6(2)

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.

1-07.9 Wages

(January 3, 2020 APWA GSP)

1-07.9(5) Required Documents

Delete this section and replace it with the following:

General

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 the State L&I online Prevailing Wage Intent & Affidavit (PWIA) system.

Intents and Affidavits

On forms provided by the Industrial Statistician of State L&I, the Contractor shall submit to the Engineer the following for themselves and for each firm covered under RCW 39.12 that will or has provided Work and materials for the Contract:

1. The approved “Statement of Intent to Pay Prevailing Wages” State L&I’s form number F700-029-000. The Contracting Agency will make no payment under this Contract until this statement has been approved by State L&I and reviewed by the Engineer.

2. The approved “Affidavit of Prevailing Wages Paid”, State L&I’s form number F700-007-000. The Contracting Agency will not grant Completion until all approved Affidavit of Wages paid for the Contractor and all Subcontractors have been received by the Engineer. The Contracting Agency will not release to the Contractor any funds retained under RCW 60.28.011 until “Affidavit of Prevailing Wages Paid” forms have been approved by State L&I and all of the approved forms have been submitted to the Engineer for every firm that worked on the Contract.

The Contractor is responsible for requesting these forms from State L&I and for paying any fees required by State L&I.

Certified Payrolls
Certified payrolls are required to be submitted by the Contractor for themselves, all Subcontractors, and all lower tier subcontractors. The payrolls shall be submitted weekly on all Federal-aid projects and no less than monthly on State funded projects.

Penalties for Noncompliance
The Contractor is advised, if these payrolls are not supplied within the prescribed deadlines, any or all payments may be withheld until compliance is achieved. In addition, failure to provide these payrolls may result in other sanctions as provided by State laws (RCW 39.12.050) and/or Federal regulations (29 CFR 5.12).

(July 18, 2016 APWA GSP, Option C)

1-07.11 Requirements for Nondiscrimination

Supplement this section with the following:

Voluntary Minority, Small, Veteran and Women's Business Enterprise (MSVWBE) Participation

General Statement

Voluntary goals for minority, small, veteran and women business enterprises are included in this Contract. The Contractor is encouraged to utilize MSVWBEs in accordance with these Specifications, RCW 39.19, and Executive Order 13-01 (issued by the Governor of Washington on May 10, 2013).

No preference will be included in the evaluation of the Contractor’s Proposal or Bid; no minimum level of MSVWBE participation is required as a condition of award or completion of the Contract; and a Proposal or Bid will not be rejected or considered non-responsive on that basis.

The goals are voluntary and outreach efforts to provide MSVWBEs maximum practicable opportunities are encouraged.

Non-Discrimination

Contractors shall not create barriers to open and fair opportunities for all businesses, including MSVWBEs, to participate in the Work on this Contract. This includes the opportunity to compete for subcontracts as sources of supplies, equipment, construction, or services.

The Contractor shall make Voluntary MSVWBE Participation a part of all subcontracts and agreements entered into as a result of this Contract.

Voluntary MSVWBE Participation Goals

Goals for voluntary MSVWBE participation have been established as a percentage of Contractor’s total Bid amount.

The Contracting Agency has established the following voluntary goals:

Minority	10%
Small	5%
Veteran	5%
Women	6%

Amounts paid to an MSVWBE will be credited to every voluntary goal in which they are eligible. In other words participation may be credited for participation in more than one category. If the Contractor is a MSVWBE their Work will be credited to the voluntary goals in which they are eligible.

Definitions

Minority Business Enterprise (MBE) – A minority owned business meeting the requirements of RCW 39.19 and WAC 326-20 and certified by the Washington State Office of Minority & Women's Business Enterprises.

Small Business – A business meeting the Washington State requirements for a "Small business", "Minibusiness" or "Microbusiness as defined in RCW 39.26.010 and included on the WSDOT Office of Equal Opportunity list of Small Businesses at http://www.wsdot.wa.gov/equalopportunity/bddirectory.htm

Veteran Business – A veteran owned business meeting the requirements of RCW 43.60A.010 and included on the WSDOT Office of Equal Opportunity list of Veteran Businesses at http://www.wsdot.wa.gov/equalopportunity/bddirectory.htm

Women Business Enterprise (WBE) – A women owned business meeting the requirements of RCW 39.19 and WAC 326-20 and certified by the Washington State Office of Minority & Women's Business Enterprises.

MSVWBE Inclusion Plan

A MSVWBE Inclusion Plan shall be submitted to the Engineer prior to the start of Work on the project. The plan is submitted for the Contracting Agency's information. Approval of the plan is not required; an incomplete plan will be returned for correction and resubmittal. The plan shall include the information identified in the guidelines at http://www.wsdot.wa.gov/EqualOpportunity/MSVWBE.htm.

MSVWBE Reporting

An end of project Report of Amounts Paid to MSVWBEs shall be submitted to the Engineer after Physical Completion of the Contract. The end of project report is due 20 calendar days after the physical completion of the project has been issued.

The end of project report shall include payments to all eligible businesses regardless of their listing on the MSVWBE Inclusion Plan. If the Contractor is a MSVWBE the amounts paid by the Contracting Agency for Work performed by the Contractor shall also be reported.

MSVWBE Payment

All costs for implementation of the requirements for Voluntary MSVWBE Participation shall be included in the associated items of Contract Work.

(January 1, 2016 COK GSP)

1-07.14 Responsibility for Damage

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

(January 10, 2019 COK GSP)

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

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

(January 1, 2016 COK GSP)

1-07.16(3) Fences, Mailboxes, Incidentals

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 box 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.

(January 1, 2020 COK GSP)

1-07.17 Utilities and Similar Facilities

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:

4. Water, sewer, storm, streets – minimum two working days in advance
5. Power (Electric and Natural Gas) – minimum 48 hours in advance
6. Telephone – minimum 30 days in advance
7. Natural Gas – minimum 48 hours in advance
8. Cable Television – minimum 48 hours in advance
9. 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
Water / Sewer (North area of Kirkland)	Northshore Utility District	6380 NE 185th St Kenmore, WA 98028	George Matote Kelly Nesbitt	(425) 398-4400 (425) 521-3750
Street	City of Kirkland	123 Fifth Avenue Kirkland, WA 98033	Glenn Akramoff	(425) 587-3900
Natural Gas	Puget Sound Energy	P.O. Box 97034 EST-11W Bellevue, WA 98009-9734	Patty Miller	(206) 305-7950
Electric	Puget Sound Energy	35131 SE Center St Snoqualmie, WA 98065	Fremont Aguinaldo	(425) 223-0936
Telephone/ FIOS	Ziply Fiber	P.O. Box 1127 Everett, WA 98206	Jay Schwab	(425) 263-4019
FIOS	Zayo	22651 83rd Ave. S. Kent, WA 98032	Jason Accuradi	(971) 344-0530
Cable Television	Comcast	1525 - 75th St SW, Suite 200 Everett, WA 98203	Joe Fordon	(425) 263-5348
Network	Verizon/MCI	11311 NE 120th St Kirkland, WA 98034	Brad Landis Scott Christenson	(425) 201-0901 (425) 471-1079
School District Transportation	Lake Washington School District	15212 NE 95th St Redmond, WA 98052	Jeff Miles	(425) 936-1120
Transit	King County METRO	MS SVQ-TR-0100 1270 6th Ave S Seattle, WA 98134	David Freeman	(206) 477-1140 (206) 477-0438
Water (Northeast	Woodinville Water District	17238 NE Woodinville Duvall Road,	Ken McDowell	(425) 487-4104

area of Kirkland)		Woodinville, WA 98072		
Olympic Pipeline	BP		Kenneth Metcalf Joseph Stone	(425) 981-2575 (425) 981-2506

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.

(******)

Coordination with Adjacent Work by Others

Name of Development: *The Offices at 6th Street*

Development Contractor: Craig Miller, Senior Project Manager, Foushée, (425) 766-1997, cmiller@foushee.com.

Location of Development: 422 6th Street S, Kirkland, WA 98033 (i.e., at the northeast corner of the intersection of 6th Street S and 5th Avenue S)

Description of Development: *The Offices at 6th Street*, when completed, will consist of a new 55,000-square-foot, multi-story office building with at-grade and below-grade parking structures. Construction began in February 2022.

Coordination Requirements: Access to *The Offices at 6th Street* jobsite is from 5th Avenue S only, so there will be significant truck traffic on 5th Avenue S at all times during construction of the City's *5th/8th Watermain Replacement* project. *The 5th/8th Watermain Replacement* project contractor shall:

- Coordinate with Foushée's project manager, Craig Miller, to ensure that access to *The Offices at 6th Street* jobsite from 5th Avenue S is available at all times;
- Protect the temporary and permanent works of *The office at 6th Street* from damages.

(******)

Coordination with Residents on 7th Street S

Construction traffic and parking will not be permitted on 7th Street S. When it is absolutely necessary to utilize 7th Street S to facilitate construction, the Contractor shall provide the City with a minimum of one week advance notice so the City can coordinate with residents.

(January 1, 2016 COK GSP)

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

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.

(January 4, 2016 APWA GSP)

1-07.18 Public Liability and Property Damage Insurance

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

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.

(January 4, 2016 APWA GSP)

1-07.18(5)D Excess or Umbrella Liability

The Contractor shall provide Excess or Umbrella Liability insurance with limits of not less than **three million dollars ($3,000,000)** each occurrence and annual aggregate. This excess or umbrella liability coverage shall be excess over and as least as broad in coverage as the Contractor's Commercial General and Auto Liability insurance

All entities listed under 1-07.18(2) of these Special Provisions shall be named as additional insureds on the Contractor's Excess or Umbrella Liability insurance policy.

This requirement may be satisfied instead through the Contractor's primary Commercial General and Automobile Liability coverages, or any combination thereof that achieves the overall required limits of insurance.

(January 4, 2016 APWA GSP)

1-07.18(5)H Marine Pollution

The Contractor shall procure and maintain Pollution Liability (OPA, CERCLA) insurance to satisfy U.S. Coast Guard requirements as respects the Federal Oil Pollution Act of 1990 and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 as amended.

Such policy must provide the following minimum limits, or statutory limits of liability as applicable, whichever is higher:

$1,000,000 per Occurrence

(January 4, 2016 APWA GSP)

1-07.18(5)K Professional Liability

The Contractor and/or its Subcontractor(s) and/or its design consultant providing construction management, value engineering, or any other design-related non-construction professional services shall provide evidence of Professional Liability insurance covering professional errors and omissions.

Such policy shall provide the following minimum limits:

$1,000,000 per claim and annual aggregate

If the scope of such design-related professional services includes work related to pollution conditions, the Professional Liability insurance shall include coverage for Environmental Professional Liability.

If insurance is 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.

(January 1, 2016 COK GSP)

1-07.23 Public Convenience and Safety

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 firefighting 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.

(******)

1-07.23(2) Construction and Maintenance of Detours

Section 1-07.23(2) is supplemented with the following:

Posting of "No Parking" Signs Prior to Work

When necessary to complete the work specified under this contract, the Contractor shall furnish and install, at no expense to the Contracting Agency, temporary "No Parking" signs at least twenty-four (24) hours in advance of start of work. The Contractor shall be responsible for coordinating the removal of non-compliant vehicles from the work zone with the Kirkland Police Department.

All temporary "No Parking" signs shall clearly indicate the date(s) of construction and include the words "Tow Away Zone". If the schedule of work changes, for any reason, the Contractor shall change the dates indicated on the sign. The contractor shall be onsite working on the days indicated on the sign. A range of dates that span multiple project areas will not be acceptable.

(January 1, 2016 COK GSP)

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.

(July 23, 2015 APWA GSP)

1-07.24 Rights of Way

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)

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: _____

1-08 PROSECUTION AND PROGRESS

Add the following new section:

(May 25, 2006 APWA GSP)

1-08.0 Preliminary Matters

Add the following new section:

(October 10, 2008 APWA GSP)

1-08.0(1) Preconstruction Conference

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 new Section 1-08.0(2).

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.

(******)

Working days for this project shall exclude weekends, holidays, and 07/31/2022 through 08/06/2022 for the Junior League Softball World Series.

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:

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

(May 30, 2019 APWA GSP, Option B)

1-08.1 Subcontracting

Delete the ninth paragraph, beginning with “On all projects, the Contractor shall certify…”.

(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.

(January 1, 2016 COK GSP)

1-08.3 Progress Schedule

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) Progress Schedule Types

(March 13, 2012 APWA GSP)

1-08.3(2)A Type A Progress Schedule

Revise this section to read:

The Contractor shall submit **electronic** 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.

(******)

Special Schedule Limitations

Junior League Softball World Series at Everest Park, Sunday, July 31st, through Saturday, August 6th: No work or equipment staging may occur on this project during the *Junior League Softball World Series* at Everest Park in Kirkland. All sidewalks, driveways, and ramps shall be open and accessible to pedestrians, and all bike routes shall be clear and safe.

Coordination with adjacent work by others: Coordination with development work adjacent to 5th Ave S shall be accounted for in the Type A Progress Schedule. Refer to Section 1-07.17 for more information on required coordination.

(July 23, 2015 APWA GSP)

1-08.4 Prosecution of Work

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

1-08.4 Notice to Proceed and Prosecution of Work

Notice to Proceed will be given after the contract has been executed and the contract bond and evidence of insurance have been approved and filed by the Contracting Agency. The Contractor shall not commence with the work until the Notice to Proceed has been given by the Engineer. The Contractor shall commence construction activities on the project site within ten days of the Notice to Proceed Date, unless otherwise approved in writing. The Contractor shall diligently pursue the work to the physical completion date within the time specified in the contract. Voluntary shutdown or slowing of operations by the Contractor shall not relieve the Contractor of the responsibility to complete the work within the time(s) specified in the contract.

When shown in the Plans, the first order of work shall be the installation of high visibility fencing to delineate all areas for protection or restoration, as described in the Contract. Installation of high

visibility fencing adjacent to the roadway shall occur after the placement of all necessary signs and traffic control devices in accordance with 1-10.1(2). Upon construction of the fencing, the Contractor shall request the Engineer to inspect the fence. No other work shall be performed on the site until the Contracting Agency has accepted the installation of high visibility fencing, as described in the Contract.

(November 30, 2018 APWA GSP, Option A)
1-08.5 Time for Completion

Revise the third and fourth paragraphs to read:

Contract time shall begin on the first working day following the Notice to Proceed Date.

Each working day shall be charged to the contract as it occurs, until the contract work is physically complete. If substantial completion has been granted and all the authorized working days have been used, charging of working days will cease. Each week the Engineer will provide the Contractor a statement that shows the number of working days: (1) charged to the contract the week before; (2) specified for the physical completion of the contract; and (3) remaining for the physical completion of the contract. The statement will also show the nonworking days and any partial or whole day the Engineer declares as unworkable. Within 10 calendar days after the date of each statement, the Contractor shall file a written protest of any alleged discrepancies in it. To be considered by the Engineer, the protest shall be in sufficient detail to enable the Engineer to ascertain the basis and amount of time disputed. By not filing such detailed protest in that period, the Contractor shall be deemed as having accepted the statement as correct. If the Contractor is approved to work 10 hours a day and 4 days a week (a 4-10 schedule) and the fifth day of the week in which a 4-10 shift is worked would ordinarily be charged as a working day then the fifth day of that week will be charged as a working day whether or not the Contractor works on that day.

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. Documentation of compliance with all terms and conditions of all local, state, and federal permits issued to, or transferred to, the Contractor for the purposes of this Work. This documentation does not include permits issued to the Contracting Agency that were not transferred to the Contractor.

h. Property owner releases per Section 1-07.24.

(January 1, 2016 COK GSP)

Section 1-08.5 is supplemented with the following:

This project shall be physically completed in its entirety within **80** working days.

(January 1, 2016 COK GSP)

1-08.9 Liquidated Damages

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 → LD = 0.15 × C ÷ T, and
For C ≤ $50,000 → LD = 0.30 × C ÷ 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

(January 1, 2016 COK GSP)

1-09.2(1) General Requirements for Weighing Equipment

The second to last paragraph of Section 1-09.2(1) is supplemented with the following:

Trucks and Tickets

All tickets shall, at a minimum, contain the following information:

7. Ticket serial number
8. Date and hour of weighing
9. Weigher's identification

Duplicate tally tickets shall be prepared to accompany each truckload of materials delivered to the project.

It is the responsibility of the Contractor to see that tickets are given to the Inspector on the project for each truckload of material delivered. Pay quantities will be prepared on the basis of said tally tickets, delivered to the Inspector at time of delivery of materials. Tickets not collected at the time of delivery will not be honored for payment.

(May 2, 2017 APWA GSP)

1-09.2(5) Measurement

Revise the first paragraph to read:

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

(October 10, 2008 APWA GSP)

1-09.6 Force Account

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 Engineer.

(December 10, 2020 APWA GSP)

1-09.7 Mobilization

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 which occur 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. Any portion 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. Any costs of 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~~ **90** percent of the Bid Item for mobilization on that original Bid Schedule, ~~10~~ **9** percent of the total of that original Bid Schedule, or ~~10~~ **9** 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.

(March 13, 2012 APWA GSP)

1-09.9 Payments

Supplement this section with the following:

Lump sum item breakdowns are not required when the bid price for the lump sum item is less than $20,000.

(March 13, 2012 APWA GSP)

Delete the first four paragraphs and replace them with the following:

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.

(January 1, 2016 COK GSP)

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

(November 30, 2018 APWA GSP)

1-09.11(3) Time Limitation and Jurisdiction

Revise this section to read*:*

For the convenience of the parties to the Contract it is mutually agreed by the parties that any 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 any 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 any such claims or causes of action. It is further mutually agreed by the parties that when any 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 any records deemed necessary by the Contracting Agency to assist in evaluating the claims or action.

1-09.13 Claims Resolution

(February 1, 2021 COK GSP)

1-09.13(3) Claims $250,000 or Less

Delete this Section and replace it with the following:

The Contractor and the Contracting Agency mutually agree that those claims that total $250,000 or less, submitted in accordance with Section 1-09.11 and not resolved by nonbinding Alternative Dispute Resolution (ADR) processes, **provided Contracting Agency agreed to engage such ADR**

processes, shall be resolved through litigation unless the parties mutually agree in writing to resolve the claim through binding arbitration.

(November 30, 2018 APWA GSP)
1-09.13(3)A Administration of Arbitration

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.

1-10 TEMPORARY TRAFFIC CONTROL

(January 1, 2016 COK GSP)

1-10.2 Traffic Control Management

1-10.2(2) Traffic Control Plans

The first and second sentences of Section 1-10.2(2) are deleted and replaced with the following:

> The Contractor shall submit a traffic control plan or plans showing a method of handling traffic including pedestrian and bicycle traffic. All construction signs, flaggers, spotters, and other traffic control devices shall be shown on the traffic control plan(s) except for emergency situations.

1-10.3 Traffic Control Labor, Procedures, and Devices

1-10.3(3) Traffic Control Devices

(April 18, 2018 COK GSP)

1-10.3(3)C Portable Changeable Message Sign

Supplement this section with the following:

> Two Portable Changeable Message Signs (PCMS) shall be provided for the duration of the project. Proposed locations shall be shown on Traffic Control Plan(s) submitted by the contractor. Contractor shall submit proposed message(s) to be displayed and receive approval by the Engineer prior to placement. Contractor is responsible for programming of the approved message into the PCMS('s), set-up, placement, and removal upon project completion.

1-10.4 Measurement

(May 16, 2006 COK GSP)
1-10.4(2) Item Bids with Lump Sum for Incidentals

Section 1-10.4(2) is supplemented with the following:

> "Off-duty Uniformed Police Officer" will be by measured per hour for each hour the off-duty uniformed police officer is performing work to control the flow of traffic through signalized intersections affected by Contractor work.

1-10.5 Payment

(January 23, 2006 APWA GSP)

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

Revise the pay item name to read:

> "Project Temporary Traffic Control (Min. Bid **$75,000)**", lump sum.

(May 16, 2006 COK GSP)

1-10.5(3) Reinstating Unit Items with Lump Sum Traffic Control

> "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".

Providing, operating, and maintaining two (2) Portable Changeable Message Signs from 7 calendar days prior to the start of construction and throughout the project duration 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

2-01.3 Construction Requirements

(January 1, 2020 COK GSP)

2-01.3(1) Clearing

This Section is supplemented with the following:

7. Trees removal shall be performed in a manner that does not damage overhead utilities. The Contractor shall coordinate tree removal activities with the affected utility companies, including meeting all applicable requirements.

(January 1, 2020 COK GSP)

2-01.3(2) Grubbing

This Section is supplemented with the following:

3. Remove stumps of removed trees by grinding. Contractor shall grind stumps to a minimum of 6 inches below either the existing or final ground surface elevation, whichever is lower. The Contractor shall coordinate stump removal activities with the affected utility companies, including meeting all applicable requirements.

2-02 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

2-02.1 Description

Section 2-02.1 is supplemented with the following:

The work described in this section includes sawcutting, removing, and disposing of asphalt concrete and cement concrete pavement, sidewalks, curb, and curb and gutter, and all other items necessary to satisfactorily complete the work as described in the contract documents. Any backfill and compaction of the resulting voids will be considered incidental to these bid items.

2-02.3 Construction Requirements

Section 2-02.3 is supplemented with the following:

(******)

Saw Cutting

This work consists of cutting all types and thicknesses of material including, but not limited to, asphalt concrete, cement concrete, and reinforcing steel. The use of pneumatic hammers or punches will not be permitted.

All full-depth saw cuts shall be continuous, and shall be made with saws specifically equipped for the purpose. No skip cutting or jack hammering will be allowed unless specifically approved otherwise in writing by the Engineer. The location of all pavement cuts shall be where shown in the Plans or as approved by the Engineer in the field before cutting commences.

The Contractor shall be responsible for ensuring that special precautions are undertaken so that no material is discharged into any storm drain system or surface water. All waste water shall be collected by vacuum system and disposed of at an appropriate disposal site or by methods approved by the Washington State Department of Ecology at no cost to the City.

Removing Hydrant Assembly

This work consists of removing and disposing of existing fire hydrants as shown on the plans. In addition to removing the hydrant itself, cap the existing 6" ductile-iron pipe between the hydrant and the watermain with a solid plug or cap, restrained, and thrust block.

(******)

Removing Curb, Curb and Gutter

This work consists of removing cold mix curbs, asphalt concrete curbs, cement concrete pedestrian curbs, cement concrete curbs, cement concrete curb and gutters, berms, or thickened edge as indicated.

(******)

Removing Cement Conc. Sidewalk

This work consists of removing cement concrete sidewalk, driveway approach, driveway, walkway, and sidewalk ramps as indicated.

(September 8, 1997 WSDOT GSP)

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

Section 2-02.3(3) is supplemented with the following:

The thickness of the asphalt concrete pavement is approximately seven (7) inches.

(******)

Contractor shall notify affected businesses and residents prior to removal of driveways. If new concrete is not installed by the end of the work day that concrete is removed, Contractor shall provide temporary access at no additional cost to the Owner.

Pedestrian detours shall be in place prior to removal of sidewalks and/or ramps.

Portions of the of the sidewalk or curb/gutter damaged due to the Contractor's operation, shall be removed to the next construction or crack control joint and replaced at the Contractor's expense and to the satisfaction of the Engineer.

Contractor shall take care to prevent damage to landscaping plants or other vegetation on private property in close proximity to the structures/obstructions to be removed. The Contractor is responsible for all costs associated with the protection of this private landscaping. The Contractor shall assume responsibility for all repair/replacement costs for landscaping damaged by activities associated with the work.

(September 8, 1997 WSDOT GSP)

2-02.4 Measurement

Section 2-02.4 is supplemented with the following:

Sidewalk removal will be measured by the square yard.

Curb removal will be measured by the linear foot.

(******)

Pipe Removal will be measured by the linear foot.

Drainage Structure Removal will be measured per each.

Final Saw Cutting will be measured by the linear foot along the surface being cut, for the final trench patch only.

Hydrant assembly removal will be per each.

(September 8, 1997 WSDOT GSP)

2-02.5 Payment

Section 2-02.5 is supplemented with the following:

"Removing Cement Conc. Sidewalk", per square yard.

"Removing Cement Conc. Curb", per linear foot.

"Removing Cement Conc. Curb and Gutter", per linear foot.

(******)

"Removing Asbestos Concrete Pipe", per linear foot.

The contract price for Removing AC Pipe shall include all costs for removal and proper disposal of the pipe in compliance with Washington State Department of Ecology requirements for materials containing asbestos.

"Removing Drainage Structure", per each.

"Final Saw Cutting", per linear foot.

"Removing Hydrant Assembly", per each.

The contract price for Removing Hydrant Assembly shall be full pay for removing the existing hydrant assembly and capping the 6-inch pipe connecting to the water main.

(******)

2-09 STRUCTURE EXCAVATION

2-02.4 Measurement

The last paragraph of Section 2-02.4 is deleted and replaced with the following:

Controlled density fill will be measured by the linear foot of existing pipe filled.

2-02.5 Payment

The last pay item of Section 2-02.5 is revised to read:

"Controlled Density Fill", per linear foot.

END OF DIVISION 2

DIVISION 4 – BASES

4-04 BALLAST AND CRUSHED SURFACING

(March 9, 2016 APWA GSP)

4-04.2 Materials

Supplement this section with the following:

Aggregates for permeable base shall meet the requirements for grading and quality when placed in hauling vehicles for delivery to the site, after placement in temporary stockpiles on site, during installation, and after installation and compaction.

Acceptance of aggregates shall be as provided under non-statistical evaluation.

The Contractor's submittal for the aggregate material shall provide description of sampling methodology, identify where and how the sample was collected, total weight of sampled collected, description of sample preparation procedures, total weight of sample sieved to determine grain size distribution, and test results. Sampling and preparation shall be in conformance with ASTM D75 and ASTM C702.

4-04.3 Construction Requirements

(March 9, 2016 APWA GSP)

4-04.3(5) Shaping and Compaction

Supplement this section with the following:

Immediately following spreading and final shaping each layer of surfacing shall be lightly compacted in one lift until no visible movement of aggregate is observed resulting in a firm and unyielding condition, as determined by the Engineer.

4-04.3 Payment

Revise the pay item name to read:

"Crushed Surfacing Top Course (For Trench Backfill)", per ton

END OF DIVISION 4

DIVISION 5 – SURFACE TREATMENTS AND PAVEMENTS

(July 18, 2018 APWA GSP)

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 conveyer 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 ⅜”	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:

   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%

   a. 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 Con**tent – 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 sublot shall be equal to one day's production or 800 tons, whichever is less except that the final sublot 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 sublot.

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 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

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 sublot 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 sublot 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 sublot shall be equal to one day's production or 400 tons, whichever is less except that the final sublot 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 sublot per WSDOT T 738.

The sublot 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 sublot, with one test per sublot.

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 sublot 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 PF 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 ion 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.

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 ⅛ 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 ¼ 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 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 from a low place in the HMA and deviations resulting from a high place where corrective action, in the opinion of the Engineer, will not produce satisfactory results will be accepted with a price adjustment. The Engineer shall deduct from monies due or that may become due to the Contractor the sum of $500.00 for each and every section of single traffic lane 100 feet in length in which any excessive deviations described above are found.

When utility appurtenances such as manhole covers and valve boxes are located in the traveled way, the utility appurtenances shall be adjusted to the finished grade prior to paving. This requirement may be waived when requested by the Contractor, at the discretion of the Engineer or when the adjustment details provided in the project plan or specifications call for utility appurtenance adjustments after the completion of paving.

Utility appurtenance adjustment discussions will be included in the Pre-Paving planning (5-04.3(14)B3). Submit a written request to waive this requirement to the Engineer prior to the start of paving.

5-04.3(14) Planing (Milling) Bituminous Pavement

The planning plan must be approved by the Engineer and a pre planning 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 coordination 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 of 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 of 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. ___ PG ___, HMA for ___ Cl. ___ PG ___, and Commercial HMA will be measured by the ton 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.

Roadway cores will be measured per each for the number of cores taken.

Preparation of untreated roadway will be measured by the mile once along the centerline of the main line Roadway. No additional measurement will be made for ramps, Auxiliary Lanes, service roads, Frontage Roads, or Shoulders. Measurement will be to the nearest 0.01 mile.

Soil residual herbicide will be measured by the mile for the stated width to the nearest 0.01 mile or by the square yard, whichever is designated in the Proposal.

Pavement repair excavation will be measured by the square yard of surface marked prior to excavation.

Asphalt for prime coat will be measured by the ton in accordance with Section 1-09.2.

Prime coat aggregate will be measured by the cubic yard, truck measure, or by the ton, whichever is designated in the Proposal.

Asphalt for fog seal will be measured by the ton, as provided in Section 5-02.4.

Longitudinal joint seals between the HMA and cement concrete pavement will be measured by the linear foot along the line and slope of the completed joint seal.

Planing bituminous pavement will be measured by the square yard.

Temporary pavement marking will be measured by the linear foot as provided in Section 8-23.4.

Water will be measured by the M gallon as provided in Section 2-07.4.

(******)

Remove and Replace HMA Speed Cushion will be per each location where a speed hump is removed and replaced with a set of speed cushions.

5-04.5 Payment

Payment will be made for each of the following Bid items that are included in the Proposal:

"HMA Cl. ___ PG ___", per ton.

"HMA for Approach Cl. ___ PG ___", per ton.

"HMA for Preleveling Cl. ___ PG ___", per ton.

"HMA for Pavement Repair Cl. ___ PG ___", per ton.

"Commercial HMA", per ton.

The unit Contract price per ton for "HMA Cl. ___ PG ___", "HMA for Approach Cl. ___ PG ___", "HMA for Preleveling Cl. ___ PG ___", "HMA for Pavement Repair Cl. ___ PG ___", and "Commercial HMA" 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.

"Preparation of Untreated Roadway", per mile.

The unit Contract price per mile for "Preparation of Untreated Roadway" shall be full pay for all Work described under 5-04.3(4) , with the exception, however, that all costs involved in patching the Roadway prior to placement of HMA shall be included in the unit Contract price per ton for "HMA Cl. ___ PG ___" which was used for patching. If the Proposal does not include a Bid item for "Preparation of Untreated Roadway", the Roadway shall be prepared as specified, but the Work shall be included in the Contract prices of the other items of Work.

"Preparation of Existing Paved Surfaces", per mile.

The unit Contract Price for "Preparation of Existing Paved Surfaces" shall be full pay for all Work described under Section 5-04.3(4) with the exception, however, that all costs involved in patching the Roadway prior to placement of HMA shall be included in the unit Contract price per ton for "HMA Cl. ___ PG ___" which was used for patching. If the Proposal does not include a Bid item for "Preparation of Untreated Roadway", the Roadway shall be prepared as specified, but the Work shall be included in the Contract prices of the other items of Work.

"Crack Sealing", by force account.

"Crack Sealing" will be paid for by force account as specified in Section 1-09.6. For the purpose of providing a common Proposal for all Bidders, the Contracting Agency has entered an amount in the Proposal to become a part of the total Bid by the Contractor.

"Pavement Repair Excavation Incl. Haul", per square yard.

The unit Contract price per square yard for “Pavement Repair Excavation Incl. Haul” shall be full payment for all costs incurred to perform the Work described in Section 5-04.3(4) with the exception, however, that all costs involved in the placement of HMA shall be included in the unit Contract price per ton for “HMA for Pavement Repair Cl. ___ PG ___”, per ton.

“Asphalt for Prime Coat”, per ton.

The unit Contract price per ton for “Asphalt for Prime Coat” shall be full payment for all costs incurred to obtain, provide, and install the material in accordance with Section 5-04.3(4).

“Prime Coat Agg.”, per cubic yard, or per ton.

The unit Contract price per cubic yard or per ton for “Prime Coat Agg.” shall be full pay for furnishing, loading, and hauling aggregate to the place of deposit and spreading the aggregate in the quantities required by the Engineer.

“Asphalt for Fog Seal”, per ton.

Payment for “Asphalt for Fog Seal” is described in Section 5-02.5.

“Longitudinal Joint Seal”, per linear foot.

The unit Contract price per linear foot for “Longitudinal Joint Seal” shall be full payment for all costs incurred to perform the Work described in Section 5-04.3(12).

“Planing Bituminous Pavement”, per square yard.

The unit Contract price per square yard for “Planing Bituminous Pavement” shall be full payment for all costs incurred to perform the Work described in Section 5-04.3(14).

“Temporary Pavement Marking”, per linear foot.

Payment for “Temporary Pavement Marking” is described in Section 8-23.5.

“Water”, per M gallon.

Payment for “Water” is described in Section 2-07.5.

“Job Mix Compliance Price Adjustment”, by calculation.

“Job Mix Compliance Price Adjustment” will be calculated and paid for as described in Section 5-04.3(9)C6.

“Compaction Price Adjustment”, by calculation.

“Compaction Price Adjustment” will be calculated and paid for as described in Section 5-04..3(10)D3.

“Roadway Core”, per each.

The Contractor’s costs for all other Work associated with the coring (e.g., traffic control) shall be incidental and included within the unit Bid price per each and no additional payments will be made.

“Cyclic Density Price Adjustment”, by calculation.

“Cyclic Density Price Adjustment” will be calculated and paid for as described in Section 5-04.3(10)B.

(******)

“Remove and Replace HMA Speed Cushion”, per each.

The unit contract price per each of “Remove and Replace HMA Speed Cushion” shall be full payment for all costs associated with the removal ad disposal of the existing speed hump prior to resurfacing of the roadway, and reinstallation of the speed cushion as shown in the Plans and in accordance with the City of Kirkland Pre-Approved Plans.

“Temporary Asphalt Trench Patch”, per ton.

(April 20, 2012 COK GSP)

5-04.3(13) Surface Smoothness

Supplement this section as follows:

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 ¼ 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.

END OF DIVISION 5

DIVISION 7 – DRAINAGE STRUCTURES, STORM SEWERS, SANITARY SEWERS, WATER MAINS, AND CONDUITS

(12/20/2018 COK GSP)

7-04 STORM SEWERS

7-04.2 Materials

The materials list in Section 7-04.2 is modified as follows:

Acceptable pipe materials within City of Kirkland right of way are:

Solid Wall PVC Storm Sewer Pipe	9-05.12(1)
PVC Pressure Pipe	9-30.1(5)
Ductile Iron Pipe	9-30.1

7-04.3 Construction Requirements

Section 7-04.3(1) is supplemented with the following:

7-04.3(1) Cleaning and Testing

Cleaning and testing of the sanitary sewer system is required prior to placing the new section into service and shall be incidental to the sanitary 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 side sewer 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.

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, including all connected side 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

Section 7-04.4 is supplemented with the following:

Debris barrier, where called out on the Plans, shall be incidental to the installation of Storm Sewer Pipe.

7-04.5 Payment

Section 7-04.5 is supplemented with the following:

The unit contract prices for Storm Sewer Pipe, regardless of size and material, shall be full compensation for all labor, material, tools, and equipment necessary for and incidental to furnish and install the storm sewer as shown on the plans and as specified herein, including the following:

(******)

1. Sawcut, removal, loading, hauling, and disposal of existing asphalt concrete pavement as necessary for trench excavations in paved areas. This shall include removal of existing pavement beyond the trench as necessary and as indicated on the drawings prior to final pavement patch.
2. All required potholing to verify locations of existing utilities.
3. Trench excavation and dewatering, furnishing and installation of pipe on line and grade, wyes, tees, special fittings, manhole adapters.
4. Removal, loading, hauling, and disposal of native excavation material.

5. Pipe bedding material and compaction.
6. Extra depth, including excavation, backfill and compaction, required to clear existing buried utilities or other obstacles.
7. Steel sheeting for covering excavations as necessary.
8. Maintenance, restoration and/or relocation, if required, of existing culverts, storm drainage pipe, other utilities and structures affected by construction that are to remain.
9. Cleaning and testing of all storm sewers and catch basins including CCTV inspection of the mains.
10. Crushed Surfacing Top Course and compaction for roadway base.
11. Placing and maintaining temporary cold mix asphalt concrete patching consisting of a minimum 3-inches of cold asphalt mix over compacted backfill within existing paved areas, and removal of the temporary cold mix asphalt mix prior to placement of trench patch (paid for under "HMA Class 1/2-inch, PG 64-22").

(******)

7-09 WATER MAINS

7-09.4 Measurement

Section 7-09.4 is supplemented with the following:

Connections to Existing Mains will be per each.

Additional Ductile Iron Fittings will be measured per pound.

7-09.5 Payment

Section 7-09.5 is supplemented with the following:

The unit contract prices for Water Main Pipe shall also include the cost of Placing and maintaining temporary cold mix asphalt concrete patching consisting of a minimum 3-inches of cold asphalt mix over compacted backfill within existing paved areas, and removal of the temporary cold mix asphalt mix prior to placement of trench patch (paid for under "HMA Class 1/2-inch, PG 58H-22").

"Connection to Existing Main", per each.

"Optional Temporary Water Main Connection", force account.

"Additional Ductile Iron Fittings", per pound.

The unit price bid per pound for ductile iron fittings shall constitute full compensation for all labor, materials, tools, and equipment necessary and incidental to providing and installing ductile iron fittings not shown on the plans or as otherwise required by the City of Kirkland or field conditions. The unit price shall include, but not be limited to, the following:

1. Excavation;
2. Dewatering;
3. Furnishing and installing all ductile-iron fittings, bolts, gaskets, restrained joints, and all hardware for proper jointing and operation including testing and disinfection;
4. Concrete blocking in accordance with standard details; and
5. Sawcut, removal, and proper disposal of asphalt or cement concrete pavement.

(6/25/2003 COK GSP)

7-15 SERVICE CONNECTIONS

7-15.1 General (Supplement)

The work shall include relocating, resetting, and adjusting water meters and water meter boxes, installing new service connections, and abandoning services as shown in the Plans or as directed by the Engineer.

7-15.3 Construction Requirements (Supplement)

CONFORMANCE WITH PRE-APPROVED PLANS

Existing water meters to be adjusted, reinstalled, or relocated per Plan or as directed by the Project Engineer shall be in conformance with City of Kirkland Pre-Approved Plans.

COORDINATION WITH WATER DEPARTMENT

Only City of Kirkland Water Division personnel may operate valves. Contractor shall contact the Water Division a minimum of five (5) days prior to any work requiring the shutdown of existing water mains. Shutdowns shall be scheduled for Tuesdays, Wednesdays, or Thursdays between 9am and 4pm.

METER BOX ADJUSTMENT

Meter boxes shall be set at finish grade. Meter boxes shall conform to Pre-Approved Plans W.21 through W.25. Meter boxes that are damaged or not in conformance shall be replaced. If the meter box is to be located in the sidewalk, a concrete meter box with steel traffic-bearing lid shall be used.

METER ADJUSTMENT AND RELOCATION

Meters shall be within 6 inches and 10 inches of the top of the meter box at finish grade. Vertical adjustment of 12 inches or less may be made using a meter setter. If a meter setter will not raise the service to the appropriate grade, or if the meter is to be relocated, a new service connection shall be installed.

(******)

The Contractor shall re-install existing meters at new water meter service installations with exception to one new water meter service installation at which the Contractor shall install a new meter provided by the City.

SERVICE CONNECTION INSTALLATION

New service connections shall be made by wet tap. Service pipes shall be continuous 1-inch diameter polyethylene between the main and the service meter. Splicing will not be allowed. Service connection installation shall be in accordance with Pre-Approved Plan CK-W.18.

With the Engineer's approval, connection may be made utilizing the existing corporation stop. If the Engineer determines that a new tap is necessary, the existing corporation stop shall be removed and a repair band installed.

ABANDONING EXISTING SERVICE

Where possible, new service lines shall utilize existing corporation stop. Services that must be abandoned shall be cut and capped at the main. A brass plug shall be installed on the existing corporation stop. If the existing corporation stop is a "Hays" or "Mueller B machine", the corporation stop shall be removed from the main and a repair band installed.

7-15.5 Payment (Supplement)

"Service Connection, up to 1 In. Diam.", per each.

The unit contract price per each for "Service Connection, 1 In. Diam." shall be full pay for all materials and labor required to install the service connection as specified herein, including but not limited to, excavating; tapping the main; laying and jointing pipe; fittings and appurtenances; backfilling and compacting; testing, flushing, and disinfection of the new service connection; and abandoning of old service connections.

"Service Connection, 2 In. Diam.", per each.

The unit contract price per each for "Service Connection, 2 In. Diam." shall be full pay for all materials and labor required to install the service connection as specified herein, including but not limited to, excavating; tapping the main; laying and jointing pipe; fittings and appurtenances; backfilling and compacting; testing, flushing, and disinfection of the new service connection; and abandoning of old service connections.

END OF DIVISION 7

DIVISION 8 – MISCELLANEOUS CONSTRUCTION

(******)

8-02 ROADSIDE RESTORATION

8-02.5 Payment

Section 8-02.5 is supplemented with the following:

"Landscape Restoration", lump sum.

All costs for topsoil, plant materials, seeding, lawn, sod, protection of existing plants, trimming, and any other materials as detailed in the Plans shall be included in the lump sum price for Site Restoration.

(******)

Replace Section 8-05 with the following:

8-05 POTHOLING

8-05.1 Description

Existing utilities will be within the location of existing structures. Potholing locations, as depicted by the contract plans, denote areas that could possibly be utility conflicts with new structures. Excavation to the depth of the top of utilities (pipe, duct bank, etc.) is to be performed temporarily and then excavated grade will be replaced.

8-05.2 Materials

Backfill for filling excavation holes is to be like materials as were excavated for pervious, grassed, and landscaped areas. Potholing performed within paved areas will be backfilled with gravel borrow per Section 2-03.3(14) and will be patched with 6" thick concrete at the final grade surface.

8-05.3 Construction Requirements

Excavation of potholes shall be performed with care such that existing utilities are not damaged by excavation. Excavation shall be undertaken with a vactor truck and water jet such that utilities are protected from any machine excavation. Spoils from the potholing excavation shall be dispensed of off the project site.

Actual locations of existing underground utilities that are noted to be potholed in the contract plans shall be recorded after potholing and provided to the City of Kirkland project manager and the project engineer.

8-05.4 Measurement

Potholing will be measured per each.

8-05.5 Payment

Payment will be made for the following Bid items when included in the Proposal:

Potholing	EA

The unit Contract price shall be all costs associated with excavation equipment and rentals, disposal of spoils, backfilling and paving of excavated potholes to City of Kirkland standards.

(December 28, 2006 COK GSP)

8-14 CEMENT CONCRETE SIDEWALK

8-14.3 Construction Requirements

8-14.3(3) Placing and Finishing Concrete

The fourth paragraph of Section 8-14.3(3) shall be replaced with the following:

Sidewalk ramps shall be of the type specified in the Plans. The detectable warning pattern shall have the truncated dome shape shown in the Standard Plans and shall be installed by adding a manufactured material before the concrete has cured. Acceptable manufacturers' products are shown on the Qualified Products List.

Section 8-14.3(5) is replaced with the following:

8-14.3(5) ADA Sidewalk Ramps

Construction of ADA sidewalk ramps shall conform to Washington State Dept of Transportation (WSDOT) Standards included herein. Pre-approved manufactured products include: Detectable Warning Systems, Inc, or approved equivalent.

All costs associated with the installation of ramps shall be considered included in the unit contract price for "Cement Concrete Sidewalk."

8-14.4 Measurement

Section 8-14.3(4) is replaced with the following:

Cement concrete sidewalks will be measured by the square yard of finished surface and will include the surface area of the sidewalk ramps. Included in the unit contract price shall be all labor, tools, equipment, materials, and incidental items of work including, but not limited to, providing expansion joints, joint filler, finishing the surface, thickened edges in curb returns, raised edge for back of walk, materials and labor for ADA sidewalk ramps and providing white polyethylene sheeting for curing.

The unit contract price listed above shall be full compensation for all labor, tools, materials, and equipment necessary to complete the work as specified herein.

Ramp detectible warning retrofit will be measured by the square foot of truncated dome material installed on the existing ramp.

(******)

8-22 PAVEMENT MARKING

8-22.4 Measurement

Section 8-22.4 is supplemented with the following:

"Plastic Speed Cushion Symbol" will be measured per each. Both pieces of the typical marking for each lane, the large chevron and small triangle as shown on City of Kirkland Pre-Approved Plan CK-R.67B, shall be counted together as one unit. Additional chevrons shown on the Plans shall also count as one unit.

8-22.5 Payment

Add the following pay item:

"Plastic Speed Cushion Symbol", per each.

END OF DIVISION 8

DIVISION 9 – MATERIALS

9-03 AGGREGATES

9-03.6 Vacant

Delete this Section and replace it with the following:

9-03.6 Aggregates for Asphalt Treated Base (ATB)

(May 5, 2015 APWA GSP)

9-03.6(1) General Requirements

Aggregates for asphalt treated base shall be manufactured from ledge rock, talus, or gravel, in accordance with the provisions of Section 3-01 that meet the following test requirements:

Los Angeles Wear, 500 Rev.	30% max.
Degradation Factor	15 min.

9-03.6(2) Grading

Aggregates for asphalt treated base shall meet the following requirements for grading:

Sieve Size	Percent Passing
2″	100
½″	56-100
No. 4	32-72
No. 10	22-57
No. 40	8-32
No. 200	2.0-9.0

All percentages are by weight.

9-03.6(3) Test Requirements

When the aggregates are combined within the limits set forth in Section 9-03.6(2) and mixed in the laboratory with the designated grade of asphalt, the mixture shall be capable of meeting the following test values:

% of Theoretical Maximum Specific Gravity (GMM) (approximate)	93 @ 100 gyrations
AASHTO T324, WSDOT TM T718 or ASTM D3625 (Acceptable anti-strip evaluation tests)	Pass

The sand equivalent value of the mineral aggregate for asphalt treated base (ATB) shall not be less than 35.

END OF DIVISION 9

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PREVAILING WAGE RATES

City of Kirkland

PREVAILING WAGE RATES

Prevailing wage rates can be found at:
www.lni.wa.gov/tradeslicensing/prevwage/wagerates

Use 2022 rates
(August 17, 2022)

King County

A copy of the applicable wage rates is available for viewing in our office:

City Hall Annex
310 1st Street
Kirkland, WA 98033

The City of Kirkland will mail a hard copy of the applicable wage rates upon request.
Send your request to the Project Engineer.

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APPENDIX A

POTHOLE DATA APS, INC.

City of Kirkland

TEST HOLE DATA SHEET

Applied Professional Services, Inc.

APS Job # 6088 Date: 12/21/21

Overlay type: (Asphalt) Concrete Brick

Test hole#: 1 Overlay Thickness 9 inches. Utility type: H20 (gas,water, etc.)

Utility Size: 12 inches Utility Material: DI Soil Cond. Dirt

Overlay layers:

9" Asphalt

Dirt

Pipe Direction (circle one)

E & W

N & S

(SW & NE)

SE & NW

Top of utility from grade: 56 inches.

Bottom of utility from grade: 68 inches.

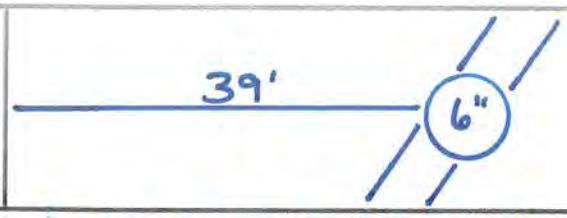
Width of Structure if necessary: x inches.

Additional utilities found in same Test-Hole: E & W N & S SW & NE SE & NW

Test hole#_____

Utility Type:_____ Top:_____ Bot:_____ Size:_____ Utility Material:_____

CL OFFSET/UTILITY CONFIG: Facing North



CL Approx CL of 6th St S

Pipe Condition: Check one with X

1) Poor-broken/cracks/damage	
2) Fair-Brittle pipe/pitted/rusty	
3) Good-well defined/no pits	x
4) Great-looks brand new	

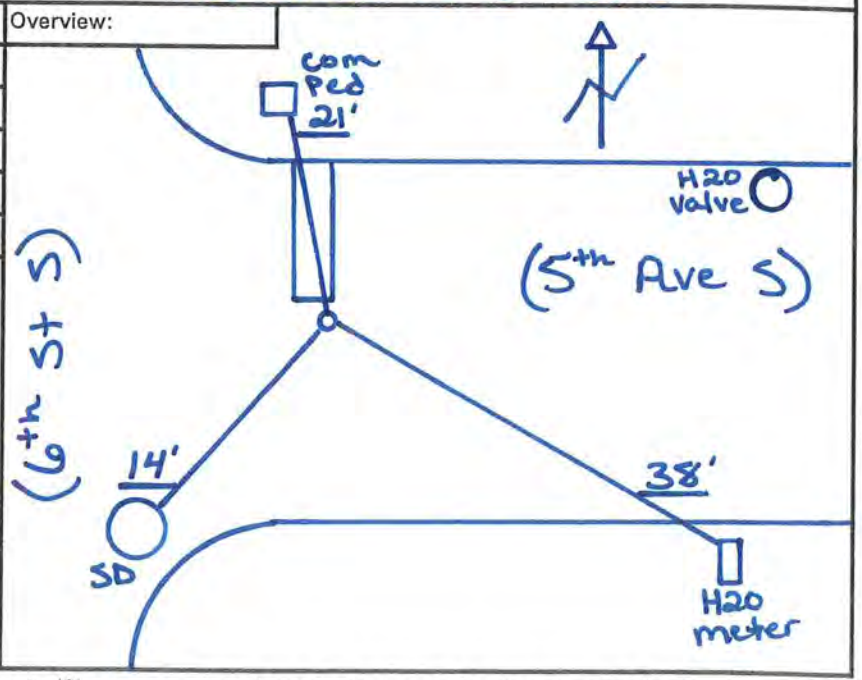
Notes:

Vacuum Crew:

Lead: JD

Helper: Andrew

Overview:



Sketch to include street name(s), North arrow, distance to (2) permanent markers & distance to fog line or centerline.

Be sure to include a description of each permanent marker

Any known building address, or side street address in the vicinity should be included

TEST HOLE DATA SHEET

Applied Professional Services, Inc.

APS Job # 6088 Date: 12/21/21

Overlay type: (Asphalt) Concrete Brick

Test hole#: 2 Overlay Thickness 8 inches. Utility type: H20 (gas,water, etc.)

Utility Size: 2 inches Utility Material: PVC Soil Cond. Dirt

Overlay layers:

8" Asphalt

Dirt

Pipe Direction (circle one)

E & W

(N & S)

SW & NE

SE & NW

Top of utility from grade: 44 inches.

Bottom of utility from grade: 46 inches.

Width of Structure if necessary: x inches.

Additional utilities found in same Test-Hole: E & W N & S SW & NE SE & NW

Test hole#_____

Utility Type:_____ Top:_____ Bot:_____ Size:_____ Utility Material:_____

CL OFFSET/UTILITY CONFIG: Facing North

78' 2"

CL Approx CL of 6th St S

Pipe Condition: Check one with X	
1) Poor-broken/cracks/damage	
2) Fair-Brittle pipe/pitted/rusty	
3) Good-well defined/no pits	x
4) Great-looks brand new	

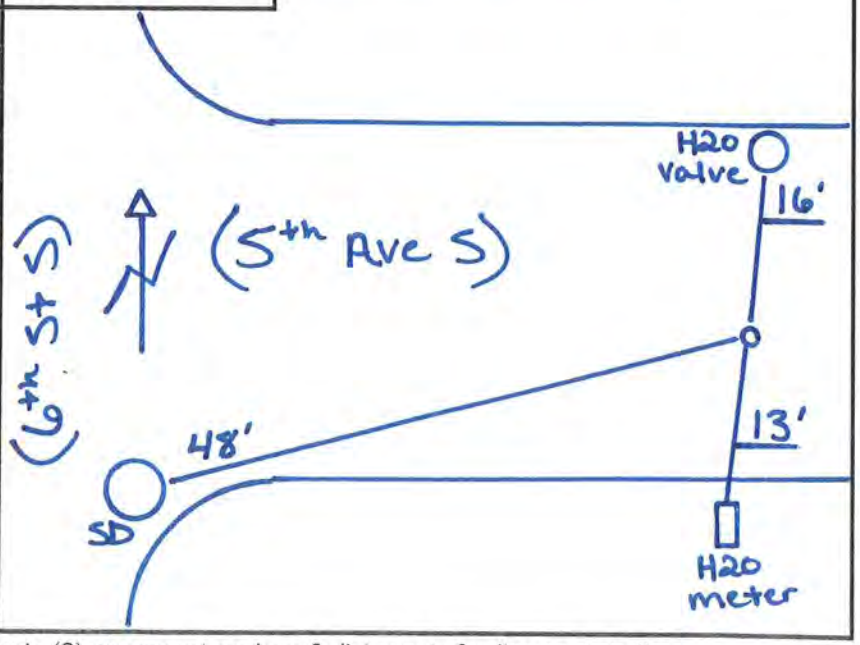
Notes:

Vacuum Crew:

Lead: JD

Helper: Andrew

Overview:



Sketch to include street name(s), North arrow, distance to (2) permanent markers & distance to fog line or centerline.

Be sure to include a description of each permanent marker

Any known building address, or side street address in the vicinity should be included

TEST HOLE DATA SHEET

Applied Professional Services, Inc.

APS Job # 6088 Date: 12/21/21

Overlay type: (Asphalt) Concrete Brick

Test hole#: 3 Overlay Thickness 7 inches. Utility type: PWR/com (gas,water, etc.)

Utility Size: 2x2" 2x4" inches Utility Material: PVC Soil Cond. Dirt

Overlay layers:

7"	Asphalt
	Dirt

Pipe Direction (circle one)

E & W

(N & S)

SW & NE

SE & NW

Top of utility from grade: 28 inches.

Bottom of utility from grade: 33 inches.

Width of Structure if necessary: 16 inches.

Additional utilities found in same Test-Hole: E & W N & S SW & NE SE & NW

Test hole#_____

Utility Type:_____ Top:_____ Bot:_____ Size:_____ Utility Material:_____

CL OFFSET/UTILITY CONFIG: Facing North

156' 2" 2" 4" 4"

CL Approx CL of 6th St S

Pipe Condition: Check one with X

1) Poor-broken/cracks/damage	
2) Fair-Brittle pipe/pitted/rusty	
3) Good-well defined/no pits	X
4) Great-looks brand new	

Notes:

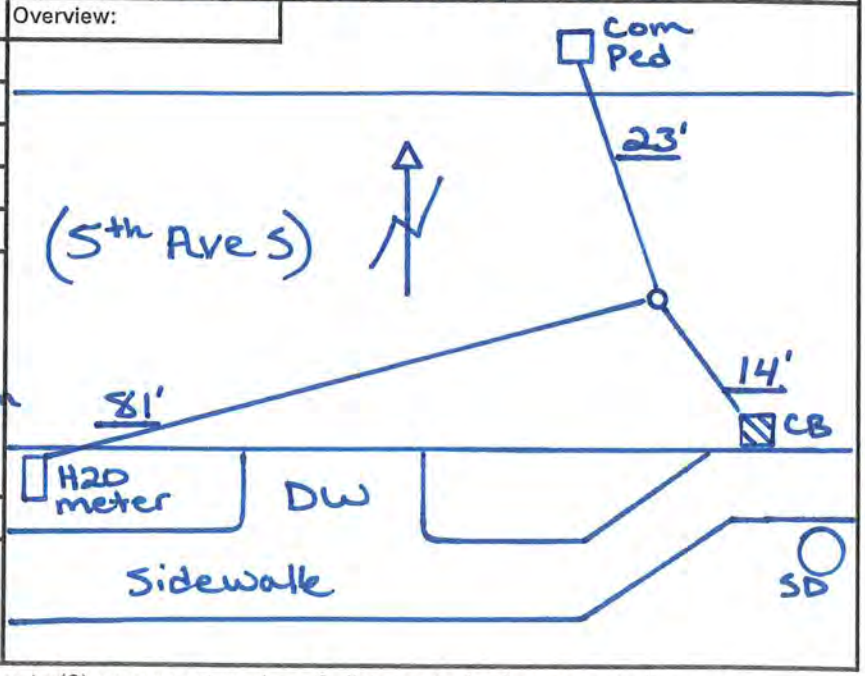
Found two 2 inch and two 4 inch conduits. Possibly com but could not locate com to confirm location of utilities

Vacuum Crew:

Lead: JD

Helper: Andrew

Overview:



Sketch to include street name(s), North arrow, distance to (2) permanent markers & distance to fog line or centerline.

Be sure to include a description of each permanent marker

Any known building address, or side street address in the vicinity should be included

TEST HOLE DATA SHEET

APS Job # 6088 Date: 12/21/21

Applied Professional Services, Inc.

Overlay type: (Asphalt) Concrete Brick

Test hole#: 4 Overlay Thickness 7 inches. Utility type: Com (gas,water, etc.)

Overlay layers:

Utility Size: DNF inches Utility Material: DNF Soil Cond. Dirt

7" Asphalt

Dirt

Pipe Direction (circle one)

E & W

N & S

SW & NE

SE & NW

Top of utility from grade: X inches.

Bottom of utility from grade: X inches.

Width of Structure if necessary: X inches.

Additional utilities found in same Test-Hole: E & W N & S SW & NE SE & NW

Test hole#_____

Utility Type:_____ Top:_____ Bot:_____ Size:_____ Utility Material:_____

CL OFFSET/UTILITY CONFIG:

CL

Pipe Condition: Check one with X

1) Poor-broken/cracks/damage	
2) Fair-Brittle pipe/pitted/rusty	
3) Good-well defined/no pits	
4) Great-looks brand new	

Notes:

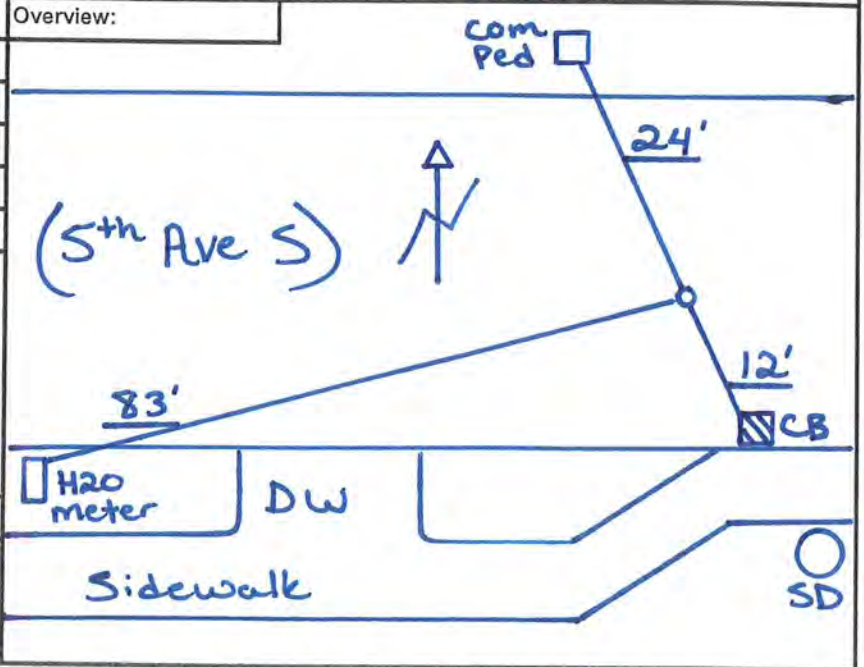
Dug on com locate to 6 feet deep by 2 feet wide, no utility found

Vacuum Crew:

Lead: JD

Helper: Andrew

Overview:



Sketch to include street name(s), North arrow, distance to (2) permanent markers & distance to fog line or centerline.

Be sure to include a description of each permanent marker

Any known building address, or side street address in the vicinity should be included

TEST HOLE DATA SHEET

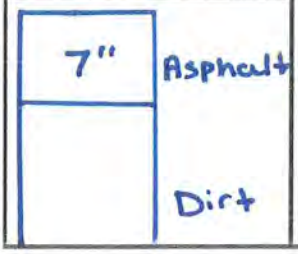
Applied Professional Services, Inc.

APS Job # 6088 Date: 12/21/21

Overlay type: (Asphalt) Concrete Brick

Test hole#: 5 Overlay Thickness 7 inches. Utility type: H20 (gas,water, etc.)

Overlay layers:



Utility Size: 1 inches Utility Material: Poly Soil Cond. Dirt

Pipe Direction (circle one)

E & W

(N & S)

SW & NE

SE & NW

Top of utility from grade: 30 inches.

Bottom of utility from grade: 31 inches.

Width of Structure if necessary: X inches.

Additional utilities found in same Test-Hole: E & W N & S SW & NE SE & NW

Test hole#_____

Utility Type:_____ Top:_____ Bot:_____ Size:_____ Utility Material:_____

CL OFFSET/UTILITY CONFIG: Facing North

227' (1")

CL Approx CL of 6th St S

Pipe Condition: Check one with X	
1) Poor-broken/cracks/damage	
2) Fair-Brittle pipe/pitted/rusty	
3) Good-well defined/no pits	X
4) Great-looks brand new	

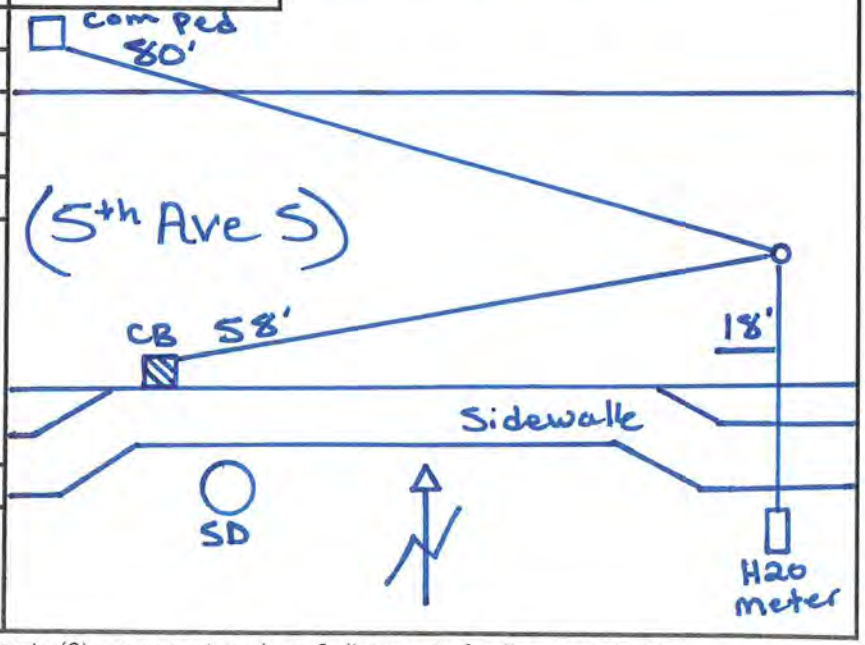
Notes:

Vacuum Crew:

Lead: JD

Helper: Andrew

Overview:



Sketch to include street name(s), North arrow, distance to (2) permanent markers & distance to fog line or centerline.

Be sure to include a description of each permanent marker

Any known building address, or side street address in the vicinity should be included

TEST HOLE DATA SHEET

Applied Professional Services, Inc.

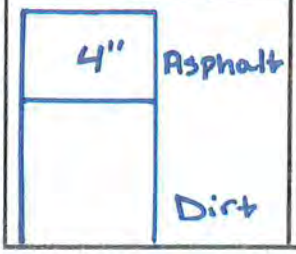
APS Job # 6088 Date: 12/21/21

Overlay type: (Asphalt) Concrete Brick

Test hole#: 6 Overlay Thickness 4 inches. Utility type: H20 (gas,water, etc.)

Utility Size: 6 inches Utility Material: AC Soil Cond. Dirt

Overlay layers:



Pipe Direction (circle one)

E & W

(N & S)

SW & NE

SE & NW

Top of utility from grade: 39 inches.

Bottom of utility from grade: 45 inches.

Width of Structure if necessary: X inches.

Additional utilities found in same Test-Hole: E & W N & S SW & NE SE & NW

Test hole#_____

Utility Type:_____ Top:_____ Bot:_____ Size:_____ Utility Material:_____

CL OFFSET/UTILITY CONFIG: Facing North

347' 6"

CL Approx CL of 6th St S

Pipe Condition: Check one with X	
1) Poor-broken/cracks/damage	
2) Fair-Brittle pipe/pitted/rusty	
3) Good-well defined/no pits	X
4) Great-looks brand new	

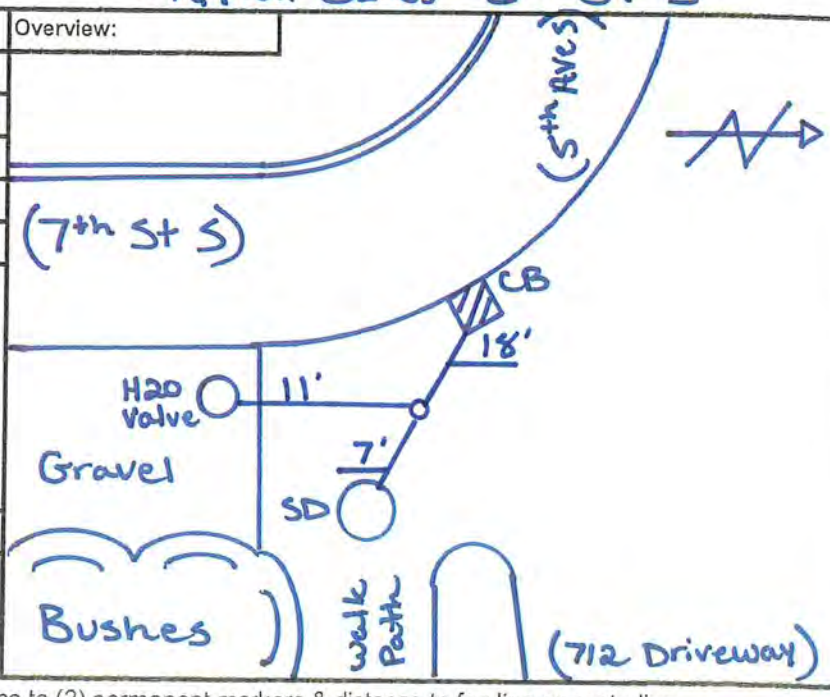
Notes:

Vacuum Crew:

Lead: JD

Helper: Andrew

Overview:



Sketch to include street name(s), North arrow, distance to (2) permanent markers & distance to fog line or centerline.

Be sure to include a description of each permanent marker

Any known building address, or side street address in the vicinity should be included

TEST HOLE DATA SHEET

Applied Professional Services, Inc.

APS Job # 6088 Date: 12/21/21

Overlay type: (Asphalt) Concrete Brick

Test hole#: 7 Overlay Thickness 4 inches. Utility type: GAS (gas,water, etc.)

Utility Size: 1½ inches Utility Material: PE Soil Cond. Dirt

Overlay layers:

4"	Asphalt
	Dirt

Pipe Direction (circle one)

E & W

(N & S)

SW & NE

SE & NW

Top of utility from grade: 36 inches.

Bottom of utility from grade: 38 inches.

Width of Structure if necessary: X inches.

Additional utilities found in same Test-Hole: E & W N & S SW & NE SE & NW

Test hole#_____

Utility Type:_____ Top:_____ Bot:_____ Size:_____ Utility Material:_____

CL OFFSET/UTILITY CONFIG: Facing North

352' (1½")

CL Approx CL of 6th St S

Pipe Condition: Check one with X

1) Poor-broken/cracks/damage	
2) Fair-Brittle pipe/pitted/rusty	
3) Good-well defined/no pits	X
4) Great-looks brand new	

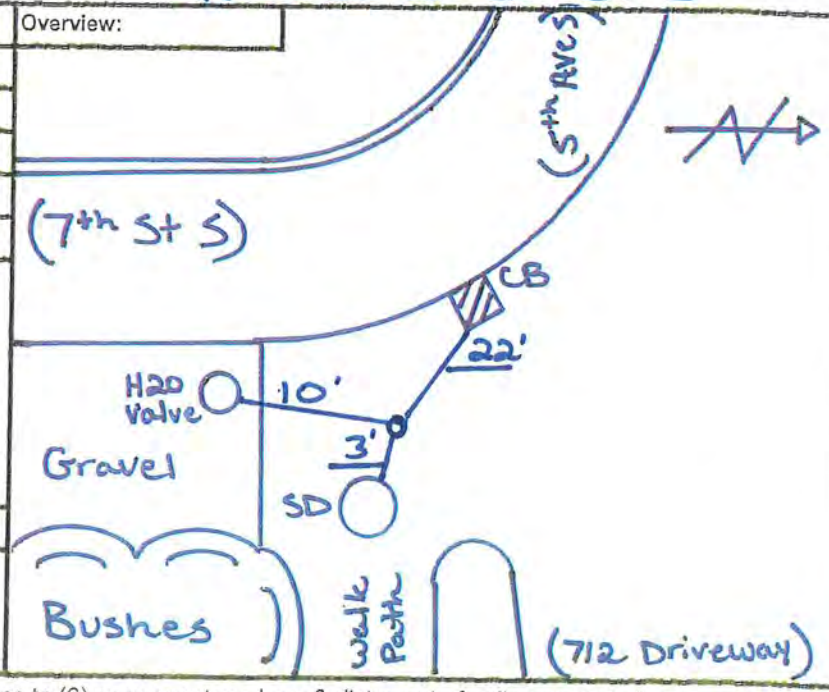
Notes:

Vacuum Crew:

Lead: JD

Helper: Andrew

Overview:



Sketch to include street name(s), North arrow, distance to (2) permanent markers & distance to fog line or centerline.

Be sure to include a description of each permanent marker

Any known building address or side street address in the vicinity should be included

TEST HOLE DATA SHEET

Applied Professional Services, Inc.

APS Job # 6088 Date: 12/21/21

Overlay type: (Asphalt) Concrete Brick

Test hole#: 8 Overlay Thickness 3 inches. Utility type: GAS (gas,water, etc.)

Utility Size: 1¼ inches Utility Material: PE Soil Cond. Dirt

Overlay layers:

3" Asphalt

Dirt

Pipe Direction (circle one)

E & W

(N & S)

SW & NE

SE & NW

Top of utility from grade: 24 inches.

Bottom of utility from grade: 26 inches.

Width of Structure if necessary: x inches.

Additional utilities found in same Test-Hole: E & W N & S SW & NE SE & NW

Test hole#_____

Utility Type:_____ Top:_____ Bot:_____ Size:_____ Utility Material:_____

CL OFFSET/UTILITY CONFIG: Facing North

113' (1¼")

CL Approx CL of 7th St S

Pipe Condition: Check one with X	
1) Poor-broken/cracks/damage	
2) Fair-Brittle pipe/pitted/rusty	
3) Good-well defined/no pits	x
4) Great-looks brand new	

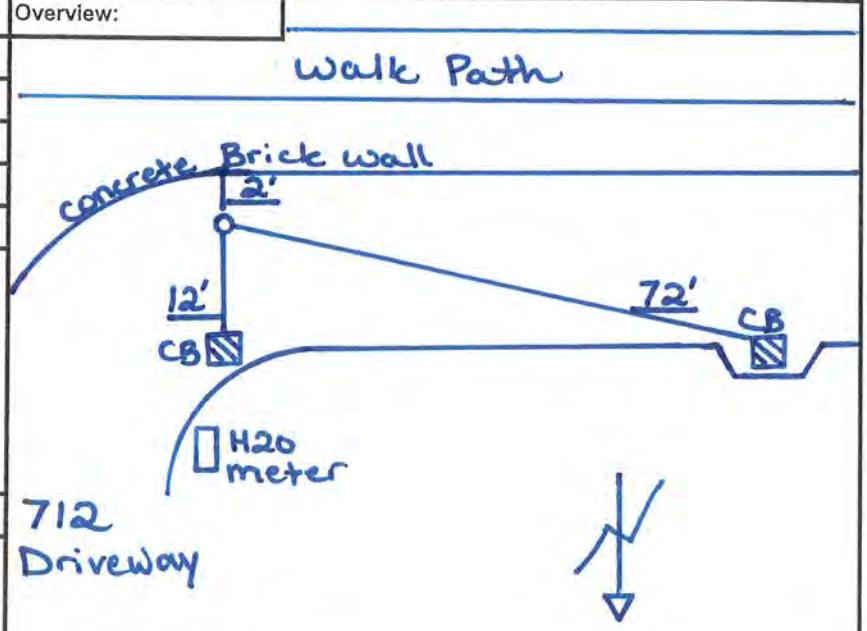
Notes:

Vacuum Crew:

Lead: JD

Helper: Andrew

Overview:



Sketch to include street name(s), North arrow, distance to (2) permanent markers & distance to fog line or centerline.

Be sure to include a description of each permanent marker

Any known building address, or side street address in the vicinity should be included

TEST HOLE DATA SHEET

Applied Professional Services, Inc.

APS Job # 6088 Date: 12/20/21

Overlay layers:	Overlay type: Soft / Asphalt / Concrete / Brick		
X	Test hole#: 9	Overlay Thickness X inches.	Utility type: PWR (gas,water, etc.)
	Utility Size: 1 inches	Utility Material: DB	Soil Cond. Dirt
	Pipe Direction (circle one): E & W / (N & S) / SW & NE / SE & NW	Top of utility from grade: 39 inches.	
		Bottom of utility from grade: 40 inches.	
		Width of Structure if necessary: X inches.	

Additional utilities found in same Test-Hole: E & W (N & S) SW & NE SE & NW

Test hole# 9A

Utility Type: GAS Top: 39 Bot: 40 Size: 5/8 Utility Material: PE

CL OFFSET/UTILITY CONFIG: Facing South

24' 5/8" 1"

CL Approx CL of 8th St S

Pipe Condition: Check one with X	
1) Poor-broken/cracks/damage	
2) Fair-Brittle pipe/pitted/rusty	
3) Good-well defined/no pits	X
4) Great-looks brand new	

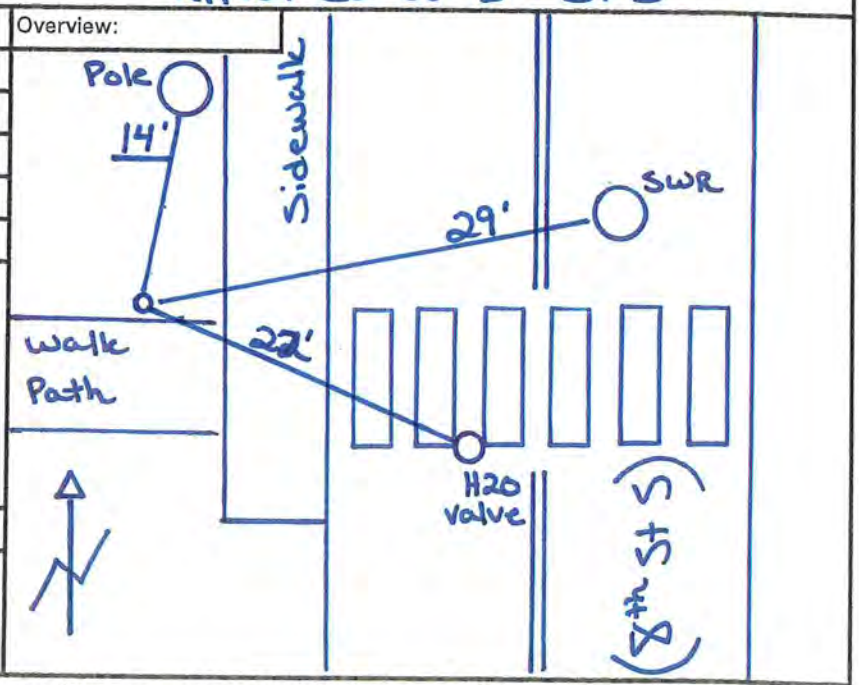
Notes:

Vacuum Crew:

Lead: JD

Helper: Andrew

Overview:



Sketch to include street name(s), North arrow, distance to (2) permanent markers & distance to fog line or centerline.

Be sure to include a description of each permanent marker

Any known building address, or side street address in the vicinity should be included

TEST HOLE DATA SHEET

Applied Professional Services, Inc.

APS Job # 6088 Date: 12/20/21

Overlay layers:	Overlay type: SoSt	Asphalt	Concrete	Brick
X	Test hole#: 10	Overlay Thickness X inches.		Utility type: Com (gas,water, etc.)
	Utility Size: 1/4 inches	Utility Material: DB		Soil Cond. Dirt
	Pipe Direction (circle one): E & W / (N & S) / SW & NE / SE & NW	Top of utility from grade: 39 inches.		
		Bottom of utility from grade: 40 inches.		
		Width of Structure if necessary: X inches.		

Additional utilities found in same Test-Hole: E & W N & S SW & NE SE & NW

Test hole#_____

Utility Type:_____ Top:_____ Bot:_____ Size:_____ Utility Material:_____

CL OFFSET/UTILITY CONFIG: Facing South

23' 1/4"

CL Approx CL of 8th St S

Pipe Condition: Check one with X	
1) Poor-broken/cracks/damage	
2) Fair-Brittle pipe/pitted/rusty	
3) Good-well defined/no pits	X
4) Great-looks brand new	

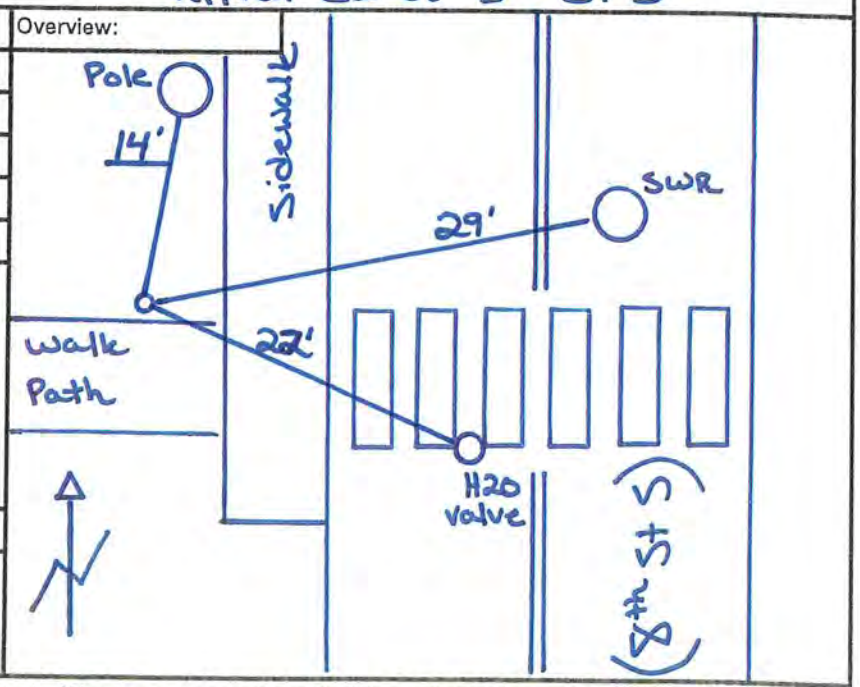
Notes:

Vacuum Crew:

Lead: JD

Helper: Andrew

Overview:



Sketch to include street name(s), North arrow, distance to (2) permanent markers & distance to fog line or centerline.

Be sure to include a description of each permanent marker

Any known building address, or side street address in the vicinity should be included

TEST HOLE DATA SHEET

Applied Professional Services, Inc.

APS Job # 6088 Date: 12/20/21

Overlay type: Soft | Asphalt | Concrete | Brick

Test hole#: 11 Overlay Thickness x inches. Utility type: GAS (gas,water, etc.)

Overlay layers: x

Utility Size: 2 inches Utility Material: STW Soil Cond. Dirt

Pipe Direction (circle one)
E & W
(N & S)
SW & NE
SE & NW

Top of utility from grade: 50 inches.

Bottom of utility from grade: 52 inches.

Width of Structure if necessary: x inches.

Additional utilities found in same Test-Hole: E & W N & S SW & NE SE & NW

Test hole#_____

Utility Type:_____ Top:_____ Bot:_____ Size:_____ Utility Material:_____

CL OFFSET/UTILITY CONFIG: Facing South

15' 2"

CL Approx CL of 8th St S

Pipe Condition: Check one with X	
1) Poor-broken/cracks/damage	
2) Fair-Brittle pipe/pitted/rusty	
3) Good-well defined/no pits	x
4) Great-looks brand new	

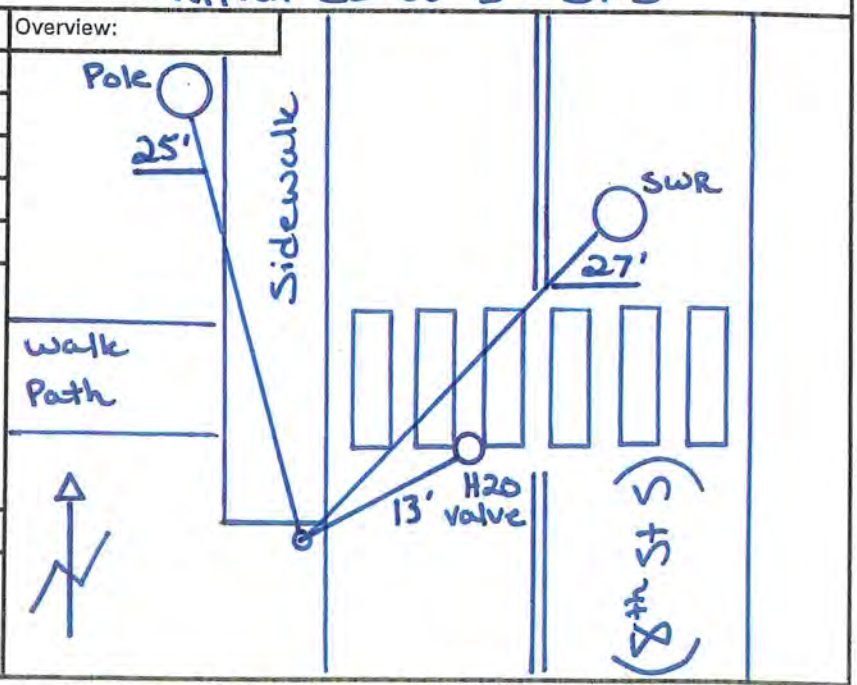
Notes:

Vacuum Crew:

Lead: JD

Helper: Andrew

Overview:



Sketch to include street name(s), North arrow, distance to (2) permanent markers & distance to fog line or centerline.

Be sure to include a description of each permanent marker

Any known building address, or side street address in the vicinity should be included

TEST HOLE DATA SHEET

Applied Professional Services, Inc.

APS Job # 6088 Date: 12/20/21

Overlay type: (Asphalt) Concrete Brick

Test hole#: 12 Overlay Thickness 5 inches. Utility type: H20 (gas,water, etc.)

Utility Size: 6 inches Utility Material: Steel Soil Cond. Dirt

Overlay layers:

5" Asphalt

Dirt

Pipe Direction (circle one)

E & W

(N & S)

SW & NE

SE & NW

Top of utility from grade: 35 inches.

Bottom of utility from grade: 41 inches.

Width of Structure if necessary: X inches.

Additional utilities found in same Test-Hole: E & W N & S SW & NE SE & NW

Test hole#_____

Utility Type:_____ Top:_____ Bot:_____ Size:_____ Utility Material:_____

CL OFFSET/UTILITY CONFIG: Facing South

2' 6"

CL Approx CL of 8th St S

Pipe Condition: Check one with X	
1) Poor-broken/cracks/damage	
2) Fair-Brittle pipe/pitted/rusty	
3) Good-well defined/no pits	X
4) Great-looks brand new	

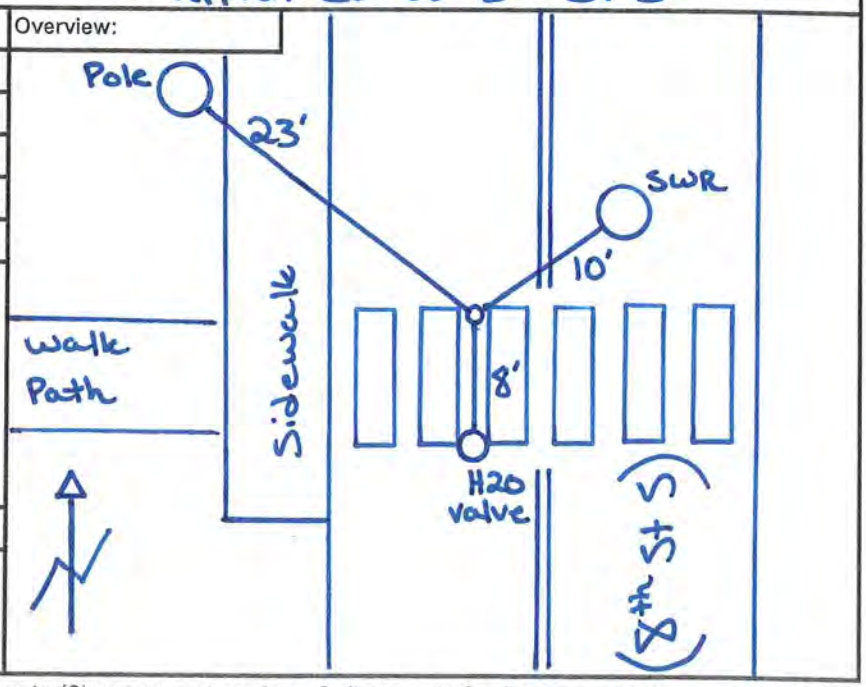
Notes:

Vacuum Crew:

Lead: JD

Helper: Andrew

Overview:



Sketch to include street name(s), North arrow, distance to (2) permanent markers & distance to fog line or centerline.

Be sure to include a description of each permanent marker

Any known building address, or side street address in the vicinity should be included

TEST HOLE DATA SHEET

Applied Professional Services, Inc.

APS Job # 6088 Date: 12/20/21

Overlay type: (Asphalt) Concrete Brick

Test hole#: 13 Overlay Thickness 7 inches. Utility type: GAS (gas,water, etc.)

Utility Size: 2 inches Utility Material: STW Soil Cond. Dirt

Overlay layers:

7" Asphalt

Dirt

Pipe Direction (circle one)

E & W

(N & S)

SW & NE

SE & NW

Top of utility from grade: 42 inches.

Bottom of utility from grade: 44 inches.

Width of Structure if necessary: x inches.

Additional utilities found in same Test-Hole: E & W N & S SW & NE SE & NW

Test hole#_____

Utility Type:_____ Top:_____ Bot:_____ Size_____ Utility Material:_____

CL OFFSET/UTILITY CONFIG: Facing South

15' (2")

CL Approx CL of 8th St S

Pipe Condition: Check one with X	
1) Poor-broken/cracks/damage	
2) Fair-Brittle pipe/pitted/rusty	
3) Good-well defined/no pits	x
4) Great-looks brand new	

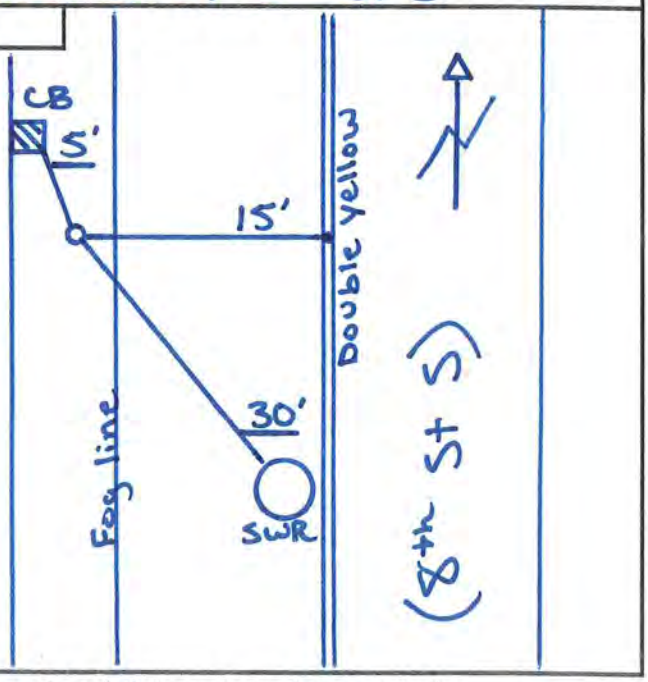
Notes:

Vacuum Crew:

Lead: JD

Helper: Andrew

Overview:



Sketch to include street name(s), North arrow, distance to (2) permanent markers & distance to fog line or centerline.

Be sure to include a description of each permanent marker

Any known building address, or side street address in the vicinity should be included

TEST HOLE DATA SHEET

Applied Professional Services, Inc.

APS Job # 6088 Date: 12/20/21

Overlay type: (Asphalt) Concrete Brick

Test hole#: 14 Overlay Thickness 7 inches. Utility type: H20 (gas,water, etc.)

Utility Size: NA inches Utility Material: Concrete Soil Cond. Dirt

Overlay layers:

7" Asphalt

Dirt

Pipe Direction (circle one)

E & W

N & S

SW & NE

SE & NW

Top of utility from grade: 34 inches.

Bottom of utility from grade: 47 inches.

Width of Structure if necessary: X inches.

Additional utilities found in same Test-Hole: E & W N & S SW & NE SE & NW

Test hole#_____

Utility Type:_____ Top:_____ Bot:_____ Size:_____ Utility Material:_____

CL OFFSET/UTILITY CONFIG:

CL

Pipe Condition: Check one with X

1) Poor-broken/cracks/damage	
2) Fair-Brittle pipe/pitted/rusty	
3) Good-well defined/no pits	
4) Great-looks brand new	

Notes:

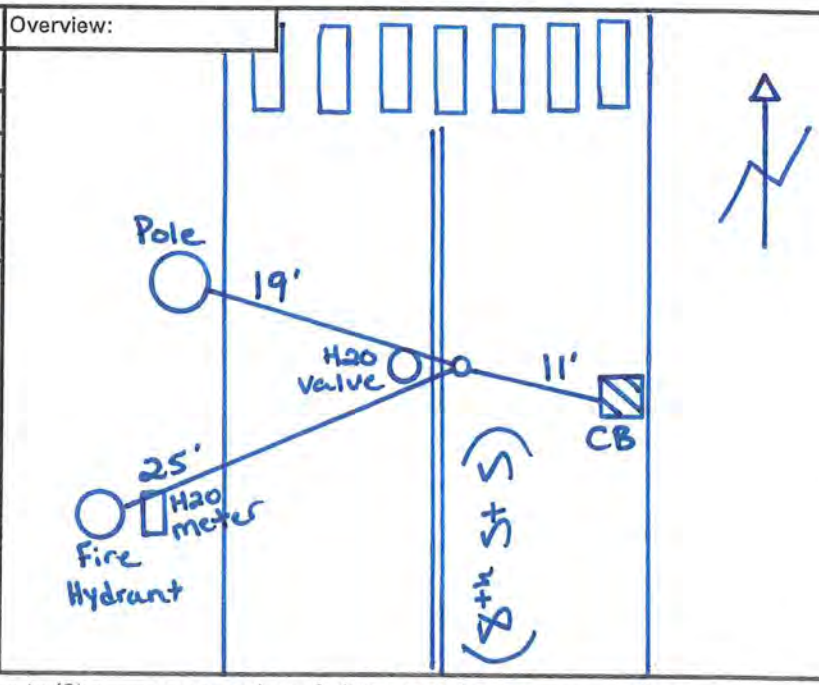
Ran into a thrust block at this location

Vacuum Crew:

Lead: JD

Helper: Andrew

Overview:



Sketch to include street name(s), North arrow, distance to (2) permanent markers & distance to fog line or centerline.

Be sure to include a description of each permanent marker

Any known building address, or side street address in the vicinity should be included

TEST HOLE DATA SHEET

Applied Professional Services, Inc.

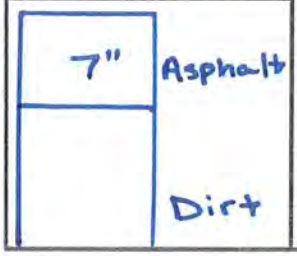
APS Job # 6088 Date: 12/20/21

Overlay type: (Asphalt) Concrete Brick

Test hole#: 15 Overlay Thickness 7 inches. Utility type: GAS (gas,water, etc.)

Utility Size: 1 inches Utility Material: Steel ? Soil Cond. Dirt

Overlay layers:



Pipe Direction (circle one)
(E & W)
N & S
SW & NE
SE & NW

Top of utility from grade: 42 inches.

Bottom of utility from grade: 43 inches.

Width of Structure if necessary: X inches.

Additional utilities found in same Test-Hole: E & W N & S SW & NE SE & NW

Test hole#_____

Utility Type:_____ Top:_____ Bot:_____ Size:_____ Utility Material:_____

CL OFFSET/UTILITY CONFIG: Facing West

88' (1")

CL Approx CL of Driveway (Everest Park)

Pipe Condition: Check one with X	
1) Poor-broken/cracks/damage	
2) Fair-Brittle pipe/pitted/rusty	
3) Good-well defined/no pits	X
4) Great-looks brand new	

Notes:

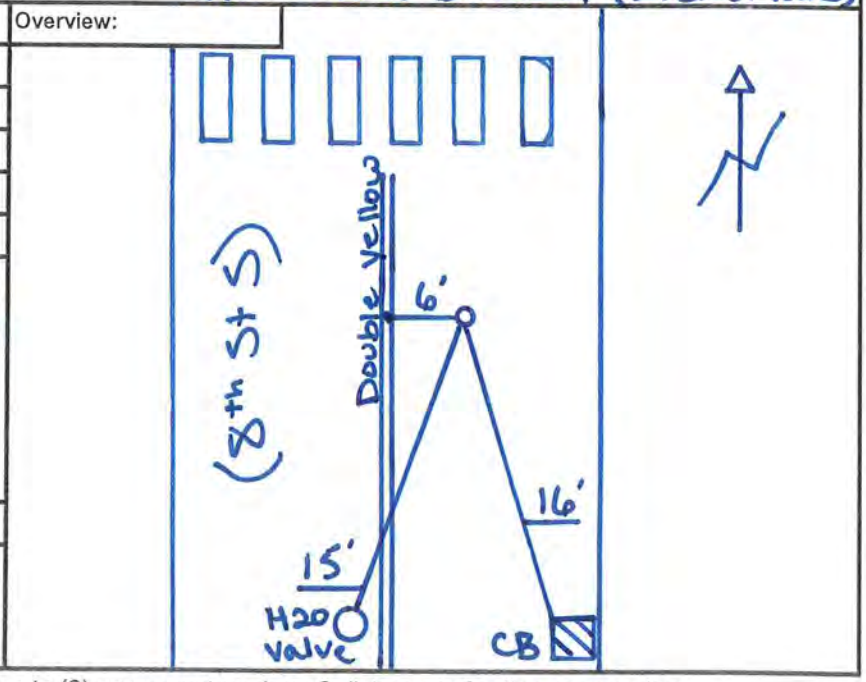
Hard to see gas service due to root growing over it

Vacuum Crew:

Lead: JD

Helper: Andrew

Overview:



Sketch to include street name(s), North arrow, distance to (2) permanent markers & distance to fog line or centerline.

Be sure to include a description of each permanent marker

Any known building address, or side street address in the vicinity should be included

TEST HOLE DATA SHEET

Applied Professional Services, Inc.

APS Job # 6088 Date: 12/15/21

Overlay type: (Asphalt) Concrete Brick

Test hole#: 16 Overlay Thickness 4 inches. Utility type: GAS (gas,water, etc.)

Overlay layers:

4" Asphalt

Dirt

Utility Size: 2 inches Utility Material: PE Soil Cond. Dirt

Pipe Direction (circle one)

(E & W)

N & S

SW & NE

SE & NW

Top of utility from grade: 42 inches.

Bottom of utility from grade: 44 inches.

Width of Structure if necessary: x inches.

Additional utilities found in same Test-Hole: E & W N & S SW & NE SE & NW

Test hole#_____

Utility Type:_____ Top:_____ Bot:_____ Size:_____ Utility Material:_____

CL OFFSET/UTILITY CONFIG: Facing East

16' (2")

CL Approx CL of Driveway #210

Pipe Condition: Check one with X	
1) Poor-broken/cracks/damage	
2) Fair-Brittle pipe/pitted/rusty	
3) Good-well defined/no pits	x
4) Great-looks brand new	

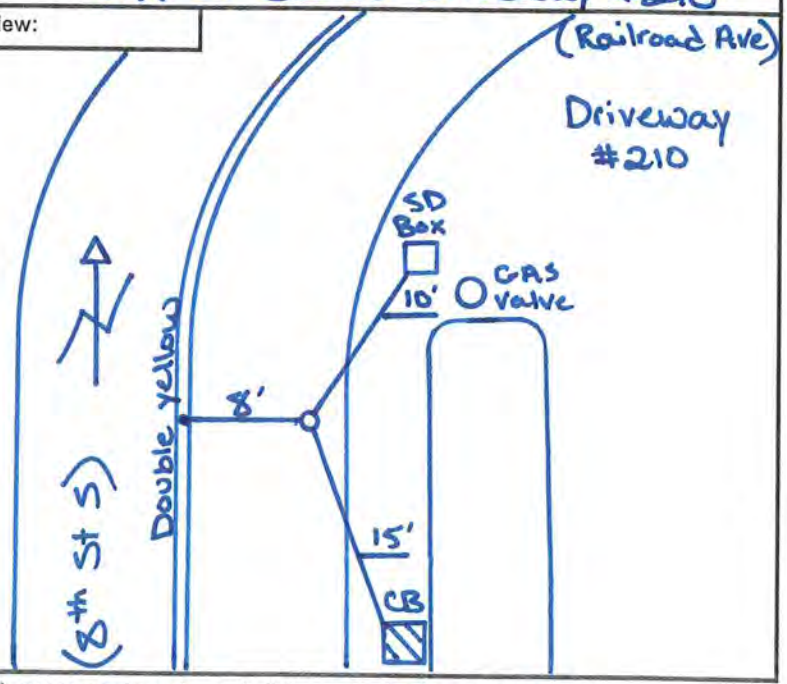
Notes:

Vacuum Crew:

Lead: JD

Helper: Andrew

Overview:



Sketch to include street name(s), North arrow, distance to (2) permanent markers & distance to fog line or centerline.

Be sure to include a description of each permanent marker

Any known building address, or side street address in the vicinity should be included

TEST HOLE DATA SHEET

Applied Professional Services, Inc.

APS Job # 6088 Date: 12/15/21

Overlay type: (Asphalt) Concrete Brick

Test hole#: 17 Overlay Thickness 9 inches. Utility type: H20 (gas,water, etc.)

Utility Size: 6 inches Utility Material: AC Soil Cond. Dirt

Overlay layers:

9" Asphalt

Dirt

Pipe Direction (circle one)

(E & W)

N & S

SW & NE

SE & NW

Top of utility from grade: 41 inches.

Bottom of utility from grade: 47 inches.

Width of Structure if necessary: x inches.

Additional utilities found in same Test-Hole: E & W N & S SW & NE SE & NW

Test hole#_____

Utility Type:_____ Top:_____ Bot:_____ Size _____ Utility Material:_____

CL OFFSET/UTILITY CONFIG: Facing East

8' (6")

CL Approx CL of 8th St S

Pipe Condition: Check one with X	
1) Poor-broken/cracks/damage	
2) Fair-Brittle pipe/pitted/rusty	
3) Good-well defined/no pits	x
4) Great-looks brand new	

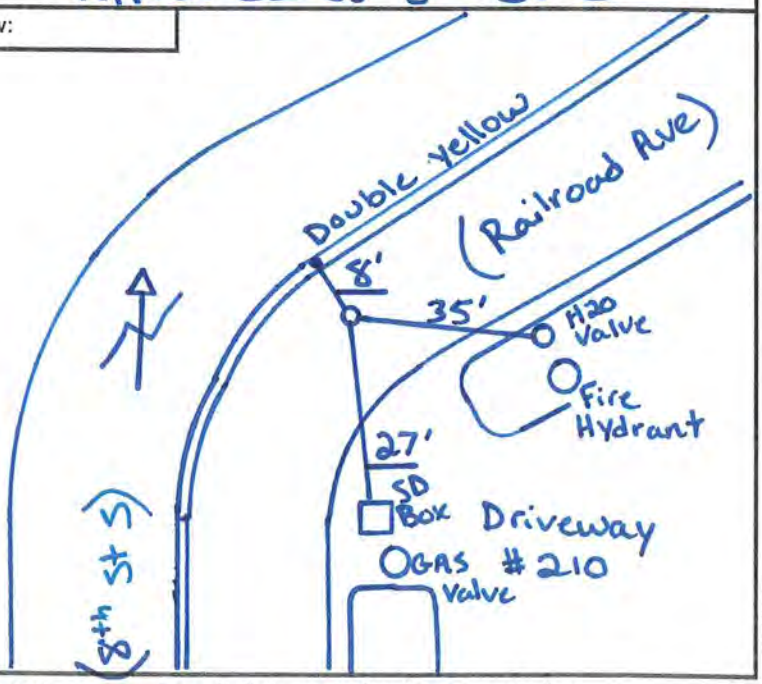
Notes:

Vacuum Crew:

Lead: JD

Helper: Andrew

Overview:



Sketch to include street name(s), North arrow, distance to (2) permanent markers & distance to fog line or centerline.

Be sure to include a description of each permanent marker

Any known building address, or side street address in the vicinity should be included

TEST HOLE DATA SHEET

Applied Professional Services, Inc.

APS Job # 6088 Date: 12/15/21

Overlay type: (Asphalt) Concrete Brick

Test hole#: 18 Overlay Thickness 9 inches. Utility type: GAS (gas,water, etc.)

Utility Size: 1/4 inches Utility Material: PE Soil Cond. Dirt

Overlay layers:

9" Asphalt

Dirt

Pipe Direction (circle one)

E & W

N & S

SW & NE

(SE & NW)

Top of utility from grade: 34 inches.

Bottom of utility from grade: 35 inches.

Width of Structure if necessary: X inches.

Additional utilities found in same Test-Hole: E & W N & S SW & NE SE & NW

Test hole#_____

Utility Type:_____ Top:_____ Bot:_____ Size:_____ Utility Material:_____

CL OFFSET/UTILITY CONFIG: Facing SouthEast

270' (1/4")

CL Approx CL of Kirkland Ave

Pipe Condition: Check one with X	
1) Poor-broken/cracks/damage	
2) Fair-Brittle pipe/pitted/rusty	
3) Good-well defined/no pits	X
4) Great-looks brand new	

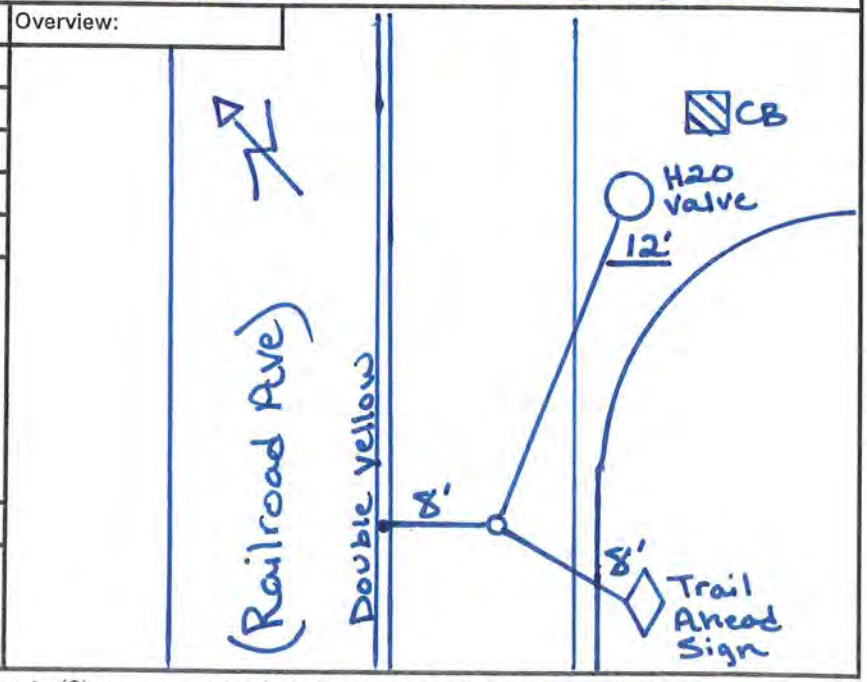
Notes:

Vacuum Crew:

Lead: JD

Helper: Andrew

Overview:



Sketch to include street name(s), North arrow, distance to (2) permanent markers & distance to fog line or centerline.

Be sure to include a description of each permanent marker

Any known building address, or side street address in the vicinity should be included

TEST HOLE DATA SHEET

Applied Professional Services, Inc.

APS Job # 6088 Date: 12/15/21

Overlay type: (Asphalt) Concrete Brick

Test hole#: 19 Overlay Thickness 5 inches. Utility type: H20 (gas,water, etc.)

Overlay layers:

5" Asphalt

Dirt

Utility Size: 6 inches Utility Material: Steel Soil Cond. Dirt

Pipe Direction (circle one)

E & W

N & S

(SW & NE)

SE & NW

Top of utility from grade: 38 inches.

Bottom of utility from grade: 44 inches.

Width of Structure if necessary: x inches.

Additional utilities found in same Test-Hole: E & W N & S SW & NE SE & NW

Test hole#_____

Utility Type:_____ Top:_____ Bot:_____ Size:_____ Utility Material:_____

CL OFFSET/UTILITY CONFIG: Facing NorthEast

12' 6"

CL Approx CL of Railroad Ave

Pipe Condition: Check one with X	
1) Poor-broken/cracks/damage	
2) Fair-Brittle pipe/pitted/rusty	
3) Good-well defined/no pits	x
4) Great-looks brand new	

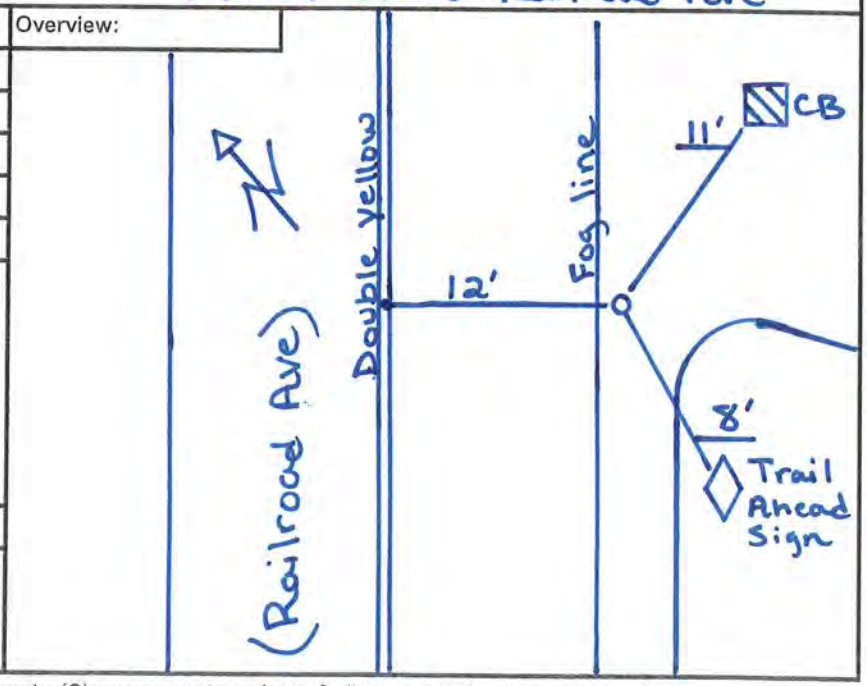
Notes:

Vacuum Crew:

Lead: JD

Helper: Andrew

Overview:



Sketch to include street name(s), North arrow, distance to (2) permanent markers & distance to fog line or centerline.

Be sure to include a description of each permanent marker

Any known building address, or side street address in the vicinity should be included

TEST HOLE DATA SHEET

Applied Professional Services, Inc.

APS Job # 6088 Date: 12/15/21

Overlay type: (Asphalt) Concrete Brick

Test hole#: 20 Overlay Thickness 7 inches. Utility type: H20 (gas,water, etc.)

Utility Size: 6 inches Utility Material: AC Soil Cond. Dirt

Overlay layers:

7" Asphalt

Dirt

Pipe Direction (circle one)

E & W

(N & S)

SW & NE

SE & NW

Top of utility from grade: 33 inches.

Bottom of utility from grade: 39 inches.

Width of Structure if necessary: X inches.

Additional utilities found in same Test-Hole: E & W N & S SW & NE SE & NW

Test hole#_____

Utility Type:_____ Top:_____ Bot:_____ Size_____ Utility Material:_____

CL OFFSET/UTILITY CONFIG: Facing North

4' (6")

CL Approx CL of 8th St S

Pipe Condition: Check one with X	
1) Poor-broken/cracks/damage	
2) Fair-Brittle pipe/pitted/rusty	
3) Good-well defined/no pits	X
4) Great-looks brand new	

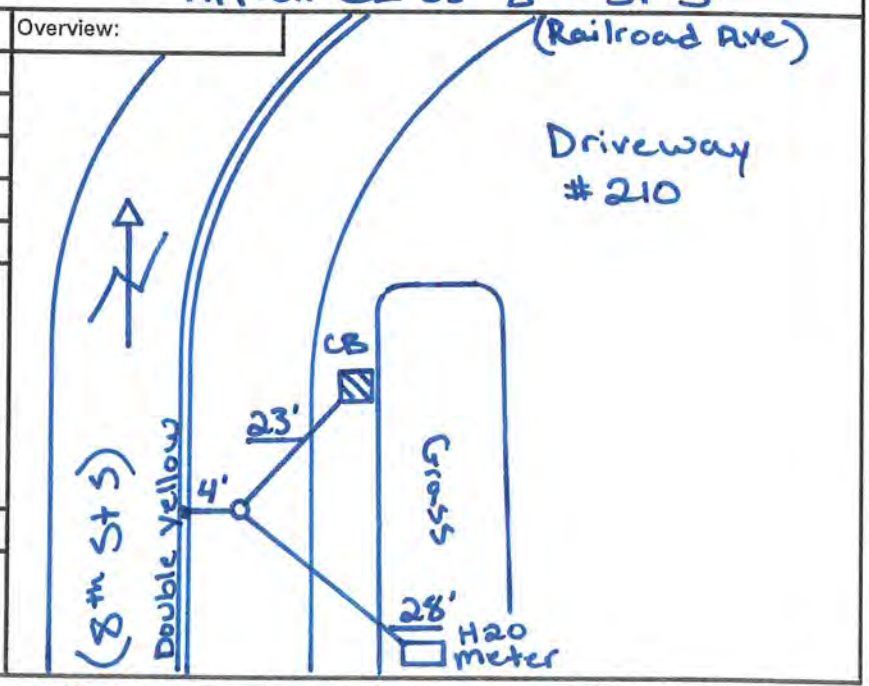
Notes:

Vacuum Crew:

Lead: JD

Helper: Andrew

Overview:



Sketch to include street name(s), North arrow, distance to (2) permanent markers & distance to fog line or centerline.

Be sure to include a description of each permanent marker

Any known building address, or side street address in the vicinity should be included

TEST HOLE DATA SHEET

Applied Professional Services, Inc.

APS Job # 6088 Date: 12/15/21

Overlay type: (Asphalt) Concrete Brick

Test hole#: 22 Overlay Thickness 9 inches. Utility type: GAS (gas,water, etc.)

Utility Size: 1/4 inches Utility Material: PE Soil Cond. Dirt

Overlay layers:

9"	Asphalt
	Dirt

Pipe Direction (circle one)

E & W

N & S

SW & NE

(SE & NW)

Top of utility from grade: 30 inches.

Bottom of utility from grade: 31 inches.

Width of Structure if necessary: x inches.

Additional utilities found in same Test-Hole: E & W N & S SW & NE SE & NW

Test hole#_____

Utility Type:_____ Top:_____ Bot:_____ Size_____ Utility Material:_____

CL OFFSET/UTILITY CONFIG: Facing SouthEast

225' (1/4")

CL Approx CL of Kirkland Ave

Pipe Condition: Check one with X	
1) Poor-broken/cracks/damage	
2) Fair-Brittle pipe/pitted/rusty	
3) Good-well defined/no pits	x
4) Great-looks brand new	

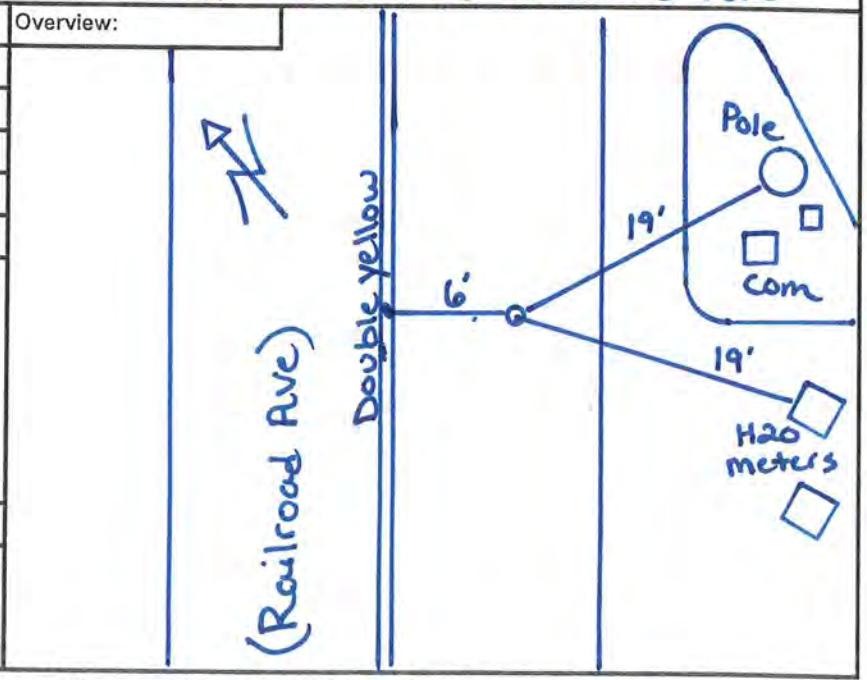
Notes:

Vacuum Crew:

Lead: JD

Helper: Andrew

Overview:



Sketch to include street name(s), North arrow, distance to (2) permanent markers & distance to fog line or centerline.

Be sure to include a description of each permanent marker

Any known building address, or side street address in the vicinity should be included

TEST HOLE DATA SHEET

Applied Professional Services, Inc.

APS Job # 6088 Date: 12/15/21

Overlay type: (Asphalt) Concrete Brick

Test hole#: 23 Overlay Thickness 9 inches. Utility type: GAS (gas,water, etc.)

Overlay layers:

9" Asphalt

Dirt

Utility Size: 5/8 inches Utility Material: PE Soil Cond. Dirt

Pipe Direction (circle one)

E & W

N & S

SW & NE

(SE & NW)

Top of utility from grade: 38 inches.

Bottom of utility from grade: 39 inches.

Width of Structure if necessary: X inches.

Additional utilities found in same Test-Hole: E & W N & S SW & NE SE & NW

Test hole#_____

Utility Type:_____ Top:_____ Bot:_____ Size:_____ Utility Material:_____

CL OFFSET/UTILITY CONFIG: Facing SouthEast

183' (5/8")

CL Approx CL of Kirkland Ave

Pipe Condition: Check one with X	
1) Poor-broken/cracks/damage	
2) Fair-Brittle pipe/pitted/rusty	
3) Good-well defined/no pits	X
4) Great-looks brand new	

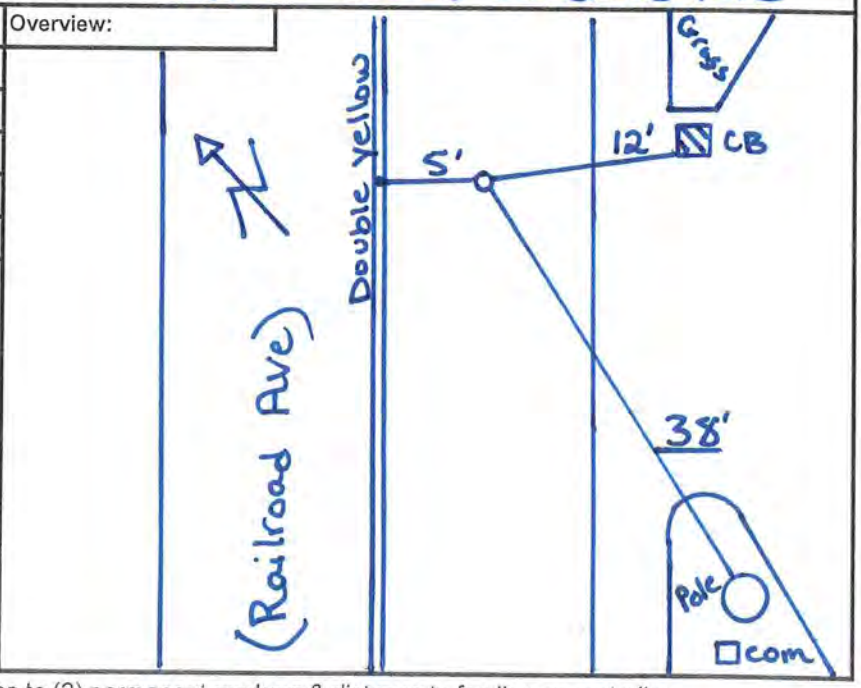
Notes:

Vacuum Crew:

Lead: JD

Helper: Andrew

Overview:



Sketch to include street name(s), North arrow, distance to (2) permanent markers & distance to fog line or centerline.

Be sure to include a description of each permanent marker

Any known building address, or side street address in the vicinity should be included

TEST HOLE DATA SHEET

APS Job # 6088 Date: 12/15/21

Applied Professional Services, Inc.

Overlay type: (Asphalt) Concrete Brick

Test hole#: 24 Overlay Thickness 10 inches. Utility type: GAS (gas,water, etc.)

Utility Size: 2 inches Utility Material: STL Soil Cond. mud & water

Overlay layers:

10" Asphalt

mud & water

Pipe Direction (circle one)

E & W

N & S

SW & NE

(SE & NW)

Top of utility from grade: 69 inches.

Bottom of utility from grade: 71 inches.

Width of Structure if necessary: X inches.

Additional utilities found in same Test-Hole: E & W N & S SW & NE SE & NW

Test hole#_____

Utility Type:_____ Top:_____ Bot:_____ Size:_____ Utility Material:_____

CL OFFSET/UTILITY CONFIG: Facing SouthEast

113' (2")

CL Approx CL of Kirkland Ave

Pipe Condition: Check one with X

1) Poor-broken/cracks/damage	
2) Fair-Brittle pipe/pitted/rusty	
3) Good-well defined/no pits	
4) Great-looks brand new	

Notes:

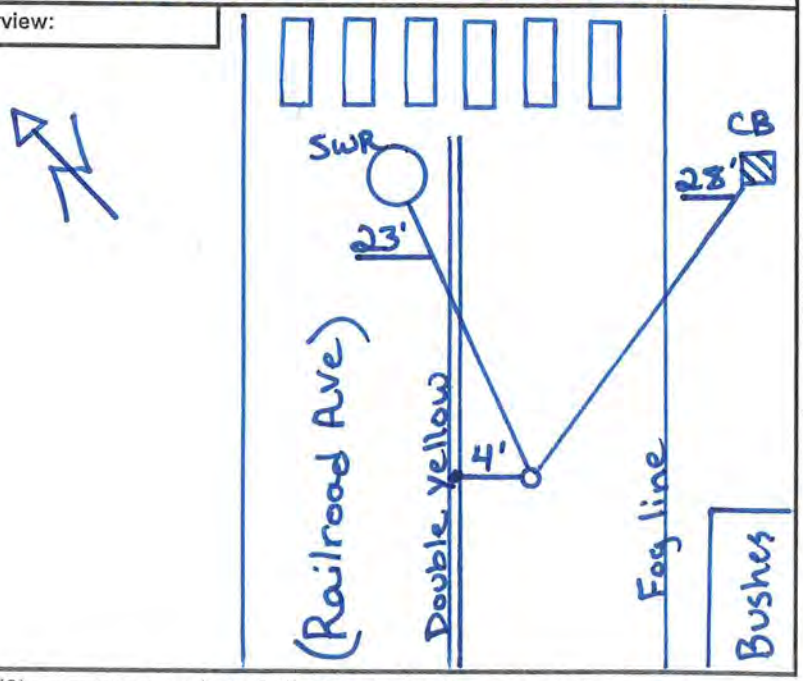
To much ground water to see utility. only found utility by feel

Vacuum Crew:

Lead: JD

Helper: Andrew

Overview:



Sketch to include street name(s), North arrow, distance to (2) permanent markers & distance to fog line or centerline.

Be sure to include a description of each permanent marker

Any known building address, or side street address in the vicinity should be included

TEST HOLE DATA SHEET

Applied Professional Services, Inc.

APS Job # 6088 Date: 12/15/21

Overlay type: (Asphalt) Concrete Brick

Test hole#: 25 Overlay Thickness 7 inches. Utility type: H20 (gas,water, etc.)

Utility Size: 6 inches Utility Material: Steel Soil Cond. Dirt

Overlay layers:

7" Asphalt

Dirt

Pipe Direction (circle one)

E & W

N & S

(SW & NE)

SE & NW

Top of utility from grade: 43 inches.

Bottom of utility from grade: 49 inches.

Width of Structure if necessary: X inches.

Additional utilities found in same Test-Hole: E & W N & S SW & NE SE & NW

Test hole#_____

Utility Type:_____ Top:_____ Bot:_____ Size_____ Utility Material:_____

CL OFFSET/UTILITY CONFIG: Facing NorthEast

12' 6"

CL Approx CL of Railroad Ave

Pipe Condition: Check one with X	
1) Poor-broken/cracks/damage	
2) Fair-Brittle pipe/pitted/rusty	
3) Good-well defined/no pits	X
4) Great-looks brand new	

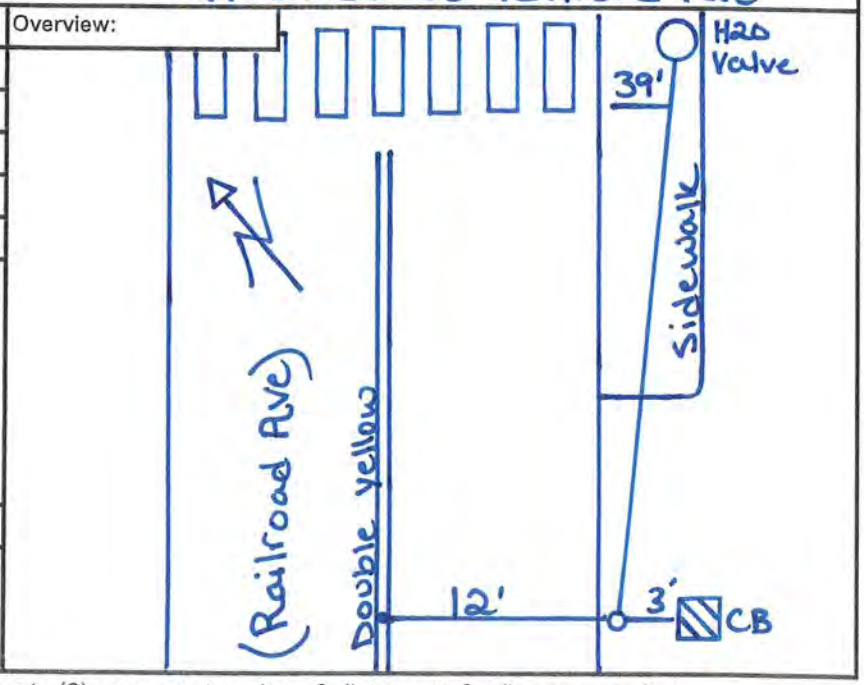
Notes:

Vacuum Crew:

Lead: JD

Helper: Andrew

Overview:



Sketch to include street name(s), North arrow, distance to (2) permanent markers & distance to fog line or centerline.

Be sure to include a description of each permanent marker

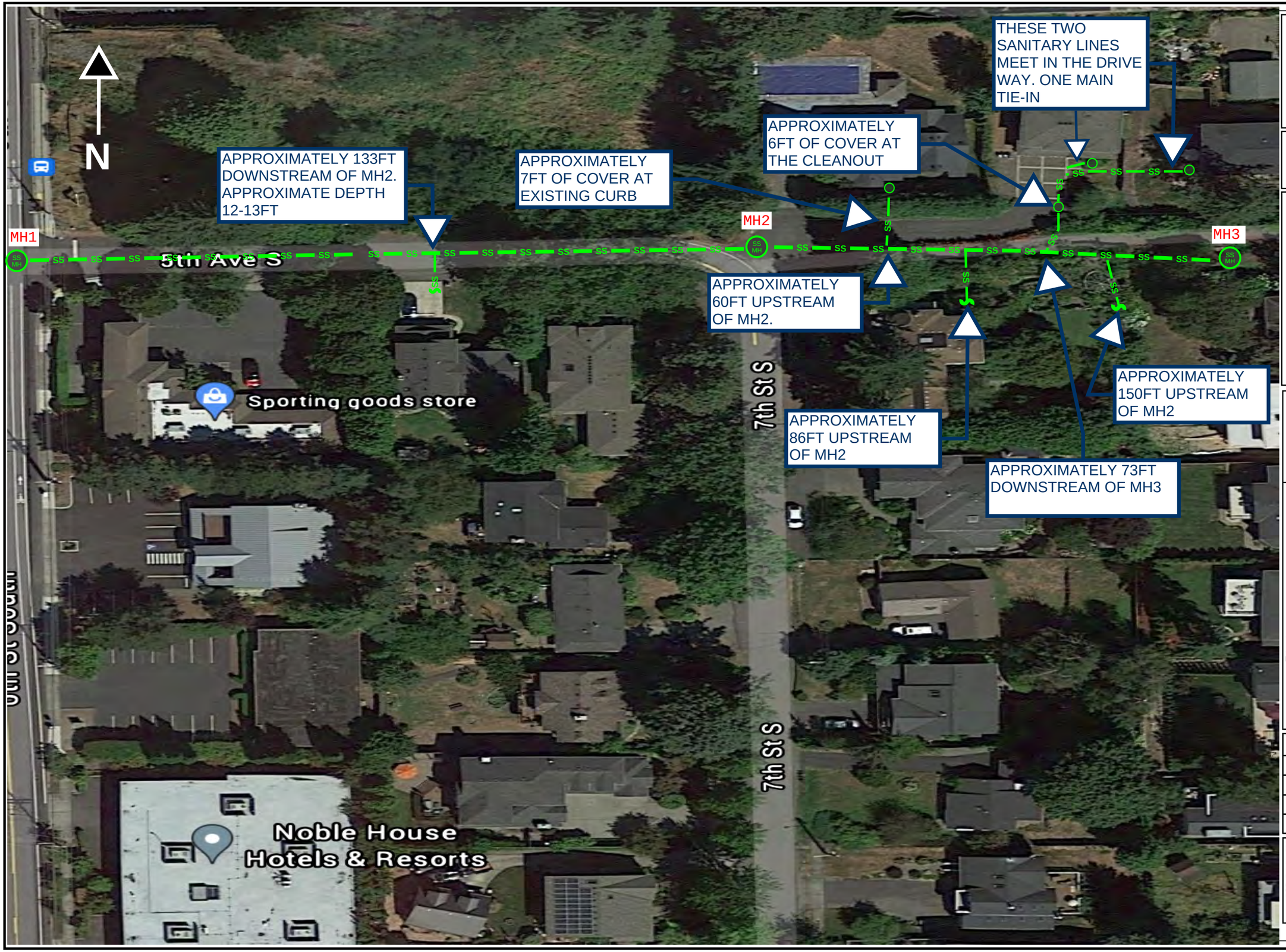
Any known building address, or side street address in the vicinity should be included

APPENDIX B

POTHOLE DATA (VIDEO PIPE INSPECTION DATA) – GPRS, INC

City of Kirkland

City of Kirkland



GPRS

www.gp-radar.com

Site Name and Location:

5TH Ave S and 7TH ST S
Kirkland WA 98033

Assumptions & Clarifications

1. UNLESS OTHERWISE NOTED UNDERGROUND UTILITY DATA IS CONSIDERED QUALITY LEVEL B (QLB) AS DEFINED IN ASCE 38-02: STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA AND IS INTENDED TO SHOW THE APPROXIMATE HORIZONTAL LOCATIONS OF EXISTING UNDERGROUND UTILITIES AS MARKED BY MASTER LOCATORS DURING A GEOPHYSICAL INVESTIGATION PERFORMED WITHIN THE OUTLINED SCOPE OF WORK.

2. ALL UTILITY LOCATIONS SHOWN ON THIS PLAN ARE FOR REFERENCE ONLY. THIS PLAN SHOULD NOT BE USED FOR CONSTRUCTION OR DESIGN PURPOSES AND MASTER LOCATORS IS NOT RESPONSIBLE FOR DAMAGE TO UTILITIES RESULTING FROM ANY CONSTRUCTION WORK BASED ON THESE PLAN.

3. NO BOUNDARY OR PROPERTY SURVEY WORK WAS CONDUCTED IN THE DEVELOPMENT OF THIS PLAN. THE PLAN IS NOT DRAWN TO SCALE.

4.ANY DEPTH INFORMATION PROVIDED IS CONSIDERED APPROXIMATE AND IS NOT GUARANTEED UNLESS LABELED AS QUALITY LEVEL A (QLA) DATA.

Legend & Color Codes

Electric — E
Unknown — UNK
Water — W
Comms. — C
Storm — ST
Sanitary — SS
Gas — G

Man Hole, Valve, Continuation Mark, End of Information, Scope of Work
Bollard, Utility Pole, Clean Out, Storm Drain, Roof Drain
Floor Drain, Test Hole, Fire Hydrant, Irrigation Box
Site Light, Transformer, Electric Box, Phone Pedestal
Large (>12") Storm Line, Flow Direction, Buried Vault, Witness Post

Revisions:

Date:	Description:	By:

ML Job #:
Date: 01-04-22
Technician(s): David Castro
Client Name: DOWL

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APPENDIX C

WATER INSTALLATION PROCEDURES CHECKLIST

City of Kirkland

City of Kirkland

Water Installation Procedures Checklist

General Notes:

- ☐ ONLY CITY WATER DEPARTMENT PERSONNEL ARE PERMITTED TO OPERATE VALVES ON LIVE IN-SERVICE MAINS INCLUDING HYDRANTS, BLOW-OFFS AND OTHER APPURTENCES OF THE EXISTING SYSTEM.
- ☐ All operating valves are to be accessible throughout the duration of the project.
- ☐ For multi-phased/scheduled projects, the City's construction inspector shall keep the water department personnel updated as to the timing and scope of the various phases.
- ☐ The City's construction inspector shall keep complete and accurate red-lined as-built construction information for transfer and creation of post-project construction record drawings.
- ☐ Field changes to the approved plans should be approved by the Project Engineer and Water Division.
- ☐ Water Division personnel will be available to the inspector if requested, to answer any installation questions.

CONSTRUCTION

Tying New Water Main to the Existing System:

- ☐ Connections to existing AC mains need to be made on rough barrel section of the main and not at milled joints using Romac brand couplers with the proper transition gaskets.
- ☐ New water main shall be filled, flushed and pressure tested with the City's construction inspector/ observer being present.
- ☐ Water shall not sit in a new main for more than 7-days after achieving purity prior to new system tie-in.
- ☐ Acceptable purity test results shall be obtained prior to scheduling any system tie-in.
- ☐ System tie-in's shall be scheduled for Monday thru Thursday only.
- ☐ A minimum of two working days notice to the water department is required for all system tie-in's.
- ☐ A maximum of one system tie-in will be scheduled per day unless multiple tie-ins are advantageous to the water system and have been approved by the Water Division.
- ☐ All service area turn-off notices must be distributed to affected parties two working days prior to any scheduled shut-off. (Water department personnel will provide door hanger notices and a shut-off area map – contractor shall be required to fill in the required information on the door hangers and for distribution of all door hanger notices.)
- ☐ Tie-ins using a bell and/or a wedding band are not allowed.

Water Main Bends:

- ☐ All fittings & valves at tie-ins or build outs for tie-ins shall have Mega-Lugs (or similar product) and concrete thrust blocks.
  - o If concrete thrust blocks will not be fully cured at the time the new main is pressurized all the bends must have temporary "kickers" in place before the main will be re-charged.
  - o All concrete blocks are to be hand mixed (with water) or delivered by ready mix truck before placed.

Old Water Main Valve Boxes:

- ☐ Shall be totally removed, the holes backfilled and the existing surface restored in-kind after the old water main is abandoned.

New Water Main Valves:

- ☐ Shall have resilient seats for all valves, no matter which type (gate or butterfly).
- ☐ Shall have the valve nut centered in the valve box with a nut depth no greater than 60" below grade.

- ☐ Shall have boxes that are free of debris.
- ☐ Shall be checked for proper operation before and after the new line is pressurized.
- ☐ Shall have the valve box lid painted blue enamel (Kelly Moore 5880 or equal).
- ☐ Shall have the valve box ears lined up in the direction of flow (parallel to the direction of the pipe.)

Fire Hydrants:

- ☐ Shall be replaced with new in all cases even if an existing hydrant is to be relocated.
- ☐ Shall utilize shackle rods and blocks -- no exceptions.
- ☐ Shall be set to proper grade.
- ☐ Shall be tested for proper function.
- ☐ Shall have two coats of safety yellow enamel paint.
- ☐ Shall have one Storz adapter installed – 5 ¼ Female Thread.
- ☐ Shall have a minimum 3' surrounding clearance for proper operation.

Water Meters and Boxes:

- ☐ Shall be replaced with new approved meter box per Standard Detail W.17, unless noted otherwise.
- ☐ Shall be set to grade – raised or lowered to the surrounding grade regardless of prior condition.
- ☐ Shall have the meter set at between 6" and 10" below meter box lid.
- ☐ Shall have new service tracer wire visible and wrapped around angle stop with the first 6" stripped.
- ☐ Shall have the customer side of meter re-plumbed with appropriate materials and related fittings (i.e., brass, copper, polyethylene or PVC (rated at 200 p.s.i.) where existing meter setters were used or if a service is being relocated. No tie-ins will be allowed to any existing meter-setter tailpieces on the customer's side of the meter.
- ☐ If the existing meter does not have a check valve installed on the customer side of the meter a check valve shall not be installed when doing the tie in.
- ☐ If existing meter appears damaged, the inspector shall note the address and notify the Project Engineer and or Water Department for replacement.

Air-Reliefs and Blow-offs:

- ☐ Shall be checked for proper function.
- ☐ Shall have all above ground piping painted with blue enamel and shall be identified with a blue enamel painted marker post.
- ☐ Air-Reliefs shall have 6 – 10" clearance from top of device to the finished grade of lid and the box grouted both inside and out.

PROJECT CLOSE-OUT

General Construction:

- ☐ The construction inspector shall perform a project walk-through with water department personnel prior to final curb and gutter, sidewalk and asphalt replacement.
- ☐ All items identified during the inspector/water department personnel walk-through will be incorporated into the original (first) punchlist given to the contractor.

APPENDIX D

ARBORIST REPORT

City of Kirkland

City of Kirkland

Arborist Report

Tree Retention Plan - January 2022

City of Kirkland 5th/8th Watermain Replacement

5th Avenue South right-of-way looking east.

Prepared For:

DOWL, Inc.

Daniel Williams, P.E.
Consulting Engineer
8410 145th Ave NE, Suite 120
Redmond, WA, 98052
425.503.8849
dwilliams@dowl.com

Prepared By:

Davey Resource Group, Inc.

2646 23rd Ave W
Seattle, WA 98199
Contact: Marc Leonard
marc.leonard@davey.com
Local Office: 206.331.0869
Corporate Office: 330.673.5685

Marc Leonard 1/25/2022

DAVEY Resource Group

Notice of Disclaimer

Assessment data provided by Davey Resource Group is based on visual recording at the time of inspection. Visual records do not include testing or analysis and do not include aerial or subterranean inspection unless indicated. Davey Resource Group is not responsible for discovery or identification of hidden or otherwise non-observable risks. Records may not remain accurate after inspection due to variable deterioration of surveyed material. Risk ratings are based on observable defects and mitigation recommendations do not reduce potential liability to the owner. Davey Resource Group provides no warranty with respect to the fitness of the trees for any use or purpose whatsoever.

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Post-Development 11

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Appendix A: Inventory Site Map **14**

Introduction

Background

Davey Resource Group (DRG) was contracted by Daniel Williams, a Senior Water Resource Engineer with DOWL, to inspect and provide an arborist report and tree retention plan for the 5th/8th Watermain Replacement project (DOWL Project #: 2028.15134.01). Trenching for a water main and a storm drain is expected to be five (5) feet wide in order to centrally house an 18-inch and a 24-inch storm pipe. The client intends to replace the water main and storm drain within the City of Kirkland rights-of-way easement.

The arborist visually assessed each assigned tree and the required tree data was collected within a GIS database. Following data collection, specific tree preservation plan elements were calculated that identified each tree's dripline and Critical Root Zone (CRZ) to better ensure survivability during the planned work. The following details are provided in alignment with the information required by the City of Kirkland Municipal Code (KZC Chapter 95 – TREE MANAGEMENT AND REQUIRED LANDSCAPING):

- A methodology section describing the arboricultural inventory process and rationale used to rate each tree.
- A description of the Critical Root Zone (CRZ) and how it was calculated.
- Critical Root Zone (CRZ) standards and implementation for all trees that are recommended to remain.
- Inventory data table(s) for each tree six (6”) inches or greater in diameter at breast height (DBH) and corresponding identification numbers that will identify each tree on the provided map.
- Tree care recommendations for any and all work to take place in the CRZ of all retained trees.
- Maps detailing all tree locations, driplines, and tag numbers.

Limits of the Assignment

There are many factors that can limit specific and accurate data when performing evaluations of trees, their conditions, and values. The determinations and recommendations presented here are based on current data and conditions that existed at the time of the evaluation and cannot be a predictor of the ultimate outcomes for the trees. A visual inspection was used to develop the findings, conclusions, and recommendations found in this report. Values were assigned to grade the attributes of the trees, including structure and canopy health, and to obtain an overall condition rating. No physical inspection of the upper canopy, sounding, root crown excavation, resistograph, or other technologies were used in the evaluation of the trees.

- There is a row of multiple Western red cedar trees with driplines along the property line of 700 5th Avenue South (Parcel Identification Number 0120000267). All trees existing on this parcel were not inspected and their attributes are not included in this report.
- A Tree Retention Plan has already been created for the construction development site at 620 5th Avenue South (Parcel Identification Number 0120000150). All trees existing on this parcel were not inspected and their attributes are not included in this report.

Methods

Data was collected by Marc Leonard (WE-11849AU), an ISA Certified Arborist, on January 18, 2021. A visual inspection was used to develop the findings, conclusions, and recommendations found in this report. The results will be used to determine the Limits of Disturbance (LOD), as represented by Critical Root Zone (CRZ), and any other tree protection measures required during construction. Location and dripline of assigned trees six inches or greater in diameter at breast height (4.5 ft. above grade) were estimated to the nearest foot.

The following attributes were collected for each site:

Tree Number: Tree ID number was assigned and a numbered aluminum tag was affixed to the tree.

Species: Trees were identified by genus and species, cultivar if evident, and by common name.

Diameter at Breast Height (DBH): Trunk diameter was recorded to the nearest inch at 4.5 feet (standard height) above grade except where noted. When limbs or deformities occurred at standard height, measurement was taken below 4.5 ft. The DBH of multi-trunk trees was determined by taking the square root of the sum of the DBH for each individual stem squared.

Height: Tree Height estimated to the nearest <5ft.

Avg. Crown Radius: Average dripline distance was measured at the nearest <5ft.

Condition: Condition ratings were based on but not limited to: (1) the condition and environment of the tree's root crown; (2) the condition of the trunk, including decay, injury, callusing, or presence of fungus sporophore; (3) the condition of the limbs, including the strength of crotches, amount of deadwood, hollow areas, and whether there was excessive weight borne by them; (4) the condition and growth rate history of the twigs, including pest damage and diseases; (5) the leaf appearance, including abnormal size and density as well as pest and disease damage.

Using an average of the above factors together with the arborist's best judgment, the general condition of each tree was recorded in one of the following categories adapted from the rating system established by the International Society of Arboriculture and 10th Edition of the Council of Tree & Landscape Appraisers (CTLA) *Guide for Plant Appraisal*[1]:

- **Excellent (81%-100%):** High vigor and near-perfect health with little or no twig dieback, discoloration, or defoliation. Nearly ideal and free of structural defects. A nearly ideal form for the species and generally symmetrical.
- **Good (61%-80%):** Vigor is normal for the species and has no significant damage due to disease or pests. Twig dieback, discoloration, or defoliation is minor. Well-developed structure with minor defects that can be corrected easily. Minor asymmetries/deviations from species norm. Function and aesthetics are not compromised.
- **Fair (41%-60%):** Reduced vigor. Damage due to insects or diseases may be significant and associated with defoliation but is not likely to be fatal. Twig dieback, defoliation, discoloration, and/or dead branches may comprise up to 50% of the canopy. A single structural defect of a significant nature or multiple moderate defects. Structural defects are not practical to correct or would require multiple treatments over several years. Major asymmetries/deviations from species norm. Function and aesthetics are compromised.

[1] Council of Tree and Landscape Appraisers. (2019). *Guide for Plant Appraisal, 10th Edition, Second Printing.* Atlanta, GA: International Society of Arboriculture.

- **Poor (21%-40%):** Unhealthy and declining in appearance. Poor vigor, low foliage density, and poor foliage color are present. Potentially fatal pest infestation. Extensive twig or branch dieback. A single serious structural defect or multiple significant defects. Observed structural problems cannot be corrected. Failure may occur at any time. Largely asymmetrical or abnormal form. Form detracts from aesthetics or intended use to a significant degree.
- **Very Poor (6%-20%):** Poor vigor and appears to be dying. Little live foliage. Single or multiple severe structural defects. Visually unappealing and provides little or no function in the landscape.
- **Dead (0%-5%)**

Observations

A total of six (6) significant trees were inspected for the purpose of this report.

Tree ID# 4990 is a Weeping willow *(Salix babylonica)* and belongs to a private property owner on the Parcel Identification Number 0120000262. The trunk of the tree is approximately five (5) feet to the north of the outer limit of the proposed storm drain trench. The tree is in good condition and shows signs of good vigor. Due to its large DBH of forty-seven (47) inches, this tree is considered to be a Landmark Tree by the City of Kirkland.

Tree ID# 4991 is a Douglas fir *(Pseudotsuga menziesii)* and belongs to a private property owner on the Parcel Identification Number 0120000261. The trunk of the tree is approximately six (6) feet to the north of the outer limit of the proposed storm drain trench. The tree is in good condition and shows minor signs of stress. Due to its large DBH of thirty-four (34) inches, this tree is considered to be a Landmark Tree by the City of Kirkland.

Tree ID#s 4992, 4993, 4994, and 4995 are located on a rights-of-way (ROW) easement and are property of the city of Kirkland. The trees are growing in an irrigation ditch that leads to the existing underground water main, as a part of a hedgerow. The trees range from good to poor condition and compete with one another for available resources given their close proximity. All four (4) trees in the ROW will be directly impacted by the construction of the new water main.

- **Tree ID# 4994** is a Butterfly bush *(Buddleia davidii)* and the species is considered to be a Class B Noxious Weed in the State of Washington. Control is recommended.

Table 1: Tree Inventory Table

Tree ID#	Species	Condition	DBH (in)	Height (ft)	Avg. Canopy Radius (ft)	Critical Root Zone (radial ft)	Observations
4990	Weeping willow *(Salix babylonica)*	Fair	47	30	15	47	Topped
4991	Douglas fir *(Pseudotsuga menziesii)*	Good	34	80	20	34	Signs of Stress
4992	Oregon ash *(Fraxinus latifolia)*	Good	7	45	5	7	Multistem
4993	Oregon ash *(Fraxinus latifolia)*	Good	6	50	10	6	Vines
4994	Butterfly bush *(Buddleia davidii)*	Poor	6	15	20	6	Poor Structure
4995	Oregon ash *(Fraxinus latifolia)*	Fair	11	55	10	11	Multistem

Analysis & Recommendations

As with most tree preservation planning, a critical element is in minimizing root disturbance. When evaluating tree root disturbance during construction there are two considerations; the removal of absorption roots and removal of anchoring roots. Removal (or compaction in the area) of the absorption roots can cause immediate water stress and a significant decline in tree health. The ability of a tree to survive the loss of absorption roots is dependent on its tolerance of drought, tree health, and the ability to form new roots quickly. Removal of the larger anchoring roots can lead to structural instability. Trees that suffer substantial root loss or damage are seldom good candidates for preservation. The Critical Root Zone (CRZ) is considered the ideal preservation area of the root zone of a tree. It is measured as one (1) foot of radius for every inch of trunk diameter measured at 4.5 feet from grade. CRZ measurements are calculated from DBH and may not be an accurate representation of the actual dimensions of the root zone of the trees in the field. Many factors can limit root growth and expansion such as degree of slope, present hardscape or heavily compacted areas, and/or tree health. Final selections for tree preservation are largely determined by the percentage of Critical Root Zone impacted. Similar to the CRZ, the Structural Root Zone (SRZ) was also calculated using a commonly accepted method established by Dr. Kim Coder in Construction Damage Assessments: Trees and Sites[2].

Priority Recommendations Related to Proposed Construction

For all trees to be impacted by proposed construction, standard tree protection measures provided in subsequent sections of this report will be appropriate. Exceptions will be required to accommodate construction around trees that will have the proposed development project impact the CRZ**.**

The site-specific recommendations are as follows:

Tree ID#s 4992, 4993, 4994, and 4995 are recommended for removal. These trees are in the direct path of the proposed trench line for the water main. Retaining these trees is not feasible and removal is the only viable option in order to move on with construction plans.

Tree ID#s 4990 and 4991 will require specialized care when excavation takes place**.** Any root that is greater than two (2) inches in diameter should not be severed or damaged. Ingress into the Structural Root Zone yields a significant risk of catastrophic tree failure.

[2] Dr. Kim Coder, University of Georgia June 1996

Tree ID# 4990 (pictured below) is a Landmark Tree and is to be retained. The tree has a calculated Critical Root Zone of forty-seven (47) feet. Any excavation within the CRZ is to be done by hand or air/vacuum excavating and not by any heavy machinery. Additionally, the Structural Root Zone is calculated to be eleven (11) feet of radius.

Tree ID# 4991 (pictured below) is a Landmark Tree and is to be retained. The tree has a calculated Critical Root Zone of thirty-four (34) feet. Any excavation within the CRZ is to be done by hand or air/vacuum excavating and not by any heavy machinery. Additionally, the Structural Root Zone is calculated to be eleven (10) feet of radius.

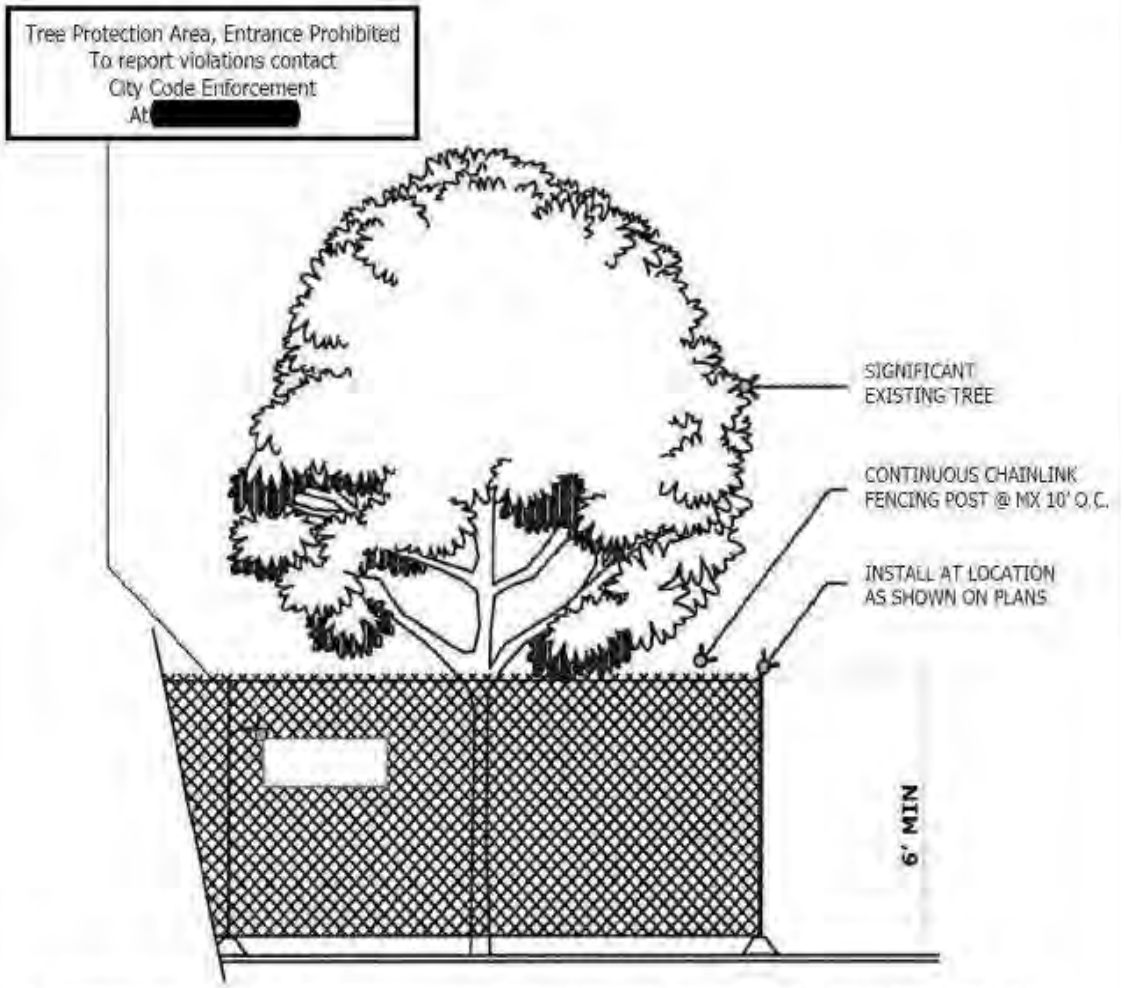
- Install tree protection fencing for any tree on-site according to standard tree protection measures at the beginning of the project.
- Any demolition or construction activities that are likely to take place within the TPZ of retained trees will need to be supervised by an ISA Certified arborist to ensure that the trees are not damaged.
- When anticipated construction activity requires ingress into the TPZ, temporarily adjust the fence limits as little as necessary to allow access.
- The supervising arborist will make recommendations at the time of construction to ensure suitable tree protection standards are followed.
- Prohibit any heavy machinery from operating within the CRZ of the trees.

Tree Protection Zone & Timing

To ensure the long-term viability of trees and stands identified for protection, construction activities shall comply with minimum required tree protection through an established Tree Protection Zone (TPZ) for those trees determined to remain on the site.

- TPZ fencing will be installed outside the dripline, at a minimum, of all retained trees. It is recommended that TPZ fencing be installed to encompass as much of the tree's root zone as is allowable by design plans.
- Preventative measures are recommended in addition to the installation of tree protection barriers for retained trees including mulching over the drip line, supplemental fertilization for stressed trees, supplemental irrigation as necessary, soil amendments and soil aeration, and pruning to remove deadwood or create clearance on trees to be protected.
- Mulch the root zones of all significant trees to be retained during construction with 3" of organic mulch or arborist wood chips to help maintain moisture, avoid soil compaction, and avoid runoff.
- Install tree protection fencing for all remaining significant trees on the site and all those trees with canopies that extend onto the subject property.
- TPZ fencing will follow the edge of building/road/paved paths where necessary and are not required to extend to the dripline where impervious surfaces are determined to be the limiting factor for root development (fence following existing curb does not trigger 'impact' status). Tree protection fencing may be installed at the edge of the impermeable or paved surfaces for those trees whose driplines extend over the edge.
- TPZ fencing shall be a minimum of 4 feet high, constructed of chain link or polyethylene laminar safety fencing or similar material.
- "Tree Protection Area - Keep Out" or similar signs are required to accompany the TPZ fencing at regular intervals and include the contact information of the consulting arborist or entity responsible for enforcing tree protection standards.
- TPZs shall be constructed in such a fashion as to not be easily moved or dismantled.
- TPZs shall remain in place for the entirety of the project and only be removed, temporarily or otherwise, with authorization by an ISA-certified arborist after submission and approval of intent.
- Any entry or work within the TPZ of retained trees is prohibited.This includes but is not limited to the storage of materials, parking, or contaminating soil by washing out equipment.
- Retain a site arborist for the duration of the project that may conduct periodic site visits to investigate tree protection compliance any changes to tree condition.

Image 1. An example of a Tree Protection Zone barrier per the City of Kirkland Municipal Code. Contact information of the site manager or consulting arborist should also be included on the sign.



1. MINIMUM SIX (6) FOOT HIGH TEMPORARY CHAINLINK FENCE SHALL BE PLACED AT THE CRITICAL ROOT ZONE OR DESIGNATED LIMIT OF DISTURBANCE OF THE TREE TO BE SAVED. FENCE SHALL COMPLETELY ENCIRCLE TREE(S). INSTALL FENCE POSTS USING PIER BLOCK ONLY. AVOID POST OR STAKES INTO MAJOR ROOTS. MODIFICATIONS TO FENCING MATERIAL AND LOCATION MUST BE APPROVED BY PLANNING OFFICIAL.

2. TREATMENT OF ROOTS EXPOSED DURING CONSTRUCTION: FOR ROOTS OVER ONE (1) INCH DIAMETER DAMAGED DURING CONSTRUCTION, MAKE A CLEAN STRAIGHT CUT TO REMOVE DAMAGED PORTION OF ROOT. ALL EXPOSED ROOTS SHALL BE TEMPORARILY COVERED WITH DAMP BURLAP TO PREVENT DRYING AND COVERED WITH SOIL AS SOON AS POSSIBLE.

3. NO STOCKPILING OF MATERIALS, VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MACHINERY SHALL BE ALLOWED WITHIN THE LIMIT OF THE FENCING. FENCING SHALL NOT BE MOVED OR REMOVED UNLESS APPROVED BY THE CITY PLANNING OFFICIAL. WORK WITHIN PROTECTION FENCE SHALL BE DONE MANUALLY UNDER THE SUPERVISION OF THE ON-SITE ARBORIST AND WITH PRIOR APPROVAL BY THE CITY PLANNING OFFICIAL.

4. FENCING SIGNAGE AS DETAILED ABOVE MUST BE POSTED EVERY FIFTEEN (15) FEET ALONG THE FENCE.

CITY OF KIRKLAND WASHINGTON

TREE PROTECTION FENCING DETAIL
(for public and private trees)

Pre-Development Tree Care

Successful tree preservation efforts begin in the planning and design phase. In order to select the appropriate trees for preservation and then incorporate those trees into future development plans, site managers and designers need detailed information on the health and status of the existing trees. This report satisfies the conditions of the critical first step in the preservation process: a tree inventory, assessment, and analysis conducted by a qualified professional. The resulting findings guide the beginning stages of the preservation process.

Condition rating and preservation priority rating help nominate potential candidates for preservation. Development plans should ensure that no impact or root damage occurs within the inner root zone and plans should take into consideration the significant reduction in the likelihood of tree survival when the root zone is impacted. After individual trees are selected for preservation, the following action steps are recommended prior to development activities:

- **Prune** trees, as necessary, to remove existing deadwood and stubs. This strategy controls potential future vectors of decay. Clean cuts made at branch collars allow the tree to undergo its natural process of compartmentalizing wounds, preventing the spread of decay. During the pruning process, remove as minimal of an amount of live foliage as possible and no more than 25% removal in any one season while allowing for the safe and unimpeded operation of construction activities.
- **Install Tree Protection Zone** (TPZ) fencing out to the furthest possible radius distance from the tree.
- If the soil within the TPZ is compacted, then **aerate the soil** using an air spade to alleviate compaction and promote the flow of oxygen and water to the roots.
- **Add a 6-inch layer of mulch** to the portion of the root zone protected by the TPZ. Be sure not to cover/bury the tree root collar. Mulch aids the soil in water retention and also helps insulate the soil from hot and cold weather extremes.
- Where possible, **add a 12-inch layer of wood chips** over any parts of a root zone not protected by the TPZ. This aids in reducing the impact of soil compaction from heavy equipment during the upcoming construction activities.

Tree Care During Development

Once development begins, several measures are necessary to help ensure optimal outcomes for all trees selected for preservation:

- **Retain a Certified Arborist** on-site to monitor activities and assess impacts to trees. The arborist can make as-needed recommendations to improve tree preservation activities throughout the development process. This is particularly important in order to make a timely response when a preserved tree is accidentally damaged or otherwise impacted during development.
- **Signage** instructing site workers not to enter Tree Protection Zones should be posted throughout the job site. Signage should be posted in both English and Spanish, as well as, any other language as deemed necessary by site managers.

- **Discuss tree protection** regularly at required staff meetings. Reiterate the importance of respecting the Tree Protection Zone as critical to the safety of staff working on-site and the success of tree preservation efforts.
- Strictly **enforce** the Tree Protection Zones as “No-Go” zones. No activity, human or machinery, should breach the established TPZ.
- **Root prune** where any grading or trenching occurs within the critical root zone.
- Ensure the area within the TPZ receives the **weekly watering** equivalent to the amount of average natural rainfall for the specific development site. When the amount of natural rainfall received is less than the historical average, manual watering methods should be employed. The on-site Certified Arborist can make the determination when additional manual watering is necessary.
- **Do not raise or lower the soil grade near the TPZ**. A tree relies upon small, non-woody roots called feeder roots for the absorption of water and nutrients. These roots predominantly reside in the upper several inches of soil, just below grade. Lowering the soil grade, even just a few inches, will sever these feeder roots and compromise tree health. Raising the soil above existing grades, such as through the addition of fill soil, buries feeder roots too deep and restricts feeder root access to water and oxygen.

Post-Development

A successful tree preservation effort continues well past the conclusion of development activities:

- The preserved trees should be **re-inspected** for signs of impacts that may have gone undetected during construction and mitigation measures assigned accordingly.
- The preserved trees should be placed on a **seasonal care plan** for two years that includes both monitoring and routine soil inoculation treatments designed to stimulate new root growth.
- Annual monitoring should continue for several years, as the effects of construction may take anywhere from 3 to 7 years to become visibly apparent.

Concluding Remarks

This report, along with the tree inventory, is the first step in preserving the health, function, and value of the trees on the site during and after development. Trees and green spaces provide benefits and add value to residential properties. Tree preservation starts with a basic understanding of the health and structure of the trees on the site. With proper care and protection, these trees can continue to thrive. Tree protection guidelines and strategies should be shared with contractors and employers prior to any disturbance at the site.

The suitability of a tree for preservation is a qualitative process based on the interaction of a variety of influencing factors. A tree inventory and arborist report provide a snapshot in time of each individual tree assessed across many of the most important observable factors relative to preservation. Healthy, vigorous trees better tolerate impacts from construction and more readily adapt to the new site conditions that exist after completion of development. Additionally, tolerance to impact from construction activities varies across species and sites. The percentage impact on the tree protection zone also greatly influences the suitability of a particular tree for preservation.

Successful tree preservation requires a team effort to find the right balance and select the appropriate trees. Using the findings of this report as a guiding foundation, planners are equipped to design, prepare, and implement a tree preservation plan tailored to achieving the optimal outcome.

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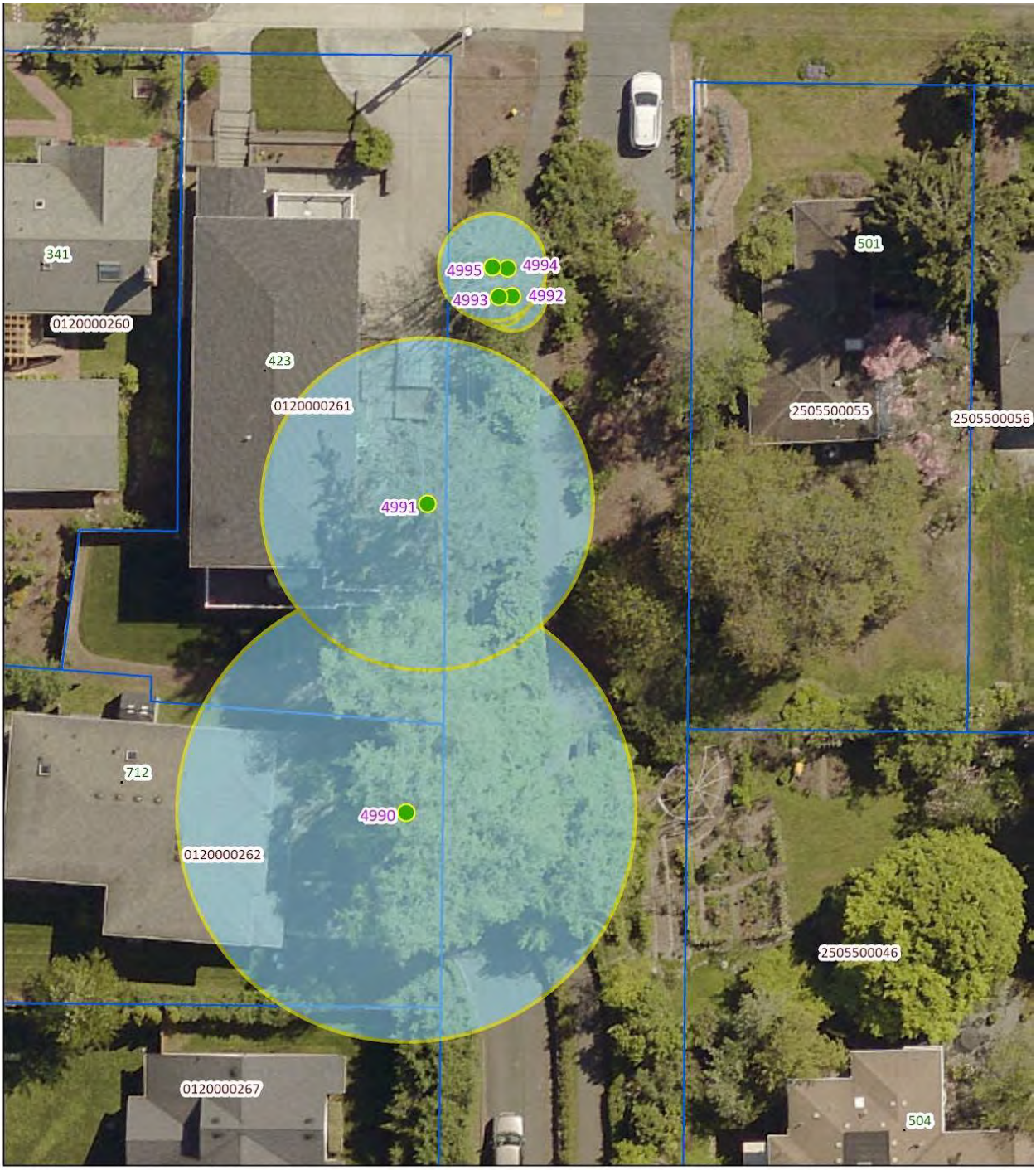
Appendix A: Inventory Site Map

Map 1. Site map showing Tree ID# and locations.

Map 2. Site map showing Tree ID# and Critical Root Zone area.



Tree Inventory

Tree Sites
CRZ
Feet
0 10 20 40

504 7th St S
Kirkland, WA
January 2022

Prepared by:
DAVEY Resource Group

*Tree locations are approximate. Map projections can distort aerial imagery. Aerial imagery is from 2019.

APPENDIX E

DRAINAGE REPORT

City of Kirkland

City of Kirkland

FINAL Technical Information Report
for
5th/8th Watermain Replacement
Kirkland, WA

Prepared by:

This report has been prepared by the staff of DOWL under the direction of the undersigned professional engineer whose stamp and signature appears hereon.

Jason T. Shrope, PE March 2022
W.O. 2028.15134.01

DOWL

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SECTION 1
PROJECT OVERVIEW

This Technical Information Report (TIR) has been prepared for the 5th/8th Watermain Replacement project in Kirkland, Washington. A Site Location Map is presented in Figure 1. This report describes how the project's site improvements comply with sections of the Kirkland Municipal Code regulating stormwater and drainage (Title 15, Chapter 15.52, Surface Water Management). This project will adhere to the 2016 King County Surface Water Design Manual (KCSWDM) and the City of Kirkland Addendum to the 2016 King County Surface Water Design Manual.

This project is a utility maintenance project that proposes to replace 2,170 lineal feet of existing 6-inch asbestos concrete water main with new 16-inch ductile iron water main along 5th Ave S (between 6th Street S and 8th Street S) and along 8th Street S and Railroad Avenue (between 5th Avenue S and Kirkland Avenue). The new alignment of the water main will require the existing storm drain pipe in this area to be relocated. The project includes the replacement of existing pavement and sidewalks. All of the replaced impervious surfaces proposed under this project are directly related to the utility maintenance work. The area of impervious surface to be replaced is approximately 17,972 sf.

The project will include the construction of the following elements:

- Water line replacement
- Relocation/replacement of storm drain pipes and structures
- Replacement of roadway pavement section and sidewalks above utility pipe trenches
- 3" grind and overlay (half width on 8th Street S and Railroad Avenue, full width on 5th Avenue S)

Predeveloped Conditions

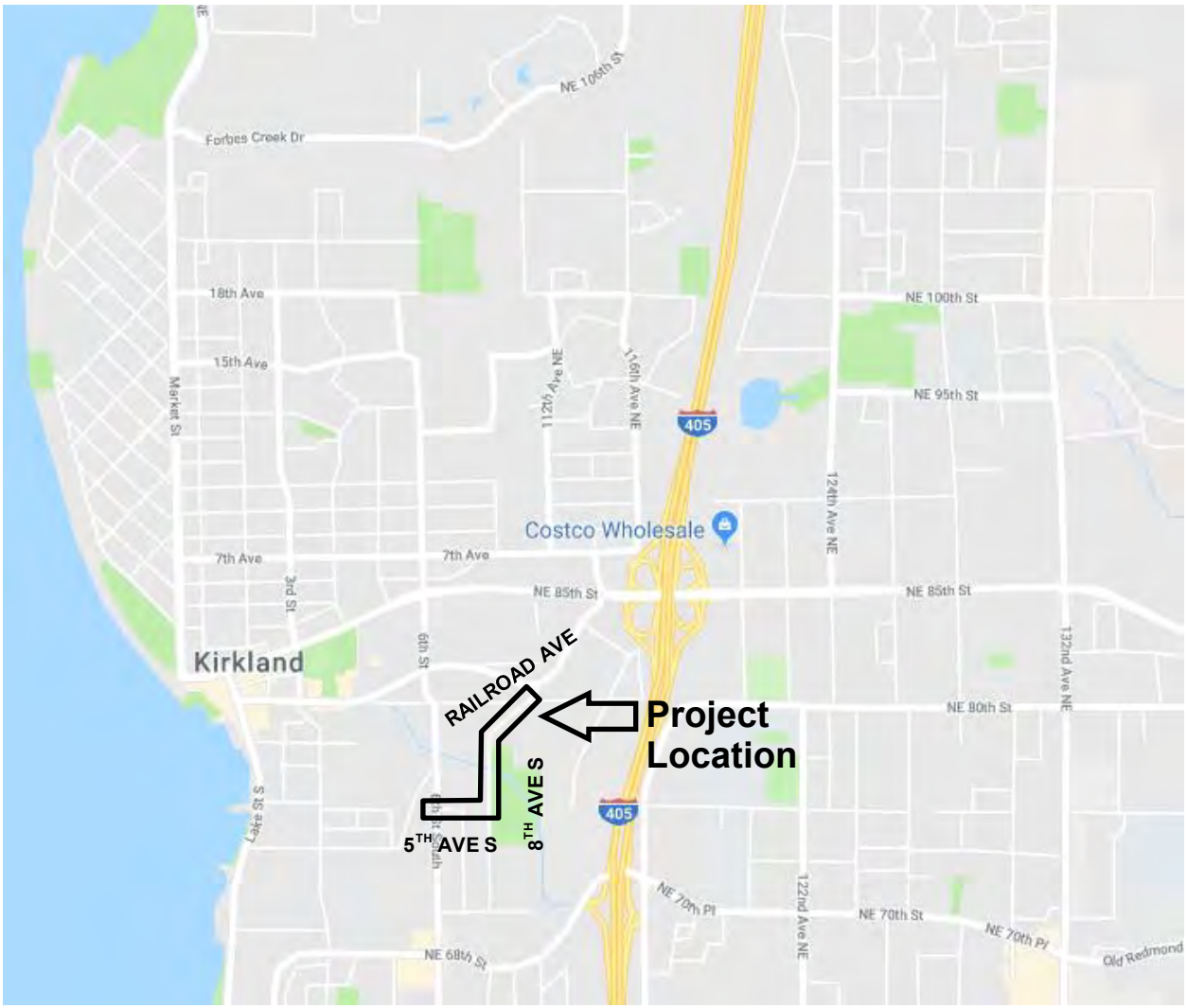
The existing area proposed for utility replacement consists of asphalt pavement and concrete sidewalks and is currently used as a residential street, local arterial, sidewalks, and pathway all fully within the City right-of-way. Stormwater at the project site is collected by catch basins and conveyed to the existing downstream drainage system on 6th Street S.

A soils information report (See Appendix B) is provided for the project and identifies the soil at the site where improvements are proposed as Indianola loamy sand.

Developed Conditions

Utility replacement will occur along 5th Avenue S, 8th Street S, and Railroad Avenue. No new impervious surface will be created by the project. Approximately 1,000 lineal feet of the existing storm drain system will be replaced and relocated, but the existing runoff patterns for the site will be maintained.

FIGURE 1 – SITE LOCATION MAP



SECTION 2
APPLICATION OF MINIMUM REQUIREMENTS

2.1 CORE REQUIREMENTS

The following summary describes how this maintenance project will meet the KCSWDM Core Requirements.

The proposed project is a maintenance project to replace water utility lines. All pavement being replaced is necessary to build the water line and relocate storm drain lines. Replaced pavement for maintenance projects is not classified as Replaced Impervious Surface. Therefore, this project has a total of 0 square feet of New Plus Replaced Impervious Surface.

2.1.1 Core Requirement #1: Discharge at the Natural Location

The operation of the drainage system is not proposed to be modified with this project and existing drainage patterns will be maintained. Surface water runoff from the site is routed to discharge at the natural location.

2.1.2 Core Requirement #2: Offsite Analysis

The project does not change the rate, volume, duration, or location of discharges to and from the project site and therefore is exempt from Core Requirement #2.

2.1.3 Core Requirement #3: Flow Control Facilities

As this is a maintenance project, and the project scope calls only for the replacement of existing impervious surfaces as strictly necessary to install the replaced utilities. Flow control facilities are not required for this project.

2.1.4 Core Requirement #4: Conveyance System

Portions of the existing onsite conveyance system are being reconstructed to replace sections of piping that are failing due to age and rout intrusion. An analysis for conveyance capacity is has been prepared for those sections and is included in Appendix C.

2.1.5 Core Requirement #5: Construction Stormwater Pollution Prevention

Stormwater Site Plans including Erosion and Sediment Control (ESC) are included in the Site Plans in Appendix A. A Construction Stormwater Pollution Prevention (CSWPP) plan will be prepared for the construction of this project.

2.1.6 Core Requirement #6: Maintenance and Operations

Existing drainage systems will continue to be maintained by their respective owners.

2.1.7 Core Requirement #7: Financial Guarantees and Liability

As this project is proposed by the City of Kirkland, financial guarantees are not required.

2.1.8 Core Requirement #8: Water Quality Features

This project is a maintenance project, and all replaced impervious surfaces are directly associated with the utility replacement. Therefore, the project has 0 square feet of New Plus Replaced PGIS and is exempt from Core Requirement #8.

2.1.9 Core Requirement #9: Flow Control BMPs

The project site is 0.8 acres (36,162 SF) and is therefore assessed in accordance with the Large Lot BMP requirements. Flow control BMPs will be applied to the maximum extent feasible.

- Full dispersion is not feasible at the site based on existing development and topography.
- Full infiltration of roof runoff is not applicable as the site does not include any buildings.
- Full infiltration is not feasible at the site based on high water table and poorly drained soils.
- Limited infiltration, bioretention, and permeable pavement are not feasible at the site based on existing development and underlying soils.
- Basic dispersion is not feasible at the site based on existing development and limited right-of-way.
- No native topsoil is proposed to be removed. Native topsoil will be retained to the maximum extent feasible.

2.2 SPECIAL REQUIREMENTS

2.2.1 Special Requirement #1: Other Adopted Area-Specific Requirements

The project is not in a Critical Drainage Area or in an area included in an adopted master drainage plan, basin plan, salmon conservation plan, stormwater compliance plan, flood hazard management plan, lake management plan, or shared facility drainage plan; therefore, Special Requirement #1 does not apply.

2.2.2 Special Requirement #2: Flood Hazard Area Delineation

The project is not located within the flood hazard area of any bodies of water as defined in the King County SWDM; therefore, Special Requirement #2 does not apply.

2.2.3 Special Requirement #3: Flood Protection Facilities

The project does not rely on, modify, or construct an existing or new flood protection facility; therefore, Special Requirement #3 does not apply.

2.2.4 Special Requirement #4: Source Controls

Applicable and appropriate source control measures will be implemented by the contractor for this project.

2.2.5 Special Requirement #5: Oil Control

For roadways, the 2016 KCSWDM defines “high-use sites” as; “The interior of any road intersection and that portion of lanes leading into the intersection subject to braking, turning, or stopping, with a measured ADT count of 25,000 vehicles or more on the main roadway and 15,000 vehicles or more on any intersecting roadway.” The highest traffic count on or near the site is 6th Street S, with an ADT of 11,076; therefore this is not a “high-use site”. Since the project is not located on a “high-use site”, Special Requirement #5 does not apply.

SECTION 3
PROPOSED STORMWATER WORK

This project proposes the replacement of approximately 630 linear feet of 12-inch concrete storm pipe along 5th Avenue S (between 6th Street S and 8th Street S) and 370 linear feet of 12-inch concrete storm pipe along 8th Street S. Along 5th Avenue, the storm pipe is relocated to the north edge of pavement to facilitate the water line replacement and avoid impacts to existing trees along the south side of the street. Between 7th and 8th Street, the storm pipe is being relocated to the north to make way for the new water line. Lastly, on 8th Street, two separate segments of storm pipe will be relocated under the existing gutter so that the water line may be built within the northbound lane.

Note that none of this work will result in any change to the overall operation of the drainage system, the pipes will simply be relocated as necessary to facilitate replacement of the water line, and the existing drainage pattern will be maintained.

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Appendix B

Soils Information

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Custom Soil Resource Report
Soil Map

Map Scale: 1:1,640 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: King County Area, Washington
Survey Area Data: Version 17, Aug 23, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 25, 2020—Jul 27, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AmC	Arents, Alderwood material, 6 to 15 percent slopes	2.7	21.8%
InC	Indianola loamy sand, 5 to 15 percent slopes	9.7	78.2%
Totals for Area of Interest		**12.4**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

King County Area, Washington

AmC—Arents, Alderwood material, 6 to 15 percent slopes

Map Unit Setting

National map unit symbol: 1hmsq
Elevation: 50 to 660 feet
Mean annual precipitation: 35 to 60 inches
Mean annual air temperature: 50 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Arents, alderwood material, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Arents, Alderwood Material

Setting

Landform: Till plains
Parent material: Basal till

Typical profile

H1 - 0 to 26 inches: gravelly sandy loam
H2 - 26 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to densic material
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 16 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 2.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: B/D
Hydric soil rating: No

InC—Indianola loamy sand, 5 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2t635
Elevation: 0 to 980 feet
Mean annual precipitation: 30 to 81 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 170 to 210 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Indianola and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Indianola

Setting

Landform: Eskers, kames, terraces
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy glacial outwash

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 6 inches: loamy sand
Bw1 - 6 to 17 inches: loamy sand
Bw2 - 17 to 27 inches: sand
BC - 27 to 37 inches: sand
C - 37 to 60 inches: sand

Properties and qualities

Slope: 5 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: F002XA004WA - Puget Lowlands Forest
Forage suitability group: Droughty Soils (G002XS401WA), Droughty Soils (G002XN402WA)
Other vegetative classification: Droughty Soils (G002XS401WA), Droughty Soils (G002XN402WA)
Hydric soil rating: No

Minor Components

Alderwood

Percent of map unit: 8 percent
Landform: Ridges, hills
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Nose slope, talf
Down-slope shape: Linear, convex
Across-slope shape: Convex
Hydric soil rating: No

Everett

Percent of map unit: 5 percent
Landform: Kames, eskers, moraines
Landform position (two-dimensional): Shoulder, footslope
Landform position (three-dimensional): Base slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Norma

Percent of map unit: 2 percent
Landform: Depressions, drainageways
Landform position (three-dimensional): Dip
Down-slope shape: Concave, linear
Across-slope shape: Concave
Hydric soil rating: Yes

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Appendix C

Conveyance Capacity Analysis

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PROJECT: 5TH/8TH AVE WATERMAIN JOB: 15134 DATE:
SUBJECT: Stormdrain Capacity Analysis BY: TWN SHEET:

INPUT VALUES
COMPUTED VALUES

Storm: 25 yr P_R :
ar: FLOWS ARE CALCULATED IN WWHM AND IMPORTED
br:
C: (Pavement) (Grass) (Play Field)

LOCATION			DISCHARGE							SYSTEM DESIGN					PROFILE INFORMATION		
									Total	Capacity & Velocity @ Full Flow							
Structure Note #		Loc.	Area to Inlet Sta., A			Flow Time	Tc End	I	Discharge, Qt	Q	Check	Pipe Diam.		V	Pipe L	Pipe Slope	
Inlet	Outlet	On	(ac)	AC	Sum AC	(min)	(min)	(in/hr)	(cfs)	(cfs)	Q	(in)	n	(fps)	(ft)	(ft/ft)	Comments
CB 16335	CB12	8TH ST				6.30	6.30		0.07	5.16	OK	12	0.009	6.56	27	0.0100	
CB12	CB11	8TH ST					6.30		0.07	3.65	OK	12	0.009	4.64	60	0.0050	
CB11	CB8	8TH ST					6.30		0.41	3.68	OK	12	0.009	4.68	67	0.0051	
CB8	CB6	8TH ST					6.30		5.27	13.47	OK	12	0.009	17.11	143	0.0681	
CB6	CB5	5TH AVE					6.30		5.27	12.29	OK	12	0.009	15.61	86	0.0567	
CB5	CB4	5TH AVE					6.30		5.52	7.65	OK	12	0.009	9.72	72	0.0220	
CB4	CB3	5TH AVE					6.30		5.52	7.30	OK	12	0.009	9.27	58	0.0200	
CB3	CB2	5TH AVE	FLOWS ARE CALCULATED IN WWHM AND IMPORTED				6.30		8.45	8.94	OK	12	0.009	11.35	148	0.0300	
CB2	CB1	5TH AVE					6.30		8.68	11.45	OK	12	0.009	14.54	125	0.0492	
CB1	CB 1A	5TH AVE					6.30		8.68	9.32	OK	12	0.009	11.84	31	0.0326	
CB10	CB9	8TH ST				6.32	6.30		3.25	7.30	OK	12	0.009	9.27	12	0.0200	
CB9	CB8	8TH ST					6.30		3.25	7.30	OK	12	0.009	9.27	28	0.0200	
CB3B	CB3A	7TH ST				6.39	6.30		2.93	5.16	OK	12	0.009	6.56	35	0.0100	
CB3A	CB3	7TH ST					6.30		2.93	5.16	OK	12	0.009	6.56	36	0.0100	
CB 16335 AREA	CB 16335	Impervious	0.1000	0.1100		6.30	6.30		0.07								
CB 16335 AREA		Pervious	0.0100			6.30	6.30										
CB 11 AREA	CB11	Impervious	0.1520	1.1320		6.30	6.30		0.34								
CB 11 AREA		Pervious	0.9800			6.30	6.30										
CB 8 AREA	CB8	Impervious	0.7300	5.3500		6.30	6.30		1.61								
CB 8 AREA		Pervious	4.6200			6.30	6.30										
CB 10 AREA	CB10	Impervious	3.3700	8.4300		6.30	6.30		3.25								
CB 10 AREA		Pervious	5.0600			6.30	6.30										
CB 5 AREA	CB5	Impervious	0.2900	0.6000		6.30	6.30		0.25								
CB 5 AREA		Pervious	0.3100			6.30	6.30										
CB 3 AREA	CB3	Impervious	2.1400	5.3400		6.30	6.30		2.06								
CB 3 AREA		Pervious	3.2000			6.30	6.30										
CB#8245 AREA	CB3	Impervious	1.3300	1.4800		6.30	6.30		0.87								
CB#8245 AREA		Pervious	0.1500			6.30	6.30										
CB 1883 AREA	CB2	Impervious	0.2700	0.5400		6.30	6.30		0.23								
CB 1883 AREA		Pervious	0.2700			6.30	6.30										

PROJECT: 5th / 8th Watermain Replacement JOB: 15134 DATE: 2-Mar-22

SUBJECT: Stormdrain Capacity Analysis BY: JTS SHEET:

DIRECT DISCHARGE LINE HYDRAULIC GRADE ANALYSIS

Pipe Segment						Outlet	Inlet	Barrel			Critical	TW	Friction	Entrance	Entrance	Exit	Outlet	Inlet	Appr	Bend	Junc.	HW	HW	Rim	
Outlet Node	Inlet Node	Q	L	Pipe Diam.	n	Inv. Elev.	Inv. Elev.	Area	V	Vel. Head	Depth	Elev.	Loss	HGL Elev.	Head Loss	Head Loss	Contr. Elev.	Contr. Elev.	Vel. Head	Head Loss	Head Loss	Elev.	Depth	Elev.	*Freeboard
		(cfs)	(ft)	(in)		(ft)	(ft)	(sq. ft.)	(fps)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
CB 1A	CB1	8.68	31.0	12	0.009	**176.72**	**177.02**	0.79	11.05	1.90	1.24	**175.04**	0.87	175.91	0.95	1.90	178.76	181.58	-1.90	**0.84**	**0.00**	180.52	3.50	**180.81**	0.29
CB1	CB2	8.68	125.0	12	0.009	**177.02**	**183.96**	0.79	11.05	1.90	1.24	180.52	3.52	184.04	0.95	1.90	186.89	188.49	-1.80	**0.02**	**0.15**	186.87	2.91	**188.54**	1.67
CB2	CB3	8.45	148.0	12	0.009	**184.06**	**190.72**	0.79	10.76	1.80	1.22	186.87	3.95	190.82	0.90	1.80	193.51	195.06	-0.77	**0.08**	**1.13**	195.50	4.78	**197.85**	2.35
CB3	CB4	5.52	58.0	12	0.009	**190.82**	**192.23**	0.79	7.03	0.77	0.99	195.50	0.66	196.16	0.38	0.77	197.31	194.47	-0.77	**0.08**	**0.00**	196.62	4.39	**199.29**	2.67
CB4	CB5	5.52	72.0	12	0.009	**192.33**	**194.00**	0.79	7.03	0.77	0.99	196.62	0.82	197.44	0.38	0.77	198.59	196.24	-0.70	**0.02**	**0.01**	197.93	3.93	**198.92**	0.99
CB5	CB6	5.27	86.0	12	0.009	**194.10**	**195.90**	0.79	6.71	0.70	0.96	197.93	0.89	198.82	0.35	0.70	199.87	198.01	-0.70	**0.02**	**0.00**	199.19	3.29	**200.07**	0.88
CB6	CB8	5.27	143.0	12	0.009	**196.00**	**204.81**	0.79	6.71	0.70	0.96	199.19	1.48	200.67	0.35	0.70	201.72	206.90	0.00	**1.34**	**-4.92**	203.31	-1.50	**213.28**	9.97
CB8	CB11	0.41	67.0	12	0.009	**205.97**	**206.64**	0.79	0.52	0.00	0.27	206.60	0.00	206.61	0.00	0.00	206.62	206.91	0.00	**0.02**	**0.00**	206.93	0.29	**211.64**	4.71
CB11	CB12	0.07	60.0	12	0.009	**206.64**	**207.00**	0.79	0.09	0.00	0.11	207.20	0.00	207.20	0.00	0.00	207.20	207.11	0.00	**1.34**	**0.00**	208.54	1.54	**210.51**	1.97
CB12	CB 16335	0.07	27.0	12	0.009	**207.00**	**207.12**	0.79	0.09	0.00	0.11	208.54	0.00	208.54	0.00	0.00	208.54	207.23	0.00	**0.02**	**0.00**	208.56	1.44	**210.62**	2.06

*** If Freeboard value is positive then the water does not back up and overtop the structure.**

WWHM2012
PROJECT REPORT

Project Name: 5th-8th Watermain Storm Model – CB3
Site Name: Kirkland
Site Address:
City :
Report Date: 1/26/2022
Gage : Seatac
Data Start : 1948/10/01
Data End : 2009/09/30
Precip Scale: 1.00
Version Date: 2021/08/18
Version : 4.2.17

Low Flow Threshold for POC 1 : 50 Percent of the 2 Year

High Flow Threshold for POC 1: 50 year

PREDEVELOPED LAND USE

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	acre
C, Lawn, Flat	3.2
Pervious Total	3.2

Impervious Land Use	acre
ROADS FLAT	2.14
Impervious Total	2.14
Basin Total	5.34

Element Flows To:

Surface	Interflow	Groundwater

MITIGATED LAND USE

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	acre
C, Lawn, Flat	3.2
Pervious Total	3.2

Impervious Land Use	acre
ROADS FLAT	2.14
Impervious Total	2.14
Basin Total	5.34

Element Flows To:
Surface Interflow Groundwater

ANALYSIS RESULTS

Stream Protection Duration

Predeveloped Landuse Totals for POC #1
Total Pervious Area:3.2
Total Impervious Area:2.14

Mitigated Landuse Totals for POC #1
Total Pervious Area:3.2
Total Impervious Area:2.14

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	1.035726
5 year	1.414474
10 year	1.687708
25 year	2.059261
50 year	2.35565
100 year	2.669251

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	1.035726
5 year	1.414474
10 year	1.687708
25 year	2.059261
50 year	2.35565
100 year	2.669251

WWHM2012
PROJECT REPORT

Project Name: 5th-8th Watermain Storm Model – CB5
Site Name: Kirkland
Site Address:
City :
Report Date: 1/26/2022
Gage : Seatac
Data Start : 1948/10/01
Data End : 2009/09/30
Precip Scale: 1.00
Version Date: 2021/08/18
Version : 4.2.17

Low Flow Threshold for POC 1 : 50 Percent of the 2 Year

High Flow Threshold for POC 1: 50 year

PREDEVELOPED LAND USE

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	acre
C, Lawn, Flat	.31
Pervious Total	**0.31**

Impervious Land Use	acre
ROADS FLAT	0.29
Impervious Total	**0.29**
Basin Total	**0.6**

Element Flows To:

Surface	Interflow	Groundwater

MITIGATED LAND USE

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	acre
C, Lawn, Flat	.31
Pervious Total	0.31

Impervious Land Use	acre
ROADS FLAT	0.29
Impervious Total	0.29
Basin Total	0.6

Element Flows To:
Surface Interflow Groundwater

ANALYSIS RESULTS

Stream Protection Duration

Predeveloped Landuse Totals for POC #1
Total Pervious Area:0.31
Total Impervious Area:0.29

Mitigated Landuse Totals for POC #1
Total Pervious Area:0.31
Total Impervious Area:0.29

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	0.131405
5 year	0.175546
10 year	0.206857
25 year	0.248871
50 year	0.281997
100 year	0.316727

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	0.131405
5 year	0.175546
10 year	0.206857
25 year	0.248871
50 year	0.281997
100 year	0.316727

WWHM2012
PROJECT REPORT

Project Name: 5th-8th Watermain Storm Model – CB #8
Site Name: Kirkland
Site Address:
City :
Report Date: 1/26/2022
Gage : Seatac
Data Start : 1948/10/01
Data End : 2009/09/30
Precip Scale: 1.00
Version Date: 2021/08/18
Version : 4.2.17

Low Flow Threshold for POC 1 : 50 Percent of the 2 Year

High Flow Threshold for POC 1: 50 year

PREDEVELOPED LAND USE

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	acre
C, Lawn, Flat	4.62
Pervious Total	4.62

Impervious Land Use	acre
ROADS FLAT	0.73
Impervious Total	0.73
Basin Total	5.35

Element Flows To:
Surface **Interflow** **Groundwater**

MITIGATED LAND USE

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	acre
C, Lawn, Flat	4.62
Pervious Total	4.62

Impervious Land Use	acre
ROADS FLAT	0.73
Impervious Total	0.73
Basin Total	5.35

Element Flows To:
Surface Interflow Groundwater

ANALYSIS RESULTS

Stream Protection Duration

Predeveloped Landuse Totals for POC #1
Total Pervious Area:4.62
Total Impervious Area:0.73

Mitigated Landuse Totals for POC #1
Total Pervious Area:4.62
Total Impervious Area:0.73

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	0.619564
5 year	0.968752
10 year	1.235916
25 year	1.614663
50 year	1.927099
100 year	2.26587

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	0.619564
5 year	0.968752
10 year	1.235916
25 year	1.614663
50 year	1.927099
100 year	2.26587

WWHM2012
PROJECT REPORT

Project Name: 5th-8th Watermain Storm Model – CB10
Site Name: Kirkland
Site Address:
City :
Report Date: 1/26/2022
Gage : Seatac
Data Start : 1948/10/01
Data End : 2009/09/30
Precip Scale: 1.00
Version Date: 2021/08/18
Version : 4.2.17

Low Flow Threshold for POC 1 : 50 Percent of the 2 Year

High Flow Threshold for POC 1: 50 year

PREDEVELOPED LAND USE

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	acre
C, Lawn, Flat	5.06
Pervious Total	5.06

Impervious Land Use	acre
ROADS FLAT	3.37
Impervious Total	3.37
Basin Total	8.43

Element Flows To:

Surface	Interflow	Groundwater

MITIGATED LAND USE

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	acre
C, Lawn, Flat	5.06
Pervious Total	5.06

Impervious Land Use	acre
ROADS FLAT	3.37
Impervious Total	3.37
Basin Total	8.43

Element Flows To:
Surface Interflow Groundwater

ANALYSIS RESULTS

Stream Protection Duration

Predeveloped Landuse Totals for POC #1
Total Pervious Area:5.06
Total Impervious Area:3.37

Mitigated Landuse Totals for POC #1
Total Pervious Area:5.06
Total Impervious Area:3.37

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	1.632524
5 year	2.230179
10 year	2.661434
25 year	3.247976
50 year	3.715937
100 year	4.211134

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	1.632524
5 year	2.230179
10 year	2.661434
25 year	3.247976
50 year	3.715937
100 year	4.211134

WWHM2012
PROJECT REPORT

Project Name: 5th-8th Watermain Storm Model - CB11
Site Name: Kirkland
Site Address:
City :
Report Date: 1/26/2022
Gage : Seatac
Data Start : 1948/10/01
Data End : 2009/09/30
Precip Scale: 1.00
Version Date: 2019/09/13
Version : 4.2.17

Low Flow Threshold for POC 1 : 50 Percent of the 2 Year

High Flow Threshold for POC 1: 50 year

PREDEVELOPED LAND USE

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	acre
C, Lawn, Flat	.98
Pervious Total	**0.98**

Impervious Land Use	acre
ROADS FLAT	0.15
Impervious Total	**0.15**
Basin Total	**1.13**

Element Flows To:

Surface	Interflow	Groundwater

MITIGATED LAND USE

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	acre
C, Lawn, Flat	.98
Pervious Total	0.98

Impervious Land Use	acre
ROADS FLAT	0.15
Impervious Total	0.15
Basin Total	1.13

Element Flows To:
Surface Interflow Groundwater

ANALYSIS RESULTS

Stream Protection Duration

Predeveloped Landuse Totals for POC #1
Total Pervious Area:0.98
Total Impervious Area:0.15

Mitigated Landuse Totals for POC #1
Total Pervious Area:0.98
Total Impervious Area:0.15

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	0.129632
5 year	0.203371
10 year	0.259928
25 year	0.340262
50 year	0.406639
100 year	0.478701

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	0.129632
5 year	0.203371
10 year	0.259928
25 year	0.340262
50 year	0.406639
100 year	0.478701

WWHM2012
PROJECT REPORT

Project Name: 5th-8th Watermain Storm Model – CB1883
Site Name: Kirkland
Site Address:
City :
Report Date: 1/26/2022
Gage : Seatac
Data Start : 1948/10/01
Data End : 2009/09/30
Precip Scale: 1.00
Version Date: 2021/08/18
Version : 4.2.17

Low Flow Threshold for POC 1 : 50 Percent of the 2 Year

High Flow Threshold for POC 1: 50 year

PREDEVELOPED LAND USE

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	acre
C, Lawn, Flat	.27
Pervious Total	**0.27**

Impervious Land Use	acre
ROADS FLAT	0.27
Impervious Total	**0.27**
Basin Total	**0.54**

Element Flows To:

Surface	Interflow	Groundwater

MITIGATED LAND USE

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	acre
C, Lawn, Flat	.27
Pervious Total	0.27

Impervious Land Use	acre
ROADS FLAT	0.27
Impervious Total	0.27
Basin Total	0.54

Element Flows To:
Surface Interflow Groundwater

ANALYSIS RESULTS

Stream Protection Duration

Predeveloped Landuse Totals for POC #1
Total Pervious Area:0.27
Total Impervious Area:0.27

Mitigated Landuse Totals for POC #1
Total Pervious Area:0.27
Total Impervious Area:0.27

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	0.121022
5 year	0.161079
10 year	0.189412
25 year	0.227346
50 year	0.257196
100 year	0.288444

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	0.121022
5 year	0.161079
10 year	0.189412
25 year	0.227346
50 year	0.257196
100 year	0.288444

WWHM2012
PROJECT REPORT

Project Name: 5th-8th Watermain Storm Model – CB8245
Site Name: Kirkland
Site Address:
City :
Report Date: 1/26/2022
Gage : Seatac
Data Start : 1948/10/01
Data End : 2009/09/30
Precip Scale: 1.00
Version Date: 2021/08/18
Version : 4.2.17

Low Flow Threshold for POC 1 : 50 Percent of the 2 Year

High Flow Threshold for POC 1: 50 year

PREDEVELOPED LAND USE

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	acre
C, Lawn, Flat	.15
Pervious Total	**0.15**

Impervious Land Use	acre
ROADS FLAT	1.33
Impervious Total	**1.33**
Basin Total	**1.48**

Element Flows To:

Surface	Interflow	Groundwater

MITIGATED LAND USE

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	acre
C, Lawn, Flat	.15
Pervious Total	0.15

Impervious Land Use	acre
ROADS FLAT	1.33
Impervious Total	1.33
Basin Total	1.48

Element Flows To:
Surface Interflow Groundwater

ANALYSIS RESULTS

Stream Protection Duration

Predeveloped Landuse Totals for POC #1
Total Pervious Area:0.15
Total Impervious Area:1.33

Mitigated Landuse Totals for POC #1
Total Pervious Area:0.15
Total Impervious Area:1.33

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	0.516718
5 year	0.655939
10 year	0.750894
25 year	0.874437
50 year	0.969243
100 year	1.066554

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	0.516718
5 year	0.655939
10 year	0.750894
25 year	0.874437
50 year	0.969243
100 year	1.066554

WWHM2012
PROJECT REPORT

Project Name: 5th-8th Watermain Storm Model – CB16335
Site Name: Kirkland
Site Address:
City :
Report Date: 1/26/2022
Gage : Seatac
Data Start : 1948/10/01
Data End : 2009/09/30
Precip Scale: 1.00
Version Date: 2021/08/18
Version : 4.2.17

Low Flow Threshold for POC 1 : 50 Percent of the 2 Year

High Flow Threshold for POC 1: 50 year

PREDEVELOPED LAND USE

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	acre
C, Lawn, Flat	.01
Pervious Total	**0.01**

Impervious Land Use	acre
ROADS FLAT	0.1
Impervious Total	**0.1**
Basin Total	**0.11**

Element Flows To:

Surface	Interflow	Groundwater

MITIGATED LAND USE

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	acre
C, Lawn, Flat	.01
Pervious Total	0.01

Impervious Land Use	acre
ROADS FLAT	0.1
Impervious Total	0.1
Basin Total	0.11

Element Flows To:
Surface Interflow Groundwater

ANALYSIS RESULTS

Stream Protection Duration

Predeveloped Landuse Totals for POC #1
Total Pervious Area:0.01
Total Impervious Area:0.1

Mitigated Landuse Totals for POC #1
Total Pervious Area:0.01
Total Impervious Area:0.1

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	0.038769
5 year	0.049187
10 year	0.056288
25 year	0.065525
50 year	0.072611
100 year	0.079883

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	0.038769
5 year	0.049187
10 year	0.056288
25 year	0.065525
50 year	0.072611
100 year	0.079883

APPENDIX F

CRITICAL AREAS REPORT

City of Kirkland

City of Kirkland

CRITICAL AREAS REPORT

5th/8th Watermain Replacement

City Project # WAC 1340000

December 2021

Prepared for:

City of Kirkland
123 5th Avenue
Kirkland, WA 98033

Prepared by:

DOWL

8410 154th Ave NE #120
Redmond, WA 98052

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APPENDICES

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1.0 INTRODUCTION

1.1 Purpose

The City of Kirkland (City) proposes a watermain replacement project that involves the following:

1. Replacement of 2,170 lineal feet of existing 6-inch asbestos concrete water main with new 16-inch ductile-iron water main along 5th Avenue S (between 6th Street S and 8th Street S) and along 8th Street S and Railroad Avenue (between 5th Avenue S and Kirkland Avenue).
    a) Full width grind/overlay of 5th Avenue S (between 6th Street S and 7th Street S)
    b) Half-width grind/overlay of 8th Street S (between 5th Avenue S and Kirkland Avenue)
2. Replacement and relocation of 630 lineal feet of 12-inch concrete storm pipe along 5th Avenue S (between 6th Street S and 8th Street S) and 460 lineal feet of 12-inch concrete storm pipe along 8th Street S. In total, 1,090 feet of existing storm drain will be replaced with 907 feet of new storm drain.
3. Restoration of a paved pedestrian footpath along 5th Avenue S right-of-way (between 7th Street S and 8th Street S).

At the request of the City, DOWL has prepared this Critical Areas Report to identify critical areas on site and within up to 300 feet of the project area, as specified by the Kirkland Zoning Code (KZC). This report also identifies potential impacts to critical areas and their buffers that could result from the proposed project. This report has been prepared to satisfy City reporting requirements defined in *KZC 90.110 – Critical Area Report.*

1.2 Project Area Description

The project area is located in Section 8, Township 25N, Range 5E, and is approximately 0.78 acre in size. The project area extends along 5th Avenue S from 6th Street S to 8th Street S and north along 8th Street S and Railroad Avenue from 5th Avenue S to Kirkland Avenue. On 5th Avenue S, the project area is bordered by a large empty lot on the northwest corner, a commercial building on the southwest corner, and single family residences. There is a two-lane road between 6th Street S and 7th Street S, and a narrow paved pathway between 7th Street S and 8th Street S. The pathway is bordered by trees and shrubs on both sides. On 8th Street S and Railroad Avenue, the project area is bordered by single family residences, Everest Park, commercial buildings, and a parking area that provides access to the Cross Kirkland Corridor trail. See Appendix 1, Figure 1 for a vicinity map.

2.0 METHODS

2.1 Desktop Research

Prior to conducting the site visit, DOWL environmental staff performed an in-house review of available data and mapping resources consisting of, but not limited to, the National Wetland Inventory (NWI) map, Natural Resources Conservation Service (NRCS) soil maps, SalmonScape's mapping tool, City of Kirkland critical areas maps, and Google Earth aerial

imagery. The information obtained during DOWL's research identified the location of potential critical areas and was used to supplement the on-site field investigation.

2.2 Field Investigation

During the site visit, DOWL environmental staff traversed the project area assessing on- and offsite conditions. Offsite conditions were observed from the project area except where public access made offsite access possible, such as in Everest Park. A detailed investigation and mapping was not performed for offsite resources.

3.0 IDENTIFICATION OF CRITICAL AREAS

3.1 Desktop Research

One watercourse was identified during DOWL's review of NWI maps, SalmonScape, City of Kirkland maps, and aerial imagery. The watercourse, Everest Creek, is mapped as a riverine, unknown perennial waterway with a permanently flooded water regime (R5UBH). SalmonScape does not map fish within the stream. The Kirkland interactive mapper identifies landslide hazard areas and Everest Creek within the project area, and one piped stream crossing under Railroad Avenue just north of the project area. No federally or state listed or priority species, including species of local importance, were identified in the project area or vicinity by WDFW's Priority Habitats and Species on the Web. No other critical areas were identified within the project area, or within 150 feet for streams or 300 feet for wetlands.

3.2 Field Investigation

DOWL environmental staff conducted a site visit on November 22, 2021. One critical area, Everest Creek, was identified within the project area. See Appendix 2 for photographs of the project area and critical areas discussed below.

3.2.1 Identification of Critical Areas

Most of the project area is contained within the existing roadway. The exception is the portion between 5th Avenue S and 8th Street S where the project area encompasses a narrow (approximately 6-foot-wide) pathway, paved driveways, and vegetated areas on both sides of the pathway. The pathway is bordered by ornamental shrubs and trees including English laurel (*Prunus laurocerasus*), butterfly bush (*Buddleia davidii*), raspberries (*Rubus sp.),* and roses (*Rosa sp.).*

3.2.1.1 Streams

Everest Creek is a perennial stream that crosses the project area under 8th Street S. As shown in *KZC Table 90.65.1*, the buffer for a perennial non-fish bearing stream is 50 feet. Downstream of the project area the stream is piped for approximately 0.45 miles before it flows into Lake Washington. As stated previously, SalmonScape does not map fish presence in Everest Creek. Based on this information it is assumed that Everest Creek is a non-fish bearing stream and the buffer is 50 feet. Within the vicinity of Everest Creek, the project is located entirely within the improved roadway and there is no vegetated stream buffer within the project area.

The stream is unpiped outside of the roadway fill prism, both immediately upstream and immediately downstream of the project area. In the project vicinity, the stream is approximately 2 to 4 feet wide with generally steep but low banks that are undercut in places. There is a sandy, gravelly substrate with some large rocks and large wood in the channel. Upstream of the project area in Everest Park, the forested riparian area is vegetated with native species including salmonberry (*Rubus spectabilis*), snowberry (*Symphoricarpos albus*), western swordfern (*Polystichum munitum*), oceanspray (*Holodiscus discolor*), western red cedar (*Thuja plicata*), black cottonwood (*Populus balsamifera*), and bigleaf maple (*Acer macrophyllum*). Downstream of the project area, the riparian area is forested with western red cedar, bigleaf maple, and Himalayan blackberry (*Rubus armeniacus*) throughout. English ivy (*Hedera helix*) is dense above the left bank but is cleared above the right bank, which is likely maintained by adjacent the property owner.

Another stream was observed approximately 75 feet north of the project area, in a ravine on the north side of the intersection of Railroad Avenue and Kirkland Avenue. It enters the ravine via a culvert and is daylighted for approximately six feet before flowing into another culvert. The riparian area associated with the short length of open channel supports red alder (*Alnus rubra*), beaked hazelnut (*Corylus cornuta*), western swordfern, and horsetail (*Equisetum sp.*), with a small low area vegetated by lady fern (*Athyrium felix-femina*). Outside of the riparian area, the buffer extends to the improved roadway to the east and the Cross Kirkland Corridor trail to the west.

3.2.1.2 Geologically Hazardous Areas

The December 2021 Draft Geotechnical Report written by HWA Geosciences Inc. notes that the project area is located in areas mapped by the City as within or adjacent to potential liquefaction and landslide hazard areas. See this report for further details regarding these areas and any potential project impacts to these areas. These critical areas are not discussed further in this report.

3.2.1.3 Other Critical Areas

No federally or state listed or priority species, including species of local importance, or their habitat were identified in or in the immediate vicinity of the project area. No other critical areas were identified within or in the immediate vicinity of the project area.

4.0 PROPOSED IMPACTS AND CITY REGULATIONS

With the exception of geologically hazardous areas, the only critical area identified within the project area is Everest Creek. The only other critical area identified in the project vicinity, the unnamed stream north of the project area, is entirely outside of the project area and no impacts to that stream or its buffer are proposed.

Pursuant to *KZC 90.35 - Exemptions*, the replacement, installation, or construction of new utility structures and conveyance systems and their associated facilities within existing improved rights-of-way are exempt from the City's critical areas provisions. The replacement waterline will be positioned perpendicular to and above the culverts that conveys Everest Creek beneath the road. All work that will occur within 50 feet of Everest Creek will be contained within the existing

improved roadway. Erosion control and sediment control BMPs will be in place to prevent sediment-laden water from entering the stream. See Appendix 3 for project plans.

5.0 CONCLUSION

No impacts to critical areas or their buffers are proposed as part of the project. Under KZC 90.35 the proposed project is exempt from the City's critical areas provisions because it is a replacement of a utility conveyance system within existing improved right-of-way.

6.0 DISCLAIMER

This report documents the investigation, best professional judgement, and conclusions of the investigators. It is correct and complete to the best of their knowledge. If you have any questions please contact Lizzie Zemke, PWS, at LZemke@dowl.com or 425-947-8523.

7.0 REFERENCES

City of Kirkland. 2021. Interactive Mapping Portal.https://maps.kirklandwa.gov/Html5Viewer. Accessed 11/21/21.

NRCS (Soil Survey Staff, Natural Resources Conservation Service). 2021. Web Soil Survey. United States Department of Agriculture. http://websoilsurvey.sc.egov.usda.gov/. Accessed 11/21/21.

USFWS (U.S. Fish & Wildlife Service). 2021. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington D.C. http://www.fws.gov/wetlands. Accessed 11/21/21.

WDFW (Washington Department of Fish and Wildlife). 2021. SalmonScape online mapping. https://apps.wdfw.wa.gov/salmonscape/map.html. Accessed 11/21/21.

WDFW (Washington Department of Fish and Wildlife). 2021. Priority habitats and species online mapping. https://geodataservices.wdfw.wa.gov/hp/phs/. Accessed 11/21/21.

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APPENDIX 1:
FIGURES

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Proposed Project

N

0 250 500 1,000 Feet

Project Location & Vicinity

5th/8th Watermain Replacement
Critical Areas Report

DOWL

Date: December 2021

Figure 1

K:\28\15134-01\60GIS\ENV\Environmental.aprx Location Vicinity Map
Imagery Layer: Maxar

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APPENDIX 2:
PHOTOS

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Photo 1. Everest Creek upstream of the project area, facing southeast from 8th Street S (Nov 2021).

Photo 2. Everest Creek downstream of the project area, facing northwest from 8th Street S (Nov 2021).

Photo 3. 5th Avenue S facing west toward 6th Street S (Nov 2021).

Photo 4. 8th Street S at the intersection with the 5th Avenue S path facing north (Nov 2021).

Photo 5. Railroad Avenue between 8th St S and Kirkland Ave facing SW (Nov 2021).

Photo 6. Pathway at 5th Avenue S between 7th St S and 8th St S facing east (Nov 2021).

Photo 7. Unnamed stream located north of the project area (Nov 2021).

APPENDIX G

SEPA CHECKLIST

City of Kirkland

City of Kirkland

Environmental Checklist (SEPA)

Purpose of SEPAChecklist

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for non-project proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. BACKGROUND

Name of proposed project, if applicable:

5th/8th Watermain Replacement

Name of applicant:

City of Kirkland

Phone #

425-587-3800

Applicant Address

Kirkland City Hall
123 5th Avenue

Kirkland, WA 98033

Agency requesting checklist:

City of Kirkland

Proposed timing or schedule (including phasing, if applicable):

April 2022 to October 2022. No phasing is proposed.

Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

There are no known future projects associated with this proposal.

List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

Geotechnical Report. December 6, 2021

Critical Areas Report. December 2021

Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

None known.

List any government approvals or permits that will be needed for your proposal, if known.

None

Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

The project is a watermain replacement project that involves the following:

1. Replace 2,170 lineal feet of existing 6-inch asbestos concrete water main with new 16-inch ductile-iron water main along 5th Avenue S (between 6th Street S and 8th Street S) and along 8th Street S and Railroad Avenue (between 5th Avenue S and Kirkland Avenue).

    a. Half-width grind/overlay of 8th Street S (between 5th Avenue S and Kirkland Avenue)

2. Replace and relocate 630 lineal feet of 12-inch concrete storm pipe along 5th Avenue S (between 6th Street S and 8th Street S) and 460 lineal feet of 12-inch concrete storm pipe along 8th Street S. In total, 1,090 feet of existing storm drain will be replaced with 907 feet of new storm drain.

3. Restore a paved pedestrian footpath along 5th Avenue S right-of-way (between 7th Street S and 8th Street S)

Date Checklist Prepared:

March 22, 2022

Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The project is located on 5th Avenue S between 6th Street S and 8th Street S, and on 8th Street S and Railroad Avenue between 5th Avenue S and Kirkland Avenue, in the City of Kirkland, in King County, Washington.

The project is in located Section 8, Township 25N, Range 5E.

B. ENVIRONMENTAL ELEMENTS

---

1. Earth

a. General description of the site (Select 1 or more options)

Flat, Rolling, **Hilly**, Steep slopes, Mountainous, Other (general description):

The project area along 5th Avenue S slopes gently from east to west. 8th Street S is generally flat and Railroad Avenue slopes downhill from (southwest to northeast) to Kirkland Avenue.

b. What is the steepest slope on the site (approximate percent slope)?

The steepest slope occurs at the north end of the project area along Railroad Avenue and is approximately ten percent.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

Most of the project area is confined to existing roadway. HWA GeoSciences, Inc. conducted a geotechnical investigation of the project area in September 2021 and encountered fill below the pavement in most boring locations except for one along 8th Street S just north of 5th Avenue S, where recessional outwash deposits consisting of very silty, fine to medium sand with trace to some gravel were found below the pavement. The Natural Resources Conservation Service (NRCS) maps soil in most of the project area as Indianola loamy sand, 5 to 15 percent slopes. At the north end of the project area along Railroad Avenue, soil is mapped as Alderwood gravelly sandy loam, 8 to 15 percent slopes. No prime farmland is present.

d. Are there surface indications or history of unstable soils

No, none within the project area.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

Excavation will occur within the existing roadways through the project area. The total area of excavation will be approximately 0.41 acre. Along the pathway between 5th Avenue S and 8th Street S, excavation will extend north of the pathway. The purpose of excavation is to access and replace existing water main and storm pipes described in the description of the proposal above. Existing onsite material will be reused, and an amount less than 1,000 CY of imported rock will be used for trench backfill.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Most of the project area is relatively flat, including the only area where vegetation will be cleared, and erosion is unlikely. Standard erosion control BMP's will be in place to prevent erosion.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

The existing project area consists mostly of paved roadway and paved pedestrian path and the same area will be paved following project construction. No new impervious surface is proposed.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

Although erosion risks are minimal, risks will be further reduced by incorporating the following measures:

- The contractor will be required to develop a site-specific temporary erosion and sedimentation control (TESC) plan.
- City of Kirkland TESC requirements will be implemented.
- Industry best practices for TESC will be implemented.

2. AIR

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

The project will result in minor, temporary increases in air emissions during construction, resulting from increased exhaust from construction vehicles and equipment, and potentially from fugitive dust. Following construction, the project will have no impact on emissions.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

There are no known off-site sources of emissions or odor that may affect the proposal.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

All heavy equipment will be factory-fitted with emission control devices and turned off when not in use. BMPs will be utilized during construction to control dust if necessary.

3. WATER

a. Surface Water:

1. Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

Yes, Everest Creek flows west through a culvert under 8th Street South in the project area. The creek flows in a generally northwest direction until it reaches Kirkland Avenue, where it is piped and follows Kirkland Way to where it flows into Lake Washington, approximately 0.75 miles downstream of the site.

2. Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

Yes. The replacement waterline will be positioned perpendicular to and above the culvert that conveys Everest Creek beneath 8th Street South. The distance between the outer edge of project-related disturbance and the creek channel will be less than 200 feet. However, in the immediate vicinity of the creek all work will occur within the roadway.

3. Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

No fill or dredge material will be placed in or removed from surface water or wetlands.

4. Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

No surface water withdrawals or diversions are proposed.

5. Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

No.

6. **Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.**

   No, the project will not discharge waste materials to surface waters. BMPs will be implemented in the vicinity of Everest Creek to prevent any materials from leaving the project site and entering the creek. Straw wattles will be used to contain sediment and prevent it from entering the creek. Construction safety fencing will also line the project area in the vicinity of the creek to prevent equipment or materials from encroaching on the creek.

b. Ground Water

1. **Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.**

   No, groundwater will not be withdrawn at this site, for any type of use.

2. **Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.**

   No waste material will be discharged into the ground following project construction.

c. Water runoff (including stormwater):

1. **Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

   Stormwater runoff is likely given that the project will be constructed in winter and spring. No other runoff is anticipated. Onsite BMPs consisting of straw wattles and catch basin socks will be used so that sediment does not enter the storm drainage system. The water will combine with other site and roadway runoff and will flow downstream.

2. **Could waste materials enter ground or surface waters? If so, generally describe.**

   No.

3. **Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.**

   No, drainage patterns will not be altered by the project.

4. **Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:**

   None. The completed project will not impact runoff or drainage patterns.

4. PLANTS

a. Check the types of vegetation found on the site (Select 1 or more options)

Deciduous tree: alder, maple, aspen, **other**: ornamental street trees

Evergreen tree: fir, cedar, pine, other

Shrubs

Grass

Pasture

Crop or grain

Orchards, vineyards or other permanent crops

Wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other

Water plants: water lily, eelgrass, milfoil, other

Other types of vegetation:

The project is contained within the existing roadway on 8th Street S and Railroad Avenue. Along 5th Avenue S, the project area contains several deciduous street trees and some mowed grass, and the pathway connecting 5th Avenue S to 8th Street S is lined with ornamental shrubs and trees such English laurel (*Prunus laurocerasus*), butterfly bush (*Buddleia davidii*), raspberries (*Rubus* sp.), and roses (*Rosa* sp.).

b. What kind and amount of vegetation will be removed or altered?

Street trees located within the project area will be protected during construction. Ornamental tree and shrub species along the path between 5th Avenue S and will be removed to facilitate the project and will be replaced in kind.

c. List threatened and endangered species known to be on or near the site.

There are no known threatened or endangered plant species on or near the site.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

No planting is proposed.

e. List all noxious weeds and invasive species known to be on or near the site.

The site was not surveyed for noxious weeds and invasive species. Himalayan blackberry (*Rubus armeniacus*), English ivy (*Hedera helix*), and English holly (*Ilex aquifolium*) were observed near the site.

5. ANIMALS

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site. Examples include:

- Birds: hawk, heron, eagle, **songbirds**, other:
- Mammals: deer, bear, elk, beaver, other: **Eastern gray squirrel, raccoon, common rodents**
- Fish: bass, salmon, trout, herring, shellfish, other: none

b. List any threatened and endangered species known to be on or near the site.

No threatened or endangered species are known to be on or near the site.

c. Is the site part of a migration route? If so, explain.

The project site is part of the Pacific Flyway, a major north-south flyway for migratory birds in America, extending from Alaska to Patagonia.

d. Proposed measures to preserve or enhance wildlife, if any:

No measures to preserve or enhance wildlife are proposed.

e. List any invasive animal species known to be on or near the site.

No invasive animal species are known to be on or near the site.

6. ENERGY AND NATURAL RESOURCES

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

None. There are no energy needs associated with the completed project.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

None.

7. ENVIRONMENTAL HEALTH

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

None.

b. Describe any known or possible contamination at the site from present or past uses.

The Department of Ecology's cleanup site search tool does not list any contamination sites in the project area.

c. Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

None. There are natural gas service lines within the project limits, but they will not be affected by the project.

d. Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

During construction, fuels and other construction-related fluids will be stored on existing paved surfaces. Following project construction, no toxic or hazardous chemicals will be stored, used, or produced.

e. Describe special emergency services that might be required.

None.

f. Proposed measures to reduce or control environmental health hazards, if any:

As described in 7.a and 7.a.3 above, mitigation measures will be followed to minimize the risk of release of hazardous materials during project construction. This includes storing equipment, fuel, and other construction-related fluids on existing impervious areas and having a spill prevention plan in place prior to construction.

8. NOISE

a. What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Existing noise in the area includes vehicular traffic, pedestrian traffic, park maintenance, and recreational noise. Other construction noise may be audible in the project area during project construction but will not affect the project.

b. What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indi-cate what hours noise would come from the site.

The project will not impact noise levels in the long-term. During project construction, construction activities during normal construction hours, including truck hauling for equipment and material movement, may have minor short-term impacts on noise in the area. Pavement demolition activities that will require jack hammering will likely be the loudest noise associated with project construction; these will be short duration activities.

c. Proposed measures to reduce or control noise impacts, if any:

Work hour restrictions will be followed, per City of Kirkland code. Construction equipment will be equipped with the latest industry-standard emissions and noise-reduction technologies.

9. LAND AND SHORELINE USE

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The project footprint is contained within existing roadways and a paved walkway. The project will not affect current land uses.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

No.

c. Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

No.

d. Describe any structures on the site.

There is a short (less than 4 foot high) keystone block wall on the north side of the pedestrian pathway between 5th Avenue S and 8th Street S.

e. What is the current zoning classification of the site?

The project will be entirely located within City of Kirkland right-of-way. Zoning classifications include Industrial (LIT), Low Density Residential (RS 7.2 and RS 8.5), Office (PR 5.0), and Park/Open Space (P).

f. What is the current comprehensive plan designation of the site?

Industrial, Low Density Residential, Office, Park/Open Space.

g. If applicable, what is the current shoreline master program designation of the site?

N/A. The project area is outside of shoreline jurisdiction.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

Within the project area, the only critical areas mapped by the City of Kirkland are Everest Creek and a landslide hazard area. Everest Creek is addressed in the December 2021 Critical Areas Report and the landslide hazard area is addressed in the December 2021 Geotechnical Report.

i. Approximately how many people would reside or work in the completed project?

None.

j. Proposed measures to avoid or reduce displacement impacts, if any:

None. The project will not result in displacement impacts.

k. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

None. The project will not impact land uses.

l. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:

The project will not impact agricultural and/or forest lands, so no impact reduction measures are proposed.

10. HOUSING

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

None.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None.

c. Proposed measures to reduce or control housing impacts, if any:

The project will not impact housing, so no measures are proposed.

11. AESTHETICS

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

No new structures are proposed. The block wall along the north side of 5th Avenue S may be replaced if it needs to be removed to facilitate project construction. The wall is less than 4 feet high.

b. What views in the immediate vicinity would be altered or obstructed?

No views will be altered.

c. Proposed measures to reduce or control aesthetic impacts, if any:

None. The project will not result in aesthetic impacts.

12. LIGHT AND GLARE

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

None.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

N/A. The finished project will not result in light or glare.

c. What existing off-site sources of light or glare may affect your proposal?

None.

d. Proposed measures to reduce or control light and glare impacts, if any:

None. No light or glare impacts will occur.

13. RECREATION

a. What designated and informal recreational opportunities are in the immediate vicinity?

The project is in the vicinity of Everest Park and the Cross Kirkland Corridor. The park offers a basketball court, baseball fields, pickleball courts, a playground, picnic shelters, picnics tables, and walking paths. The Cross Kirkland Corridor is a crushed gravel trail through Kirkland that is primarily used for walking, running, and biking.

b. Would the proposed project displace any existing recreational uses? If so, describe.

Everest Park will remain open throughout project construction. There will be a short closure of the north parking lot when construction crosses the driveway. The south parking lot will remain open, and displacement of park visitors is not anticipated.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

None are proposed. One lane of traffic will remain open throughout project construction, which will allow access to the Everest Park parking lots (with the exception of the north parking lot, which may be closed for one to two days when construction blocks the driveway).

14. HISTORIC AND CULTURAL PRESERVATION

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers located on or near the site? If so, specifically describe.

A review of the Department of Archaeology & Historic Preservation's WISSARD database did not identify any known historic or archaeological resources located within the vicinity of the project.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

No evidence of indigenous or historic use or occupation, nor any evidence of burials or abandoned cemeteries was identified within the boundaries of the project. The project is located within previously disturbed soils within a densely developed residential area. An abandoned railway corridor (Burlington Northern Santa Fe Line) which is now a multi-use trail system, is located north of the project area.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

Based on the nature and location of the project, review was limited to the DAHP's WISSARD database and records of previous cultural resources surveys in the vicinity.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

None. No loss, changes to, or disturbance to historic or cultural resources is proposed.

15. TRANSPORTATION

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

The project area includes and will be accessed by means of 5th Avenue S, 8th Street S, and Railroad Avenue. The completed project will not affect street access.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

King County Metro provides pedestrian access to the project vicinity. 6th Street S, the western end of the project area, is served by bus routes 245 and 255. N 68th Street, 0.4 miles south of the project area, is served by bus route 986. NE 85th Street, which is located 0.3 mile north of the project area, is served by bus routes 239 and 250.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

None. The project will not eliminate or construct parking spaces.

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

The project will require impacts to the roadway throughout the project area in order to access the existing watermains and to install the new watermains. The roadways will be reconstructed to match existing conditions.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

None.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No.

h. Proposed measures to reduce or control transportation impacts, if any:

The completed project will have no impacts on transportation. During project construction, one lane of traffic will be closed along 5th Avenue S, 8th Street S, and/or Railroad Avenue, with the closure shifting as construction moves from one end of the alignment to the other. Construction and these lane closures are expected to last from January 2022 to March 2022. No additional measures are proposed because lane closures are needed to complete the work and one lane of traffic will remain open throughout project construction.

16. PUBLIC SERVICES

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

No new services are anticipated to be required as a result of the improvements.

b. Proposed measures to reduce or control direct impacts on public services, if any.

No impacts to public services are anticipated so no measures are proposed.

17. UTILITIES

a. **Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.**

None.

b. **Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.**

None.

Declaration: (Select 1 option)

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

Signature: Lizzie Zemke

Print/Type Name of Signature: Lizzie Zemke

Position and Agency/Organization: Environmental Specialist, DOWL

Email Address: lzemke@dowl.com

Date: March 22, 2022

City: Redmond

State: Washington

Zip: 98052

Country: United States

c. **Supplemental Information for nonproject actions.**

N/A

April 27, 2022

Dan Williams
DOWL
8410 154th Avenue NE, Suite 120
Redmond, WA 98052
dwilliams@dowl.com

Dear Mr. Williams:

Subject: Environmental Determination, File No. SEP22-00107 for 5th / 8th Watermain Replacement

The City has completed its environmental review of your application and has issued a Determination of Non-significance for the proposed project (attached).

Sincerely,

PLANNING AND BUILDING DEPARTMENT

Kelly Wilkinson

Kelly Wilkinson
Planner

Attachment: Environmental Determination

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CITY OF KIRKLAND
Planning and Building Department
123 5th Avenue, Kirkland, WA 98033
www.kirklandwa.gov ~ 425.587.3600

DETERMINATION OF NON-SIGNIFICANCE (DNS)

DATE ISSUED: April 27, 2022
File No.: SEP22-00107
Project Name: 5th / 8th WATERMAIN

City Planner: Kelly Wilkinson
Phone: (425) 587-3264
Email: kwilkinson@kirklandwa.gov

Project Location / Address: Right-of-Way; 5th Avenue S, 8th Street S and Railroad Avenue

Proponent: Dan Williams, DOWL on behalf of the City of Kirkland CIP Team

Project Description: Watermain and storm pipe replacement project

Lead agency is the City of Kirkland

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public upon request.

Comment Period Information:

There is no comment period for this DNS.

Responsible Official:

April 21, 2022

Adam Weinstein, AICP, Planning & Building Director Date
City of Kirkland
Planning & Building Department
123 Fifth Avenue, Kirkland, WA 98033 – 425.587.3600

Appeal Information:

There is no administrative appeal period for this DNS (KMC 24.02.230(a)).

Distribute this notice with a copy of the Environmental Checklist to:

GENERAL NOTICING

- Department of Ecology - Environmental Review
- Muckleshoot Tribal Council - Environmental Division, Tribal Archeologist
- Muckleshoot Tribal Council - Environmental Division, Fisheries Division Habitat
- Cascade Water Alliance – Director of Planning
- Everest Neighborhood Association
- Lake Washington School District No. 414: Budget Manager and Director of Support Services
- Washington State Dept. of Archaeology & Historic Preservation
- King County Dept. of Transportation - Employer Transportation Representative

- Seattle & King County Public Health - SEPA Coordinator
- City of Bellevue - Director, Planning Dept.
- City of Kenmore - Director, Planning Dept.
- City of Bothell - Manager, Planning Dept.
- City of Woodinville - Director, Planning Dept.
- City of Redmond - Manager, Planning Dept.

cc: Applicant
Planning Department File, Case No. SEP22-00107

Distributed by: April 27, 2022

(Karin Bayes, Office Specialist) Date

CITY OF KIRKLAND
PLANNING & BUILDING DEPARTMENT
123 5th Avenue, Kirkland, WA 98033
425.587.3600 ~ www.kirklandwa.gov

Title VI

To request information from this document in another language, please contact the Title VI Coordinator at titlevicoordinator@kirklandwa.gov or (425) 587-3831.

如需此文件中信息的简体中文 版本，请发送电子邮件至 titlevicoordinator@kirklandwa.gov 或拨打 (425) 587-3831 联络 Title VI 协调员。

Чтобы запросить перевод этого документа на по-русски, свяжитесь с координатором по вопросам Раздела VI по электронной почте titlevicoordinator@kirklandwa.gov или по номеру (425) 587-3831.

Para pedir información sobre este documento en español, comuníquese con el coordinador del Título VI escribiendo a titlevicoordinator@kirklandwa.gov o llamando al (425) 587-3831.

Para solicitar informações deste documento em português, entre em contato com o Coordenador do Título VI em titlevicoordinator@kirklandwa.gov ou (425) 587-3831.

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CITY OF KIRKLAND
Planning & Building Department
123 5th Avenue, Kirkland, WA 98033
425.587.3600 ~ www.kirklandwa.gov

MEMORANDUM

To: Adam Weinstein, AICP, SEPA Responsible Official

From: Kelly Wilkinson, Planner

Date: 4/8/2022

File: SEP22-00107

Subject: STATE ENVIRONMENTAL POLICY ACT (SEPA) DETERMINATION
5th / 8th WATERMAIN

GENERAL

The project is a watermain and storm pipe replacement project. The applicant, Dan Williams with DOWL, has proposed the following:

1. Replace 2,170 lineal feet of existing 6-inch asbestos concrete water main with new 16-inch ductile-iron water main along 5th Avenue S (between 6th Street S and 8th Street S) and along 8th Street S and Railroad Avenue (between 5th Avenue S and Kirkland Avenue).

2. Replace and relocate 630 lineal feet of 12-inch concrete storm pipe along 5th Avenue S (between 6th Street S and 8th Street S) and 460 lineal feet of 12-inch concrete storm pipe along 8th Street S.

The project will temporarily impact traffic along 5th Ave S, 8th St S and Railroad Ave. It will also temporarily impact a pedestrian path along 5th Ave S.

See Attachment 1.

ANALYSIS

The SEPA "threshold determination" is the formal decision as to whether the proposal is likely to cause a significant adverse environmental impact for which mitigation cannot be identified. If it is determined that a proposal may have a significant adverse impact that cannot be mitigated, an Environmental Impact Statement (EIS) would be required.

Many environmental impacts are mitigated by City codes and development regulations. For example, the Kirkland Zoning Code has regulations that protect sensitive areas, limit noise, provide setbacks, establish height limits, etc. Where City regulations have been adopted to address an environmental impact, it is presumed that such regulations are adequate to achieve sufficient mitigation [WAC 197-11-660(1)(e) and (g)].

I have had an opportunity to visit the subject property and review the following documents:

- Environmental Checklist dated December 15th, 2021 (see Attachment 2)
- Critical Area Report dated December 2021 (see Attachment 3)
- Geotechnical Report dated December 6th, 2021 (see Attachment 4)

Below is an analysis of key SEPA elements identified by staff.

Transportation

Construction will occur during normal work hours. One lane of traffic will remain open throughout project construction to allow for some traffic flow. An in-progress construction project at 422 6th St S will amplify the effects of the watermain replacement on the neighborhood.

Recreation

The garden and pedestrian pathway on 5th Ave will be temporarily removed. The plants along the pathway will be preserved and replanted after work has completed. See Sheet 46 in Attachment 1.

CONCLUSION

Based on my review of all available information and adopted policies of the City, I have not identified any significant adverse environmental impacts. Therefore, I recommend that a Determination of Non-Significance be issued for this proposed action.

ATTACHMENTS

1. Plan Set dated March 29th, 2022
2. Environmental Checklist dated December 15th, 2021
3. Critical Area Report dated December 2021
4. Geotechnical Report dated December 6th, 2021

☒ I concur ☐ I do not concur

Comments:_____

_____

_____

_____

_____

April 21, 2022
Adam Weinstein, Planning & Building Director Date

cc: Dan Williams, DOWL
George Minassian, City of Kirkland, CIP Team

APPENDIX H

WASHINGTON STATE DEPARTMENT OF HEALTH CONSTRUCTION COMPLETION REPORT FORM

City of Kirkland

City of Kirkland

CONSTRUCTION COMPLETION REPORT FORM

In accordance with WAC 246-290-120 (5), a ***Construction Completion Report*** is required for all approved construction projects. Operators **must** submit a Construction Completion Report to us within sixty (60) days of completion and before use of any water system facility. This includes any source, water quality treatment, storage tanks, booster pump facilities, and distribution projects.

Please type or print legibly in ink:

_____ DOH System ID No.: _____
Name of Water System

_____ DOH Project No.: _____ (if applicable)
Name of Purveyor (Owner or System Contact)

_____ Date Construction Documents Approved by DOH _____ (If applicable)
Mailing Address

_____
City State Zip

PROJECT NAME AND DESCRIPTIVE TITLE: _____

***CHECK ONE*:** ☐ Entire Project Completed. ☐ Description of Portions Completed.

PROFESSIONAL ENGINEER'S ACKNOWLEDGMENT *(Complete items below–Attach additional sheets as needed)*

The undersigned professional engineer (PE), or their authorized agent, has inspected the above-described project which, as to layout, size and type of pipe, valves and materials, reservoir and other designed physical facilities, has been constructed and is substantially completed in accordance with construction documents reviewed by the purveyor's engineer or approved by the Department of Health. In the opinion of the undersigned engineer, the installation, physical testing procedures, water quality tests, and disinfection practices were carried out in accordance with state regulations and principles of standard engineering practice.

I have reviewed the disinfection procedures ☐, pressure test results ☐, and results of the bacteriological test(s) ☐ for this project and certify that they comply with the requirements of the construction standards/specifications approved by the Department of Health. (Check all boxes that apply that are consistent with the nature of the project.)

This project changes the physical capacity of the system to serve consumers. The system is now able to serve _____ equivalent residential units (ERUs.) ☐ Not applicable

P.E.'s Seal

_____
Date Signed

_____
Name of Engineering Firm

_____
Name of PE Acknowledging Construction

_____
Mailing Address

_____
City State Zip

_____
Engineer's Signature

State/Federal Funding Type (if any) _____

Please return completed form to your regional office checked below.

☐ **NWRO Drinking Water**
Department of Health
20425 72nd Ave. S, Ste 310
Kent, WA 98032-2388
253-395-6750

☐ **SWRO Drinking Water**
Department of Health
PO Box 47823
Olympia, WA 98504-7823
360-236-3030

☐ **ERO Drinking Water**
Department of Health
16201 E. Indiana Ave, Suite 1500
Spokane Valley, WA 99216
509-329-2100

For people with disabilities, this document is available on request in other formats. To submit a request, please call 1-800-525-0127 (TDD/TTY call 711).

The operator must attach a completed Water Facilities Inventory (WFI) form in accordance with WAC 246-290-120(6), if applicable. Contact your regional office for WFI forms or additional Construction Completion Report forms.

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APPENDIX I

GEOTECHNICAL REPORT

City of Kirkland

City of Kirkland

FINAL GEOTECHNICAL REPORT
5th Ave S / 8th Street S Watermain Replacement
Kirkland, Washington
HWA Project No. 2021-089-21

Prepared for

DOWL inc.

December 6, 2021

HWA GeoSciences Inc.
DBE/MWBE

Geotechnical Engineering
Pavement Engineering
Geoenvironmental
Hydrogeology
Inspection & Testing

HWA GEOSCIENCES INC.
DBE/MWBE

December 6, 2021
HWA Project No. 2021-089-21

DOWL Engineers, Inc
8410 154th Avenue NE, Suite 120
Redmond, Washington 98052

Attention: Dan Williams, P.E.

SUBJECT: Final Geotechnical Report
5th Avenue S & 8th Street S Watermain Replacement
Kirkland, Washington

Dear Mr. Williams:

As requested, HWA GeoSciences Inc. (HWA) has performed geotechnical engineering evaluations for the 5th / 8th Watermain Replacement Project in Kirkland, Washington. The objective of this work was to evaluate the subsurface conditions along the alignment and provide recommendations for design and construction of the proposed replacement of water lines and storm drains along 5th Avenue S (between 6th Street S and 8th Street S) and along 8th Street S and Railroad Avenue (between 5th Avenue S and Kirkland Avenue). In addition, full width and half-width grind/overlay pavement improvements are proposed for 5th Avenue S (between 6th Street S and 7th Street S) and 8th Street S (between 5th Avenue S and Kirkland Avenue), respectively. Installation of the new mains will require excavations for main replacement within areas that are noted on City of Kirkland critical areas mapping as within or adjacent to potential liquefaction and landslide hazard areas.

The attached draft geotechnical report summarizes the results of our study and presents our conclusions and recommendations.

We appreciate the opportunity to provide geotechnical engineering services on this project. If you have any questions regarding this draft report or require additional information or services, please contact the undersigned at your convenience.

Sincerely,

HWA GEOSCIENCES INC.

Steven E. Greene, L.G., L.E.G.
Principal Engineering Geologist

Michael Place, P.E.
Senior Geotechnical Engineer

Enclosure: Final Geotechnical Report

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FINAL GEOTECHNICAL REPORT
5TH AVENUE S & 8TH STREET S WATER MAIN REPLACEMENT
KIRKLAND, WASHINGTON

1. INTRODUCTION

1.1 GENERAL

This report summarizes the results of the geotechnical study conducted in support of design for the 5th / 8th Water Main Replacement Project in Kirkland, Washington. The purpose of this study was to evaluate the soil and ground water conditions along the project alignment and provide geotechnical recommendations for design and construction for replacing and upsizing the existing water mains, storm drains, and roadway rehabilitation.

1.2 PROJECT UNDERSTANDING

We understand that the City Kirkland intends to replace 2,170 lineal feet of existing 6-inch asbestos concrete water main with new 16-inch ductile iron (DI) piping along 5th Avenue S (between 6th Street S and 8th Street S) and along 8th Street S and Railroad Avenue (between 5th Avenue S and Kirkland Avenue). The project also includes assessment of the feasibility of the replacement and relocation of 630 lineal feet of 12-inch concrete storm pipe along 5th Avenue S (between 6th Street S and 8th Street S), and 370 lineal feet of 12-inch concrete storm pipe along 8th Street S. Work along 5th Avenue S will also include restoration of a pedestrian footpath within a right-of-way between 7th Street S and 8th Street S. In addition, full width and half-width grind/overlay pavement improvements are proposed for 5th Avenue S (between 6th Street S and 7th Street S) and 8th Street S (between 5th Avenue S and Kirkland Avenue), respectively. We further understand that installation of the new mains will require excavations for main replacement within areas that are noted on City of Kirkland critical areas mapping as within or adjacent to potential liquefaction and landslide hazard areas. The approximate location of the project site is shown on the Site Vicinity Map, Figure 1. Figures 2A, 2B, and 2C show the alignment where the new facilities will be located.

2. FIELD AND LABORATORY TESTING

2.1 SUBSURFACE EXPLORATIONS

2.1.1 Borings

Four borings, designated BH-1 through BH-4, were drilled along the alignments to provide information regarding soil and ground water conditions. The borings were drilled and sampled to depths ranging from approximately 16½ to 21½ feet. The locations of these borings are shown on Figure 2.

The borings were drilled on September 8, 2021, by Geologic Drill, Inc. under subcontract to HWA. The borings were drilled using the hollow-stem auger drilling technique using a bobcat mounted mini-track rig. One of the borings (BH-2) was completed as a 2-inch diameter monitoring well. Continuous monitoring of ground water level over a period of up to six months using a ground water monitoring transducer began on September 8, 2021, and HWA will retrieve data from the transducer at the end of the monitoring period.

Sampling in the soil borings was performed using Standard Penetration Test (SPT) methods. This includes driving a 2-inch outside diameter split-spoon sampler into the bottom of the borehole at selected depths with a 140-pound automatic hammer. During the SPT, samples were obtained by driving the sampler 18 inches with the hammer free-falling 30 inches. The number of blows required for each 6 inches of penetration was recorded. The N-value (or resistance in terms of blows per foot) is defined as the number of blows recorded to drive the sampler the final 12 inches. This resistance provides an indication of the relative density of granular soils and the relative consistency of cohesive soils. If a total of 50 blows was recorded within a single 6-inch interval, the test was terminated, and the blow count was recorded as 50 blows for the number of inches of penetration achieved.

Each of the explorations was completed under the full-time observation of a geologist from HWA. Pertinent information including soil sample depths, stratigraphy, and soil engineering characteristics was recorded as the explorations were advanced. Soils were classified in general accordance with the classification system described in Figure A-1, which also provides a key to the exploration log symbols. The exploration logs are presented on Figures A-2 through A-5.

The stratigraphic contacts shown on the exploration logs represent the approximate boundaries between soil types; actual transitions may be more gradual. The ground water conditions depicted are only for the specific date and location reported and, therefore, are not necessarily representative of other locations and times.

2.1.2 **Pavement Coring**

Pavement layer thicknesses and shallow subgrade support conditions were investigated in six, 4-inch diameter pavement cores, performed on September 28, 2021. The approximate locations of the pavement cores are shown on the Site and Exploration Plans, Figures 2A through 2C. Pavement coring and subsurface explorations through each core hole were performed by two geologists from HWA. All core holes were backfilled with compacted gravel and patched with Aquaphalt. Photographic logs of each pavement core are presented in Appendix A, Figures A-6 through A-11. Photographs of the core locations are shown on Figures A-12 through A-17. Table 1 below summarizes thicknesses encountered in the pavement cores, as well as notes regarding subgrade support.

TABLE 1. PAVEMENT CORE RESULTS.

Designation	Location	HMA Thickness, in.	Crushed Base Thickness, in.	Notes
Core-1	5th Ave S., EB / 5½ feet from curb	4½-inches 2 lifts: 2¼ x 2¼	2*	Medium dense, very silty fine sand with gravel (subgrade).
Core-2	5th Ave S., WB / 3½ feet from Centerline	8¼ Inches 4 Lifts: 1½ x 1½ x 2¼ x 3	2*	Dense, silty sand with gravel and cobbles (subgrade).
Core-3	8th St S., NB / 5 feet from curb	4 Inches 2 lifts: 1½ x 2½	3 CSTC	Dense, silty sand with gravel(fill) over stiff sandy silt (subgrade).
Core-4	8th St S., NB / 5 feet from curb	3½ Inches 2 lifts: 2 x 1½	3 CSTC	Very dense silty sand (fill) over medium dense poorly graded sand with silt (subgrade).
Core-5	8th St S., NB / 4½ feet from Fog line	3½ Inches 2 lifts: 1 x 2½	4*	Dense, poorly graded sand with silt (subgrade).
Core-6	Railroad Ave., NB / 5½ feet from Fog line	5½ Inches 3 Lifts: 1 x 2 x 2½	2 CSTC 3½ CSBC	Medium dense, poorly graded sand with silt and cobbles (subgrade).

Notes: * = HMA underlain by thin veneer of fill consisting of dense to very dense, silty sand with gravel.
CSTC = crushed rock top course
CSBC = crushed rock base course

2.2 LABORATORY TESTING

Laboratory tests were conducted at HWA's laboratory in Bothell, Washington, on selected samples to determine relevant index and engineering properties of the soils encountered at the site. The tests included visual classification, natural moisture content, grain size distribution, and Atterberg Limits. The tests were conducted in general accordance with appropriate American Society of Testing and Materials (ASTM) standards. The test results are presented in Appendix B, and/or displayed on the exploration logs in Appendix A, as appropriate.

3. SITE CONDITIONS

3.1 SITE TOPOGRAPHY

The project is located along the slope of glacial upland area southeast of downtown Kirkland, situated for the most part west of Everest Park, in Kirkland, Washington. The project is located along an arterial street having two paved traffic lanes. From north to south, the alignment gradually climbs upward to the south with the lowest point of the project being at the intersection of Railroad Ave and Kirkland Ave at the north end.

3.2 GENERAL GEOLOGIC CONDITIONS

The project is located within the Puget Lowland. The Puget Lowland has repeatedly been occupied by a portion of the continental glaciers that developed during the ice ages of the Quaternary period. During at least four periods, portions of the ice sheet advanced south from British Columbia into the lowlands of Western Washington. The southern extent of these glacial advances was near Olympia, Washington. Each major advance included numerous local advances and retreats, and each advance and retreat resulted in its own sequence of erosion and deposition of glacial lacustrine, outwash, till, and drift deposits. Between and following these glacial advances, sediments from the Olympic and Cascade Mountains accumulated in the Puget Lowland. As the most recent glacier retreated, it uncovered a sculpted landscape of elongated, north-south trending hills and valleys between the Cascade and Olympic Mountain ranges. This landscape is composed of a complex sequence of glacial and interglacial deposits.

Geologic information for the project area was obtained from the *Geologic Map of the Kirkland Quadrangle, Washington* (James P. Minard, 1983). According to this map, near-surface deposits at the project site consist of either glacial till or advance outwash. Glacial till is comprised of a very dense, homogeneous mixture of gravel, sand, silt, sand, clay, also referred to as hardpan. Till materials are glacially transported and deposited under ice. Advance outwash deposits consist of dense to very dense, brown, or gray, clean to silty, fine to coarse sand, and are locally gravelly. In some areas, thin layers of silt are interbedded in the sand, especially low in the section. Fine silty to clean, pebbly sand with an increasing gravel component higher in the section. Distinctive features of the outwash are its sorting, cross and horizontal stratification, and cut and fill structures. Locally, some of the sediments are stained by iron oxide precipitated from ground water. Fine grained sand and some silt are common in the lower part of the unit but occur sparingly in the upper part. Locally, glacial till is relatively impervious and may act as a perching layer impeding groundwater seepage. Regionally, Advance outwash serves as a major aquifer.

Review of pre-existing subsurface information developed in 1964 by Metropolitan Engineers for King County for the design and construction of the Eastside Interceptor (King County regional gravity sewer line) indicate that the subsurface conditions range from fill over alluvium at the north end near Kirkland Ave (B-14), that transitions to alluvium over hard silts and clays (B-15), to fill over hard clay in the south end near the intersection of 5th Ave S. and 6th Street S. (B-16).

Groundwater was encountered in the shallow alluvial soils. Where clay soils were encountered at shallow depth, groundwater was not observed (Metropolitan Engineers, 1964). The logs are compiled in Appendix C. The approximate locations of these borings are shown on Figure C-1.

3.3 SUBSURFACE CONDITIONS

Our interpretations of subsurface conditions are based on a review of available geologic and geotechnical information for the project site, as well as our field explorations. The results of our explorations indicate that the project site is underlain by a sequence of fill/alluvium, recessional outwash, glaciolacustrine and advance outwash deposits. Brief descriptions of the major soil units observed in our explorations are presented below in order of deposition, beginning with the most recently deposited.

- **Fill** – Fill was encountered near the surface beneath the asphalt concrete in all borings except BH-3. In those borings, the fill immediately below the pavement consisted of medium dense to dense, olive-gray, sandy, crushed gravel road base aggregate. This material layer varied in thickness from less than one foot in BH-1 to about 3½ feet in BH-2. In BH-1, fill below the aggregate base consisted of dense to medium dense, silty sand that was about 14½ feet thick. In BH-2, loose, silty sand to poorly graded sand with silt extended from about 4 to 10 feet, which we interpret to be embankment backfill for the creek culvert located about 20 feet to the north. At BH-4, fill consisted of dense silty sand with a gravel layer about 2½ feet thick placed directly over native glaciomarine subgrade.

- **Alluvium** – Alluvial soils were encountered below the base of the fill layer in boring BH-2. The alluvium consisted of loose, brown to olive brown, silty sand with organics. This material was deposited by a local creek which has been culverted through the road embankment proximal to this location.

- **Recessional Outwash** – Recessional outwash deposits were encountered below the pavement in boring BH-3 and consisted of medium dense, yellow to olive-brown, very silty, fine to medium sand with trace to some gravel. At this location, the recessional outwash was slightly more than 17 feet thick and overlies advance outwash soils. These deposits can vary markedly in relative density over short distances and can easily be excavated with backhoes. Excavations into recessional outwash will not stand vertical without support.

- **Advance Outwash** – Advance outwash deposits were encountered below fill or recessional outwash in borings BH-1 and BH-3, respectively, and consisted of medium dense to very dense, very silty, fine to medium sand with trace gravel. These deposits have high shear strengths as they have been densified by the weight of the glacial ice during the most recent glacial advance. BH-1 and BH-3 were terminated within this deposit at a depth of about 21½ and 26½ feet, respectively.

- **Lacustrine** – Below the alluvium in boring BH-2 and fill in BH-4, lacustrine deposits were observed at depths of about 12½ and 5 feet, respectively. These soils were deposited in slack water lake environment prior to the Vashon Stade of glaciation. In BH-2, the lacustrine deposits consisted of very stiff to hard, gray, lean clay, with scattered organics. In BH-4, the lacustrine deposits consisted of hard olive brown to gray, sandy silt to lean clay. BH-2 and BH-4 were terminated within this deposit at a depth of about 20 and 16½ feet, respectively.

3.4 GROUND WATER CONDITIONS

Ground water seepage was observed in all borings except BH-4 during drilling. Ground water observed in BH-1 and BH-3 was within fill or recessional outwash overlying advance outwash. The water observed in boring BH-2 is perched in permeable soils, consisting of fill and alluvium situated atop low permeability glaciolacustrine deposits. Ground water depths measured at the time of drilling range from 10 to 12½ feet below ground surface (bgs). It is important to note that the stabilized ground water levels are expected to be higher than those observed during drilling.

The ground water level at BH-2, located at the creek culvert crossing, as measured in the well on September 8, 2021, was 11.6 feet below the ground surface. Ground water data collected by the transducer installed in BH-2 from September 8, 2021, to November 1, 2021, is presented in Figure 4. The data indicates localized rapid response to a major storm event that induced a rapid rise in ground water of almost 2 feet from October 29 to November 1.

3.5 GEOLOGICALLY HAZARDOUS AREAS

Geologically Hazardous Areas as defined in City of Kirkland Code (KZC) Chapter 85.07 "*applies to any property that contains any of the following including those shown on critical areas maps relating to this chapter entitled "Landslide Susceptibility" and "Liquefaction Potential"*. A pre-project GIS assessment of the project alignment was undertaken by the City of Kirkland indicate that portions of the project alignment are located within a mapped Moderate Landslide Hazard Potential. In addition, portions of the project alignment are located within 50 feet of a mapped High liquefaction potential area and within a mapped Medium/Mixed Liquefaction Potential Area. This section of our report is provided to meet the requirements for geotechnical reports provided in COK 85.15 associated with geologically hazardous areas. Portions of the pre-project assessment are reproduced in Appendix D, Figures D-1 through D-6.

3.5.1 Landslide Hazard Area

Section 85.10 of the KZC defines Landslide Hazard Areas as:

"Areas at risk of movement due to a combination of geologic, topographic, and hydrologic factors. This includes high and moderate landslide hazard areas."

Portions of the project alignment are mapped as being within a moderate landslide hazard area and within 50 feet of a high landslide hazard area according to the map provided by the City of Kirkland as part of their CIP pre-project GIS assessment of geological hazard shown on Figures D-1 through D-3.

Railroad Ave from Kirkland Ave to Everest Park – The project alignment commences at the intersection of Railroad Avenue and Kirkland Avenue where the roadway proceeds southwest and climbs uphill from Kirkland Avenue to Everest Park. The roadbed is cut into the hillside and bordered on the northwest and southeast by slopes inclined uphill to the southeast and downslope to the northwest. The descending slope below the roadway to the northwest was modified in the past to accommodate a railbed now currently occupied by the Cross Kirkland Corridor Trail (See Figure D-1). Visual assessment of these areas proximal to the project alignment revealed no indications of sloughing or deep-seated slope instability in the slopes above the road or below from the trail. Locally some slope areas, most particularly below the roadway, exhibited shallow soil creep typically manifested by slopes underlain by granular outwash type soils. Although soil creep of the hillslope and trail embankment is expected to continue, the process is gradual with the potential for shallow colluvial slides or erosion occurring if the area is denuded of vegetation and tree canopy. The proposed improvements consist of replacement of water main, storm piping, and pavement repair within the roadway prism and do not include any alteration to the existing hillslopes. Provided construction of the utility upgrades follows the recommendations in this report, the improvements will not negatively impact the local slope stability.

Everest Creek Crossing – Immediately south of the north parking lot at Everest Park, Everest Creek is conveyed through the roadway embankment via culvert (See Figure D-2). A relatively new HMA patch covers the crossing area suggesting that the culvert piping and watermain was upgraded recently. East and west of the roadway embankment the creek is confined to a broad channel with moderate to steeply inclined slopes. Locally, the stream banks are vegetated and support deciduous trees. Some evidence of shallow soil creep and sloughing is apparent as would be expected along the banks of a perennial stream. However, the proposed improvements do not include any alteration of the stream channel or embankment slopes. Provided construction of utility upgrades follow the recommendations of this report, stability of the existing stream channel will not be negatively affected.

5th Avenue Alleyway – At the south end of the project the alignment turns 90 degrees to the west following the paved pathway along the easement of 5th Ave S connecting 8th Street S. with 7th Street S (see Figure D-3). The pathway is separated from the adjacent residential lots by a hedge on the north side and fencing on the south. Grade separation along the northwest portion of the pathway is maintained by a short (<4 foot high) keystone block wall. The wall appears to be functioning adequately at the time of our inspection. Should the wall need to be removed and replaced to accommodate a proposed storm drain upgrade then design should include provision for regrading and or wall replacement as appropriate. While we do not consider this feature to be a potential landslide hazard, an engineered replacement of the wall, if required will serve to increase local slope stability, if properly designed.

3.5.2 Potential Seismic Hazards

Seismic hazard areas are defined in COK Code Section 85.10 as; "*Those areas subject to severe risk of earthquake damage as a result of seismically induced ground shaking, slope failure, settlement, or soil liquefaction, which typically occurs in areas underlain by cohesionless soils of low density, usually in association with a shallow groundwater water"*. According to the Kirkland Zoning Code Geologically Hazardous Mapping, two locations along the project alignment are situated within a Medium/Mixed

Liquefaction Potential Area and one location within 50 feet of a High Liquefaction Potential Area as shown on Figures D-4 through D-6 in Appendix D.

3.5.3 High Liquefaction Potential Area

Everest Creek Undercrossing – The project alignment crosses Everest Creek south of the north parking lot at Everest Park. At that location, the creek is conveyed through the 8th Street S. roadway embankment by a pair of corrugated steel pipes. Below the toe of the embankment in both the downstream and upstream directions, the floodplain of the stream is mapped as a High Liquefaction Potential Area as shown on Figure D-4. Subsurface conditions inferred from boring BH-2 indicates that at stream level alluvial soils are underlain by stiff clay soils. As such, we would expect that local response to strong ground shaking would be sloughing of the stream channel walls where they are composed of loose, saturated granular soils, we do not expect the underlying clay soils that likely form the base of the stream channel to liquefy. The roadway embankment at the creek crossing is comprised of about 3½ feet of medium dense crushed gravel fill over about 8½ feet of loose, silty granular fill and alluvial soils over very stiff clay. When saturated, the low-density soil layers at this location may potentially be liquefiable and subject settlement and lateral spreading, most likely in the downstream direction. Based on our design calculation we anticipate that vertical settlement would be less than 3-inches in magnitude and that lateral spreading of the road shoulder downstream would likely be less than 6-inches in magnitude. Replacement of the watermain will require the removal and replacement of portions of the existing potentially liquefiable embankment soils with properly compacted structural fill that are resistant to spreading and settlement. However, the watermain replacement is not anticipated to negatively impact the potential liquefaction and lateral spreading issues in or around the project area.

3.5.4 Medium/Mixed Liquefaction Potential Areas

Railroad Ave from Kirkland Ave to CKC Trail Shelter – The portion of the alignment situated at the north end of the alignment from Kirkland Ave to the CKC Trail shelter is mapped as a Medium/Mixed Liquefaction Potential Area (See Figure D-5) At this location, subsurface information from HWA boring BH-1 and boring B-14 for the Eastside Interceptor (Metropolitan Engineers, 1965) indicate dense to medium dense, silty sand fill or alluvial soils at relatively shallow depth. When saturated, low density soil layers at this location are potentially liquefiable and subject settlement and lateral spreading where unconfined. Installation of the new watermain and associated storm drains in this area will not increase the potential for liquefaction in this area than there currently is at present. In fact, local rehabilitation of underground utilities will require removal of loose subsoils and replacement with properly compacted structural fill that is less prone to liquefaction.

5th Ave S / 6th Street S Intersection – The portion of the project alignment at the intersection of 5th Ave S with 6th Street S is mapped as Medium/Mixed Liquefaction Potential Area (See Figure D-6). However, the boring conducted as part of this project (BH-4) and the boring conducted for the Eastside Interceptor (Metropolitan Engineers, 1965), situated approximately within 6th Street S. (B-16) indicate that dense silty sands and stiff to hard clay soils are present at relatively shallow depths. Shallow groundwater was not observed in either boring at the time of drilling. In our opinion, these soils exhibit very low potential for liquefaction and construction of proposed utility upgrades will not result in an increased hazard potential.

4. CONCLUSIONS AND RECOMMENDATIONS

4.1 GENERAL

The results of our studies indicate that the ground conditions are suitable for traditional open trench construction. We anticipate that the existing trench backfill around the pipe is loose to medium dense. Depending upon location, depth of cut and time of year, excavations along 8th Street S will likely encounter the ground water table and dewatering would be required to maintain trench base/sidewall stability. For open excavations, the Contractor will need to provide adequate shoring and dewatering to provide stable excavations for workers to enter during pipe installation.

The project alignment passes through or is adjacent to areas mapped as potential landslide and liquefaction hazard areas. In our opinion, the improvements described in this report, if constructed in accordance with the recommendations herein, will not result in an increase in hazard potential and may locally serve to decrease susceptibility to the mapped hazards.

Full width overlay is recommended to rehabilitate the pavement along 5th Avenue S. In our opinion, overlay of the northbound lane of 8th Street S is not adequate for pavement rehabilitation and this section should be reconstructed as described in Section 4.4.2 below.

4.2 OPEN-CUT EXCAVATIONS

We understand open-cut trenching will be used to replace the watermain and storm drain alignments on 8th street S and 5th Avenue S, as well as to install the storm line in the alley (5th Ave S) between 8th Street S and 6th Street S.

4.2.1 Excavation and Temporary Shoring

Trench excavations for the pipelines can be accomplished with conventional excavation equipment such as backhoes and trackhoes. Trench excavation should be made with a smooth-edge (toothless) bucket or a bucket with a plate welded over the teeth to minimize disturbance to the pipe subgrade. Although not reported on the exploration logs, there is a potential for oversize objects, such as boulders or buried logs, to be encountered in the excavations.

All temporary cuts more than 4 feet in height should be sloped in accordance with Part N of WAC (Washington Administrative Code) 296-155 or should be temporarily shored. Trench support can be achieved using a trench box, augmented as necessary with steel sheets and struts. Caving of the sidewalls is anticipated, and temporary shoring will be necessary to limit the extents of the excavation.

4.2.2 **Dewatering**

Based on the transducer data, ground water level has fluctuated between a depth of 9 and 11 feet below ground surface in the monitoring well at BH-2. Ground water was observed at depths of 10 to 12½ feet bgs while drilling in BH-1 and BH-3; however, ground water level observations made during drilling are often lower and are less reliable than the stabilized ground water levels.

Moderate to rapid ground water seepage can be expected on top of the glaciolacustrine soils; however, we expect that the use of sumps and trash pumps may adequately dewater short sections of shallow open trenches.

Significant ground water flows are likely from the backfill of existing utility trenches.

4.2.3 **Trench Subgrade Preparation**

Subgrade preparation and verification should be performed at the base of all excavations. This work should be observed by the geotechnical consultant. Any soft or yielding materials identified at the base of the excavation should be removed and replaced with trench backfill as directed by the geotechnical consultant in the field. Any loose materials should be compacted prior to placement of pipe bedding or foundation pad for manhole structures.

4.2.4 **Pipe Bedding**

The soils at, or near, the bottom of the proposed sewer line and manhole excavations are expected to consist of slightly silty to silty sand. We do not recommend pea gravel for use as pipe bedding material or backfill. To provide suitable support and bedding, we recommend the pipes and be founded on suitable bedding material, such as Gravel Backfill for Pipe Zone Bedding meeting the requirements of Section 9-03.12(3) of the *Standard Specifications* (WSDOT, 2021).

Pipe bedding should provide a firm uniform cradle for support of the pipes. A minimum 4-inch thickness of bedding material beneath the pipe should be provided. Prior to installation of the pipe, the pipe bedding should be shaped to fit the lower part of the pipe exterior with reasonable closeness to provide uniform support along the pipe. Pipe bedding material should be used as pipe zone backfill and placed in layers and tamped around the pipe to obtain complete contact. To protect the pipe, bedding material should extend at least 12 inches above the top of the pipe.

4.3 BACKFILL AND COMPACTION

Near surface existing materials along the alignment, that are anticipated to be encountered during trench excavation, consist of slightly silty to silty sand. Where these materials are encountered below the ground water table, they are likely to be too wet for compaction; however, these materials may be suitable for re-use as trench backfill if they can be properly moisture conditioned and placed within 3 percent of the optimum moisture content as determined using

the test method ASTM D1557 (Modified Proctor). These materials should be compacted to 95 percent of their maximum dry density as determined by ASTM D1557. Deeper sections of our explorations noted the presence of clay soils that are not anticipated to be encountered in the watermain trenching excavation. If these soil are found within the excavation they should not be considered for reuse as backfill in the trench.

If import materials are needed because the existing materials are too difficult to re-use for compaction; we recommend using clean, free-draining, granular materials such as Gravel Borrow as specified in Section 9-03.14(1) of the *Standard Specifications* (WSDOT, 2016) or Bank Run Gravel for Trench Backfill as specified in Section 9-03.19 of the *Standard Specifications* (WSDOT, 2021). As with the native materials, import materials should be placed within 3 percent of their optimum water content and compacted to 95 percent of their maximum dry density as determined by ASTM D1557.

Trench backfill should be placed in lifts with a maximum uncompacted thickness of 12 inches and densely compacted in a systematic manner. Thinner lifts may be necessary for fills to achieve the minimum compaction requirements, depending upon the type of material being compacted and the compaction equipment to be used. The contractor should develop compaction methods that consistently produce adequate compaction levels. All backfilling operations should be monitored full-time by a qualified inspector and a sufficient number of in-place density tests, as determined by the geotechnical engineer, should be performed as the fill is placed to determine that the required compaction is being achieved.

During placement of the initial lifts, the trench backfill material should not be bulldozed into the excavation or dropped directly on the pipe. Furthermore, heavy vibratory equipment should not be permitted to operate directly over the pipe until a minimum of 2 feet of backfill has been placed over the pipe bedding.

A significant cause of trench settlement is inadequate shoring practices and inadequate compaction during shoring removal and backfilling. Special care must be taken to obtain good compaction up to the edges of the excavation as the shoring is removed. Moreover, attention must be paid to ensure good compaction around manholes.

4.4 PAVEMENT DESIGN

4.4.1 5th Avenue S. – Full Width Overlay

This road segment is approximately 300 feet long and consists of a two-lane residential street with sidewalk on the south side and trends west to east connecting 6th Street S with 7th Street S. No significant areas of structural failures or weak subgrade were observed during our walkthrough along 5th Avenue S (between 6th Street S and 7th Street S). Visible distress consisted predominantly of minor longitudinal wheel path cracking in the eastbound lane. A large utility trench patch is present in the westbound lane that appears to be somewhat recent and well-sealed

along the edges. In addition, a small patch is present near the curb where the eastbound lane turns south onto 7th Street S.

Pavement cores C-1 and C-2 were performed in this segment. Existing HMA thicknesses varied from about 4½ to 8¼ inches, in cores obtained within the eastbound (C-1) and westbound (C-2) lanes, respectively. It is likely that the road was widened toward the north after original construction. The upper lift of HMA in C-1 and C-2 varied in thickness from about 1½ to 2¼ inches, with lift thickness and total pavement thickness greater along the westbound lane. For overlay, we recommend that pavement rehabilitation consist of grinding a depth of 2 inches followed by construction of a 2-inch thick HMA overlay.

4.4.2 **8th Street S. – Northbound Lane Reconstruction**

This road segment is approximately 1,600 feet long, commencing from Kirkland Avenue south to the entrance of the pedestrian path along the easement for 5th Ave S For purposes of this project, the pavement rehabilitation was planned for the northbound lane only and our coring and observations were limited to that portion of the alignment. During our walkthrough the primary pavement distresses visible are longitudinal wheel path cracking that has formed into alligator cracking in the wheel path for most of the length of the alignment. Pavement cores C-3 through C-6 were performed in this segment. The existing HMA thickness varied from about 3½ to 5½ inches. Pavement cores C-3 and C-4 encountered 3 inches of CSTC below 4 to 3½ inches of HMA. Core-5 did not encounter any CTSC below 3½ inches of HMA. At the north end, C-6 encountered 2.0 inches of CSTC under 5½ inches of HMA. All cores except C-6 were cracked full depth. Core C-6 was obtained in the center of the northbound lane between the wheel path area. Due to the style and throughgoing nature of the pavement cracking along the northbound lane we recommend full-depth reconstruction instead of overlay. We understand that no formal traffic study has been completed for this road section. However, based on input received from City of Kirkland personnel, we assumed a ADT of 2500 (each way), 1% heavy trucks, no annual growth and a 30-year design life. Based on those assumptions we recommend a section consisting of 5 inches of HMA over 4 inches of CSTC for this portion of the project alignment. Recommendations for HMA/CSTC placement and compaction and subgrade preparation are presented later in this report.

4.4.3 **HMA Design Considerations**

The following design considerations should be noted and implemented:

- We recommend that the asphaltic layers consist of HMA Class ½-inch. Consideration could be given to the use of fiber reinforced HMA for the wearing course to provide longer useful life and longer time until the onset of distresses.
- The longitudinal joints in the HMA wearing course should coincide with a line lane or an edge line.

- When pavement reconstruction is called for in conjunction with the HMA overlay, construction of the wearing course for both the HMA overlay and reconstruction areas should be placed as the final stage of the paving operation.
- The pavements will likely require a functional overlay after about 10 to 12 years because of non-structural associated distress caused by environmental factors such as degradation of the asphalt surface.
- HMA pavements are susceptible to shoving and rutting from heavy vehicles, such as buses and heavy delivery trucks, particularly at intersections. In these areas, more frequent maintenance and even premature reconstruction of the pavement may be required.

4.4.4 **HMA Binder Selection**

The selection of the optimum asphalt binder type for the prevailing climate is critical to ensure long-term pavement performance. Use of the wrong binder can result in low temperature cracking or permanent deformation at high temperatures.

Based on the climate in Lynnwood and levels of traffic, we recommend Superpave Performance Grade binder PG 58H-22 be used for pavement reconstruction and pavement overlays in order to provide greater resistance to potential pavement distresses.

4.4.5 **Placement of HMA**

Placement of HMA should be in accordance with Section 5-04 of the WSDOT *Standard Specifications* (WSDOT, 2021). Particular attention should be paid to the following:

- HMA should not be placed until the engineer has evaluated and approved the surface following grinding. In some areas, deeper grinding may be required due to distresses observed in the layer after initial grinding.
- HMA should not be placed on any frozen or wet surface.
- HMA should not be placed when precipitation is anticipated before the pavement can be compacted, or before any other weather conditions which could prevent proper handling and compaction of HMA.
- HMA should not be placed when the average surface temperatures are less than 45° F.
- HMA temperature behind the paver should be in excess of 240° F. Compaction should be completed before the mix temperature drops below 180° F. Comprehensive temperature records should be kept during the HMA placement.
- Sufficient tack coat must be applied uniformly and allowed to break and set before placing HMA above an existing HMA layer in order to create a strong bond between layers. The surface of the pavement should be thoroughly cleaned prior to tack coat

application. Improper tack coat application can cause unbonded layers and will lead to premature pavement distress/failure.

- For cold joints, tack coat should be applied to the edge to be joined and the paver screed should be set to overlap the first mat by 1 to 2 inches.

4.4.6 Subgrade Preparation

Subgrade preparation for areas of full-depth reconstruction should begin with removal of existing pavement materials to the depth of the new pavement section (HMA and CSTC). The exposed soils should be thoroughly compacted and evaluated by the geotechnical engineer, or their representative, using a T-handle soil probe. Areas found to be soft/loose, or unsuitable, should be over-excavated to reach competent soils as directed by the geotechnical engineer. Backfill of any over-excavated areas should consist of CSTC, placed and compacted as described below. Any material used to support the pavement should consist of Crushed Surfacing Top Course (CSTC) as specified in Section 9-03.9(3) of the WSDOT *Standard Specifications* (WSDOT, 2021).

The CSTC should be moisture conditioned, placed in loose horizontal lifts less than 12-inches thick, and compacted to at least 95% of the maximum dry density (MDD) as determined using test method ASTM D1557 (modified Proctor). Achievement of proper density of a compacted fill depends on the size and type of compaction equipment, the number of passes, thickness of the layer being compacted and soil moisture-density properties. In areas where limited space restricts the use of heavy equipment, smaller equipment can be used, but the material must be placed in thin enough layers to achieve the required relative compaction. Generally, loosely compacted soils result from poor construction technique and/or improper moisture content. Soils with high fines contents are particularly susceptible to becoming too wet, and coarse-grained materials easily become too dry for proper compaction.

4.4.7 Drainage

It is essential to the satisfactory performance of the roadway that good drainage is provided to prevent water ponding on or alongside, or accumulating beneath, the pavement. Water ponding can cause saturation of the pavement and subgrade layers and lead to premature failure. The base layers and subgrade surface should be graded to prevent water being trapped within the layer. The surface of the pavement should be sloped to convey water from the pavement to appropriate drainage facilities.

4.5 WET WEATHER EARTHWORK

If fill is to be placed or earthwork is to be performed in wet weather or under wet conditions, the following recommendations should apply:

- Earthwork should be performed in small sections to minimize exposure to wet weather. Excavation or the removal of unsuitable soil should be followed promptly by

the placement and compaction of a suitable thickness of clean structural fill with less than 5 percent of the particles passing the No. 200 sieve.

- The ground surface within the construction area should be sloped and sealed with a smooth drum vibratory roller, or equivalent, to promote rapid runoff of precipitation and to prevent ponding of water.
- No soil should be left uncompacted so it can absorb water. Soils that become too wet for compaction should be removed and replaced with clean granular materials.
- Excavation and placement of fill should be observed by personnel from HWA to verify that all unsuitable materials are removed, and suitable compaction and site drainage are achieved.

The above recommendations for wet weather earthwork should be incorporated into the contract specifications.

5. CONDITIONS AND LIMITATIONS

We have prepared this report for DOWL, Inc., and the City of Kirkland for their use in design and construction of water main replacement on 8th Street S and 5th Avenue S in Kirkland, Washington. This report should be provided in its entirety to prospective contractors for bidding and estimating purposes; however, the conclusions and interpretations presented in this report should not be construed as a warranty of existing subsurface conditions. Experience has shown that soil and ground water conditions can vary significantly over small distances and ground water can vary significantly over time. Inconsistent conditions can occur between exploration locations and may not be detected by a geotechnical study of this nature. If, during future site operations, subsurface conditions are encountered which vary appreciably from those described herein, HWA should be notified for review of the recommendations of this report, and revision of such if necessary.

HWA should review the plans and specifications to verify that our recommendations have been properly incorporated into the design. Sufficient geotechnical monitoring, testing, and consultation should be provided during construction to confirm that the conditions encountered are consistent with those indicated by the explorations, to provide recommendations for design changes should conditions revealed during construction differ substantially from those anticipated, and to verify that geotechnical aspects of construction comply with the contract plans and specifications.

Within the limitations of scope, schedule and budget, HWA attempted to execute these services in accordance with generally accepted professional principles and practices in the fields of geotechnical and pavement engineering and engineering geology in the area at the time the report was prepared. No warranty, express or implied, is made. The scope of our work did not include

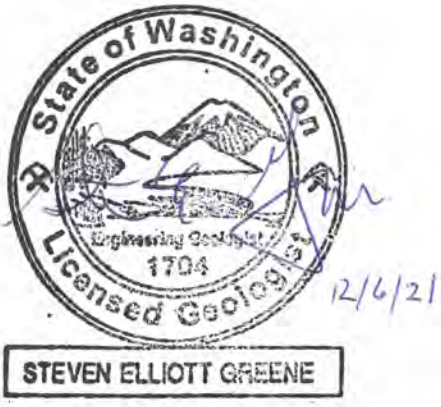
environmental assessments or evaluations regarding the presence or absence of wetlands or hazardous substances in the soil, surface water, or ground water at this site.

This firm does not practice or consult in the field of safety engineering. We do not direct the contractor's operations and cannot be responsible for the safety of personnel other than our own on the site. As such, the safety of others is the responsibility of the contractor. The contractor should notify the owner if he/she considers any of the recommended actions presented herein unsafe.

We appreciate the opportunity to provide geotechnical services on this project. Should you have any questions or comments, or if we may be of further service, please do not hesitate to call.

Sincerely,

HWA GEOSCIENCES INC.



Steven E. Greene, L.E.G
Engineering Geologist, Principal

Michael Place, P.E.
Senior Geotechnical Engineer

REFERENCES

City of Kirkland, 2021, *KZC: Chapter 85 - Critical Areas: Geologically Hazardous Areas*

Metropolitan Engineers, 1964, *Final Report Soils Investigation, Eastside Interceptor, Sections 12,13 and 14, Bellevue, Houghton and Kirkland, Washington*.

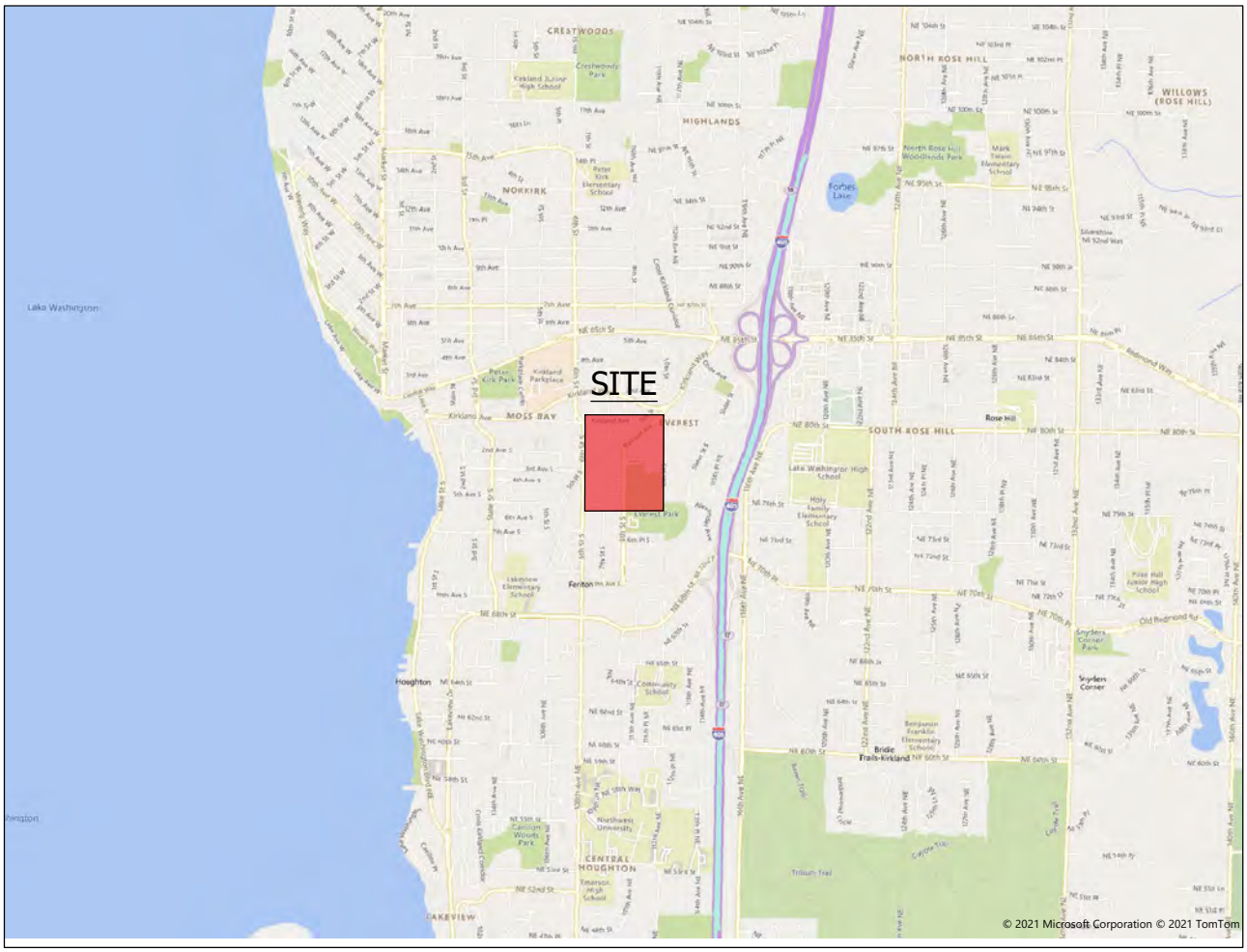
Minard, J.P., 1983, *Geologic Map of the Kirkland Quadrangle, Washington.*

WSDOT, 2021, *Standard Specifications for Road, Bridge, and Municipal Construction,* Washington State Department of Transportation.

SITE MAP

0 500' 1000' 1500' 2000'

SCALE: 1" = 1000'



VICINITY MAP

0 1500' 3000' 4500' 6000'

SCALE: 1" = 3000'

HWA GeoSciences Inc.
DBE/MWBE

SITE AND VICINITY MAP

5TH AVE S & 8TH ST S
WATERMAIN REPLACEMENT
KIRKLAND, WASHINGTON

FIGURE NO.: 1

DRAWN BY: CF
CHECK BY: SP/SEG

PROJECT # 2021-089-21

MATCHLINE SEE 2B

5TH AVE S & 8TH ST S
Scale: 1" = 50'-0"

EXPLORATION LEGEND

BH-1 — BOREHOLE DESIGNATION AND APPROXIMATE LOCATION

CORE-1 — PAVEMENT CORE DESIGNATION AND APPROXIMATE LOCATION

N

0 25 50 75 100

SCALE: 1" = 50'

BASE MAP PROVIDED BY: BING AND DOWL 09.30.2021

GeoSciences Inc. DBE/MWBE

5TH AVE S & 8TH ST S
WATERMAIN REPLACEMENT
KIRKLAND, WASHINGTON

SITE &
EXPLORATION PLAN

DRAWN BY:	FIGURE NO.:
CF	2A
CHECK BY:	PROJECT NO.:
SP/SEG	2021-089-21

C:\USERS\CFRY\DESKTOP\2021-089-21 5TH & 8TH WATERMAIN REPLACEMENT\2021-089-21 5TH & 8TH WATERMAIN REPLACEMENT.DWG <2A> Plotted: 10/4/2021 12:08 PM

8TH ST S & RAILROAD AVE

Scale: 1" = 50'-0"

EXPLORATION LEGEND

BH-1 — BOREHOLE DESIGNATION AND APPROXIMATE LOCATION

CORE-1 — PAVEMENT CORE DESIGNATION AND APPROXIMATE LOCATION

N

0 25 50 75 100

SCALE: 1" = 50'

GeoSciences Inc. DBE/MWBE

5TH AVE S & 8TH ST S
WATERMAIN REPLACEMENT
KIRKLAND, WASHINGTON

SITE &
EXPLORATION PLAN

DRAWN BY:	FIGURE NO.:
CF	2B
CHECK BY:	PROJECT NO.:
SP/SEG	2021-089-21

BASE MAP PROVIDED BY: BING AND DOWL 09.30.2021

C:\USERS\CFRY\DESKTOP\2021-089-21 5TH & 8TH WATERMAIN REPLACEMENT\2021-089-21 5TH & 8TH WATERMAIN REPLACEMENT.DWG <2B> Plotted: 10/4/2021 12:10 PM

MATCHLINE SEE 2B

RAILROAD AVE

Scale: 1" = 50'-0"

EXPLORATION LEGEND

BH-1 — BOREHOLE DESIGNATION AND APPROXIMATE LOCATION

CORE-1 — PAVEMENT CORE DESIGNATION AND APPROXIMATE LOCATION

N

0 25 50 75 100

SCALE: 1" = 50'

GEOSCIENCES INC. DBE/MWBE

5TH AVE S & 8TH ST S
WATERMAIN REPLACEMENT
KIRKLAND, WASHINGTON

SITE &
EXPLORATION PLAN

DRAWN BY:	FIGURE NO.:
CF	2C
CHECK BY:	PROJECT NO.:
SP/SEG	2021-089-21

BASE MAP PROVIDED BY: BING AND DOWL 09.30.2021

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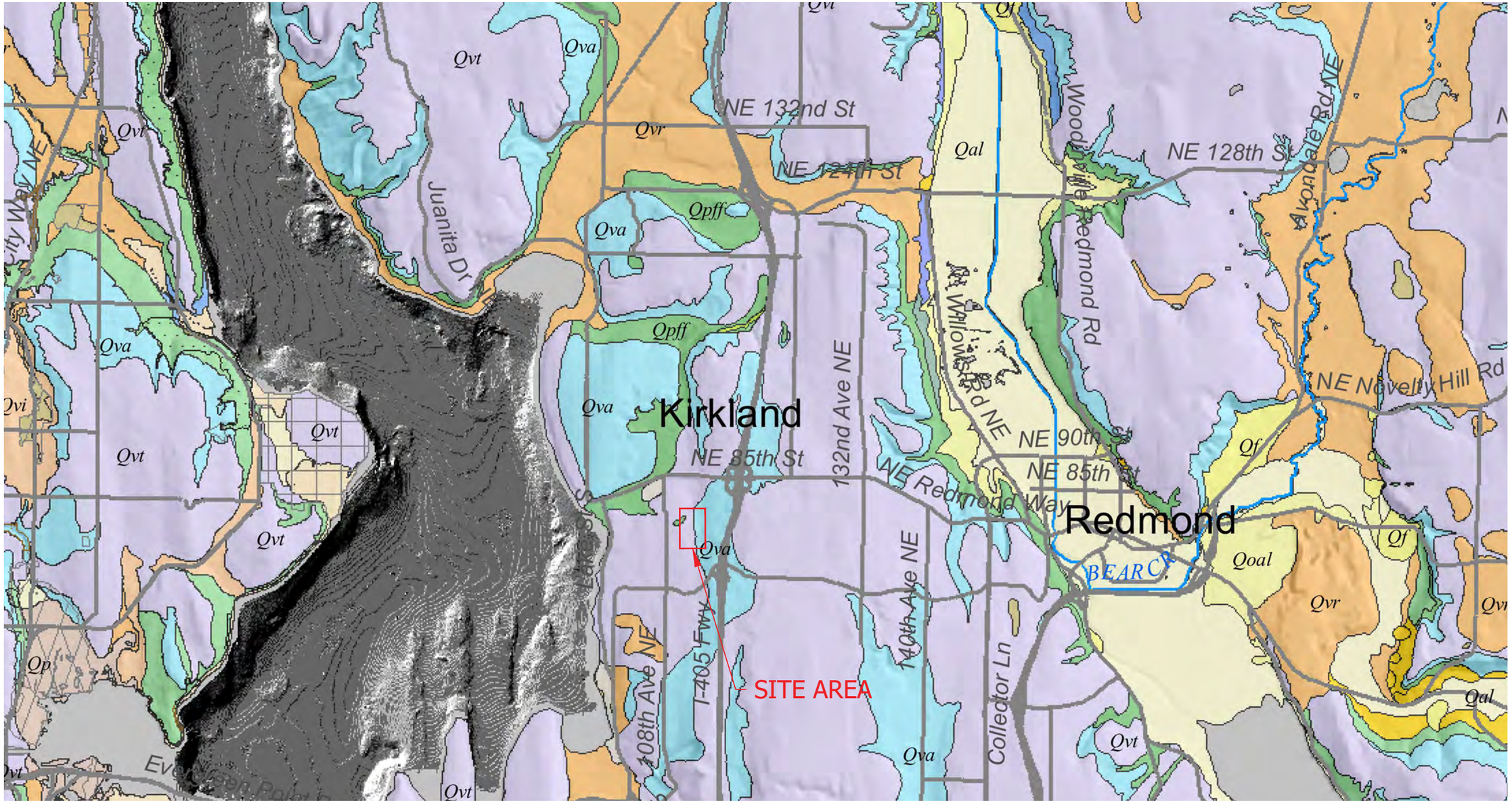


DEPOSITS OF FRASER GLACIATION (PLEISTOCENE)

- Qvt - Vashon subglacial till
- Qva - Vashon advance outwash

OLDER GLACIAL AND NONGLACIAL DEPOSITS (PLEISTOCENE)

- Qpff - Pre-Fraser fine-grained deposits

NOT TO SCALE

GeoSciences Inc. DBE/MWBE

5TH AVE S & 8TH ST S
WATERMAIN REPLACEMENT
KIRKLAND, WASHINGTON

GEOLOGIC MAP

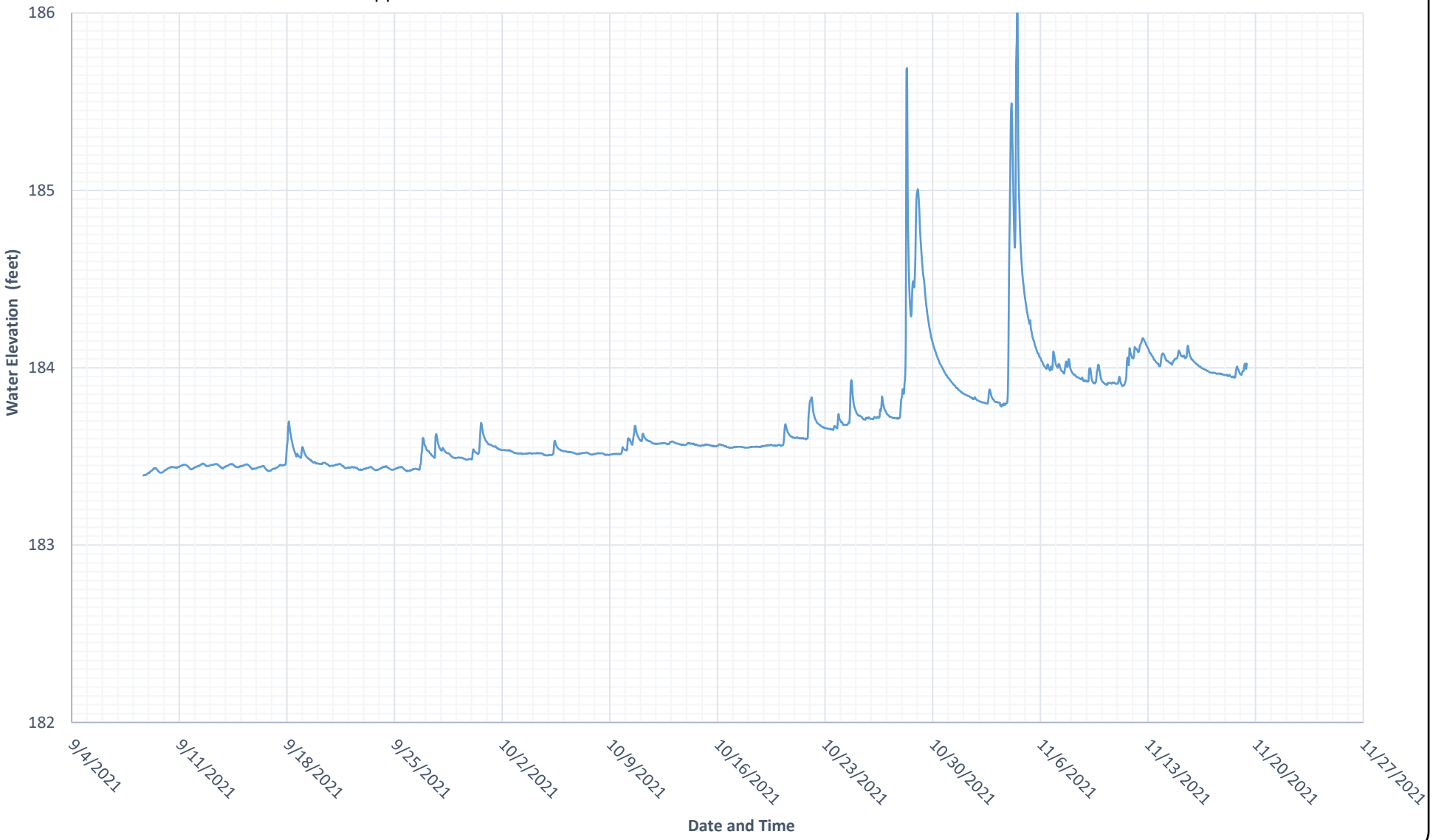
DRAWN BY:	FIGURE NO.:
CF	3
CHECK BY:	PROJECT NO.:
SEG	2021-089-21

BASE MAP PROVIDED BY: GEOLOGIC MAP OF KING COUNTY (MARCH 2007) geomapnw.ess.washington.edu

C:\USERS\CFRY\DESKTOP\2021-089-21 5TH & 8TH WATERMAIN REPLACEMENT\2021-089-21 5TH & 8TH WATERMAIN REPLACEMENT.DWG <3> Plotted: 10/18/2021 12:52 PM

BH-2 Ground Water Elevation from September 8, 2021 to November 19, 2021

*water elevation based on approximate well surface elevation of 195 feet.



HWA GeoSciences Inc.

BH-2 GROUND WATER ELEVATION DATA

5TH AVE S & 8TH ST S WATERMAIN REPLACEMENT
GEOTECHNICAL INVESTIGATION
KIRKLAND, WASHINGTON

FIGURE NO.
4

PROJECT NO.
2021-089-21

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APPENDIX A

EXPLORATION LOGS

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RELATIVE DENSITY OR CONSISTENCY VERSUS SPT N-VALUE

COHESIONLESS SOILS			COHESIVE SOILS		
Density	N (blows/ft)	Approximate Relative Density(%)	Consistency	N (blows/ft)	Approximate Undrained Shear Strength (psf)
Very Loose	0 to 4	0 - 15	Very Soft	0 to 2	<250
Loose	4 to 10	15 - 35	Soft	2 to 4	250 - 500
Medium Dense	10 to 30	35 - 65	Medium Stiff	4 to 8	500 - 1000
Dense	30 to 50	65 - 85	Stiff	8 to 15	1000 - 2000
Very Dense	over 50	85 - 100	Very Stiff	15 to 30	2000 - 4000
			Hard	over 30	>4000

USCS SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GROUP DESCRIPTIONS	
Coarse Grained Soils	Gravel and Gravelly Soils	Clean Gravel (little or no fines)	GW	Well-graded GRAVEL
			GP	Poorly-graded GRAVEL
	More than 50% of Coarse Fraction Retained on No. 4 Sieve	Gravel with Fines (appreciable amount of fines)	GM	Silty GRAVEL
			GC	Clayey GRAVEL
More than 50% Retained on No. 200 Sieve Size	Sand and Sandy Soils	Clean Sand (little or no fines)	SW	Well-graded SAND
			SP	Poorly-graded SAND
	50% or More of Coarse Fraction Passing No. 4 Sieve	Sand with Fines (appreciable amount of fines)	SM	Silty SAND
			SC	Clayey SAND
Fine Grained Soils	Silt and Clay	Liquid Limit Less than 50%	ML	SILT
			CL	Lean CLAY
			OL	Organic SILT/Organic CLAY
50% or More Passing No. 200 Sieve Size	Silt and Clay	Liquid Limit 50% or More	MH	Elastic SILT
			CH	Fat CLAY
			OH	Organic SILT/Organic CLAY
Highly Organic Soils			PT	PEAT

TEST SYMBOLS

%F	Percent Fines
AL	Atterberg Limits: PL = Plastic Limit, LL = Liquid Limit
CBR	California Bearing Ratio
CN	Consolidation
DD	Dry Density (pcf)
DS	Direct Shear
GS	Grain Size Distribution
K	Permeability
MD	Moisture/Density Relationship (Proctor)
MR	Resilient Modulus
OC	Organic Content
pH	pH of Soils
PID	Photoionization Device Reading
PP	Pocket Penetrometer (Approx. Comp. Strength, tsf)
Res.	Resistivity
SG	Specific Gravity
CD	Consolidated Drained Triaxial
CU	Consolidated Undrained Triaxial
UU	Unconsolidated Undrained Triaxial
TV	Torvane (Approx. Shear Strength, tsf)
UC	Unconfined Compression

SAMPLE TYPE SYMBOLS

- 2.0" OD Split Spoon (SPT) (140 lb. hammer with 30 in. drop)
- Shelby Tube
- Non-standard Penetration Test (3.0" OD Split Spoon with Brass Rings)
- Small Bag Sample
- Large Bag (Bulk) Sample
- Core Run
- 3-1/4" OD Split Spoon

GROUNDWATER SYMBOLS

- Groundwater Level (measured at time of drilling)
- Groundwater Level (measured in well or open hole after water level stabilized)

COMPONENT DEFINITIONS

COMPONENT	SIZE RANGE
Boulders	Larger than 12 in
Cobbles	3 in to 12 in
Gravel	3 in to No 4 (4.5mm)
Coarse gravel	3 in to 3/4 in
Fine gravel	3/4 in to No 4 (4.5mm)
Sand	No. 4 (4.5 mm) to No. 200 (0.074 mm)
Coarse sand	No. 4 (4.5 mm) to No. 10 (2.0 mm)
Medium sand	No. 10 (2.0 mm) to No. 40 (0.42 mm)
Fine sand	No. 40 (0.42 mm) to No. 200 (0.074 mm)
Silt and Clay	Smaller than No. 200 (0.074mm)

COMPONENT PROPORTIONS

PROPORTION RANGE	DESCRIPTIVE TERMS
< 5%	Clean
5 - 12%	Slightly (Clayey, Silty, Sandy)
12 - 30%	Clayey, Silty, Sandy, Gravelly
30 - 50%	Very (Clayey, Silty, Sandy, Gravelly)
Components are arranged in order of increasing quantities.	

NOTES: Soil classifications presented on exploration logs are based on visual and laboratory observation.
Soil descriptions are presented in the following general order:

Density/consistency, color, modifier (if any) GROUP NAME, additions to group name (if any), moisture content. Proportion, gradation, and angularity of constituents, additional comments. (GEOLOGIC INTERPRETATION)

Please refer to the discussion in the report text as well as the exploration logs for a more complete description of subsurface conditions.

MOISTURE CONTENT

DRY	Absence of moisture, dusty, dry to the touch.
MOIST	Damp but no visible water.
WET	Visible free water, usually soil is below water table.

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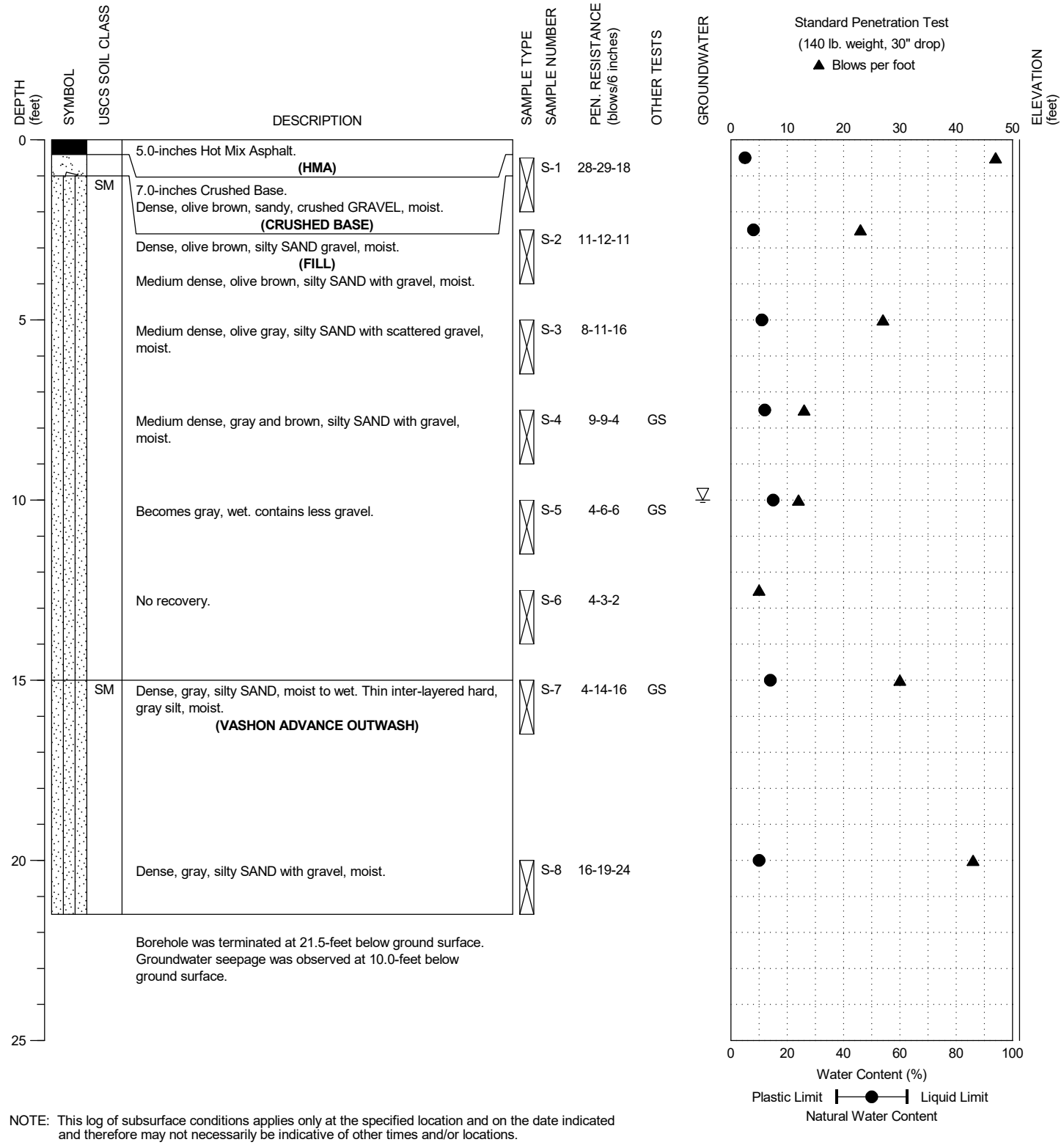
5th Ave S & 8th St S Watermain Replacement
Geotechnical Investigation
Kirkland, WA

LEGEND OF TERMS AND SYMBOLS USED ON EXPLORATION LOGS

PROJECT NO.: 2021-089 FIGURE: A-1

DRILLING COMPANY: Geologic Drill, Inc.
DRILLING METHOD: HSA with Bobcat Minitrack Rig
SAMPLING METHOD: SPT w/Rope & Cathead
LOCATION: See Figure 2

DATE STARTED: 9/8/2021
DATE COMPLETED: 9/8/2021
LOGGED BY: S. Pemble



NOTE: This log of subsurface conditions applies only at the specified location and on the date indicated and therefore may not necessarily be indicative of other times and/or locations.

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5th Ave S & 8th St S Watermain Replacement
Geotechnical Investigation
Kirkland, WA

BORING:
BH-1

PAGE: 1 of 1

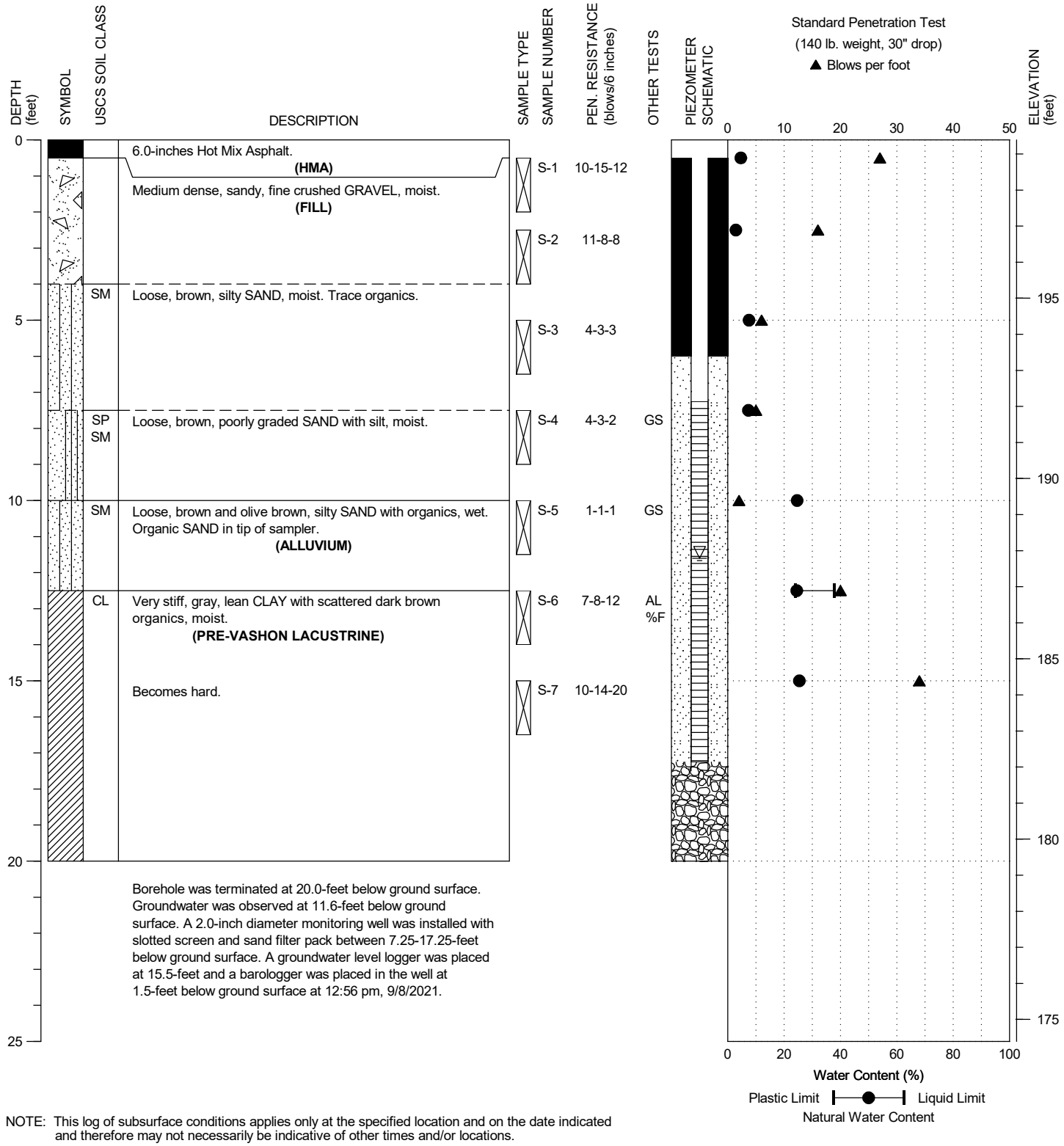
PROJECT NO.: 2021-089

FIGURE: A-2

BORING-DSM 2021-089.GPJ 11/5/21

DRILLING COMPANY: Geologic Drill, Inc.
DRILLING METHOD: HSA with Bobcat Minitrack Rig
SAMPLING METHOD: SPT w/Rope & Cathead
LOCATION: See Figure 2

DATE STARTED: 9/8/2021
DATE COMPLETED: 9/8/2021
LOGGED BY: S. Pemble
SURFACE ELEVATION: 199.4 ± feet



Borehole was terminated at 20.0-feet below ground surface. Groundwater was observed at 11.6-feet below ground surface. A 2.0-inch diameter monitoring well was installed with slotted screen and sand filter pack between 7.25-17.25-feet below ground surface. A groundwater level logger was placed at 15.5-feet and a barologger was placed in the well at 1.5-feet below ground surface at 12:56 pm, 9/8/2021.

NOTE: This log of subsurface conditions applies only at the specified location and on the date indicated and therefore may not necessarily be indicative of other times and/or locations.

GeoSciences Inc.

5th Ave S & 8th St S Watermain Replacement
Geotechnical Investigation
Kirkland, WA

BORING: BH-2

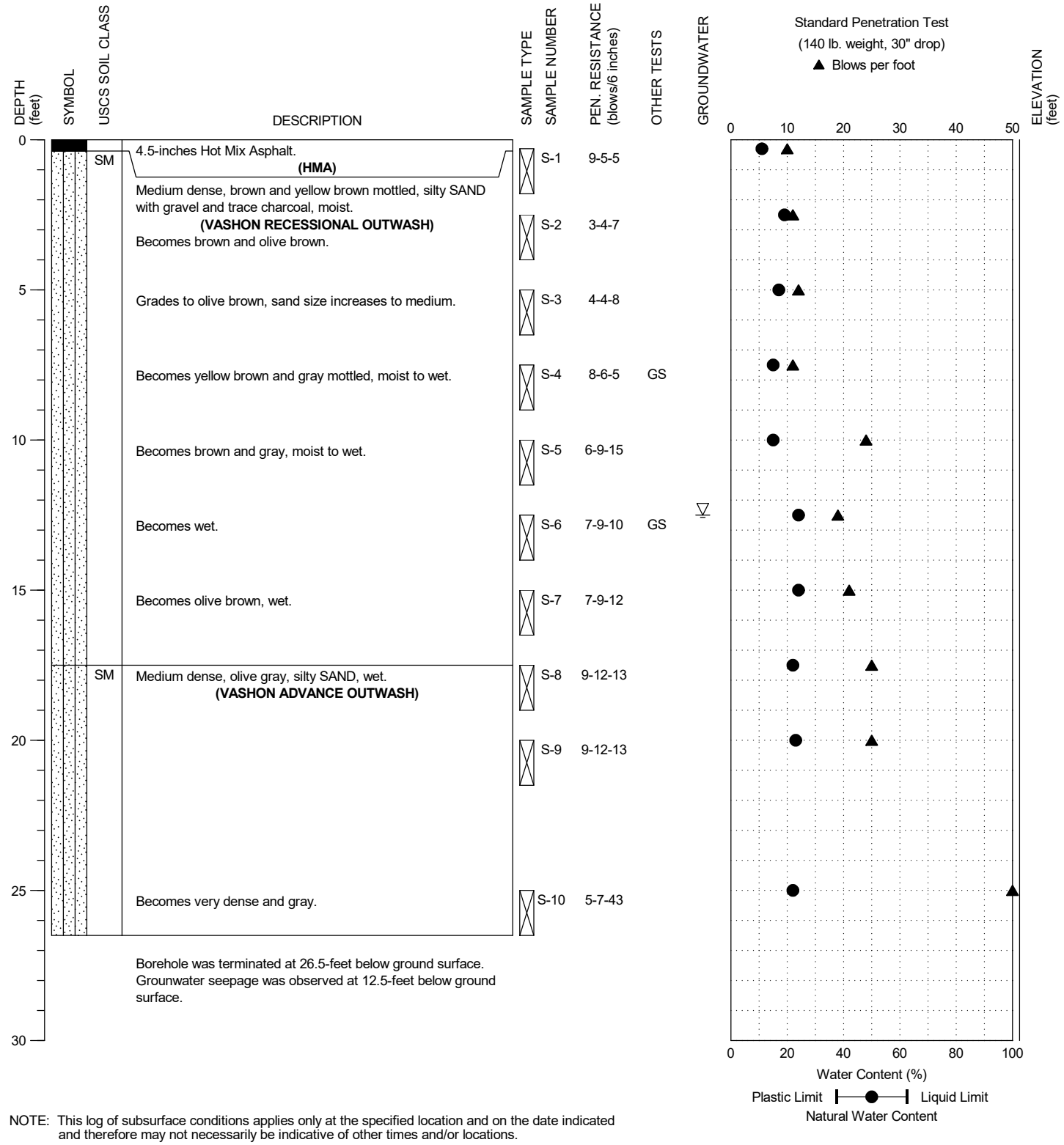
PAGE: 1 of 1

PROJECT NO.: 2021-089 FIGURE: A-3

PZO-DSM 2021-089.GPJ 11/5/21

DRILLING COMPANY: Geologic Drill, Inc.
DRILLING METHOD: HSA with Bobcat Minitrack Rig
SAMPLING METHOD: SPT w/Rope & Cathead
LOCATION: See Figure 2

DATE STARTED: 9/8/2021
DATE COMPLETED: 9/8/2021
LOGGED BY: S. Pemble



NOTE: This log of subsurface conditions applies only at the specified location and on the date indicated and therefore may not necessarily be indicative of other times and/or locations.

GeoSciences Inc.

5th Ave S & 8th St S Watermain Replacement
Geotechnical Investigation
Kirkland, WA

BORING:
BH-3

PAGE: 1 of 1

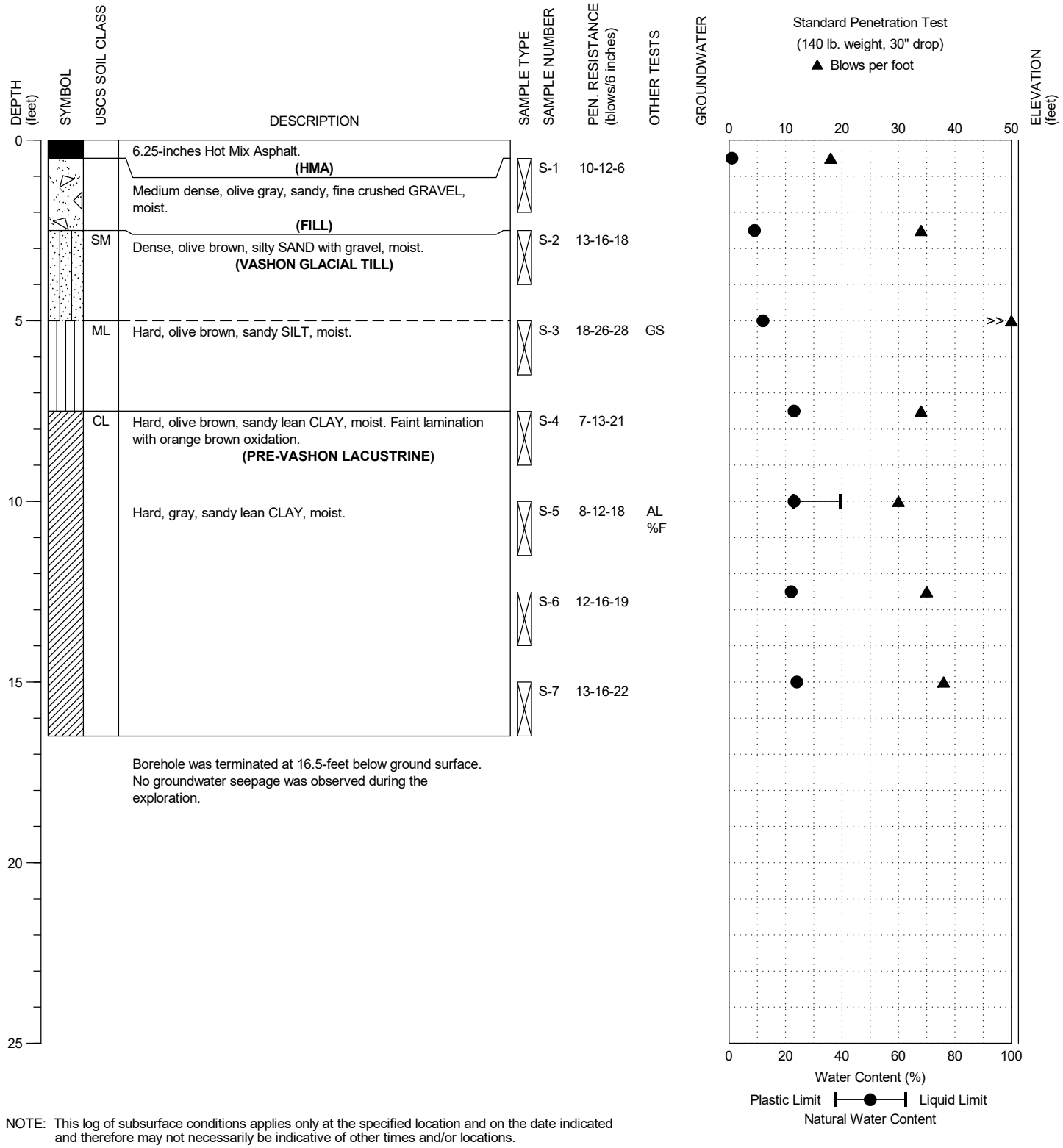
PROJECT NO.: 2021-089

FIGURE: A-4

BORING-DSM 2021-089.GPJ 11/5/21

DRILLING COMPANY: Geologic Drill, Inc.
DRILLING METHOD: HSA with Bobcat Minitrack Rig
SAMPLING METHOD: SPT w/Rope & Cathead
LOCATION: See Figure 2

DATE STARTED: 9/8/2021
DATE COMPLETED: 9/8/2021
LOGGED BY: S. Pemble



Borehole was terminated at 16.5-feet below ground surface.
No groundwater seepage was observed during the exploration.

NOTE: This log of subsurface conditions applies only at the specified location and on the date indicated and therefore may not necessarily be indicative of other times and/or locations.

GeoSciences Inc.

5th Ave S & 8th St S Watermain Replacement
Geotechnical Investigation
Kirkland, WA

BORING:
BH-4

PROJECT NO.: 2021-089

FIGURE: A-5

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EXCAVATION COMPANY: HWA GeoSciences Inc.
EXCAVATING EQUIPMENT: 4-inch Diameter Core Barrel
STREET: 5th Ave S, EB, 5.5' from curb

LOCATION: See Figure 2
DATE COMPLETED: 9/28/21
LOGGED BY: S. Pemble

DEPTH (feet)	SYMBOL	USCS SOIL CLASS.	DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	MOISTURE CONTENT(%)	OTHER TESTS
0			4.5-inches Hot Mix Asphalt. 2 lifts: 2.25" x 2.25 No cracks at core location. Lifts are bonded and in good condition.				
		SM	**(HMA)** Very dense, brown, silty, gravelly SAND, moist.				
		SM	**(FILL)** Medium dense, light brown, very silty, fine SAND with scattered gravel, moist.				
3			Corehole was terminated at 2.0-feet below ground surface. No groundwater seepage was observed during the exploration.				

PAVEMENT CORE PHOTO

NOTE: This log of subsurface conditions applies only at the specified location and on the date indicated and therefore may not necessarily be indicative of other times and/or locations.

HWA GEOSCIENCES INC.

5th Ave S & 8th St S Watermain Replacement
Geotechnical Investigation
Kirkland, WA

PAVEMENT CORE
C-1

PROJECT NO.: 2021-089 FIGURE: A-6

EXCAVATION COMPANY: HWA GeoSciences Inc.
EXCAVATING EQUIPMENT: 4-inch Diameter Core Barrel
STREET: 5th Ave S, WB, 3.5' from centerline

LOCATION: See Figure 2
DATE COMPLETED: 9/28/21
LOGGED BY: S. Pemble

DEPTH (feet)	SYMBOL	USCS SOIL CLASS.	DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	MOISTURE CONTENT(%)	OTHER TESTS
0			8.25-inches Hot Mix Asphalt. 4 lifts: 1.5" x 1.5"x 2.25" x 3" No cracks at core location. Upper two lifts are bonded, third lift is unbonded from fourth. **(HMA)**				
		SM	Very dense, brown, silty, gravelly SAND with some crushed aggregate, moist.				
		SM	**(FILL)** Dense, brown, silty SAND with gravel and cobbles, moist.				
3			Corehole was terminated at 1.5-feet below ground surface due to refusal on cobble. No groundwater seepage was observed during the exploration.				

PAVEMENT CORE PHOTO

NOTE: This log of subsurface conditions applies only at the specified location and on the date indicated and therefore may not necessarily be indicative of other times and/or locations.

HWA GEOSCIENCES INC.

5th Ave S & 8th St S Watermain Replacement
Geotechnical Investigation
Kirkland, WA

PAVEMENT CORE
C-2

PROJECT NO.: 2021-089 FIGURE: A-7

EXCAVATION COMPANY: HWA GeoSciences Inc.
EXCAVATING EQUIPMENT: 4-inch Diameter Core Barrel
STREET: 8th St S, NB, 5' from curb

LOCATION: See Figure 2
DATE COMPLETED: 9/28/21
LOGGED BY: S. Pemble

DEPTH (feet)	SYMBOL	USCS SOIL CLASS.	DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	MOISTURE CONTENT(%)	OTHER TESTS
0			4.0-inches Hot Mix Asphalt. 2 lifts: 1.5" x 2.5" Cored on high severity alligator cracking. Lifts are cracked through and unbonded. **(HMA)**				
			3.0-inches Crushed Surfacing Top Course.				
		SM	Very dense, brown, sandy, fine crushed GRAVEL, moist. **(CSTC)**				
			Dense, brown, silty SAND with gravel, moist. **(FILL)**				
		ML	Stiff, yellow brown and olive brown, sandy SILT, moist.				
3			Corehole was terminated at 2.6-feet below ground surface. No groundwater seepage was observed during the exploration.				

PAVEMENT CORE PHOTO

NOTE: This log of subsurface conditions applies only at the specified location and on the date indicated and therefore may not necessarily be indicative of other times and/or locations.

HWA GEOSCIENCES INC.

5th Ave S & 8th St S Watermain Replacement
Geotechnical Investigation
Kirkland, WA

PAVEMENT CORE
C-3

PROJECT NO.: 2021-089 FIGURE: A-8

EXCAVATION COMPANY: HWA GeoSciences Inc.
EXCAVATING EQUIPMENT: 4-inch Diameter Core Barrel
STREET: 8th St S, NB, 5' from curb

LOCATION: See Figure 2
DATE COMPLETED: 9/28/21
LOGGED BY: S. Pemble

DEPTH (feet)	SYMBOL	USCS SOIL CLASS.	DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	MOISTURE CONTENT(%)	OTHER TESTS
0			3.5-inches Hot Mix Asphalt. 2 lifts: 2" x 1.5" Cored on medium severity alligator cracking. Lifts are cracked through and unbonded. **(HMA)**				
		SM	3.0-inches Crushed Surfacing Top Course. Very dense, olive brown, sandy, fine crushed GRAVEL, moist. **(CSTC)**				
			Medium dense to dense, brown, silty SAND with gravel and scattered charcoal, moist. **(FILL)**				
		SP SM	Medium dense, brown, SAND with silt, moist.				
3			Corehole was terminated at 2.0-feet below ground surface. No groundwater seepage was observed during the exploration.				

PAVEMENT CORE PHOTO

NOTE: This log of subsurface conditions applies only at the specified location and on the date indicated and therefore may not necessarily be indicative of other times and/or locations.

HWA GEOSCIENCES INC.

5th Ave S & 8th St S Watermain Replacement
Geotechnical Investigation
Kirkland, WA

PAVEMENT CORE
C-4

PROJECT NO.: 2021-089 FIGURE: A-9

EXCAVATION COMPANY: HWA GeoSciences Inc.
EXCAVATING EQUIPMENT: 4-inch Diameter Core Barrel
STREET: 8th St S, NB, 4.5' from fogline

LOCATION: See Figure 2
DATE COMPLETED: 9/28/21
LOGGED BY: S. Pemble

DEPTH (feet)	SYMBOL	USCS SOIL CLASS.	DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	MOISTURE CONTENT(%)	OTHER TESTS
0			3.5-inches Hot Mix Asphalt. 2 lifts: 1" x 2.5" Cored on medium severity alligator cracking. Lifts are bonded and cracked through. **(HMA)**				
		SM	Dense, brown, silty, gravelly SAND, moist. **(FILL)**				
		SP SM	Dense, yellow brown, SAND with silt and scattered rootlets, moist.				
3			Corehole was terminated at 2.25-feet below ground surface. No groundwater seepage was observed during the exploration.				

PAVEMENT CORE PHOTO

NOTE: This log of subsurface conditions applies only at the specified location and on the date indicated and therefore may not necessarily be indicative of other times and/or locations.

HWA GEOSCIENCES INC.

5th Ave S & 8th St S Watermain Replacement
Geotechnical Investigation
Kirkland, WA

PAVEMENT CORE
C-5

PROJECT NO.: 2021-089 FIGURE: A-10

EXCAVATION COMPANY: HWA GeoSciences Inc.
EXCAVATING EQUIPMENT: 4-inch Diameter Core Barrel
STREET: Railroad Ave, NB, 5.5' from fogline

LOCATION: See Figure 2
DATE COMPLETED: 9/28/21
LOGGED BY: S. Pemble

DEPTH (feet)	SYMBOL	USCS SOIL CLASS.	DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	MOISTURE CONTENT(%)	OTHER TESTS
0			5.5-inches Hot Mix Asphalt. 3 lifts: 1" x 2" x 2.5" Cored in center of lane. Medium severity longitudinal and transverse cracking in wheel paths. Lifts are bonded. **(HMA)**				
			2.0-inches Crushed Surfacing Top Course. Dense, olive brown, sandy, fine crushed GRAVEL, moist. **(CSTC)**				
			3.5-inches Crushed Surfacing Base Course. Dense, olive brown, sandy, coarse crushed GRAVEL, moist. **(CSBC)**				
		SP SM	Medium dense, olive brown, SAND with silt and gravel and cobbles, moist. **(FILL)**				
3			Corehole was terminated at 1.3-feet due to refusal on cobble. No groundwater seepage was observed during the exploration.				

PAVEMENT CORE PHOTO

NOTE: This log of subsurface conditions applies only at the specified location and on the date indicated and therefore may not necessarily be indicative of other times and/or locations.

HWA GEOSCIENCES INC.

5th Ave S & 8th St S Watermain Replacement
Geotechnical Investigation
Kirkland, WA

PAVEMENT CORE
C-6

PROJECT NO.: 2021-089 FIGURE: A-11

FIGURE A-12: Pavement Surface Conditions at the location of C-1 looking east (5th Avenue S-EB lane).

FIGURE A-13: Pavement Surface Conditions at the location of C-2 looking west (5th Avenue S-WB lane).

FIGURE A-14: Pavement Surface Conditions at the location of C-3 looking south (8th Street S-NB lane).

FIGURE A-15: Pavement Surface Conditions at the location of C-4 looking south (8th Street S-NB lane).

FIGURE A-16: Pavement Surface Conditions at the location of C-5 looking southwest (8th Street S-NB lane).

FIGURE A-17: Pavement Surface Conditions at the location of C-6 looking northeast (8th Street S-NB lane).

APPENDIX B

LABORATORY TEST RESULTS

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APPENDIX B

LABORATORY INVESTIGATION

Representative soil samples obtained from the explorations were placed in plastic bags to prevent loss of moisture and transported to our Bothell, Washington, laboratory for further examination and testing. Laboratory tests were conducted on selected soil samples to characterize relevant engineering and index properties of the site soils. Laboratory testing was conducted as described below:

MOISTURE CONTENT OF SOIL: The moisture content of selected soil samples (percent by dry mass) was determined in general accordance with ASTM D 2216. The results are shown at the sampled intervals on the appropriate exploration logs in Appendix A, and on the Summary of Material Properties shown on Figures B-1 and B-2.

PARTICLE SIZE ANALYSIS OF SOILS: Selected samples were tested to determine the particle (grain) size distribution of material in general accordance with ASTM D 422. The results are summarized on the attached Particle Size Distribution reports, Figures B-3 through B-6, which also provide information regarding the classification of the sample, and the moisture content at the time of testing.

PERCENT OF MATERIAL PASSING THE U.S. NO. 200 SIEVE: Selected samples were tested to determine the quantity by mass of soil particles finer than 0.075 mm (U.S. No. 200 sieve) in general accordance with ASTM D1140. The results are summarized on the attached Particle Size Distribution reports, Figures B-3 through B-6, which also provide information regarding the classification of the sample, and the moisture content at the time of testing.

LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOILS (ATTERBERG LIMITS): Selected sample was tested using method ASTM D 4318, multi-point method. The results are reported on the attached Liquid Limit, Plastic Limit, and Plasticity Index report found in Figure B-7.

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EXPLORATION DESIGNATION	TOP DEPTH (feet)	BOTTOM DEPTH (feet)	MOISTURE CONTENT (%)	ORGANIC CONTENT (%) (440° C)	ORGANIC CONTENT (%) (750° C)	ATTERBERG LIMITS (%)			% GRAVEL	% SAND	% SILT	% CLAY	ASTM SOIL CLASSIFICATION	SAMPLE DESCRIPTION
						LL	PL	PI						
BH-1	0.5	2.0	4.6										SM	Olive-brown, silty SAND with gravel
BH-1	2.5	4.0	8.4										SM	Olive-brown, silty SAND
BH-1	5.0	6.5	10.7										SM	Olive-brown, silty SAND
BH-1	7.5	9.0	11.7						17.9	61.5	17.8	2.8	SM	Olive-gray, silty SAND with gravel
BH-1	10.0	11.5	15.0						11.6	64.0	20.6	3.8	SM	Olive-gray, silty SAND
BH-1	15.0	16.5	13.9						10.8	49.2			SM	Dark gray, silty SAND
BH-1	20.0	21.5	10.4										SM	Dark gray, silty SAND with gravel
BH-2	0.5	2.0	4.6										SM	Olive-brown, silty SAND with gravel
BH-2	2.5	4.0	2.9										SM	Light olive-brown, silty SAND with gravel
BH-2	5.0	6.5	7.5										SM	Light olive-brown, silty SAND
BH-2	7.5	9.0	7.3						1.9	87.1			SP-SM	Light olive-brown, poorly graded SAND with silt
BH-2	10.0	11.5	24.6						3.9	78.6	13.3	4.3	SM	Dark grayish-brown, silty SAND
BH-2	12.5	14.0	24.5			37	24	13					CL	Gray, lean CLAY
BH-2	15.0	16.5	25.4										CL	Gray, lean CLAY
BH-3	0.3	1.8	10.7										SM	Dark yellowish-brown, silty SAND with gravel
BH-3	2.5	4.0	18.7										SM	Yellowish-brown, silty SAND
BH-3	5.0	6.5	17.2										SM	Dark grayish-brown, silty SAND
BH-3	7.5	9.0	14.9						21.4	36.5	34.9	7.2	SM	Yellowish-brown, silty SAND with gravel
BH-3	10.0	11.5	14.5										SM	Olive-brown, silty SAND with gravel
BH-3	12.5	14.0	23.6						3.4	67.9	25.7	3.0	SM	Olive-brown, silty SAND

Notes: 1. This table summarizes information presented elsewhere in the report and should be used in conjunction with the report text, other graphs and tables, and the exploration logs.

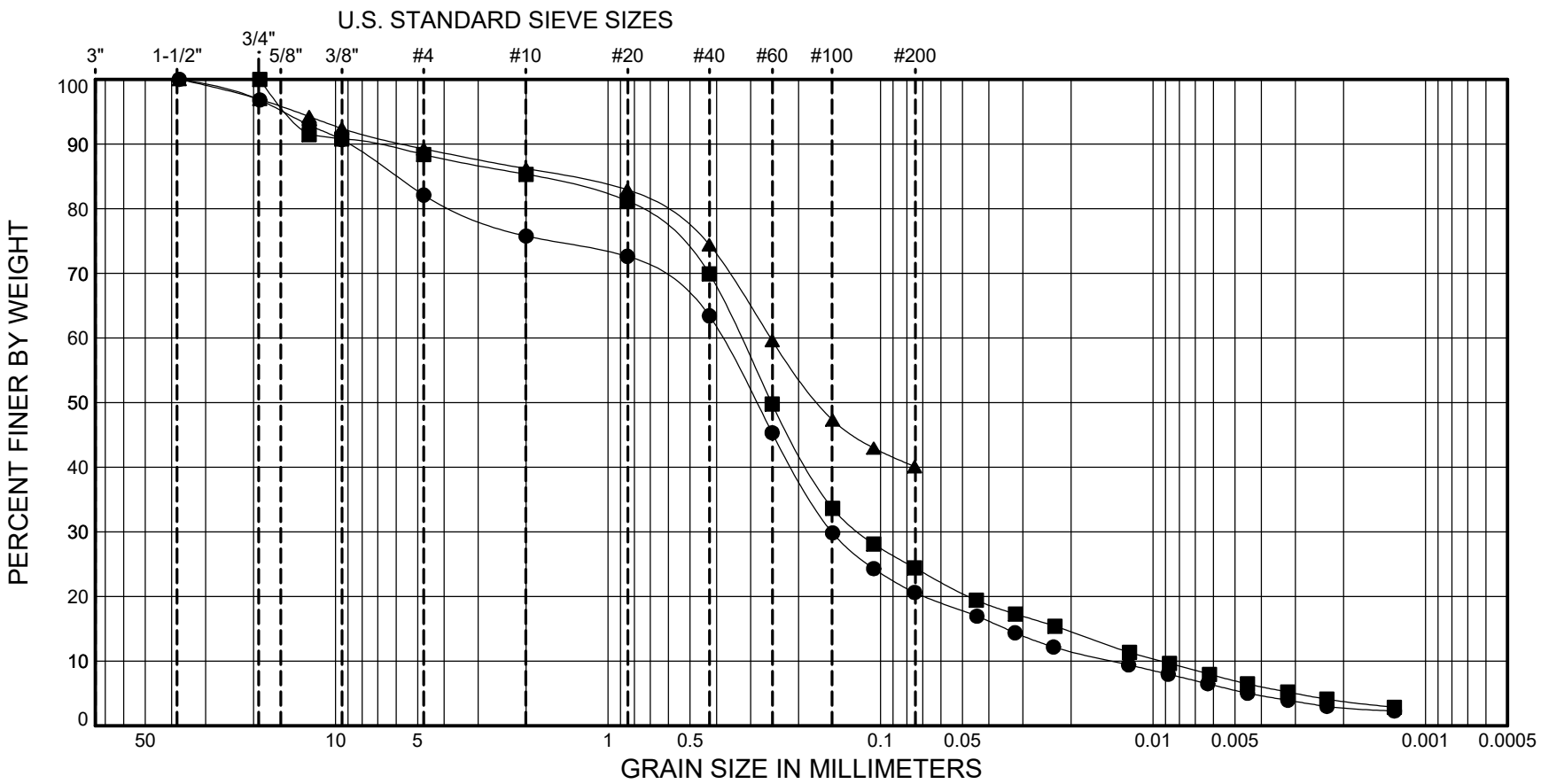
2. The classification of soils in this table is based on ASTM D2487 and D2488 as applicable.

EXPLORATION DESIGNATION	TOP DEPTH (feet)	BOTTOM DEPTH (feet)	MOISTURE CONTENT (%)	ORGANIC CONTENT(%) (440° C)	ORGANIC CONTENT (%) (750° C)	ATTERBERG LIMITS (%)			% GRAVEL	% SAND	% SILT	% CLAY	ASTM SOIL CLASSIFICATION	SAMPLE DESCRIPTION
						LL	PL	PI						
BH-3	15.0	16.5	24.3										SM	Olive-brown, silty SAND
BH-3	17.5	19.0	22.1										SM	Dark grayish-brown, silty SAND
BH-3	20.0	21.5	23.5										SM	Olive-brown, silty SAND
BH-3	25.0	26.5	21.6										SM	Very dark gray, silty SAND
BH-4	0.5	2.0	1.2										SP-SM	Olive-brown, poorly graded SAND with silt and gravel
BH-4	2.5	4.0	8.6										SM	Olive-brown, silty SAND
BH-4	5.0	6.5	12.3						12.0	24.7			ML	Light olive-brown, sandy SILT
BH-4	7.5	9.0	22.9										CL	Olive-brown, lean CLAY
BH-4	10.0	11.5	22.5			39	23	16					CL	Dark gray, lean CLAY
BH-4	12.5	14.0	22.3										CL	Very dark gray, lean CLAY
BH-4	15.0	16.5	23.6										CL	Very dark gray, lean CLAY

Notes: 1. This table summarizes information presented elsewhere in the report and should be used in conjunction with the report text, other graphs and tables, and the exploration logs.

2. The classification of soils in this table is based on ASTM D2487 and D2488 as applicable.

GRAVEL		SAND			SILT	CLAY
Coarse	Fine	Coarse	Medium	Fine		



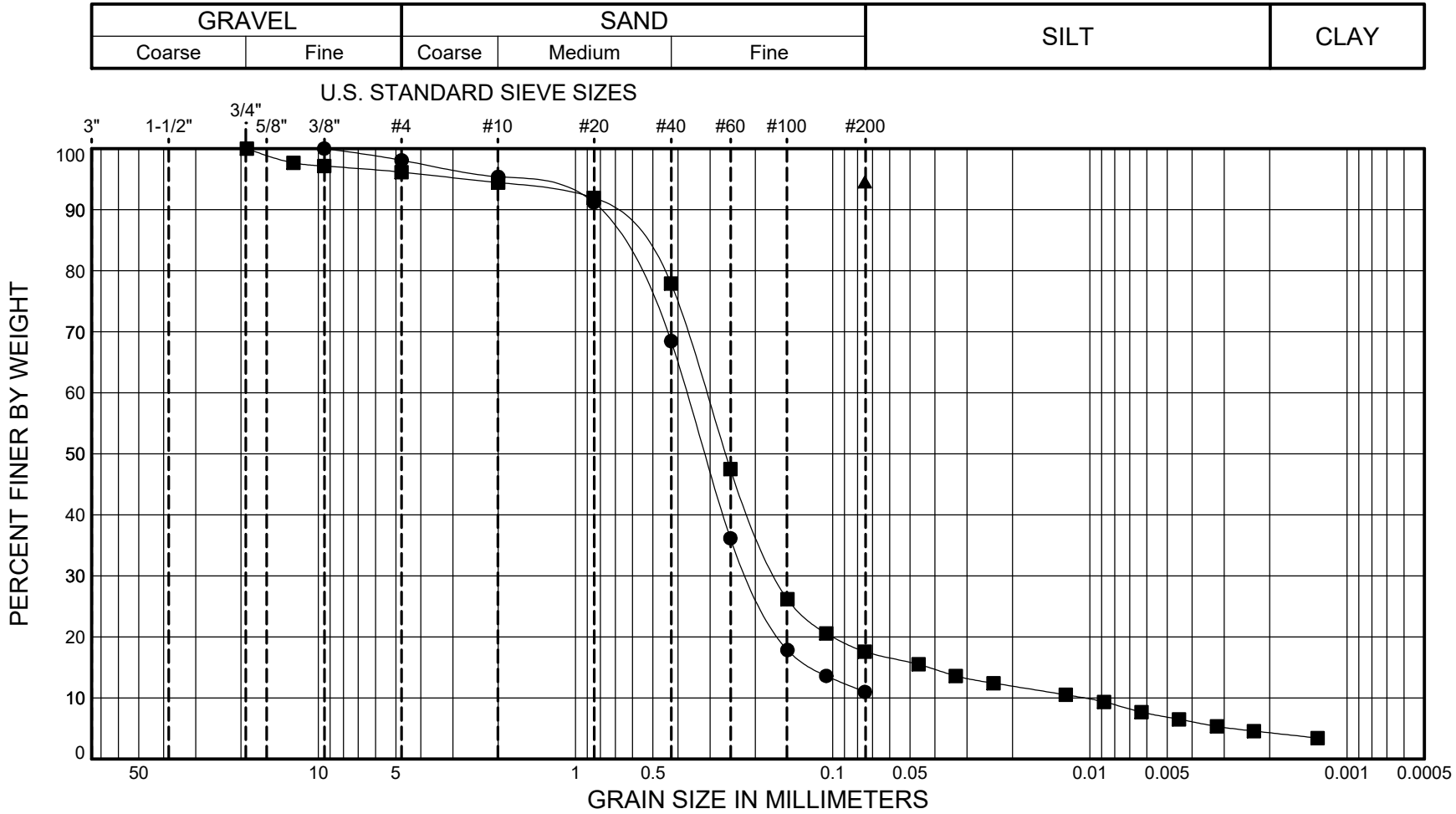
SYMBOL	SAMPLE		DEPTH (ft)	CLASSIFICATION OF SOIL- ASTM D2487 Group Symbol and Name	% MC	LL	PL	PI	Gravel %	Sand %	Fines %
●	BH-1	S-4	7.5 - 9.0	(SM) Olive-gray, silty SAND with gravel	12				17.9	61.5	20.6
■	BH-1	S-5	10.0 - 11.5	(SM) Olive-gray, silty SAND	15				11.6	64.0	24.4
▲	BH-1	S-7	15.0 - 16.5	(SM) Dark gray, silty SAND	14				10.8	49.2	40.1

GeoSciences Inc.

5th Ave S & 8th St S Watermain Replacement
Geotechnical Investigation
Kirkland, WA

PARTICLE-SIZE ANALYSIS
OF SOILS
METHOD ASTM D422

PROJECT NO.: 2021-089 FIGURE: B-3



SYMBOL	SAMPLE		DEPTH (ft)	CLASSIFICATION OF SOIL- ASTM D2487 Group Symbol and Name	% MC	LL	PL	PI	Gravel %	Sand %	Fines %
●	BH-2	S-4	7.5 - 9.0	(SP-SM) Light olive-brown, poorly graded SAND with silt	7				1.9	87.1	11.0
■	BH-2	S-5	10.0 - 11.5	(SM) Dark grayish-brown, silty SAND	25				3.9	78.6	17.6
▲	BH-2	S-6	12.5 - 14.0	(CL) Gray, lean CLAY	24	37	24	13			94.5

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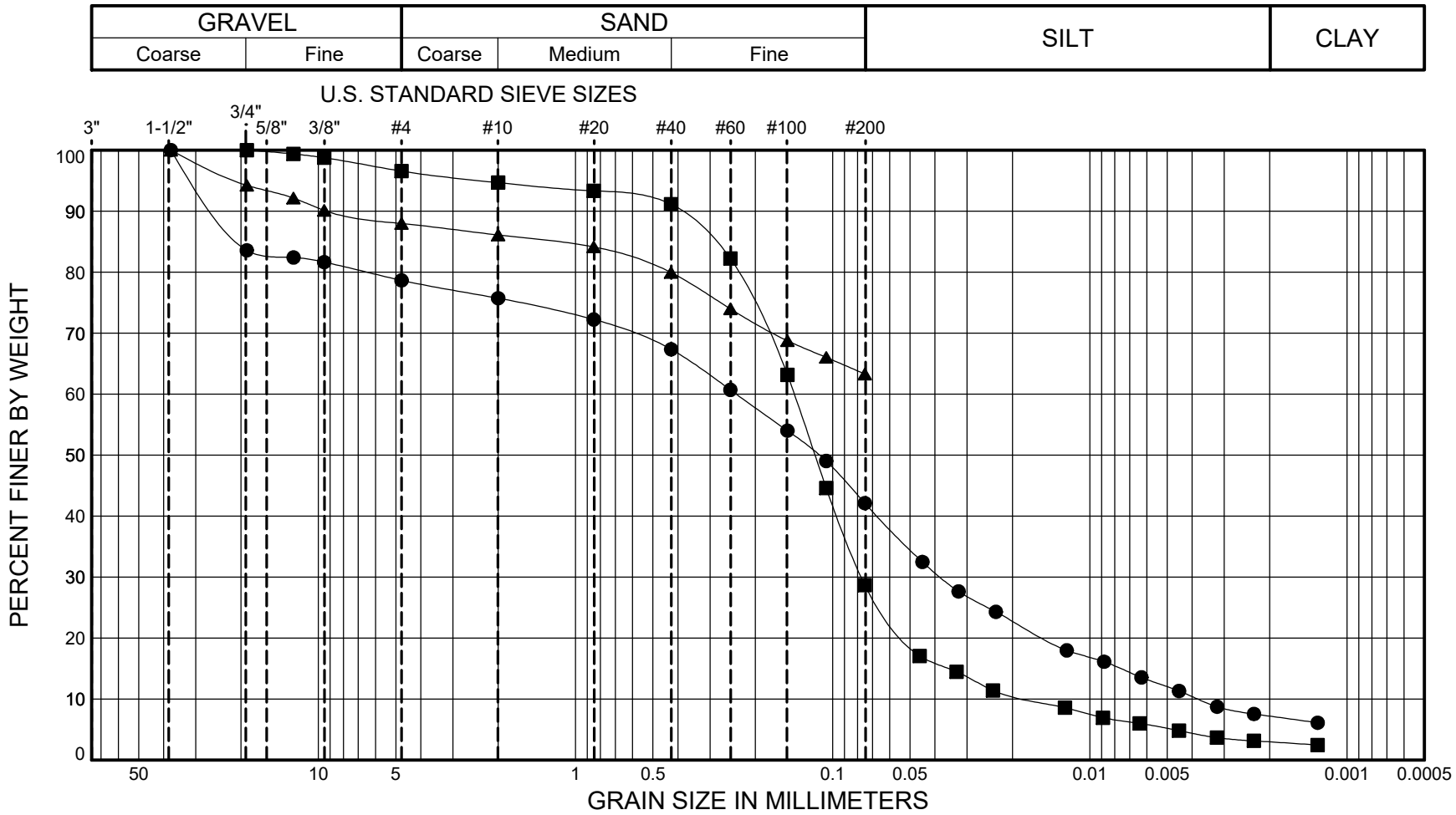
Geotechnical Investigation
Kirkland, WA

PARTICLE-SIZE ANALYSIS
OF SOILS
METHOD ASTM D422

PROJECT NO.: 2021-089 FIGURE: B-4



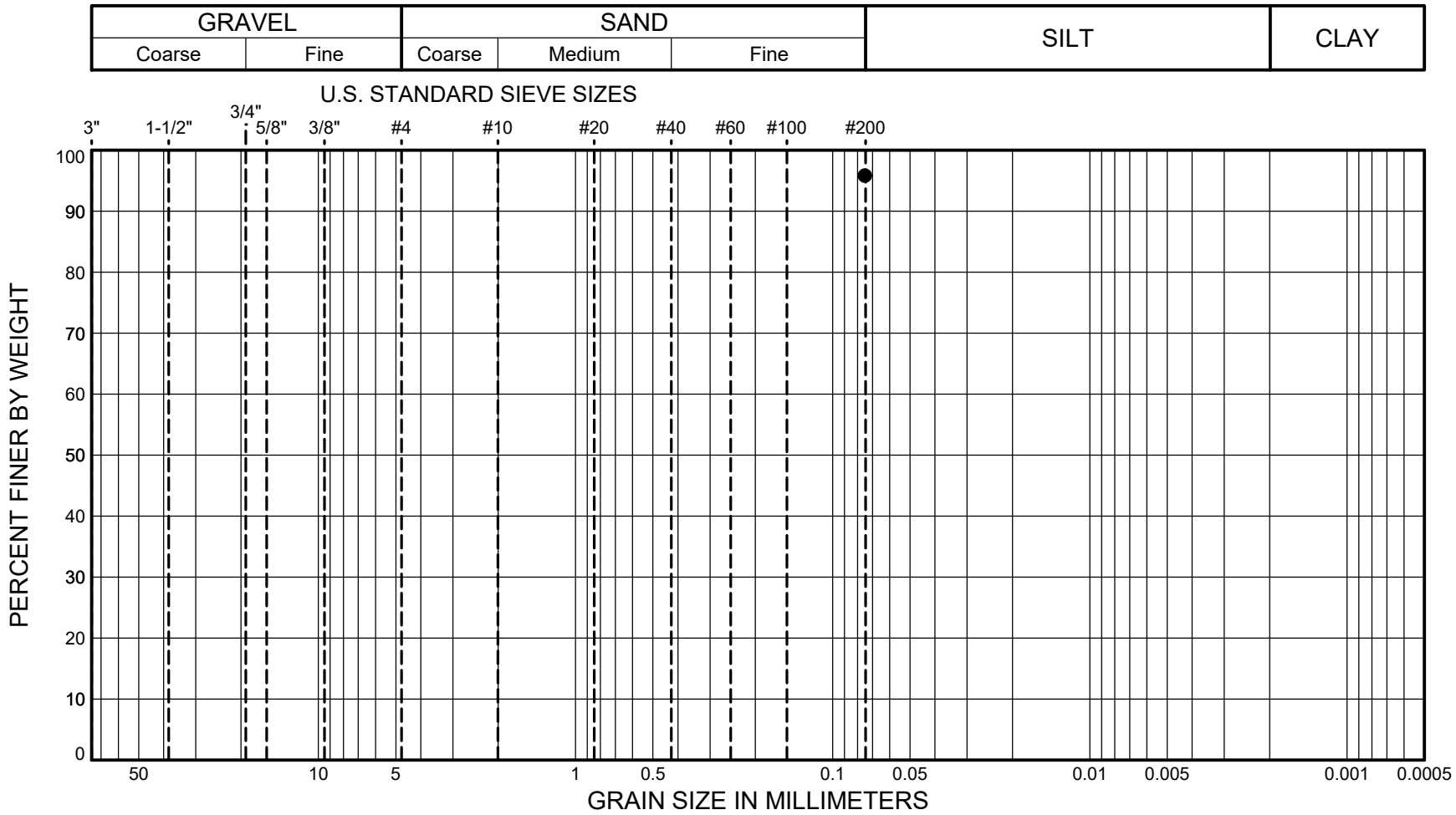
SYMBOL	SAMPLE		DEPTH (ft)	CLASSIFICATION OF SOIL- ASTM D2487 Group Symbol and Name	% MC	LL	PL	PI	Gravel %	Sand %	Fines %
●	BH-3	S-4	7.5 - 9.0	(SM) Yellowish-brown, silty SAND with gravel	15				21.4	36.5	42.1
■	BH-3	S-6	12.5 - 14.0	(SM) Olive-brown, silty SAND	24				3.4	67.9	28.7
▲	BH-4	S-3	5.0 - 6.5	(ML) Light olive-brown, sandy SILT	12				12.0	24.7	63.3

GeoSciences Inc.

5th Ave S & 8th St S Watermain Replacement
Geotechnical Investigation
Kirkland, WA

PARTICLE-SIZE ANALYSIS
OF SOILS
METHOD ASTM D422

PROJECT NO.: 2021-089 FIGURE: B-5



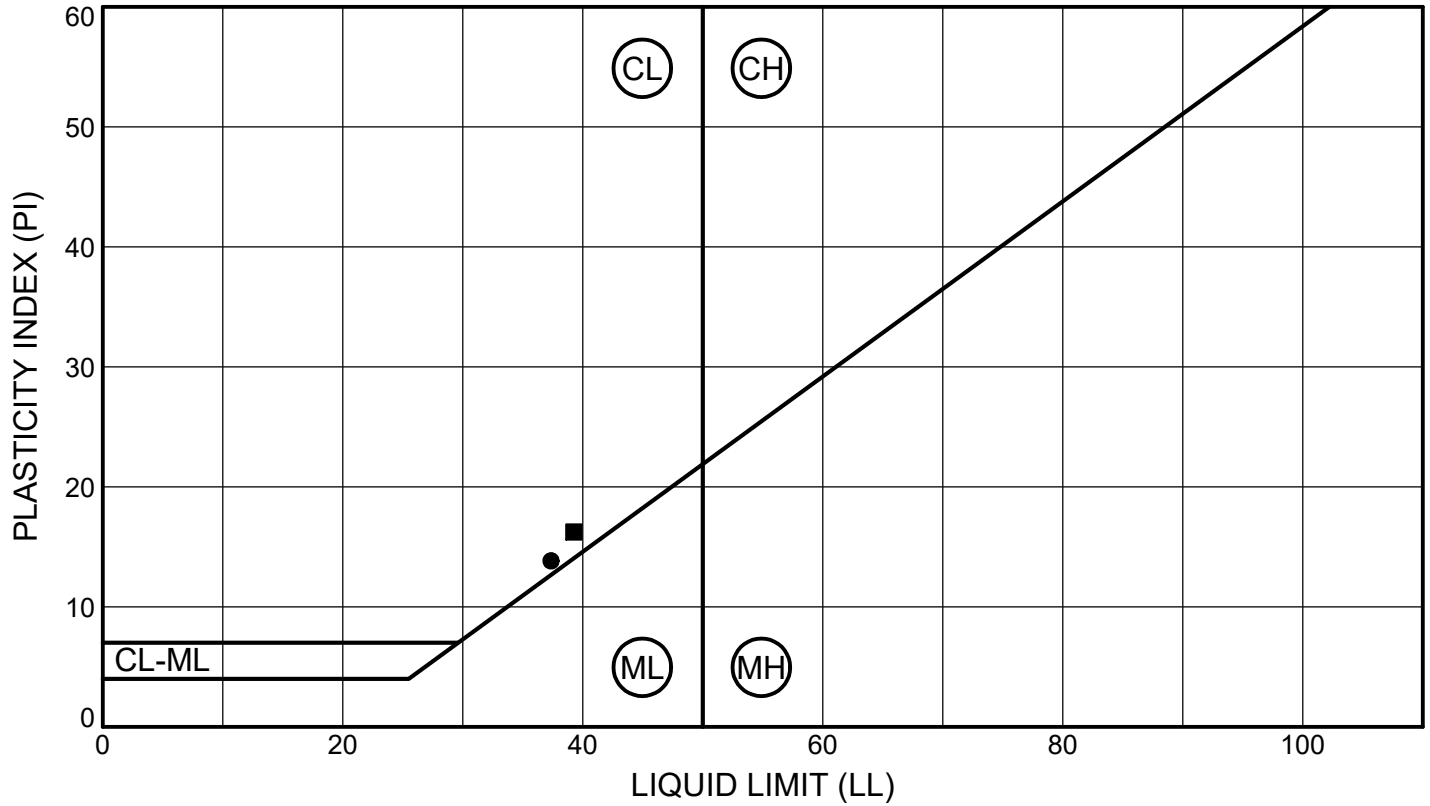
SYMBOL	SAMPLE		DEPTH (ft)	CLASSIFICATION OF SOIL- ASTM D2487 Group Symbol and Name	% MC	LL	PL	PI	Gravel %	Sand %	Fines %
●	BH-4	S-5	10.0 - 11.5	(CL) Dark gray, lean CLAY	23	39	23	16			95.8

GeoSciences Inc.

5th Ave S & 8th St S Watermain Replacement
Geotechnical Investigation
Kirkland, WA

PARTICLE-SIZE ANALYSIS
OF SOILS
METHOD ASTM D422

PROJECT NO.: 2021-089 FIGURE: B-6



SYMBOL	SAMPLE		DEPTH (ft)	CLASSIFICATION	% MC	LL	PL	PI	% Fines
●	BH-2	S-6	12.5 - 14.0	(CL) Gray, lean CLAY	24	37	24	13	94.5
■	BH-4	S-5	10.0 - 11.5	(CL) Dark gray, lean CLAY	23	39	23	16	95.8

GeoSciences Inc.

5th Ave S & 8th St S Watermain Replacement
Geotechnical Investigation
Kirkland, WA

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS
METHOD ASTM D4318

PROJECT NO.: 2021-089 FIGURE: B-7

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APPENDIX C

LOGS OF PREVIOUS EXPLORATIONS BY OTHERS

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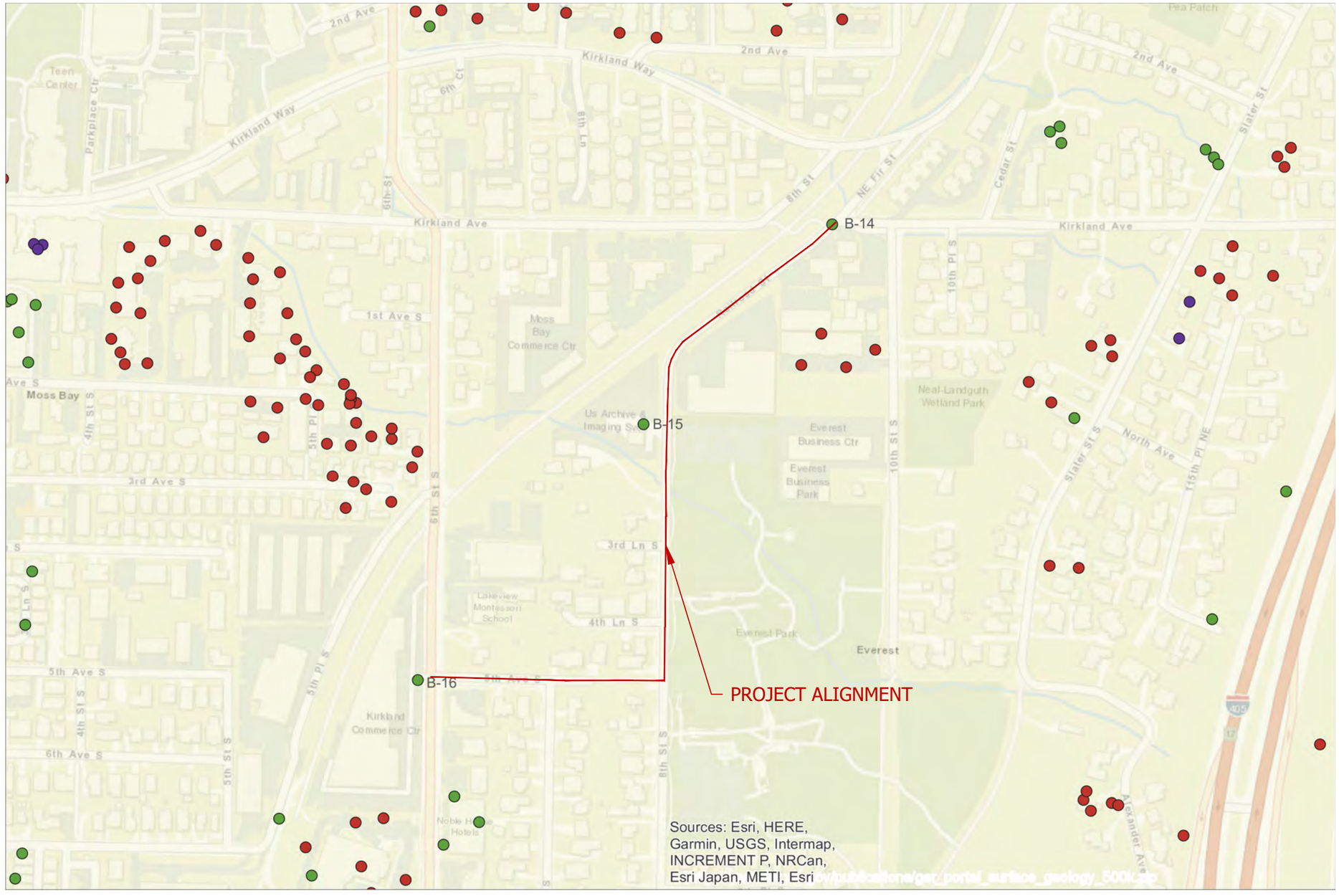
Subsurface Geology - Borehole information

Borehole class

- Geotechnical
- Lithologic boring
- Test pit



NOT TO SCALE

BASE MAP PROVIDED BY: WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES (WASHINGTON GEOLOGICAL SURVEY)
SOURCES: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri

GeoSciences Inc. DBE/MWBE

5TH AVE S & 8TH ST S
WATERMAIN REPLACEMENT
KIRKLAND, WASHINGTON

LOCATION OF
BORINGS BY
OTHERS

DRAWN BY:	FIGURE NO.:
CF	C-1
CHECK BY:	PROJECT NO.:
SEG	2021-089-21

C:\USERS\CFRY\DESKTOP\2021-089-21 5TH & 8TH WATERMAIN REPLACEMENT\2021-089-21 5TH & 8TH WATERMAIN REPLACEMENT.DWG <C-1> Plotted: 11/5/2021 3:27 PM

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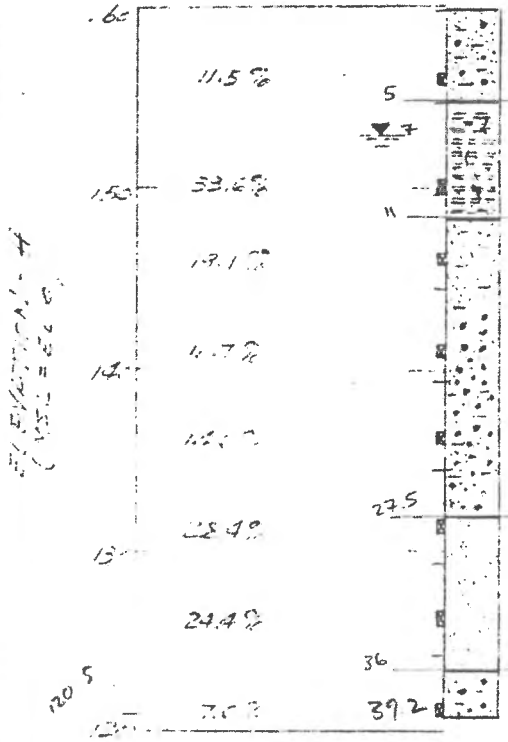
CALCULATION SHEET

METROPOLITAN ENGINEERS
SEATTLE, WASHINGTON

BORING 314

ELEVATION 154.7
STATION 132+58 (10'A-1
DATE DRILLED 6-25-64

N 249,403
E 1665,686



GRAY SAND WITH SILT AND SOME GRAVEL (FILL)

GRAY AND BROWN GRAY SANDY SILT WITH ORGANIC MATERIAL - SOFT

(WET) 10

GRAY FINE MED-COARSE SAND WITH SOME SILT

CONTAINS GRAVEL (WATER BEARING) 17

GRADES GRAVELLY 20

GRAY FINE SAND
WAVES

GRAY SAND AND GRAVEL WITH SOME SILT

NOTES

1) BORING DRILLED WITH AUGER RIG. AFTER BORING COMPLETED AND AUGER PULLED, WATER LEVEL @ EL 153
2) BORING BACKFILLED WITH NATIVE MATERIAL

☒ SAMPLE TAKEN WITH 1⅜" ID SPLIT SPOON SAMPLER

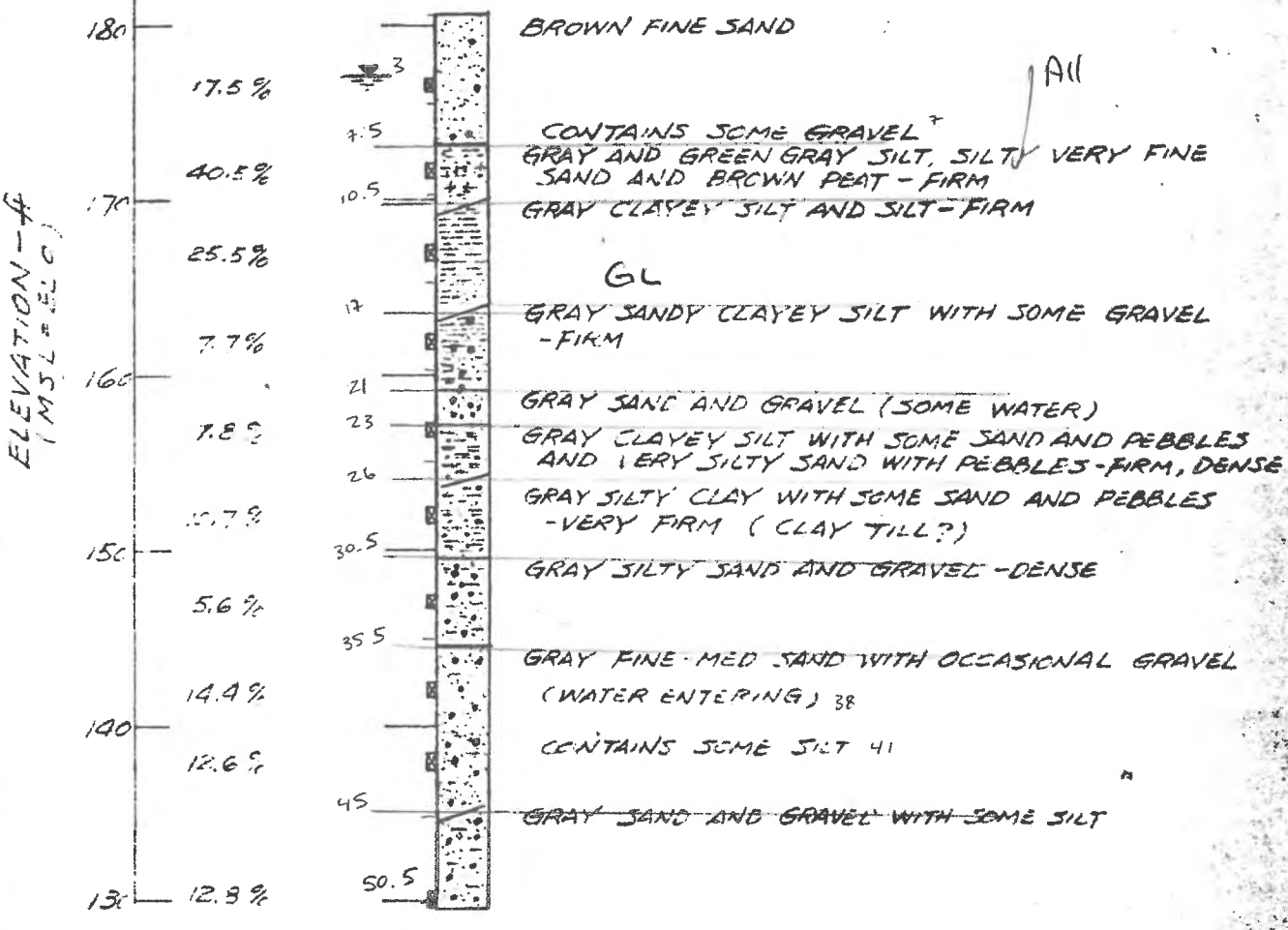
DATE	BY	JOB NO.	TITLE	PLATE
	CHW	R2034	LOG OF BORING	A-15

CALCULATION SHEET

METROPOLITAN ENGINEERS
SEATTLE, WASHINGTON

BORING B15

ELEVATION 18C.5
STATION 174+30 (20' Rt) N248.976 E1665.113
DATE DRILLED 6-25-64



NOTES:

(1) AFTER BORING COMPLETED AND AUGER PULLED, OVERNIGHT, HOLE OPEN TO EL 172 AND WATER LEVEL @ EL 177

(2) BORING BACKFILLED WITH NATIVE MATERIAL

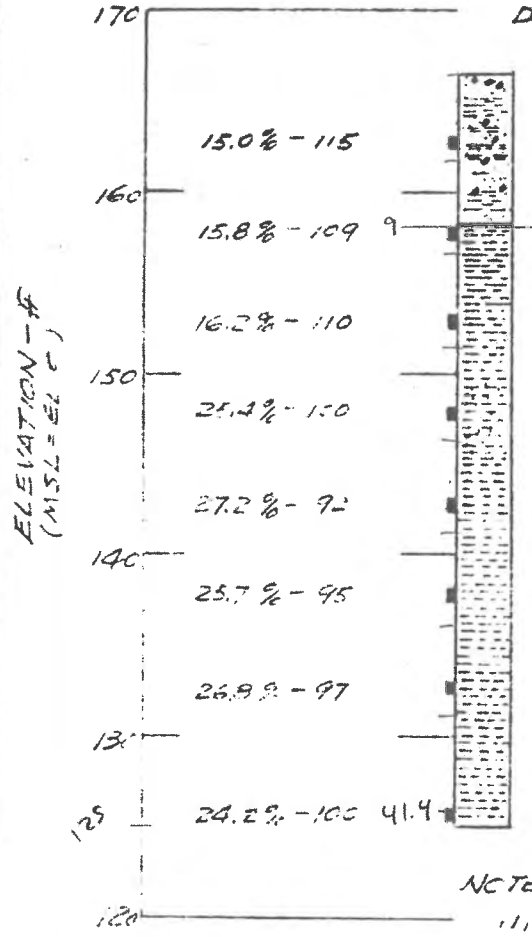
DATE	BY	JOB NO.	TITLE	PLATE
	CHW	R202M	LOG OF BORING	A-16

CALCULATION SHEET

METROPOLITAN ENGINEERS
SEATTLE, WASHINGTON

BORING B16

ELEVATION 166.4
STATION 165+78 (24' RT) N 348,412 / E 1,664,488
DATE DRILLED 6-26-64



BROWN AND GRAY BROWN CLAYEY SILT AND SILTY SAND WITH OCCASIONAL GRAVEL - FIRM, DENSE

GRAY CLAYEY SILT WITH SOME PEBBLES - VERY FIRM

GRADES TO SILT, SOME LAMINATIONS

CONTAINS VERY FINE SANDY SILT LAYERS

NOTES:
(1) NO WATER ENTERED DURING DRILLING
(2) BORING BACKFILLED WITH NATIVE MATERIAL

DATE	BY	JOB NO.	TITLE	PLATE
	CHW	R202M	LOG OF BORING	A-17

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APPENDIX D

COK CIP PRE-PROJECT GIS ASSESSMENT OF GEOLOGICAL HAZARD

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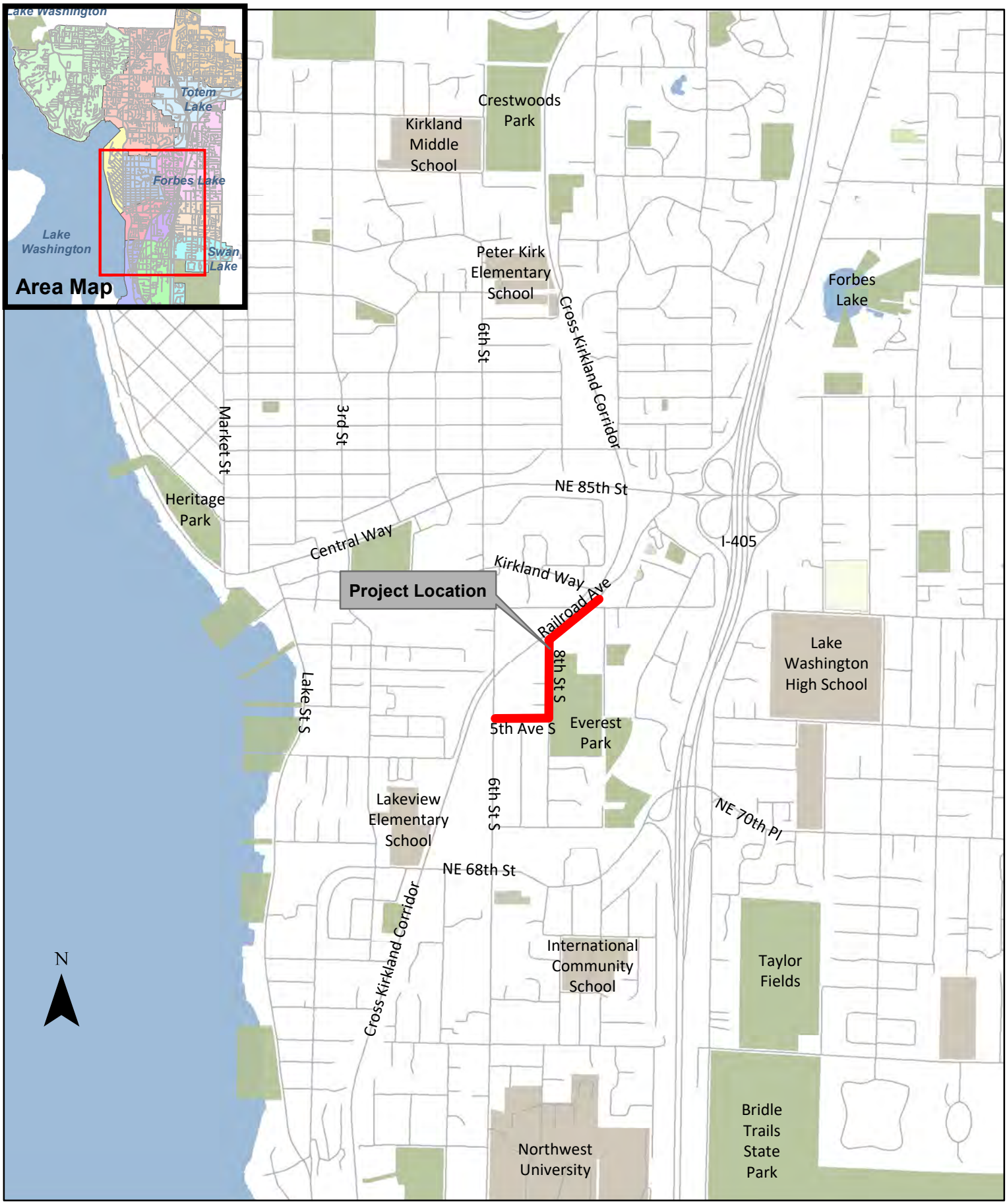

Vicinity & Area Map
5th Avenue South / 8th Street South Watermain Replacement

SECTION C: CIP PRE-PROJECT GIS ASSESSMENT OF GEOLOGICAL HAZARD (KZC CHAPTER 85) ENVIRONMENTAL REVIEW/PERMITTING NEEDS

Landslide Hazard Evaluation

C.1 Is any portion of the Project Area located within a mapped High Landslide Area, or located within 50 feet outside of a mapped High Landslide Area? Yes.

Is any portion of the Project Area located within a mapped Moderate Landslide Area? Yes.

1 of 3 locations (Railroad Ave):

Figure D-1

2 of 3 locations (8th St S):

FIGURE D-2

3 of 3 locations (5th Ave S - this is a retaining wall):

FIGURE D-3

Liquefaction Potential Risk Evaluation

C.6 Is any portion of the Project Area located within a mapped High Liquefaction Potential Area, or located within 50 feet outside of a mapped High Liquefaction Potential Area? Yes.

FIGURE D-4

C.7 Is any portion of the Project Area located within a mapped Medium / Mixed Liquefaction Potential Area? Yes.

1 of 2 locations is along Railroad Ave:

FIGURE D-5

2 of 2 locations is along 5th Ave S (map border is within 10' margin of error):

FIGURE D-6

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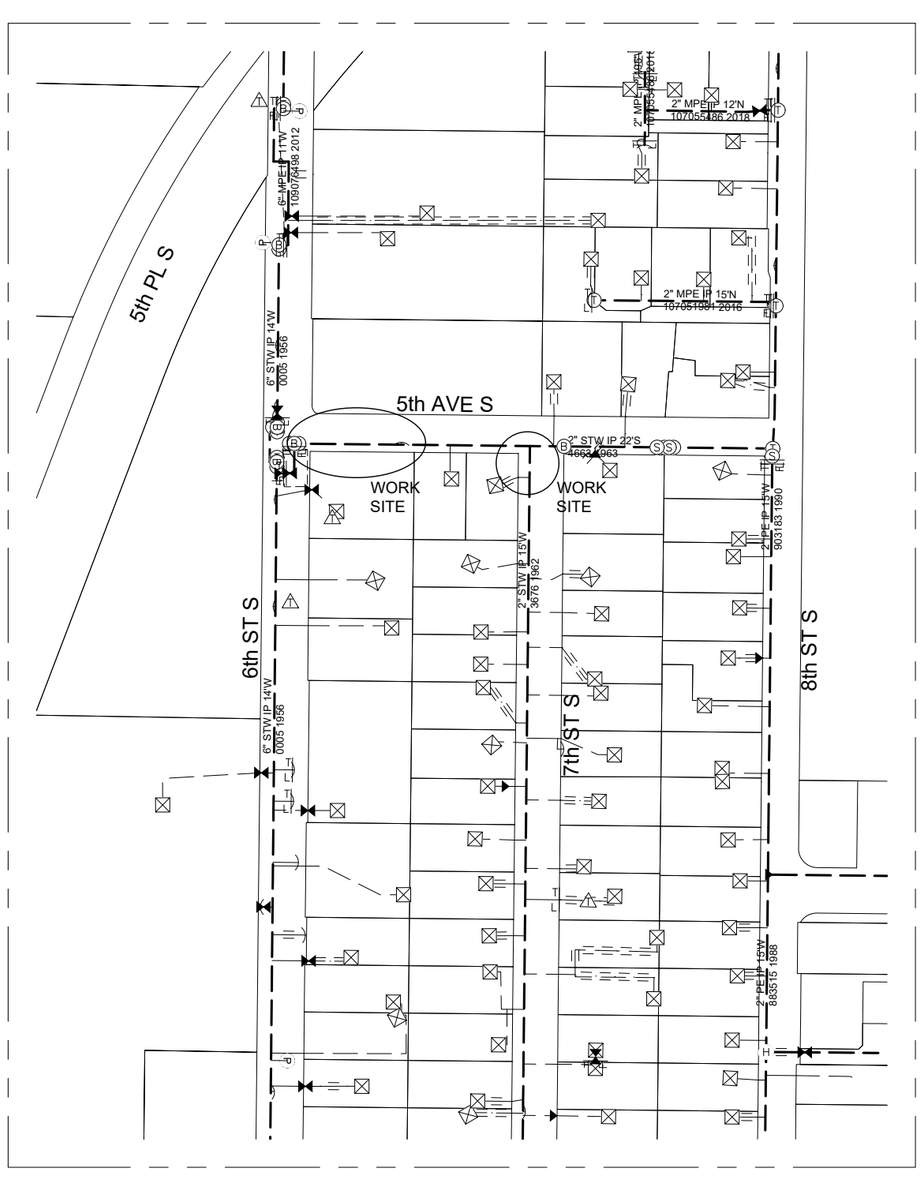
APPENDIX J

PSE GAS MAIN RELOCATION DRAWINGS

City of Kirkland

City of Kirkland



GAS SYSTEM PLAN

SCALE: 1" = 100'-0"

STANDARD IP & LP GAS REPLACEMENT CONSTRUCTION NOTES

1. NOTIFY GAS CUSTOMERS, OR DISTRIBUTE FLYER #1443 A MINIMUM OF TWO WORKING DAYS PRIOR TO A PLANNED OUTAGE.
2. INSTALL ONE POUND ANODE FOR EVERY 1000' OF LOCATING WIRE. INSTALL ANODE AND TEST LEAD WIRES PER PSE GAS OPERATING STANDARD 2525.2300.
3. MAINTAIN CATHODIC PROTECTION FOR STEEL MAINS BY THE USE OF CONTINUITY BONDS OR OTHER MEANS DETERMINED BY THE PSE CORROSION ENGINEER PER PSE GAS OPERATING STANDARD 2600.1300.
4. INSTALL ANODES AND TEST LEAD WIRES AS REQUIRED PER PSE GAS FIELD PROCEDURES 4515.1000 AND 4515.1020 AND PSE GAS OPERATING STANDARD 2600.1200. TEST LEAD WIRES ARE REQUIRED ON ALL TRANSITION FITTINGS.
5. INSTALL CURB VALVE AT PROPERTY LINE OR 5/8" PE WHIP AT MAIN (AS REQUIRED) ON NEW AND EXISTING SERVICES PER PSE GAS OPERATING STANDARD 2550.1600.
6. REFER TO PSE GAS OPERATING STANDARD 2525.1700 FOR MAIN AND SERVICE COVER REQUIREMENTS.
7. MAINS AND SERVICES SHALL BE TESTED AND PURGED PER PSE GAS OPERATING STANDARDS 2525.3300 AND 2525.3400 AND PSE GAS FIELD PROCEDURE 4700.1500.
8. PROJECT MANAGER TO MAKE AN ACTIVE SERVICE RUN IMMEDIATELY PRIOR TO STARTING CONSTRUCTION.
9. INSTALL REPLACEMENT MAINS PER PSE GAS OPERATING STANDARD 2525.2100.
10. PLUG ENDS OF DEACTIVATED OR INSERTED MAINS AND SERVICES IN ACCORDANCE WITH PSE GAS OPERATING STANDARDS 2525.2100 AND 2525.3600.
11. REMOVE OR RENDER INOPERABLE DEACTIVATED VALVES ON CASING WHERE MPE PIPE IS INSERTED.
12. INSIDE METER SETS SHALL BE MOVED OUTSIDE WHENEVER POSSIBLE OR SET REGULATORS AND VENTS OUTSIDE PER PSE GAS OPERATING STANDARDS 2575.2300 AND 2550.1700.
13. REPLACE EXISTING ACTIVE SERVICES PER PSE GAS OPERATING STANDARDS 2525.2100 AND 2575.2300.
14. REPLACE ALL "NO RECORD" SERVICES AND 1-1/8" PE SERVICES INSTALLED PRIOR TO 1985.
15. ACTIVE SERVICES TO BE REPLACED DENOTED BY: ###
16. MAINS AND SERVICES SHALL BE CONSTRUCTED IN ACCORDANCE WITH 2525.1200.
17. PIPE SQUEEZING SHALL BE DONE IN ACCORDANCE WITH GOS 2525.1200 AND GAS FIELD PROCEDURES 4700.1300 AND 4700.1310.
18. WHEN INSTALLING, DEACTIVATING, REPAIRING, OR OTHERWISE MODIFYING A PIPELINE THAT IS LOCATED WITHIN 200 FEET OF ANY ACTIVE REGULATING STATION, PRESSURE RELIEF AND LIMITING DEVICE, OR SINGLE SERVICE FARM TAP WHERE GAS SYSTEM ENGINEERING REVIEW AND APPROVAL IS REQUIRED PER GAS OPERATING STANDARDS. SEE REVIEW DOCUMENTS, PROVIDED BY ENGINEERING.
19. FIELD TO VERIFY THAT ALL PROPER SERVICE ACTIONS (FOLLOWING THE KEY TO SERVICE ACTION LEGEND) HAVE BEEN ACCOUNTED FOR PER THE "SERVICE CHECKLIST". IF A RISER IS FOUND IN THE FIELD AND WASN'T ACCOUNTED FOR, FIELD PERSONNEL SHALL CONFIRM WHETHER THE RISER IS AN ABANDONED OR IDLE RISER:
    - 19.1 IF IT IS AN ABANDONED RISER, CONTACT THE POINT DESK TO REQUEST GFR TO REMOVE IT.
    - 19.2 IF IT IS AN IDLE RISER, REPORT THE RISER TO THE PROJECT MANAGER SO THAT THE PROJECT MANAGER MAY CONFIRM WITH THE CUSTOMER WHETHER THEY WOULD LIKE TO KEEP THE SERVICE AND RISER. THE PROJECT MANAGER MAY INSTRUCT TO TEST AND TIE THE SERVICE IF THE CUSTOMER WANTS GAS OR DOESN'T PROVIDE PSE A RESPONSE IN A TIMELY MANNER.

STANDARD GAS CONSTRUCTION NOTES:

1. FIELD LOCATE ALL UNDERGROUND UTILITIES. EXCAVATOR TO CALL "ONE-CALL" TWO WORKING DAYS PRIOR TO CONSTRUCTION, IN WESTERN WASHINGTON CALL: 1-800-424-5555. OR CALL NATIONWIDE: 811
2. NOTIFY APPROPRIATE PERMITTING AGENCY PRIOR TO JOB START (SEE PERMIT REQUIREMENTS).
3. ALL CONSTRUCTION IS TO CONFORM TO PSE GAS OPERATING STANDARDS AND GAS FIELD PROCEDURES.
4. EROSION AND SEDIMENT CONTROL SHALL BE PER PSE STANDARD PRACTICE 0150.3200 TECHNIQUES FOR TEMPORARY EROSION AND SEDIMENT CONTROL AND ANY ADDITIONAL LOCAL JURISDICTION REQUIREMENTS.
5. NOTIFY PROPERTY OWNERS ADJACENT TO PROPOSED CONSTRUCTION ACTIVITIES A MINIMUM OF TWO WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION. USE iSi TO DISTRIBUTE FLYERS IF JOB IS LARGE, OTHERWISE HAND DELIVER FLYERS BE SURE TO INCLUDE THE LIST OF FREQUENTLY ASKED QUESTIONS AND INFORMATION ABOUT THE OPPORTUNITY TO PURCHASE AN EXCESS FLOW VALVE WHEN THEIR SERVICE IS INSTALLED OR REPLACED PER GAS OPERATING STANDARD 2550.1600. ALLOW ADEQUATE TIME FOR CUSTOMER DECISION AND RESPONSE.
6. ANY CHANGE IN ROUTE, PIPE SIZE/TYPE, TIE-IN METHOD OR ADDITIONAL MAIN FOOTAGE MUST BE APPROVED BY THE APPROPRIATE PSE ENGINEER OR PSE REPRESENTATIVE.
7. COMPLETE "PIPE CONDITION REPORT" ON ALL METALLIC PSE FACILITIES. CHECK BOX ON REPORT FOR WIRE BOX (TEST LEAD) INSTALLATION.
8. PIPELINE MARKERS AND WARNING SIGNS SHALL BE INSTALLED AND RECORDED BY THE CONTRACTOR PER PSE GAS OPERATING STANDARD 2525.2500.
9. INSTALL MAIN VALVES OUT OF TRAFFIC WHERE POSSIBLE. VALVE MARKERS SHALL BE INSTALLED AND RECORDED BY THE CONTRACTOR PER PSE GAS OPERATING STANDARD 2525.2600 FOR ALL HP VALVES IF THE LOCATION IS NOT READILY ACCESSIBLE, AND FOR ALL VALVES WHERE PERSISTENT SNOWFALL MAY OBSCURE THE VALVE BOX.
10. TO PREVENT ACCIDENTAL OVERPRESSURE OF ADJOINING SYSTEMS, NO TWO MAINS SHALL BE CONNECTED EXCEPT AS SHOWN ON THIS DESIGN UNLESS APPROVED BY APPROPRIATE PSE ENGINEER OR PSE REPRESENTATIVE.
11. SYSTEM MAOP DENOTED BY: SYSTEM MAOP = 45 PSIG
12. GAUGE AND MONITOR USE OF ALL STOPPERS TO ENSURE ADEQUATE FEED.
13. RESTORE ALL DRIVEWAYS SUBJECT TO OPEN CUT TO ORIGINAL OR BETTER CONDITION.
14. PURGE POINTS TO BE INSTALLED PER PSE GAS OPERATING STANDARDS 2525.3400.
15. MAINS AND SERVICES SHALL BE TESTED AND PURGED PER PSE GAS OPERATING STANDARDS 2525.3300 AND 2525.3400.
16. IF METALLIC PIPE IS INVOLVED, COORDINATE INSTALLATION WITH CP TECH. MIKE COWIN , PHONE 206-571-8517
17. NOTE ALL ACTUAL FOOTAGE, LOCATION AND MATERIAL CHANGES ON THE AS-BUILT IN RED. (') DENOTES FOOTAGE BETWEEN FITTINGS.
18. EXCESS FLOW VALVE TO BE INSTALLED ON ALL NEW RESIDENTIAL SERVICES PER GOS 2500.2200. (RECORD ALL INFORMATION ON D-4 CARD)

HOLE HOG TABLE

CALLOUT		LOCATION	DEPTH	LENGTH
BP1	START			
BP2	END			
BP3	START			
BP4	END			
BP5	START			
BP6	END			
BP7	START			
BP8	END			
BP9	START			
BP10	END			

SAP BATCH YEAR & FOOTAGE

SIZE OF RETIRED MAIN	MATERIAL RETIRED	ORIGINAL JOB	ORIGINAL YEAR	PROPOSED LENGTH OF RETIREMENT	ACTUAL LENGTH OF RETIREMENT
2"	STW	3676	1962	174'	

GASSED UP PIPELINE			Verify Testing Requirements, Chart vs Gauge GOS 2525.3300 sec. 5, Table 5-1 and sec. 5.5				
PIPE SEGMENT	FOREMAN'S NAME	DATE	GAS MAIN PRESSURE & TESTING				
			TYPE TEST	☐ SOAP	☐ AIR	☐ NITROGEN	☐ WATER
			DATE ON	/ /	START TIME		TESTED BY
			DATE OFF	/ /	STOP TIME		
			PRESSURE		TEST RESULTS	☐ P	☐ F
			TYPE TEST	☐ SOAP	☐ AIR	☐ NITROGEN	☐ WATER
			DATE ON	/ /	START TIME		TESTED BY
			DATE OFF	/ /	STOP TIME		
			PRESSURE		TEST RESULTS	☐ P	☐ F
			TYPE TEST	☐ SOAP	☐ AIR	☐ NITROGEN	☐ WATER
			DATE ON	/ /	START TIME		TESTED BY
			DATE OFF	/ /	STOP TIME		
			PRESSURE		TEST RESULTS	☐ P	☐ F
			TYPE TEST	☐ SOAP	☐ AIR	☐ NITROGEN	☐ WATER
			DATE ON	/ /	START TIME		TESTED BY
			DATE OFF	/ /	STOP TIME		
			PRESSURE		TEST RESULTS	☐ P	☐ F
			TYPE TEST	☐ SOAP	☐ AIR	☐ NITROGEN	☐ WATER
			DATE ON	/ /	START TIME		TESTED BY
			DATE OFF	/ /	STOP TIME		
			PRESSURE		TEST RESULTS	☐ P	☐ F
			TYPE TEST	☐ SOAP	☐ AIR	☐ NITROGEN	☐ WATER
			DATE ON	/ /	START TIME		TESTED BY
			DATE OFF	/ /	STOP TIME		
			PRESSURE		TEST RESULTS	☐ P	☐ F
			☐ TESTED BY PSE PRESSURE CONTROL, SEE FORM 1928				
			DESIGN PRESS	60	SYS MAOP	45	
			2023 02/08				

GASSED UP PIPELINE			Verify Testing Requirements, Chart vs Gauge GOS 2525.3300 sec. 5, Table 5-1 and sec. 5.5				
PIPE SEGMENT	FOREMAN'S NAME	DATE	GAS MAIN PRESSURE & TESTING				
			TYPE TEST	☐ SOAP	☐ AIR	☐ NITROGEN	☐ WATER
			DATE ON	/ /	START TIME		TESTED BY
			DATE OFF	/ /	STOP TIME		
			PRESSURE		TEST RESULTS	☐ P	☐ F
			TYPE TEST	☐ SOAP	☐ AIR	☐ NITROGEN	☐ WATER
			DATE ON	/ /	START TIME		TESTED BY
			DATE OFF	/ /	STOP TIME		
			PRESSURE		TEST RESULTS	☐ P	☐ F
			☐ TESTED BY PSE PRESSURE CONTROL, SEE FORM 1928				
			DESIGN PRESS	60	SYS MAOP	45	
			2023 02/18				

GAS MAIN INSTALLATION/RETIREMENT

Type/Work	Pipe Size	Type	Est Length	Act Lgth	Manufacturer
INSTALL	2"	STW	191'		
RETIRE	2"	STW	174'		

PROJECT PHASE		Notification #	Order #
GAS	SAP Superior	11856033	109142730
	Service/Meter		
	Service/Meter		
	Service/Meter		
	Service/Meter		
	Ind. Service		
	Ind. MSA		
	Dis. Reg. / FT		
	HP Svc/MSA		
	Relocate		
	Retirement		108635662

CUSTOMER PROVIDED COVID-19 SITE SUPERVISOR CONTACT INFORMATION

COVID-19 SUPERVISOR NAME (PRINTED):_____

COVID-19 SUPERVISOR PH. #:_____

FITTER'S CHECKLIST (CHECK BOX TO CONFIRM COMPLETION)

- ☐ Inspected Steel and PE pipe per GOS 2450.1400 and 2450.1500
- ☐ Reviewed and complied with all construction notes.
- ☐ Recorded all required information on the as-built per GOS 2500.1700.
- ☐ Completed post installation inspection per GOS 2525.1200 and 2525.2700.
- ☐ Left the work area in a clean and safe condition.

Foreman's Signature_____

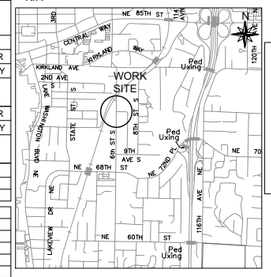
Foreman's Name (printed) _____

Company: _____ Date _____

4680 06/11

Vicinity Map

N/A



Owner / Developer Contact Info

N/A
N/A
N/A
ATTN: N/A N/A office

For contacts below dial 1-888-CALL PSE (225-5773)

CALL 811 AT LEAST 2 BUSINESS DAYS BEFORE YOU DIG

THIS SKETCH NOT TO BE RELIED UPON FOR EXACT LOCATION OF EXISTING FACILITIES

Project Manager Contact Information:
Manager: KIARA SKYE
Cell Phone: 425-213-9205
E-Mail: kiara.skye@pse.com

"Locates Required" Yes ☐ No ☐
"Flagging Required" Yes ☐ No ☐

REAL ESTATE/EASEMENT	PERMIT
N/A	KIRKLAND

REV#	DATE	BY	DESCRIPTION
3			
2			
1			

FUNCTION	CONTACT	PHONE NO	DATE
PROJECT MGR	K.SKYE	425-213-9205	
ENGR - GAS			
DRAWN BY	J.MOSS	425-748-6345	4-29-22
CHECKED BY	C.WESTHOFF	425-748-6323	4-29-22
APPROVED BY	K.SKYE	425-213-9205	
CP APPROVAL	M.COWIN	206-571-8517	4-21-22
PC APPROVAL	.	.	.
MAPPING			

COUNTY	Emer Sect	GAS WK CTR
KING	469A	CSPFGPI
1/4 SEC	OP MAP	PLAT MAP
NE 8-25-5	180.080	182.083

JOINT FACILITIES ARRANGEMENTS

UTILITIES	N/A	N/A	N/A	N/A
CONTACT	N/A	N/A	N/A	N/A
PHONE#	N/A	N/A	N/A	N/A

PUGET SOUND ENERGY

DESIGNED BY PSE

5th & 8th WATER MAIN REPLACEMENT

2" STW IP MAIN RELOCATION

512 5th AVE S, KIRKLAND, WA 98033

SAP Sup Order Nbr 109142730

Drawing Number

SCALE AS NOTED | PAGE 1 of 4

109142730

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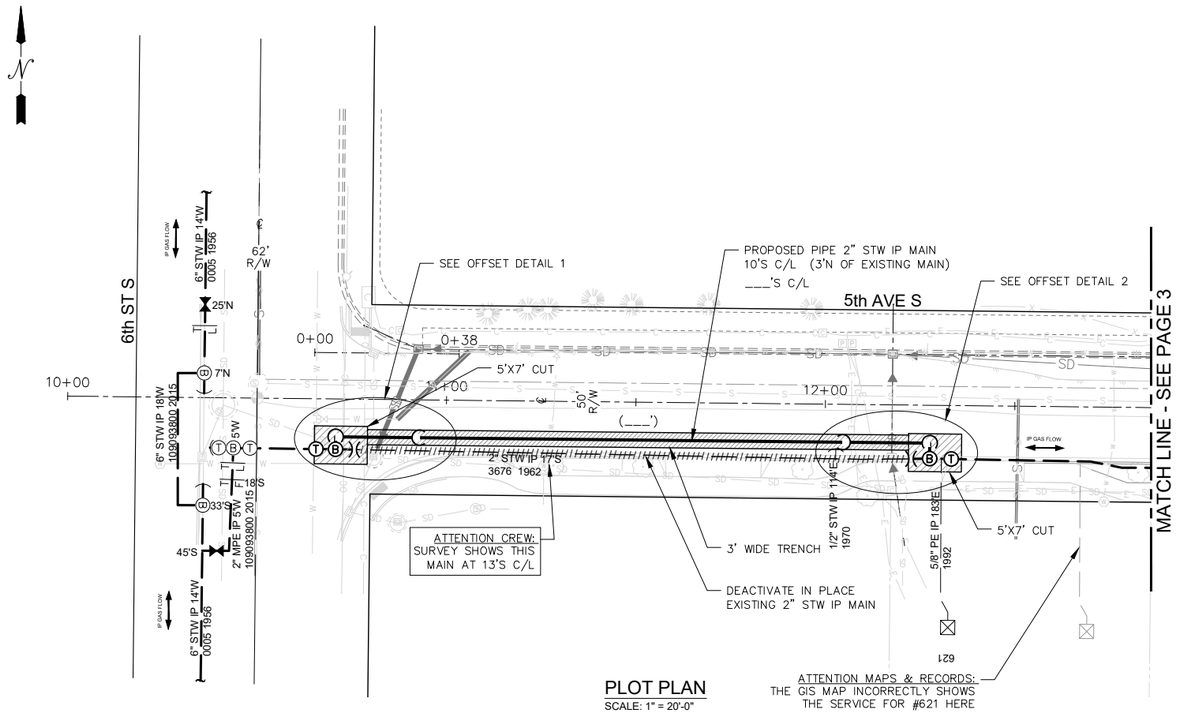
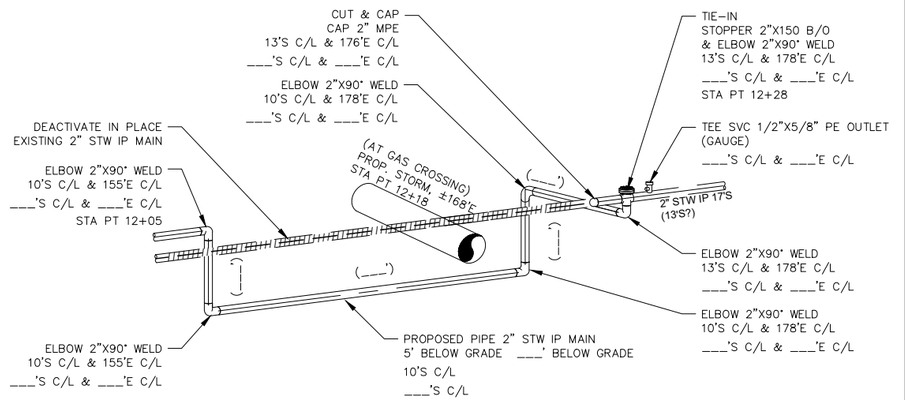
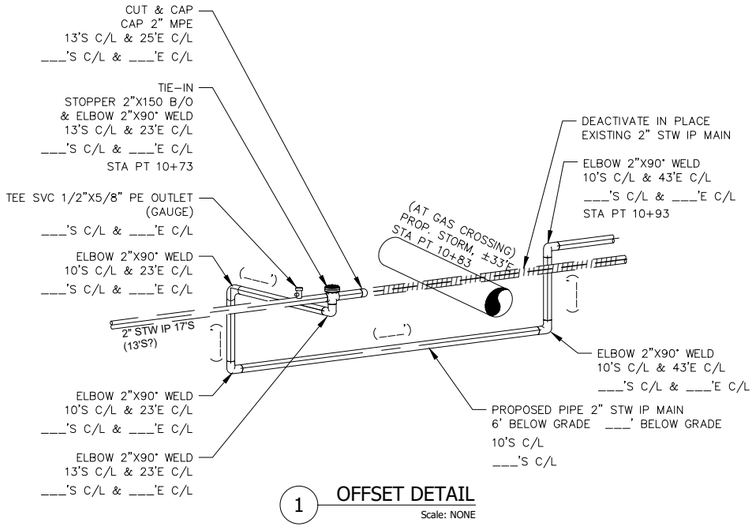


PLOT PLAN
SCALE: 1" = 20'-0"



2 OFFSET DETAIL
Scale: NONE



1 OFFSET DETAIL
Scale: NONE

GAUGE TEES TO BE MONITORED
DURING ALL ACTIVITIES WHERE FLOW
OF GAS WILL BE INTERRUPTED

FITTER'S CHECKLIST (CHECK BOX TO CONFIRM COMPLETION)

- ☐ Inspected Steel and PE pipe per GOS 2450.1400 and 2450.1500
- ☐ Reviewed and compiled with all construction notes.
- ☐ Recorded all required information on the as-built per GOS 2500.1700.
- ☐ Completed post installation inspection per GOS 2525.1200 and 2525.2700.
- ☐ Left the work area in a clean and safe condition.

Foreman's Signature_____

Foreman's Name (printed) _____

Company: _____ Date _____

4680 06/11

				REAL ESTATE/EASEMENT N/A		PERMIT KIRKLAND	
REV#	DATE	BY	DESCRIPTION	FUNCTION	CONTACT	PHONE NO	DATE
3				PROJECT MGR	K.SKYE	425-213-9205	
2				ENGR - GAS			
1				DRAWN BY	J.MOSS	425-748-6345	4-29-22
				CHECKED BY	C.WESTHOFF	425-748-6323	4-29-22
				APPROVED BY	K.SKYE	425-213-9205	
				CP APPROVAL	M.COWIN	206-571-8517	4-21-22
				PC APPROVAL	.	.	.
				MAPPING			

COUNTY	Emer Sect	GAS WK CTR	
KING	469A	CSPFGPI	
1/4 SEC	OP MAP	PLAT MAP	
NE 8-25-5	180.080	182.083	

JOINT FACILITIES ARRANGEMENTS				
UTILITIES	N/A	N/A	N/A	N/A
CONTACT	N/A	N/A	N/A	N/A
PHONE#	N/A	N/A	N/A	N/A

PUGET SOUND ENERGY

DESIGNED BY PSE

5th & 8th WATER MAIN REPLACEMENT
2" STW IP MAIN RELOCATION
512 5th AVE S, KIRKLAND, WA 98033

SAP Sup Order Nbr 109142730

Drawing Number

SCALE 1"=20'

PAGE 2 of 4

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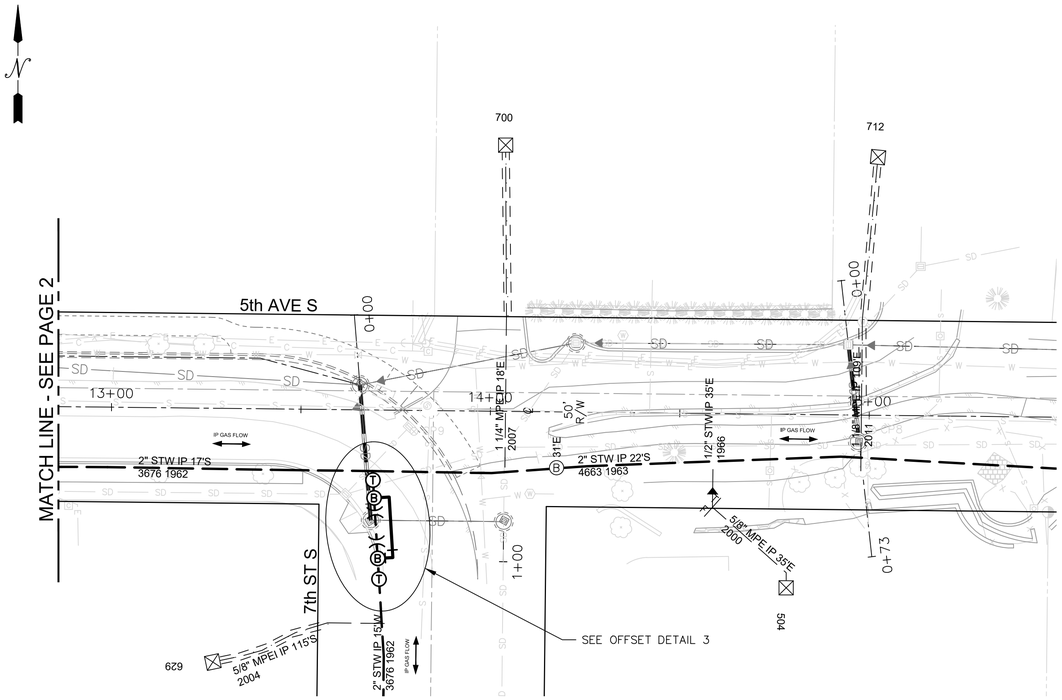
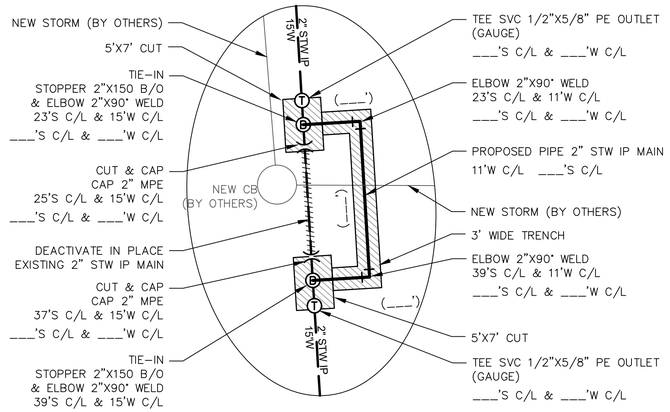


PLOT PLAN
SCALE: 1" = 20'-0"



3 OFFSET DETAIL
Scale: NONE

GAUGE TEES TO BE MONITORED DURING ALL ACTIVITIES WHERE FLOW OF GAS WILL BE INTERRUPTED

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- ☐ Left the work area in a clean and safe condition.

Foreman's Signature_____

Foreman's Name (printed) _____

Company: _____ Date _____

4680 06/11

REAL ESTATE/EASEMENT	PERMIT
N/A	KIRKLAND

REV#	DATE	BY	DESCRIPTION	FUNCTION	CONTACT	PHONE NO	DATE
3				PROJECT MGR	K.SKYE	425-213-9205	
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				PC APPROVAL	.	.	.
				MAPPING			

COUNTY	Emer Sect	GAS WK CTR
KING	469A	CSPFGPI
1/4 SEC	OP MAP	PLAT MAP
NE 8-25-5	180.080	182.083

JOINT FACILITIES ARRANGEMENTS

UTILITIES	N/A	N/A	N/A	N/A
CONTACT	N/A	N/A	N/A	N/A
PHONE#	N/A	N/A	N/A	N/A

PUGET SOUND ENERGY

DESIGNED BY PSE

5th & 8th WATER MAIN REPLACEMENT

2" STW IP MAIN RELOCATION

512 5th AVE S, KIRKLAND, WA 98033

SAP Sup Order Nbr 109142730

Drawing Number

SCALE 1"=20'

PAGE 3 of 4

Apr. 29, 2022 - 10:17am C:\pwworking\projectwise\jmoss\dms71390\ 109142730.dwg

EROSION/SEDIMENTATION CONTROL – PLAN NOTES

1. The approved Construction Sequence shall be as follows:

a. Conduct pre–construction meeting.
b. Flag or fence clearing limits.
c. Post sign with name and phone number of TESC supervisor.
d. Install catch basin protection if required.
e. Grade and install construction entrance(s).
f. Install perimeter protection (silt fence, brush barrier, etc.).
g. Construct sediment ponds and traps.
h. Grade and stabilize construction roads.
i. Construct surface water controls (interceptor dikes, pipe slope drains, etc.) simultaneously with clearing and grading for project development.
j. Maintain erosion control measure in accordance with City of Kirkland Standards and manufacturer's recommendations.
k. Relocate erosion control measures or install new measures so that as site conditions change, the erosion and sediment control is always in accordance with the City TESC minimum requirements.
l. Cover all areas within the specified time frame with straw, wood fiber mulch, compost, plastic sheeting, crushed rock or equivalent.
m. Stabilize all areas that reach final grade within 7 days.
n. Seed or sod any areas to remain unworked for more than 30 days.
o. Upon completion of the project, all disturbed areas must be stabilized and best management practices removed if appropriate.

2. Approval of this erosion/sedimentation control (ESC) plan does not constitute an approval of permanent road or drainage design (e.g., size and location of roads, pipes, restrictors, channels, retention facilities, utilities, etc.).

3. The implementation of this ESC plan and the construction, maintenance, replacement, and upgrading of these ESC facilities is the responsibility of the Permittee/Contractor until all construction is approved.

4. The boundaries of the clearing limits shown on this plan shall be set by survey and clearly flagged in the field by a clearing control fence prior to construction. During the construction period, no disturbance or removal of any ground cover beyond the flagged clearing limits shall be permitted. The flagging shall be maintained by the Permittee/Contractor for the duration of construction.

5. The ESC facilities shown on this plan must be constructed prior to or in conjunction with all clearing and grading activities in such a manner as to ensure that sediment–laden water does not enter the drainage system or violate applicable water standards. Wherever possible, maintain natural vegetation for silt control.

6. The ESC facilities shown on this plan are the minimum requirements for anticipated site conditions. During the construction period, these ESC facilities shall be upgraded (e.g., additional sumps, relocation of ditches and silt fences, etc.) as needed for unexpected storm events. Additionally, more ESC facilities may be required to ensure complete siltation control. Therefore, during the course of construction it shall be the obligation and responsibility of the Contractor to address any new conditions that may be created by his activities and to provide additional facilities over and above the minimum requirements as may be needed.

7. The ESC facilities shall be inspected by the Permittee/Contractor daily during non–rainfall periods, every hour (daylight) during a rainfall event, and at the end of every rainfall, and maintained as necessary to ensure their continued functioning. In addition, temporary siltation ponds and all temporary siltation controls shall be maintained in a satisfactory condition until such time that clearing and/or construction is completed, permanent drainage facilities are operational, and the potential for erosion has passed. Written records shall be kept documenting the reviews of the ESC facilities.

8. The ESC facilities on inactive sites shall be inspected and maintained a minimum of once a month or within 48 hours following a storm event.

9. All denuded soils must be stabilized with an approved TESC method (e.g. seeding, mulching, plastic covering, crushed rock) within the following timelines:

May 1 to September 30 – soils must be stabilized within 7 days of grading.
October 1 to April 30 – soils must be stabilized within 2 days of grading.
Stabilize soils at the end of the workday prior to a weekend, holiday, or predicted rain event.

10. At no time shall more than 1' of sediment be allowed to accumulate within a catch basin. All catch basins and conveyance lines shall be cleaned prior to paving. The cleaning operation shall not flush sediment–laden water into the downstream system.

11. Stabilized construction entrances shall be installed at the beginning of construction and maintained for the duration of the project. Additional measures, such as wash pads, may be required to ensure that all paved areas are kept clean for the duration of the project.

12. Any permanent retention/detention facility used as a temporary settling basin shall be modified with the necessary erosion control measures and shall provide adequate storage capacity. If the permanent facility is to function ultimately as an infiltration or dispersion system, the facility shall not be used as a temporary settling basin. No underground detention tank, detention vault, or system which backs under or into a pond shall be used as a temporary settling basin.

13. Where seeding for temporary erosion control is required, fast germinating grasses shall be applied at an appropriate rate (example: annual or perennial rye applied at approximately 80 pounds per acre).

14. Where straw mulch is required for temporary erosion control, it shall be applied at a minimum thickness of 2".

15. All erosion/sedimentation control ponds with a dead storage depth exceeding 6" must have a perimeter fence with a minimum height of 3'.

16. All work and materials shall be in accordance with City of Kirkland standards and specifications.

17. The ESC facilities shall be constructed in accordance with the details on the approved plans. Locations may be moved to suit field conditions, subject to approval by the Engineer and the City of Kirkland Inspector.

18. A copy of the approved erosion control plans must be on the job site whenever construction is in progress.

19. All lots adjoining or having any native growth protection easements (NGPE) shall have a 6' high temporary construction fence (chain link with pier blocks) separating the lot (or buildable portions of the lot) from the area restricted by the NGPE and shall be installed prior to any grading or clearing and remain in place until the Planning Department authorizes removal.

20. Clearing limits shall be delineated with a clearing control fence. The clearing control fence shall consist of a 6–ft. high chain link fence adjacent the drip line of trees to be saved, wetland or stream buffers, and sensitive slopes. Clearing control fences along wetland or stream buffers or upslope of sensitive slopes shall be accompanied by an erosion control fence. If approved by the City, a four–foot high orange mesh clearing control fence may be used to delineate clearing limits in all other areas.

21. Off–site streets must be kept clean at all times. If dirt is deposited on the public street system, the street shall be immediately cleaned with power sweeper or other equipment. All vehicles shall leave the site by way of the construction entrance and shall be cleaned of all dirt that would be deposited on the public streets.

22. Any catch basins collecting runoff from the site, whether they are on or off the site, shall have adequate protection from sediment. Catch basins directly downstream of the construction entrance or any other catch basin as determined by the City Inspector shall be protected with a "storm drain protection insert" or equivalent.

23. The washed gravel backfill adjacent to the filter fabric fence shall be replaced and the filter fabric cleaned if it is nonfunctional by excessive silt accumulation as determined by the City of Kirkland. Also, all interceptor swales shall be cleaned if silt accumulation exceeds one–quarter depth.

24. Rock for erosion protection of roadway ditches, where required, must be of sound quarry rock, placed to a depth of 1' and must meet the following specifications: 4"–8" rock/40%–70% passing; 2"–4" rock/30%–40% passing; and 1"–2" rock/10%–20% passing.

25. If any part(s) of the clearing limit boundary or temporary erosion/sedimentation control plan is/are damaged, it shall be repaired immediately.

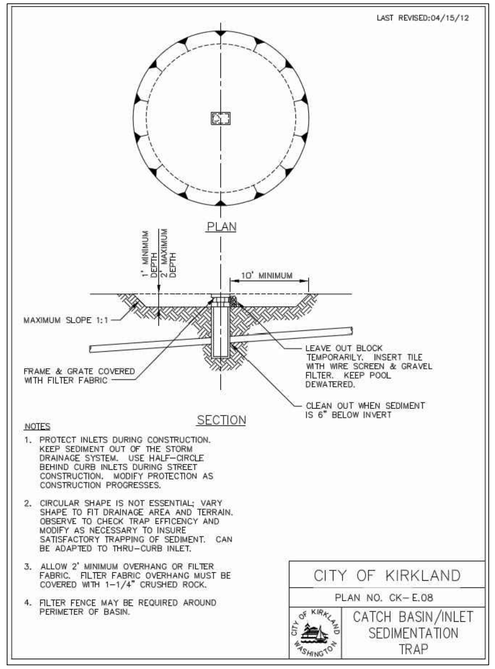
26. All properties adjacent to the project site shall be protected from sediment deposition and runoff.

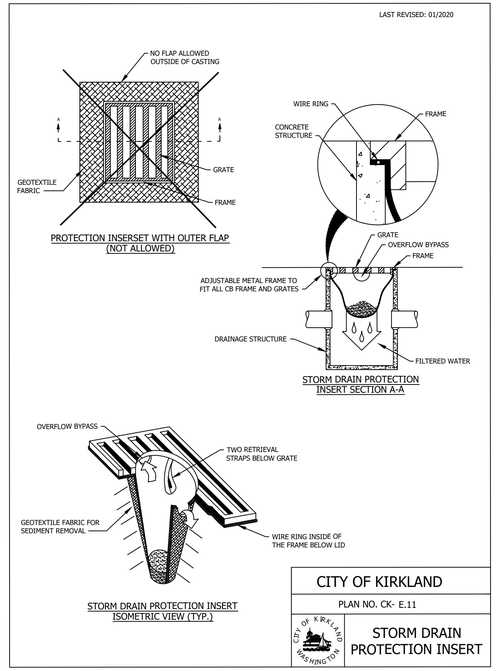
27. Do not flush concrete by–products or trucks near or into the storm drainage system. If exposed aggregate is flushed into the storm system, it could mean re–cleaning the entire downstream storm system, or possibly re–laying the storm line.

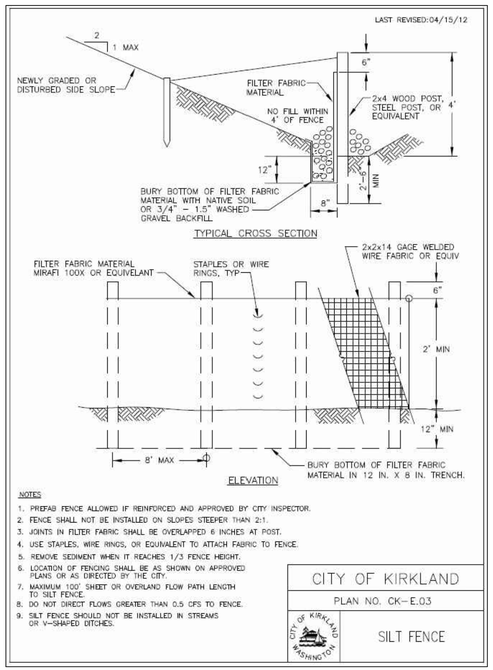
28. Prior to the October 1 of each year (the beginning of the wet season), all disturbed areas shall be reviewed to identify which ones can be seeded in preparation for the winter rains. The identified disturbed area shall be seeded within one week after October 1. A site plan depicting the areas to be seeded and the areas to remain uncovered shall be submitted to the Public Works Construction Inspector. The Inspector can require seeding of additional areas in order to protect surface waters, adjacent properties, or drainage facilities.

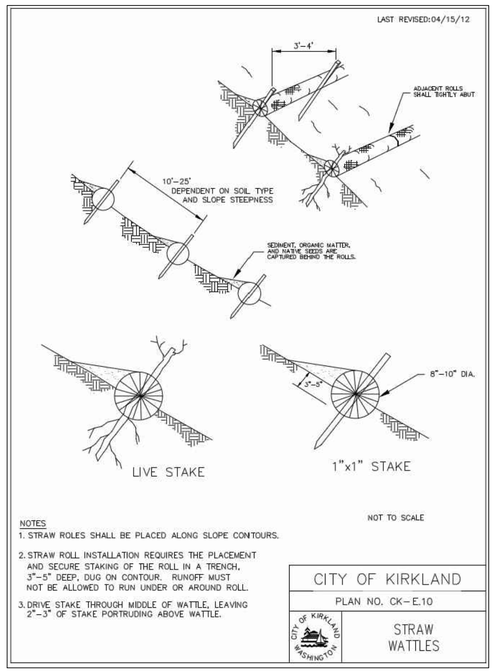
29. If a sediment pond is not proposed, a baker tank or other temporary ground and/or surface water storage tank may be required during construction, depending on weather conditions.

30. Any area to be used for infiltration or pervious pavement (including a 5–foot buffer) must be surrounded by silt fence prior to construction and until final stabilization of the site to prevent soil compaction and siltation by construction activities.









REAL ESTATE/EASEMENT				PERMIT	
N/A				KIRKLAND	
REV#	DATE	BY	DESCRIPTION	FUNCTION / CONTACT	PHONE NO / DATE
3				PROJECT MGR: K.SKYE	425-213-9205
2				ENGR - GAS:	
1				DRAWN BY: J.MOSS	425-748-6345 4-29-22
				CHECKED BY: C.WESTHOFF	425-748-6323 4-29-22
				APPROVED BY: K.SKYE	425-213-9205
				PC APPROVAL: M.COWIN	206-571-8517 4-21-22
				MAPPING: .	. .

COUNTY	Emer Sect	GAS WK CTR	APPROVED BY	K.SKYE	425-213-9205	
KING	469A	CSPFGPI	CP APPROVAL	M.COWIN	206-571-8517	4-21-22
1/4 SEC	OP MAP	PLAT MAP	PC APPROVAL	.	.	.
NE 8-25-5	180.080	182.083	MAPPING			

JOINT FACILITIES ARRANGEMENTS

UTILITIES	N/A	N/A	N/A	N/A
CONTACT	N/A	N/A	N/A	N/A
PHONE#	N/A	N/A	N/A	N/A

PUGET SOUND ENERGY

DESIGNED BY PSE

5th & 8th WATER MAIN REPLACEMENT

2" STW IP MAIN RELOCATION
512 5th AVE S, KIRKLAND, WA 98033

SAP Sup Order Nbr 109142730
Drawing Number

SCALE: NONE | PAGE: 4 of 4

Apr 29, 2022 – 10:17am C:\pwworking\projectwise\jmoss\dms71390\ 109142730.dwg

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City of Kirkland