Set No. _____

Specifications, Proposal,
and Contract Documents for:

108th Avenue NE Pipe Installation Project

CIP No. SDC1590000
Job No. 33-25-PW

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

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CITY OF KIRKLAND
DEPARTMENT OF PUBLIC WORKS

108TH AVENUE NE PIPE INSTALLATION PROJECT
CIP NO. SDC1590000
JOB NO. 33-25-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.

6/8/2026

Brian Wolf, P.E.
Senior Associate, Project Engineer

Approved for Construction:

Rob English, PE
Capital Division Manager

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CITY OF KIRKLAND
GENERAL TABLE OF CONTENTS

Invitation to Bid ..... **(Tan)**

General Information, Proposal & Contract ..... **(White)**

Amendments to the Standard Specifications ..... **(Pink)**

Special Provisions ..... **(Blue)**

Prevailing Wage Rates ..... **(Yellow)**

Appendices ..... **(White)**

Appendix A: Project Plans

Appendix B: Geotechnical Report

Appendix C: Stormwater TIR

Appendix D: Arborist Report

City of Kirkland

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INVITATION TO BID

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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 10:00 A.M., local time on July 9, 2026, for the project hereinafter referred to as:

108TH AVENUE NE PIPE INSTALLATION PROJECT
CIP NO. SDC1590000
PROJECT JOB NO. 33-25-PW

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

The work to be performed under these specifications consists of furnishing all labor, tools, materials, and equipment necessary for construction of the **108TH AVENUE NE PIPE INSTALLATION PROJECT.** Specific work includes but is not limited to **installation of approximately 845 lineal feet of 12-inch storm drainage pipe, 3 Type 1 and 7 Type 2 Catch basins, pavement restoration, and other related Work**. The estimated cost for this project is in the range of $450,000 to $550,000 based on the base bid, Schedule A.

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. Information for registering for the Bidders List can be found at www.bxwa.com/membership.html or by phoning (425) 258-1303, or in person at Builder's Exchange of Washington located at 2607 Wetmore Ave, Everett, WA.

The City of Kirkland in accordance with Title VI of the Civil Rights Act of 1964, (78 Stat. 252, 42 USC 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

Questions regarding this project shall be submitted in writing to Ben Mahony, E.I.T. via email only at *BMahony@kirklandwa.gov*. Questions via phone will not be accepted. Bidders shall submit questions no later than 12:00 A.M. on July 2, 2026.

The City reserves the right to reject any and all bids, and to waive any irregularities or 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 sixty (60) days after the actual date of the bid opening.

Published: Daily Journal of Commerce – June 11, 2026: June 18, 2026

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GENERAL INFORMATION, PROPOSAL, & CONTRACT

City of Kirkland

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CITY OF KIRKLAND

TABLE OF CONTENTS – PROPOSAL

Information for Bidders 2
Bid Proposal 5
Bid Bond 9
Non-collusion Affidavit 10
Statement of Bidder's Qualifications 11
Subcontractor Identification 12
Bidder's Checklist 14

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 in compliance with RCW 39.30.060 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

108TH AVENUE NE PIPE INSTALLATION PROJECT
CIP NO. SDC1590000
JOB NO. 33-25-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 **108TH AVENUE NE PIPE INSTALLATION PROJECT, JOB NO. 33-25-PW** for the following:

Total Computed Price *(in figures)*:	$ _____
Washington State Sales Tax 10.4% *(in figures)*: Per WAC 458-20-171 (State Sales Tax - Rule 171)	N/A. - Included $ in Bid Items
Total Bid *(in figures)*:	$ _____

Total 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
_____	_____
	EMAIL

** Bid proposal to be submitted in a **sealed envelope** marked "**Bid Enclosed**" for **108TH AVENUE NE PIPE INSTALLATION PROJECT, JOB NO. 33-25-PW.**

CITY OF KIRKLAND
BID SCHEDULE

108TH AVENUE NE PIPE INSTALLATION PROJECT
JOB NO. 33-25-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.

Item No.	Item Description	Spec Ref.	Est. Qty.	Unit	Unit Price	Amount
1	Minor Change	1-04	1	FA	$55,000.00	$55,000.00
2	Record Drawings (Minimum Bid $2,000)	1-05	1	LS		
3	Mobilization	1-09	1	LS		
4	Project Temporary Traffic Control	1-10	1	LS		
5	Clearing and Grubbing	3-01	1	LS		
6	Remove Existing Tree	3-01	3	EA		
7	Cement Concrete Sidewalk Removal	3-02	70	SY		
8	Cement Concrete Curb Removal	3-02	115	LF		
9	Paver Removal (as Required)	3-02	45	SY		
10	Shoring or Extra Excavation, Class B	2-09	5,830	SF		
11	Controlled Density Fill (As Required)	4-04	25	CY		
12	Crushed Surfacing Base Course	5-04	15	TN		
13	HMA for Pavement Repair Cl. ½" PG 58H-22	5-04	120	TN		
14	HMA for Cl. ½" PG 58H-22	5-04	140	TN		
15	Planing Bituminous Pavement	5-04	1200	SY		
16	PVC Storm Sewer Pipe 12 In. Diameter	7-04	861	LF		
17	PVC Storm Sewer Pipe 8 In. Diameter	7-04	19	LF		
18	PVC Storm Sewer Pipe 6 In. Diameter	7-04	13	LF		
19	Catch Basin Type 1	7-05	3	EA		
20	Catch Basin Type 2 48 In. Diam.	7-05	5	EA		
21	Storm Manhole 48 In. Diam.w/ Structural Liner	7-05	1	EA		
22	Curb Inlet	7-05	1	EA		
23	Storm Drainage Manhole	7-05	1	EA		
24	Connection to Drainage Structure	7-05	3	EA		

Item No.	Item Description	Spec Ref.	Est. Qty.	Unit	Unit Price	Amount
25	Remove Existing Catch Basin	7-05	1	EA		
26	Replace Frame and Grate	7-05	1	EA		
27	Gravel Backfill For Foundations Class A	7-08	40	CY		
28	Erosion/Water Pollution Control	8-01	1	FA		
29	Property Restoration	8-02	1	LS		
30	Cement Concrete Traffic Curb and Gutter	8-04	105	LF		
31	Cement Concreter Driveway Entrance	8-06	1	SY		
32	Cement Concrete Sidewalk	8-14	65	SY		
33	Quarry Spalls (As Required)	8-15	20	TN		

Total Computed Price(in figures): **$**_____

Washington State Sales Tax 10.4% (in figures): **$ Not Applicable**

Per WAC 458-20-171 (State Sales Tax - Rule 171)

Total Bid (in figures): **$**_____

Total Bid (in words):_____

_____

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 PERSONS 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.

MUST BE SUBMITTED WITH PROPOSAL

CITY OF KIRKLAND
NONCOLLUSION AFFIDAVIT
108TH AVENUE NE PIPE INSTALLATION PROJECT
CIP NO. SDC1590000
JOB NO. 33-25-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.

MUST BE SUBMITTED WITH PROPOSAL

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: _____

MUST BE SUBMITTED WITH PROPOSAL

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:

> "(1) 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:
>
> (a) Within one hour after the published bid submittal time, 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; or
>
> (b) Within forty-eight hours after the published bid submittal time, the names of the subcontractors with whom the bidder, if awarded the contract, will subcontract for performance of the work of structural steel installation and rebar installation.
>
> 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."

Each bidder shall submit a list of:

1. HVAC, plumbing, electrical, structural steel installation, and rebar installation 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 relating to work described in RCW 39.30.060.

MUST BE SUBMITTED WITH PROPOSAL

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: _____

_____

_____

_____

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 if the estimate amount exceeds $1,000,000.)
10. Bid proposal to be submitted in a sealed envelope marked "Bid Enclosed" for: **108TH AVENUE NE PIPE INSTALLATION PROJECT, JOB NO. 33-25-PW.**

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CONTRACT

INFORMATION ONLY

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

City of Kirkland

CITY OF KIRKLAND

TABLE OF CONTENTS – CONTRACT DOCUMENTS

Contract 1

Performance and Payment Bond 4

Labor and Material Payment Bond 5

Contractor's Declaration of Option for Management of Statutory Retained Percentage 7

Retainage Bond 8

Retained Percentage Escrow Agreement 9

Retainage Release Requirements 12

CITY OF KIRKLAND
PUBLIC WORKS AGREEMENT

Version:063020

108th Avenue NE Pipe Installation Project

JOB NO. 33-25-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 "City."

W I T N E S S E T H:

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

Whereas, the City 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: "108th Avenue NE Pipe Installation Project, Job No. 33-25-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. Invitation to Bid, as published by the City.

B. Specifications prepared for this project by the City and named above by title.

C. 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 City.

E. Any written change orders, additions or deletions, if any, issued by the City, pursuant to this agreement.

F. Indemnification and insurance provisions included in the project documents shall apply to this agreement.

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 City 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 **108TH AVENUE NE PIPE INSTALLATION PROJECT**, **Job #33-25-PW**, which is hereby made a part of this bond as if fully set forth herein;

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

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

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

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

Signed this _____ day of _____, 2____.

Principal:	_____	Surety:	_____
By:	_____	By:	_____
Title:	_____	Title:	_____
Address:	_____	Address:	_____
City/Zip:	_____	City/Zip:	_____
Telephone: ( )	_____	Telephone: ( )	_____

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

LABOR, MATERIAL AND TAXES PAYMENT BOND

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

Bond No. _____

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

WHEREAS, Principal has been awarded, and is about to enter into, a Contract with City of Kirkland for **108TH AVENUE NE PIPE INSTALLATION PROJECT, Job #33-25-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
108TH AVENUE NE PIPE INSTALLATION PROJECT
JOB NO. 33-25-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	108th Avenue NE Pipe Installation Project
Contract Number	33-25-PW
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 **PRINICPAL**

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
108TH AVENUE NE PIPE INSTALLATION PROJECT
JOB NO. 33-25-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

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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GENERAL SPECIAL PROVISIONS

City of Kirkland

DIVISION 01 – GENERAL REQUIREMENTS

DIVISION 02 – EARTHWORK

DIVISION 03 – AGGREGATE PRODUCTION AND ACCEPTANCE

DIVISION 04 – BASES

DIVISION 05 – SURFACE TREATMENTS AND PAVEMENTS

DIVISION 06 – STRUCTURES

DIVISION 07 – DRAINAGE STRUCTURES, STORM SEWERS, SANITARY SEWERS, WATER MAINS, AND CONDUITS

DIVISION 08 – MISCELLANEOUS CONSTRUCTION

DIVISION 09 – MATERIALS

GSP DIVISION 1

City of Kirkland

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SPECIAL PROVISIONS

Supplement to

2026

WSDOT Standard Specifications

City of Kirkland
TABLE OF CONTENTS - SPECIAL PROVISIONS

DIVISION 1 - GENERAL REQUIREMENTS 7
DESCRIPTION OF WORK 7
1-01 DEFINITIONS AND TERMS 7
1-01.3 Definitions 7
1-02 BID PROCEDURES AND CONDITIONS 9
1-02.1 Prequalification of Bidders 9
1-02.1 Qualifications of Bidder 9
1-02.1(1) Supplemental Qualifications Criteria 9
1-02.2 Plans and Specifications 10
1-02.4(1) General 10
1-02.5 Proposal Forms 10
1-02.6 Preparation of Proposal 11
1-02.8 Noncollusion Declaration and Lobbying Certification 11
1-02.10 Withdrawing, Revising, or Supplementing Proposal 12
1-02.13 Irregular Proposals 12
1-02.14 Disqualification of Bidders 13
1-02.15 Pre Award Information 15
1-03 AWARD AND EXECUTION OF CONTRACT 15
1-03.1 Consideration of Bids 15
1-03.3 Execution of Contract 16
1-03.4 Contract Bond 16
1-03.7 Judicial Review 17
1-03.8 Escrow Bid Document Preservation 17
1-04 SCOPE OF THE WORK 20
1-04.1 Intent of the Contract 20
1-04.2 Coordination of Contract Documents, Plans, Special Provisions, Specifications, and Addenda 20
1-04.4 Changes 20
1-04.4(1) Minor Changes 21
1-04.6 Variation in Estimated Quantities 21
1-04.8 Progress Estimates and Payments 21
1-04.11 Final Cleanup 21
1-04.12 Water, Electrical Power, Telecommunications, and Sanitary Sewer Requirements 22
1-05 CONTROL OF WORK 22
1-05.1 Authority of the Engineer 22
1-05.4 Conformity with and Deviations from Plans and Stakes 23
1-05.4(1) Roadway and Utility Surveys 23

1-05.4.3 Monuments....24
1-05.7 Removal of Defective and Unauthorized Work....25
1-05.9 Equipment....26
1-05.10 Guarantees....26
1-05.11 Final Inspection....26
1-05.11 Final Inspections and Operational Testing....26
1-05.11(1) Substantial Completion Date....26
1-05.11(2) Final Inspection and Physical Completion Date....27
1-05.11(3) Operational Testing....27
1-05.12 Final Acceptance....28
1-05.12(1) One-Year Guarantee Period....28
1-05.13 Superintendents, Labor and Equipment of Contractor....28
1-05.15 Method of Serving Notices....29
1-05.16 Water and Power....29
1-05.18 Record Drawings....29
1-05.19 Daily Construction Report....31
1-06 CONTROL OF MATERIAL....32
1-06.1 Approval of Materials Prior to Use....32
1-06.1(2) Request for Approval of Materials (RAM)....32
1-06.2(2)B Financial Incentive....33
1-06.6 Recycled Materials....33
1-07 LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLIC....33
1-07.1 Laws to Be Observed....33
1-07.2 State Taxes....35
1-07.2 State Sales Tax....35
1-07.2(1) State Sales Tax — Rule 171....35
1-07.2(2) State Sales Tax — Rule 170....35
1-07.2(3) Services....36
1-07.5 Environmental Regulations....36
1-07.5(2) State Department of Fish and Wildlife....36
1-07.6 Permits and Licenses....37
1-07.6(1) Permits for Sanitary Sewer Discharge for Construction Dewatering....37
1-07.6(2) Permits for Off-site Staging and Storage Areas....37
1-07.8 High Visibility Apparel....38
1-07.8(1) Traffic Control Personnel....38
1-07.9 Wages....39
1-07.9(5)A Required Documents....39
1-07.11 Requirements for Nondiscrimination....39
1-07.11(1)C Regulatory Authorities....39
1-07.11(2) Contractual Requirements....40
1-07.14 Responsibility for Damage....40
1-07.15 Temporary Water Pollution/Erosion Control....41
1-07.15(1) Spill Prevention, Control, and Countermeasures Plan....41
1-07.16 Protection and Restoration of Property....41
1-07.16(3) Fences, Mailboxes, Incidentals....41
1-07.17 Utilities and Similar Facilities....41
1-07.17(2) Utility Construction, Removal or Relocation by Others....44
1-07.18 Public Liability and Property Damage Insurance....44
1-07.18(5)D Excess or Umbrella Liability....47
1-07.18(5)K Professional Liability....48
1-07.23 Public Convenience and Safety....48

1-07.24 Rights of Way 49
1-08 PROSECUTION AND PROGRESS 51
1-08.0 Preliminary Matters 51
1-08.0(1) Preconstruction Conference 51
1-08.0(2) Hours of Work 52
1-08.1 Subcontracting 54
1-08.1 Subcontracting 54
1-08.1(7)A Payment Reporting 55
1-08.1(8)B Clauses Required in Subcontracts of All Tiers 55
1-08.1(9) Submittal of Executed Subcontracts 55
1-08.3 Progress Schedule 55
1-08.3(2)A Type A Progress Schedule 55
1-08.4 Prosecution of Work 56
1-08.5 Time for Completion 56
1-08.6 Suspension of Work 57
1-08.9 Liquidated Damages 58
1-09 MEASUREMENT AND PAYMENT 58
1-09.2 Weighing Equipment 58
1-09.2(5) Measurement 58
1-09.6 Force Account 58
1-09.9 Payments 59
1-09.11(3) Time Limitation and Jurisdiction 60
1-09.13(1) General 61
1-09.13(3) Claims $1,000,000 or Less 61
1-09.13(3)A Administration of Arbitration 61
1-09.13 (4) Venue for Litigation 62

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, **2026** 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 108th Avenue NE Pipe Installation Project.

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

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

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

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

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

- **City of Kirkland GSPs** are modifications to the Standard Specifications prepared by the City of Kirkland Public Works Department, and commonly applicable to City of Kirkland projects. Denoted as: ***(date COK GSP)***

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

Also incorporated into the Contract Documents by reference are:

- *Manual on Uniform Traffic Control Devices for Streets and Highways*, currently adopted edition, with Washington State modifications, if any
- *Standard Plans for Road, Bridge and Municipal Construction*, WSDOT Manual M21-01, 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

(JANUARY 1, 2026 COK GSP)
This contract provides for **installation of approximately 845 lineal feet of 12-inch storm drainage pipe, 3 Type 1 and 7 Type 2 Catch basins, pavement restoration**, and all related Work, all in accordance with the Contract Plans, these Contract Special Provisions, and the Standard Specifications.

1-01 DEFINITIONS AND TERMS

1-01.3 Definitions

(January 19, 2022 APWA GSP)
Delete the heading **Completion Dates** and the three paragraphs that follow it, and replace them with the following:

Dates

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

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

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

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

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

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

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

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

Supplement this Section with the following:

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

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

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

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

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

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

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

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

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

Contract Documents
See definition for "Contract".

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

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

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

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

1-02 BID PROCEDURES AND CONDITIONS

1-02.1 Prequalification of Bidders

Delete this Section and replace it with the following:

1-02.1 Qualifications of Bidder

(January 1, 2026 COK GSP, Option A)

Before award of a public works contract, a Bidder must meet at least the minimum qualifications of RCW 39.04.350(1) and, if subject to apprentice utilization requirements under RCW 39.04.320, the requirements of RCW 39.04.350(3) to be considered a responsible Bidder and qualified to be awarded a public works project.

1-02.1(1) Supplemental Qualifications Criteria

(July 31, 2017 APWA GSP; requires pre-approval on FHWA funded projects, through WSDOT/Local Programs)

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 D of these Special Provisions.

(January 1, 2026 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, the Contracting Agency may request that a Bidder or all Bidders provide supplemental information concerning responsibility in accordance with RCW 39.04.350(3). Such supplemental information shall be provided to the Contracting Agency in writing within two (2) business days of the request. If the Bidder fails to supply this supplemental information within the time and manner specified, the Contracting Agency may base its determination of responsibility on any available information related to the supplemental criteria or may find the Bidder not responsible.

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 will be rejected. The Bidder may appeal the determination within two (2) business days after receipt of the determination by presenting additional information to the Contracting Agency. The Contracting Agency will consider the additional information before issuing its final decision. If the Contracting Agency's final decision affirms that the Bidder is not responsible, the 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 the 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, no later than five (5) business days before the bid submittal deadline, request that the Contracting Agency modify the supplemental criteria. Such request must

be in writing, describe the nature of the concern(s), and propose specific modifications to the criteria that will make the criteria more relevant and/or less restrictive of competition. The Contracting Agency will evaluate the information submitted by the Bidder and respond before the bid submittal deadline. If the evaluation results in a change of the criteria, the Contracting Agency will issue an Addendum to the Bid Documents identifying the new criteria.

1-02.2 Plans and Specifications

(June 27, 2011 APWA GSP)
Delete this section and replace it with the following:

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

After award of the contract, plans and specifications will be issued to the Contractor at no cost as detailed below:

To Prime Contractor	No. of Sets	Basis of Distribution
Reduced plans (11" x 17")	1	Furnished automatically upon award.
Contract Special Provisions	1	Furnished automatically upon award.
Large plans (e.g., 22" x 34")	0	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(1) General

(December 30, 2022 APWA GSP Option B)
The first sentence of the ninth paragraph, beginning with "Prospective Bidder desiring…", is revised to read:

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

1-02.5 Proposal Forms

(February 17, 2026 APWA GSP)

Delete this section and replace it with the following:

The Proposal Form will identify the project and its location and describe the work. It will also list estimated quantities, units of measurement, the items of work, and the materials to be furnished at the unit bid prices. The bidder shall complete spaces on the proposal form that call for, but are not limited to, unit prices; extensions; summations; the total bid

amount; signatures; date; and, where applicable, retail sales taxes and acknowledgment of addenda; the bidder's name, address, telephone number, and signature. Bids shall be in legible figures (not words) written in ink or typed and expressed in U.S. dollars. The required certifications are included as part of the Proposal Form.

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

1-02.6 Preparation of Proposal

(*February 17, 2026 APWA GSP, Option C*)

The first sentence of the second paragraph is revised to read as follows:

All prices shall be in legible figures (not words) written in ink or typed, and expressed in U.S. dollars.

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.

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 bid by a joint venture shall be executed in the joint venture name and signed by a member of the joint venture.

1-02.8 Noncollusion Declaration and Lobbying Certification

(January 1, 2016 COK GSP)
The following new paragraph is inserted at the end of Section 1-02.8:

Conflict of Interest

The bidder affirms that it presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of its services hereunder. The Contractor further covenants that in the performance of this contract, no person having any conflicting interest shall be employed. Any interest on the part of the Contractor or its employees must be disclosed forthwith to the City of Kirkland. If this

contract is within the scope of a Federal Housing and Community Development Block Grant program, the Contractor further covenants that no person who presently exercises any functions or responsibilities in connection with the block grant program has any personal financial interest, direct or indirect, in this contract.

1-02.10 Withdrawing, Revising, or Supplementing Proposal

(February 17, 2026 APWA GSP)

Delete this section, and replace it with the following:

After submitting a physical or an electronic bid, if allowed under 1-02.9, 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, if a physical Bid Proposal was submitted, or recalled electronically via electronic method described in 1-02.9 if an electronic Bid Proposal was submitted, 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 before the time set for receipt of Bid Proposals, 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. Requests to withdraw, revise, or supplement a Bid Proposal may be submitted by the following methods:

1. In person

1-02.13 Irregular Proposals

(November 21, 2025 APWA GSP)

Delete this section and replace it with the following:

1. A Proposal will be considered irregular and will be rejected if:
    a. The Bidder is not prequalified when so required;
    b. The Bidder adds provisions reserving the right to reject or accept the Award, or enter into the Contract;
    c. A price per unit cannot be determined from the Bid Proposal;
    d. The Proposal form is not properly executed;
    e. The Bidder fails to submit or properly complete a subcontractor list as required in Section 1-02.6;

f. The Bidder fails to submit the Bidder Questionnaire, if applicable, as required by Section 1-02.6, or if the documentation that is submitted fails to meet the requirements of the Special Provisions; or
g. The Bid Proposal does not constitute a definite and unqualified offer to meet the material terms of the Bid invitation.
h. The Bidder fails to submit the Statement of Bidder's Qualification, as required by Section 1-02.1(1).

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. The authorized Proposal Form furnished by the Contracting Agency is not used or is altered;
d. The completed Proposal form contains unauthorized additions, deletions, alternate Bids, or conditions;
e. Receipt of Addenda is not acknowledged;
f. 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
g. If Proposal form entries are not made in ink.

1-02.14 Disqualification of Bidders

(January 1, 2026 COK GSP; requires pre-approval FHWA-funded projects, through WSDOT/Local Programs)
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 in this Section.

Supplemental Bidder Responsibility Criteria:

As permitted under RCW 39.04.350(3), the Contracting Agency requires bidders to meet the following supplemental bidder responsibility criteria to be considered a responsible bidder. The Bidder shall complete and sign a checklist on a form to be provided by the Contracting Agency to confirm compliance with the supplement criteria, and may be required by the Contracting Agency to submit documentation demonstrating compliance with the supplemental criteria. The Bidder must:

□ A. Have not delivered a project to the Contracting Agency within the three-year period immediately preceding the date of the bid submittal which was late, over budget, or did not meet specifications, and the Contracting Agency does not find in writing that the Bidder has shown how the Bidder would improve its performance to be likely to meet project specifications. This criteria also applies to the owner of the Bidder;

□ B. Have successfully completed projects of a similar size and scope as required by the contract documents for this project. In evaluating whether the projects were "successfully completed," the Contracting Agency may check owner references for the previous projects and may evaluate the owner's assessment of the Bidder's performance, including but not limited to the following areas:

- Quality of project and quality control;
- Management of safety and safety record;
- Timeliness of performance;
- Use of skilled personnel;
- Management of subcontractors;
- Availability of and use of appropriate equipment;
- Compliance with contract documents;
- Management of schedule, submittals process, change orders, and close-out;
- Apprenticeship utilization;
- Diverse or certified business outreach and inclusion;

□ C. Not owe delinquent taxes to the Washington State Department of Revenue without a payment plan approved by the Department of Revenue;

□ D. Within the five-year period immediately preceding the date of the bid submittal, not have a record of excessive claims filed against its retainage or payment bonds for public works projects 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;

□ E. Within the five-year period immediately preceding the date of the bid submittal, not have had any public works contract terminated for cause or terminated for default by a government agency, unless there are extenuating circumstances, and such circumstances are deemed acceptable to the Contracting Agency;

□ F. Within the five-year period immediately preceding the date of the bid submittal, not have lawsuits with judgments entered against the Bidder 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;

□ G. Within the five-year period immediately preceding the date of the bid submittal, not have a record of prevailing wage complaints filed against it that demonstrates a pattern of failing to pay workers prevailing wages, unless there are extenuating circumstances, and such circumstances are deemed acceptable to the Contracting Agency;

□ H. Not currently be debarred or suspended by the Federal government;

□ I. Use a standard subcontract form that includes the subcontractor responsibility language required by RCW 39.06.020, and 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;

□ J. Within the five-year period immediately preceding the date of the bid submittal, the Bidder and/or its owners have not been convicted of a crime involving bidding on a public works contract.

□ K. 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).

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 its 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 the 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.

Request to Change Supplemental Criteria:

Bidders with concerns about the relevancy or restrictiveness of the Supplemental Bidder Responsibility Criteria required in the Bid Documents may request that the Contracting Agency modify the criteria. Such requests must be in writing, describe the nature of the concerns, and propose specific modifications to the criteria that will make the criteria more relevant and/or less restrictive of competition. Bidders must submit such requests to the Contracting Agency no later than five business days prior to the bid submittal deadline and address the request to the Project Engineer. The Contracting Agency will evaluate the information submitted by the Bidder and respond before the bid submittal deadline. If the evaluation results in a change of the criteria, the Contracting Agency will issue an addendum to the Bid Documents identifying the new criteria.

Decision and Appeal:

If the Contracting Agency determines the Bidder does not meet the supplemental bidder responsibility criteria 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 business days of receipt of the Contracting Agency's determination by presenting additional information to the Contracting Agency. The Contracting Agency will consider the 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 final determination.

1-02.15 Pre Award Information

(April 22, 2024 COK GSP)
This section is supplemented with the following:

7. Obtain, and furnish a copy of, a business license to do business in the city or county where the work is located.

1-03 AWARD AND EXECUTION OF CONTRACT

1-03.1 Consideration of Bids

(December 30, 2022 APWA GSP)

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.

1-03.3 Execution of Contract

(February 17, 2026 APWA GSP, Option A)

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 10 calendar days after the award date, the successful Bidder shall return the signed Contracting Agency-prepared Contract, an insurance certification as required by Section 1-07.18, a satisfactory bond as required by law and Section 1-03.4, the Transfer of Coverage form for the Construction Stormwater General Permit with sections I, III, and VIII completed when provided. Before execution of the Contract by the Contracting Agency, the successful Bidder shall provide, if required, any of the following: pre-Award information required by the Contracting Agency as listed under Section 1-02.15, proof of licensure for electrical, HVAC, or plumbing subcontractors. If the Prime Contractor lists themselves as performing electrical, HVAC, or plumbing they are required to submit proof of licensure prior to execution.

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

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

1-03.4 Contract Bond

(January 1, 2016 COK GSP)
Revise the first paragraph to read:

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

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

1-03.7 Judicial Review

(December 30, 2022 APWA GSP)
Revise this section to read:

All decisions made by the Contracting Agency regarding the Award and execution of the Contract or Bid rejection shall be conclusive subject to the scope of judicial review permitted under Washington Law. Such review, if any, shall be timely filed in the Superior Court of the county where the Contracting Agency headquarters is located, provided that where an action is asserted against a county, RCW 36.01.050 shall control venue and jurisdiction.

(April 25, 2019 COK GSP)

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

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

(December 30, 2022 APWA GSP)
Revise the second paragraph to read:

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

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

1-04.4 Changes

(April 1, 2026 COK GSP)
Delete "electronically" in the first sentence of the last paragraph:
Delete the second sentence of the last paragraph:

1-04.4(1) Minor Changes

(May 30, 2019 APWA GSP)
Delete the first paragraph and replace it with the following:

Payments or credits for changes amounting to $55,000 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

1-04.6 Variation in Estimated Quantities

(December 30, 2022 APWA GSP, Option B)

Revise the first paragraph to read:

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

1-04.8 Progress Estimates and Payments

(April 1, 2026 COK GSP)

This section is supplemented with the following:

> Progress estimates shall be signed by the Contractor and Contracting Agency Representative to be considered approved and properly completed in accordance with RCW 39.76.011. Progress payments shall be for work completed in the previous month. Estimating ahead will not be allowed. The Contracting Agency will normally submit draft progress estimates for the Contractor's review and approval within 14 calendar days from the end of the previous month. Should the Contractor fail to sign a progress estimate within 7 calendar days after receipt from the Contracting Agency, the Contracting Agency may unilaterally process a progress payment based on the amount shown on the draft progress estimate.

1-04.11 Final Cleanup

(January 1, 2016 COK GSP)
Section 1-04.11 is deleted in its entirety and replaced with the following:

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

thereof charged to the Contractor and deducted from the Contractor's final progress estimate.

The Contractor shall:

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

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

(January 27, 2021 COK GSP) Add new Section 1-04.12.

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

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

1-05 CONTROL OF WORK

(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.

1-05.4 Conformity with and Deviations from Plans and Stakes

(January 1, 2020 COK GSP)
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 set 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.

(April 22, 2025 COK GSP)
Add new Section 1-05.4(3).

1-05.4.3 Monuments

The Contractor shall work to preserve the existing monumentation as provided in RCW 58.09.130 and WAC 332-120. The Contractor shall notify the Engineer immediately if it becomes apparent that a survey marker will be disturbed due to construction. The Contractor shall allow ample time for the Engineer to acquire adequate information so that the monument may be replaced in its original position and so that a reference monument can be set. The Engineer will notify the Contractor if or when the monument will be reset to its original position. All costs associated with the replacement of monuments damaged or destroyed prior to being referenced shall be deducted from monies due to the Contractor.

1-05.7 Removal of Defective and Unauthorized Work

(February 17, 2026 APWA GSP)

Supplement this section with the following:

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. The Engineer has the right to reject all or part of the Nonconforming Work, and the Engineer's decision is final and not subject to protest.

No additional contract time or compensation will be allowed when the Contracting Agency exercises their rights provided by this Section.

1-05.7(1) Identification of Nonconforming Work

Replace this section with the following:

The Contractor is responsible for quality control and shall identify all Nonconforming Work. The Contracting Agency may also identify Nonconforming Work. However, failure by the Contracting Agency to identify Nonconforming Work shall not relieve the Contractor from their responsibility for the quality of the Work, nor shall it constitute acceptance or approval of the Nonconforming Work.

1-05.7(2) Reporting of Nonconforming Work

Replace this section with the following:

The Contractor shall immediately report all Nonconforming Work to the Engineer and shall include any relevant information known for suggested remediation of Nonconforming Work.

When the Contracting Agency identifies Nonconforming Work, the Engineer will notify the Contractor in writing specifying a time when a remedy must be complete. If the Contractor fails to remedy Nonconforming 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.

1-05.7(3) Remediation of Nonconforming Work

Supplement this section with the following:

The Contractor shall be responsible and bear all costs for remediating Nonconforming Work.

If the Contracting Agency remedies Nonconforming Work after the specified time when a remedy was to be completed, by any means deemed necessary, direct and indirect costs incurred by the Contracting Agency attributable to correcting and remedying Nonconforming Work not corrected by the time provided in the notice, or Work the Contractor failed or refused to perform, shall be paid by the Contractor.

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 Nonconforming Work

corrected immediately, have the 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 risk of loss or damage to the public.

When costs are incurred by the Contracting Agency, payment will be deducted by the Engineer from monies due, or to become due, to the Contractor. Such direct and indirect costs shall include in particular, but without limitation, compensation for additional professional services required, and compensation for removal, repair, replacement and/or correction of the Contractor's Nonconforming Work.

1-05.9 Equipment

(January 1, 2016 COK GSP)
The following new paragraph is inserted between the second and third paragraphs:

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

1-05.10 Guarantees

(January 1, 2016 COK GSP)
Section 1-05.10 is supplemented as follows:

Guarantees and maintenance bonds shall be in accordance with City of Kirkland, State of Washington, Public Works Performance and Payment Bond forms and requirements. The performance bond shall be in the full amount of contract. The Contractor guarantees all items of material, equipment, and workmanship against mechanical, structural, or other defects for which the Contractor is responsible that may develop or become evident within a period of one year from and after acceptance of the work by the Owner. This guarantee shall be understood to require prompt remedy of defects upon written notification to the Contractor. If the Owner determines the defect requires immediate repair, the Owner may, without further notice to the Contractor, make the necessary corrections, the cost of which shall be borne by the Contractor. To support the above guarantee, the Contractor's performance bond shall remain in full force and effect for one year following the acceptance of the project by the Owner.

1-05.11 Final Inspection

(October 1, 2005 APWA GSP)
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.

1-05.12 Final Acceptance

(March 8, 2013 APWA GSP)
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.

1-05.13 Superintendents, Labor and Equipment of Contractor

(August 14, 2013 APWA GSP); (January 1, 2026 COK GSP)
Replace the third paragraph of this section with the following:

Competent supervisors experienced in the task being performed shall continuously oversee the Contract Work. Within ten (10) days after being awarded the Contract, the Contractor shall provide to the Contracting Agency the names and qualifications of any superintendents and project managers for the Work. Within five (5) business days following receipt of the information, the Contracting Agency may notify the Contractor that

the Contracting Agency (1) has reasonable objection to the proposed superintendent(s) and/or project manager(s), or (2) requires additional time for review. The Contractor shall not employ a proposed superintendent or project manager to whom the Contracting Agency has made reasonable and timely objection. The Contractor shall not change the superintendent(s) or project manager(s) without the Contracting Agency's consent, which shall not unreasonably be withheld or delayed. At the Engineer's written request, the Contractor shall immediately remove and replace incompetent, careless, or negligent employees.

Delete the sixth and seventh paragraphs of this section.

1-05.15 Method of Serving Notices

(January 4, 2024 APWA GSP)
Revise the second paragraph to read:

All correspondence from the Contractor shall be served and directed to the 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 written in paper format, hand delivered or sent via certified mail delivery service with return receipt requested to the 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.

(October 1, 2005 APWA GSP)
Add the following new section:

1-05.16 Water and Power

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

(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 applicable references 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 (Minimum 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:

• Project name & number;

• Consecutive numbering of pages, and

• Typed or printed name, signature, and date of the person making the entry.

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

1. Day and date.
2. Weather conditions, including changes throughout the day.
3. Complete description of work accomplished during the day, with adequate references to the Plans and Contract Provisions so the reader can easily and accurately identify said work on the Plans. Identify location/description of photographs or videos taken that day.
4. Each and every changed condition, dispute or potential dispute, incident, accident, or occurrence of any nature whatsoever which might affect Contractor, Contracting

Agency, or any third party in any manner. This shall be provided on a separate page for other information.

5. List all materials received and stored on- or off-site by Contractor that day for future installation, including the manner of storage and protection of the same.
6. List materials installed that day.
7. List all Subcontractors working on-site that day.
8. List the number of Contractor's employees working during each day, by category of employment.
9. List Contractor's equipment on the site that day; showing which were in use, and which idle.
10. Notations to explain inspections, testing, stake-out, and all other services furnished by Contracting Agency or other party during the day.
11. Verify the daily (including non-work days) inspection and maintenance of traffic control devices and condition of the traveled roadway surfaces.
12. Any other information that serves to give an accurate and complete record of the nature, quantity, and quality of Contractor's progress on each day.
13. Add; Officials and visitors onsite
14. Change Orders
15. Occurrence of testing, staking or special inspections

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

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

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

1-06 CONTROL OF MATERIAL

1-06.1 Approval of Materials Prior to Use

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

(February 17, 2022 COK GSP)
Revise the first paragraph to read:

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

1-06.2(2)B Financial Incentive

(January 4, 2024 AWPA GSP)

Replace the first sentence of this Section with the following:

The maximum Composite Pay Factor shall be 1.00.

1-06.6 Recycled Materials

(January 4, 2016 APWA GSP)

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

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

Prior to Physical Completion the Contractor shall report the quantity of recycled materials that were utilized in the construction of the project for each of the items listed in 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.

1-07.2 State Taxes

(June 27, 2011 APWA GSP)
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).

1-07.5 Environmental Regulations

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

(January 1, 2021 COK GSP)
Supplement this section with the following:

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

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

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

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

1-07.6 Permits and Licenses

(January 1, 2021 COK GSP)
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)).

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

(January 1, 2021 COK GSP)
Add new Section 1-07.6(1)

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.

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

(January 1, 2021 COK GSP)
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.

1-07.8 High Visibility Apparel

1-07.8(1) Traffic Control Personnel
(September 16, 2025 WSDOT GSP)

Section 1-07.8(1) is revised to read:

All personnel performing the Work described in Section 2-04 (including traffic control supervisors, flaggers, and others performing traffic control labor of any kind) shall comply with the following:

1. During daylight hours with clear visibility, workers shall wear a high-visibility ANSI/ISEA 107 Type R Class 2 or 3 garment with background material that are fluorescent yellow-green, fluorescent orange-red, or fluorescent red in color; and a high visibility hardhat that is white, yellow, yellow-green, orange, or red in color; and

2. During hours of darkness (½ hour before sunset to ½ hour after sunrise) or other low-visibility conditions (snow, fog, etc.), workers shall wear a high-visibility ANSI/ISEA 107 Type R Class 2 or 3 garment with background material that are fluorescent yellow-green, fluorescent orange-red, or fluorescent red in color; a high-visibility lower garment meeting ANSI/ISEA 107 Class E, and a high visibility hardhat marked with at least 12 square inches of retroreflective material applied to provide 360 degrees of visibility.

1-07.9 Wages

1-07.9(5)A Required Documents

(February 17, 2026 APWA GSP, Option B)

Revise this section to read:

All Statements of Intent to Pay Prevailing Wages and Affidavits of Wages Paid shall be submitted to the Engineer through the State L&I online Prevailing Wage Intent & Affidavit (PWIA) system. When apprenticeship is a requirement of the Contract, include all apprentices in PWIA.

1-07.11 Requirements for Nondiscrimination

1-07.11(1)C Regulatory Authorities

(March 9, 2026 WSDOT GSP)

Section 1-07.11(1)C is revised to read:

During the performance of this Contract, the Contractor, for itself, its assignees, and successors in interest agrees to comply with the following nondiscrimination statues and authorities, including but not limited to:

1. Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), and its implementing regulations and case law, prohibit discrimination on the basis of race, color, or national origin. 49 C.F.R. 21.5(b)(2) prohibits a recipient of federal funds from utilizing “criteria or methods of administration which have the effect of subjecting persons to discrimination because of their race, color, or national origin, or have the effect of defeating or substantially impairing accomplishment of the objectives of the program with respect to individuals of a particular race, color, or national origin.” This includes taking reasonable steps to provide limited English proficiency (LEP) persons meaningful access to all programs, activities and services, where necessary to avoid discrimination on the basis of national origin.

2. The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C §4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects).

3. Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et. seq.), as amended, (prohibits discrimination on the basis of sex).

4. Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended (prohibits discrimination on the basis of disability); and 49 C.F.R. Part 27.

5. The Age Discrimination Act of 1975, as amended (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age).

6. Airport and Airway Improvement Act of 1982, (49 U.S.C. § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex).

7. The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age of Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition and terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not).

8. Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. § 12131-12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38.

9. The Federal Aviation Administration's Nondiscrimination statute (49 U.S.C. § 47123), (prohibits discrimination on the basis of race, color national origin, and sex).

10. Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq.).

1-07.11(2) Contractual Requirements

(November 25, 2024 APWA *GSP)*
Delete item 11 of the first paragraph of Section 1-07.11(2).

1-07.14 Responsibility for Damage

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

The Contractor further agrees that it is waiving immunity under Industrial Insurance Law Title 51 RCW for any claims brought against the City by its employees. In the event Contractor fails, after receipt of timely notice from the City, to appear, defend, or pay as required by the first paragraph of this section, then in that event and in that event only, the City may in its sole discretion, deduct from the progress payments to the Contractor and pay any amount sufficient to pay any claim, of which the City may have knowledge and regardless of the informalities of notice of such claim, arising out of the performance of this contract, provided the City has theretofore given notice of receipt of such claim to the Contractor and the Contractor has failed to act thereon.

1-07.15 Temporary Water Pollution/Erosion Control

(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.

1-07.17 Utilities and Similar Facilities

(January 1, 2020 COK GSP)

Section 1-07.17 is supplemented with the following:

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

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

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

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

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	Cody Gray	(425) 587-3900
Storm Drainage	City of Kirkland	123 Fifth Avenue Kirkland, WA 98033	Jason Osborn	(425) 587-3900
Water / Sewer (North area of Kirkland)	Northshore Utility District	6380 NE 185th St Kenmore, WA 98028	Jamie Lamb Kelly Nesbitt	(425) 471-1483 (425) 521-3750
Street	City of Kirkland	123 Fifth Avenue Kirkland, WA 98033	Ryan Fowler	(425) 587-3900
Natural Gas	Puget Sound Energy	P.O. Box 97034 EST-11W Bellevue, WA 98009-9734	Kiara Skye	(425) 213-9205
Electric	Puget Sound Energy	35131 SE Center St Snoqualmie, WA 98065	Kiara Skye	(425) 213-9205
Telephone/ FIOS	Ziply Fiber	P.O. Box 1127 Everett, WA 98206	Cheryl Schneider	(425) 949-0230
FIOS	Astrobound/Wave Broadband		Richard Hays	(360) 631-4134

FIOS	CenturyLink/Lumen	22817 SE Issaquah-Fall City Rd, WA, 98027	Kayvan Fassnacht	(425) 213-9378
FIOS	Zayo	22651 83rd Ave. S. Kent, WA 98032	Rusty Perdieu	(706) 889-6967
Cable Television	Comcast	1525 - 75th St SW, Suite 200 Everett, WA 98203	Chris Combs	(425) 273-7832
Network	Verizon/MCI	11311 NE 120th St Kirkland, WA 98034	Kenny Terhune Scott Christenson	(425) 301-8658 (425) 471-1079
School District Transportation	Lake Washington School District	15212 NE 95th St Redmond, WA 98052	Laura DeGooyer	(425) 936-1133
Transit	King County METRO	MS SVQ-TR-0100 1270 6th Ave S Seattle, WA 98134	Mark LaFalce	(206) 477-1140 (206)477-9868
Water (Northeast area of Kirkland)	Woodinville Water District	17238 NE Woodinville Duvall Road, Woodinville, WA 98072	Christian Hoffman	(425) 487-4142
Olympic Pipeline	BP		Kenneth Metcalf Joseph Stone	(425) 981-2575 (425) 981-2506
Water (along 132nd Ave NE)	Seattle Public Utilities		Mike Freeman	(206) 684-8117

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

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

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

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

Other Notifications

Service Area Turn Off: All service area turn off notices must be distributed to affected parties two working days in advance of any scheduled shut-off. City to provide door hangers and

affected service area map. The contractor shall fill in all required information prior to hanging door hanger.

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

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

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

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

(January 1, 2016 COK GSP)
Section 1-07.17(2) is supplemented with the following:

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

1-07.18 Public Liability and Property Damage Insurance

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

1-07.18 Insurance
(February 17, 2026 APWA GSP)

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.

I. Under no circumstances shall a wrap up policy be obtained, for either initiating or maintaining coverage, to satisfy insurance requirements for any policy required under this Section. A **"**wrap up policy**"** is defined as an insurance agreement or arrangement under which all the parties working on a specified or designated project are insured under one policy for liability arising out of that specified or designated project**.**

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.

5. All insurance coverage maintained or procured pursuant to this agreement shall be endorsed to waive subrogation against the Contracting Agency, its elected or appointed officers, agents, officials, employees, and volunteers or shall specifically allow the Contractor or others providing insurance evidence in compliance with these Specifications to waive their right of subrogation prior to a loss. The Contractor hereby waives its own right of subrogation against the Contracting Agency and shall require similar written express waivers and insurance clauses from each of its subcontractors.

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:

$2,000,000 Each Occurrence
$3,000,000 General Aggregate
$3,000,000 Products & Completed Operations Aggregate
$2,000,000 Personal & Advertising Injury each offence
$2,000,000 Stop Gap / Employers' Liability each accident

1-07.18(5)B Automobile Liability
Automobile Liability shall cover owned, non-owned, hired, and leased vehicles; and shall be written on a coverage form at least as broad as ISO form CA 00 01. If the Work involves the transport of pollutants, the automobile liability policy shall include MCS 90 and CA 99 48 endorsements.

Such policy must provide the following minimum limit:

$1,000,000 Combined single limit each accident

1-07.18(5)C Workers' Compensation
The Contractor shall comply with Workers' Compensation coverage as required by the Industrial Insurance laws of the State of Washington.

1-07.18(5)D Excess or Umbrella Liability

(January 4, 2016 APWA GSP)
The Contractor shall provide Excess or Umbrella Liability insurance with limits of not less than **$1,000,000** 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.

(December 30, 2022 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.

1-07.23 Public Convenience and Safety

(January 1, 2016 COK GSP)
Section 1-07.23 is supplemented with the following:

No road or street shall be closed to the public except as permitted in these plans and specifications or with the approval of the Engineer and proper governmental authority. Fire hydrants on or adjacent to the work shall be kept accessible to 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.

(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.

1-07.24 Rights of Way

(April 22, 2025 APWA GSP)

Delete this section and replace it with the following:

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

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(1), 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:

1-08.0(1) Preconstruction Conference

(October 21, 2025 APWA GSP)

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

1. To review the initial progress schedule;
2. To establish a working understanding among the various parties associated with or affected by the work;
3. To establish and review procedures for progress payment, notifications, approvals, submittals, etc.
4. To review Training or Apprenticeship Plans, when applicable.
5. To discuss FSBE Goals when applicable.
5. To establish normal working hours for the work;
6. To review safety standards and traffic control; and
7. 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; may not be used on FHWA-funded projects)
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.

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)

(December 30, 2022 APWA GSP, Option B)

1-08.1 Subcontracting

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

1-08.1 Subcontracting

(January 1, 2016 COK GSP)

Section 1-08.1 is supplemented with the following:

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

1. Request to Sublet Work (form 421-012).
2. Statement of Intent to Pay Prevailing Wages (Form 700-029-000).

The Contractor's records pertaining to the requirements of this Special Provision shall be open to inspection or audit by representatives of the Department during the life of the contract and for a period of not less than three years after the date of acceptance of the

contract. The Contractor shall retain these records for that period. The Contractor shall also guarantee that these records of all Subcontractors and Agents shall be open to similar inspection or audit for the same period.

1-08.1(7)A Payment Reporting
(November 25, 2024 APWA GSP)
Delete this section and replace it with the following:

1-08.1(7)A VACANT

1-08.1(8)B Clauses Required in Subcontracts of All Tiers

(November 25, 2024 APWA GSP)
Delete item 8 of the second paragraph of Section 1-08.1(8)B.

1-08.1(9) Submittal of Executed Subcontracts

(April 22, 2025 APWA GSP, Option B)

Section 1-08.1(9) content and title are deleted and replaced with the following:

Vacant

1-08.3 Progress Schedule

(January 1, 2016 COK GSP)
This section is supplemented with the following:

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

1-08.3(2)A Type A Progress Schedule

(February 17, 2026 APWA GSP)

Revise this section to read:

The Contractor shall submit 2 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 is used, the schedule shall identify the critical path. The Engineer will evaluate the Type A Progress Schedule and accept or return the schedule for corrections within 15 calendar days of receiving the submittal.

(February 17, 2026 APWA GSP)

1-08.4 Prosecution of Work

Delete this section and replace it with the following:

1-08.4 Notice to Proceed and Prosecution of Work

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 2-04.3. 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.

1-08.5 Time for Completion

(February 17, 2026 APWA GSP, Option A)

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 all partial or whole days the Engineer declares as unworkable. The statement will be identified as a Written Determination by the Engineer. If the Contractor does not agree with the Written Determination of working days, the Contractor shall pursue the protest procedures in accordance with Section 1-04.5. By failing to follow the procedures of Section 1-04.5, 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 Engineer prior to establishing a completion date:
   a. Certified Payrolls (per Section 1-07.9(5)).
   b. Material Acceptance Certification Documents
   c. Monthly Reports in DMCS of the amounts paid including the final payment confirmation to all firms required by Section 1-08.1(7)A if applicable
   d. Final Contract Voucher Certification
   e. Copies of the approved "Affidavit of Prevailing Wages Paid" for the Contractor and all subcontractors
   f. A copy of the Notice of Termination sent to the Washington State Department of Ecology (Ecology); the elapse of 30 calendar days from the date of receipt of the Notice of Termination by Ecology; and no rejection of the Notice of Termination by Ecology. This requirement will not apply if the Construction Stormwater General Permit is transferred back to the Contracting Agency in accordance with Section 8-01.3(16).
   g. Property owner releases per Section 1-07.24

(January 1, 2016 COK GSP)
Section 1-08.5 is supplemented with the following:

This project shall be substantially completed in its entirety within **75** working days.

1-08.6 Suspension of Work

(July 24, 2025 COK GSP)
Supplement this section with the following:

Contract time may be suspended for procurement of critical materials (Procurement Suspension). In order to receive a Procurement Suspension, the Contractor shall within 21 calendar days after execution by the Contracting Agency, place purchase orders for all materials deemed critical by the Contracting Agency for physical completion of the contract. The Contractor shall provide copies of purchase orders for the critical materials. Such purchase orders shall disclose the purchase order date and estimated delivery dates for such critical material.

For this project Critical Work required to be completed prior to suspension shall mean the following items are completed: curbs, HMA, concrete, signing that is not impacted by the Critical Materials, foundations for signal and illumination poles are installed and anchor bolts are protected, temporary traffic control plan for the suspension is approved and in-place

Charging of contract time will resume upon delivery of the critical materials to the Contractor or 14 calendar days after the estimated deliver date shown on the purchase orders.

1-08.9 Liquidated Damages

(January 1, 2016 COK GSP)
The third paragraph of Section 1-08.9 is revised to read as follows:

Accordingly, the Contractor agrees:

1. To pay (according to the following formula) liquidated damages for each working day beyond the number of working days established for Physical Completion, and

2. To authorize the Engineer to deduct these liquidated damages from any money due or coming to the Contractor.

LIQUIDATED DAMAGES FORMULA

For C > $50,000 → 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

1-09.2 Weighing Equipment

1-09.2(5) Measurement

(December 30, 2022 APWA GSP)
Revise the first paragraph to read:

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

1-09.6 Force Account

(December 30, 2022 APWA GSP)
Supplement this section with the following:

The Contracting Agency has estimated and included in the Proposal, dollar amounts for all items to be paid per force account, only to provide a common proposal for Bidders. All such dollar amounts are to become a part of Contractor's total bid. However, the Contracting Agency does not warrant expressly or by implication, that the actual amount of work will correspond with those estimates. Payment will be made on the basis of the amount of work actually authorized by the Engineer.

1-09.9 Payments

(July 8, 2024 COK GSP)

Section 1-09.9 is revised to read:

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

The Contractor shall submit a breakdown of the cost of lump sum bid items at the Preconstruction Conference, to enable the Project Engineer to determine the Work performed on a monthly basis. A breakdown is not required for lump sum items that include a basis for incremental payments as part of the respective Specification. Absent a lump sum breakdown, the Project Engineer will make a determination based on information available. The Project Engineer's determination of the cost of work shall be final.

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

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

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

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

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

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

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

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

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

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

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

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(3) Time Limitation and Jurisdiction

(December 30, 2022 APWA GSP)
Revise this section to read*:*

For the convenience of the parties to the Contract it is mutually agreed by the parties that all claims or causes of action which the Contractor has against the Contracting Agency arising from the Contract shall be brought within 180 calendar days from the date of final acceptance (Section 1-05.12) of the Contract by the Contracting Agency; and it is further agreed that all such claims or causes of action

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

1-09.13(1) General

(April 26, 2023 COK GSP)
Revise this section to read:

Prior to seeking claims resolution through arbitration or litigation, the Contractor shall proceed in accordance with Sections 1-04.5 and 1-09.11. The provisions of Sections 1-04.5 and 1-09.11 must be complied with in full as a condition precedent to the Contractor's right to seek claim resolution through binding arbitration or litigation.

Any claims or causes of action which the Contractor has against the Contracting Agency arising from the Contract shall be resolved, as prescribed herein, through binding arbitration or litigation.

The Contractor and the Contracting Agency mutually agree that those claims or causes of action which total $1,000,000 or less, which are not resolved by mediation, shall be resolved through litigation unless the parties mutually agree in writing to resolve the claim through binding arbitration.

The Contractor and the Contracting Agency mutually agree that those claims or causes of action in excess of $1,000,000, which are not resolved by mediation, shall be resolved through litigation unless the parties mutually agree in writing to resolve the claim through binding arbitration.

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

(February 1, 2021 COK GSP) Option B
Delete this Section and replace it with the following:

The Contractor and the Contracting Agency mutually agree that those claims that total $1,000,000 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.

1-09.13(3)A Administration of Arbitration

(January 19, 2022 APWA GSP)
Revise the third paragraph to read:

The Contracting Agency and the Contractor mutually agree to be bound by the decision of the arbitrator, and judgment upon the award rendered by the arbitrator may be entered in the

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

1-09.13 (4) Venue for Litigation

(December 30, 2022 APWA GSP)
Revise this section to read:

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

END OF DIVISION 1

GSP DIVISION 2

City of Kirkland

DIVISION 2 – TEMPORARY FEATURES

2-01 MOBILIZATION

(February 17, 2026 APWA GSP)

Delete Section 2-01 and replace it with the following:

2-01.1 Description

This Work consists of operations and preparatory Work necessary to become ready to perform the Work or an item of Work.

2-01.3 Construction Requirements

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

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

2-01.5 Payment

Payment will be by lump sum as “Mobilization”.

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

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

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

2-04 TEMPORARY FEATURES

2-04.3 Construction Requirements

(January 1, 2016 COK GSP)

2-04.3(2) Traffic Control Plans

The first and second sentences of this section 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.

2-04.3(6)C Portable Changeable Message Sign

(April 18, 2018 COK GSP)

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.

2-04.5 Payment

2-04.5(3) Reinstating Unit Items with Lump Sum Traffic Control

(January 13, 2025 COK GSP)
Supplement this Section with the following:

> "Project Temporary Traffic Control", lump sum.
>
> Costs for layout, installation, removal, and transport of project signage shall be included with the Contract lump sum price for "Project Temporary Traffic Control." This Bid item shall also constitute full compensation for all labor, tools, equipment, and materials necessary and incidental to maintaining temporary driving surface as required by Section 2-03.3(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 2

GSP DIVISION 3

City of Kirkland

DIVISION 3 – EARTHWORK

3-01 CLEARING, GUBBING, AND ROADSIDE CLEANUP

3-01.3 Construction Requirements

(February 17, 2022 COK GSP)
3-01.3(1) Clearing

This Section is supplemented with the following:

8. 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)
3-01.3(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.

3-01.4 Measurement
(******)

This Section is supplemented with the following:

Measurement of Tree Removal shall be per each tree specified, including stumps. Trees less than 6-inches in diameter will be considered brush and shall be incidental to the Clearing and Grubbing" Bid item.

3-01.5 Payment
(******)

This Section is supplemented with the following:

Payment will be made for the following bid item(s):
"Tree Removal", per each

3-02 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

2-02.4 Measurement
(******)

Supplement this Section with the following:

No specific unit of measure shall apply to the lump sum item for "Remove/Abandon Storm System."

Sawcutting will not be measured for payment and is considered incidental to the Bid item it is associated with.

"Cement Conc. Sidewalk Removal" will be measured per square yard, regardless of depth. Only cement concrete sidewalk designated for removal on the Plans or approved by the Engineer will be measured for payment. Cement concrete median removal shall also be measured and paid under this item.

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

2-02.5 Payment

(******)

Supplement this Section with the following:

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

The unit Contract price for "Cement Conc. Sidewalk Removal" shall be full compensation for all costs necessary and incidental to completely removing and disposing of concrete sidewalks, driveway entrances, and medians, regardless of depth, including but not limited to sawcutting.

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

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

"Paver Removal (as Required)", per linear foot.

The unit Contract price for "Paver Removal" shall be full compensation for all costs necessary and incidental to completely removing and disposing of concrete pavers. The decrease in quantity shall not constitute a basis for claim for extra payment or damages. Payment will be for actual work performed based on the unit contract prices and shall be considered full compensation to the Contactor for the Work.

END OF DIVISION 3

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GSP DIVISION 4

City of Kirkland

DIVISION 4 – AGGREGATES AND BASES

END OF DIVISION 4

GSP DIVISION 5

City of Kirkland

DIVISION 5 – SURFACE TREATMENTS AND PAVEMENTS

5-04 Hot Mix Asphalt

(December 12, 2025 APWA GSP)

Delete Section 5-04 and replace it with the following:

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 (RAP)	9-03.8(3)B, 9-03.21
Reclaimed Asphalt Shingles (RAS)	9-03.8(3)B, 9-03.21
Mineral Filler	9-03.8(5)
Recycled Material	9-03.21

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.

If the Contractor wishes to utilize High RAP/Any RAS, the design must be listed on the WSDOT Qualified Products List (QPL).

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, temporary pavement, 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 & signature) of a valid licensed Washington State Professional Engineer. * (see below)

- 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. * (see below)

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:

- Be designed for ***$$1$$*** million equivalent single axle loads (ESALs).
- 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 required, 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 Mix Design. 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 ESALs 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 otherwise 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 placement 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. PG grade asphalt or non-tracking tack formulas may be used upon approval of the Engineer.

5-04.3(4)A Crack Sealing

When the Proposal includes a pay item for crack sealing, seal cracks in accordance with Section 5-03.

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 placed 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:

   a. First, determine preliminary upper and lower acceptance limits by applying the following tolerances to the approved JMF.

Aggregate Percent Passing	Non-Statistical Evaluation	Commercial Evaluation
1”, ¾”, ½”, and 3/8” sieves	+/- 6%	+/- 8%
No. 4 sieve	+/-6%	+/- 8%
No. 8 Sieve	+/- 6%	+/-8%
No. 200 sieve	+/- 2.0%	+/- 3.0%

   b. Second, adjust the preliminary upper and lower acceptance limits determined from step (a) the minimum amount necessary so that none of the aggregate properties are outside the control points in Section 9-03.8(6), except as specified below in (c). 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.

c. These tolerances and specification limits constitute the allowable limits as described in Section 1-06.2. The tolerance limit for aggregate shall not exceed the limits of the control points, except the No. 8 tolerance is +/- 6% from the JMF, the No. 200 tolerance is +/- 2.0% from the JMF with a minimum of 2% and a maximum of 8.0% passing the No. 200 sieve. Other tolerance limits for sieves designated as 100 percent passing will be 99-100

2. **Job Mix Formula Adjustments** – An adjustment to the aggregate gradation or asphalt binder content of the JMF requires approval of the Engineer. Adjustments to the JMF will only be considered if the change produces material of equal or better quality and may require the development of a new mix design if the adjustment exceeds the amounts listed below.

   a. **Aggregates** –2 percent for the aggregate passing the 1½″, 1″, ¾″, ½″, ⅜″, and the No. 4 sieves, 1 percent for aggregate passing the No. 8 sieve, and 0.5 percent for the aggregate passing the No. 200 sieve. The adjusted JMF shall be within the range of the control points in Section 9-03.8(6).

   b. **Asphalt Binder Content** – The Engineer may order or approve changes to asphalt binder content. The maximum adjustment from the approved mix design for the asphalt binder content shall be 0.3 percent.

5-04.3(9)A Vacant

5-04.3(9)B Vacant

5-04.3(9)C Mixture Acceptance – Nonstatistical Evaluation

HMA mixture which is accepted by Nonstatistical Evaluation will be evaluated by the Contracting Agency by dividing the HMA tonnage into lots.

5-04.3(9)C1 Mixture Nonstatistical Evaluation – Lots and Sublots

A lot is represented by randomly selected samples of the same mix design that will be tested for acceptance. A lot is defined as the total quantity of material or work produced for each Job Mix Formula placed. Only one lot per JMF is expected. A 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 AASHTO 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 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 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 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 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 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 $1500 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 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 placed 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 placed 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

Bridge Paving Joint Seals shall be in accordance with Section 5-03.

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 $1500.00 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 and Pre-Planing Briefing (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 planing plan must be approved by the Engineer and a pre-planing meeting must be held prior to the start of any planing. See Section 5-04.3(14)B2 for information on planing submittals.

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, and unless the Contract specifies otherwise or the Engineer approves, the Contractor must comply with the following:

1. Intersections:

   a. Keep intersections open to traffic at all times, except when paving or planing operations through an intersection requires closure. Such closure must be kept to the minimum time required to place and compact the HMA mixture, or plane as appropriate. For paving, schedule such closure to individual lanes or portions thereof that allows the traffic volumes and schedule of traffic volumes required in the approved traffic control plan. Schedule work so that adjacent intersections are not impacted at the same time and comply with the traffic control restrictions required by the Traffic Engineer. Each individual intersection closure or partial closure must be addressed in the traffic control plan, which must be submitted to and accepted by the Engineer, see Section 1-10.2(2).

   b. When planing or paving and related construction must occur in an intersection, consider scheduling and sequencing such work into quarters of the intersection, or half or more of an intersection with side street detours. Be prepared to sequence the work to individual lanes or portions thereof.

   c. Should closure of the intersection in its entirety be necessary, and no trolley service is impacted, keep such closure to the minimum time required to place and compact the HMA mixture, plane, remove asphalt, tack coat, and as needed.

   d. Any work in an intersection requires advance warning in both signage and a number of Working Days advance notice as determined by the Engineer, to alert traffic and emergency services of the intersection closure or partial closure.

   e. Allow new compacted HMA asphalt to cool to ambient temperature before any traffic is allowed on it. Traffic is not allowed on newly placed asphalt until approval has been obtained from the Engineer.

2. Temporary centerline marking, post-paving temporary marking, temporary stop bars, and maintaining temporary pavement marking must comply with Section 8-23.

3. Permanent pavement marking must comply with Section 8-22.

5-04.3(14)B2 Submittals - Planing Plan and HMA Paving Plan

The Contractor must submit a separate planing plan and a separate paving plan to the Engineer at least 5 Working Days in advance of each operation's activity start date. These plans must show how the moving operation and traffic control are coordinated, as they will be discussed at the pre-planing briefing and pre-paving briefing. When requested by the Engineer, the Contractor must provide each operation's traffic control plan on 24 x 36 inch or larger size Shop Drawings with a scale showing both the area of operation and sufficient detail of traffic beyond the area of operation where detour traffic may be required. The scale on the Shop Drawings is 1 inch = 20 feet, which may be changed if the Engineer agrees sufficient detail is shown.

The planing operation and the paving operation include, but are not limited to, metal detection, removal of asphalt and temporary asphalt of any kind, tack coat and drying, staging of supply trucks, paving trains, rolling, scheduling, and as may be discussed at the briefing.

When intersections will be partially or totally blocked, provide adequately sized and noticeable signage alerting traffic of closures to come, a minimum 2 Working Days in advance. The traffic control plan must show where police officers will be stationed when signalization is or may be, countermanded, and show areas where flaggers are proposed.

At a minimum, the planing and the paving plan must include:

1. A copy of the accepted traffic control plan, see Section 1-10.2(2), detailing each day's traffic control as it relates to the specific requirements of that day's planing and paving. Briefly describe the sequencing of traffic control consistent with the proposed planing and paving sequence, and scheduling of placement of temporary pavement markings and channelizing devices after each day's planing, and paving.

2. A copy of each intersection's traffic control plan.

3. Haul routes from supplier facilities, and locations of temporary parking and staging areas, including return routes. Describe the complete round trip as it relates to the sequencing of paving operations.

4. Names and locations of HMA supplier facilities to be used.

5. List of all equipment to be used for paving.

6. List of personnel and associated job classification assigned to each piece of paving equipment.

7. Description (geometric or narrative) of the scheduled sequence of planing and of paving and intended area of planing and of paving for each day's work, must include the directions of proposed planing and of proposed paving, sequence of adjacent lane paving, sequence of skipped lane paving, intersection planing and paving scheduling and sequencing, and proposed notifications and coordinations to be timely made. The plan must show HMA joints relative to the final pavement marking lane lines.

8. Names, job titles, and contact information for field, office, and plant supervisory personnel.

9. A copy of the approved Mix Designs.

10. Tonnage of HMA to be placed each day.

11. Approximate times and days for starting and ending daily operations.

5-04.3(14)B3 Pre-Paving and Pre-Planing Briefing

At least 2 Working Days before the first paving operation and the first planing operation, or as scheduled by the Engineer for future paving and planing operations to ensure the Contractor has adequately prepared for notifying and coordinating as required in the Contract, the Contractor must be prepared to discuss that day's operations as they relate to other entities and to public safety and convenience, including driveway and business access, garbage truck operations, 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 the Paving and Planing:

   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, public convenience and safety, and other Contractors who may operate in the Project limits.

   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 planing and 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, streetcar rail, and castings, before planing as per 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 is used, how the Contractor will ensure different JMFs are distinguished, how pavers and how MTVs are distinguished, 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

Construct HMA approaches at the locations shown in the Plans or where staked by the Engineer, 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.

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

Planing bituminous pavement will be measured by the square yard.

No measurement will be made for asphalt thickened edge. All costs for placement of asphalt thickened edge as shown in the Contract Plans shall be included in other bid items included in the proposal.

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. All labor, material and costs for installing and maintaining temporary pavement markings as needed; and for thickened edges shall be included in this bid item.

The decrease in quantity shall not constitute a basis for claim for extra payment or damages. Payment will be for actual work performed based on the unit contract prices and shall be considered full compensation to the Contactor for the Work.

"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.

"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).

"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 Work associated with the coring (e.g., traffic control) shall be incidental and included in the unit Bid price per each.

"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.

END OF DIVISION 5

GSP DIVISION 6

City of Kirkland

DIVISION 6 – STRUCTURES

END OF DIVISION 6

GSP DIVISION 7

City of Kirkland

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

COK GSP (From 12/20/2018 file)
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. 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. Furnishing and placing crushed surfacing top course, select, or native trench backfill as required, including compaction.
8. Steel sheeting for covering excavations as necessary.
9. Maintenance, restoration and/or relocation, if required, of existing culverts, storm drainage pipe, other utilities and structures affected by construction that are to remain.
10. Cleaning and testing of all storm sewers and catch basins including CCTV inspection of the mains.
11. Crushed Surfacing Top Course and compaction for roadway base.
12. 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”).

COK GSP (From 1/22/2018 file)

7-05 MANHOLES, INLETS, CATCH BASINS, AND DRYWELLS

7-05.2 Materials

(*******)

The materials list in Section 7-05.2 is supplemented with the following:

Material for storm catch basin liner shall meet the following requirements:

Cementitious Liner

a. A cementitious product shall be used to form a structural monolithic liner covering all interior surfaces.
b. The cementitious liner material shall have the following minimum requirements:

Cementitious Liner Materials		
Characteristic	**Specification**	**Minimum Requirement**
Compressive Strength at 28 days	ASTM C109	8,000 psi
Tensile Strength	ASTM C496	800 psi
Flexural Strength	ASTM C293	1,000 psi
Bond Strength	ASTM C882	2,000 psi
Shrinkage @ 90% R.H.	ASTM C596	0%

c. Materials shall be as manufactured by the following:
   1. Strong-Seal MS-2C by Strong Company, Inc. Pine Bluff, Arkansas
   2. Permacast CR-9000 by Permacast Products, Johnson, Iowa
   3. Permaform MS-1000 by Permacast Products, Johnson, Iowa
   4. City approved equal.

d. Admixture. The identifier shall be brown in color, or as otherwise approved by the City.

Epoxy Liner Systems

a. Shall be a monolithic, 100% solids, solvent-free epoxy or polyurethane lining with exceptionally high physical strengths and a broad range of chemical resistance.
b. Shall be specifically designed for applications onto properly prepared concrete surfaces.
c. Resin system shall be 100% solid based free of volatile organic compounds (VOC).
   1. Coating on horizontal and vertical surfaces shall be an integral part of the new or rehabilitated sewer manhole.
   2. The final coating shall be a monolithic lining with uniform thickness, covering the entire interior of the manhole being rehabilitated, including but not limited to channel invert, bench, barrel, walls, cone section, and chimney.

3. The product must be capable of providing a structural liner application in excess of 250 mils in one coating application.
4. Epoxy liner system shall meet the following minimum requirements:

Epoxy Liner Requirements		
Characteristic	**Minimum Requirement**	**Specification**
Adhesive Strength	Substrate Failure	ASTM D4541
Hardness, Shore D	≥ 80	ASTM D2240
Compressive Strength	>10,000 psi	ASTM D695
Flexural Strength	>9,000 psi	ASTM D790
Tensile Strength	>6,000 psi	ASTM D638

5. Mixing and Handling: All two component epoxies should be spray applied using a plural component application system capable of spraying at distances in excess of 300 feet from the spray rig, and at application temperatures per manufacturer's recommendations.

d. Allowable Lining product manufacturers includes the following:
   1. SprayWall® by SprayRoq Protective Lining Systems.
   2. Raven 405 as manufactured by Raven Lining Systems.
   3. Warren S301 as manufactured by Warren Environmental, Inc.
   4. Cor+Gard 301 as manufactured by Permaform.
   5. Epoxytec™ Series 451 CPP Sprayliner MH™ as manufactured by Epoxytec™
   6. City-approved equal.

Water

a. All water used to mix products shall be potable.

Other Materials

a. No other material shall be used with the mixes described above without City pre- approval.

Submittals

a. Submit as specified in Section 01300 – Submittals.
b. Shop Drawings.
c. Product Data:
   1. Submittal detailed data pertaining to the manhole lining products, manufacturer's installation recommendations, product data, mix designs and manufacturer's installation instructions.
   2. Patching Materials.
   3. Infiltration control materials.

4. Cementitious Liner:
   (a) Test Data:
      (i) Provide third party test data verifying the properties called for in the specifications including, but not limited to compressive strength, bond strength, tensile strength, and shrinkage.
      (ii) When an antimicrobial admixture is to be used (Type 2 Liners), the testing shall be performed on cementitious material with the antimicrobial admixture to be used for the Work.
      (iii) Testing data shall have been conducted within 3 years prior to the date of submittal.
   (b) Manufacturer's installation instructions shall include, but are not limited to, the following:
      (i) Recommendations for repairs.
      (ii) Minimum and maximum application temperatures.
      (iii) Instructions for material handling and mixing.
      (iv) Recommendations for environmental controls during application, safety, and spray equipment.
      (v) Requirements for surface preparation and surface conditions.
      (vi) Recommendations for curing time before the cementitious liner may be subject to flow.
      (vii) Recommendations for curing time before an epoxy topcoat can be applied to the cementitious liner..
5. Epoxy Lining System:
   (a) Specifications.
   (b) Technical data sheets.
   (c) Installation instructions: Provide detailed and complete information pertaining to the manufacturer's instructions for installation and repair of the epoxy liner system. The information and instructions shall include, but not limited to, the following:

      (i) Recommendations for storage of materials.
      (ii) Minimum and maximum application temperatures.
      (iii) Instructions for material handling and mixing.
      (iv) Recommendations for environmental controls during application, safety, and spray equipment.
      (v) Requirements for surface preparation and surface conditions to receive the epoxy liner system.
      (vi) Recommendations for application of multiple coats including curing time between coats.
      (vii) Procedures to repair pinholes, blisters, evidence of uneven coverage, poor bonding, or other types of repairs.

6. Test Data: Provide test data verifying the properties of the epoxy liner system where called for in the specifications. Data is to include, but is not limited to, the following:
   (a) Adhesion strength.

(b) Hardness, Shore D.
(c) Compressive strength.
(d) Flexural strength.
(e) Tensile strength

7. Results of all quality control tests performed on the shipments of the epoxy products provided.

b. Samples:
1. Not a required submittal.

c. Testing:
1. Product testing in conformance with paragraph Cementious Manhole Lining.

d. Other Submittals:
1. Qualifications:
(a) Submit resumes for each worker as required by paragraph QUALITY ASSURANCE. Include years of experience and verification of OSHA 10- hour training.
(b) Provide cementitious liner manufacturer's certification for Applicators as required by paragraph QUALITY ASSURANCE.
(c) As applicable, provide antimicrobial admixture manufacturer's certification for Applicators as required by paragraph QUALITY ASSURANCE.
(d) References: Submit Contractor's references in accordance with paragraph QUALITY ASSURANCE.
2. Submit Work Plan in accordance with paragraph WORK PLAN.
3. Results of all quality control tests performed on samples taken during application.
4. Contractor shall submit manhole acceptance testing reports prior to final payment.
5. Manufacturer's warranty on the liner system(s) provided.

7-05.3(1) Adjusting Manholes and Catch Basins to Grade

Section 7-05.3(1) is supplemented with the following:

Catch basins and similar structures shall be brought to finished grades by methods of construction as required in Section 7-05 and City of Kirkland Pre-Approved Plans. Steel risers are not allowed. Patch adjacent pavement with Class G asphalt concrete pavement. Seal joint with AR4000W and dry sand after patching.

"ADJUST CATCH BASIN WITH NEW SOLID LOCKING LID" shall be constructed in accordance with the Plans.

Any damage to existing catch basins resulting from the Contractor's operations shall be repaired at the Contractor's expense.

Contractor shall install agency supplied storm drain markers and adhesive on any new or altered catch basins that have a vaned grate and/or inlet. To install, follow the “Storm Drain Marking” instruction sheet supplied with the storm drain markers. Any work associated with installation of storm drain markers is incidental to other bid items.

7-05.5 Payment

Payment will be made for the following bid item(s):

CATCH BASIN, TYPE 1	PER EACH
CATCH BASIN TYPE 2 __IN DIA	PER EACH
STORM MANHOLE __IN DIA WITH STRUCTURAL LINER	PER EACH
CURB INLET	PER EACH
STORM DRAINAGE MANHOLE_IN DIA	PER EACH
REMOVE EXISTING CATCH BASIN	PER EACH
REPLACE FRAME AND GRATE	PER EACH

The contract bid prices above, including all incidental work, shall be full compensation for all labor, material, tools, and equipment necessary to satisfactorily complete the work as defined in the Standard Specifications and these Special Provisions.

Furnishing and placing crushed surfacing top course, select, or native trench backfill as required, including compaction shall be considered **incidental** and included in the unit contract price for the items in this section.

Precast adjusting rings/risers, bricks, grout, Class G asphalt concrete, and AR4000W asphalt shall be considered **incidental** and included in the unit contract price for the items in this section.

END OF DIVISION 7

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GSP DIVISION 8

City of Kirkland

DIVISION 8 – MISCELLANEOUS CONSTRUCTION

8-01 EROSION CONTROL AND WATER POLLUTION CONTROL

(June 20, 2017 COK GSP)
8-01.1 Description

Section 8-01.1 is supplemented with the following:

Implementation of appropriate TESC BMPs at the appropriate construction phases is very important to prevent siltation of the subgrade, aggregate courses, and final permeable pavement. The Contractor shall install and maintain all temporary and permanent erosion control measures and Best Management Practices (BMPs) in accordance with the Contract Documents, Standard Specifications, Permit Conditions, the Contractors "Stormwater Pollution Prevention Plan" (SWPPP) and as directed by the Engineer prior to clearing, grubbing, or grading or as necessary, as clearing and grading progress. Such measures shall include, but are not necessarily limited to:

- Commercial construction entrances per CK-E.02.
- Quarry Spall outfall pads for temporary erosion control
- Rock, Wattle, Compost sock check dams
- Straw mulch, netting and tackifier
- Concrete wash
- Baker tanks and/or Settling ponds
- Stabilized construction entrance / exit
- Inlet protection on existing and proposed drainage structures
- Reinforced silt fencing
- Plastic Covering
- Temporary pipe slope drains
- Temporary HMA Curb
- Disposal of sediments and materials
- TESC seeding
- Maintenance of BMPs including in the event of emergencies and as weather and field conditions dictate; and also including installation of additional BMPs which may become required as field and weather conditions evolve.
- Street sweeping and Cleaning
- ESC Lead per 8-01 of the Standard Specifications
- All materials, tools and equipment necessary to meet these requirements

The Contractor shall provide erosion control as required for all stockpiled materials at no cost to the Contracting Agency. The Engineer, in the event of an emergency, and as weather and field conditions dictate, may require additional erosion controls and BMPs.

Site Specific BMPs and SWPPP Plan

Temporary Erosion / Water Pollution Control notes and performance criteria are noted in the Contract Documents. The Contractor shall submit his or her own Storm Water Pollution Prevention Plan (SWPPP) to the Contracting Agency for review and approval prior to the commencement of clearing, grubbing, or grading activities.

Water quality testing and discharge volume reporting required by the project permits shall be performed by the Contractor and is a condition of approval of the SWPPP. The reporting data shall be provided to the Engineer as soon as practical, at regular intervals and prior to reporting deadlines established in the permits. The Contractor will provide a copy of the reporting information within 24 hours of a request to do so by the Engineer. All costs to perform these reporting requirements are to be included in the lump sum contract price for “Erosion/Water Pollution Control”.

(June 20, 2017 COK GSP)
8-01.3 Construction Requirements

Section 8-01.3 is supplemented with the following:

The Contractor shall bear sole responsibility for damage to completed portions of the project and to property located off the project caused by erosion, siltation, runoff, or other related items during the construction of the project. The Contractor shall also bear sole responsibility for any pollution of rivers, streams, groundwater, or other water that may occur as a result of construction operations.

Any area not covered with established, stable vegetation where no further work is anticipated for a period of 15 days, shall be immediately stabilized with the approved erosion and sedimentation control methods (e.g., seeding and mulching, straw). Where seeding for temporary erosion control is required, fast germinating grasses shall be applied at an appropriate rate (e.g., perennial rye applied at approximately 80 pounds per acre).

At no time shall more than 1 foot of sediment be allowed to accumulate within a catch basin. All catch basins and conveyance lines shall be cleaned at a time designated by the Contracting Agency Construction Inspector.

The cleaning operation shall not flush sediment-laden water into the downstream system. The cleaning shall be conducted using an approved vacuum truck capable of jet rodding the lines. The collection and disposal of the sediment shall be the responsibility of the Contractor at no cost to the Contracting Agency.

8-01.3(1) General

(June 20, 2017 COK GSP)
8-01.3(1)A Submittals

Section 8-01.3(1)A is supplemented with the following:

Stormwater Pollution Prevention Plan

The Contractor shall prepare a Stormwater Pollution Prevention Plan (SWPPP) in accordance with Department of Ecology requirements.

The Contractor shall incorporate the SWPPP implementation schedule into the Contractor’s progress schedule. The SWPPP and implementation schedule shall be submitted in accordance with Sections 1-05.3 and 1-08.3.

In addition, the SWPPP shall outline the procedures to be used to prevent high pH stormwater. The plan shall include how the pH of the water will be maintained between pH

6.5 and pH 8.5 prior to being discharged from the project or entering surface waters. Prior to beginning any concrete or grinding work, the Contractor shall submit the plan, for the Engineer's review and approval.

The Ecology template can be found at the following link:

http://www.ecy.wa.gov/programs/wq/stormwater/construction/

The SWPPP is considered a "living" document that shall be revised to account for additional erosion control/pollution prevention BMPs as they become necessary and are implemented in the field during project construction. A copy of the most current SWPPP shall remain on-site at all times and an additional copy shall be forwarded to the Engineer. At the Contractor's preference, revisions to the SWPPP may be forwarded to the Engineer rather than submitting a complete document. Revisions to the SWPPP may be kept on-site in a file along with the original SWPPP document.

(June 20, 2017 COK GSP)
8-01.3(1)B Erosion and Sediment Control (ESC) Lead

Supplement the second paragraph with the following:

3. Inspecting all on-site erosion and sediment control BMPs at least once every five working days and within 24 hours of every runoff event. A SWPPP Inspection report or form shall be prepared for each inspection and shall be included in the SWPPP file. A copy of each SWPPP Inspection report or form shall be submitted to the Engineer no later than the end of the next working day following the inspection. The report or form shall include, but not be limited to the following:

   a. When, where, and how BMPs were installed, maintained, modified, and removed.
   b. Observations of BMP effectiveness and proper placement.
   c. Recommendations for improving future BMP performance with upgraded or replacement BMPs when inspections reveal SWPPP inadequacies.
   d. Approximate amount of precipitation since last inspection and when last inspection was performed.

4. Updating and maintaining a SWPPP file on site that includes, but is not limited to the following:

   a. SWPPP Inspection Reports or Forms.
   b. SWPPP narrative.
   c. Other applicable permits.

(June 20, 2017 COK GSP)
8-01.3(1)C Water Management

Section 8-01.3(1)C is supplemented with the following:

The Contractor will be responsible for meeting the SWPPP requirements.

The Bid Item “Erosion/Water Pollution Control” shall include the cost of providing temporary detention/retention facilities as illustrated in the Contractor’s SWPPP Plan as well as modifications, additions and removals of such facility as dictated by the Contractor’s sequence of work and may include, but are not limited to:

1. Temporary detention/retention facilities such as ponds, Baker Tanks, or other facilities.
2. If any permanent stormwater facilities are utilized, such as the detention vault, for SWPPP compliance, the Contractor shall remove accumulated sediment and clean the facility prior to final acceptance at no additional cost to the Contracting Agency.
3. Temporary facilities such as wheel wash stations or similar.
4. Temporary construction entrances.

No additional compensation shall be made for construction, alteration, removal, maintenance, and any additional requirements necessary for “Erosion/Water Pollution Control”. No additional compensation shall be made for conflicts with existing or proposed improvements or construction sequencing of work when facilities are utilized to meet permit requirements.

(******)

8-01.5 Payment

Section 8-01.5 is deleted in its entirety and replaced with the following:

Payment will be made for the following bid item(s):

“Erosion/Water Pollution Control”, by Lump Sum as provided in Section 1-09.6.

Installation, maintenance, and removal of erosion and water pollution control devices ,including removal and disposal of sediment, stabilization, and rehabilitation of soil disturbed by these activities, and any additional work deemed necessary by the Engineer to control erosion and water pollution will be paid by force account under the item “Erosion/Water Pollution Control”.

8-02 ROADSIDE RESTORATION

8-02.3 Construction Requirements

(December 14, 2005 COK GSP)

8-02 ROADSIDE RESTORATION

8-02.3 Construction Requirements

Section 8-02.3 is supplemented with the following:

Property Restoration

Property restoration shall consist of placement of topsoil, seed, bark mulch, slope restoration behind sidewalks, retaining walls, and other work necessary to restore all disturbed areas to original condition or better.

8-02.4 Measurement

Section 8-02.4 is supplemented with the following:

Topsoil will not be measured separately. The cost for furnishing and installing topsoil as specified is included in the unit contract prices for "Property Restoration".

No unit of measure shall apply to the lump sum price for property restoration.

8-02.5 Payment

Section 8-02.5 is supplemented with the following:

Payment will be made in accordance with Section 1-04.1 of these Specifications for the following bid item(s):

"Property Restoration", per lump sum.

(December 10, 2004 COK GSP)
8-02.3(4) Topsoil

Section 8-02.3(4) is supplemented with the following:

Structural Soil for Tree Back-Fill

Soil for tree planting in 4' x 4' tree grates shall be CU-Structural Soil as produced by Amereq, Inc. and as supplied by:

Pacific Topsoils, Inc.
14002-35th Ave. SE
Mill Creek, WA 98912

CU-Structural Soil shall meet the following requirements:

The soil medium is a three-component gap graded structural supporting soil mixed in the following proportions by weight.

Crushed Stone	100 lbs	gradation of 100% passing 1.25", Max. 30% passing 0.75 inch
Clay Loam	20 lbs	per USDA soul classification system (gravel<5%, sand 25-30%, silt 20-40%, clay 25-40%, organic matter 2-5%)
Hydogel	0.03 lbs	Potassium propenoate-propenamide copolymer tackifier

Material shall be delivered at or near optimum moisture content as determined by ASTM D-698. Upon delivery, cover and protect to avoid moisture loss/absorption. Material delivered in frozen, wet, or muddy conditions or placed when moisture content is 2 percent or more above optimum will not be accepted. During installation the structural soil shall

be installed in 6" maximum lifts and compacted to 95% per Standard Proctor ASTM D-698.

8-04 CURBS, GUTTERS, AND SPILLWAYS

8-04.5 Payment (******)

Section 8-04.5 is supplemented with the following:

"Cement Concrete Traffic Curb and Gutter", per lineal foot.

The linear footage shall be measured along the curb face along the line and grade of the roadway. The Contract Price shall be per linear foot regardless of actual curb width. Included in the unit contract price shall be all labor, tools, equipment, materials, and incidental items of work including, but not limited to, sawcutting existing curb and gutter for removal, disposal of surplus, unsuitable and/or waste materials, furnishing, placing and compacting CSTC for subgrade, and Furnishing and placing concrete for new curb and gutter.

*(DECEMBER **28, 20**06 **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 8-14.4 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, furnishing, placing and compacting CSTC for subgrade, 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.

8-15 Riprip

8-15.5 Payment (******)

Section 8-15.5 is supplemented with the following:

"Quarry Spalls", per ton or per cubic yard.

The decrease in quantity shall not constitute a basis for claim for extra payment or damages. Payment will be for actual work performed based on the unit contract prices and shall be considered full compensation to the Contactor for the Work.

END OF DIVISION 8

GSP DIVISION 9

City of Kirkland

DIVISION 9 – MATERIALS

END OF DIVISION 9

PREVAILING WAGES

City of Kirkland

PREVAILING WAGE RATES

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

Use 2026 rates
(published date – July 9,2026)

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, or kweil@kirklandwa.gov.

APPENDIX A: PROJECT PLANS

City of Kirkland

CITY OF KIRKLAND

108TH AVE NE PIPE INSTALLATION PROJECT

KIRKLAND, WA

JUNE 2026

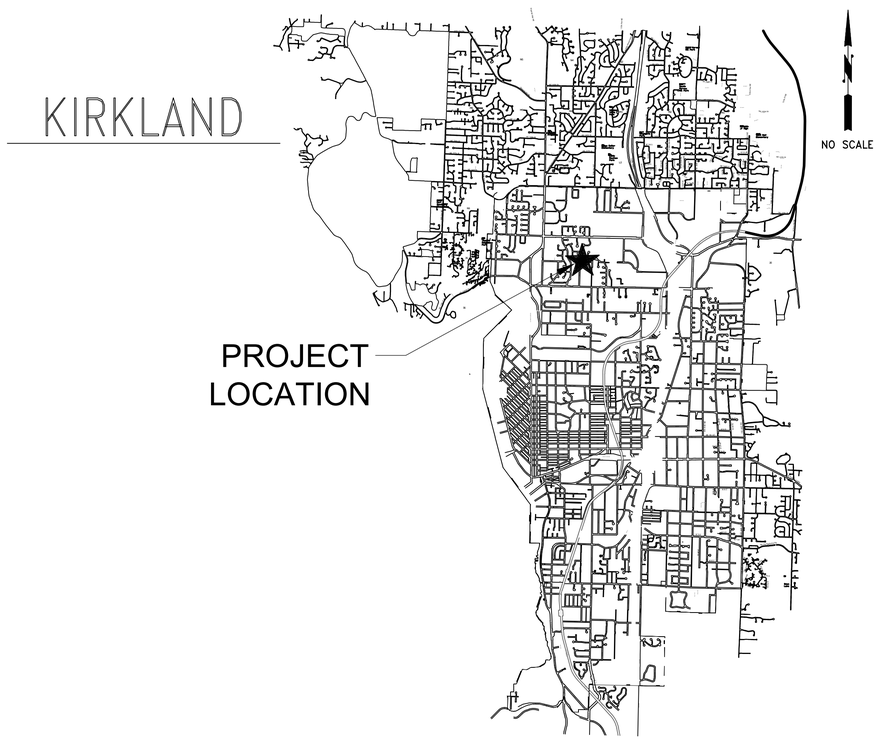
JOB NO. 33-25-PW

CITY OFFICIALS

KELLI CURTIS	MAYOR
NEAL BLACK	DEPUTY MAYOR
JAY ARNOLD	COUNCIL MEMBER
SHILPA PREM	COUNCIL MEMBER
AMY FALCONE	COUNCIL MEMBER
JOHN TYMCZYSZYN	COUNCIL MEMBER
JON PASCAL	COUNCIL MEMBER
KURT TRIPLETT	CITY MANAGER
JULIE UNDERWOOD	PUBLIC WORKS DIRECTOR
ROB ENGLISH, PE	CAPITAL DIVISION MANAGER

CONTACT PERSONNEL

NAME	AGENCY	PHONE
BEN MAHONY, EIT	COK PROJECT ENGINEER	425.587.3248
	COK STREETS & GROUNDS DEPARTMENT	425.587.3900
	COK STORMWATER DEPARTMENT	425.587.3900
	COK UTILITIES DEPARTMENT	425.587.3900
STEVE HOOPES	COK FIELD REPRESENTATIVE	425.623.5086
RIK MAYER	COK FIELD REPRESENTATIVE	206.496.4265
EVAN HEIMBUCH	COK FIELD REPRESENTATIVE	425.410.4606
KIARA SKYE	PUGET SOUND ENERGY (GAS)	425.213.9205
KIARA SKYE	PUGET SOUND ENERGY (ELECTRIC)	425.213.9205
BIANCA CRAWFORD	COMCAST CABLE	253.303.2723
CHERYL SCHNEIDER	ZIPLY FIBER	509.218.1294
SCOTT CHRISTENSEN	VERIZON	425.471.1079
JEFF MILES	LAKE WASH. SCHOOL DISTRICT	425.936.1120
CONST. COORDINATOR	KING COUNTY METRO	206.684.2732
MIKE FREEMAN	SEATTLE PUBLIC UTILITIES	206.684.8117
EMERGENCY	NORCOM	911
POLICE MAIN LINE	COK	425.587.3400
FIRE MAIN LINE	COK	425.864.3650
SPILL RESPONSE HOTLINE	COK	425.587.3900
ONE CALL UTILITY LOCATE		800.424.5555



INDEX OF DRAWINGS

GENERAL

G-001	COVER SHEET, DRAWING INDEX, LOCATION MAP
G-002	GENERAL NOTES, STANDARD SYMBOLS, AND LEGEND
G-003	SURVEY CONTROL PLAN

CIVIL

C-100	KEY PLAN
C-101	PLAN AND PROFILE – I
C-102	PLAN AND PROFILE – II
C-103	PLAN AND PROFILE – III
C-104	PLAN AND PROFILE – IV
C-105	PLAN AND PROFILE – V
C-501	CITY OF KIRKLAND STANDARD DETAILS – I
C-502	CITY OF KIRKLAND STANDARD DETAILS – II
C-503	CITY OF KIRKLAND STANDARD DETAILS – III

EROSION AND SEDIMENT CONTROL AND SURFACE RESTORATION PLANS

CE-001	ESCP GENERAL NOTES AND STANDARD DETAILS
CE-101	ESCP UTILITY CONSTRUCTION

LANDSCAPE PLANS

L-101	LANDSCAPE RESTORATION PLAN
L-102	TREE REMOVAL PLAN

BRIAN P. WOLF
STATE OF WASHINGTON
47049
REGISTERED
PROFESSIONAL ENGINEER

6/8/2026

100% - BID DOCUMENTS

June 5, 2026 - 2:52 PM - ALLIM - C:\USERS\ALLIM\DC\ACCDOCS\STANTEC CONSULTING\200200649_CITY_OF_KIRKLAND-108TH_AVE_NE_PIPELINE_PROJECT\PROJECT FILES\01_WIP\01_GENERAL\SHEET_FILES\G-002.DWG - Layout Name: LAYOUT1

CIVIL GENERAL NOTES

STORM DRAINAGE - PLAN NOTES:

1. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION.
2. BEFORE ANY CONSTRUCTION MAY OCCUR, THE CONTRACTOR SHALL HAVE PLANS WHICH HAVE BEEN SIGNED AND APPROVED BY THE CITY OF KIRKLAND PUBLIC WORKS DEPARTMENT, OBTAINED ALL CITY, COUNTY, STATE, FEDERAL AND OTHER REQUIRED PERMITS, AND HAVE POSTED ALL REQUIRED BONDS.
3. ALL STORM DRAINAGE IMPROVEMENTS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE CITY OF KIRKLAND PUBLIC WORKS PRE-APPROVED PLANS AND POLICIES AND THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION, PREPARED BY WSDOT AND THE AMERICAN PUBLIC WORKS ASSOCIATION (APWA).
4. ANY DEVIATION FROM THE APPROVED PLANS WILL REQUIRE WRITTEN APPROVAL, ALL CHANGES SHALL BE SUBMITTED TO THE CITY.
5. A COPY OF THE APPROVED STORM WATER PLANS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
6. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED OR SIMILARLY STABILIZED TO THE SATISFACTION OF THE CITY OF KIRKLAND DEPARTMENT OF PUBLIC WORKS FOR THE PREVENTION OF ON-SITE EROSION AFTER THE COMPLETION OF CONSTRUCTION.
7. MINIMUM COVER OVER STORM DRAINAGE PIPES IN ROW OR VEHICULAR PATH SHALL BE SUBJECT TO PRE-APPROVED PLAN CK-D.01, UNLESS OTHER DESIGN IS APPROVED.
8. ALL CATCH BASINS SHALL BE TYPE I UNLESS OTHERWISE NOTED. CATCH BASINS WITH A DEPTH OF OVER FIVE FEET (5') TO THE PIPE INVERT SHALL BE A TYPE II CATCH BASIN. TYPE II CATCH BASINS EXCEEDING FIVE FEET (5') IN DEPTH SHALL HAVE A STANDARD LADDER INSTALLED, UNLESS APPROVED BY CITY OF KIRKLAND ENGINEER.
9. ALL STORM DRAINAGE MAIN EXTENSIONS WITHIN THE PUBLIC RIGHT-OF-WAY OR IN EASEMENTS MUST BE STAKED FOR LINE AND GRADE PRIOR TO STARTING CONSTRUCTION.
10. ROCK FOR EROSION PROTECTION OF ROADWAY DITCHES, WHERE REQUIRED, MUST BE OF SOUND QUARRY ROCK, PLACED TO A DEPTH OF ONE FOOT (1') AND MUST MEET THE FOLLOWING SPECIFICATIONS: 4"-8" ROCK/40%-70% PASSING; 2"-4" ROCK/30%-40% PASSING; 2"-MINUS ROCK/10%-20% PASSING. RECYCLED CONCRETE SHALL NOT BE USED FOR EROSION PROTECTION, INCLUDING FOR CONSTRUCTION ENTRANCE OR TEMPORARY STABILIZATION ELSEWHERE ON SITE.
11. ALL PIPE, MANHOLES, CATCH BASINS, AND APPURTENANCES SHALL BE LAID ON A PROPERLY PREPARED FOUNDATION IN ACCORDANCE WITH THE CURRENT STATE OF WASHINGTON STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (WSDOT). THIS SHALL INCLUDE NECESSARY LEVELING OF THE TRENCH BOTTOM OR THE TOP OF THE FOUNDATION MATERIAL AS WELL AS PLACEMENT AND COMPACTION OF REQUIRED BEDDING MATERIAL TO UNIFORM GRADE SO THAT THE ENTIRE LENGTH OF THE PIPE WILL BE SUPPORTED ON A UNIFORMLY DENSE, UNYIELDING BASE. IF THE NATIVE MATERIAL IN THE BOTTOM OF THE TRENCH MEETS THE REQUIREMENTS FOR "GRAVEL BACKFILL FOR PIPE BEDDING," THE FIRST LIFT OF PIPE BEDDING MAY BE OMITTED PROVIDED THE MATERIAL IN THE BOTTOM OF THE TRENCH IS LOOSENED, REGRADED, AND COMPACTED TO FORM A DENSE UNYIELDING BASE. ALL PIPE BEDDING SHALL BE APWA CLASS B, TYPE I, OR BETTER. PIPE SHALL NOT BE INSTALLED ON SOD, FROZEN EARTH, LARGE BOULDERS, OR ROCK. PIPE BEDDING FOR FLEXIBLE PIPES SHALL BE PEA GRAVEL TO THE SPRINGLINE OF THE PIPE.
12. CONSTRUCTION OF DEWATERING DISCHARGES SHALL ALWAYS MEET WATER QUALITY GUIDELINES LISTED IN COK POLICY E-1. SPECIFICALLY, DISCHARGES TO THE PUBLIC STORMWATER DRAINAGE SYSTEM MUST BE BELOW 25NTU, AND NOT CONSIDERED A PROHIBITED DISCHARGE (PER KMC 15.52.090). TEMPORARY DISCHARGES TO SANITARY SEWER REQUIRE PRIOR AUTHORIZATION AND PERMIT FROM KING COUNTY INDUSTRIAL WASTE PROGRAM (206-477-5300) AND NOTIFICATION TO THE PUBLIC WORKS CONSTRUCTION INSPECTOR.
13. ISSUANCE OF A BUILDING OR LAND SURFACE MODIFICATION PERMIT BY THE CITY OF KIRKLAND DOES NOT RELIEVE THE OWNER OF THE CONTINUING LEGAL OBLIGATION AND/OR LIABILITY CONNECTED WITH STORM SURFACE WATER DISPOSITION. FURTHER, THE CITY OF KIRKLAND DOES NOT ACCEPT ANY OBLIGATION FOR THE PROPER FUNCTIONING AND MAINTENANCE OF THE SYSTEM DURING OR FOLLOWING CONSTRUCTION EXCEPT AS OUTLINED IN THE CITY OF KIRKLAND PUBLIC WORKS STANDARDS.
14. ALL TRENCH BACKFILL SHALL BE COMPACTED TO 95 PERCENT DENSITY IN ROADWAYS, ROADWAY SHOULDERS, ROADWAY PRISM AND DRIVEWAYS, AND 85 PERCENT DENSITY IN UNPAVED AREAS. ALL PIPE ZONE COMPACTION SHALL BE 95 PERCENT.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, CONFINED SPACE PROTECTION, FLAGGERS, AND ANY OTHER NEEDED ACTIONS TO PROTECT THE LIFE, HEALTH, AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACT. ANY WORK WITHIN THE TRAVELED RIGHT-OF-WAY THAT MAY INTERRUPT NORMAL TRAFFIC FLOW SHALL REQUIRE A TRAFFIC CONTROL PLAN APPROVED BY THE CITY OF KIRKLAND. ALL SECTIONS OF THE WSDOT STANDARD SPECIFICATIONS, TRAFFIC CONTROL, AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) SHALL APPLY.
16. NO FINAL CUT OR FILL SLOPE SHALL EXCEED SLOPES OF TWO (2) HORIZONTAL TO ONE (1) VERTICAL WITHOUT STABILIZATION BY ROCKERY OR BY A STRUCTURAL RETAINING WALL.

CIVIL GENERAL NOTES - CONTINUED

STORM DRAINAGE - PLAN NOTES (CONT.):

17. ALL MANHOLE LADDERS SHALL BE FIRMLY ATTACHED AND EXTEND TO WITHIN 1' OF THE BOTTOM OF THE STRUCTURE.
18. APPROXIMATE LOCATIONS OF EXISTING UTILITIES HAVE BEEN OBTAINED FROM AVAILABLE RECORDS AND ARE SHOWN FOR CONVENIENCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF EXISTING UTILITY LOCATIONS WHETHER OR NOT THESE UTILITIES ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL EXERCISE ALL CARE TO AVOID DAMAGE TO ANY UTILITY. IF CONFLICTS WITH EXISTING UTILITIES ARISE DURING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE CITY CONSTRUCTION INSPECTOR AND ANY CHANGES REQUIRED SHALL BE APPROVED BY THE DEVELOPMENT ENGINEER PRIOR TO COMMENCEMENT OF RELATED CONSTRUCTION ON THE PROJECT.
19. THE UNDERGROUND UTILITY LOCATION SERVICE SHALL BE CONTACTED FOR FIELD LOCATION OF EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION. THE OWNER OR THEIR REPRESENTATIVE SHALL BE CONTACTED IF A UTILITY CONFLICT EXISTS. FOR UTILITY LOCATION IN KING COUNTY, CALL 1-800-424-5555. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT UTILITY LOCATES ARE MAINTAINED THROUGHOUT THE LIFE OF THE PROJECT.
20. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, WIDTHS, THICKNESSES, AND ELEVATIONS OF ALL EXISTING PAVEMENTS AND STRUCTURES THAT ARE TO INTERFACE WITH NEW WORK. PROVIDE ALL TRIMMING, CUTTING, SAW CUTTING, GRADING, LEVELING, SLOPING, COATING, AND OTHER WORK, INCLUDING MATERIALS AS NECESSARY, TO CAUSE THE INTERFACE WITH EXISTING WORKS TO BE PROPER, ACCEPTABLE TO THE ENGINEER AND THE CITY OF KIRKLAND, COMPLETE IN PLACE AND READY TO USE.
21. ALL INLET, MANHOLE, AND CATCH BASIN FRAMES AND GRATES SHALL NOT BE ADJUSTED TO GRADE UNTIL IMMEDIATELY PRIOR TO FINAL PAVING. ALL CATCH BASIN GRATES SHALL BE SET 0.10' BELOW PAVEMENT LEVEL.
22. OPEN CUT ROAD CROSSINGS FOR UTILITY TRENCHES ON EXISTING TRAVELED ROADWAY SHALL BE BACKFILLED ONLY WITH 5/8" MINUS CRUSHED ROCK AND MECHANICALLY COMPACTED (UNLESS OTHERWISE APPROVED BY THE CITY). FOR STREETS CLASSIFIED AS ARTERIALS OR COLLECTORS, BACKFILL FOR CROSSINGS SHALL BE CDF. CUTS INTO THE EXISTING ASPHALT SHALL BE NEAT LINE CUT WITH SAW OR JACKHAMMER IN A CONTINUOUS LINE. A TEMPORARY COLD MIX PATCH MUST BE PLACED IMMEDIATELY AFTER BACKFILL AND COMPACTION. A PERMANENT HOT MIX PATCH SHALL BE PLACED WITHIN 30 DAYS AND SHALL BE A MINIMUM OF 1" THICKER THAN THE ORIGINAL ASPHALT WITH A MINIMUM THICKNESS OF 2". SEE STANDARD D.02.
23. ALL DAMAGES INCURRED TO PUBLIC AND/OR PRIVATE PROPERTY BY THE CONTRACTOR DURING THE COURSE OF CONSTRUCTION SHALL BE PROMPTLY REPAIRED TO THE SATISFACTION OF THE CITY CONSTRUCTION INSPECTOR BEFORE PROJECT APPROVAL AND/OR THE RELEASE OF THE PROJECT'S PERFORMANCE BOND.
24. GROUT ALL SEAMS AND OPENINGS IN ALL INLETS, CATCH BASINS, AND MANHOLES. JETSET OR SPEED CRETE RED LINE GROUT IS NOT ALLOWED.
25. WHEN WIDENING AN EXISTING ROADWAY WHERE AN EXISTING TYPE I CATCH BASIN WILL REMAIN IN THE TRAVEL LANE, THE EXISTING FRAME AND COVER SHALL BE REPLACED WITH A ROUND, LOCKING FRAME AND COVER.
26. FOR OTHER THAN SINGLE-FAMILY DWELLINGS, ALL EXPOSED OR READILY EXPOSED INDOOR STORM DRAINAGE PIPING/PLUMBING SHALL BE LABELED WITH THE WORDS "STORM DRAIN" WITH MINIMUM 2 INCH HIGH LETTERS.
27. RECYCLED CONCRETE SHALL NOT BE USED AROUND STORMWATER FACILITIES.
28. ALL FASTENERS (BOLTS, NUTS, WASHERS, ETC.) ON MANHOLE AND CATCH BASIN LIDS TO BE STANDARD SIZE. NO METRIC FASTENERS ALLOWED.
29. A SPECIAL INSPECTION USING CCTV BY A PACP (PIPELINE ASSESSMENT CERTIFICATION PROGRAM) OR EQUIVALENT CERTIFIED VENDOR IS REQUIRED FOR NEW STORM SEGMENTS THAT ARE PUBLICLY OWNED AND MAINTAINED BEFORE INSPECTOR SIGN OFF.

GENERAL CIVIL SYMBOLS

- DECORATIVE COLUMN
- FENCE GATE POST
- FOUND MONUMENT MAG NAIL
- FOUND MONUMENT BRASS CAP
- FOUND MONUMENT CONCRETE MONUMENT
- MB — MAILBOX
- SIGN SITE
- TREE DECIDUOUS
- TREE CONIFER
- F — FIBER OPTIC UNDERGROUND VAULT
- POWER/UTILITY POLE
- GUY ANCHOR
- POWER LIGHT POLE
- S — SANITARY MANHOLE
- SCO — STORM CLEAN OUT
- STORM CATCH BASIN
- T — TELEPHONE RISER
- WV — WATER FIRE HYDRANT
- WATER VALVE
- WATER METER

LEGEND (EXISTING)

- EASEMENTS
- LOT/PARCEL LINE
- RIGHT-OF-WAY
- BOUNDARY SECTION LINE
- CENTERLINE
- BUILDING
- FLOW LINE CURB
- STANDARD CURB
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EDGE OF GRAVEL
- BREAKLINE
- FENCE
- SITE
- FO — FIBER OPTIC
- E — UNDERGROUND POWER
- OHP — OVERHEAD POWER
- G — GAS
- SS — SANITARY SEWER
- SD — STORM SEWER
- T — TELEPHONE
- W — WATER
- CONTOUR MAJOR
- CONTOUR MINOR
- BUILDING HATCH
- CONCRETE PAVER HATCH
- CONCRETE HATCH
- ROCK RETAINING WALL HATCH

LEGEND (PROPOSED)

- NEW
- EXISTING
- FUTURE
- EXISTING TO BE REMOVED OR DEMOLISHED
- CENTERLINE
- EARTH (IN SECTION)
- COMPACTED EARTH (IN SECTION)
- S=0.0123 — SLOPE ON PAVED SURFACE
- 125 — MAJOR CONTOURS
- MINOR CONTOURS
- TOP OF SLOPE
- TOE OF SLOPE
- P/L — PROPERTY LINE
- R/W — RIGHT-OF-WAY LINE
- GB — GRADE BREAK
- R — RIDGE LINE
- ESMT — EASEMENT LINE
- TEMP ESMT — TEMPORARY EASEMENT LINE
- TRAIL OR DIRT ROAD
- FLOW LINE
- FLOOD HAZARD AREA
- EDGE OF WETLANDS
- RAILROAD
- GUARDRAIL (PERMANENT)
- GUARDRAIL (REMOVABLE)
- VEGETATION
- WELL
- D — CATCH BASIN
- ASPHALT OVERLAY
- PAVEMENT RESTORATION
- PAVEMENT WIDENING
- CONCRETE PAVING (LIGHT DUTY) SIDEWALKS ETC...

BRIAN P. WOLF — STATE OF WASHINGTON — 47049 — REGISTERED PROFESSIONAL ENGINEER

5/8/2026

100% - BID DOCUMENTS

DATE	NO.	REVISION	BY	
06/26	4	ISSUED FOR BID	AL	BW
05/08/26	3	100% DESIGN	AL	BW
12/12/25	2	90% DESIGN	AL	BW
10/03/25	1	60% DESIGN	AL	BW

811 Know what's below. Call 811 before you dig.

UPI NO.:	FED. AID PROJ. NO.:
SURVEY NO.:	FIELD BOOK(S):
HORZ. DATUM:	VERT. DATUM:
DESIGNED BY: BW	DRAWN BY: VS

CITY OF KIRKLAND
DEPARTMENT OF PUBLIC WORKS
123 FIFTH AVENUE KIRKLAND, WA 98033
(425) 587-3800 www.kirklandwa.gov

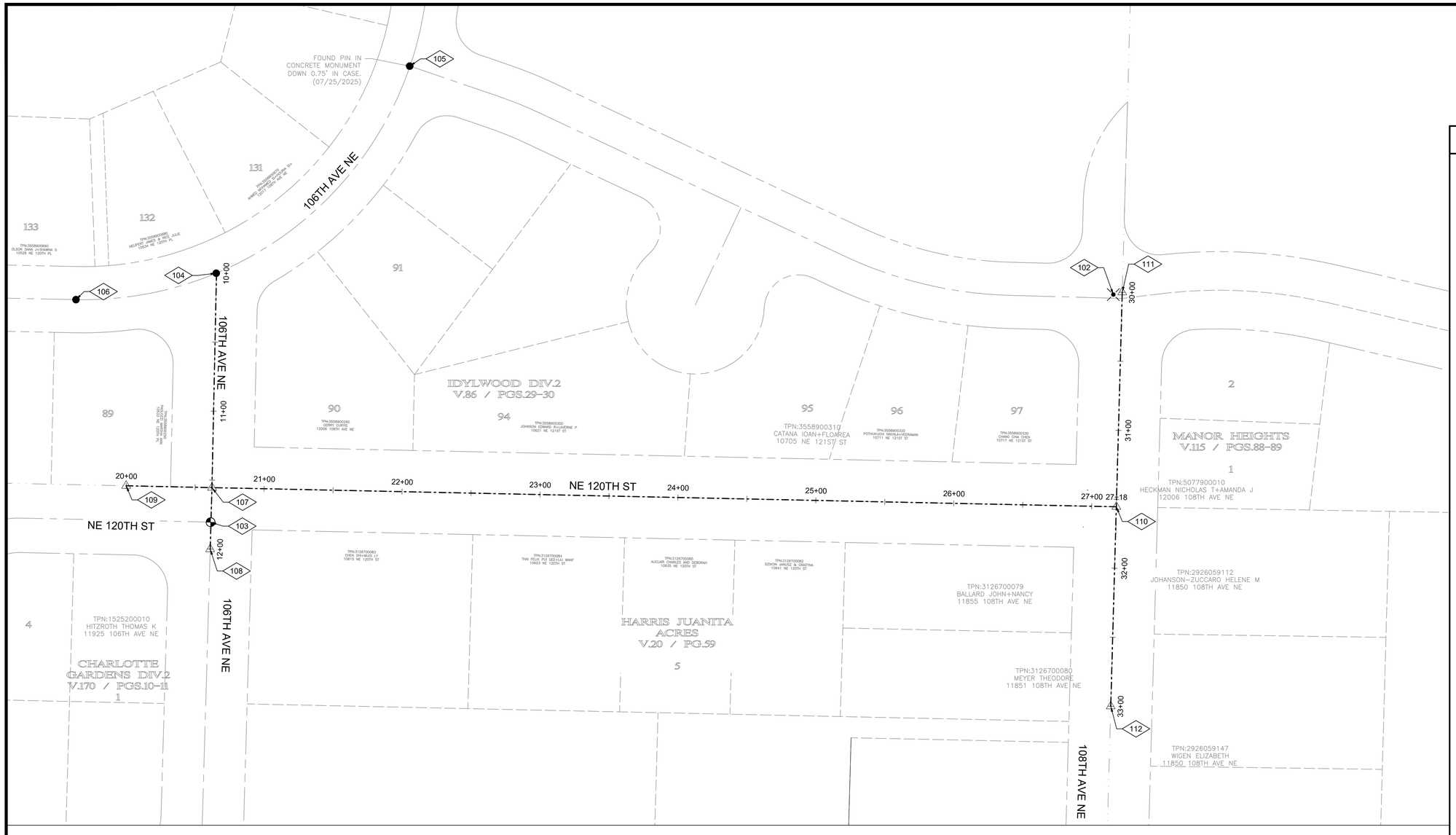
FUNDING NO. _____

108TH AVE NE PIPE INSTALLATION PROJECT

GENERAL NOTES, STANDARD SYMBOLS, AND LEGEND

REFERENCE SHEET NO. G-002

SHEET 2 OF 16 SHEETS



PLAN

SCALE: 1"=40'

N

0 40 80

SCALE IN FEET

SURVEY AND CONTROL NOTES:

1. HORIZONTAL DATUM (BASIS OF BEARINGS):

   WASHINGTON STATE PLANE COORDINATE SYSTEM NORTH ZONE. NAD83 (1991), BASED ON GPS OBSERVATIONS OF CITY OF KIRKLAND POINT DESIGNATION 44 AND 45. DISTANCES SHOWN HEREON ARE GROUND DISTANCES, US SURVEY FEET, SCALED ABOUT CONTROL POINT NO 4. TO CONVERT TO GRID DISTANCES MULTIPLY BY THE COMBINED FACTOR OF 1.0000385133.

2. VERTICAL DATUM:

   NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), BASED ON CITY OF KIRKLAND POINT DESIGNATION 44, WITH AN ELEVATION OF 256.57 FEET, SET AT THE INTERSECTION OF NE 116TH ST AND 108TH AVE NE, SAID POINT ALSO BEING THE SOUTH QUARTER CORNER FOR SECTION 29, TOWNSHIP 26 NORTH, RANGE 5 EAST, W.M., AND CITY OF KIRKLAND POINT DESIGNATION 45, WITH AN ELEVATION OF 81.28, SET AT THE INTERSECTION OF NE 116TH ST AND 100TH AVE NE, SAID POINT ALSO BEING THE SOUTHWEST CORNER FOR SECTION 29, TOWNSHIP 26 NORTH, RANGE 5 EAST, W.M.

3. THE LOCATION OF EXISTING UNDERGROUND UTILITY FACILITIES SHOWN HEREON ARE BASED ON LOCATE MARKS REQUESTED FOR THIS SURVEY. THE SURVEYOR ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE DELINEATION OF SUCH UNDERGROUND UTILITIES BY THE RESPECTIVE UTILITY OWNERS, NOR FOR THE EXISTENCE OF BURIED OBJECTS WHICH ARE NOT SHOWN ON THE PLAN. ALL UTILITY LOCATIONS SHOULD BE FIELD VERIFIED PRIOR TO CONSTRUCTION.

4. FIELD WORK WAS COMPLETED ON JULY 28, 2025.

5. NO EASEMENTS, RESTRICTIONS, OR RESERVATIONS OF RECORD WHICH WOULD BE DISCLOSED BY TITLE REPORT ARE SHOWN.

6. EXISTING TAX LOT LINES ARE SHOWN BASED ON PUBLICLY AVAILABLE RECORDS.

CITY OF KIRKLAND SURVEY CONTROL POINTS				
POINT #	NORTHING	EASTING	ELEVATION	DESC
100	259826.60	1301968.82	81.26	FD_CONC CP_CHK
101	259767.14	1304596.46	256.57	FD_CONC CP_CHK
102	261242.30	1304631.05	266.24	FD_PKW
103	261077.39	1303976.70	185.40	FD_BC
104	261257.76	1303980.79	177.90	FD_CONC
105	261407.81	1304121.04	189.22	FD_CONC
106	261238.65	1303879.12	171.24	FD_CONC / BRASS PIN

CONSTRUCTION CENTERLINE CONTROL POINTS				
POINT #	NORTHING	EASTING	ELEVATION	DESC
107	261102.47	1303977.70	184.29	ROAD C/L
108	261057.93	1303976.41	186.68	ROAD C/L
109	261103.79	1303915.52	180.66	ROAD C/L
110	261088.58	1304633.26	266.01	ROAD C/L
111	261243.96	1304637.51	N/A	ROAD C/L
112	260944.07	1304629.18	266.55	ROAD C/L

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FUNDING NO. _____

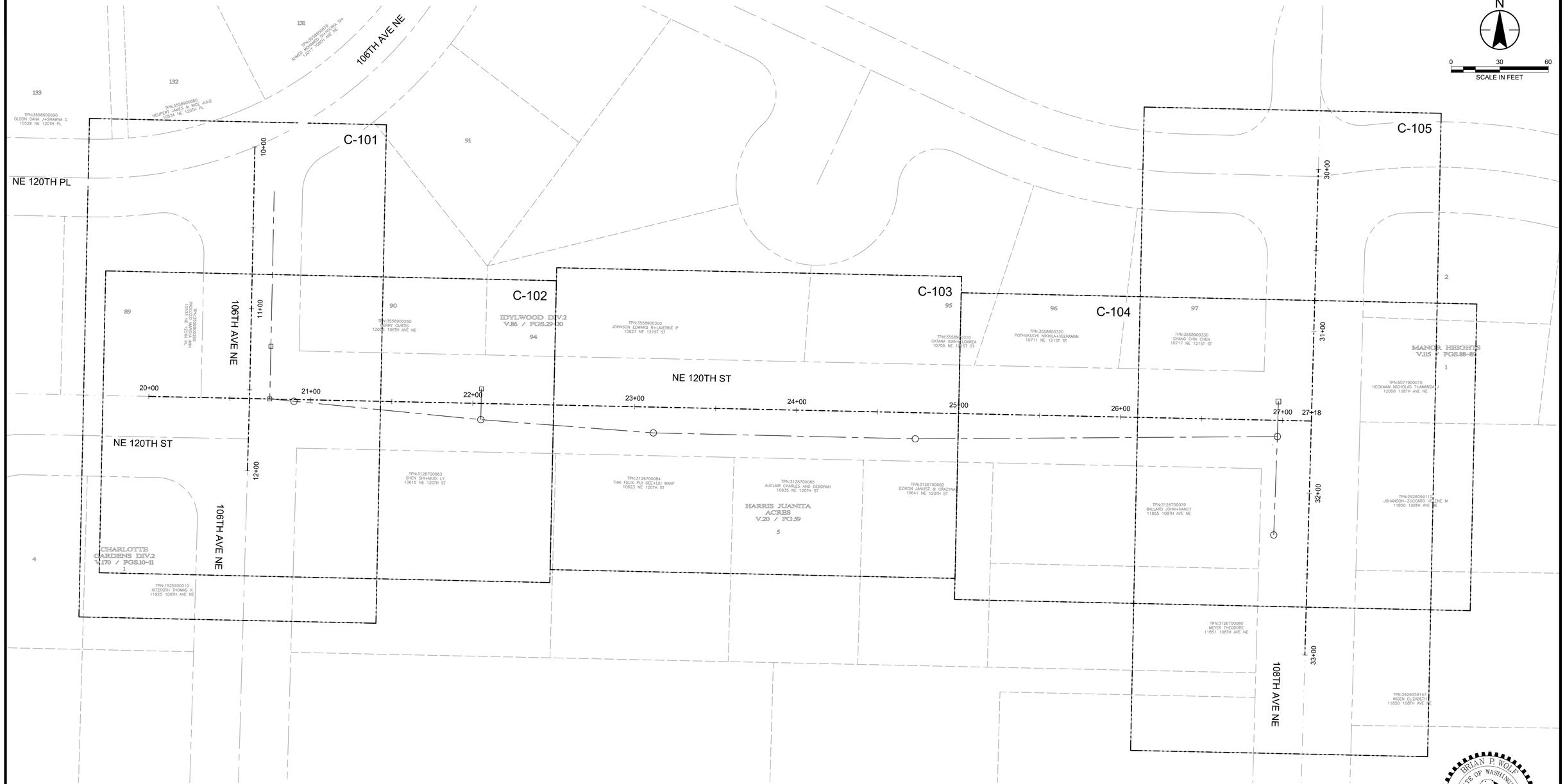
108TH AVE NE PIPE INSTALLATION PROJECT

SURVEY CONTROL PLAN

REFERENCE SHEET NO. G-003

SHEET 3 OF 16 SHEETS

June 5, 2026 - 3:09 PM - ALLIM - C:\USERS\ALLIM\DC\ACCDOCS\STANTEC CONSULTING\2002006449_CITY_OF_KIRKLAND-108TH_AVE_NE_PIPELINE_PROJECT\PROJECT FILES\01_WIP\01_GENERAL\SHEET_FILES\G-003.DWG - Layout Name: LAYOUT1



PLAN
SCALE: 1"=30'

BRIAN P. WOLLA
STATE OF WASHINGTON
47049
REGISTERED PROFESSIONAL ENGINEER
6/8/2026

100% - BID DOCUMENTS

DATE	NO.	REVISION	BY	
06/26	4	ISSUED FOR BID	AL	BW
05/08/26	3	100% DESIGN	AL	BW
12/12/25	2	90% DESIGN	AL	BW
10/03/25	1	60% DESIGN	AL	BW

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SURVEY NO.:	FIELD BOOK(S):
HORZ. DATUM:	VERT. DATUM:
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CITY OF KIRKLAND
DEPARTMENT OF PUBLIC WORKS
123 FIFTH AVENUE KIRKLAND, WA 98033
(425) 587-3800 www.kirklandwa.gov

FUNDING NO. _____

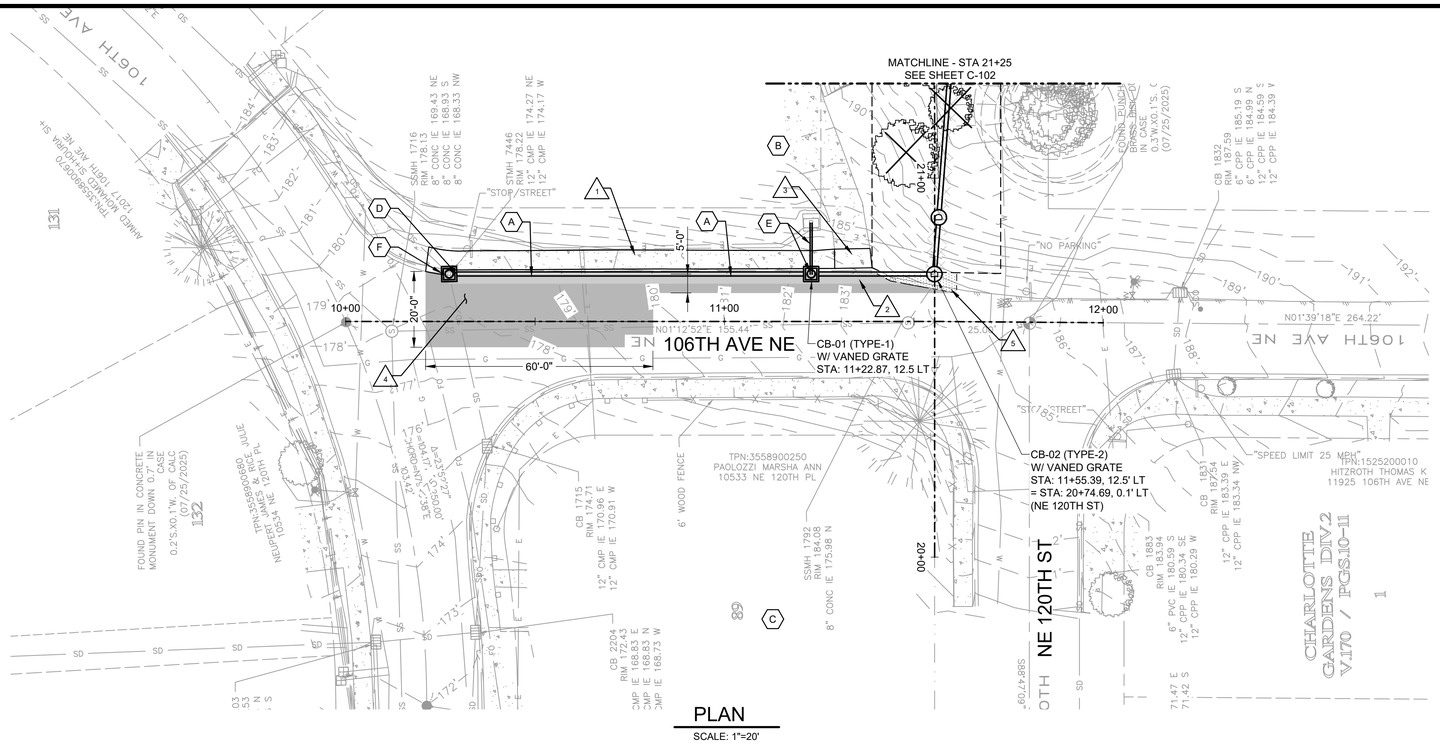
108TH AVE NE PIPE INSTALLATION PROJECT

KEY PLAN

REFERENCE SHEET NO. C-100

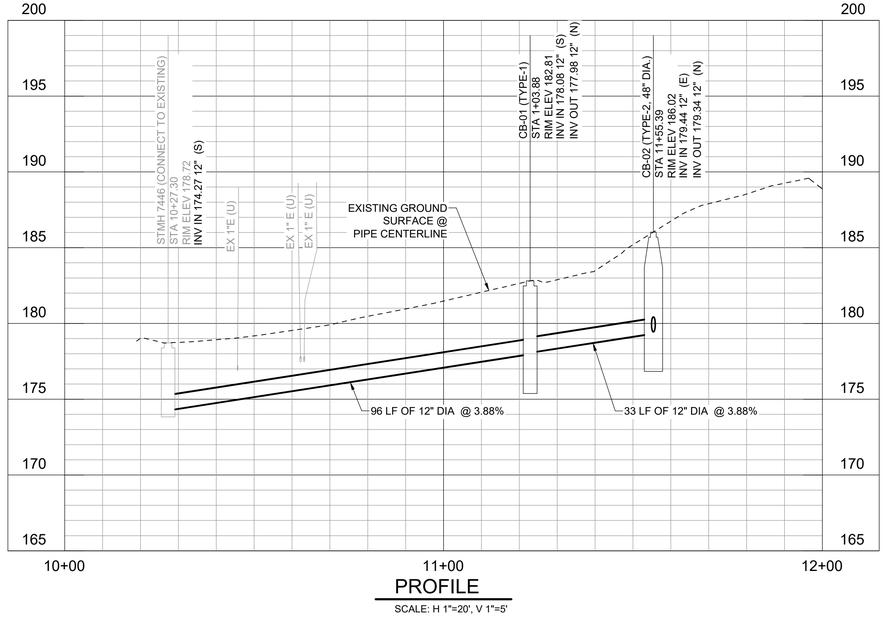
SHEET 4 OF 16 SHEETS

June 5, 2026 - 3:12 PM - ALLIM - C:\USERS\ALLIM\DC\ACCDOCS\STANTEC CONSULTING\2002006449_CITY_OF_KIRKLAND-108TH_AVE_NE_PIPELINE_PROJECT\PROJECT FILES\01_WIP\04_CIVIL\SHEET_FILES\C-100.DWG - Layout Name: LAYOUT1



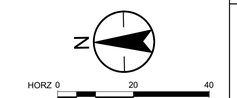
PLAN

SCALE: 1"=20'

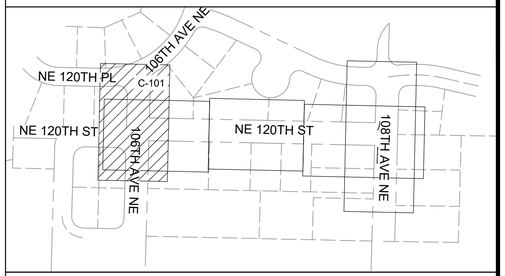


PROFILE

SCALE: H 1"=20', V 1"=5'



KEY PLAN



GENERAL SHEET NOTES

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES IN AND AROUND THE AREAS OF NEW CONSTRUCTION. THE CONTRACTOR SHALL POTHOLE FOR EXISTING UTILITIES PRIOR TO SUBMITTAL OF SHOP DRAWINGS, FOR POINTS OF CONNECTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITY SERVICE CONNECTIONS UNLESS OTHERWISE INDICATED. CONTRACTOR SHALL REPAIR ALL SERVICE CONNECTIONS AND UTILITIES DAMAGED DURING CONSTRUCTION WHETHER SHOWN ON THE PLAN OR NOT.
3. SEE SHEET C-501 FOR TRENCH SECTIONS.
4. PIPE MATERIAL SHALL BE PVC 3034 UNLESS OTHERWISE NOTED ON THE PLANS.

⬡ SHEET KEYNOTES

A. STORM DRAIN TRENCH PER COK PLAN CK-D.02.

B. TYPE 1 CATCH BASIN WITH VANED GRATE PER COK PLANS CK-D.07 AND CK-D.14.

C. TYPE 2 CATCH BASIN WITH VANED GRATE PER COK PLANS CK-D.09 AND CK-D.14.

D. CONNECT TO EXISTING CATCH BASIN PER COK STANDARDS.

E. CONNECT NEW 6" PVC DRAIN TO EXISTING VAULT, LENGTH AS REQUIRED CONNECT TO CB-02.

F. INSTALL NEW OPEN CURB FACE FRAME AND GRATE ON EXISTING CATCH BASIN PER COK PLANS CK-D.14 AND CK-D.15.

△ RESTORATION KEYNOTES

1. REPLACE EX SIDEWALK, CURB AND GUTTER PER COK PLAN CK-R.17 AND CK-R.23.
2. PAVEMENT RESTORATION PER COK PLAN CK-R.12.
3. REPLACE EX DRIVEWAY PER COK PLAN CK-R.21.
4. PAVEMENT OVERLAY PER COK PLAN CK-R13.A.
5. NEW PAVEMENT PER PAVEMENT WIDENING DETAIL C-901, SHEET C-503.

POTHOLE DATA

PH NO.	ELEVATION	NORTHING	EASTING	TOP OF PIPE DEPTH	BOTTOM OF PIPE DEPTH	DESCRIPTION
2	179.26	261194.04	1303991.35	30"	32"	POWER - 2x2" PVC
3	187.52	261092.07	1303992.63	65"	72"	POWER - 12" WIDE PVC

NOTE: PH#1 EXCLUDED FROM SET. NO UTILITY LOCATED

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10/03/25	1	60% DESIGN	AL	BW

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(425) 587-3800 www.kirklandwa.gov

FUNDING NO. _____

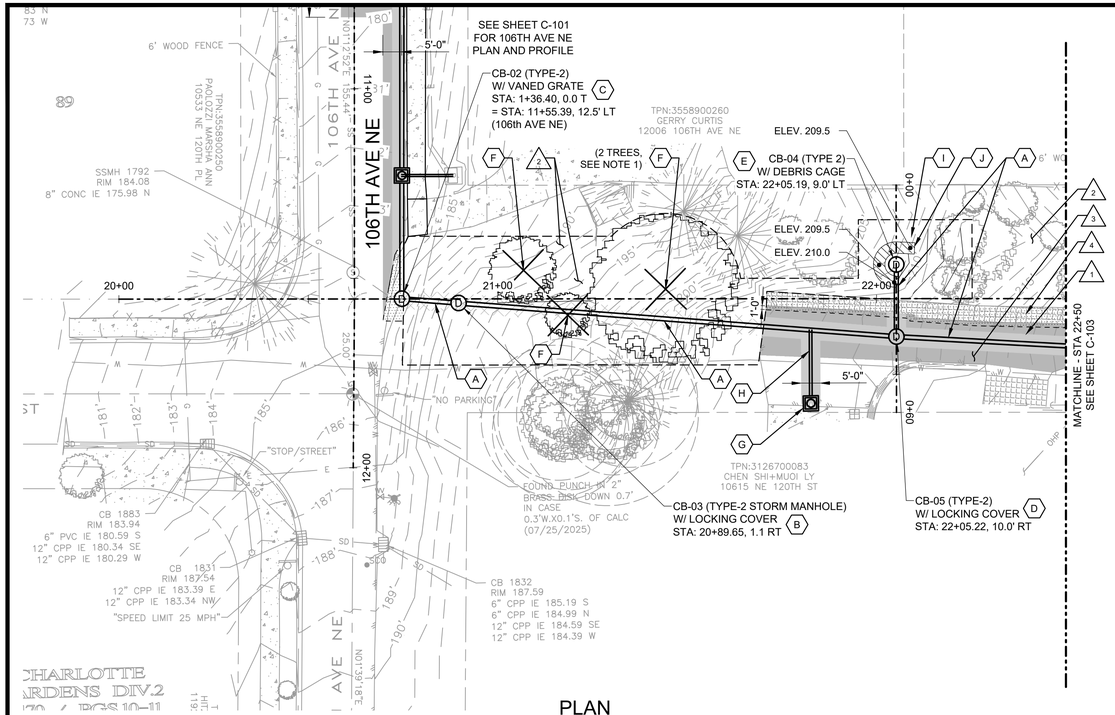
108TH AVE NE PIPE INSTALLATION PROJECT

STA 10+00 TO STA 12+00
106TH AVE NE
PLAN AND PROFILE - I

REFERENCE SHEET NO. C-101

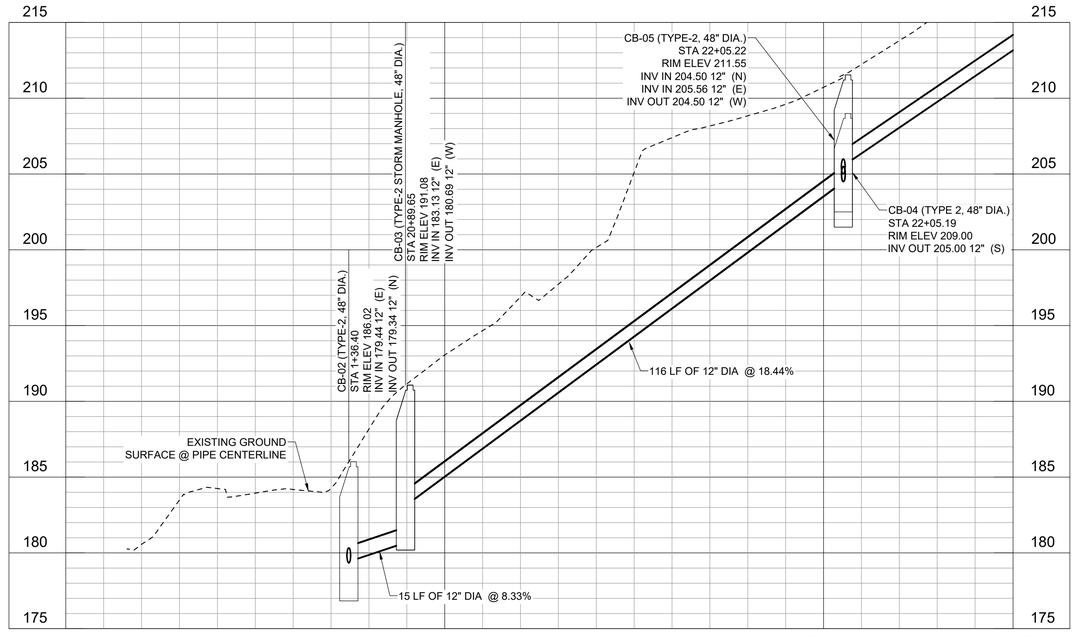
SHEET 5 OF 16 SHEETS

June 5, 2026 - 4:13 PM - ALLIM - C:\USERS\ALLIM\DC\ACCDOCS\STANTEC CONSULTING\2002006449_CITY_OF_KIRKLAND-108TH_AVE_NE_PIPELINE_PROJECT\PROJECT FILES\01_WIP\04_CIVIL\SHEET_FILES\C-101.DWG - Layout Name: C-101



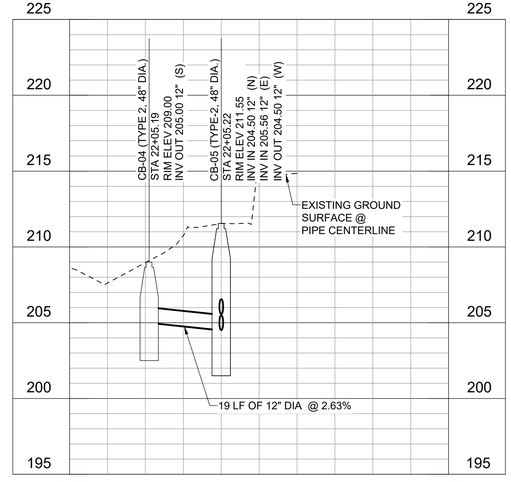
PLAN

SCALE: 1"=20'



PROFILE

SCALE: H 1"=20', V 1"=5'



CB-04 TO CB-05 PROFILE

SCALE: H 1"=20', V 1"=5'

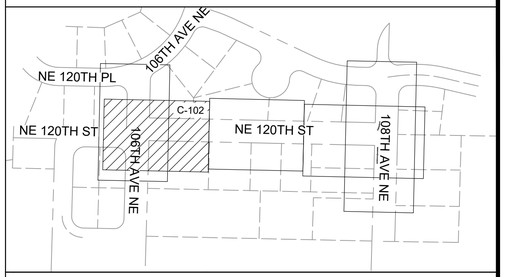
N

HORZ 0 20 40

VERT 0 5 10

SCALE IN FEET

KEY PLAN



GENERAL SHEET NOTES

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES IN AND AROUND THE AREAS OF NEW CONSTRUCTION. THE CONTRACTOR SHALL POTHOLE FOR EXISTING UTILITIES PRIOR TO SUBMITTAL OF SHOP DRAWINGS, FOR POINTS OF CONNECTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITY SERVICE CONNECTIONS UNLESS OTHERWISE INDICATED. CONTRACTOR SHALL REPAIR ALL SERVICE CONNECTIONS AND UTILITIES DAMAGED DURING CONSTRUCTION WHETHER SHOWN ON THE PLAN OR NOT.
3. SEE SHEET C-501 FOR TRENCH SECTIONS.
4. PIPE MATERIAL SHALL BE PVC 3034 UNLESS OTHERWISE NOTED ON THE PLANS.

SHEET KEYNOTES

A. STORM DRAIN TRENCH PER COK PLAN CK-D.02.

B. TYPE 2 STORM MANHOLE WITH LOCKING COVER PER COK PLAN CK-S.09 AND CK-D.18A. STORM MANHOLE TO INCLUDE LINER PER SPECIFICATION SECTION 7-04.

C. TYPE 2 CATCH BASIN WITH VANED GRATE PER COK PLANS CK-D.09 AND CK-D.14.

D. TYPE 2 CATCH BASIN WITH LOCKING COVER PER COK PLANS CK-D.09 AND CK-D.18A.

E. TYPE 2 CATCH BASIN WITH DEBRIS CAGE PER COK PLANS CK-D.09 AND CK-D.28.

F. REMOVE TREES PER SPECIFICATION 2-01. SEE SHEET L-102.

G. REMOVE EXISTING INLET AND INSTALL CURB INLET PER CK-D.06. CONTRACTOR TO VERIFY EXISTING INVERT.

H. CONNECT NEW 8" PVC DRAIN TO INLET, LENGTH AS REQUIRED 8" BLIND TEE CONNECTION PER COK PLANS CK-D.03A.

I. RE-GRADE AREA. DIRECT SURFACE FLOW TO CB-4.

J. INSTALL 3' WIDE QUARRY SPALL BERM. KEY BERM 1' INTO EXISTING GRADE DOWN SLOPE OF CB-04. SEE DETAIL C-902, SHEET C-503. ADJUST IN FIELD AT THE DIRECTION OF THE ENGINEER.

RESTORATION KEYNOTES

1. PAVEMENT RESTORATION PER COK PLAN CK-R.12.
2. RESTORE LANDSCAPE AREA PER SHEET L-101 AND SPECIFICATION 8.02.
3. PAVEMENT OVERLAY PER COK PLAN CK-R13.A.
4. REMOVE PAVERS AND INSTALL NEW PAVEMENT PER PAVEMENT WIDENING DETAIL C-901, SHEET C-503.

TREE REMOVAL NOTES

1. A DOWNED TREE IS RESTING AGAINST THE 43-INCH BIG LEAF MAPLE DESIGNATED FOR REMOVAL. IT IS CONSIDERED HAZARDOUS AND IS TO BE REMOVED UNDER THE "REMOVE EXISTING TREE" BID ITEM.

BRIAN P. WOLF
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PROFESSIONAL ENGINEER

6/8/2026

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10/03/25	1	60% DESIGN	AL	BW

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(425) 587-3800 www.kirklandwa.gov

FUNDING NO. _____

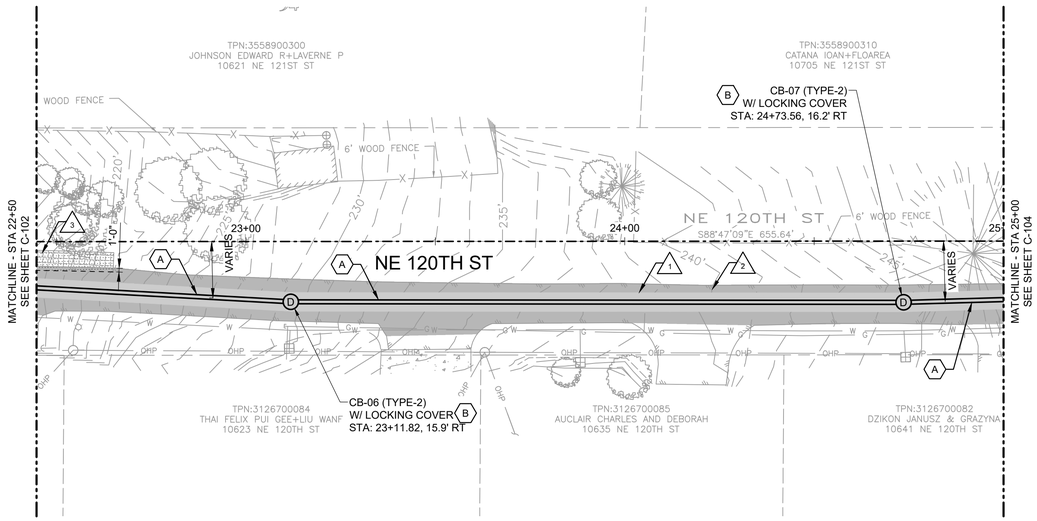
108TH AVE NE PIPE INSTALLATION PROJECT

STA 20+00 TO STA 22+50
NE 120TH ST
PLAN AND PROFILE - II

REFERENCE SHEET NO. C-102

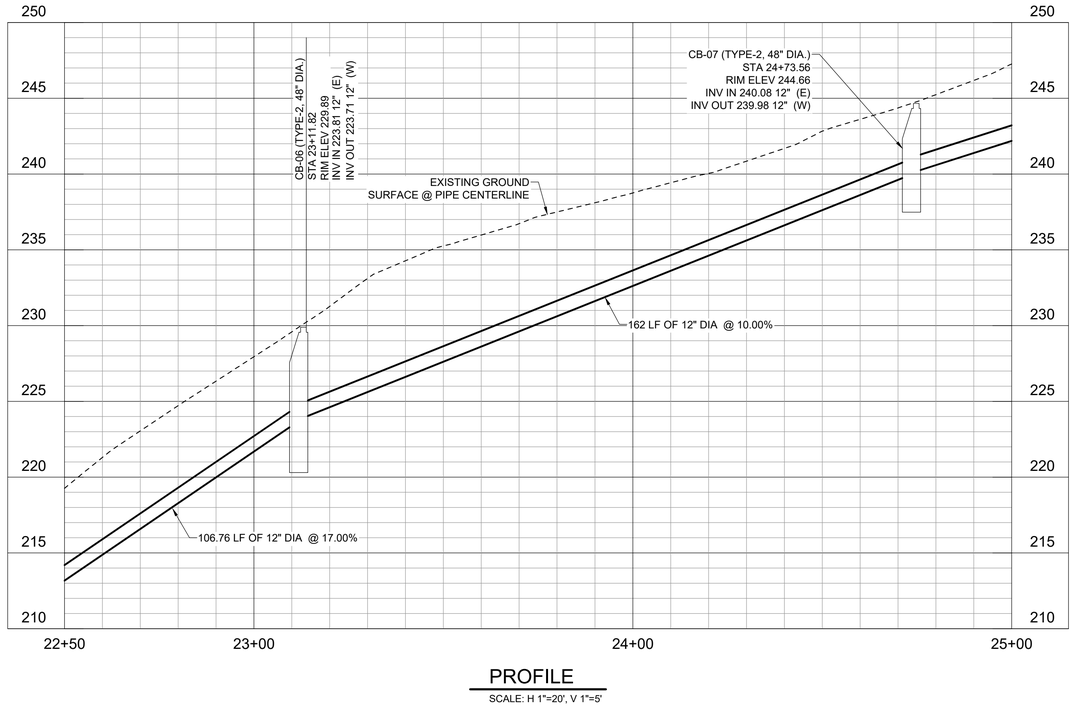
SHEET 6 OF 16 SHEETS

June 5, 2026 - 4:13 PM - ALLIM - C:\USERS\ALLIM\DC\ACCDOCS\STANTEC CONSULTING\2002006449_CITY_OF_KIRKLAND-108TH_AVE_NE_PIPELINE_PROJECT\PROJECT FILES\01_WIP\04_CIVIL\SHEET_FILES\C-101.DWG - Layout Name: C-102



PLAN

SCALE: 1"=20'



PROFILE

SCALE: H 1"=20', V 1"=5'

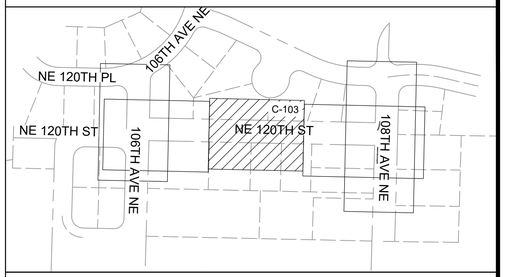
N

HORZ 0 20 40

VERT 0 5 10

SCALE IN FEET

KEY PLAN



GENERAL SHEET NOTES

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2. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITY SERVICE CONNECTIONS UNLESS OTHERWISE INDICATED. CONTRACTOR SHALL REPAIR ALL SERVICE CONNECTIONS AND UTILITIES DAMAGED DURING CONSTRUCTION WHETHER SHOWN ON THE PLAN OR NOT.
3. SEE SHEET C-501 FOR TRENCH SECTIONS.
4. PIPE MATERIAL SHALL BE PVC 3034 UNLESS OTHERWISE NOTED ON THE PLANS.

SHEET KEYNOTES

A. STORM DRAIN TRENCH PER COK PLAN CK-D.02.

B. TYPE 2 CATCH BASIN WITH LOCKING COVER PER COK PLANS CK-D.09 AND CK-D.18A.

RESTORATION KEYNOTES

1. PAVEMENT RESTORATION PER COK PLAN CK-R.12.
2. PAVEMENT OVERLAY PER COK PLAN CK-R13.A.
3. REMOVE PAVERS AND INSTALL NEW PAVEMENT PER PAVEMENT WIDENING DETAIL C-901, SHEET C-503.

BRIAN P. WOLF
STATE OF WASHINGTON
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6/8/2026

100% - BID DOCUMENTS

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05/08/26	3	100% DESIGN	AL	BW
12/12/25	2	90% DESIGN	AL	BW
10/03/25	1	60% DESIGN	AL	BW

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123 FIFTH AVENUE KIRKLAND, WA 98033
(425) 587-3800 www.kirklandwa.gov

FUNDING NO. _____

108TH AVE NE PIPE INSTALLATION PROJECT

STA 22+50 TO STA 25+00

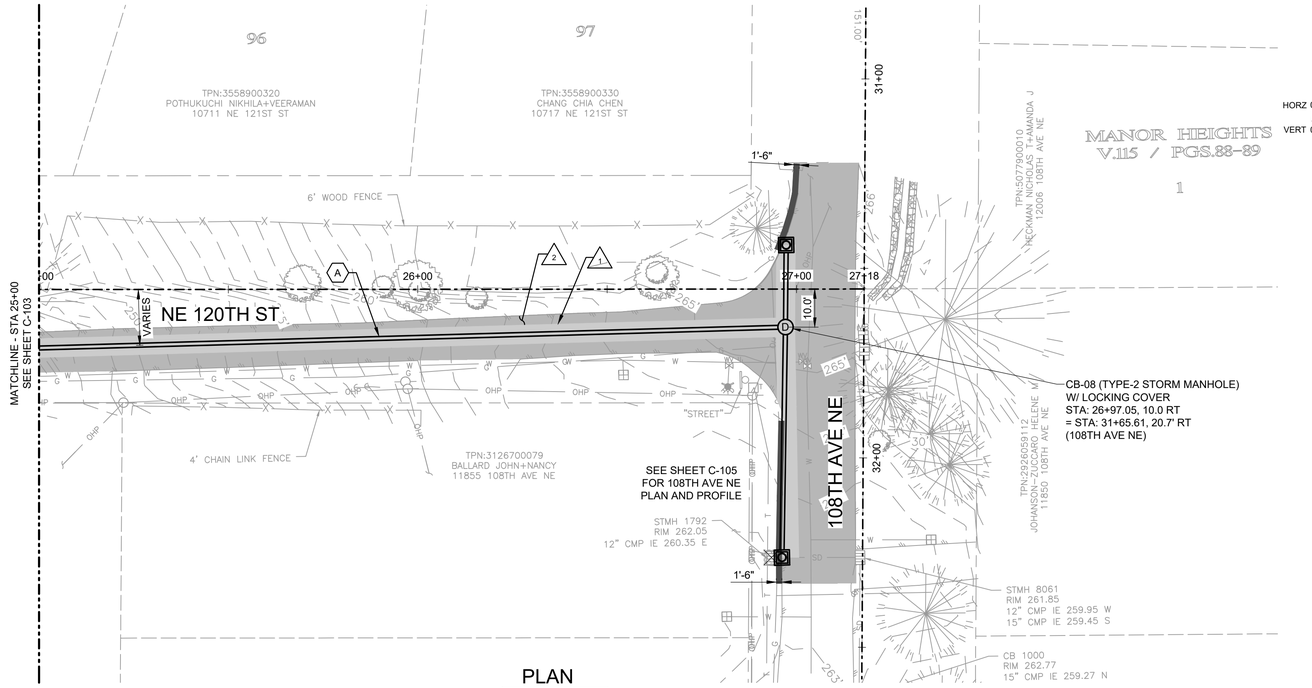
NE 120TH ST

PLAN AND PROFILE - III

REFERENCE SHEET NO. C-103

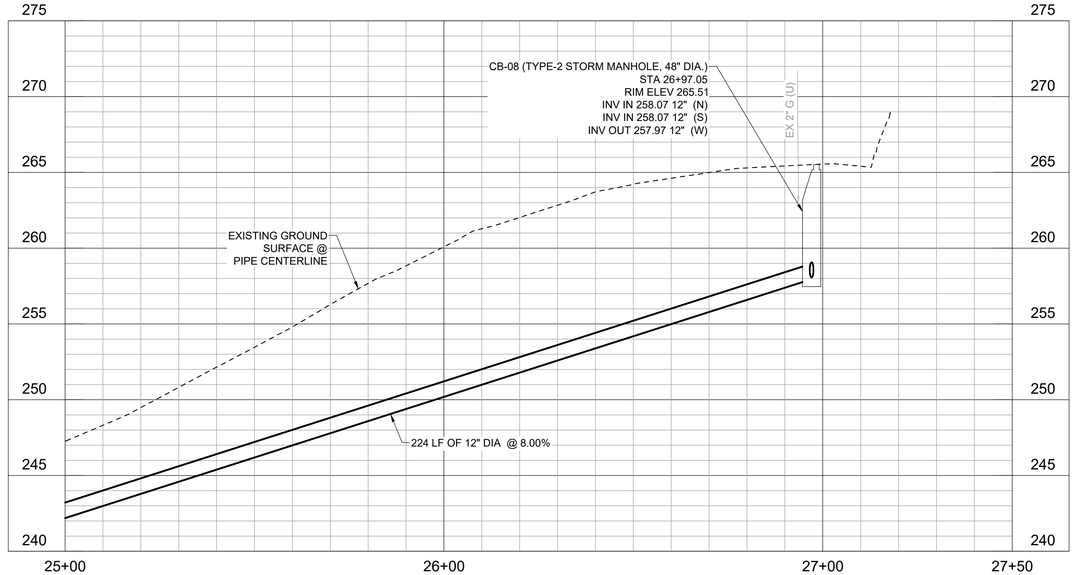
SHEET 7 OF 16 SHEETS

June 5, 2026 - 4:14 PM - ALLIM - C:\USERS\ALLIM\DC\ACCDOCS\STANTEC CONSULTING\2002006449_CITY_OF_KIRKLAND-108TH_AVE_NE_PIPELINE_PROJECT\PROJECT FILES\01_WIP\04_CIVIL\SHEET_FILES\C-101.DWG - Layout Name: C-103



PLAN

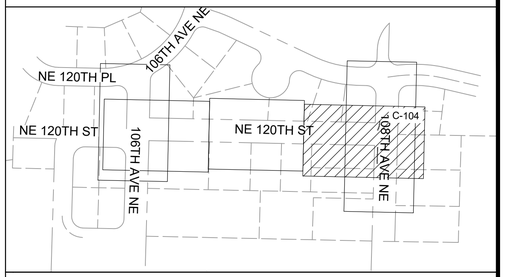
SCALE: 1"=20'



PROFILE

SCALE: H 1"=20', V 1"=5'

KEY PLAN



GENERAL SHEET NOTES

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3. SEE SHEET C-501 FOR TRENCH SECTIONS.
4. PIPE MATERIAL SHALL BE PVC 3034 UNLESS OTHERWISE NOTED ON THE PLANS.

⬡ SHEET KEYNOTES

A. STORM DRAIN TRENCH PER COK PLAN CK-D.02.

△ RESTORATION KEYNOTES

1. PAVEMENT RESTORATION PER COK PLAN CK-R.12.
2. PAVEMENT OVERLAY PER COK PLAN CK-R13.A.

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6/8/2026

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10/03/25	1	60% DESIGN	AL	BW

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(425) 587-3800 www.kirklandwa.gov

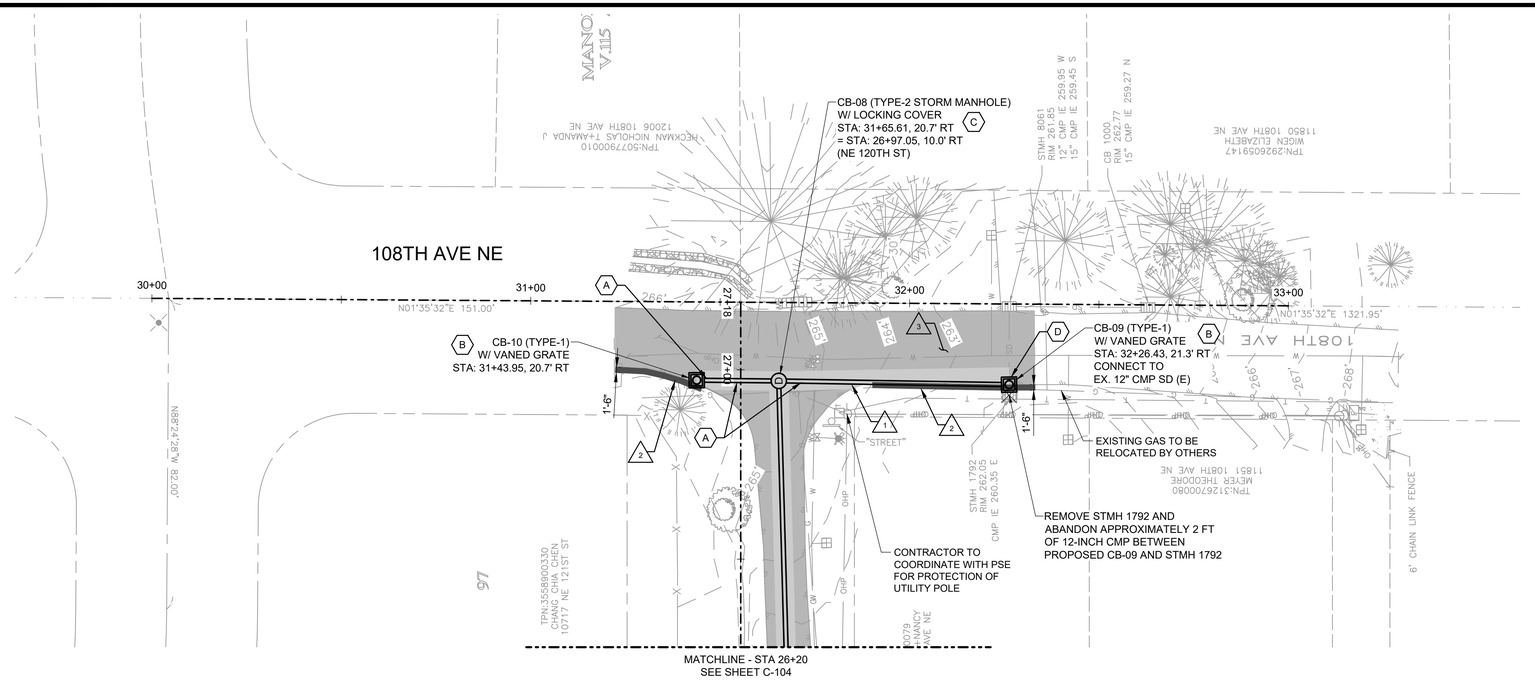
FUNDING NO. _____

108TH AVE NE PIPE INSTALLATION PROJECT
STA 25+00 TO STA 27+18
NE 120TH ST
PLAN AND PROFILE - IV

REFERENCE SHEET NO. C-104

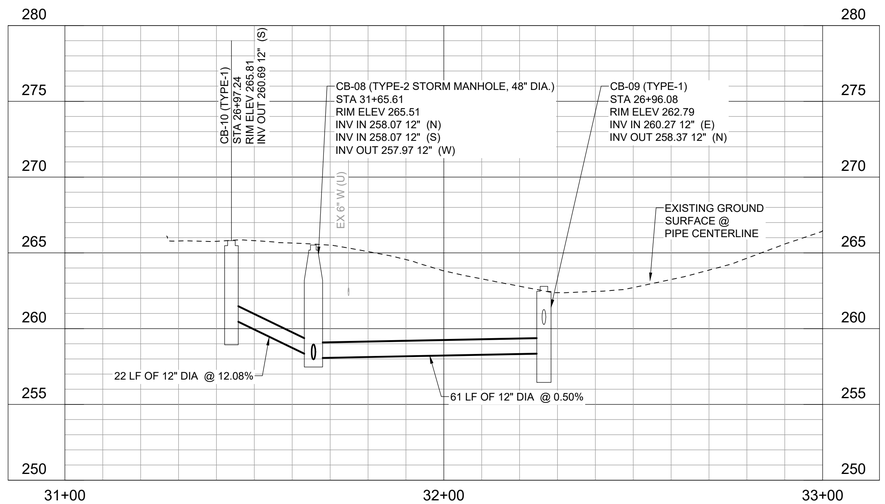
SHEET 8 OF 16 SHEETS

June 5, 2026 - 4:14 PM - ALLIM - C:\USERS\ALLIM\DC\ACCDOCS\STANTEC CONSULTING\2002006449_CITY_OF_KIRKLAND-108TH_AVE_NE_PIPELINE_PROJECT\PROJECT FILES\01_WIP\04_CIVIL\SHEET_FILES\C-101.DWG - Layout Name: C-104



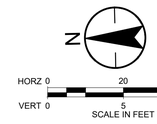
PLAN

SCALE: 1"=20'

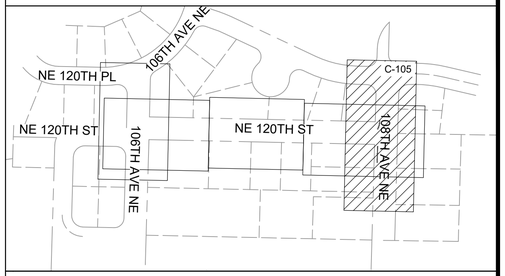


PROFILE

SCALE: H 1"=20', V 1"=5'



KEY PLAN



GENERAL SHEET NOTES

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3. SEE SHEET C-501 FOR TRENCH SECTIONS.
4. PIPE MATERIAL SHALL BE PVC 3034 UNLESS OTHERWISE NOTED ON THE PLANS.

⬡ SHEET KEYNOTES

A. STORM DRAIN TRENCH PER COK PLAN CK-D.02.

B. TYPE 1 CATCH BASIN WITH VANED GRATE PER COK PLANS CK-D.07 AND CK-D.14.

C. TYPE 2 STORM MANHOLE WITH LOCKING COVER PER COK PLANS CK-D.09 AND CK-D.18A.

D. CONNECT EXISTING 12" CMP TO NEW TYPE-1 CB.

△ RESTORATION KEYNOTES

1. PAVEMENT RESTORATION PER COK PLAN CK-R.12.
2. ASPHALT-THICKENED EDGE PER COK PLAN CK-R.11.
3. PAVEMENT OVERLAY PER COK PLAN CK-R13.A.

POTHOLE DATA

PH NO.	ELEVATION	NORTHING	EASTING	TOP OF PIPE DEPTH	BOTTOM OF PIPE DEPTH	DESCRIPTION
4	265.87	261100.32	1304619.95	39"	47"	WATER - 8" AC
5	265.14	261069.67	1304613.26	32"	40"	WATER - 8" DI
6	265.02	261064.50	1304617.56	49"	55"	WATER - 6" DI
2A	263.53	261045.08	1304610.28	34"	36"	GAS - 2"
3A	262.31	261021.48	1304609.00	24"	36"	GAS - 2"

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10/03/25	1	60% DESIGN	AL	BW

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FUNDING NO. _____

108TH AVE NE PIPE INSTALLATION PROJECT

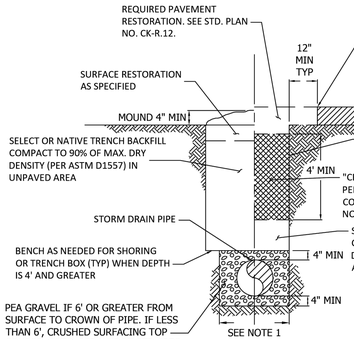
STA 30+00 TO STA 33+00
108TH AVE NE
PLAN AND PROFILE - V

REFERENCE SHEET NO.
C-105

SHEET 9 OF 16 SHEETS

June 5, 2026 - 4:14 PM - ALLIM - C:\USERS\ALLIM\DC\ACCDOCS\STANTEC CONSULTING\2002006449_CITY_OF_KIRKLAND-108TH_AVE_NE_PIPELINE_PROJECT\PROJECT FILES\01_WIP\04_CIVIL\SHEET_FILES\C-101.DWG - Layout Name: C-105

LAST REVISED: 07/2021



NOTES:

1. MAXIMUM WIDTH OF TRENCH AT TOP OF PIPE
   * 30" FOR PIPE UP TO AND INCLUDING 12" NOMINAL DIAMETER.
   * OD PLUS 16" FOR PIPE LARGER THAN 12" NOMINAL DIAMETER.
2. WHERE TRENCH IS PERPENDICULAR TO TRAVELED LANES, BACKFILL FULL DEPTH WITH CRUSHED SURFACING–TOP COURSE. WHERE TRENCH IS PARALLEL TO TRAVELED LANES, BACKFILL THE TOP 4' OF TRENCH TO SUBGRADE WITH CRUSHED SURFACING–TOP COURSE. SUITABLE EXCAVATED MATERIAL MAY BE USED PROVIDED 95% MAX. COMPACTION DENSITY (ASTM D1557) CAN BE ACHIEVED.
3. SEE OVERLAY POLICY R–7.
4. USE OF RECYCLED CONCRETE IS PROHIBITED, UNLESS APPROVED BY THE CITY. SEE POLICY D-16.

CITY OF KIRKLAND	
PLAN NO. CK - D.02	
CITY OF KIRKLAND WASHINGTON	STORM TRENCH DETAIL

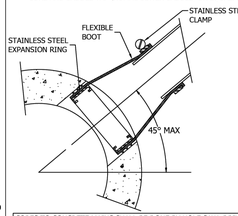
LAST REVISED: 07/2021

STORM DRAIN CONNECTIONS SHALL BE BY:

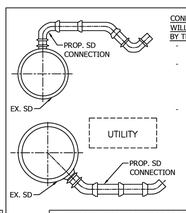
- CONNECTING TO AN EXISTING CATCH BASIN OR MANHOLE
- CONSTRUCTING A NEW CATCH BASIN OR MANHOLE ON THE EXISTING STORM DRAINAGE PIPELINE AND CONNECTING THE CONVEYANCE PIPELINE TO THIS STRUCTURE

ALTERNATIVE CONNECTIONS MAY ONLY BE ALLOWED WITH PRIOR APPROVAL BY THE CITY PUBLIC WORKS INSPECTOR:

- CUT-IN TEE
- INSERTA TEE (CORED PER MANUFACTURERS INSTRUCTIONS, SBR RUBBER SLEEVE AND GASKET TO SEAL AND SS METAL PARTS TO CLAMP)
- CORE AND SADDLE TAP (ROMAC SEWER SADDLE, OR EQUAL. LIMITED TO 4-INCH AND 6-INCH PRIVATE CONNECTIONS)



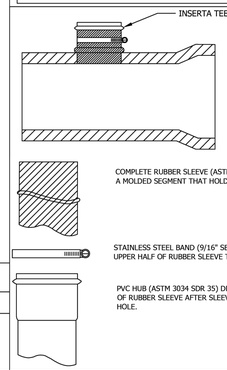
CORES TO CONCRETE MAINS SHALL BE DONE BY HOLE SAW. DRILL HOLES SHALL BE MADE BASED ON GIVEN TEE OPENING. SQUARE CUTS BY JIGSAW OR CIRCULAR SAW SHALL BE PROHIBITED.



CONNECTIONS THAT WILL NOT BE APPROVED BY THE CITY INCLUDE:

- CONNECTIONS TO FORCE MAINS.
- CONNECTIONS OF LATERAL PIPES WITH A DIAMETER LARGER THAN THE MAINLINE PIPE.
- CONNECTIONS THAT RESEMBLE FIGURES TO THE LEFT.

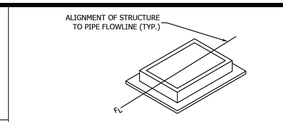
SERVICE LATERALS MUST BE AT LEAST ONE STANDARD PIPE SIZE SMALLER THAN THE MAINLINE PIPE INSIDE DIAMETER.

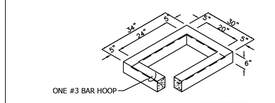


NOTES:

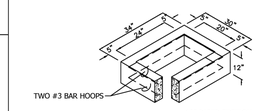
1.) ALL INSERTA-TEE HOLES SHALL BE MACHINE DRILLED.
2.) INSERTA-TEES ARE NOT APPROVED FOR NEW MAIN / LATERAL CONNECTION.

CITY OF KIRKLAND	
PLAN NO. CK - D.03A	
CITY OF KIRKLAND WASHINGTON	BLIND TEE CONNECTION

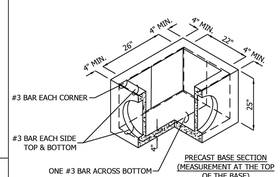




6" RISER SECTION



12" RISER SECTION



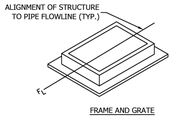
PRECAST BASE SECTION (MEASUREMENT AT THE TOP OF THE BASE)

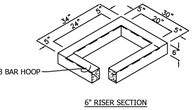
NOTES:

1. CONCRETE INLET TO BE CONSTRUCTED IN ACCORDANCE WITH ASTM C478 (AASHTO M 199) & C890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE STANDARD SPECIFICATIONS.
2. AS AN ACCEPTABLE ALTERNATIVE TO REBAR, WELDED WIRE FABRIC HAVING A MIN. AREA OF 0.12 SQUARE INCHES PER FOOT MAY BE USED. WELDED WIRE FABRIC SHALL COMPLY TO ASTM A497 (AASHTO M 221). WIRE FABRIC SHALL NOT BE PLACED IN KNOCKOUTS.
3. ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000.
4. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MIN. ALL PIPE SHALL BE INSTALLED IN FACTORY PROVIDED KNOCKOUTS. UNUSED KNOCKOUTS NEED NOT BE GROUTED IF WALL IS LEFT INTACT.
5. KNOCKOUT OR CUTOUT HOLE SIZE IS EQUAL TO PIPE OUTER DIAM. PLUS CURB INLET WALL THICKNESS.
6. ROUND KNOCKOUTS MAY BE ON ALL 4 SIDES WITH MAX. DIAM. OF 16".
7. THE MAX. DEPTH FROM THE FINISHED GRADE TO THE PIPE INVERT IS 5'-0".
8. THE TAPER ON THE SIDES OF THE PRECAST BASE SECTION AND RISER SECTION SHALL NOT EXCEED 1/2" PER FOOT.
9. CONCRETE INLET FRAME AND GRATES SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.
10. FRAME AND GRATE SHALL BE INSTALLED WITH FLANGE DOWN.
11. APPROVAL BY THE CITY OF KIRKLAND REQUIRED.
12. CURB INLET MUST DRAIN TO CATCH BASIN WITH SUMP.
13. ALL NEW PVC PIPES SHALL BE INSTALLED WITH SAND COLLARS AND A NON-SHRINK GROUT. JETSET OR SPEED CRETE RED LINE GROUT NOT ALLOWED.
14. 1", 2", AND 4" RISERS ACCEPTED AS NEEDED.
15. MINIMUM 10' FROM ADJACENT TREES, UNLESS OTHERWISE APPROVED.

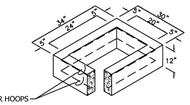
CITY OF KIRKLAND	
PLAN NO. CK - D.06	
CITY OF KIRKLAND WASHINGTON	CURB INLET

LAST REVISED: 01/2023

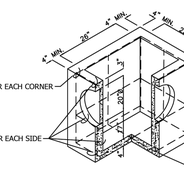




6" RISER SECTION



12" RISER SECTION



PRECAST BASE SECTION (MEASUREMENT AT THE TOP OF THE BASE)

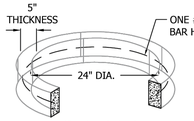
NOTES:

1. CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C478 (AASHTO M 199) & C890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE STANDARD SPECIFICATIONS.
2. AS AN ACCEPTABLE ALTERNATIVE TO REBAR, WELDED WIRE FABRIC HAVING A MIN. AREA OF 0.12 SQUARE INCHES PER FOOT MAY BE USED. WELDED WIRE FABRIC SHALL COMPLY TO ASTM A497 (AASHTO M 221). WIRE FABRIC SHALL NOT BE PLACED IN KNOCKOUTS.
3. ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000.
4. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MIN. ALL PIPE SHALL BE INSTALLED IN FACTORY PROVIDED KNOCKOUTS. UNUSED KNOCKOUTS NEED NOT BE GROUTED IF WALL IS LEFT INTACT.
5. KNOCKOUT OR CUTOUT HOLE SIZE IS EQUAL TO PIPE OUTER DIAM. PLUS CATCH BASIN WALL THICKNESS.
6. ROUND KNOCKOUTS MAY BE ON ALL 4 SIDES, WITH MAX. DIAM. OF 20". KNOCKOUTS MAY BE EITHER ROUND OR "D" SHAPE.
7. THE MAX. DEPTH FROM THE FINISHED GRADE TO THE PIPE INVERT IS 5'-0".
8. THE TAPER ON THE SIDES OF THE PRECAST BASE SECTION AND RISER SECTION SHALL NOT EXCEED 1/2" PER FOOT.
9. CATCH BASIN FRAME AND GRATE SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.
10. FRAME AND GRATE SHALL BE INSTALLED WITH FLANGE DOWN.
11. EDGE OF RISER OR BRICK SHALL NOT BE MORE THAN 2" FROM VERTICAL EDGE OF CATCH BASIN WALL.
12. ACCEPTABLE PIPE SIZES ARE 8", 12" OR 15". 6" PIPE IS ONLY ACCEPTABLE ON PRIVATE SYSTEMS.
13. ROUND SOLID LIDS REQUIRED WHENEVER CATCH BASIN DOES NOT COLLECT SURFACE WATER. SEE CK-D.18 AND CK-D.18A FOR REFERENCE.
14. ROUND CONCRETE RISERS ARE REQUIRED FOR ROUND SOLID LOCKING LIDS.
15. ALL NEW PVC PIPES SHALL BE INSTALLED WITH SAND COLLARS AND A NON-SHRINK GROUT. JETSET OR SPEED CRETE RED LINE GROUT NOT ALLOWED.
16. 1", 2", AND 4" RISERS ACCEPTED AS NEEDED.
17. MINIMUM 10' FROM ADJACENT TREES, UNLESS OTHERWISE APPROVED.
18. CLEAN SURFACE AND BOTTOM AREA. PROVIDE UNIFORM CONTACT. THE SURFACE AREA OF THE BASE SECTION MUST BE MORTARED TO THE BOTTOM AREA OF THE RISER SECTION.

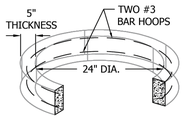
CITY OF KIRKLAND	
PLAN NO. CK - D.07	
CITY OF KIRKLAND WASHINGTON	CATCH BASIN TYPE 1

LAST REVISED: 07/2021

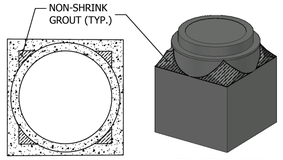
FRAME AND GRATE (SEE STANDARD DETAILS D.18 AND D.18A)



6" RISER SECTION



12" RISER SECTION



TRANSITION DETAIL 2-D PLAN VIEW

TRANSITION DETAIL 3-D CONCEPTUAL VIEW

NOTES:

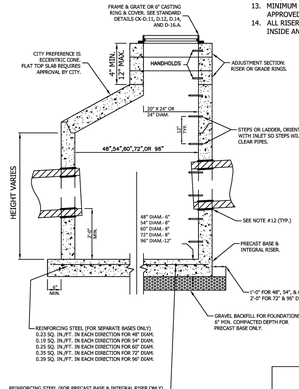
1. GROUT SHALL BE APPLIED BETWEEN ALL MATING SURFACES TO ENSURE A WATER TIGHT SEAL AND STRONG BOND.
2. COMMERCIALLY AVAILABLE CONVERTER FROM RECTANGULAR STRUCTURE TO CIRCULAR RISER MAY BE USED IF APPROVED BY PUBLIC WORKS DEPARTMENT.
3. 1", 2", AND 4" RISERS ACCEPTED AS NEEDED.

CITY OF KIRKLAND	
PLAN NO. CK - D.07A	
CITY OF KIRKLAND WASHINGTON	CIRCULAR RISER AND TRANSITION FOR TYPE 1 AND 1-L CB

LAST REVISED: 1/2025

NOTES:

1. CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C478 (AASHTO M199) AND ASTM C890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE STANDARD SPECIFICATIONS.
2. HANDHOLDS IN ADJUSTMENT SECTION SHALL HAVE 3" MIN. CLEARANCE. STEPS IN CATCH BASIN SHALL HAVE 6" MIN. CLEARANCE. SEE STD. DTL. NO. CK-D.12, CATCH BASIN DETAILS. HANDHOLDS SHALL BE PLACED IN ALTERNATING GRADE RINGS OR LEVELING BRICK COURSE WITH A MIN. OF ONE HANDHOLD BETWEEN THE LAST STEP AND TOP OF THE FINISHED GRADE.
3. ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000. ALL PRECAST CONCRETE SHALL BE CLASS 4000.
4. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE WALL THICKNESS OF 2" MIN. UNUSED KNOCKOUTS NEED NOT BE GROUTED IF WALL IS LEFT INTACT. PIPES SHALL BE INSTALLED ONLY IN FACTORY KNOCKOUTS UNLESS OTHERWISE APPROVED BY THE ENGINEER.
5. CATCH BASIN FRAMES AND GRATES OR COVERS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.
6. ALL BASE REINFORCING STEEL SHALL HAVE A MIN. YIELD STRENGTH OF 60,000 PSI AND BE PLACED IN THE UPPER HALF OF THE BASE WITH 1" MIN. CLEARANCE.
7. MIN. SOIL BEARING VALUE SHALL EQUAL 3,300 POUNDS PER SQUARE FOOT.
8. FOR DETAILS SHOWING LADDER, STEPS, HANDRAILS AND TOP SLABS, SEE STD. DTLS. NO. CK-D.12 AND CK-S.14.
9. ALL MANHOLE JOINTS SHALL USE A CONFINED RUBBER GASKET AND GROUTED (INSIDE AND OUT) TO MEET ASTM C-443 SPECIFICATIONS.
10. ROUND SOLID LOCKING LIDS REQUIRED WHENEVER CATCH BASIN DOES NOT COLLECT SURFACE WATER, OR WHEN LOCATED IN SIDEWALK AND PLANTER AREAS. SEE CK-D.18, CK-.18A, AND CK-D.18B FOR REFERENCE.
11. ROUND CONCRETE RISERS ARE REQUIRED FOR ROUND SOLID LOCKING LIDS.
12. ALL NEW PIPES SHALL BE INSTALLED WITH EITHER A KOR-N-SEAL BOOT, OR SAND COLLARS AND A NON-SHRINK GROUT. JETSET OR SPEED CRETE RED LINE GROUT NOT ALLOWED.
13. MINIMUM 10' FROM ADJACENT TREES, UNLESS OTHERWISE APPROVED.
14. ALL RISERS WILL BE WET SET IN GROUT, AND SMOOTHED INSIDE AND OUT PRIOR TO BEING BURIED.



CATCH BASIN DIMENSIONS

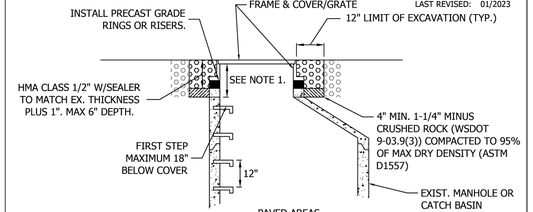
CATCH BASIN DIAMETER	MIN. WALL THICKNESS	MIN. BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS
48"	4"	6"	35"	8"
54"	4.5"	8"	42"	8"
60"	5"	8"	48"	8"
72"	6"	8"	60"	12"
84"	8"	12"	72"	12"
96"	8"	12"	84"	12"
120"	10"	12"	96"	12"
144"	12"	12"	108"	12"

ACCEPTABLE PIPE SIZES:

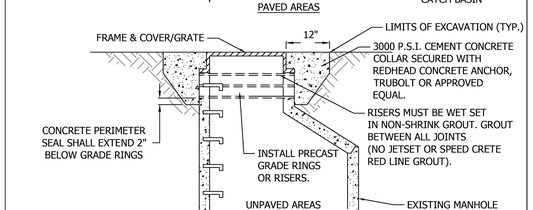
	Pipe Size							
Basin Type	6"	8"	12"	15"	18"	24"	30"	36" 48"
Type 1 -48" CB	X	X	X	X	X	X	X	
Type 1 -54" CB	X	X	X	X	X	X	X	
Type 1 -60" CB	X	X	X	X	X	X	X	
Type 1 -72" CB	X	X	X	X	X	X	X	X X
Type 1 -96" CB	X	X	X	X	X	X	X	X X

CITY OF KIRKLAND	
PLAN NO. CK- D.09	
CITY OF KIRKLAND WASHINGTON	CATCH BASIN TYPE 2 48",54",60",72",96"

LAST REVISED: 01/2023



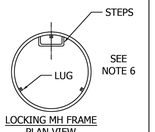
PAVED AREAS



UNPAVED AREAS

NOTES:

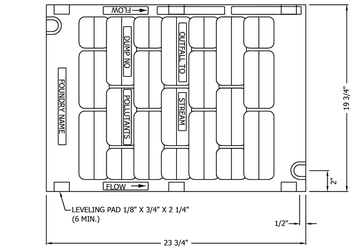
1. WHERE DEPTH OF NECK EXCEEDS 18 INCHES (INCLUDING FRAME AND COVER), ADJUST MANHOLE/CATCH BASIN TO GRADE BY INSERTING NEW BARREL SECTION BETWEEN THE CONE/SLAB AND EXISTING BARREL.
2. GRADE RINGS, RISERS AND FRAME SHALL BE SET IN 3/4" NON-SHRINK GROUT, GROUT BETWEEN ALL JOINTS. ALL SURFACES MUST BE CLEAN OF DEBRIS AND DIRT, AND WETTED PRIOR TO GROUTING. GROUT SMOOTH INSIDE AND OUTSIDE SURFACES PRIOR TO BACKFILL.
3. STEPS OR HAND HOLDS SHALL BE ADDED PER ASTM C478.
4. PRECAST GRADE RINGS AND RISERS MUST BE CAST WITH GROOVE TO ALLOW FIELD INSTALLATION OF SAFETY STEP WHEN RISER IS 4" OR HIGHER.
5. REPLACE EXISTING FRAME AND COVER/GRATE IF NOT MEETING CURRENT SPECIFICATIONS.
6. IF REQUIRED: LOCKING MH SHALL BE POSITIONED WITH ONE LUG CENTERED OVER STEPS, UNLESS USING CK-D.18A CASTING.



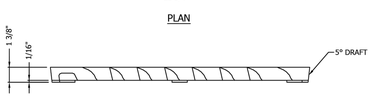
LOCKING MH FRAME PLAN VIEW

CITY OF KIRKLAND	
PLAN NO CK - D.11	
CITY OF KIRKLAND WASHINGTON	MANHOLE/CB FRAME AND GRATE ADJUSTMENT

LAST REVISED: 01/2023



PLAN



ELEVATION

NOTES:

1. USE EAST JORDAN IRON WORKS OR EQUAL TWO BOLT LOCK CAPABILITY THAT MEETS WSDOT SPEC. MANUFACTURER SUBJECT TO APPROVAL BY CITY.
2. USE WITH TWO LOCKING BOLTS 5/8"-11 NC STAINLESS TYPE 304 STEEL SOCKET HEAD (ALLEN HEAD) BOLTS, 2" LONG. FRAMES SHALL INCLUDE THREADS AS DROP-OUT REPLACEABLE NUTS.
3. MATERIAL IS DUCTILE IRON ASTM A536 GRADE 80-55-06.
4. "OUTFALL TO STREAM DUMP NO POLLUTANTS" MAY BE LOCATED ON BORDER AREA.
5. SHALL CONFORM TO SEC. 7.05 OF THE STANDARD SPECIFICATIONS.
6. WELDING IS NOT PERMITTED.
7. EDGES SHALL HAVE 0.125" RADIUS, 0.125" CHAMBER OR COMPLETE DEBURRING.
8. USE A BI-DIRECTIONAL VANED GRATE AT ANY LOW POINT OR WHEN FLOWS COME FROM MULTIPLE DIRECTIONS.
9. NO EXPANSION MATERIAL IN THE FLOW LINE, WHERE CONCRETE COMES TO FRAME.
10. FRAME AND COVER SHALL BE H-20 LOADING RATED IF INSTALLED IN ROADWAY.
11. MUST BE MADE IN USA.

CITY OF KIRKLAND	
PLAN NO. CK - D.14	
CITY OF KIRKLAND WASHINGTON	VANED GRATE FOR CATCH BASIN AND INLET

BRIAN P. WOLF STATE OF WASHINGTON 47049 REGISTERED PROFESSIONAL ENGINEER
6/8/2026

100% - BID DOCUMENTS

DATE	NO.	REVISION		
06/26	4	ISSUED FOR BID	AL	BW
05/08/26	3	100% DESIGN	AL	BW
12/12/25	2	90% DESIGN	AL	BW
10/03/25	1	60% DESIGN	AL	BW

811 Know what's below. Call 811 before you dig.

UPI NO.:	FED. AID PROJ. NO.:
SURVEY NO.:	FIELD BOOK(S):
HORZ. DATUM:	VERT. DATUM:
DESIGNED BY: BW	DRAWN BY: VS

CITY OF KIRKLAND
DEPARTMENT OF PUBLIC WORKS
123 FIFTH AVENUE KIRKLAND, WA 98033
(425) 587–3800 www.kirklandwa.gov

FUNDING NO. _____

108TH AVE NE PIPE INSTALLATION PROJECT

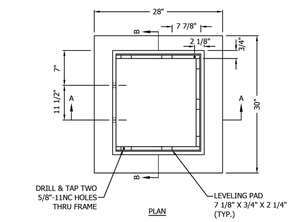
CITY OF KIRKLAND STANDARD DETAILS - I

REFERENCE SHEET NO. C-501

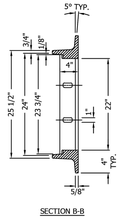
SHEET 10 OF 16 SHEETS

June 5, 2026 - 3:28 PM - ALLIM - C:\USERS\ALLIM\DOCUMENTS\ACCDOCS\STANTEC CONSULTING\2002006449_CITY_OF_KIRKLAND-108TH_AVE_NE_PIPELINE_PROJECT\PROJECT FILES\01_WIP\04_CIVIL\SHEET_FILES\CK-501.DWG - Layout Name: LAYOUT1

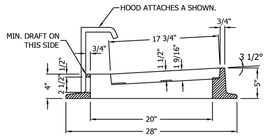
LAST REVISED: 01/2022



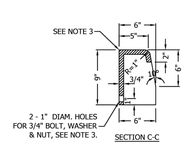
PLAN



SECTION B-B



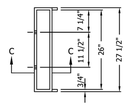
SECTION A-A



SECTION C-C

NOTES:

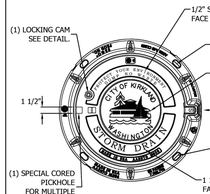
1. FRAME AND COVER SHALL BE EAST JORDAN IRON WORKS OR EQUAL, SUBJECT TO APPROVAL BY CITY. MATERIAL SHALL CONFORM TO SECTION 9-05.15(2) OF THE STANDARD SPECIFICATION.
2. PATTERN ON TOP SURFACE SHALL SPECIFY THE FISH LOGO AND DUMP NO POLLUTANTS (NO DIAMOND PATTERN).
3. BOLT, WASHER, AND NUT SHALL BE GALVANIZED OR CORROSION RESISTANT. BOLTS SHALL BE INSERTED INTO THE FACE OF THE HOOD WITH WASHER AND NUT SECURED TO THE BACK SIDE OF THE HOOD.
4. USE APPROPRIATE GRATE DEPENDING ON THE DIRECTION OF FLOW.
5. NO HORIZONTAL CROSS BAR IN THE OPENING.
6. 18" X 24" VANED OR BI-VANED LID. APPLICATION OF THIS DETAIL NOT TO REPLACE FUNCTION OF CK-D.14.
7. MUST BE MADE IN THE USA.
8. TROWELED EDGE MUST BE IN CONTACT WITH FRAME (RATHER THAN EXPANSION JOINT).



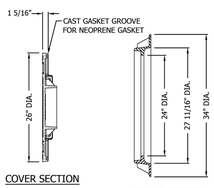
HOOD DETAIL

CITY OF KIRKLAND	
PLAN NO. CK - D.15	
CITY OF KIRKLAND WASHINGTON	OPEN CURB FACE FRAME AND GRATE DETAILS

LAST REVISED: 07/2021



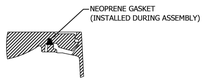
PLAN VIEW



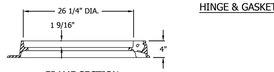
COVER SECTION

FRAME SECTION

COVER SECTION

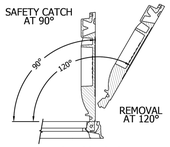


HINGE & GASKET VIEW



FRAME SECTION

CAM LOCK VIEW



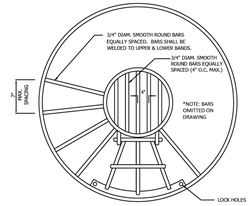
HINGE POSITONS

NOTES:

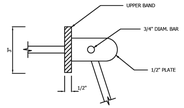
1. VERIFY SLOTTED FRAMES ARE THOROUGHLY FILLED IN WITH MORTAR FOR EFFICIENT INTERACTION WITH IRON AND STRUCTURE.
2. VERIFY BEDDING MORTAR IS NOT IN CONTACT WITH AREA UNDER LID FLANGE THAT WILL INTERFERE WITH CAMLOCK.
3. INSTALL PLUG IN LOCK HOLE TO KEEP LOCK FREE OF FOREIGN MATERIAL.
4. 24 INCH MANHOLE LID IS FITTED WITH AN INFILTRATION PLUG LOCATED IN THE HINGE HOUSING OF THE FRAME. VERIFY PLUG IS PROPERLY INSTALLED BEFORE INSTALLING THE FRAME.
5. REQUIRED ON ALL ARTERIALS, COLLECTORS OR ANY TIME THAT THE IRON WILL BE WITHIN THE TRAVEL LANE.
6. LID SHALL BE MARKED "STORM DRAIN".
7. CITY OF KIRKLAND LOGO REQUIRED.
8. LID MUST BE COVERED WITH TAR PAPER BEFORE OVERLAY.
9. PRODUCT SUPPLIED BY EAST JORDAN IRON WORKS, OR APPROVED EQUAL.
10. FRAME AND COVER SHALL BE H-20 LOADING RATED AND BE AT MINIMUM 7" TALL IF INSTALLED IN ROADWAY.
11. 7" TALL ERGO CASTING REQUIRED FOR CONCRETE ROADWAYS.
12. MUST BE MADE IN THE USA.

CITY OF KIRKLAND	
PLAN NO. CK - D.18A	
CITY OF KIRKLAND WASHINGTON	MODIFIED 24" MANHOLE FRAME W/ HINGED COVER

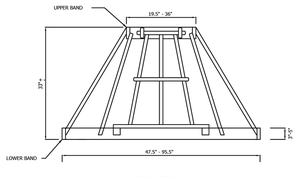
LAST REVISED: 1/2020



PLAN



ENTRY GATE DETAIL



ELEVATION

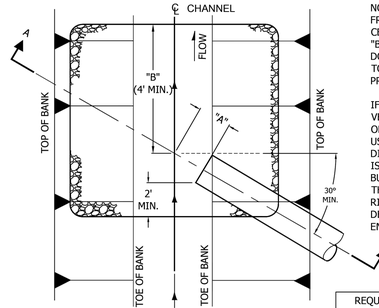
CB	LOWER BAND O.D.	UPPER BAND O.D.
48"	42.5"	19.5"
54"	48.5"	22.5"
60"	59.5"	23.5"
72"	71.5"	28.5"
96"	95.5"	36.0"

NOTES:

1. DEBRIS CAGE SHALL BE ATWOOD FABRICATION, OR EQUAL. MANUFACTURER SUBJECT TO APPROVAL BY CITY.
2. DEBRIS CAGE SHALL BE ALUMINUM 6061.

CITY OF KIRKLAND	
PLAN NO. CK- D.28	
CITY OF KIRKLAND WASHINGTON	DEBRIS CAGE

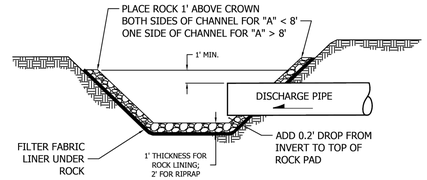
LAST REVISED: 07/2021



NOTE: "A" IS DISTANCE FROM END OF PIPE TO CENTER OF CHANNEL. "B" IS DISTANCE DOWNSTREAM FROM "A" TO END OF OUTFALL PROTECTION.

IF DISCHARGE VELOCITY IS LESS THAN OR EQUAL TO 5 FPS, USE ROCK LINING. IF DISCHARGE VELOCITY IS GREATER THAN 5 BUT EQUAL OR LESS THAN 10 FPS, USE RIPRAP. (TO BE DETERMINED BY ENGINEER)

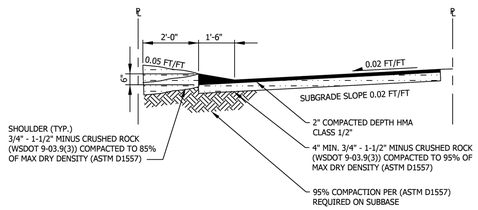
REQUIRED DIMENSIONS	
"A"+"B"	8' FOR ROCK LINING
	12' FOR RIP RAP



SECTION A-A
NTS

CITY OF KIRKLAND	
PLAN NO. CK - D.43	
CITY OF KIRKLAND WASHINGTON	OUTFALL PROTECTION

LAST REVISED: 01/2022

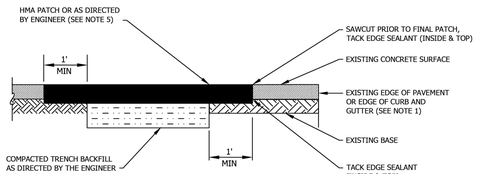


NOTES:

1. MAY BE USED FOR SPECIAL APPLICATIONS IN ALLEYS AS DETERMINED BY THE PUBLIC WORKS INSPECTOR OR ENGINEER.
2. REFER TO CK-R.09 FOR STANDARD ROAD CROSS SECTION AND CK-R.10 FOR STANDARD ALLEY SECTION

CITY OF KIRKLAND	
PLAN NO. CK- R.11	
CITY OF KIRKLAND WASHINGTON	THICKENED EDGE ROADWAY

LAST REVISED: 01/2020



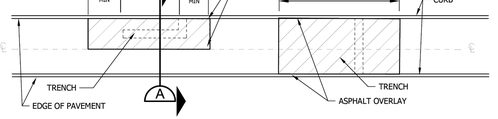
TYPICAL PATCH FOR PAVEMENT

NOTES:

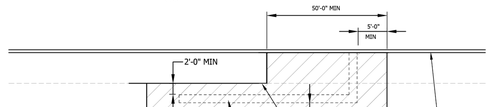
1. IF THE DISTANCE FROM THE EDGE OF PATCH TO THE EDGE OF PAVEMENT OR CURB AND GUTTER IS LESS THAN 3', THE PATCH MUST CONTINUE TO THE EXISTING EDGE; UNLESS ROADWAY IS OVERLAID WITHIN 60 DAYS.
2. HOT MIX ASPHALT SHALL BE CLASS 1/2".
3. ALL TRENCH BACKFILL SHALL BE CRUSHED SURFACING TOP COURSE MATERIAL FOR PERPENDICULAR TRENCHES, OR AS DIRECTED BY ENGINEER.
4. HMA CLASS 1/2" MAY BE USED IN LIEU OF ATB.
5. PATCH MUST ALWAYS BE 1" DEEPER THAN EXISTING ASPHALT; MAX 6" DEEP, OR AS DIRECTED BY ENGINEER.
6. TOP SEAL-USE PG 64-22 AND PROVIDE A SAND BLANKET TO ALLEVIATE TRAILING.
7. REFER TO COK STD. PLAN NO. CK-R.13C FOR REQUIREMENTS FOR GEOTECH BORING ASPHALT PATCHES.

CITY OF KIRKLAND	
PLAN NO. CK- R.12	
CITY OF KIRKLAND WASHINGTON	RESTORATION DETAIL AND PAVEMENT PATCHING

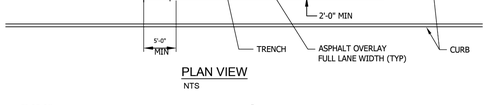
LAST REVISED: 01/2020



PLAN VIEW
NTS



PLAN VIEW
NTS



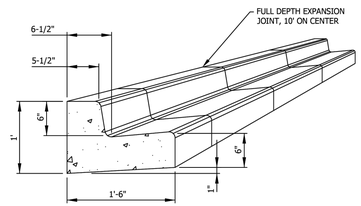
NTS

NOTES:

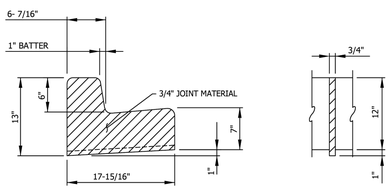
1. THIS STANDARD APPLIES TO ALL CUTS AND ARTERIAL STREETS AND ALL PAVEMENT LESS THAN 5 YEARS OLD.
2. OVERLAY AREA MAY BE MODIFIED BY CITY ON OLDER PAVEMENT DEPENDING ON CONDITIONS OR SCHEDULED CONSTRUCTION/MAINTENANCE.
3. ADJUST ALL UTILITY CASTING TO FINISH GRADE AND RESTORE CHANNELIZATION AND LOOP DETECTORS.
4. POTHOLES TO BE RESTORED WITH A 1' T-CUT. IF AFTER THE 1' T-CUT THE PATCH IS MORE THAN 4'x4', A GRIND AND OVERLAY IS REQUIRED UNLESS OTHERWISE APPROVED BY PUBLIC WORKS. IF THE PATCH IS WITHIN 2 LANES OF TRAVEL, THE GRIND AND OVERLAY WILL BE REQUIRED ON BOTH LANES. 50' MIN. LENGTH.
5. REFER TO COK STD. PLAN NO. CK-R.13C FOR REQUIREMENTS FOR GEOTECH BORING ASPHALT PATCHES.

CITY OF KIRKLAND	
PLAN NO. CK- R.13A	
CITY OF KIRKLAND WASHINGTON	ASPHALT OVERLAY FOR ROADWAY TRENCH REPAIR

LAST REVISED: 01/2023



TYPICAL SECTION FOR CURB & GUTTER, TYPE A



JOINT DETAIL

NOTES:

1. FORMS SHALL BE STEEL AND SET TRUE TO LINE AND GRADE (INSPECTION IS REQUIRED PRIOR TO PLACEMENT OF CONCRETE) UNLESS SPECIFIED DIFFERENTLY BY CITY PROJECT ENGINEER.
2. CONCRETE SHALL BE CEMENT CONCRETE CLASS 4000.
3. BASE COURSE SHALL BE 4" OF 5/8" MINUS CRUSHED ROCK.
4. SURVEY REQUIRED FOR CURB ALIGNMENT.

CITY OF KIRKLAND	
PLAN NO. CK- R.17	
CITY OF KIRKLAND WASHINGTON	CONCRETE CURB AND GUTTER, TYPE "A"

BRIAN P. WOLF
STATE OF WASHINGTON
47049
REGISTERED PROFESSIONAL ENGINEER
6/8/2026

100% - BID DOCUMENTS

DATE	NO.	REVISION	BY	
06/26	4	ISSUED FOR BID	AL	BW
05/08/26	3	100% DESIGN	AL	BW
12/12/25	2	90% DESIGN	AL	BW
10/03/25	1	60% DESIGN	AL	BW

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CITY OF KIRKLAND
DEPARTMENT OF PUBLIC WORKS
123 FIFTH AVENUE KIRKLAND, WA 98033
(425) 587-3800 www.kirklandwa.gov

FUNDING NO. _____

108TH AVE NE PIPE INSTALLATION PROJECT

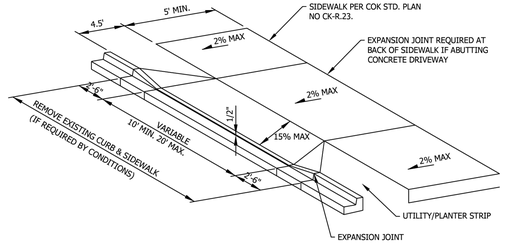
CITY OF KIRKLAND STANDARD DETAILS - II

REFERENCE SHEET NO. C-502

SHEET 11 OF 16 SHEETS

June 5, 2026 - 3:27 PM - ALLIM - C:\USERS\ALLIM\DC\ACCDOCS\STANTEC CONSULTING\2002006449_CITY_OF_KIRKLAND-108TH_AVE_NE_PIPELINE_PROJECT\PROJECT FILES\01_WIP\04_CIVIL\SHEET_FILES\C-502.DWG - Layout Name: LAYOUT1

LAST REVISED:01/2022



SINGLE FAMILY DRIVEWAY WITH PLANTER STRIP

NOTES:

1. ALL DRIVEWAYS AND WHEEL CHAIR RAMPS MUST BE DESIGNED TO MEET ADA STANDARDS. USE WSDOT STANDARD PLANS FOR LAYOUTS NOT SHOWN ON THIS PLAN WITH CLASS 4,000PSI CONCRETE FOR ALL STANDARD PLANS.

   WWW.WSDOT.WA.GOV/DESIGN/STANDARDS/PLANS.HTM

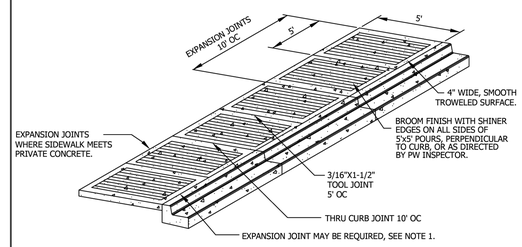
2. LANDING SHALL BE A MINIMUM OF 5' BY 5'.
3. EXPANSION JOINT SPACING NOT TO EXCEED 10'.

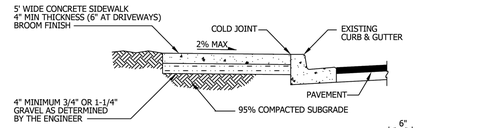
CITY OF KIRKLAND

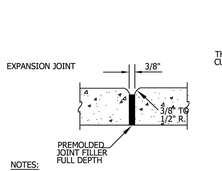
PLAN NO. CK– R.21

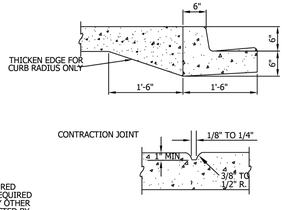
DRIVEWAYS AND WHEEL CHAIR RAMPS

LAST REVISED: 1/1/18









NOTES:

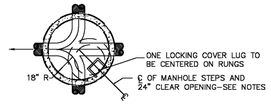
1. SIDEWALK AND CURB & GUTTER CANNOT BE POURED MONOLITHICALLY. EXPANSION JOINT WILL BE REQUIRED WHEN CONCRETE SIDEWALK IS SURROUNDED BY OTHER HARD SURFACES (E.G., DRIVEWAY); OR AS DIRECTED BY PW INSPECTOR.
2. CONCRETE SHALL BE CEMENT CONCRETE CLASS 4000 PSI MINIMUM, WITH AIR ENTRAINMENT. NO COLOR OR TINT SHALL BE ADDED.
3. FORMS SHALL BE SET TRUE TO LINE AND GRADE AND SHALL BE STEEL UNLESS OTHERWISE APPROVED BY INSPECTOR.
4. SIDEWALK SHALL NOT BE POURED IN THE RAIN. SEE POLICY R-8, PLACING CONCRETE OR ASPHALT IN ADVERSE WEATHER CONDITIONS.

CITY OF KIRKLAND

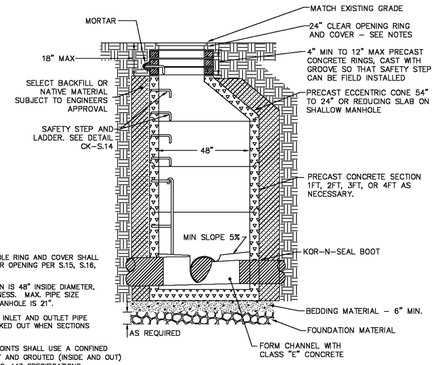
PLAN NO. CK- R.23

SIDEWALK SECTION

LAST REVISED:01/24/2013



PLAN VIEW



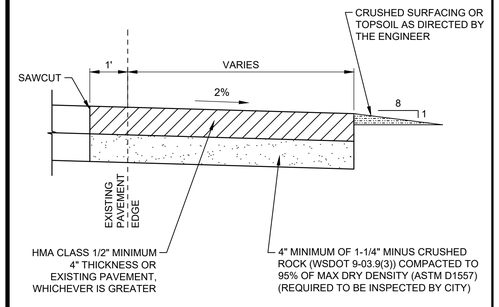
NOTES:

1. LOCKING MANHOLE RING AND COVER SHALL HAVE 24" CLEAR OPENING PER S.15, S.16, S.16A.
2. MANHOLE SHOWN IS 48" INSIDE DIAMETER, 5" WALL THICKNESS. MAX. PIPE SIZE FOR THE 48" MANHOLE IS 21".
3. ALL HOLES FOR INLET AND OUTLET PIPE SHALL BE BLOCKED OUT WHEN SECTIONS ARE CAST.
4. ALL MANHOLE JOINTS SHALL USE A CONFINED RUBBER GASKET AND GROUTED (INSIDE AND OUT) TO MEET ASTM C–443 SPECIFICATIONS.
5. ALL PIPE THROUGH MANHOLE WALL SHALL HAVE A "KOR–N–SEAL" BOOT OR EQUAL.
6. MANHOLE STEPS SHALL BE 1/2" DIA. DEFORMED REINFORCING BARS
7. BEDDING AND FOUNDATION MATERIAL REQUIRED AS SHOWN ON DETAIL AND AS NOTED IN THE SPECIFICATIONS. NATIVE MATERIAL MAY BE USED IF APPROVED BY ENGINEER.
8. LOCATION OF MANHOLE STEPS SHALL NOT BE OVER FLOW LINES AND SHALL BE APPROVED BY THE ENGINEER
9. 54" MANHOLE 27" MAX. PIPE
   72" MANHOLE 36" MAX. PIPE
   96" MANHOLE 48" MAX. PIPE

CITY OF KIRKLAND

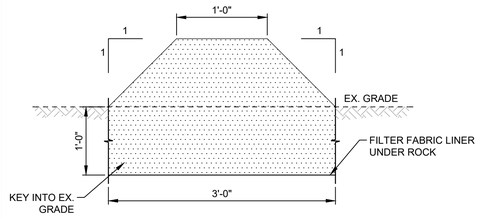
PLAN NO. CK– S.09

STANDARD 48" SANITARY SEWER MANHOLE



C-901 ROAD WIDENING DETAIL

NOT TO SCALE



C-902 QUARRY SPALLS DETAIL

NOT TO SCALE

BRIAN P. WOLF
STATE OF WASHINGTON
47049
REGISTERED PROFESSIONAL ENGINEER

6/8/2026

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DATE	NO.	REVISION	BY	
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12/12/25	2	90% DESIGN	AL	BW
10/03/25	1	60% DESIGN	AL	BW

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DESIGNED BY: BW	DRAWN BY: AL

CITY OF KIRKLAND
DEPARTMENT OF PUBLIC WORKS
123 FIFTH AVENUE KIRKLAND, WA 98033
(425) 587–3800 www.kirklandwa.gov

FUNDING NO. _____

108TH AVE NE PIPE INSTALLATION PROJECT

CITY OF KIRKLAND STANDARD DETAILS - III

REFERENCE SHEET NO. C-503

SHEET 12 OF 16 SHEETS

June 5, 2026 - 3:26 PM - ALLIM - C:\USERS\ALLIM\DC\ACCDOCS\STANTEC CONSULTING\2002006449_CITY_OF_KIRKLAND-108TH_AVE_NE_PIPELINE_PROJECT\PROJECT FILES\01_WIP\04_CIVIL\SHEET_FILES\C-503.DWG - Layout Name: LAYOUT1

CIVIL GENERAL NOTES

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 DOWNSTREAM AND AS DETERMINED BY THE CITY INSPECTOR.
   - 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. CONTRACTOR IS RESPONSIBLE FOR KEEPING STREETS CLEAN AND FREE OF CONTAMINANTS AT ALL TIMES AND FOR PREVENTING AN ILLICIT DISCHARGE (KMC 15.52) INTO A THE MUNICIPAL STORM DRAIN SYSTEM. IF YOUR CONSTRUCTION PROJECT CAUSES AN ILLICIT DISCHARGE TO THE MUNICIPAL STORM DRAIN SYSTEM, THE CITY OF KIRKLAND STORM MAINTENANCE DIVISION WILL BE CALLED TO CLEAN THE PUBLIC STORM SYSTEM, AND OTHER AFFECTED PUBLIC INFRASTRUCTURE. THE CONTRACTOR(S), PROPERTY OWNER, VENDOR, AND ANY OTHER RESPONSIBLE PARTY MAY BE CHARGED ALL COSTS ASSOCIATED WITH THE CLEAN-UP AND MAY ALSO BE ASSESSED A FINE (KMC 1.12.200). THE MINIMUM FINE IS $500. A FINE FOR A REPEAT VIOLATION SHALL BE DETERMINED BY MULTIPLYING THE SURFACE WATER FINE BY THE NUMBER OF VIOLATIONS. A FINE MAY BE REDUCED OR WAIVED FOR PERSONS WHO IMMEDIATELY SELF-REPORT VIOLATION TO THE CITY AT 425-587-3900. A FINAL INSPECTION OF YOUR PROJECT WILL NOT BE GRANTED UNTIL ALL COSTS ASSOCIATED WITH THE CLEAN-UP, AND PENALTIES, ARE PAID TO THE CITY OF KIRKLAND.
3. CONSTRUCTION DEWATERING DISCHARGES SHALL ALWAYS MEET WATER QUALITY GUIDELINES LISTED IN COK POLICY E-1. SPECIFICALLY, DISCHARGES TO THE PUBLIC STORMWATER DRAINAGE SYSTEM MUST BE BELOW 25 NTU, AND NOT CONSIDERED AN ILLICIT DISCHARGE (PER KMC 15.52.090). TEMPORARY DISCHARGES TO SANITARY SEWER REQUIRE PRIOR AUTHORIZATION AND PERMIT FROM KING COUNTY INDUSTRIAL WASTE PROGRAM (206-477-5300) AND NOTIFICATION TO THE PUBLIC WORKS CONSTRUCTION INSPECTOR.
4. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH CITY OF KIRKLAND STANDARDS AND SPECIFICATIONS.
5. 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.
6. 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.).
7. 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.
8. A COPY OF THE APPROVED ESC PLANS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
9. 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.
10. 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.
11. 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 THEIR ACTIVITIES AND TO PROVIDE ADDITIONAL FACILITIES OVER AND ABOVE THE MINIMUM REQUIREMENTS AS MAY BE NEEDED.
12. 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.
13. 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.
14. 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.
15. ALL DENUDED SOILS MUST BE STABILIZED WITH AN APPROVED TESC METHOD (E.G. SEEDING, MULCHING, PLASTIC COVERING, CRUSHED ROCK) WITHIN THE FOLLOWING TIMELINES:

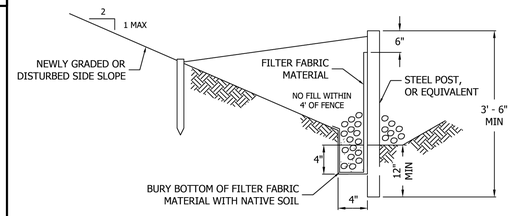
CIVIL GENERAL NOTES - CONTINUED

EROSION/SEDIMENTATION CONTROL - PLAN NOTES (CONT.):

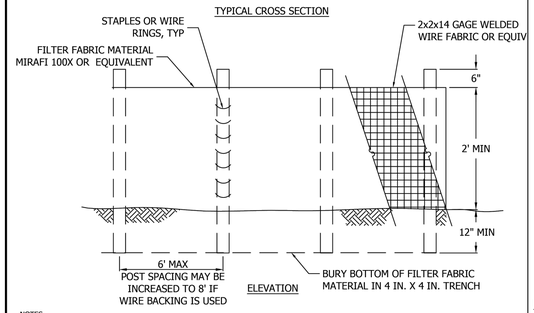
- MAY 1 TO SEPTEMBER 30 - SOILS MUST BE STABILIZED WITHIN 7 DAYS OF GRADING.
- OCTOBER 1 TO APRIL 30 - SOILS MUST BE STABILIZED WITHIN 2 DAYS OF GRADING.
- STABILIZE SOILS AT THE END OF THE WORKDAY PRIOR TO A WEEKEND, HOLIDAY, OR PREDICTED RAIN EVENT.

16. THE LONG-TERM USE OF PLASTIC COVERING ON A SITE SHALL BE LIMITED TO ONE WET SEASON (OCTOBER 1 TO APRIL 30). AFTER THAT, THE SITE WILL BE REQUIRED TO HYDROSEED OR INSTALL OTHER TESC METHODS AS APPROVED BY THE PUBLIC WORKS DEPARTMENT.
17. 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).
18. WHERE STRAW MULCH IS REQUIRED FOR TEMPORARY EROSION CONTROL, IT SHALL BE APPLIED AT A MINIMUM THICKNESS OF 2".
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. 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. RECYCLED CONCRETE SHALL NOT BE USED FOR EROSION PROTECTION, INCLUDING CONSTRUCTION ENTRANCE OR TEMPORARY STABILIZATION ELSEWHERE ON THE SITE.
23. IF ANY PART(S) OF THE CLEARING LIMIT BOUNDARY OR TEMPORARY EROSION/SEDIMENTATION CONTROL PLAN IS/ARE DAMAGED, IT SHALL BE REPAIRED IMMEDIATELY.
24. ALL PROPERTIES ADJACENT TO THE PROJECT SITE SHALL BE PROTECTED FROM SEDIMENT DEPOSITION AND RUNOFF.
25. 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 IMMEDIATELY FOLLOWING REMOVAL OF EROSION CONTROL BMPS. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE DOWNSTREAM SYSTEM.
26. 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.
27. ALL EROSION/SEDIMENTATION CONTROL PONDS WITH A DEAD STORAGE DEPTH EXCEEDING 6" MUST HAVE A PERIMETER FENCE WITH A MINIMUM HEIGHT OF 3'.
28. 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.
29. 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.
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.
31. IF THE TEMPORARY CONSTRUCTION ENTRANCE OR ANY OTHER AREA WITH HEAVY VEHICLE LOADING IS LOCATED IN THE SAME AREA TO BE USED FOR INFILTRATION OR PERVIOUS PAVEMENT, 6" OF SEDIMENT BELOW THE GRAVEL SHALL BE REMOVED PRIOR TO INSTALLATION OF THE INFILTRATION FACILITY OR PERVIOUS PAVEMENT (TO REMOVE FINES ACCUMULATED DURING CONSTRUCTION).
32. 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.
33. 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.
34. 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.
35. RECYCLED CONCRETE SHALL NOT BE STOCKPILED ON SITE, UNLESS FULLY COVERED WITH NO POTENTIAL FOR RELEASE OF RUNOFF.

LAST REVISED: 01/2022



TYPICAL CROSS SECTION

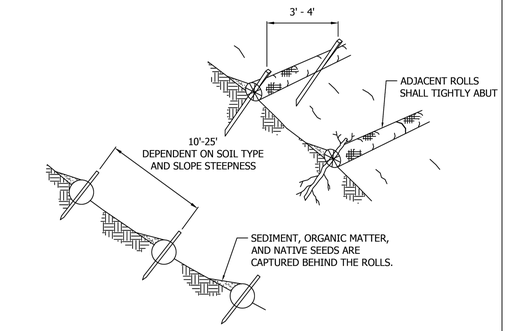


ELEVATION

NOTES
1. PREFAB FENCE ALLOWED IF REINFORCED AND APPROVED BY CITY INSPECTOR.
2. FENCE SHALL NOT BE INSTALLED ON SLOPES STEEPER THAN 2:1.
3. JOINTS IN FILTER FABRIC SHALL BE SPLICED AT POSTS. USE STAPLES, WIRE RINGS, OR EQUIVALENT TO ATTACH FABRIC TO POSTS AND FENCE.
4. REMOVE SEDIMENT WHEN IT REACHES 1/3 FENCE HEIGHT.
5. LOCATION OF FENCING SHALL BE AS SHOWN ON APPROVED PLANS OR AS DIRECTED BY THE CITY.
6. MAXIMUM 100' SHEET OR OVERLAND FLOW PATH LENGTH TO SILT FENCE.
7. DO NOT DIRECT FLOWS GREATER THAN 0.5 CFS TO FENCE.
8. SILT FENCE SHOULD NOT BE INSTALLED IN STREAMS OR V-SHAPED DITCHES.
9. FILTER FABRIC SHOULD BE INSTALLED ALONG CONTOURS WHENEVER POSSIBLE.

CITY OF KIRKLAND
PLAN NO. CK - E.03
SILT FENCE

LAST REVISED: 01/2022

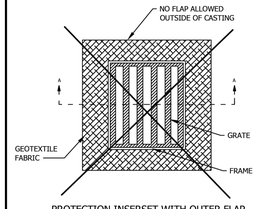


NOTES
1. STRAW ROLLS SHALL BE PLACED ALONG SLOPE CONTOURS.
2. STRAW ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE ROLL IN A TRENCH, 3"-5" DEEP, DUG ON CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND ROLL.
3. DRIVE STAKE THROUGH MIDDLE OF WATTLE, LEAVING 2"-3" OF STAKE PROTRUDING ABOVE WATTLE.

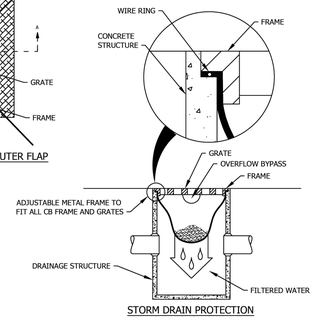
NOT TO SCALE

CITY OF KIRKLAND
PLAN NO. CK - E.10
STRAW WATTLES

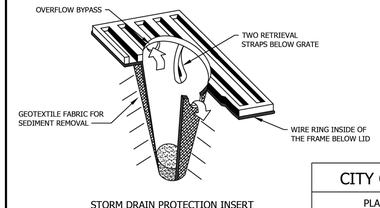
LAST REVISED: 01/2020



PROTECTION INSERSET WITH OUTER FLAP (NOT ALLOWED)



STORM DRAIN PROTECTION INSERT SECTION A-A



STORM DRAIN PROTECTION INSERT ISOMETRIC VIEW (TYP.)

CITY OF KIRKLAND
PLAN NO. CK- E.11
STORM DRAIN PROTECTION INSERT

BRIAN P. WOLA
STATE OF WASHINGTON
47049
REGISTERED
PROFESSIONAL ENGINEER
6/8/2026

100% - BID DOCUMENTS

DATE	NO.	REVISION	BY	
06/26	4	ISSUED FOR BID	AL	BW
05/08/26	3	100% DESIGN	AL	BW
12/12/25	2	90% DESIGN	AL	BW
10/03/25	1	60% DESIGN	AL	BW

811 Know what's below. Call 811 before you dig.

UPI NO.:	FED. AID PROJ. NO.:
SURVEY NO.:	FIELD BOOK(S):
HORZ. DATUM:	VERT. DATUM:
DESIGNED BY: BW	DRAWN BY: VS

CITY OF KIRKLAND
DEPARTMENT OF PUBLIC WORKS
123 FIFTH AVENUE KIRKLAND, WA 98033
(425) 587-3800 www.kirklandwa.gov

FUNDING NO. _____

108TH AVE NE PIPE INSTALLATION PROJECT

ESCP GENERAL NOTES AND STANDARD DETAILS

REFERENCE SHEET NO. CE-001

SHEET 13 OF 16 SHEETS

June 5, 2026 - 3:49 PM - ALLIM - C:\USERS\ALLIM\DC\ACCDOCS\STANTEC CONSULTING\200200649_CITY_OF_KIRKLAND-108TH_AVE_NE_PIPELINE_PROJECT\PROJECT FILES\01_WIP\04_CIVIL\SHEET_FILES\CE-001.DWG - Layout Name: LAYOUT1

June 5, 2026 - 4:08 PM - ALLIM - C:\USERS\ALLIM\DC\ACCDOCS\STANTEC CONSULTING\2002006449_CITY_OF_KIRKLAND-108TH_AVE_NE_PIPELINE_PROJECT\PROJECT FILES\01_WIP\04_CIVIL\SHEET_FILES\CE-101.DWG - Layout Name: LAYOUT1

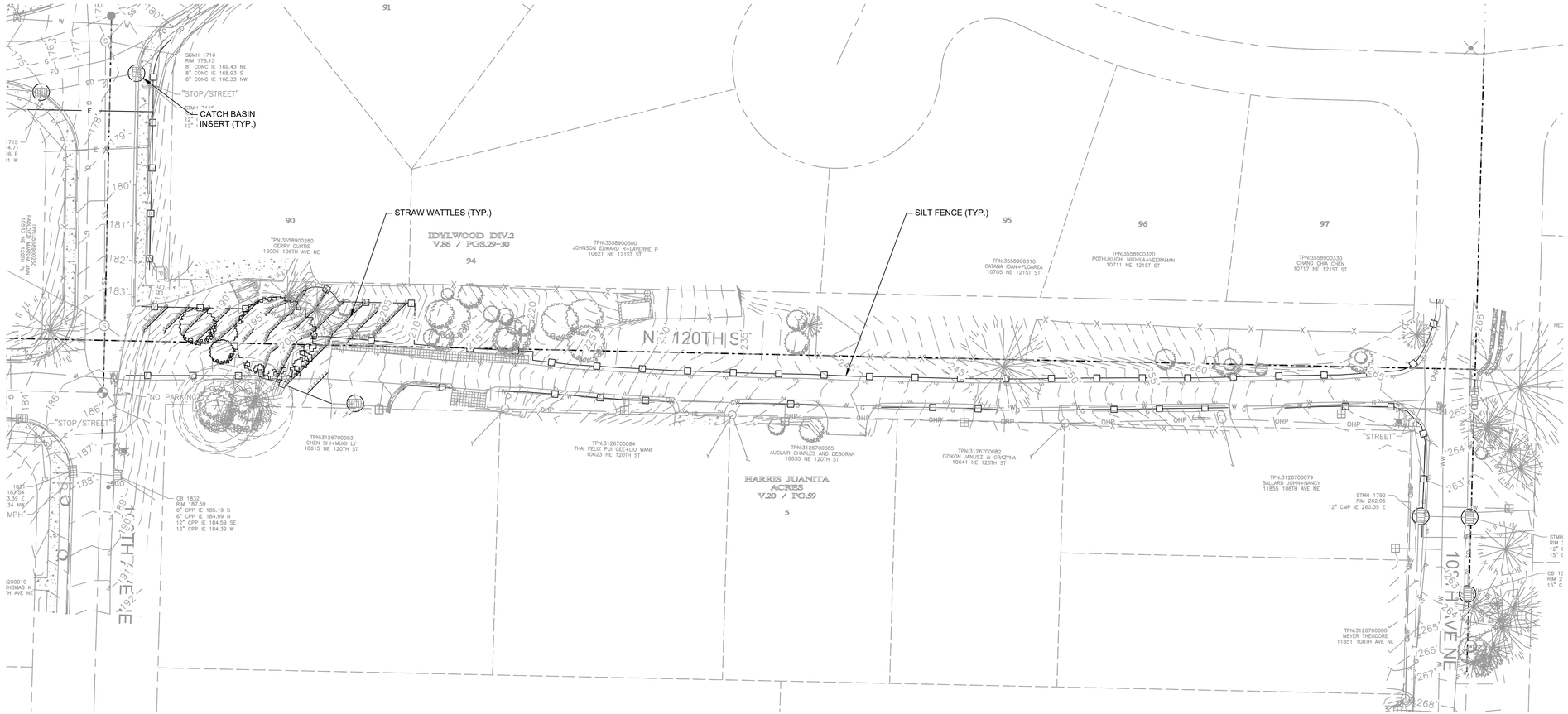
N

0 30 60

SCALE IN FEET

LEGEND

- SILT FENCE PER COK PLAN CK E.03
- STRAW WATTLE PER COK PLAN CK E.10
- CATCH BASIN INSERT PER COK PLAN CK E.11



PLAN

SCALE: 1"=30'

BRIAN P. WOLF
STATE OF WASHINGTON
47049
REGISTERED PROFESSIONAL ENGINEER

6/8/2026

100% - BID DOCUMENTS

DATE	NO.	REVISION	BY	
06/26	4	ISSUED FOR BID	AL	BW
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DESIGNED BY: BW	DRAWN BY: AL

CITY OF KIRKLAND
DEPARTMENT OF PUBLIC WORKS
123 FIFTH AVENUE KIRKLAND, WA 98033
(425) 587-3800 www.kirklandwa.gov

FUNDING NO. _____

108TH AVE NE PIPE INSTALLATION PROJECT

ESCP UTILITY CONSTRUCTION

REFERENCE SHEET NO. CE-101

SHEET 14 OF 16 SHEETS

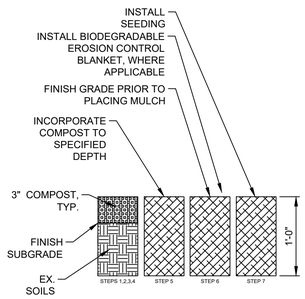
PLANT SCHEDULE

SYMBOL	BOTANICAL / COMMON NAME	CONT	QTY
GROUND COVERS			
	EROSION CONTROL SEEDING	SEED	4,037 SF

POLLINATOR SEEDING MIX

COMMON NAME	BOTANICAL NAME	LBS (PLS)	% OF MIX
CRIMSON CLOVER	TRIFOLIUM INCARNATUM	48.20	25%
PACIFIC LUPINE	LUPINUS LEPIDUS	38.56	20%
PERENNIAL RYEGRASS	LOLIUM PERENNE	48.20	25%
RED FESCUE	FESTUCA RUBRA SSP.	40.97	21%
CALIFORNIA POPPY	ESCHSCHOLZIA CALIFORNICA	14.46	8%
DOUGLAS ASTER	ASTER SUBSPICATUS	2.41	1%

APPLY SEED MIX AT 80LBS/ACRE



PLANTING AREA PREPARATION SEQUENCE

STEP 1
WASTE MATERIALS IN THE PLANTING AREAS SUCH AS WEEDS, ROCKS 2-IN AND LARGER, BUILDING MATERIALS, RUBBLE, WIRES, CANS, GLASS, LUMBER, STICKS, ETC., SHALL BE REMOVED FROM THE SITE. WEEDS SHALL BE DUG OUT BY THE ROOTS.

STEP 2
CONTOURING OF PLANTINGS AREAS TO CREATE SMOOTH GRADING TRANSITIONS, AND POSITIVE DRAINAGE.

STEP 3
PLACE 3"COMPOST

STEP 4
PLACE SOIL ADDITIVES AND FERTILIZERS

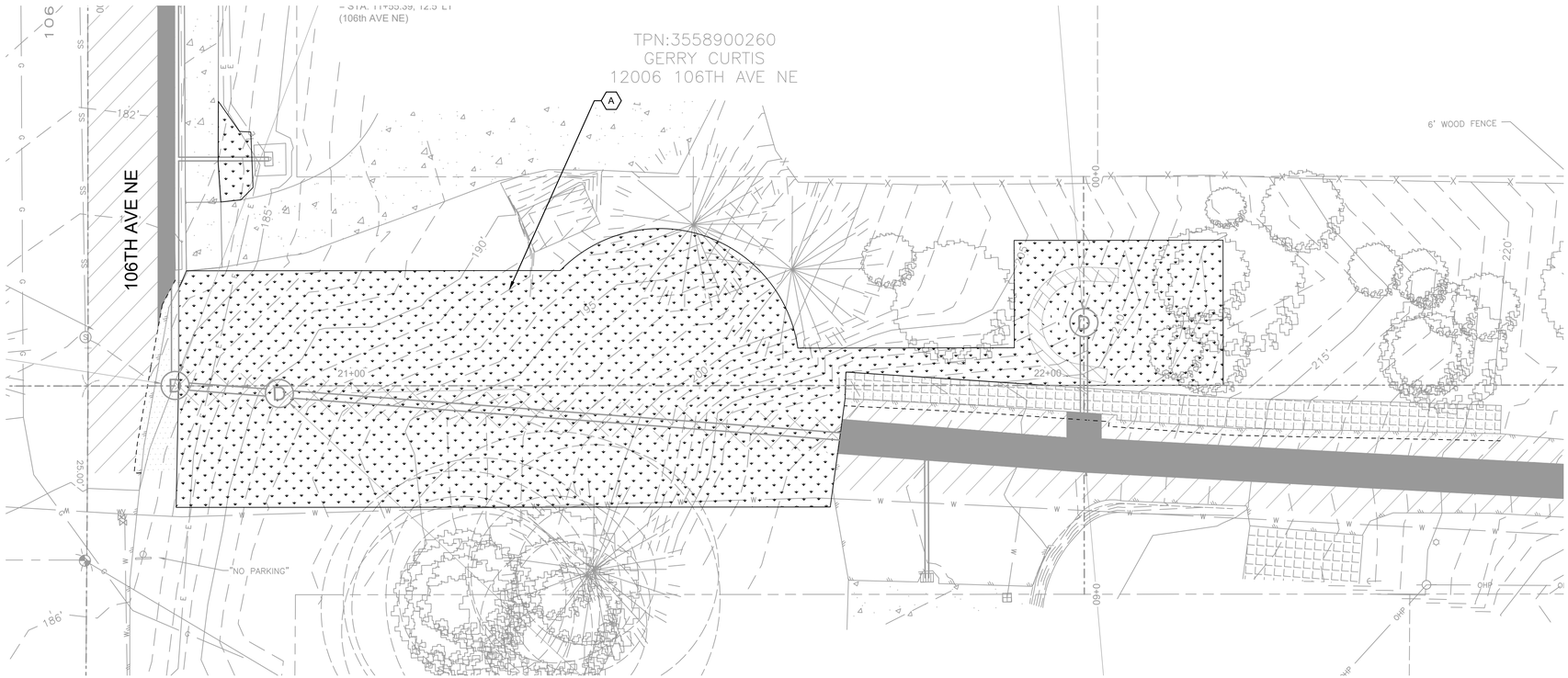
STEP 5
INCORPORATE COMPOST TO 8" DEPTH INTO PREPARED SUBGRADE BY TILLING, ROTARY DISCING, OR OTHER METHOD AS APPROVED BY LANDSCAPE ARCHITECT

STEP 6
BRING AREAS TO UNIFORM GRADES BY FLOATING AND/OR HAND RAKING, TO CREATE POSITIVE DRAINAGE AND NO PONDING. INSTALL EROSION CONTROL FABRIC ON SLOPES 3:1 AND GREATER

STEP 7
INSTALL SEEDING. SEE PLANTING PLAN FOR LOCATIONS.

L-901 SEEDING PREPARATION - COMPOST AMENDED SOIL

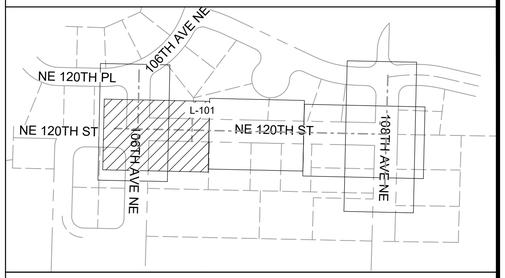
SCALE: NO SCALE P-SP-KIR-01



PLAN

SCALE: 1"=10'

KEY PLAN



GENERAL SHEET NOTES

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES IN AND AROUND THE AREAS OF NEW CONSTRUCTION. THE CONTRACTOR SHALL POTHOLE FOR EXISTING UTILITIES PRIOR TO SUBMITTAL OF SHOP DRAWINGS, FOR POINTS OF CONNECTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITY SERVICE CONNECTIONS UNLESS OTHERWISE INDICATED. CONTRACTOR SHALL REPAIR ALL SERVICE CONNECTIONS AND UTILITIES DAMAGED DURING CONSTRUCTION WHETHER SHOWN ON THE PLAN OR NOT.
3. SEE SHEET C-102 FOR PLAN AND PROFILE OF DRAINAGE IMPROVEMENTS THIS AREA.

GENERAL LANDSCAPE NOTES

1. BE RESPONSIBLE FOR FAMILIARIZING WITH ALL OTHER SITE IMPROVEMENTS PRIOR TO STARTING LANDSCAPE WORK.
2. USE CAUTION WHILE EXCAVATING TO AVOID DISTURBING ANY UTILITIES ENCOUNTERED.
3. PROMPTLY ADVISE CONTRACTING OFFICER AND AGENCY OF ANY DISTURBED UTILITIES. (DIAL DIG 811)
4. MAINTAIN AND WATER ALL PLANT MATERIAL AND SEEDED AREAS UNTIL FINAL INSPECTION AND ACCEPTANCE BY THE OWNER IN WRITING.
5. INSTALL EROSION CONTROL MATTING ON ALL SLOPES 3:1 OR GREATER.
6. PROVIDE SOIL PREPARATION IN ALL NEW SEEDED AND PLANTING AREAS AS DESCRIBED IN THE CONTRACT DOCUMENTS
7. SEE ADDITIONAL SOIL PREPARATION NOTES ON PLANTING DETAILS.
8. ALL AREAS NOT OTHERWISE DESIGNATED FOR PLANTING OR PAVING SHALL RECEIVE SOIL PREPARATION AND SEEDING.
9. PROTECT ALL EXISTING PLANTS TO REMAIN AGAINST UNNECESSARY CUTTING, BREAKING, OR SKINNING OF ROOTS AND BRANCHES, SKINNING AND BRUISING OF BARK DURING OPERATIONS TO MANUALLY OR MECHANICALLY REMOVE INVASIVE PLANTS.
10. PROTECT ALL PLANT GROWTH, INCLUDING ROOT SYSTEMS OF TREES AND PLANTS, FROM DAMAGE FROM NOXIOUS MATERIALS INCLUDING OVERSPRAY FROM HERBICIDES USED TO REMOVE INVASIVE PLANTS.

SHEET KEYNOTES

A. SOIL PREPARATION AND SEEDING PER SPECIFICATION SECTION 8.02. TOPSOIL SHALL BE TYPE B TAKEN FROM WITHIN THIS WORK AREA.

BRIAN P. WOLF — STATE OF WASHINGTON — 47049 — REGISTERED PROFESSIONAL ENGINEER

6/8/2026

100% - BID DOCUMENTS

DATE	NO.	REVISION	BY	
06/26	4	ISSUED FOR BID	AL	BW
05/08/26	3	100% DESIGN	AL	BW
12/12/25	2	90% DESIGN	AL	BW
10/03/25	1	60% DESIGN	AL	BW

811 Know what's below. Call 811 before you dig.

UPI NO.:	FED. AID PROJ. NO.:
SURVEY NO.:	FIELD BOOK(S):
HORZ. DATUM:	VERT. DATUM:
DESIGNED BY: SR	DRAWN BY: SR

CITY OF KIRKLAND
DEPARTMENT OF PUBLIC WORKS
123 FIFTH AVENUE KIRKLAND, WA 98033
(425) 587-3800 www.kirklandwa.gov

FUNDING NO. _____

108TH AVE NE PIPE INSTALLATION PROJECT
STA 20+00 TO STA 22+50
NE 120TH ST
LANDSCAPE RESTORATION PLAN

REFERENCE SHEET NO. L-101

SHEET 15 OF 16 SHEETS

June 5, 2026 - 4:10 PM - ALLIM - C:\USERS\ALLIM\DC\ACCDOCS\STANTEC CONSULTING\2002006449_CITY_OF_KIRKLAND-108TH_AVE_NE_PIPELINE_PROJECT\PROJECT FILES\01_WIP\05_LANDSCAPE\SHEET_FILES\L-101.DWG - Layout Name: L-101

June 5, 2026 - 4:10 PM - ALLIM - C:\USERSVALLIM\DC\ACCDOCS\STANTEC CONSULTING\2002006449_CITY_OF_KIRKLAND-108TH_AVE_NE_PIPELINE_PROJECT\PROJECT FILES\01_WIP\05_LANDSCAPE\SHEET_FILES\L-102.DWG - Layout Name: L-102

TREE SUMMARY TABLE

NO.	LATIN NAME	COMMON NAME	DBH (IN)	HEIGHT (FT)	LOCATION
1	*PSEUDOTSUGA MENZIESII*	DOUGLAS FIR	30	100	PUBLIC
2	*THUJA PLICATA*	WESTERN RED CEDAR	12	45	PUBLIC
3	*PSEUDOTSUGA MENZIESII*	DOUGLAS FIR	10	40	PUBLIC
4	*PSEUDOTSUGA MENZIESII*	DOUGLAS FIR	15	65	PUBLIC
5	*PSEUDOTSUGA MENZIESII*	DOUGLAS FIR	11	45	PUBLIC
6	*PSEUDOTSUGA MENZIESII*	DOUGLAS FIR	9	45	PUBLIC
7	*ACER MACROPHYLLUM*	BIGLEAF MAPLE	12,12,8.6 (20)	50	PUBLIC
8	*PSEUDOTSUGA MENZIESII*	DOUGLAS FIR	30	100	PUBLIC
9	*PSEUDOTSUGA MENZIESII*	DOUGLAS FIR	10	30	PUBLIC
10	*PSEUDOTSUGA MENZIESII*	DOUGLAS FIR	28	75	PUBLIC
11	*ABIES GRANDIS*	GRAND FIR	6	20	PUBLIC
12	*TSUGA HETEROPHYLLA*	WESTERN HEMLOCK	18	65	PUBLIC
13	*ACER MACROPHYLLUM*	BIGLEAF MAPLE	30	60	PUBLIC
14	*PSEUDOTSUGA MENZIESII*	DOUGLAS FIR	22	70	PUBLIC
15	*CORNUS NUTTALLII*	PACIfiC DOGWOOD	8,8 (11)	30	PUBLIC
16	*PSEUDOTSUGA MENZIESII*	DOUGLAS FIR	22	70	PUBLIC
17	*THUJA PLICATA*	WESTERN RED CEDAR	27	70	PUBLIC
18	*THUJA PLICATA*	WESTERN RED CEDAR	65	90	PUBLIC
19	*THUJA PLICATA*	WESTERN RED CEDAR	16	45	PUBLIC
20	*TSUGA HETEROPHYLLA*	WESTERN HEMLOCK	24,20 (31)	80	PUBLIC
21	*CRATAEGUS PHAENOPYRUM*	WASHINGTON HAWTHORN	10,8,8,8,6 (16)	30	PUBLIC
22	*CRATAEGUS MONOGYNA*	ENGLISH HAWTHORN	3,2,2,3,3 (6)	25	PUBLIC
23	*CRATAEGUS MONOGYNA*	ENGLISH HAWTHORN	6	16	PUBLIC
24	*PRUNUS EMARGINATA*	BITTER CHERRY	5	15	PUBLIC
25	*CORNUS NUTTALLII*	PACIfiC DOGWOOD	14	35	PUBLIC
26	*ACER MACROPHYLLUM*	BIGLEAF MAPLE	50	75	PRIVATE
27	*CRATAEGUS MONOGYNA*	ENGLISH HAWTHORN	11	25	PUBLIC
28	*THUJA PLICATA*	WESTERN RED CEDAR	44	90	PUBLIC
29	*PSEUDOTSUGA MENZIESII*	DOUGLAS FIR	38	100	PRIVATE
30	*PSEUDOTSUGA MENZIESII*	DOUGLAS FIR	9	40	PUBLIC
31	*PSEUDOTSUGA MENZIESII*	DOUGLAS FIR	12	40	PUBLIC
32	*PRUNUS SPP*	PLUM	12	25	PUBLIC
33	*PRUNUS SERRULATA*	FLOWERING CHERRY	12	30	PRIVATE
34	*PRUNUS SERRULATA*	FLOWERING CHERRY	8	30	PRIVATE
35	*ACER MACROPHYLLUM*	BIGLEAF MAPLE	18	50	PUBLIC
36	*ACER MACROPHYLLUM*	BIGLEAF MAPLE	18	50	PUBLIC
37	*ACER MACROPHYLLUM*	BIGLEAF MAPLE	16	40	PUBLIC
38	*ACER MACROPHYLLUM*	BIGLEAF MAPLE	9	35	PUBLIC
39	*ACER MACROPHYLLUM*	BIGLEAF MAPLE	8	35	PUBLIC
40	*ACER MACROPHYLLUM*	BIGLEAF MAPLE	15	50	PUBLIC
41	*ACER MACROPHYLLUM*	BIGLEAF MAPLE	13	50	PUBLIC
42	*ACER MACROPHYLLUM*	BIGLEAF MAPLE	6	25	PUBLIC
43	*ACER MACROPHYLLUM*	BIGLEAF MAPLE	7	25	PUBLIC
44	*ACER MACROPHYLLUM*	BIGLEAF MAPLE	7	25	PUBLIC
45	*ACER MACROPHYLLUM*	BIGLEAF MAPLE	12	40	PUBLIC
45.5	*ACER MACROPHYLLUM*	BIGLEAF MAPLE	42	65	PRIVATE
46	*THUJA PLICATA*	WESTERN RED CEDAR	19	70	PUBLIC
47	*ACER MACROPHYLLUM*	BIGLEAF MAPLE	6	25	PUBLIC
48	*ACER MACROPHYLLUM*	BIGLEAF MAPLE	12	30	PUBLIC
49	*ACER MACROPHYLLUM*	BIGLEAF MAPLE	11	30	PUBLIC
50	*ACER MACROPHYLLUM*	BIGLEAF MAPLE	8	20	PUBLIC
51	*ACER MACROPHYLLUM*	BIGLEAF MAPLE	18	45	PUBLIC
52	*ACER MACROPHYLLUM*	BIGLEAF MAPLE	7	30	PUBLIC
53	*PRUNUS LAUROCERASUS*	CHERRY LAUREL	8	15	PUBLIC
54	*PSEUDOTSUGA MENZISII*	DOUGLAS FIR	26	90	PUBLIC
55	*THUJA PLICATA*	WESTERN RED CEDAR	24	50	PUBLIC
56	*ACER MACROPHYLLUM*	BIGLEAF MAPLE	43	50	PUBLIC
57	*PRUNUS EMARGINATA*	BITTER CHERRY	8,6 (10)	30	PUBLIC
58	*THUJA PLICATA*	WESTERN RED CEDAR	24,24,24, 28 (50)	50	PRIVATE
59	*ACER MACROPHYLLUM*	BIGLEAF MAPLE	40	80	PRIVATE
60	*ACER MACROPHYLLUM*	BIGLEAF MAPLE	14	40	PUBLIC
61	*PRUNUS EMARGINATA*	BITTER CHERRY	22	65	PUBLIC
62	*PRUNUS SERRULATA*	FLOWERING CHERRY	4	10	PUBLIC
63	*PRUNUS SERRULATA*	FLOWERING CHERRY	4	10	PUBLIC
64	*ACER RUBRUM*	RED MAPLE	11	50	PUBLIC
65	*THUJA PLICATA*	WESTERN RED CEDAR	35	60	PUBLIC
66	*THUJA PLICATA*	WESTERN RED CEDAR	32	90	PRIVIATE
67	*PRUNUS SPP*	PLUM	12	35	PUBLIC
68	*PINUS STROBUS*	WHITE PINE	20	50	PRIVATE

N

0 40 80

SCALE IN FEET

SHEET KEYNOTES

A. TREE ID 56 - LANDMARK TREE, REMOVE.

B. TREE ID 60 - REGULATED TREE, REMOVE.

C. TREE ID 61 - REGULATED TREE, REMOVE.

GENERAL SHEET NOTES

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES IN AND AROUND THE AREAS OF NEW CONSTRUCTION. THE CONTRACTOR SHALL POTHOLE FOR EXISTING UTILITIES PRIOR TO SUBMITTAL OF SHOP DRAWINGS, FOR POINTS OF CONNECTION.
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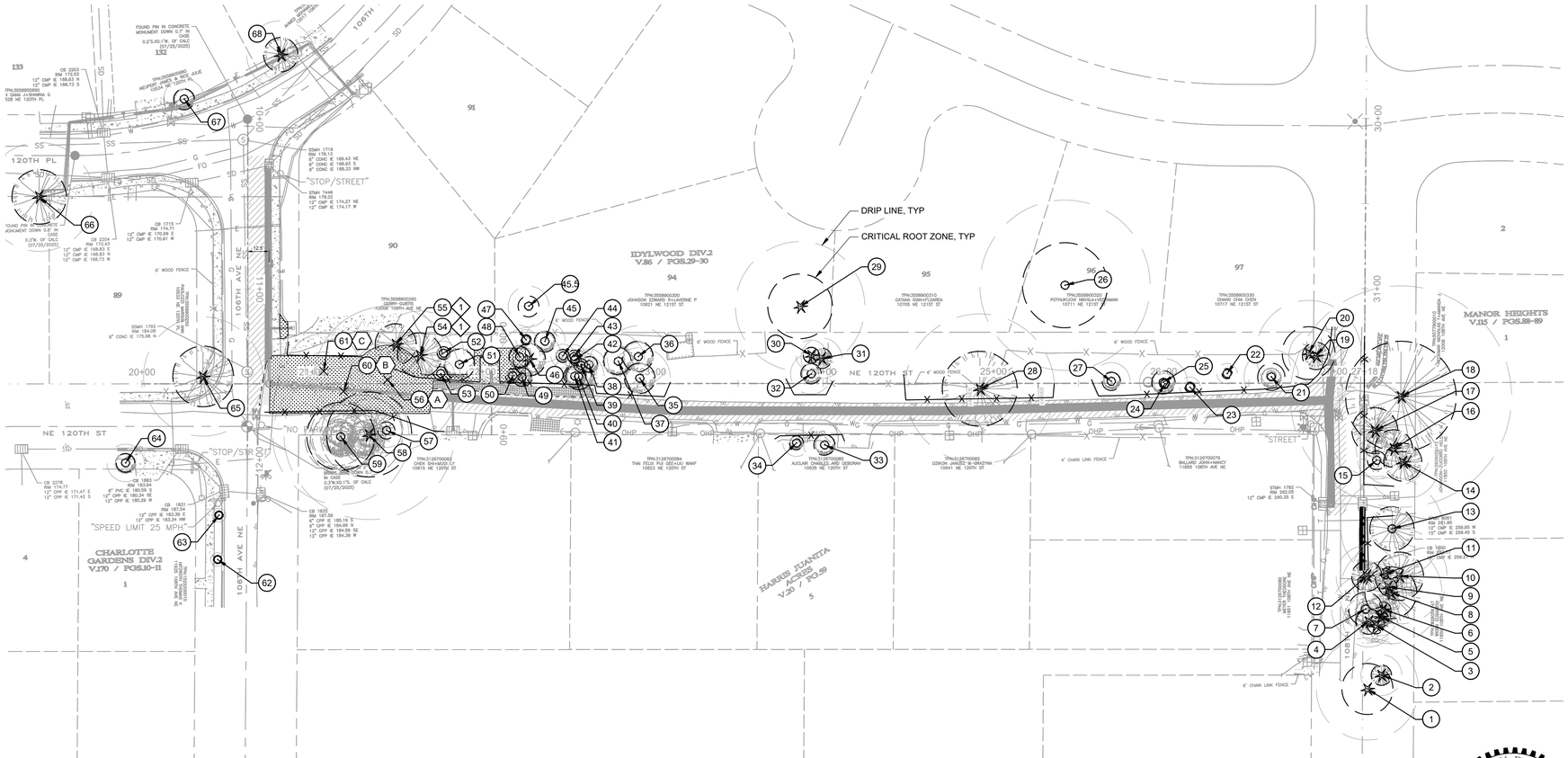
3. SEE SHEETS C-101 THROUGH C-105 FOR PLAN AND PROFILE OF DRAINAGE IMPROVEMENTS.
4. IMPLEMENT TREE PROTECTION MEASURES FOR ALL TREES NOT IDENTIFIED FOR REMOVAL DURING CONSTRUCTION INCLUDING FENCING AND AVOIDANCE OF EQUIPMENT ACCESS WITHIN DESIGNATED PROTECTION ZONES.
5. ALL TREE PROTECTION MEASURES FOR RETAINED TREES SHALL BE IMPLEMENTED IN ACCORDANCE WITH KIRKLAND ZONING CODE (KZC) 95.34 – TREE AND SOIL PROTECTION DURING DEVELOPMENT, INCLUDING PROTECTION OF CRITICAL ROOT ZONES, SOIL STRUCTURE, AND LIMITATIONS ON DISTURBANCE DURING CONSTRUCTION.



PLAN

SCALE: 1"=40'

BRIAN P. WOLF
STATE OF WASHINGTON
47049
REGISTERED
PROFESSIONAL ENGINEER

6/8/2026

100% - BID DOCUMENTS

06/26	4	ISSUED FOR BID	AL	BW
05/08/26	3	100% DESIGN	AL	BW
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DATE	NO.	REVISION	BY	

811 Know what's below. Call 811 before you dig.

UPI NO.:	FED. AID PROJ. NO.:
SURVEY NO.:	FIELD BOOK(S):
HORZ. DATUM:	VERT. DATUM:
DESIGNED BY: BW	DRAWN BY: VS

CITY OF KIRKLAND
DEPARTMENT OF PUBLIC WORKS
123 FIFTH AVENUE KIRKLAND, WA 98033
(425) 587-3800 www.kirklandwa.gov

FUNDING NO. _____

108TH AVE NE PIPE INSTALLATION PROJECT

OVERALL PLAN

NE 120TH ST

TREE REMOVAL PLAN

REFERENCE SHEET NO. L-102

SHEET 16 OF 16 SHEETS

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APPENDIX B:
GEOTECHNICAL REPORT

City of Kirkland

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Geotechnical Report

City of Kirkland 108th Avenue NE Pipe Installation Project

Stantec

Prepared for:
City of Kirkland

Prepared by:
Stantec Consulting Ltd.

Date:
December 11, 2025

Project/File:
2002006449

Stantec Consulting Ltd.

Revision Record

Revision	Date	Description
A	11/10/2025	Draft, issued for internal review
B	12/11/2025	Draft, issued with 90% Design

Disclaimer

The conclusions in the Report titled Geotechnical Report are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from City of Kirkland (the "Client") and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

This Report is intended solely for use by the Client in accordance with Stantec's contract with the Client. While the Report may be provided by the Client to applicable authorities having jurisdiction and to other third parties in connection with the project, Stantec disclaims any legal duty based upon warranty, reliance or any other theory to any third party, and will not be liable to such third party for any damages or losses of any kind that may result.

Table of Contents

1 Introduction 1
1.1 Scope of Work 1
1.2 Project Understanding 1
1.3 Design Codes and Standards 2

2 Site Description and Geology 3
2.1 Physical Setting 3
2.2 Geological Setting 3

3 Geotechnical Investigation 4
3.1 Field Program 4
3.1.1 Site Reconnaissance 4
3.1.2 Utility Locating 4
3.1.3 Air-Vacuum 4
3.1.4 Traffic Control 4
3.1.5 Borehole Drilling and In-situ Testing 5
3.2 Laboratory Testing 5

4 Subsurface Conditions 6
4.1 Soil Conditions 6
4.1.1 Topsoil 6
4.1.2 Asphalt 6
4.1.3 Fill 6
4.1.4 Silt (ML) 6
4.1.5 Lean Clay (CL) 6
4.1.6 Sand (SP), Sand with Silt (SP-SM), Silty Sand (SM) 7
4.2 Groundwater Conditions 7
4.3 Potential Variation in Subsurface Conditions 8

5 Seismic Considerations 9
5.1 Seismic Hazard and Site Classification 9
5.2 Liquefaction Assessment 9
5.3 Discussion 10

6 Geotechnical Design Recommendations 11
6.1 Pipe Support and Settlement 11
6.2 Temporary Trench Excavation, Shoring, and Dewatering 11
6.2.1 Shored Excavations 12
6.2.2 Set-Back Distances 12
6.2.3 Groundwater Control 13
6.3 Pipe Bedding and Surround 13
6.4 Trench Backfill and Compaction 14
6.4.1 Re-Use of Existing Materials as Backfill 14
6.5 Pavement Restoration 15
6.6 Geotechnical Field Review During Construction 15

7 Closure 16
8 References 17

List of Tables

Table 1 Borehole Summary 5
Table 2 Seismic Design Parameters 9

List of Appendices

Appendix A Statement of General Conditions
Appendix B Borehole Location Plan
Appendix C Borehole Records
Appendix D Laboratory Test Results
Appendix E ASCE Seismic Hazard Report

1 Introduction

Stantec Consulting Ltd. (Stantec) has prepared this geotechnical report in support of the design of the proposed City of Kirkland 108th Avenue NE Pipe Installation Project (the Project). This geotechnical report presents the results of the geotechnical investigation program and design recommendations for the Project.

The work described in this report was carried out in general accordance with Stantec's *Statement of Qualifications – 108th Avenue NE Pipe Installation Project*, dated April 18, 2025, and subsequent geotechnical scope of services proposal titled *Kirkland Storm – Geotech Scope of Services*, which was developed in response to the City of Kirkland's *Request for Qualification – City of Kirkland 108th Avenue NE Pipe Installation Project*, dated March 27, 2025.

This report should be read in conjunction with the Statement of General Conditions, which is included in **Appendix A.**

1.1 Scope of Work

Stantec's geotechnical scope of work for the Project included the following:

- Review of available published information on subsurface soil and groundwater conditions for the Project site
- Utility clearance and permitting for proposed investigative locations
- Geotechnical site investigation comprising borehole drilling and in-situ testing at five locations along the proposed Project alignment
- Laboratory testing of soil samples collected during the geotechnical investigation
- Preparation of this report to provide geotechnical recommendations for the design and construction of the project, including as applicable:
    - Evaluation of suitability of site soils for proposed construction methods.
    - Earthworks (site preparation, excavation, material specifications, placement and compaction requirements, re-use).
    - Construction considerations related to encountered subsurface conditions.

1.2 Project Understanding

Based on the information provided in the City of Kirkland's Request for Qualification, we understand that the main objective of the Project is to alleviate flooding of the storm drainage system in the Juanita Neighborhood area. Specifically, there is an isolated storm drainage system on 108th Avenue NE near NE 120th Street that has a missing link and does not connect to a downstream stormwater conveyance system. The existing system consists of three interconnected catch basins that collect stormwater runoff from the drainage basin east of 108th Avenue NE. The system has documented several flooding events and the stormwater surcharging of the affected structures. In particular, the western catch basin type-I inlet (asset no. 1792) has surcharged and flooded downstream into the private parcel to the west of 108th Avenue NE.

Secondary to the concern of relieving the local drainage issue, the City of Kirkland desires to provide storm drainage infrastructure along NE 120th Street as there is currently no storm drainage system along the dead-end road and storm water currently sheet flows to the path of least resistance. This arrangement does not allow for future redevelopment of any of the properties located along NE 120th Street.

The proposed design alignment consists of Route 3 as described Stantec's Statement of Qualifications, which will connect the isolated storm drainage system on 108th Avenue NE to the existing storm drainage system on 106th Avenue NE via a new storm drainage pipeline along NE 120th Street. Based on our review of the drawing set titled *City of Kirkland 108th Ave NE Pipe Installation Project Kirkland, WA, 60% Design*, the proposed alignment includes approximately 840 linear feet of storm drain pipeline with depth of cover ranging from approximately 2 feet to approximately 9 feet, as well as ten catch basins founded at depths ranging from approximately 5 feet to approximately 12 feet below ground surface. Conventional open-cut construction methods are proposed for installation of the new storm drainage system.

1.3 Design Codes and Standards

Geotechnical engineering recommendations provided in this report were developed in accordance with the following design codes and standards:

- City of Kirkland Storm Drainage Pre-Approved Plans, 2025.
- Washington State Department of Transportation (WSDOT) Standard Specifications for Road, Bridge, and Municipal Construction, 2026 (herein referred to as WSDOT 2026)
- WSDOT Geotechnical Design Manual, 2022
- American Society of Civil Engineers, Minimum Design Loads and Associated Criteria for Buildings and Other Structures (ASCE 7-22), 2022

2 Site Description and Geology

2.1 Physical Setting

The Project site is situated within the road Right-of-Way of NE 120th Street between 106th Avenue NE and 108th Avenue NE in the Juanita Neighborhood of the City of Kirkland, Washington, and includes the following sections:

- Sta. 10+27 (Approx.) to Sta. 11+55.39: 106th Avenue NE, from existing Manhole STMH 7446 to NE 120th Street
- Sta. 20+74.69 to Sta. 26+97.05: NE 120th Street, from 106th Avenue NE to 108th Avenue NE
- Sta. 31+43.90 to Sta. 32+26.42: 108th Avenue NE, from NE 120th Street to existing Manhole STMH 1792

Public Land Survey Township mapping provided on the State of Washington's Geospatial Open Data Portal (Washington State Geographic Information Office, 2025) indicates that the Project site is located within Section 29 of Township 26 North, Range 05 East, SW ¼ Section.

The ground surface at the Project site slopes from east to west, with geodetic elevation ranging from approximately 179 feet at 106th Avenue NE to approximately 266 feet at 108th Avenue NE. NE 120th Street dead-ends approximately 250 feet east of 106th Avenue NE. An approximately 25-foot-high unpaved slope is present between the end of NE 120th Street and 106th Avenue NE. Surrounding land usage is low density residential.

2.2 Geological Setting

Based on the Washington Geological Survey's *Geologic Information Portal* interactive map (Washington Department of Natural Resources, 2025), the surficial soils at the site consist of geological unit Qgd (Pleistocene continental glacial drift): Pleistocene till and outwash clay, silt, sand, gravel, cobbles, and boulders deposited by or originating from continental glaciers; locally includes peat, nonglacial sediments, modified land, and artificial fill.

3 Geotechnical Investigation

A geotechnical investigation program was completed to identify and assess the existing soil stratigraphy at the site and estimate representative soil parameters for use in design. The geotechnical investigation program consisted of a field program, which included a site reconnaissance, utility locating, knifing, borehole drilling, sampling, and in-situ testing, followed by geotechnical laboratory testing.

3.1 Field Program

Stantec carried out a geotechnical investigation field program between September 2 and 10, 2025, which consisted of utility locating, utility clearance via knife, and drilling five boreholes (B-1 through B-5) with Standard Penetration Testing (SPT). A borehole location plan that shows the approximate locations of the boreholes is provided in **Appendix B**.

3.1.1 Site Reconnaissance

Prior to the field program, Stantec carried out a site reconnaissance to mark and confirm access to the proposed borehole locations and to identify potential obstructions or conflicts.

3.1.2 Utility Locating

Prior to the field program, Stantec submitted a notification to nearby utility owners using the Washington Utility Notification Center 811 system. The information received from the 811 Ticket was reviewed and implemented into the proposed borehole location plan allowing for respective distances from existing utilities.

Stantec retained the services of a subcontracted 3rd party utility locator, Geomarkout Locating Co., to carry out on-site delineation of existing utilities prior to finalizing the borehole locations on September 2, 2025. The on-site utility locating was performed using Ground Penetrating Radar (GPR) and electromagnetic (EM) scanning equipment.

3.1.3 Air-Vacuum

Air-vacuum is an excavation process in which soils are removed using pressurized air and vacuum suction to mitigate the risk of damage to existing underground utilities. All boreholes were air-vacuumed to a depth of 5 feet below ground surface to clear the boreholes for buried utilities prior to drilling. Air-vacuum was completed by the drilling subcontractor, Holt Services Inc., on September 8, 2025, prior to drilling.

3.1.4 Traffic Control

Prior to the field program, traffic control plans were submitted to the City of Kirkland for review. Stantec retained Traffic Management International to provide traffic control services during drilling of boreholes B-1, B-2, and B-5 on September 9, 2025.

3.1.5 Borehole Drilling and In-situ Testing

Geotechnical borehole drilling was carried out on September 9 and 10, 2025, by Holt Services Inc., using a truck mounted Mobile B60 drill rig. Boreholes B-1, B-2, B-4, and B-5 were advanced to a depth of 15 feet below existing ground surface using the hollow-stem auger drilling method. Borehole B-3 was advanced to a depth of 50 feet below existing ground surface using the mud-rotary drilling method.

In all boreholes except B-3, SPT was carried out and soil samples were collected from the SPT split barrel at approximately 2.5-foot depth intervals to the termination depth of 15 feet. In borehole B-3, SPT was carried out at 2.5-foot depth intervals above 30-foot depth and at 10-foot intervals from 30 feet to the termination depth at 50 feet. All boreholes were backfilled using bentonite chips in accordance with Department of Natural Resources requirements, and the ground surface at the boreholes was reinstated to as near existing condition as practically possible using either concrete dyed black to match the appearance of the surrounding asphalt, or topsoil. Excess soil cuttings were collected in a 55-gallon drum for offsite disposal. Borehole details are summarized in **Table 1**.

Table 1 Borehole Summary

Location ID	Latitude[1] (º N)	Longitude[1] (º W)	Approximate Ground Surface Elevation[2] (feet)	Drilling Method	Termination Depth (feet)
B-1	47.70793	122.19987	179	Hollow-stem Auger	15
B-2	47.70762	122.19987	185	Hollow-stem Auger	15
B-3	47.70761	122.19941	209	Mud Rotary	50
B-4	47.70758	122.19840	241	Hollow-stem Auger	15
B-5	47.70740	122.19733	263	Hollow-stem Auger	15

Notes:
1. Borehole coordinates collected using handheld GPS device and are accurate to approximately +/- 15 feet.
2. Ground surface elevations estimated using City of Kirkland ArcGIS 2’ topographic contour map (City of Kirkland, 2025) open data and are approximate.

The geotechnical site investigation was carried out under the full-time supervision of a Stantec geotechnical representative who located the boreholes, observed the drilling and testing operations, classified the soil conditions encountered, prepared field records, and collected soil samples for laboratory testing. Detailed Borehole Records are provided in **Appendix C**.

3.2 Laboratory Testing

The objectives of the geotechnical laboratory tests were to aid in the visual classification of the soil samples and to derive generalized soil parameters for the locations of interest. The laboratory testing was completed in accordance with the applicable ASTM standard testing procedures and included moisture content, Atterberg limits, and fines content tests.

Borehole records are provided in **Appendix C,** and the results of the laboratory tests are presented in **Appendix D**.

4 Subsurface Conditions

4.1 Soil Conditions

The following subsections describe the subsurface conditions encountered during Stantec's geotechnical explorations The subsurface soil conditions encountered within the boreholes were generally consistent with the published geological information as discussed above. **Appendix C** contains borehole records describing the soil and groundwater conditions encountered in the boreholes.

4.1.1 Topsoil

Topsoil was encountered at the ground surface in boreholes B-3, B-4, and B-5. The topsoil thickness was not recorded in borehole B-3 due to the surface of the borehole being air-vacuumed prior to drilling. In borehole B-4, the topsoil was approximately 5 inches thick and contained gravel. In borehole B-5, the topsoil was approximately 5 inches thick and contained organic debris. In all boreholes, the topsoil was underlain by native sandy soils.

4.1.2 Asphalt

Asphalt was encountered at the ground surface in boreholes B-1 and B-2. The asphalt thickness was approximately 3 inches in both boreholes. The asphalt was underlain by fill in both boreholes.

4.1.3 Fill

Fill was encountered below the asphalt in boreholes B-1 and B-2. The fill soils generally consisted of road base sand with gravel and silt, with wood/organic debris encountered in borehole B-2. The fill thickness was approximately 5 feet in both boreholes. The fill was underlain by silt in borehole B-1 and silty sand in borehole B-2.

4.1.4 Silt (ML)

Underlying the fill in borehole B-1, brown to blueish grey silt was encountered, extending to approximately 12.5-foot depth. The layer was described as dry to moist. At 7.5-foot depth, a seam of wet sand was observed. SPT blow counts in the silt layer indicated that the layer is dense.

One Atterberg limits test conducted on a sample taken from the silt layer indicated that the silt was non-plastic. The measured moisture content of the silt layer ranged between 24% and 25%.

4.1.5 Lean Clay (CL)

In borehole B-1, a thin layer of brown lean clay was encountered from approximately 12.5 feet to 13.5 feet. In borehole B-3, a layer of grey to blue lean clay was encountered at approximately 40-foot depth and was inferred to extend beyond the borehole termination depth of 50 feet. In both boreholes, the clay was

described as low plasticity and moist. SPT blow counts in the clay layer indicate that the layer is hard. The lateral continuity of the clay layer between boreholes B-1 and B-3 is not known.

One Atterberg limits test carried out in this layer in borehole B-3 indicate that the clay has low plasticity with a measured Liquid Limit of 32%, a Plastic Limit of 23%, and a Plasticity Index of 9, with a measured natural moisture content of 26%.

One grain size analysis (wash-sieve) test conducted on a sample from the clay layer in borehole B-1 provided the following particle size distribution:

- Gravel: 0%
- Sand: 22%
- Fines (i.e., clay and silt): 78%

4.1.6 Sand (SP), Sand with Silt (SP-SM), Silty Sand (SM)

Sand was encountered in all boreholes. The observed soil conditions, compactness conditions, and depth intervals are as follows:

- B-1: Dense poorly graded sand was encountered below the lean clay layer from approximately 13.5', inferred to extend beyond the borehole termination depth of 15 feet.
- B-2: Loose brown to light brown silty sand was encountered below the fill at approximately 5-foot depth, becoming dense below 10 feet and extending beyond the borehole termination depth of 15 feet.
- B-3: Loose to compact brown silty sand was encountered at 2.5-foot depth, transitioning to dense to very dense poorly graded sand with silt below approximately 10 feet, which extended to approximately 40 feet.
- B-4: Very dense brown poorly graded sand with silt was encountered below the topsoil, extending beyond the borehole termination depth of 15 feet.
- B-5: Compact to dense brown to dark brown silty sand was encountered below the topsoil, transitioning to very dense to dense brown to dark brown poorly graded sand with silt and gravel at approximately 10 feet, extending beyond the borehole termination depth of 15 feet.

Grain size analyses (wash-sieve and hydrometer) tests conducted on samples from the sand layer provided the following ranges of particle size distribution:

- Gravel: 0% – 3%
- Sand: 68% – 93%
- Fines (i.e., clay and silt): 7% – 33%

4.2 Groundwater Conditions

The presence of groundwater was inferred during drilling in boreholes B-1 and B-2 based on the observed change in moisture content of the recovered soil samples. In borehole B-1, groundwater was inferred at approximately 2.5-foot depth. However, this groundwater is inferred to be perched on the underlying low-

permeability soil layer, which was encountered at approximately 5-foot depth, and may not be representative of local groundwater levels. In borehole B-2, groundwater was inferred at approximately 7.5-foot depth.

Direct observation of groundwater depth was not possible during drilling of borehole B-3 due to the limitations of the mud rotary drilling method, which introduces drilling fluid to the subsurface materials.

Groundwater was not observed in boreholes B-4 and B-5. It is noted that no drilling fluid was used while drilling boreholes B-4 and B-5.

4.3 Potential Variation in Subsurface Conditions

The subsurface soil and groundwater conditions described above and expressed on the borehole's records are representative only at the borehole location and at the time of the exploration. Conditions can vary between the explored locations and at the time of construction. It is anticipated that groundwater conditions will vary with seasonal weather trends and precipitation events.

5 Seismic Considerations

5.1 Seismic Hazard and Site Classification

Site-specific design parameters were obtained from the interactive website maintained by ASCE in accordance with the provisions of ASCE 7-22 and are provided in **Table 2** and attached in **Appendix E**. The selection of seismic design parameters is based on the Maximum Considered Earthquake (MCER), which corresponds to a seismic event with a 2% probability of exceedance in 50 years. Seismic site class was estimated using SPT N-values based on the procedures outlined in ASCE 7-22.

Table 2 Seismic Design Parameters

Parameter	Value
Site Class	D
Mapped MCER Spectral Response Acceleration at Short Period, S_S (g)	1.42
Mapped MCER Spectral Response Acceleration at 1-second period, S_1 (g)	0.56
Site Modified Peak Ground Acceleration, PGA_M	0.53
Site Modified Earthquake Spectral Response Acceleration at Short Periods, S_{MS} (g)	1.54
Site Modified Considered Earthquake Spectral Response Acceleration at 1-Second Periods, S_{M1} (g)	1.20
Design Spectral Acceleration at 0.2-second period, S_{DS} (g)	1.03
Design Spectral Acceleration at 1.0-second period, S_{D1} (g)	0.80
Note: ‘g’ is the acceleration due to gravity	

5.2 Liquefaction Assessment

Liquefaction is a phenomenon where soils lose a significant part of their strength due to a rapid increase in pore pressure during a cyclic loading event (e.g., earthquake) reducing the soil’s effective stress. If the effective stress drops to zero due to 100% excess pore pressure response, the soil can behave more like a liquid rather than a solid. Liquefaction can occur in saturated cohesionless soils including gravel, sand, and silty soils with plasticity index PI less than 7. Accumulation of strain and deformation with seismic shaking, but without liquefaction triggering, is referred to as “cyclic mobility” and can occur in cohesive soils. Silts and clays with PI greater than 7 may not liquefy but may be susceptible to cyclic mobility (Idriss and Boulanger, 2008).

The methods used to evaluate liquefaction potential involve comparison of the cyclic shear stress in the ground induced by the earthquake loading (i.e., the Cyclic Stress Ratio [CSR]) to the shear resistance of the soil (i.e., the Cyclic Resistance Ratio [CRR]). The Factor of Safety against liquefaction is estimated as the ratio of CRR to CSR.

A preliminary liquefaction assessment of the subsurface soils was carried out using the simplified SPT-based method recommended by Idriss and Boulanger (2014). The peak ground acceleration (PGA) for site class D and a mean earthquake magnitude of 7 were used in the analyses. The results of the liquefaction assessment indicate that the subsurface soils encountered in borehole B-2 are susceptible to liquefaction

between approximately 7.5 feet and 10 feet under the 2,475-year return period earthquake shaking. Based on our analysis, we anticipate that up to 1 inch of settlement may occur in these materials during shaking.

Based on our review of the 60% Design Drawings, the pipeline invert depth near borehole B-2 is between 5 feet and 6 feet below ground surface. Additionally, catch basin CB-02 will be founded at approximately 9 feet below ground surface near borehole B-2. It is anticipated that the pipeline and CB-02 may be impacted by the liquefiable soils.

5.3 Discussion

The liquefiable soils encountered in borehole B-2 extended from the groundwater table to approximately 10 feet below ground surface. It is noted that there is uncertainty related to the depth of the groundwater table, which was inferred during drilling at approximately 7.5-foot depth. Liquefiable soils were not encountered in nearby borehole B-1, and the lateral continuity of the liquefiable layer is not well understood.

Liquefaction Potential mapping provided on KirklandMaps (City of Kirkland, 2025) indicates that the liquefaction potential at the site is ‘Low’.

Based on the information encountered in the borings, and our analysis, liquefaction may result in up to 1 inch of settlement during shaking. If the risk of settlement due to liquefiable soils is unacceptable, the risk may be reduced to acceptable levels by over excavating to remove the liquefiable soils, consisting of saturated loose (6 < SPT N < 9) silty sand, to expose the underlying dense (SPT N > 28) silty sand, which is not considered to be liquefiable. The liquefiable soils should be replaced with compacted granular fill as discussed in **Section 6.3**.

Trench excavation along 108th Avenue NE should be carried under the supervision of a Stantec Geotechnical Engineer such that the presence of potentially liquefiable soils (i.e., loose and saturated sandy soils) can be confirmed and over-excavation extents can be directed.

6 Geotechnical Design Recommendations

All pipe, manholes, catch basins, and appurtenances shall be laid on a properly prepared foundation in accordance with the WSDOT 2026.

6.1 Pipe Support and Settlement

The subsurface soils encountered in the boreholes at the anticipated invert depths of the proposed storm sewer consisted of the following:

- 106th Avenue NE: dense silt near Sta. 10+20, transitioning to loose silty sand near Sta. 11+50.
- NE 120th Street: loose to compact silty sand near Sta. 23+20, transitioning to very dense poorly graded sand with silt moving up chainage towards Sta 24+60.
- 108th Avenue NE: compact to dense silty sand

Based on the subsurface conditions encountered, we consider that the proposed storm sewer can be grade supported along NE 120th Street and 108th Avenue NE, provided recommendations provided in the following subsections are adhered to. As discussed in **Section 5.3**, excavation and replacement of liquefiable soils with compacted granular fill may be required if anticipated settlements are unacceptable along 106th Avenue NE near Sta. 11+50. Soft or compressible soils were not encountered below the proposed pipe invert and manhole base depths at the borehole locations other than borehole B-2. Accordingly, we anticipate post-construction settlement of grade-supported sewer pipes and manholes would be negligible. It is noted that the silt encountered in borehole B-1 is anticipated to be moisture sensitive and subject to moisture related disturbance if groundwater and surface water infiltration are not managed appropriately.

As soil stratigraphy is expected to vary between borehole locations, some over-excavation of soft soils and replacement with compacted granular fill may be required and should be anticipated. Excavation, backfilling and compaction work should be completed in accordance with the recommendations in subsequent subsections of this report. No other ground improvement is anticipated to be required to support the proposed storm sewer.

6.2 Temporary Trench Excavation, Shoring, and Dewatering

It is anticipated that the proposed storm sewer will be installed using open-cut excavations. It is understood that the pipe invert depths will vary from approximately 3 feet to 10 feet below the existing ground surface.

Excavations should be in accordance with City of Kirkland Plan No. CK-D.02 *Storm Trench Detail*.

When, after excavating to the foundation level, the material remaining in the trench bottom is determined to be unsuitable by the Geotechnical Engineer, excavation shall be continued to such additional depth and width as required by the Geotechnical Engineer. The trench foundation shall be backfilled to the bottom of the pipe zone using suitable granular material, and compacted to form a uniformly dense, unyielding foundation.

The maximum width of trench excavations at the top of pipe zone should be 30 inches for pipe up to and including 12-inch outer diameter (OD), and OD plus 16 inches for pipe larger than 12-inch OD. Excavations should be benched as needed to accommodate shoring. Excavation for manholes and other Structures connected to the pipelines shall be sufficient to provide a minimum of 12 inches between their surfaces and the sides of the excavation.

6.2.1 Shored Excavations

Per WSDOT 2026 section 7-08.3(1)B, and the Washington Industrial Safety and Health Act, trench excavations of 4-foot depth or greater must be shored. Based on the anticipated subsurface conditions, we envision that trench box/shoring cage or slide-rail shoring would be suitable to support excavations for installation of manholes and trench excavations to:

- Limit the work area
- Maximize usable roadway
- Maintain trench stability
- Allow for safe worker entry into excavations
- Minimize excavation volumes.

Trench boxes should not be used to support adjacent traffic, existing footings, or other structures.

The upright portion of any temporary excavation support should be continuous to mitigate soils passing through the supports. The existing asphalt and granular fill soils might need to be locally cut and excavated prior to the installation of temporary excavation supports.

Local slumping of the trench walls behind the temporary shoring, particularly for cuts in fill and granular soils, should be anticipated. This is particularly true for excavations adjacent to existing utility trenches, which may include granular and/or poor-quality backfill soils.

Voids between temporary shoring and the trench wall should be filled immediately with granular soil. Granular backfill should be available at the site for this purpose prior to the start of the excavation. As an alternative, control density fill (high-slump, low-strength concrete) could be used to fill the voids.

The excavation cut slopes and temporary trench support should be reviewed by the Contractor daily (or at shorter frequencies as required) for signs of instability. The Geotechnical Engineer should be notified immediately, and the excavation should be backfilled, if any noticeable displacement of the excavation walls or adjacent ground is noted to have been affected.

6.2.2 Set-Back Distances

Per WSDOT 2026 section 7-08.3(1)A, soil stockpiles, construction equipment, and any other equipment or materials that may pose a hazard to workers by falling into the trench must be kept at least 2 feet from the edge of the trench. However, for soil stockpiles or heavy construction traffic, Stantec recommends a minimum setback distance of 6 feet from the edge of trench excavation, due to the potential for loose,

unconsolidated fill materials near the ground surface, unless the shoring is designed to support surcharge loading at the ground surface.

If the roadways along the storm sewer construction zones may remain partially open to traffic during construction, a recommended minimum setback distance of 10 feet is to be maintained for vehicle traffic.

6.2.3 Groundwater Control

Groundwater was observed in boreholes B-1 and B-2 based on saturated soil layers at depths ranging from 2.5 feet to 7 feet below the existing ground surface. Based on the saturated soil layers observed in these boreholes, groundwater seepage (from infiltrated rainwater) or perched water should be anticipated during trench excavation along 106th Avenue NE.

Where the excavation advances below the groundwater level, we recommend sumps and pumps be used to control groundwater and/or surface water that has entered the excavation.

Groundwater was not observed in the boreholes along NE 120th Street or 108th Avenue NE. However, Stantec anticipates that the groundwater conditions along the proposed sanitary/storm sewer alignment would vary seasonally and, where possible, construction—particularly along 106th Avenue NE—should be planned for the summer months when drier weather is expected.

Sandbags or other physical barriers should be placed at the ground surface adjacent to the trench to direct surface runoff away from the excavation.

6.3 Pipe Bedding and Surround

The pipe bedding and surround material should extend a minimum of 4 inches above and below the surface of the pipe. The bedding material should be placed over competent and undisturbed native subgrade soil or on compacted and approved granular subgrade fill. The base of the excavation should be reviewed by Stantec prior to fill placement. Any native subgrade soil that becomes softened due to construction activities and/or exposure to excess moisture or precipitation should be excavated at the direction of the Geotechnical Engineer (up to a maximum depth of 12 inches below bedding layer) and replaced with imported granular material.

The City of Kirkland's Standard Specification Plan No. CK – D.02 *Storm Trench Detail*, pipe bedding and surround materials should consist of pea gravel if there is 6 feet or greater depth from the ground surface to the crown of the pipe. If the depth from the ground surface to the crown of the pipe is less than 6 feet, then pipe bedding and surround materials should consist of Crushed Surfacing Top Course (CSTC) per WSDOT 2026 section 9-03.9(3). However, per the General Pipe Installation Requirements provided in section 7-08 of WSDOT 2026 state that, per section 9-03.12(3), "Gravel Backfill for Pipe Zone Bedding" must be used as pipe bedding and surround material for storm sewers.

Stantec considers either material to be suitable for use as pipe bedding and surround, provided that, pipe zone bedding is compacted to 95% Modified Proctor Maximum Dry Density (MPMDD). Bedding shall be placed, spread, and compacted before the pipe is installed so that the pipe is uniformly supported along the barrel. Lifts of not more than 6 inches in thickness shall be placed and compacted along the sides of the

pipe to the height shown in the Standard Plans. Material shall be worked carefully under the pipe haunches and then compacted.

Additionally, per WSDOT2026, pipe zone bedding material shall provide uniform support along the entire pipe barrel, without load concentration at joint collars or bells. All adjustment to line and grade shall be made by scraping away or filling in with bedding material under the body of the pipe and not by blocking or wedging. Bedding disturbed by pipe movement, or by removal of shoring movement of a trench shield or box, shall be reconsolidated prior to backfill.

6.4 Trench Backfill and Compaction

All trench backfill above the pipe zone shall be placed in accordance with the City of Kirkland's Standard Specification Plan No. CK – D.02 *Storm Trench Detail*.

In paved areas, trench backfill above the pipe zone should consist of CSTC per WSDOT 2026 section 9-03.9(3) within 4-foot depth below the underside of pavement. Between 4-foot depth of the underside of pavement and the top of the pipe zone, trench backfill may consist of CSTC or an alternative backfill material approved by the Geotechnical Engineer. In unpaved areas, trench backfill may consist of CSTC or an alternative backfill material approved by the Geotechnical Engineer. The trench backfill should be placed in 12-inch-thick loose lifts and should be mechanically compacted to 95% MPMDD in paved areas, and 90% MPMDD in unpaved areas. Site review and testing of general backfill compaction should be carried out during construction, consisting of regular quality control testing by the Contractor.

Protruding rock, boulders, large cobbles, foreign material, and shoring must be removed to maintain a minimum clearance of 12 inches around all pipes and manholes before compaction.

6.4.1 Re-Use of Existing Materials as Backfill

The subsurface soils encountered within the anticipated trench extent in all boreholes except B-1 generally consisted of sand with silt content ranging from 7% to 24%. These materials are not anticipated to be broadly suitable for re-use as trench backfill due to measured fines contents greater than 10% per the specifications for CSTC provided in WSDOT 2026 section 9.03(9).

If the Contractor desires, based on the subsurface conditions encountered, and subject to City of Kirkland approval and completion of laboratory tests by the Contractor, the Contractor may request re-use of the native sandy soils as trench backfill (in place of CSTC) provided that the excavated material meets the specifications provided in WSDOT 2026 section 9.03(9), i.e., it is free of organics, debris, and deleterious materials; it is stockpiled and protected from moisture; and it can be compacted to at least 95% MPMDD.

Any stockpiled fills should be covered with polyethylene sheeting to provide protection against moisture and to prevent runoff. Erosion and sediment control will be necessary to prevent runoff from entering nearby waterbodies and watercourses. Different soil types should be handled in such a manner to minimize mixing and cross-contamination.

Any excavated soils proposed for re-use as fill should be free of organics, debris, and deleterious materials, and will be stockpiled and reviewed by the Geotechnical Engineer to confirm suitability prior to use. The

Contractor should not place any excavated soils without prior review and approval by the Geotechnical Engineer.

6.5 Pavement Restoration

Following completion of trench backfill, paved areas should be restored in accordance with City of Kirkland Standard Specification Plan No. CK – R.12 *Restoration Detail and Pavement Patching*, and to match the existing asphalt surface.

6.6 Geotechnical Field Review During Construction

Stantec should be retained to provide geotechnical field reviews during construction to verify that the subsurface conditions encountered are consistent with our design assumptions and that the work is being carried out in accordance with our recommendations. Field review by Stantec should include excavation subgrade review of soils proposed for use as structural fill and review of the placement and compaction of any subgrade and bedding fill soils.

7 Closure

This report was prepared for the exclusive use of the City of Kirkland for specific application to the City of Kirkland 108th Avenue NE Pipe Installation Project. Use of this report is subject to the Statement of General Conditions included in **Appendix A**. It is the responsibility of the City of Kirkland, who is identified as "the Client" within the Statement of General Conditions, to review the conditions and notify Stantec should any of them not be satisfied.

We trust that this report meets your present requirements. If you have any questions or require additional information, please contact the undersigned.

Regards,

Stantec Consulting Ltd.

Kootenay Alder EIT

Geotechnical Engineer
Phone: (604) 360-3635
Kootenay.Alder@stantec.com

Reviewed by:

Allison Pyrch PE, GE

Principal, Geotechnical Engineer
Phone: (971) 985-9313
Allison.Pyrch@stantec.com

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Appendix A Statement of General Conditions

Stantec

STATEMENT OF GENERAL CONDITIONS

USE OF THIS REPORT: This professional work product ("hereinafter referred to as the Report") has been prepared for the sole benefit of the Client in accordance with Stantec's contract with the Client. While the Report may be provided by the Client to applicable authorities having jurisdiction and to other third parties in connection with the project, Stantec disclaims any legal duty based upon warranty, reliance, or any other theory to any third party, and will not be liable to such third party for any damages or losses of any kind that may result.

BASIS OF THIS REPORT: This Report relates solely to the site-specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The information, opinions, conclusions and/or recommendations made in this Report are in accordance with Stantec's present understanding of the site-specific project as described by the Client. The applicability of these is restricted to the site conditions encountered at the time the scope of work was conducted and do not take into account any subsequent changes. If the proposed site-specific project differs or is modified from what is described in this Report or if the site conditions are altered, this Report is no longer valid unless Stantec is requested by the Client to review and revise the Report to reflect the differing or modified project specifics and/or the altered site conditions. This Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose or site, and any unauthorized use or reliance is at the recipient's own risk.

STANDARD OF CARE: Preparation of this Report, and all associated work, was carried out in accordance with the normally accepted standard of care in the state or province of execution for the specific professional service provided to the Client. No other warranty is made.

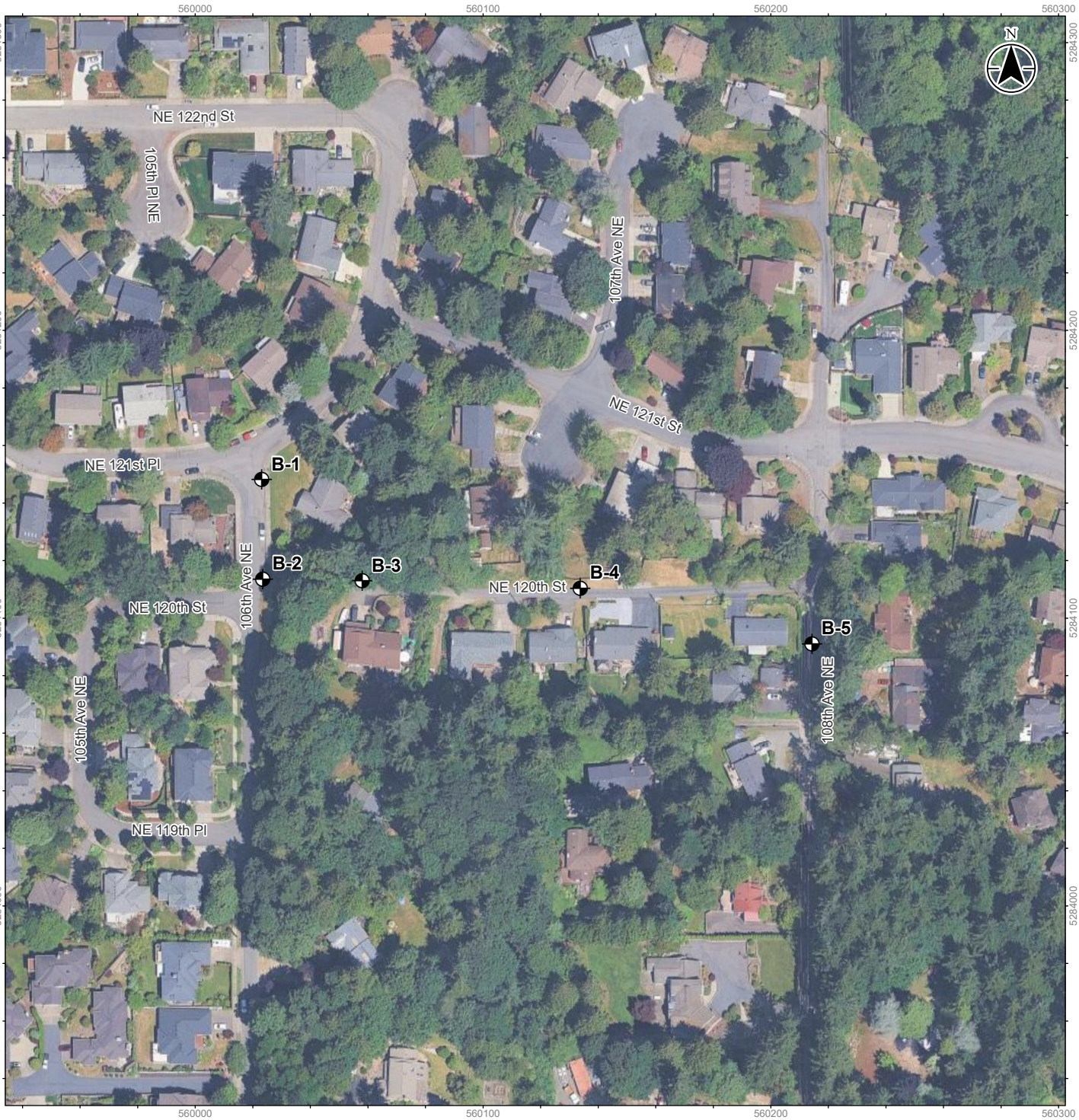
PROVIDED INFORMATION: Stantec has assumed all information received from the Client and third parties in the preparation of this Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

INTERPRETATION OF SITE CONDITIONS: Soil, rock, or other material descriptions, and statements regarding their condition, made in this Report are based on site conditions encountered by Stantec at the time of the scope of work and at the specific testing and/or sampling locations. Classifications and statements of condition have been made in accordance with normally accepted practices which are judgmental in nature; no specific description should be considered exact, but rather reflective of the anticipated material behaviour. Extrapolation of in-situ conditions can only be made to some limited extent beyond the sampling or test points. The extent depends on variability of the soil, rock and groundwater conditions as influenced by geological processes, construction activity, and site use.

VARYING OR UNEXPECTED CONDITIONS: Should any site or subsurface conditions be encountered that are different from those described in this Report or encountered at the test and/or sample locations, Stantec must be notified immediately to assess if the varying or unexpected conditions are substantial and if reassessments of the Report conclusions or recommendations are required. Stantec will not be responsible to any party for damages incurred as a result of failing to notify Stantec that differing site or subsurface conditions are present upon becoming aware of such conditions.

PLANNING, DESIGN, OR CONSTRUCTION: Development or design plans and specifications should be reviewed by Stantec geotechnical engineers, sufficiently ahead of initiating the next project stage (e.g., property acquisition, tender, construction, etc.), to confirm that this Report completely addresses the elaborated project specifics and that the contents of this Report have been properly interpreted. Specialty quality assurance services (e.g., field observations and testing) during construction are a necessary part of the evaluation of subsurface conditions and site work. Site work relating to the recommendations included in this Report should only be carried out in the presence of a qualified geotechnical engineer; Stantec cannot be responsible for site work carried out without being present.

Appendix B Borehole Location Plan



Notes:
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Data Sources: Local Agency Public Road - Line: Washington State Department of Transportation
Satellite: © OpenStreetMap (and) contributors, CC-BY-SA

Borehole Locations

0 10 20 30 40 50 m
1:2,000 (at original document size of 8.5x11)

Stantec

Project Location:
108th Avenue, City of Kirkland
Washington, USA
10T 560118 5284119

Project Number: 2002006449
Requested by KALDER 20251105
Prepared by RCOATTA 20251105
Checked by KALDER 20251105

Client/Project/Report
City of Kirkland
108th Avenue NE Pipe Installation Project

Figure No.
1

Page No.
1 of 1

Title
Borehole Location Plan

\\CA0183-PBAGF01\Workgroup\1232\projects\2002006449\figures\borehole_location_plan\borehole_location_plan.aprx Layout: fig_01_borehole_location_plan Map: Main Revised: 2025-11-05 Bycoatta

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data.
The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Appendix C Borehole Records

BOREHOLE RECORD

B-1

CLIENT: **City of Kirkland**
PROJECT: **108th Avenue NE Pipe Installation Project**
LOCATION: **Kirkland, WA**
DATE BORED: **September 9, 2025**

BH COORDINATES [UTM10] 47.70793N -122.19987E
PROJECT NO. : **2002006449**
BH ELEVATION: **179 ft**
DATUM: **WGS84**
WATER LEVEL: **3.5' during drilling**

DEPTH (ft)	ELEVATION (ft)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (in)	SAMPLES N-VALUE or RQD %	OTHER TESTS / REMARKS
0	179.0							
0	178.8	ASPHALT (3")						
1		FILL: sand with gravel and silt		SS	01	10		
2								
3				SS	02	7		Sieve at 2.5 ft G S Fines 29% 61% 11%
4								
5	174.0							
5		Dense brown to blueish grey SILT (ML) - non-plastic - dry to moist		SS	03	18	45	
6								
7								
8		- with sand, wet at 7.5'		SS	04	18	47	
9								
10								
11				SS	05	18	45	
12	166.5							
13	165.5	Hard brown lean CLAY (CL) with sand - low plasticity - moist		SS	06	18	43	Sieve at 12.5 ft G S Fines 0% 22% 78%
14	164.0	Dense light brown poorly graded SAND (SP) - coarse sand - moist						
15		End of Borehole at 15' - Soil conditions below 14' are inferred - Borehole backfill details as shown						
16								
17								
18								
19								
20								

UNDRAINED SHEAR STRENGTH, Cu (ksf)
LABORATORY TEST ▲ FIELD VANE TEST ◆
POCKET PEN. ★ POCKET SHEAR VANE ◘
50 kPa 100 kPa 150 kPa 200 kPa
WATER CONTENT & ATTERBERG LIMITS W_P W W_L
SPT (N-value) BLOWS/ft
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80

BACKFILL/ MONITOR WELL/ PIEZOMETER

ELEVATION (ft): 179 178 177 176 175 174 173 172 171 170 169 168 167 166 165 164 163 162 161 160 159

▽ Water Level Observed During Drilling

BACKFILL SYMBOL
ASPHALT GROUT CONCRETE
BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Holt Services Inc.
Drilling Method: Hollow-Stem Auger
Completion Depth: 15 ft

Logged By: TGS
Reviewed By: KA
Page 1 of 1

Printed Nov 3 2025 13:53:11 STANTEC GEO 2016 2002006449_108TH_AVE_BH_LOGS.GPJ MASTER1.GDT 11/3/25

BOREHOLE RECORD

B-2

Stantec

CLIENT: **City of Kirkland**
PROJECT: **108th Avenue NE Pipe Installation Project**
LOCATION: **Kirkland, WA**
DATE BORED: **September 9, 2025**

BH COORDINATES [UTM10] 47.70762N -122.19987E
PROJECT NO. : **2002006449**
BH ELEVATION: **185 ft**
DATUM: **WGS84**
WATER LEVEL: **7.5' during drilling**

UNDRAINED SHEAR STRENGTH, Cu (ksf)
LABORATORY TEST ▲ FIELD VANE TEST ◆
POCKET PEN. ★ POCKET SHEAR VANE ◘
50 kPa 100 kPa 150 kPa 200 kPa
WATER CONTENT & ATTERBERG LIMITS W_P W W_L
SPT (N-value) BLOWS/ft
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80

DEPTH (ft)	ELEVATION (ft)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (in)	SAMPLES N-VALUE or RQD %	OTHER TESTS / REMARKS
0	185.0							
	184.8	ASPHALT						
1		FILL: sand with gravel, trace wood debris		SS	01	5		
2								
3				SS	02	7		
4								
5	179.5			SS	03	10	6	Sieve/Hydro at 5.0 ft G 2% S 86% M 7% C 5%
6		Loose brown to light brown silty SAND (SM) - trace gravel - medium to fine sand - moist to wet						
7								
		▽ - wet below 7.5'						
8				SS	04	18	9	
9								
10	175.0							
		Dense brown to light brown silty SAND (SM) - medium to fine sand - moist to wet		SS	05	18	28	Sieve/Hydro at 10.0 ft G 0% S 68% M 27% C 6%
11								
12								
13				SS	06	18	43	
14								
15	170.0	End of Borehole at 15' - Soil conditions below 14' are inferred - Borehole backfill details as shown						
16								
17								
18								
19								
20								

BACKFILL/MONITOR WELL/PIEZOMETER

ELEVATION (ft): 185, 184, 183, 182, 181, 180, 179, 178, 177, 176, 175, 174, 173, 172, 171, 170, 169, 168, 167, 166, 165

▽ Water Level Observed During Drilling

BACKFILL SYMBOL
BENTONITE ASPHALT DRILL CUTTINGS GROUT SAND CONCRETE SLOUGH

Drilling Contractor: Holt Services Inc.
Drilling Method: Hollow-Stem Auger
Completion Depth: 15 ft

Logged By: TGS
Reviewed By: KA
Page 1 of 1

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Stantec

BOREHOLE RECORD

B-3

CLIENT: **City of Kirkland**
PROJECT: **108th Avenue NE Pipe Installation Project**
LOCATION: **Kirkland, WA**
DATE BORED: **September 10, 2025**

BH COORDINATES [UTM10] 47.70761N -122.19941E
PROJECT NO. : **2002006449**
BH ELEVATION: **209 ft**
DATUM: **WGS84**
WATER LEVEL: **Not observed**

DEPTH (ft)	ELEVATION (ft)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (in)	SAMPLES N-VALUE or RQD %	OTHER TESTS / REMARKS
0	209.0							
0		Air knife; no sample taken from 0.0' - 2.5'						
2	206.5							
3		Loose to compact brown silty SAND (SM) - fine sand - moist		SS	01			
5				SS	02	13	8	Sieve/Hydro at 5.0 ft G 1% S 84% M 9% C 6%
8				SS	03	16	14	
10	199.0							
10		Dense to very dense brown poorly graded SAND (SP-SM) with silt - medium to coarse sand - moist		SS	04	18	43	Sieve/Hydro at 10.0 ft G 0% S 89% M 7% C 4%
13				SS	05	18	80	
15				SS	06	18	77	
20								

UNDRAINED SHEAR STRENGTH, Cu (ksf)
LABORATORY TEST ▲ FIELD VANE TEST ◆
POCKET PEN. ★ POCKET SHEAR VANE ◘
50 kPa 100 kPa 150 kPa 200 kPa
WATER CONTENT & ATTERBERG LIMITS W_P W W_L
SPT (N-value) BLOWS/ft
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80

BACKFILL/ MONITOR WELL/ PIEZOMETER

ELEVATION (ft): 209 208 207 206 205 204 203 202 201 200 199 198 197 196 195 194 193 192 191 190 189

BACKFILL SYMBOL
ASPHALT GROUT CONCRETE
BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Holt Services Inc.
Drilling Method: Mud Rotary
Completion Depth: 50 ft

Logged By: TGS
Reviewed By: KA

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Stantec

BOREHOLE RECORD

B-3

CLIENT: **City of Kirkland**

PROJECT: **108th Avenue NE Pipe Installation Project**

LOCATION: **Kirkland, WA**

DATE BORED: **September 10, 2025**

BH COORDINATES [UTM10] 47.70761N -122.19941E

PROJECT NO. : **2002006449**

BH ELEVATION: **209 ft**

DATUM: **WGS84**

WATER LEVEL: **Not observed**

DEPTH (ft)	ELEVATION (ft)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (in)	SAMPLES N-VALUE or RQD %	OTHER TESTS / REMARKS
20		Dense to very dense brown poorly graded SAND (SP-SM) with silt - medium to coarse sand - moist		SS	07	18	74	
25				SS	08	18		
30				SS	09	18	90	
40	169.0							

UNDRAINED SHEAR STRENGTH, Cu (ksf)

LABORATORY TEST ▲ FIELD VANE TEST ◆

POCKET PEN. ★ POCKET SHEAR VANE ◘

50 kPa 100 kPa 150 kPa 200 kPa

WATER CONTENT & ATTERBERG LIMITS W_P W W_L

SPT (N-value) BLOWS/ft

Water Content (%) and Blow Count

10 20 30 40 50 60 70 80

BACKFILL/ MONITOR WELL/ PIEZOMETER

ELEVATION (ft)

189 188 187 186 185 184 183 182 181 180 179 178 177 176 175 174 173 172 171 170 169

BACKFILL SYMBOL: ASPHALT, GROUT, CONCRETE, BENTONITE, DRILL CUTTINGS, SAND, SLOUGH

Drilling Contractor: Holt Services Inc.

Drilling Method: Mud Rotary

Completion Depth: 50 ft

Logged By: TGS

Reviewed By: KA

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Stantec

BOREHOLE RECORD

B-3

CLIENT: **City of Kirkland**
PROJECT: **108th Avenue NE Pipe Installation Project**
LOCATION: **Kirkland, WA**
DATE BORED: **September 10, 2025**

BH COORDINATES [UTM10] 47.70761N -122.19941E
PROJECT NO. : **2002006449**
BH ELEVATION: **209 ft**
DATUM: **WGS84**
WATER LEVEL: **Not observed**

DEPTH (ft)	ELEVATION (ft)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (in)	SAMPLES N-VALUE or RQD %	OTHER TESTS / REMARKS
40		Hard grey to blue grey lean CLAY (CL) - low plasticity - moist		SS	10	18	80	
50	159.0	End of Borehole at 50' - Soil conditions below 41.5' are inferred - Borehole backfill details as shown						

UNDRAINED SHEAR STRENGTH, Cu (ksf)
LABORATORY TEST ▲ FIELD VANE TEST ◆
POCKET PEN. ★ POCKET SHEAR VANE ◘
50 kPa 100 kPa 150 kPa 200 kPa
WATER CONTENT & ATTERBERG LIMITS W_P W W_L
SPT (N-value) BLOWS/ft ●
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80

BACKFILL/ MONITOR WELL/ PIEZOMETER

ELEVATION (ft): 169 168 167 166 165 164 163 162 161 160 159 158 157 156 155 154 153 152 151 150 149

BACKFILL SYMBOL
ASPHALT GROUT CONCRETE
BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Holt Services Inc.
Drilling Method: Mud Rotary
Completion Depth: 50 ft

Logged By: TGS
Reviewed By: KA
Page 3 of 3

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Stantec

BOREHOLE RECORD

B-4

CLIENT: **City of Kirkland**
PROJECT: **108th Avenue NE Pipe Installation Project**
LOCATION: **Kirkland, WA**
DATE BORED: **September 10, 2025**

BH COORDINATES [UTM10] 47.70758N -122.19840E
WATER LEVEL: **Not observed**

PROJECT NO. : **2002006449**
BH ELEVATION: **241 ft**
DATUM: **WGS84**

DEPTH (ft)	ELEVATION (ft)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (in)	SAMPLES N-VALUE or RQD %	OTHER TESTS / REMARKS
0	241.0							
0	240.6	TOPSOIL						
0		Very dense brown poorly graded SAND (SP-SM) with silt - medium to fine sand - moist		SS	01	17		
3				SS	02	18		
5				SS	03	18	53	Sieve/Hydro at 5.0 ft G 0% S 93% M 4% C 3%
8				SS	04	18	65	
10				SS	05	18	70	
13				SS	06	18	58	
15	226.0	End of Borehole at 15' - Soil conditions below 14' are inferred - Borehole backfill details as shown						

UNDRAINED SHEAR STRENGTH, Cu (ksf)
LABORATORY TEST ▲ FIELD VANE TEST ◆
POCKET PEN. ★ POCKET SHEAR VANE ◘
50 kPa 100 kPa 150 kPa 200 kPa
WATER CONTENT & ATTERBERG LIMITS W_P W W_L
SPT (N-value) BLOWS/ft
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80

BACKFILL/ MONITOR WELL/ PIEZOMETER

ELEVATION (ft)
241 240 239 238 237 236 235 234 233 232 231 230 229 228 227 226 225 224 223 222 221

BACKFILL SYMBOL
ASPHALT GROUT CONCRETE
BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Holt Services Inc.
Drilling Method: Hollow-Stem Auger
Completion Depth: 15 ft

Logged By: TGS
Reviewed By: KA
Page 1 of 1

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BOREHOLE RECORD

B-5

CLIENT: **City of Kirkland**
PROJECT: **108th Avenue NE Pipe Installation Project**
LOCATION: **Kirkland, WA**
DATE BORED: **September 10, 2025**

BH COORDINATES [UTM10] 47.70740N -122.19733E
PROJECT NO. : **2002006449**
BH ELEVATION: **263 ft**
DATUM: **WGS84**
WATER LEVEL: **Not observed**

DEPTH (ft)	ELEVATION (ft)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (in)	SAMPLES N-VALUE or RQD %	OTHER TESTS / REMARKS
0	263.0							
0	262.6	TOPSOIL						
0		Compact to dense brown to dark brown silty SAND (SM) - trace gravel - fine to medium sand - moist		SS	01	5		
3				SS	02	14		Sieve at 2.5 ft G 3% S 73% Fines 24%
6				SS	03	14	22	
8				SS	04	18	33	Sieve/Hydro at 7.5 ft G 1% S 86% M 7% C 7%
10	253.0	Very dense to dense brown to dark brown poorly graded SAND (SP-SM) with silt and gravel - medium sand - moist		SS	05	15	70	Sieve/Hydro at 10.0 ft G 15% S 75% M 6% C 4%
13				SS	06	18	45	
15	248.0	End of Borehole at 15' - Soil conditions below 14' are inferred - Borehole backfill details as shown						

UNDRAINED SHEAR STRENGTH, Cu (ksf)
LABORATORY TEST ▲ FIELD VANE TEST ◆
POCKET PEN. ★ POCKET SHEAR VANE ◘
50 kPa 100 kPa 150 kPa 200 kPa
WATER CONTENT & ATTERBERG LIMITS W_P W W_L
SPT (N-value) BLOWS/ft
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80

BACKFILL/ MONITOR WELL/ PIEZOMETER

ELEVATION (ft): 263 262 261 260 259 258 257 256 255 254 253 252 251 250 249 248 247 246 245 244 243

BACKFILL SYMBOL
ASPHALT GROUT CONCRETE
BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Holt Services Inc.
Drilling Method: Hollow-Stem Auger
Completion Depth: 15 ft

Logged By: TGS
Reviewed By: KA

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Appendix D Laboratory Test Results

Stantec

Gradation Analysis

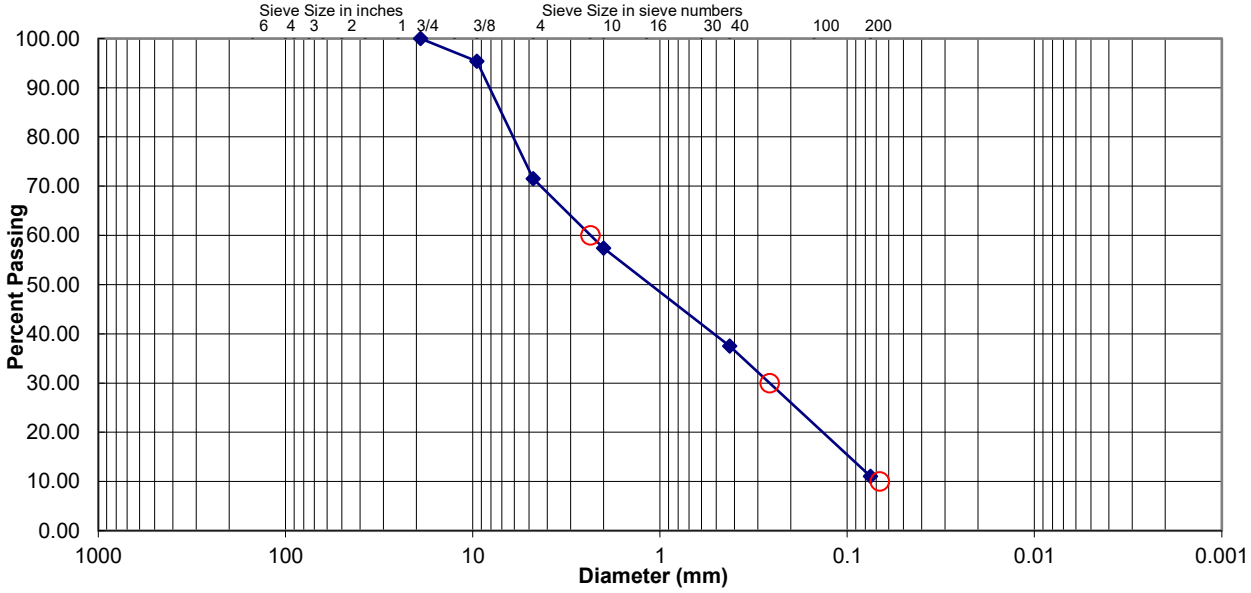
ASTM D 422

Project Name	108th Pipe	Project Number	2002006449
Source	B-1, 2.5'-5.0'	Lab ID	2
Preparation Method	ASTM D 1140 Method A	Date Received	10-10-2025
Soak Time (min)	300	Preparation Date	10-16-2025
Particle Shape	Rounded	Test Date	10-20-2025
Particle Hardness	Hard and Durable		
Sample Dry Mass (g)	224.51	Analysis Based on Total Sample.	
Moisture Content (%)	17.4		

Sieve Size	Grams Retained	% Retained	% Passing
3/4"	0.00	0.0	100.0
3/8"	10.35	4.6	95.4
No. 4	53.56	23.9	71.5
No. 10	31.75	14.1	57.4
No. 40	44.58	19.9	37.5
No. 200	59.49	26.5	11.0
Pan	24.78	11.0	---

% Gravel	28.5
% Sand	60.5
% Fines	11.0
Fines Classification	N/A
D_{10} (mm)	0.0671
D_{30} (mm)	0.2595
D_{60} (mm)	2.3459
Cu	34.97
Cc	0.43

Particle Size Distribution



Comments

Reviewed By RJ

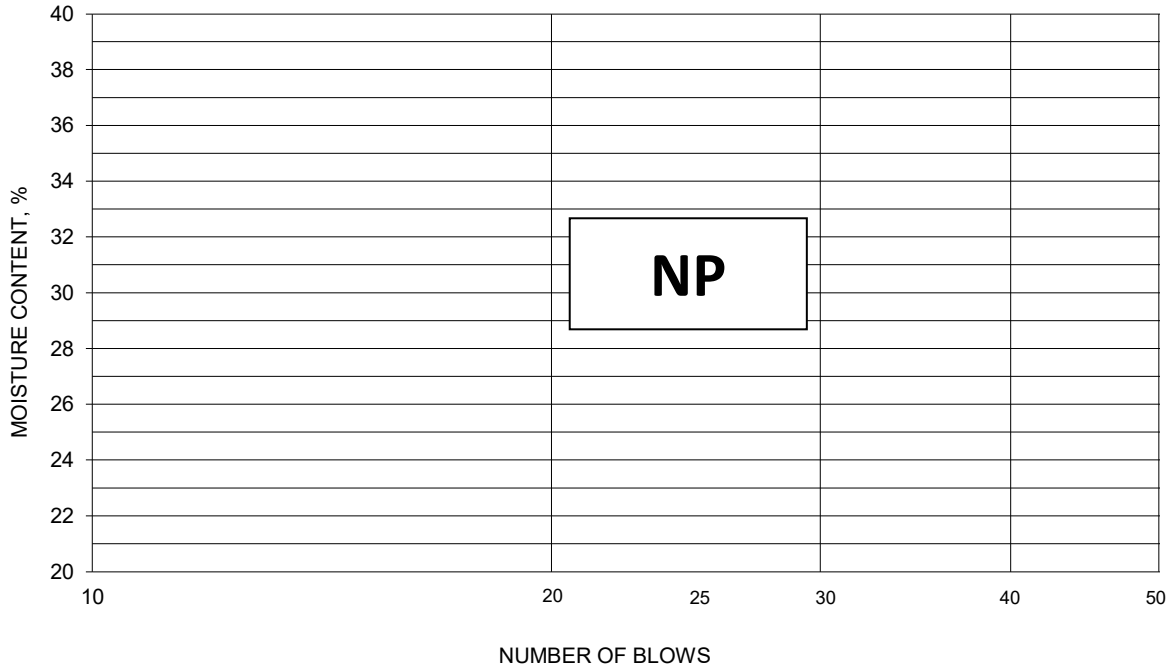
Stantec

ATTERBERG LIMITS

Project	108th Pipe			Project No.	2002006449
Source	B-1, 5.0'-7.5'			Lab ID	3
Tested By	DB	Test Method	ASTM D 4318 Method A	% + No. 40	5
Test Date	10-17-2025	Prepared	Dry	Date Received	10-10-2025

Wet Soil and Tare Mass (g)	Dry Soil and Tare Mass (g)	Tare Mass (g)	Number of Blows	Water Content (%)	Liquid Limit

Liquid Limit



PLASTIC LIMIT AND PLASTICITY INDEX

Wet Soil and Tare Mass (g)	Dry Soil and Tare Mass (g)	Tare Mass (g)	Water Content (%)	Plastic Limit	Plasticity Index

Comments _____

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Gradation Analysis

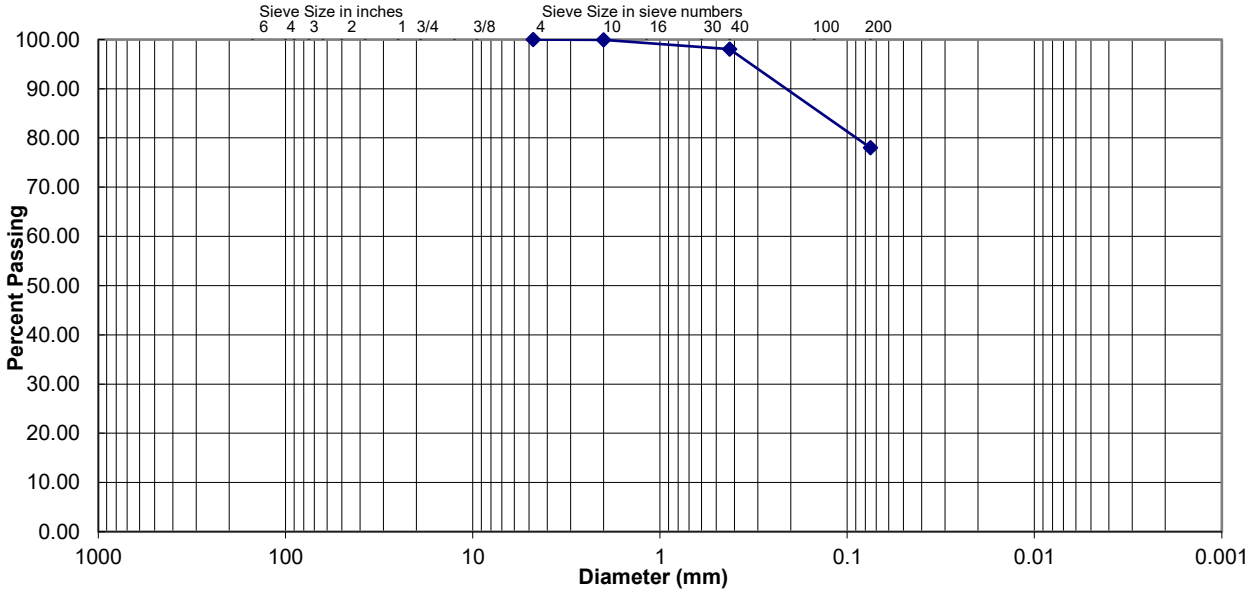
ASTM D 422

Project Name	108th Pipe	Project Number	2002006449
Source	B-1, 12.5'-15.0'	Lab ID	6
Preparation Method	ASTM D 1140 Method A	Date Received	10-10-2025
Soak Time (min)	330	Preparation Date	10-16-2025
Particle Shape	Rounded	Test Date	10-20-2025
Particle Hardness	Hard and Durable		
Sample Dry Mass (g)	285.57	Analysis Based on Total Sample.	
Moisture Content (%)	23.9		

Sieve Size	Grams Retained	% Retained	% Passing
No. 4	0.00	0.0	100.0
No. 10	0.17	0.1	99.9
No. 40	5.53	1.9	98.0
No. 200	57.11	20.0	78.0
Pan	222.76	78.0	---

% Gravel	0.0
% Sand	22.0
% Fines	78.0
Fines Classification	N/A
D_{10} (mm)	N/A
D_{30} (mm)	N/A
D_{60} (mm)	N/A
Cu	N/A
Cc	N/A

Particle Size Distribution



Comments

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Stantec

Particle-Size Analysis of Soils
ASTM D 422

Project Name	108th Pipe	Project Number	2002006449
Source	B-2, 5.0'-7.5'	Lab ID	9

Sieve Analysis for the Portion Coarser than the No. 10 Sieve

Test Method	ASTM D 422
Prepared Using	ASTM D 421
Particle Shape:	Angular
Particle Hardness:	Hard and Durable
Tested By	AD
Test Date	10-20-2025
Date Received	10-10-2025

Maximum Particle Size: 3/8" Sieve

Sieve Size	% Passing
3/8"	100.0
No. 4	98.4
No. 10	96.5

D_{60} (mm)	0.263
D_{30} (mm)	0.120
D_{10} (mm)	0.040
Cc	1.35
Cu	6.51

Analysis for the Portion Finer than the No. 10 Sieve

Analysis Based on -3 inch Fraction Only

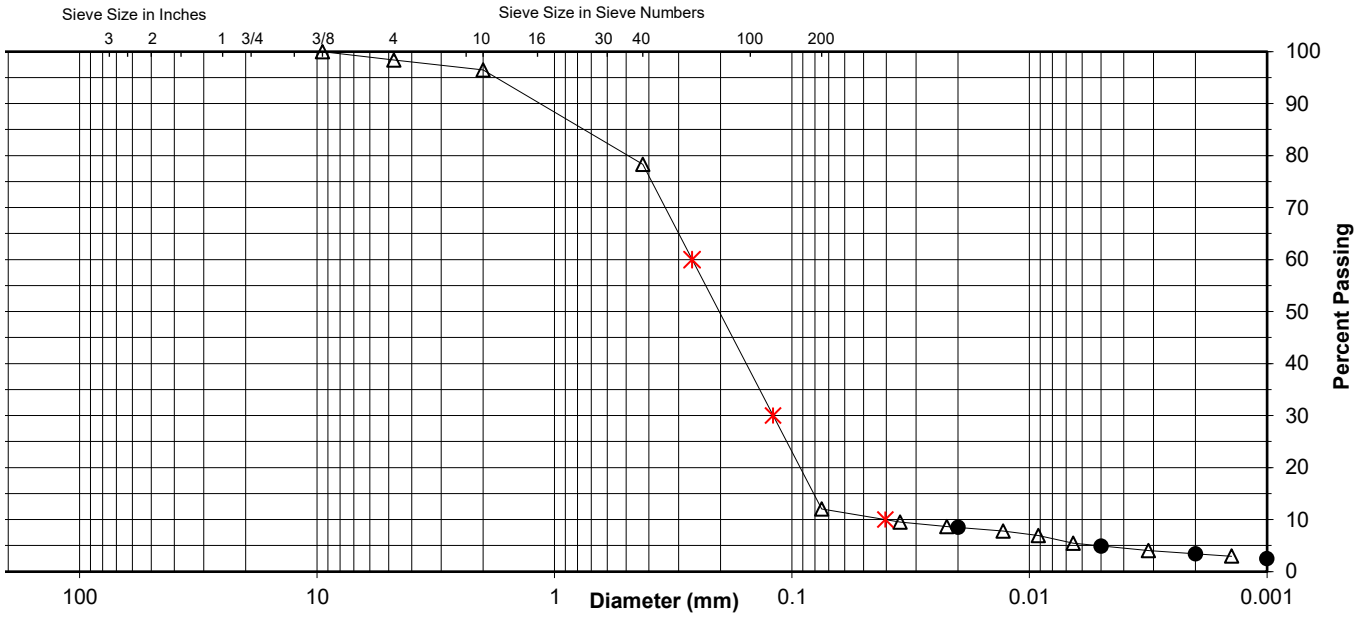
Specific Gravity 2.7

Dispersed Using Apparatus A - Mechanical, for 1 Minute

No. 40	78.3
No. 200	12.0
0.02 mm	8.5
0.005 mm	4.9
0.002 mm	3.4
0.001 mm	2.5

Particle Size Distribution

ASTM	Coarse Gravel	Fine Gravel	C. Sand	Medium Sand	Fine Sand	Silt	Clay
	0.0	1.6	1.9	18.2	66.3	7.1	4.9
AASHTO	Gravel			Coarse Sand	Fine Sand	Silt	Clay
	3.5			18.2	66.3	8.6	3.4



Comments

Reviewed By RJ

Stantec

Particle-Size Analysis of Soils
ASTM D 422

Project Name 108th Pipe
Source B-2, 10.0'-12.5'

Project Number 2002006449
Lab ID 11

Sieve Analysis for the Portion Coarser than the No. 10 Sieve

Test Method ASTM D 422
Prepared Using ASTM D 421

Particle Shape: Angular
Particle Hardness: Hard and Durable

Tested By TRH
Test Date 10-17-2025
Date Received 10-10-2025

Maximum Particle Size: 3/8" Sieve

Sieve Size	% Passing
3/8"	100.0
No. 4	99.9
No. 10	99.3

Analysis for the Portion Finer than the No. 10 Sieve

Analysis Based on -3 inch Fraction Only

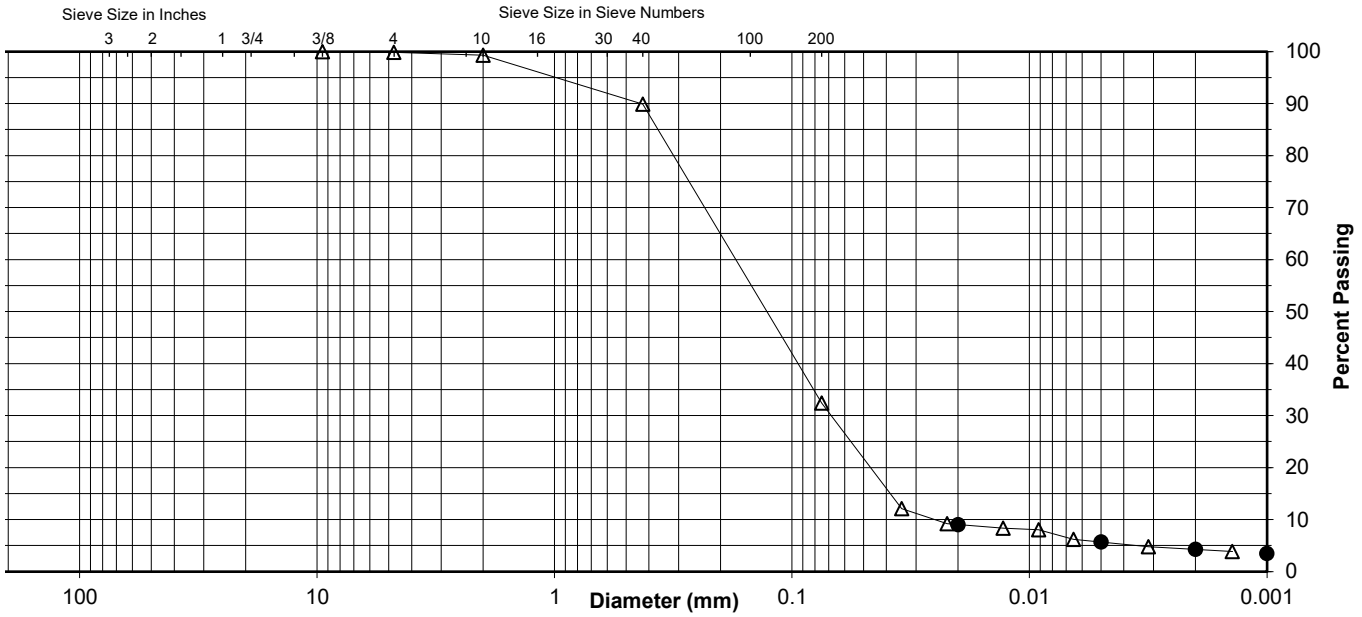
Specific Gravity 2.7

Dispersed Using Apparatus A - Mechanical, for 1 Minute

No. 40	89.9
No. 200	32.4
0.02 mm	9.0
0.005 mm	5.7
0.002 mm	4.3
0.001 mm	3.5

Particle Size Distribution

ASTM	Coarse Gravel	Fine Gravel	C. Sand	Medium Sand	Fine Sand	Silt	Clay
	0.0	0.1	0.6	9.4	57.5	26.7	5.7
AASHTO	Gravel			Coarse Sand	Fine Sand	Silt	Clay
	0.7			9.4	57.5	28.1	4.3



Comments

Reviewed By RJ

Stantec

Particle-Size Analysis of Soils
ASTM D 422

Project Name 108th Pipe
Source B-3, 5.0'-7.5'

Project Number 2002006449
Lab ID 14

Sieve Analysis for the Portion Coarser than the No. 10 Sieve

Test Method ASTM D 422
Prepared Using ASTM D 421

Particle Shape: Angular
Particle Hardness: Hard and Durable

Tested By TRH
Test Date 10-17-2025
Date Received 10-10-2025

Maximum Particle Size: 3/4" Sieve

Sieve Size	% Passing
3/4"	100.0
3/8"	99.1
No. 4	99.0
No. 10	98.9

Analysis for the Portion Finer than the No. 10 Sieve

Analysis Based on -3 inch Fraction Only

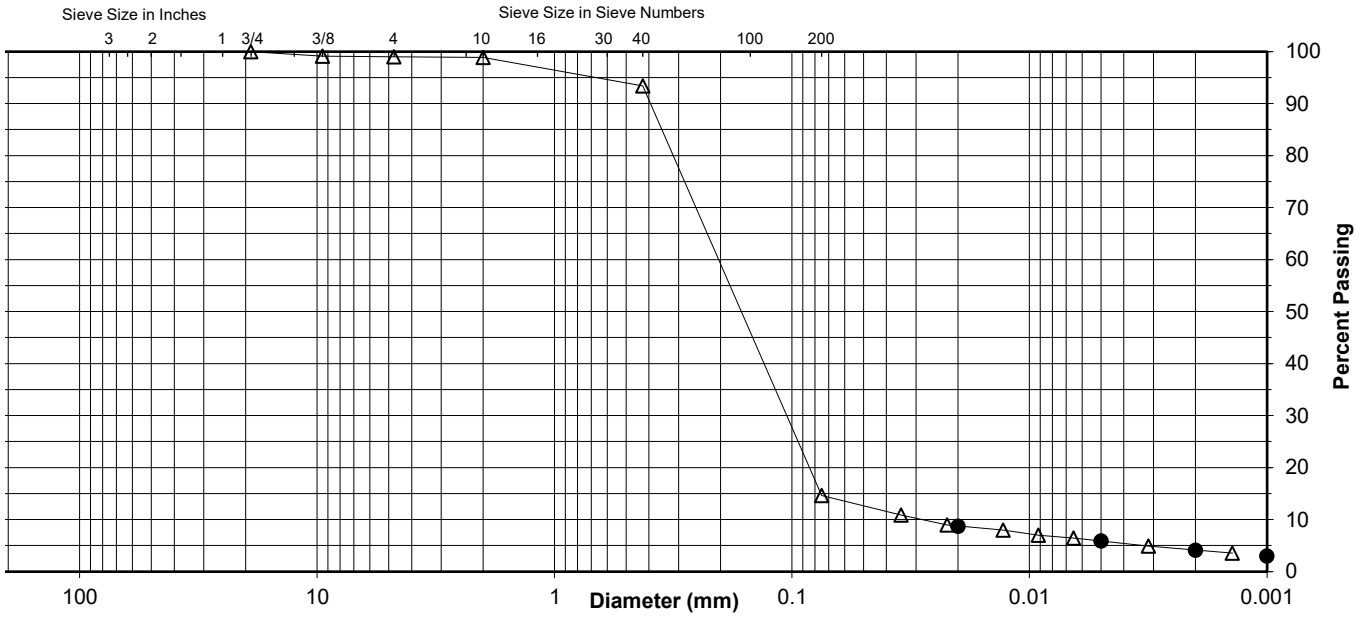
Specific Gravity 2.7

Dispersed Using Apparatus A - Mechanical, for 1 Minute

No. 40	93.4
No. 200	14.6
0.02 mm	8.7
0.005 mm	5.9
0.002 mm	4.1
0.001 mm	3.0

Particle Size Distribution

ASTM	Coarse Gravel	Fine Gravel	C. Sand	Medium Sand	Fine Sand	Silt	Clay
	0.0	1.0	0.1	5.5	78.8	8.7	5.9
AASHTO	Gravel			Coarse Sand	Fine Sand	Silt	Clay
	1.1			5.5	78.8	10.5	4.1



Comments

Reviewed By RJ

Stantec

Particle-Size Analysis of Soils
ASTM D 422

Project Name	108th Pipe	Project Number	2002006449
Source	B-3, 10.0'-12.5'	Lab ID	16

Sieve Analysis for the Portion Coarser than the No. 10 Sieve

Test Method	ASTM D 422
Prepared Using	ASTM D 421
Particle Shape:	Angular
Particle Hardness:	Hard and Durable
Tested By	TRH
Test Date	10-17-2025
Date Received	10-10-2025

Maximum Particle Size: 3/8" Sieve

Sieve Size	% Passing
3/8"	100.0
No. 4	99.9
No. 10	99.5

D_{60} (mm)	0.407
D_{30} (mm)	0.145
D_{10} (mm)	0.064
Cc	0.81
Cu	6.35

Analysis for the Portion Finer than the No. 10 Sieve

Analysis Based on -3 inch Fraction Only

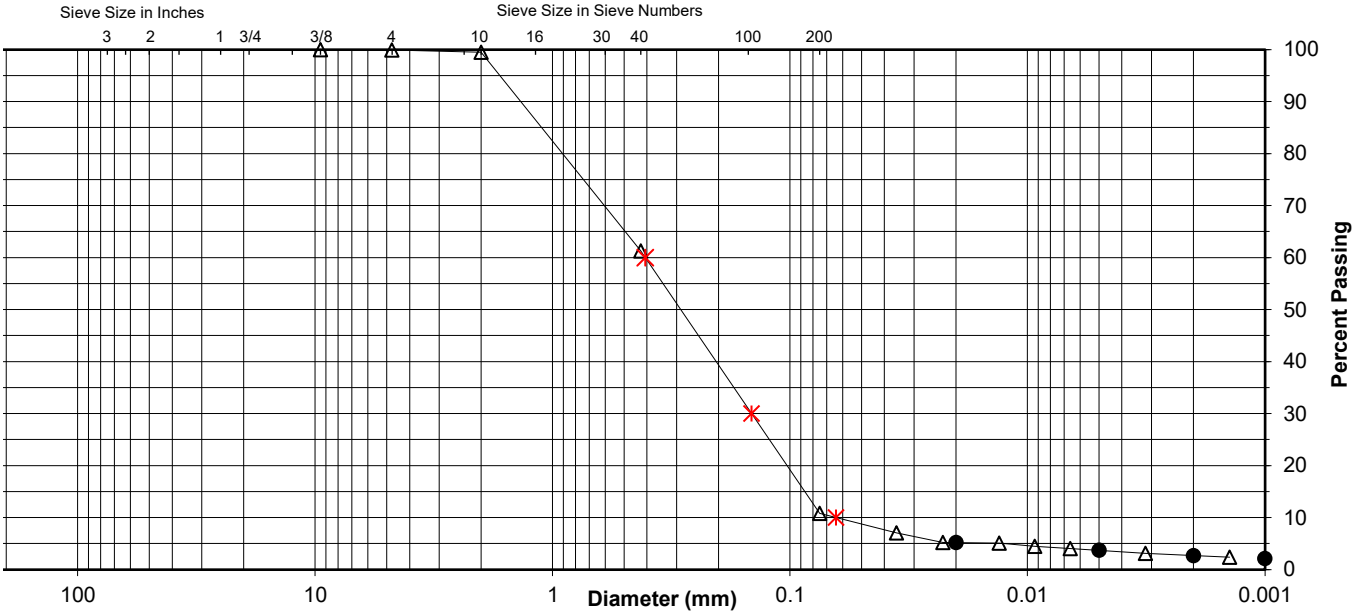
Specific Gravity 2.7

Dispersed Using Apparatus A - Mechanical, for 1 Minute

No. 40	61.3
No. 200	10.8
0.02 mm	5.2
0.005 mm	3.7
0.002 mm	2.7
0.001 mm	2.1

Particle Size Distribution

ASTM	Coarse Gravel	Fine Gravel	C. Sand	Medium Sand	Fine Sand	Silt	Clay
	0.0	0.1	0.4	38.2	50.5	7.1	3.7
AASHTO	Gravel			Coarse Sand	Fine Sand	Silt	Clay
	0.5			38.2	50.5	8.1	2.7



Comments

Reviewed By RJ

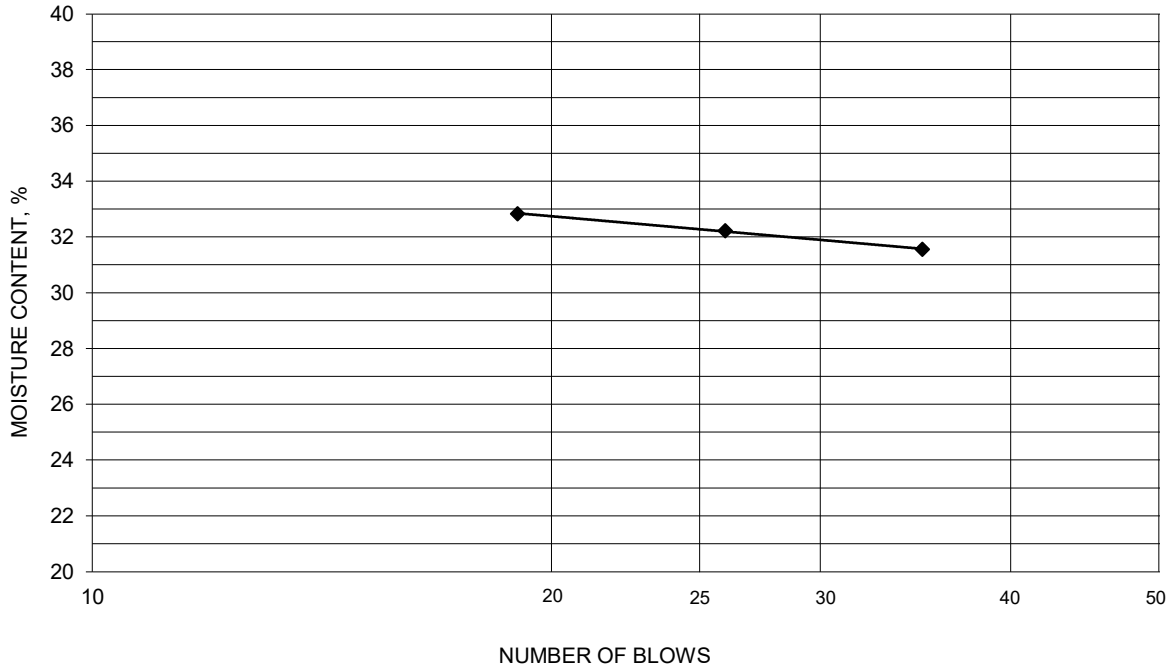
Stantec

ATTERBERG LIMITS

Project	108th Pipe			Project No.	2002006449
Source	B-3, 40.0'-50.0'			Lab ID	22
Tested By	NSC	Test Method	ASTM D 4318 Method A	% + No. 40	5
Test Date	10-21-2025	Prepared	Dry	Date Received	10-10-2025

Wet Soil and Tare Mass (g)	Dry Soil and Tare Mass (g)	Tare Mass (g)	Number of Blows	Water Content (%)	Liquid Limit
19.75	17.56	10.89	19	32.8	
20.00	17.87	11.26	26	32.2	
20.74	18.49	11.36	35	31.6	32

Liquid Limit



PLASTIC LIMIT AND PLASTICITY INDEX

Wet Soil and Tare Mass (g)	Dry Soil and Tare Mass (g)	Tare Mass (g)	Water Content (%)	Plastic Limit	Plasticity Index
17.55	16.38	11.32	23.1	23	9
17.29	16.10	10.88	22.8		

Comments _____

Reviewed By RJ

Stantec

Particle-Size Analysis of Soils
ASTM D 422

Project Name	108th Pipe	Project Number	2002006449
Source	B-4, 5.0'-7.5'	Lab ID	25

Sieve Analysis for the Portion Coarser than the No. 10 Sieve

Test Method	ASTM D 422
Prepared Using	ASTM D 421
Particle Shape:	Angular
Particle Hardness:	Hard and Durable
Tested By	TRH
Test Date	10-17-2025
Date Received	10-10-2025

Maximum Particle Size: No. 4 Sieve

Sieve Size	% Passing
No. 4	100.0
No. 10	99.7

D_{60} (mm)	0.405
D_{30} (mm)	0.156
D_{10} (mm)	0.082
Cc	0.73
Cu	4.92

Analysis for the Portion Finer than the No. 10 Sieve

Analysis Based on -3 inch Fraction Only

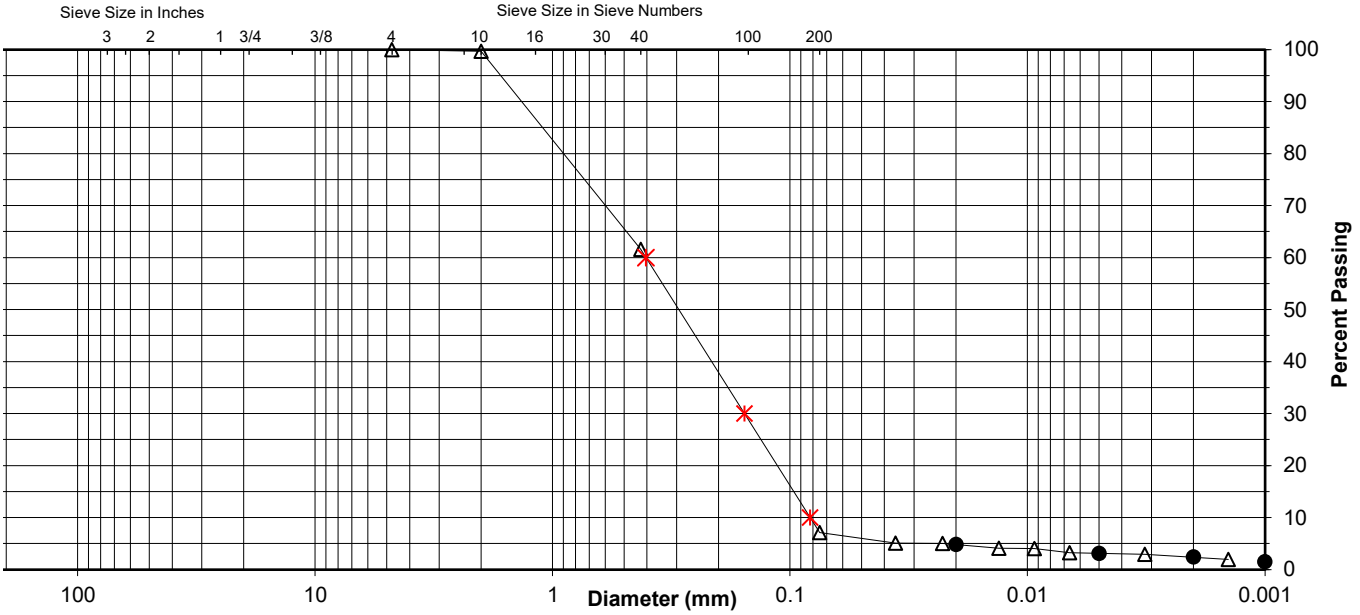
Specific Gravity 2.7

Dispersed Using Apparatus A - Mechanical, for 1 Minute

No. 40	61.6
No. 200	7.1
0.02 mm	4.8
0.005 mm	3.1
0.002 mm	2.4
0.001 mm	1.5

Particle Size Distribution

	Coarse Gravel	Fine Gravel	C. Sand	Medium Sand	Fine Sand	Silt	Clay
ASTM	0.0	0.0	0.3	38.1	54.5	4.0	3.1
AASHTO	Gravel			Coarse Sand	Fine Sand	Silt	Clay
	0.3			38.1	54.5	4.7	2.4



Comments

Reviewed By RJ

Stantec

Gradation Analysis

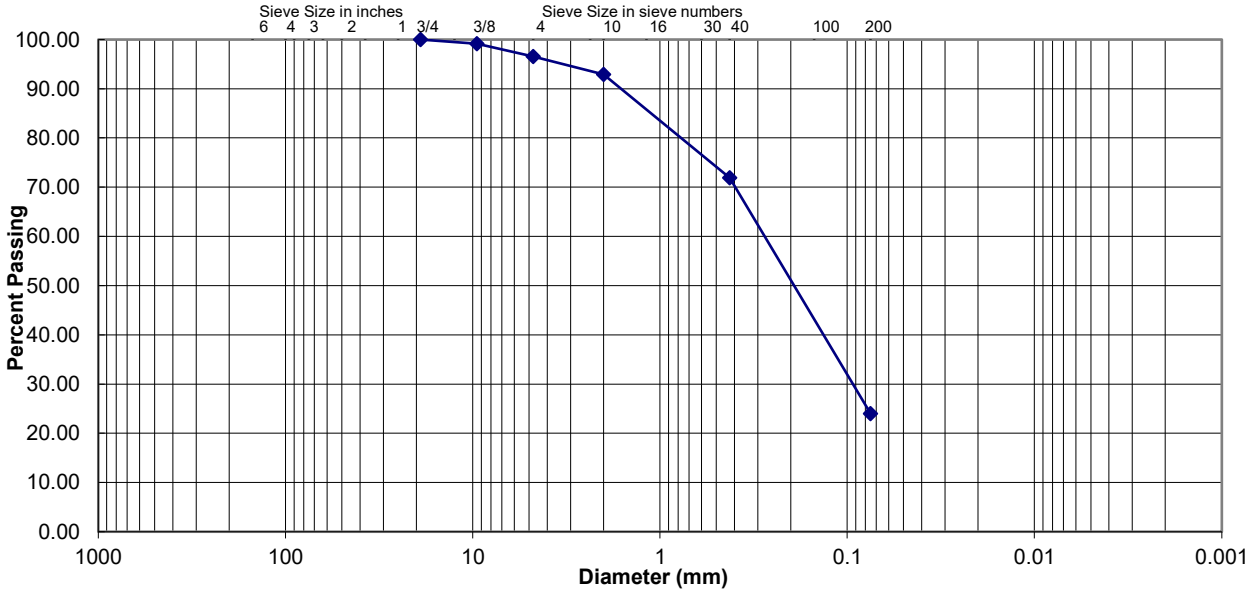
ASTM D 422

Project Name	108th Pipe	Project Number	2002006449
Source	B-5, 2.5'-5.0'	Lab ID	30
Preparation Method	ASTM D 1140 Method A	Date Received	10-10-2025
Soak Time (min)	360	Preparation Date	10-16-2025
Particle Shape	Rounded	Test Date	10-20-2025
Particle Hardness	Hard and Durable		
Sample Dry Mass (g)	253.43	Analysis Based on Total Sample.	
Moisture Content (%)	5.7		

Sieve Size	Grams Retained	% Retained	% Passing
3/4"	0.00	0.0	100.0
3/8"	2.11	0.8	99.2
No. 4	6.59	2.6	96.6
No. 10	9.24	3.6	92.9
No. 40	53.24	21.0	71.9
No. 200	121.51	47.9	24.0
Pan	60.74	24.0	---

% Gravel	3.4
% Sand	72.6
% Fines	24.0
Fines Classification	N/A
D_{10} (mm)	N/A
D_{30} (mm)	N/A
D_{60} (mm)	N/A
Cu	N/A
Cc	N/A

Particle Size Distribution



Comments

Reviewed By RJ

Stantec

Particle-Size Analysis of Soils
ASTM D 422

Project Name	108th Pipe	Project Number	2002006449
Source	B-5, 7.5'-10.0'	Lab ID	32

Sieve Analysis for the Portion Coarser than the No. 10 Sieve

Test Method	ASTM D 422
Prepared Using	ASTM D 421
Particle Shape:	Angular
Particle Hardness:	Hard and Durable
Tested By	TRH
Test Date	10-17-2025
Date Received	10-10-2025

Maximum Particle Size: 3/4" Sieve

Sieve Size	% Passing
3/4"	100.0
3/8"	99.6
No. 4	99.4
No. 10	99.0

Analysis for the Portion Finer than the No. 10 Sieve

Analysis Based on -3 inch Fraction Only

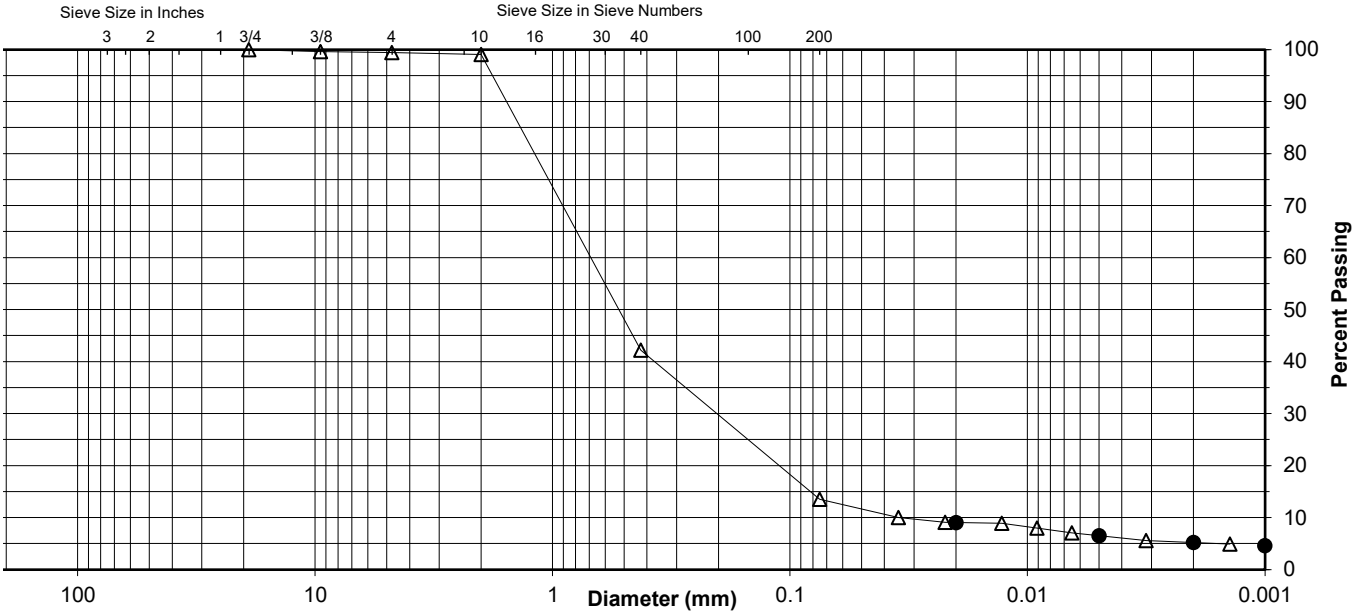
Specific Gravity 2.7

Dispersed Using Apparatus A - Mechanical, for 1 Minute

No. 40	42.2
No. 200	13.5
0.02 mm	9.0
0.005 mm	6.5
0.002 mm	5.2
0.001 mm	4.6

Particle Size Distribution

ASTM	Coarse Gravel	Fine Gravel	C. Sand	Medium Sand	Fine Sand	Silt	Clay
	0.0	0.6	0.4	56.8	28.7	7.0	6.5
AASHTO	Gravel			Coarse Sand	Fine Sand	Silt	Clay
	1.0			56.8	28.7	8.3	5.2



Comments

Reviewed By RJ

Stantec

Particle-Size Analysis of Soils
ASTM D 422

Project Name	108th Pipe	Project Number	2002006449
Source	B-5, 10.0'-12.5'	Lab ID	33

Sieve Analysis for the Portion Coarser than the No. 10 Sieve

Test Method	ASTM D 422
Prepared Using	ASTM D 421
Particle Shape:	Angular
Particle Hardness:	Hard and Durable
Tested By	TRH
Test Date	10-17-2025
Date Received	10-10-2025

Maximum Particle Size: 1 1/2" Sieve

Sieve Size	% Passing
1 1/2"	100.0
3/4"	96.8
3/8"	92.8
No. 4	85.1
No. 10	70.9

D_{60} (mm)	1.398
D_{30} (mm)	0.520
D_{10} (mm)	0.075
Cc	2.58
Cu	18.62

Analysis for the Portion Finer than the No. 10 Sieve

Analysis Based on -3 inch Fraction Only

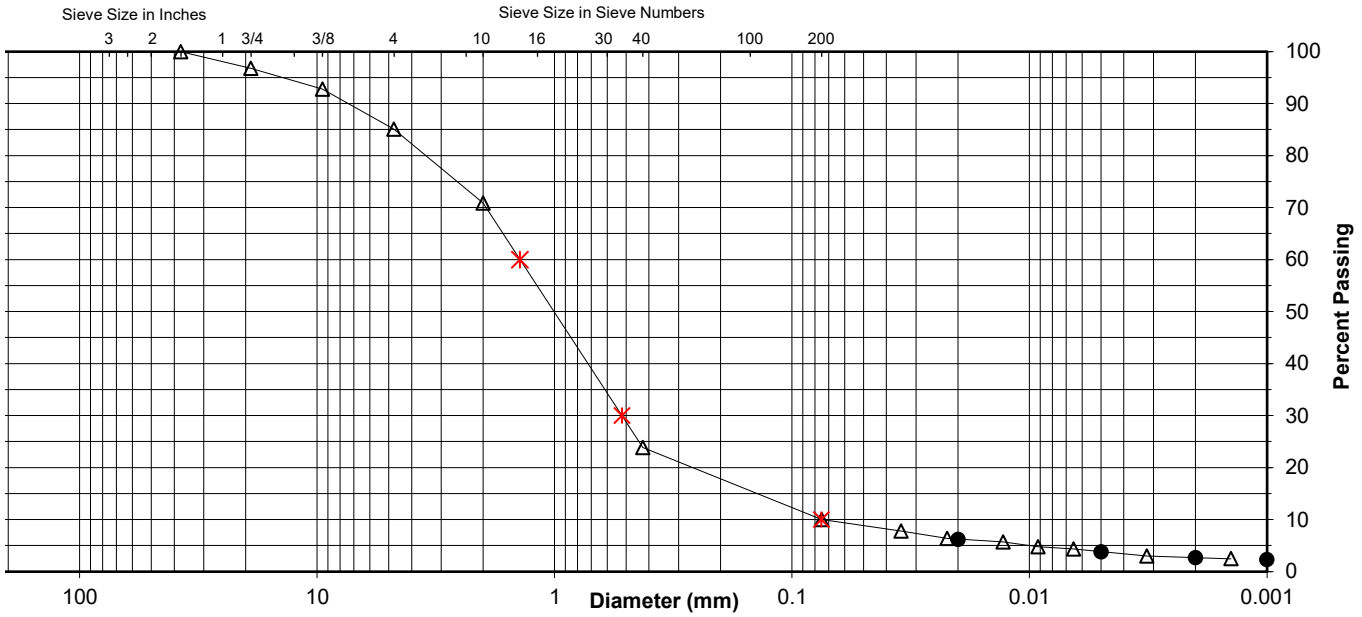
Specific Gravity 2.7

Dispersed Using Apparatus A - Mechanical, for 1 Minute

No. 40	23.9
No. 200	10.0
0.02 mm	6.2
0.005 mm	3.8
0.002 mm	2.7
0.001 mm	2.3

Particle Size Distribution

ASTM	Coarse Gravel	Fine Gravel	C. Sand	Medium Sand	Fine Sand	Silt	Clay
	3.2	11.7	14.2	47.0	13.9	6.2	3.8
AASHTO	Gravel			Coarse Sand	Fine Sand	Silt	Clay
	29.1			47.0	13.9	7.3	2.7



Comments

Reviewed By RJ

Stantec

Moisture Content of Soil

ASTM D 2216

Project Name 108th Pipe

Project Number 2002006449

Tested By AD/RJ

Test Method ASTM

Maximum Particle Size in Sample	No. 10	No. 4	3/8"	3/4"	1 1/2"	3"
Recommended Minimum Mass (g)	20	100	500	2,500	10,000	50,000

Material Type: Stratified, Laminated, Lensed, Homogeneous, Disturbed

Source	Lab ID	Date Tested	Material Type	Maximum Particle Size	Material Excluded Amount	Material Excluded Size	Pass Min. Mass? (Y/N)	Can Weight (g)	Wet Soil & Can Weight (g)	Dry Soil & Can Weight (g)	Moisture Content (%)
B-1, 5.0'-7.5'	3	10/16/25	Dist	No. 10			Yes	31.68	194.45	161.65	25.2
B-1, 10.0'-12.5'	5	10/16/25	Dist	No. 10			Yes	30.73	130.70	110.84	24.8
B-3, 40.0'-50.0'	22	10/16/25	Dist	No. 10			Yes	29.93	161.94	134.65	26.1

Comments

Reviewed By RJ

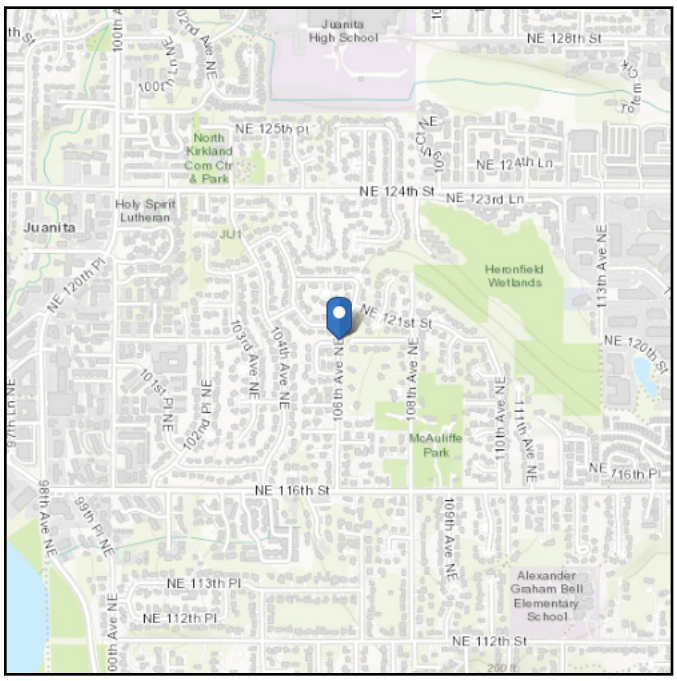
Appendix E ASCE Seismic Hazard Report

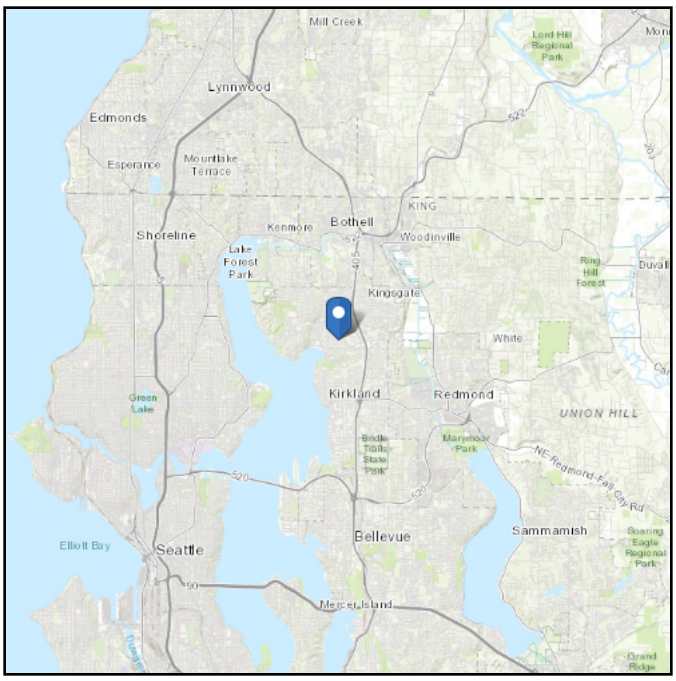
ASCE Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-22
Risk Category: I
Soil Class: D - Stiff Soil

Latitude: 47.707601
Longitude: -122.199899
Elevation: 184.45028059400983 ft (NAVD 88)





Seismic

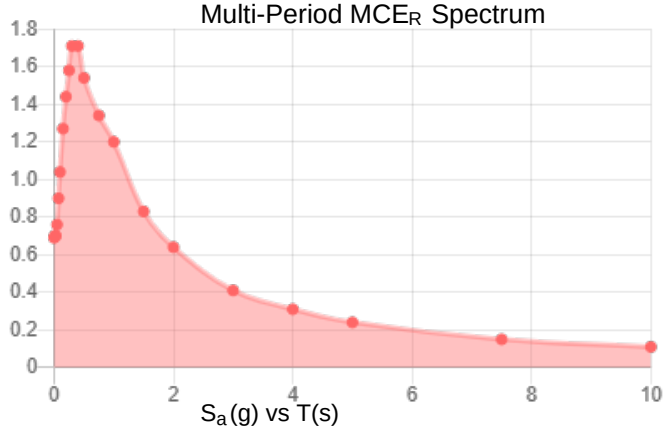
Site Soil Class: D - Stiff Soil

Results:

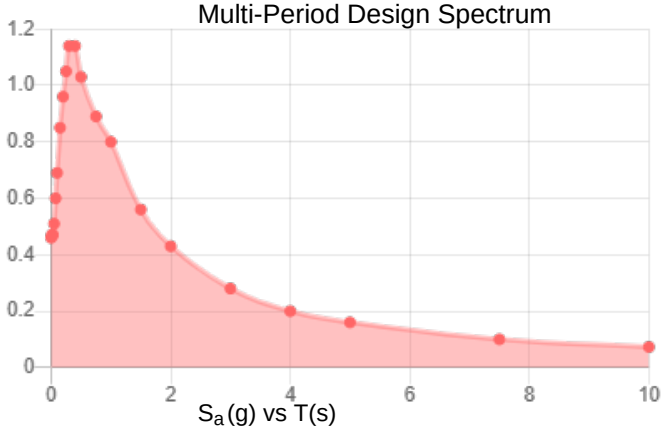
PGA_M :	0.53	T_L :	6
S_{MS} :	1.54	S_S :	1.42
S_{M1} :	1.2	S_1 :	0.56
S_{DS} :	1.03	V_{S30} :	260
S_{D1} :	0.8		

Seismic Design Category: D

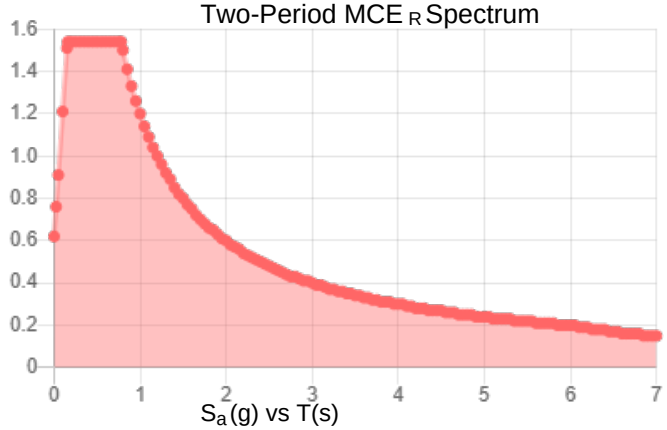
Multi-Period MCE_R Spectrum



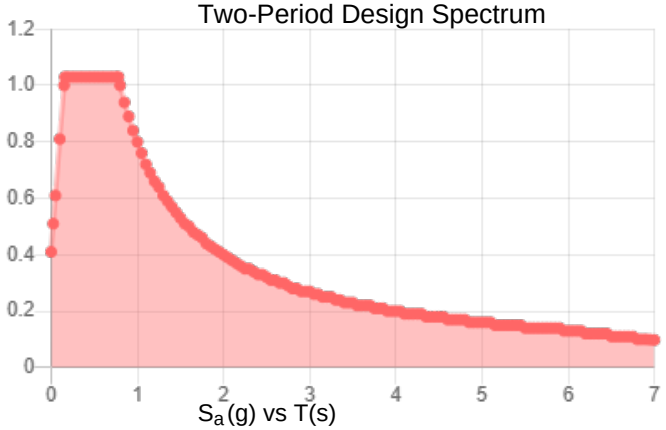
Multi-Period Design Spectrum



Two-Period MCE_R Spectrum



Two-Period Design Spectrum



MCE_R Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Design Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Data Accessed: **Fri Oct 31 2025**

Date Source:
USGS Seismic Design Maps based on ASCE/SEI 7-22 and ASCE/SEI 7-22 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-22 Ch. 21 are available from USGS.

The ASCE Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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APPENDIX C:
STORMWATER TIR

City of Kirkland

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108th Avenue NE Pipe Installation Project

Technical Information Report

FINAL

Stantec

Prepared for:
City of Kirkland

Prepared by:
Aldridge Lim, PE

Date:
December 12, 2025

Project/File:
2002006449

Stantec Consulting Services Inc.

Revision Record

Revision	Description	Author	Date	Quality Check	Date	Independent Review	Date
1	Final Report	A. Lim	12/8/25	B. Wolf	12/8/25	L. Hurley	12/9/25

Disclaimer

The conclusions in the Report titled Kirkland Stormwater TIR are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from City of Kirkland (the "Client") and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

This Report is intended solely for use by the Client in accordance with Stantec's contract with the Client. While the Report may be provided by the Client to applicable authorities having jurisdiction and to other third parties in connection with the project, Stantec disclaims any legal duty based upon warranty, reliance or any other theory to any third party, and will not be liable to such third party for any damages or losses of any kind that may result.

Prepared by:

Lim, Aldridge 2025.12.11 11:35:40-08'00'

Signature

Aldridge Lim, PE

Printed Name

Reviewed by:

Hurley, Leslie Date: 2025.12.11 12:01:12-08'00'

Signature

Leslie Hurley, PE

Printed Name

Approved by:

Wolf, Brian

Digitally signed by Wolf, Brian
DN: CN="Wolf, Brian", OU=Internal, OU=users, OU=stantec, DC=corp, DC=ads
Reason: I am approving this document
Date: 2025.12.11 13:15:29-08'00'

Signature

Brian Wolf, PE

Printed Name

Table of Contents

1 Project Overview 1
1.1 Existing Conditions 1
1.1.1 Topography 2
1.1.2 Soil 2
1.1.3 Field Survey 3
1.1.4 Stormwater Conveyance 3
1.2 Proposed Improvements 4

2 Conditions and Requirements Summary 4
2.1 Core Requirement 1 - Discharge at the Natural Location 4
2.2 Core Requirement 2 - Off-site Analysis 4
2.3 Core Requirement 3 - Flow Control Facilities 4
2.4 Core Requirement 4 - Conveyance System 5
2.5 Core Requirement 5 - Construction Stormwater Pollution Prevention Plan (CSWPPP) 5
2.6 Core Requirement 6 - Maintenance & Operations 5
2.7 Core Requirement 7 - Financial Guarantees & Liability 5
2.8 Core Requirement 8 - Water Quality Facilities 5
2.9 Core Requirement 9 - Flow Control BMPs 6
2.10 Special Requirement 1 – Other Adopted Area-Specific Requirements 6
2.11 Special Requirement 2 – Flood Hazard Area Delineation 6
2.12 Special Requirement 3 – Flood Protection Facilities 6
2.13 Special Requirement 4 – Source Controls 6
2.14 Special Requirement 5 – Oil Control 6

3 Offsite Analysis 6
3.1 Task 1 - Study Area Definition and Maps 6
3.2 Task 2 - Resource Review 7
3.3 Task 3 - Field Inspection 8
3.4 Task 4 - Drainage System Description and Problem Descriptions 1
3.5 Task 5 - Mitigation of Existing or Potential Problems 1

4 Flow Control, Low Impact Development (LID), and Water Quality Facility Analysis and Design 1
4.1 Existing Site Hydrology (Part A) 1
4.2 Developed Site Hydrology (Part B) 1
4.3 Performance Standards (Part C) 2
4.3.1 Area Specific Flow Control Facility Standard and Flow Control BMP Requirements 2
4.3.2 Conveyance System Capacity Standards 2
4.3.3 Area-Specific Water Quality Treatment 2
4.3.4 Source Control 2
4.3.5 Oil Control 2
4.4 Flow Control System (Part D) 2
4.5 Water Quality System (Part E) 2

5 Conveyance System Analysis and Design 3
5.1 Route Design and Easement Requirements 3
5.1.1 Conveyance Alignment 3
5.1.2 Easement and Setbacks 3
5.2 Pipes, Outfalls, and Pumps 3
5.2.1 Pipe Systems 3
5.2.2 Outfall Systems 3

5.3 Culverts and Bridges 3
5.4 Hydraulic Analysis Summary 4
5.4.1 Rational Method 4
5.4.2 Manning's Equation 4
5.4.3 Backwater Analysis 5
5.5 Hydraulic Analysis Results 5

6 Special Reports and Studies 5
7 Other Permits 5
8 CSWPPP Analysis and Design 5
9 Bond Quantities, Facility Summaries, and Declaration of Covenant 6
10 Operations and Maintenance Manual 6

List of TablesTable 1: Summary of Soil Types 3
Table 2: Offsite Analysis Drainage System 1
Table 3: Subbasin Characterization 1

List of Figures

Figure 1: Vicinity Map 2
Figure 2: Soils 2
Figure 3: Downstream Site Conditions 7
Figure 4: National Flood Hazard Layer FIRMette 8

List of Appendices

Appendix A Technical Information Report Worksheet
Appendix B USDA Soil Resource Report
Appendix C Existing Conditions
Appendix D Conveyance System Analysis, Design, and Calculations
Appendix E Operations and Maintenance Plan
Appendix F Geotechnical Report

1 Project Overview

The following report was prepared for the 108th Ave NE Pipe Installation project in Kirkland, WA. This report was prepared to comply with the technical standards and requirements that are set forth in the 2021 King County Surface Water Design Manual (KCSWDM) and the City of Kirkland Addendum to the KCSWDM.

The proposed project aims to address localized flooding caused by three disconnected catch basins (Asset #1792, #8061, and #1834) near the intersection of 108th Avenue NE and NE 120th Street. These basins are located at a low point and have led to recurring flooding on private residential property adjacent to Asset 1792. Additionally, NE 120th Street lacks formal stormwater infrastructure, limiting future redevelopment. The City seeks to install a new stormwater conveyance system to resolve drainage issues and support urban development.

- See Appendix A for Technical Information Report Worksheet

1.1 Existing Conditions

The project is located near the intersection of 108th Avenue NE and NE 120th Street in the Juanita neighborhood of Kirkland, Washington, see Figure 1: Vicinity Map.

Figure 1: Vicinity Map

1.1.1 Topography

Topography of the Juanita neighborhood features a mix of gentle slopes and steeper hillsides with the terrain ranging from approximately 14 to 500 feet above sea level. Juanita lies within the Juanita Creek Basin, where the terrain generally slopes westward, directing stormwater flow into Lake Washinton.

1.1.2 Soil

The project area contains a mix of three soil types as classified by the United States Department of Agriculture (USDA) Soil Survey: Alderwood gravelly sandy loam, Indianola loamy sand, and the Ragnar-Indianola association. These soils vary in texture, infiltration capacity, and hydrologic behavior, which may influence stormwater infiltration and conveyance design. Soil type and land cover categorization were incorporated into the hydrologic analysis as specified in the KCSWDM and can be referenced in Table 3.2.2.A.

- See Appendix B for USDA Soil Resource Report

Figure 2: Soils

A summary of the soil characteristics is provided in the table below:

Table 1: Summary of Soil Types

Map Unit Symbol	Map Unit Name	SCS Hydrologic Soil Group
AgD	Alderwood gravelly sandy loam, 15 to 30 percent slopes	C
InC	Indianola loamy sand, 5 to 15 percent slopes	A
RdC	Ragnar-Indianola association, sloping	B

1.1.3 Field Survey

A topographic survey was conducted by S&F Land Services to document existing surface conditions within the project limits. The survey includes detailed information on:

- Topography and elevation contours
- Utility locates
- Pavement limits
- Catch basins and manholes
- Water meters and fire hydrants
- Tree inventory
- Other utility appurtenances and significant features located within the public right-of-way or accessible easements

This survey data served as the basis for preparing the base drawings used in the Conveyance System Analysis and Design, detailed in Section 5 of this report.

1.1.4 Stormwater Conveyance

Stormwater within the neighborhood is intercepted by catch basins and conveyed through underground infrastructure located primarily within the ROW ranging in size from 6-in to 24-in, depending on location and upstream drainage area.

Runoff is discharged without on-site flow control or water quality treatment and enters Juanita Creek through a series of culverts, vegetated swales, and open channels before reaching Juanita Bay.

- See Appendix C for Existing Conditions

1.2 Proposed Improvements

Stormwater infrastructure on 108th Avenue NE, NE 120th Street, and 106th Avenue NE will be added in accordance with the City of Kirkland's Pre-Approved Plans and Design Standards. Roadway restoration will include pavement repair and asphalt grind and overlay, with new pavement installed per Kirkland's specifications for public ROW improvements. The project does not propose an increase in the impervious surface area. Updates to the stormwater conveyance system will include the addition of new drainage pipe and catch basins, supplementing the existing infrastructure. These new basins are designed to meet Kirkland's storm drainage standards, including appropriate inlet types where required. New conveyance lines will be sized to ensure adequate hydraulic performance.

2 Conditions and Requirements Summary

2.1 Core Requirement 1 - Discharge at the Natural Location

The proposed project will maintain all existing drainage patterns, and no changes are proposed to the natural discharge location of stormwater runoff. All runoff from the site will continue to discharge to the existing outfall, which conveys flow to Juanita Creek and then into Lake Washington at Juanita Bay, the natural discharge point for the basin. This is consistent with Core Requirement 1 which requires discharge at the natural location to preserve downstream hydrology. The proposed improvements will not result in any diversion of flow onto or away from downstream properties, nor will they create a significant adverse impact to adjacent drainage facilities or properties. As such, adjustment to the discharge location requirement is not necessary.

The existing discharge point is a natural low area located at the southwest corner of the site, where runoff historically collects and flows toward the downstream public storm system. This discharge location will be maintained without modification, ensuring compliance with the manual's intent to avoid diversion or concentration of flow that could affect adjacent properties or infrastructure.

2.2 Core Requirement 2 - Off-site Analysis

The proposed project is exempt from Core Requirement 2 because it does not change the rate, volume, duration, or location of discharges to and from the project site. All modified impervious surfaces on site will be replaced with other impervious surfaces having similar runoff-generating characteristics, including trench patching and AC grind and overlay. No new impervious surfaces will be created. Modifications to the existing storm pipe will not change the existing discharge characteristics.

2.3 Core Requirement 3 - Flow Control Facilities

The proposed project is exempt from Core Requirement 3 because it meets the requirements for a basic exemption. There will be less than 2,000 square feet of new plus replaced impervious surfaces. All modified impervious surfaces will be for installation and maintenance of underground utilities and/or grinding and overlay asphalt. There will be no new impervious or pervious surfaces added.

2.4 Core Requirement 4 - Conveyance System

The proposed project will be designing and constructing a new conveyance system that will intercept surface water runoff from affected areas and redirect it into the greater stormwater conveyance system. All new conveyance elements will be designed in accordance with Core Requirement 4 of the KCSWDM, including the capacity to convey the 25-year peak flow of developed conditions for onsite tributary areas and existing conditions for offsite tributary areas. The proposed improvements will mitigate existing flooding concerns and enhance system reliability while meeting the City of Kirkland's conveyance design standards.

- See Appendix D for Conveyance System Analysis, Design, and Calculations

2.5 Core Requirement 5 - Construction Stormwater Pollution Prevention Plan (CSWPPP)

All construction stormwater pollution prevention requirements, including erosion and sediment control (ESC) and stormwater pollution prevention and spill control (SWPPS) requirements, are to be provided by the contractor after permit approval.

All temporary ESC (TESC) measures proposed will conform to the KCSWDM during construction. The measures shown on the TESC plans will include clearing limits, sediment control, soil stabilization, BMP's maintenance and construction sequence.

2.6 Core Requirement 6 - Maintenance & Operations

Maintenance and operation of existing and replaced catch basins, manholes and storm conveyance pipe shall be per KCSWDM.

- See Appendix E for Operations and Maintenance Plan.

2.7 Core Requirement 7 - Financial Guarantees & Liability

Not applicable to this project.

2.8 Core Requirement 8 - Water Quality Facilities

The proposed project is exempt from Core Requirement 8 because it will not create more than 2,000 square feet of new and replaced pollution generating impervious surfaces that are not fully dispersed. The project also will not create more than ¾ of an acre of pollution generating pervious surfaces that is not fully dispersed.

2.9 Core Requirement 9 - Flow Control BMPs

The proposed project is exempt from Core Requirement 9 because it will not create more than 2,000 square feet of new and replaced impervious surface and it will not create more than 7,000 square feet of land disturbing activity.

2.10 Special Requirement 1 – Other Adopted Area-Specific Requirements

Not applicable. The proposed project does not contain or impact any other adopted areas therefore specific requirements are not required.

2.11 Special Requirement 2 – Flood Hazard Area Delineation

Not applicable. The proposed project does not contain or impact any flood hazard areas.

2.12 Special Requirement 3 – Flood Protection Facilities

Not applicable. The proposed project does not contain or impact any flood hazard areas, therefore no flood protection areas are required.

2.13 Special Requirement 4 – Source Controls

Non-structural and construction source control BMP's are addressed in Section 2.5. Otherwise, as a residential roadway within City ROW, no source control activities are anticipated within the project area, therefore no structural improvements are required.

2.14 Special Requirement 5 – Oil Control

Not applicable. The proposed project does not meet the criteria for a high-use site therefore oil control is not required.

3 Offsite Analysis

3.1 Task 1 - Study Area Definition and Maps

A level 1 downstream analysis was performed which analyzed the downstream flow path for a distance of ¼ mile from the proposed project site, see Figure 3: Downstream Site Conditions.

The project site is located within the Juanita drainage basin. Stormwater runoff from the site currently discharges at a localized low point directly onto a private residential property adjacent to Asset #1792, an existing catch basin near the intersection of 108th Ave NE and NE 120th Street. Localized flood has occurred

at Asset #1792 due to inflow from two nearby disconnected catch basins (Asset #8061 and #1834). The locations of all three catch basins are shown in Appendix C.

The proposed project will divert stormwater runoff through a network of catch basins and underground conveyance systems located within the public ROW to the existing stormwater drainage system at the intersection of 106th Ave NE and NE 120th Place. No significant changes to the offsite flow paths are anticipated. As part of the offsite analysis, existing catch basins labeled A through L were inspected and evaluated. These symbols correspond to the locations shown in Figure 3 and Table 2.

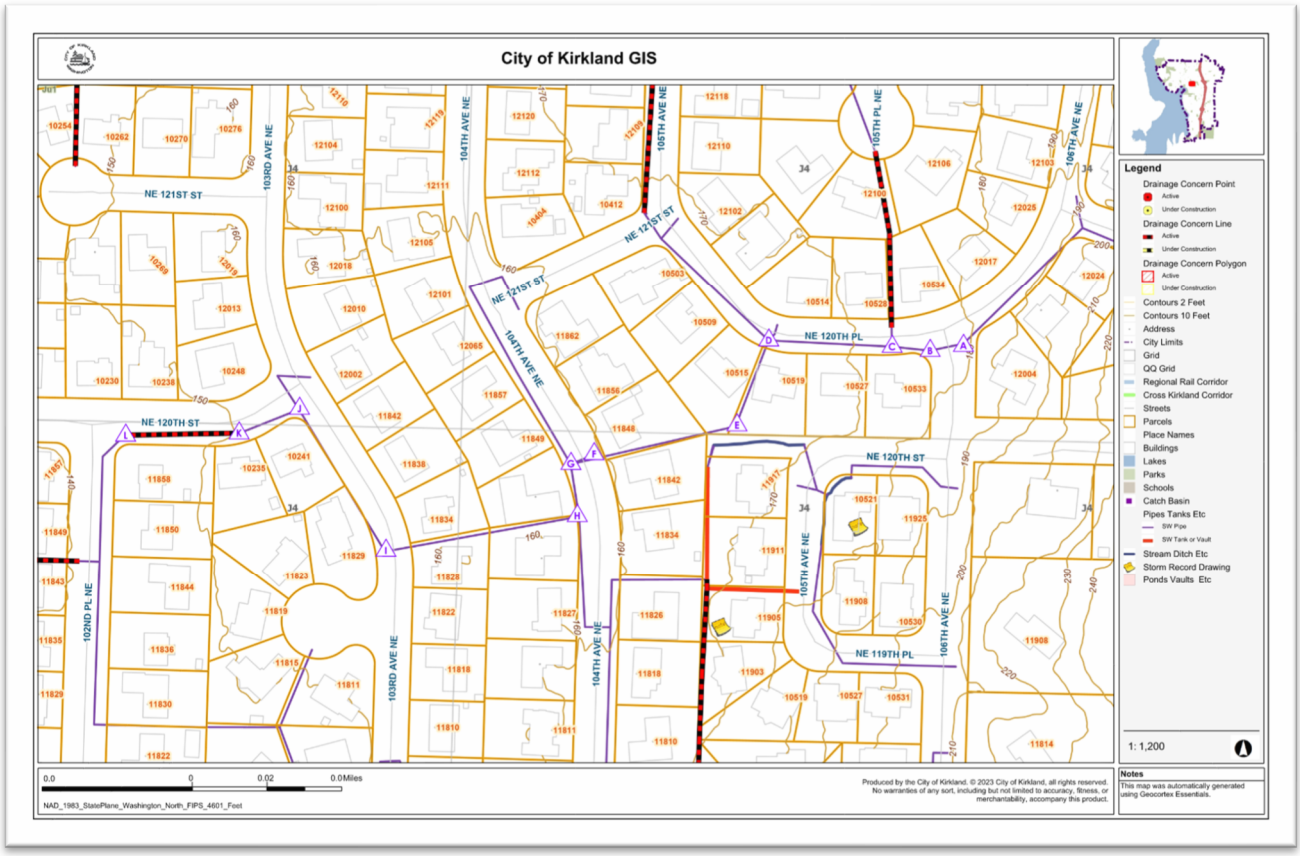


Figure 3: Downstream Site Conditions

The proposed project site does not appear to have any significant offsite run-off from the adjacent areas.

3.2 Task 2 - Resource Review

According to the FEMA Floor Insurance Rate Map (FIRM), the project site is located within Unshaded Zone X, which is an area determined to be outside the 500-year floodplain. The project is not located within any basin plan areas or drainage and water quality problem areas. See Figure 4: National Flood Hazard Layer FIRMette.

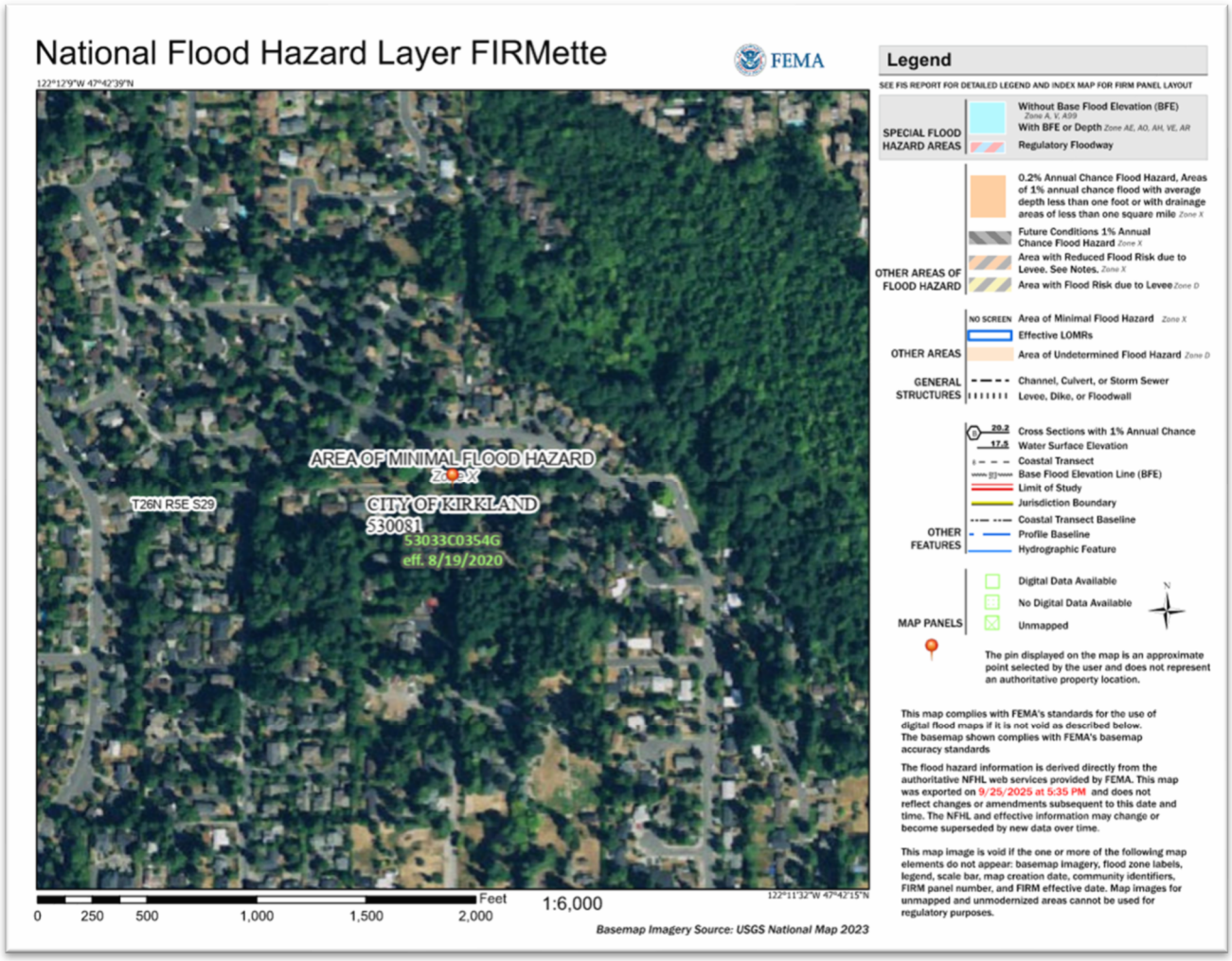


Figure 4: National Flood Hazard Layer FIRMette

3.3 Task 3 - Field Inspection

A field inspection was conducted on August 13, 2025, evaluating the drainage system approximately ¼ mile downstream from the proposed project site.

There were no known flooding or conveyance problems located on or downstream from the project. However, one of the catch basins downstream was not observed as the basin was located on private property and not accessible to inspection. Refer to Figure 3 and Table 2 for a summary of conveyance system elements and downstream conditions evaluated during the Level 1 Offsite Analysis.

Basin:	Juanita Creek	**Subbasin Name:**	South Juanita Slope	**Subbasin Number:**	12120500	**Date:**	8/13/2025

Symbol	Drainage Component Type, Name, and Size	Drainage Component Description	Slope	Distance from site discharge	Existing Problems	Potential Problems	Observations of field inspector, resource reviewer, or resident
see map	Type: catch basin (CB), swale, channel, pipe, pond, flow control Location: street/intersection (property #)	Structure type (I, II, I-L), Depth (ft)	°+	°/‹ ml = 1,320 ft.	constrictions, under capacity, ponding, overtopping, tributary area, likelihood of problem, flooding, habitat or organism destruction, scouring, overflow pathways, potential impacts, bank sloughing, sedimentation, incision, other erosion		
A	CB - 120th Pl/106th Ave Intersection (East)	Type I, D = 4.3	-	125.00	None	None	Open flow in basin
B	CB - 120th Pl/106th Ave Int (West)	Type I, D = 3.8	-	170.66	None	None	Open flow in basin
C	CB - 120th Pl (10533)	Type I, D = 3.6	-	221.86	None	None	Open flow in basin
D	CB - 120th Pl (10519)	Type I, D = 3.5	-	386.70	None	None	Catch basin insert, could not observe flow
E	CB - 120th St (10519)	Type II, D = 6.7	-	509.46	Unknown	Unknown	Did not inspect - in private property
F	CB - 104th Ave (East)	Type I, D = 2.3	-	769.61	None	None	Open flow in basin
G	CB - 104th Ave (West)	Type II, D = 3.5	-	735.20	None	None	Open flow in basin, water entering from south side
H	CB - 104th Ave (11835)	Type II, D = 5.1	-	805.94	None	Sedimentation, erosion	Risk of basin being clogged by sedimentation/runoff with nearby vegetation due to being placed at ground level
I	CB - 103rd Ave (11829)	Type II, D = 5.6	-	1069.24	None	None	Open flow in basin
J	CB - 120th St/103rd Ave Int	Type II, D = 5.4	-	1290.51	None	None	Open flow in basin
K	CB - 120th St (10235)	Type II, D = 4.0	-	1375.54	None	None	Open flow in basin
L	CB - 120th St/102nd Pl Int	Type I-L, D = 2.3	-	1528.97	None	None	Open flow in basin

Table 2: Offsite Analysis Drainage System

3.4 Task 4 - Drainage System Description and Problem Descriptions

The drainage system consists of a combination of stormwater infrastructure and natural conveyance features that discharge to Juanita Creek. Based on the field inspection in Section 3.3, no existing drainage or water quality problems were observed within the project area at the time of inspection.

3.5 Task 5 - Mitigation of Existing or Potential Problems

There are no known drainage problems on-site or downstream from the project area.

4 Flow Control, Low Impact Development (LID), and Water Quality Facility Analysis and Design

4.1 Existing Site Hydrology (Part A)

The City's GIS database was used to quantify the amount of impervious surface area located within the subbasin delineation. Groundcover surface types were categorized by hydrologic type as required for use in Western Washington Hydrology Model (WWHM).

- See Appendix C for Existing Conditions.

Table 3: Subbasin Characterization

Subbasin	Groundcover Type	Area (ac)
108th St (ROW)	Pavement (C=0.9)	0.55
108th St (Basin)	RSX 7.2; 60% Impervious	1.63
120th St (ROW)	Pavement (C=0.9)	0.84
120th St (Basin)	RSX 7.2; 60% Impervious	1.80
McAuliffe Park	Forested (Light Forest)	0.11
	Total	**4.93**

4.2 Developed Site Hydrology (Part B)

The developed site hydrology reflects the anticipated future condition of the project area, incorporating proposed impervious surfaces and updated subbasin characteristics. The analysis is based on the Kirkland RSX 7.2 zoning classification, which represents a residential setting with moderate to high imperviousness (60% Impervious).

4.3 Performance Standards (Part C)

4.3.1 Area Specific Flow Control Facility Standard and Flow Control BMP Requirements

As outlined in Section 2.3, the proposed site is exempt from flow control requirements.

4.3.2 Conveyance System Capacity Standards

As outlined in Section 2.4, the proposed project will be modifying an existing conveyance system but it will not experience any changes in flow characteristics, therefore it will not need to be analyzed for conveyance capacity.

4.3.3 Area-Specific Water Quality Treatment

As outlined in Section 2.8, the proposed project is exempt from water quality requirements because it will not create more than 2,000 square feet of new and replaced pollution generating impervious surfaces, but the project proposes water quality improvements despite this exemption.

4.3.4 Source Control

Not applicable. The proposed project does not meet the criteria for a commercial building or commercial site development permit therefore source control is not required.

4.3.5 Oil Control

Not applicable. The proposed project does not meet the criteria for a high-use site therefore oil control is not required.

4.4 Flow Control System (Part D)

As outlined in Section 2.9, flow control is not required for this site.

4.5 Water Quality System (Part E)

As outlined in Section 2.8, no pollutant-generating impervious surfaces are proposed that would require treatment therefore water quality treatment is not required for this site.

5 Conveyance System Analysis and Design

5.1 Route Design and Easement Requirements

5.1.1 Conveyance Alignment

The proposed stormwater conveyance system alignment is centered along NE 120th Street, located within the public right-of-way. The alignment was selected to minimize conflicts with existing utilities while maintaining minimum horizontal and vertical separation.

5.1.2 Easement and Setbacks

All conveyance system infrastructure and pipeline is located within the public ROW, meeting the minimum width requirements specified in Table 4.1 per KCSWDM.

5.2 Pipes, Outfalls, and Pumps

5.2.1 Pipe Systems

Stormwater will be conveyed through a 12-inch polyvinyl chloride (PVC) pipe, specifically sized to handle the runoff from a 25-year storm event without any risk of overflow. All stormwater pipes are set at a minimum slope of 0.50% and a minimum cover depth of 3 feet.

The proposed system includes ten new catch basins spaced approximately 80 to 100 feet apart to facilitate routine inspection and maintenance. Each catch basin is equipped with a sump to capture sediment and debris.

A drop manhole is incorporated into the system to accommodate significant elevation change along the pipe alignment. It is designed to dissipate energy from vertical flow transitions and to minimize downstream erosion.

5.2.2 Outfall Systems

Not applicable. No outfall systems are proposed as part of this project.

5.3 Culverts and Bridges

Not applicable. No culverts and bridges are proposed as part of this project.

5.4 Hydraulic Analysis Summary

5.4.1 Rational Method

The Rational Method was used to estimate peak runoff rates for each contributing drainage area for a 25-year design storm event. Overland sheet flow analysis was performed for each subbasin described in Section 4.1.

Peak flow was calculated using the formula:

$$Q_R = C \cdot I_R \cdot A$$

Where:

- C = Runoff coefficient for the contributing area land cover type – See Table 3
- I_R = Peak rainfall intensity for a 25-year occurrence storm event.
    - Peak rainfall intensity is determined using the estimated total precipitation at the project site (P_R) and unit peak rainfall intensity factor (i_R). The total precipitation value of 3.05 inches was obtained from the Isopluvial Maps provided in Appendix D.
- A = Drainage subbasin area – See Table 3

The time of concentration (T_c) was used to determine the appropriate rainfall intensity for the Rational Method. Using the method specified in the KCSWDM, T_c calculated was less than 6.3 minutes; therefore T_c was set equal to 6.3 minutes.

Based on the analysis, the peak runoff rate was determined to be 8.49 cubic feet per second (cfs) for the 25-year design storm. This value was used to size the conveyance system and verify that all pipe system components can accommodate the design flow without risk or surcharge or overflow.

5.4.2 Manning's Equation

Manning's Equation was used to evaluate the flow capacity of the proposed stormwater conveyance system.

Flow capacity was calculated using the formula:

$$Q = \frac{1.49}{n} \cdot A \cdot R^{2/3} \cdot S^{1/2}$$

Where:

- *Q* = flow rate (cfs)
- *n* = Manning's roughness coefficient (0.012 for PVC)

- A = cross-sectional area of the pipe (ft^2)
- R = hydraulic radius (ft)
- S = slope of the pipe (ft/ft)

Based on the analysis, the pipe system was found to have sufficient capacity to convey the peak runoff rate of 8.49 cfs without the risk of surcharge or overflow.

- See Appendix D for Conveyance System Analysis, Design, and Calculations

5.4.3 Backwater Analysis

The backwater analysis was performed to evaluate the hydraulic grade line (HGL) throughout the proposed stormwater conveyance system. The analysis indicated that the headwater surface (hydraulic grade line) remains below the rim elevations of all catch basins, confirming that the system provides adequate freeboard and voids surface flooding or surcharge.

5.5 Hydraulic Analysis Results

Based on the results of the backwater analysis, the proposed stormwater conveyance system meets all applicable design criteria and performance standards for new stormwater infrastructure outline in the KCSWDM.

6 Special Reports and Studies

A geotechnical report was prepared for the project site to evaluate subsurface conditions, slope stability, and soil characteristics.

- See Appendix F for Geotechnical Report

7 Other Permits

Not applicable to this project.

8 CSWPPP Analysis and Design

As outlined in section 2.5, construction stormwater pollution prevention requirements are to be provided by the contractor after permit approval. The following CSWPPP measures are proposed for the project to help control erosion, manage sediment, and prevent stormwater pollution during construction:

- Silt fence

- Catch basin inserts
- Straw wattles

All measures will follow King County standards and be maintained throughout construction to ensure compliance and protect nearby drainage systems.

9 Bond Quantities, Facility Summaries, and Declaration of Covenant

Not applicable to this project.

10 Operations and Maintenance Manual

Maintenance and operation of existing and replaced catch basins, manholes and storm conveyance pipe shall be per KCSWDM.

- See Appendix E for Operations and Maintenance Plan.

Appendix A Technical Information Report Worksheet

TECHNICAL INFORMATION REPORT (TIR) WORKSHEET

Part 1 PROJECT OWNER AND PROJECT ENGINEER

Project Owner _____

Phone _____

Address _____

_____

Project Engineer Brian Wolf, PE

Company Stantec Consulting, Inc

Phone (425) 289-7300

Part 2 PROJECT LOCATION AND DESCRIPTION

Project Name 108th Ave NE Pipe Installation Project

DLS-Permitting

Permit # TBD

Location Township 26N

Range 5E

Section 29

Site Address _____

_____

Part 3 TYPE OF PERMIT APPLICATION

- ☐ Land use (e.g.,Subdivision / Short Subd. / UPD)
- ☐ Building (e.g.,M/F / Commercial / SFR)
- ☑ Clearing and Grading
- ☑ Right-of-Way Use
- ☐ Other _____

Part 4 OTHER REVIEWS AND PERMITS[1]

- ☐ DFW HPA
- ☐ COE CWA 404
- ☐ ECY Dam Safety
- ☐ FEMA Floodplain
- ☐ COE Wetlands
- ☐ Other _____
- ☐ Shoreline Management
- ☐ Structural Rockery/Vault/ ☐
- ☐ ESA Section 7

Part 5 PLAN AND REPORT INFORMATION

Technical Information Report

Type of Drainage Review (check one):

- ☐ Full
- ☑ Targeted
- ☐ Simplified
- ☐ Large Project
- ☐ Directed

Date (include revision dates): 10/03/2025

Date of Final: _____

Site Improvement Plan (Engr. Plans)

Plan Type (check one):

- ☐ Full
- ☐ Modified
- ☐ Simplified

Date (include revision dates): _____

Date of Final: _____

Part 6 SWDM ADJUSTMENT APPROVALS

Type (circle one): Standard / Experimental / Blanket

Description: (include conditions in TIR Section 2)

_____

_____

_____

Approved Adjustment No. _____ Date of Approval: _____

[1] DFW: WA State Dept. of Fish and Wildlife. HPA: hydraulic project approval. COE: (Army) Corps of Engineers. CWA: Clean Water Act. ECY: WA State Dept. of Ecology. FEMA: Federal Emergency Management Agency. ESA: Endangered Species Act.

TECHNICAL INFORMATION REPORT (TIR) WORKSHEET

Part 7 MONITORING REQUIREMENTS

Monitoring Required: Yes / (No)

Start Date: _____

Completion Date: _____

Describe: _____

Re: KCSWDM Adjustment No. _____

Part 8 SITE COMMUNITY AND DRAINAGE BASIN

Community Plan : _____

Special District Overlays: _____

Drainage Basin: _____

Stormwater Requirements: _____

Part 9 ONSITE AND ADJACENT SENSITIVE AREAS

- ☐ River/Stream _____
- ☐ Lake _____
- ☐ Wetlands _____
- ☐ Closed Depression _____
- ☐ Floodplain _____
- ☐ Other _____

- ☐ Steep Slope _____
- ☐ Erosion Hazard _____
- ☐ Landslide Hazard _____
- ☐ Coal Mine Hazard _____
- ☐ Seismic Hazard _____
- ☐ Habitat Protection _____
- ☐ _____

Part 10 SOILS

Soil Type	Slopes	Erosion Potential
Alderwood gravelly sandy loam	15% to 30%	
Indianola loamy sand	5% to 15%	
Ragnar-Indianola association	2% to 15%	

- ☐ High Groundwater Table (within 5 feet)
- ☐ Other _____
- ☐ Sole Source Aquifer
- ☐ Seeps/Springs

☐ Additional Sheets Attached

TECHNICAL INFORMATION REPORT (TIR) WORKSHEET

Part 11 DRAINAGE DESIGN LIMITATIONS

REFERENCE	LIMITATION / SITE CONSTRAINT
☐ Core 2 – Offsite Analysis	
☐ Sensitive/Critical Areas	
☐ SEPA	
☐ LID Infeasibility	
☐ Other	
☐	

☐ Additional Sheets Attached

Part 12 TIR SUMMARY SHEET (provide one TIR Summary Sheet per Threshold Discharge Area)

Threshold Discharge Area:
(name or description)

Core Requirements (all 8 apply):

Discharge at Natural Location	Number of Natural Discharge Locations:
Offsite Analysis	Level: (1) / 2 / 3 dated:
Flow Control (include facility summary sheet)	Level: 1 / 2 / 3 or Exemption Number Flow Control BMPs
Conveyance System	Spill containment located at:
Erosion and Sediment Control / Construction Stormwater Pollution Prevention	CSWPP/CESCL/ESC Site Supervisor: TBD Contact Phone: TBD After Hours Phone:
Maintenance and Operation	Responsibility (circle one): Private / Public If Private, Maintenance Log Required: Yes / No
Financial Guarantees and Liability	Provided: Yes / (No)
Water Quality (include facility summary sheet)	Type (circle one): Basic / Sens. Lake / Enhanced Basic / Bog or Exemption No. N/A Landscape Management Plan: Yes / No
For Entire Project: % of Target Impervious that had a feasible FCBMP implemented N/A	Total Replaced Impervious surfaces on the site Total New Pervious Surfaces on the site 0 sf Repl. Imp. on site mitigated w/flow control facility 0 sf Repl. Imp. on site mitigated w/water quality facility 0 sf Repl. Imp. on site mitigated with FCBMP 0 sf

TECHNICAL INFORMATION REPORT (TIR) WORKSHEET

Part 12 TIR SUMMARY SHEET (provide one TIR Summary Sheet per Threshold Discharge Area)	
Special Requirements (as applicable):	
Area Specific Drainage Requirements	Type: CDA / SDO / MDP / BP / LMP / Shared Fac. / (None) Name: _____
Floodplain/Floodway Delineation	Type (circle one): Major / Minor / Exemption / None 100-year Base Flood Elevation (or range): _____ Datum:
Flood Protection Facilities	Describe: N/A
Source Control (commercial / industrial land use)	Describe land use: Describe any structural controls: N/A
Oil Control	High-use Site: Yes / (No) Treatment BMP: _____ Maintenance Agreement: Yes / No with whom? _____
Other Drainage Structures	
Describe: Catch basins, drop manhole	

Part 13 EROSION AND SEDIMENT CONTROL REQUIREMENTS	
MINIMUM ESC REQUIREMENTS DURING CONSTRUCTION	MINIMUM ESC REQUIREMENTS AFTER CONSTRUCTION
☑ Clearing Limits	☑ Stabilize exposed surfaces
☑ Cover Measures	☑ Remove and restore Temporary ESC Facilities
☑ Perimeter Protection	☑ Clean and remove all silt and debris, ensure operation of Permanent Facilities, restore operation of Flow Control BMP Facilities as necessary
☐ Traffic Area Stabilization	☐ Flag limits of SAO and open space preservation areas
☑ Sediment Retention	☐ Other _____
☐ Surface Water Collection	
☐ Dewatering Control	
☑ Dust Control	
☐ Flow Control	
☐ Protection of Flow Control BMP Facilities (existing and proposed)	
☑ Maintain BMPs / Manage Project	

TECHNICAL INFORMATION REPORT (TIR) WORKSHEET

Part 14 STORMWATER FACILITY DESCRIPTIONS (Note: Include Facility Summary and Sketch)

Flow Control	Type/Description		Water Quality	Type/Description
☐ Detention	_____		☐ Vegetated Flowpath	_____
☐ Infiltration	_____		☐ Wetpool	_____
☐ Regional Facility	_____		☐ Filtration	_____
☐ Shared Facility	_____		☐ Oil Control	_____
☐ Flow Control BMPs	_____		☐ Spill Control	_____
☐ Other	_____		☐ Flow Control BMPs	_____
			☐ Other	_____

Part 15 EASEMENTS/TRACTS

- ☐ Drainage Easement
- ☐ Covenant
- ☐ Native Growth Protection Covenant
- ☐ Tract
- ☑ Other N/A

Part 16 STRUCTURAL ANALYSIS

- ☐ Cast in Place Vault
- ☐ Retaining Wall
- ☐ Rockery > 4' High
- ☐ Structural on Steep Slope
- ☑ Other N/A

Part 17 SIGNATURE OF PROFESSIONAL ENGINEER

I, or a civil engineer under my supervision, have visited the site. Actual site conditions as observed were incorporated into this worksheet and the attached Technical Information Report. To the best of my knowledge the information provided here is accurate.

_____

Signed/Date

Appendix B USDA Soil Resource Report

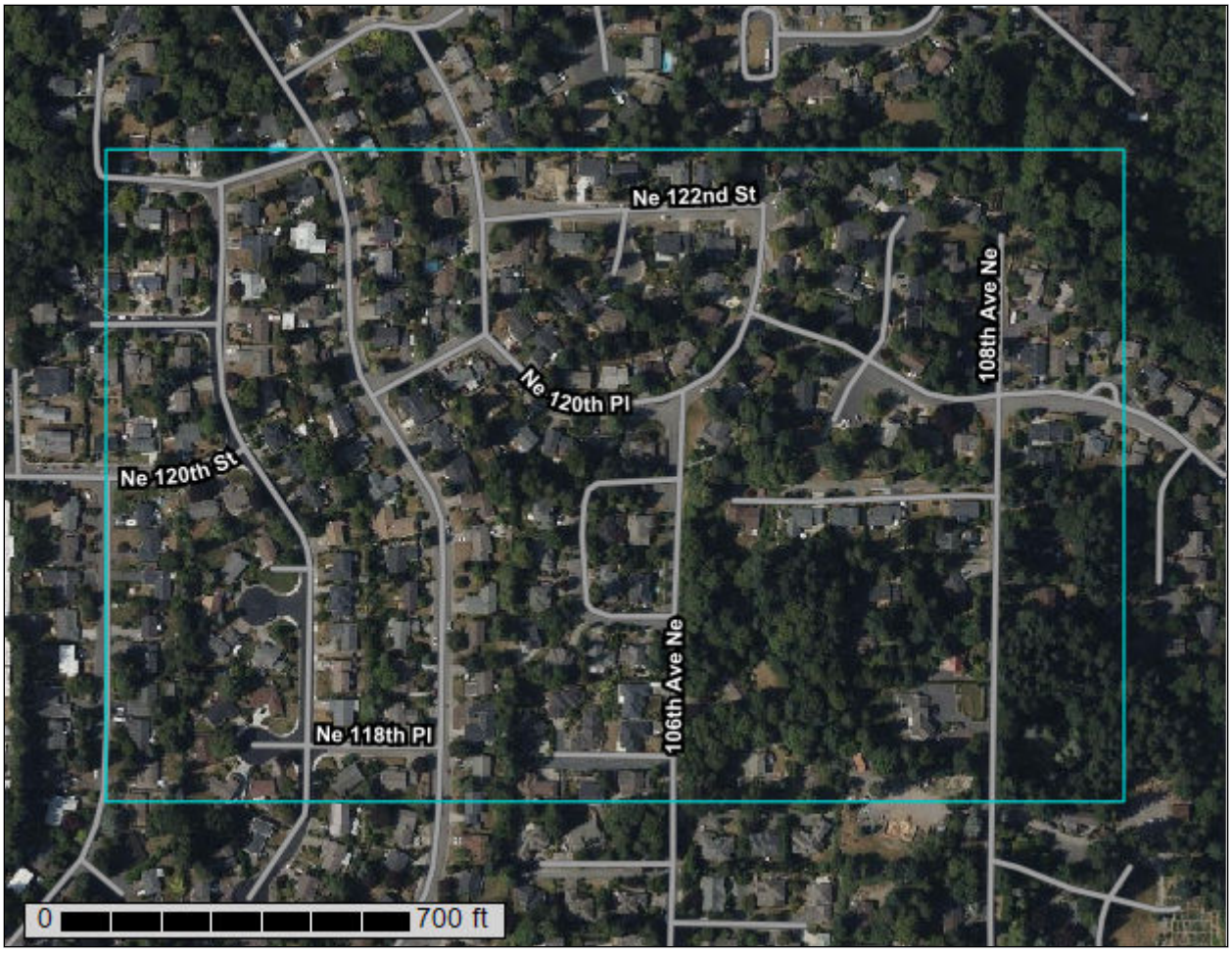
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for King County Area, Washington



September 25, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

Preface.....2
How Soil Surveys Are Made.....5
Soil Map.....8
Soil Map.....9
Legend.....10
Map Unit Legend.....11
Map Unit Descriptions.....11
King County Area, Washington.....13
AgD—Alderwood gravelly sandy loam, 15 to 30 percent slopes.....13
InC—Indianola loamy sand, 5 to 15 percent slopes.....14
RdC—Ragnar-Indianola association, sloping.....16
References.....18

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:3,410 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

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 20, Aug 27, 2024

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

Date(s) aerial images were photographed: Mar 1, 2023—Sep 1, 2023

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
AgD	Alderwood gravelly sandy loam, 15 to 30 percent slopes	10.8	17.7%
InC	Indianola loamy sand, 5 to 15 percent slopes	19.6	31.9%
RdC	Ragnar-Indianola association, sloping	30.8	50.4%
Totals for Area of Interest		**61.2**	**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

AgD—Alderwood gravelly sandy loam, 15 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2t627
Elevation: 0 to 1,000 feet
Mean annual precipitation: 25 to 60 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 160 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Alderwood

Setting

Landform: Hills, ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Nose slope, side slope, talf
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Glacial drift and/or glacial outwash over dense glaciomarine deposits

Typical profile

A - 0 to 7 inches: gravelly sandy loam
Bw1 - 7 to 21 inches: very gravelly sandy loam
Bw2 - 21 to 30 inches: very gravelly sandy loam
Bg - 30 to 35 inches: very gravelly sandy loam
2Cd1 - 35 to 43 inches: very gravelly sandy loam
2Cd2 - 43 to 59 inches: very gravelly sandy loam

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 39 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 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: F002XA004WA - Puget Lowlands Forest
Forage suitability group: Limited Depth Soils (G002XN302WA), Limited Depth Soils (G002XF303WA), Limited Depth Soils (G002XS301WA)

Other vegetative classification: Limited Depth Soils (G002XN302WA), Limited Depth Soils (G002XF303WA), Limited Depth Soils (G002XS301WA)
Hydric soil rating: No

Minor Components

Everett
Percent of map unit: 5 percent
Landform: Moraines, eskers, kames
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Indianola
Percent of map unit: 5 percent
Landform: Terraces, kames, eskers
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Shalcar
Percent of map unit: 3 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Norma
Percent of map unit: 2 percent
Landform: Drainageways, depressions
Landform position (three-dimensional): Dip
Down-slope shape: Linear, concave
Across-slope shape: Concave
Hydric soil rating: Yes

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: Terraces, kames, eskers
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 (G002XN402WA), Droughty Soils (G002XS401WA)
Other vegetative classification: Droughty Soils (G002XN402WA), Droughty Soils (G002XS401WA)
Hydric soil rating: No

Minor Components

Alderwood

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

Everett

Percent of map unit: 5 percent
Landform: Moraines, eskers, kames
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: Drainageways, depressions
Landform position (three-dimensional): Dip
Down-slope shape: Linear, concave
Across-slope shape: Concave
Hydric soil rating: Yes

RdC—Ragnar-Indianola association, sloping

Map Unit Setting

National map unit symbol: 1hmty
Elevation: 0 to 1,000 feet
Mean annual precipitation: 30 to 65 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 150 to 210 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Ragnar and similar soils: 45 percent
Indianola and similar soils: 40 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ragnar

Setting

Landform: Terraces, kames, eskers
Parent material: Glacial outwash

Typical profile

H1 - 0 to 4 inches: ashy fine sandy loam
H2 - 4 to 27 inches: ashy fine sandy loam
H3 - 27 to 60 inches: loamy sand

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 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 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: F002XA004WA - Puget Lowlands Forest
Forage suitability group: Droughty Soils (G002XN402WA)
Other vegetative classification: Droughty Soils (G002XN402WA)
Hydric soil rating: No

Description of Indianola

Setting

Landform: Terraces
Parent material: Glacial drift

Typical profile

H1 - 0 to 6 inches: loamy fine sand
H2 - 6 to 30 inches: loamy fine sand
H3 - 30 to 60 inches: sand

Properties and qualities

Slope: 2 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 (1.98 to 5.95 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 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: F002XA004WA - Puget Lowlands Forest
Forage suitability group: Droughty Soils (G002XN402WA)
Other vegetative classification: Droughty Soils (G002XN402WA)
Hydric soil rating: No

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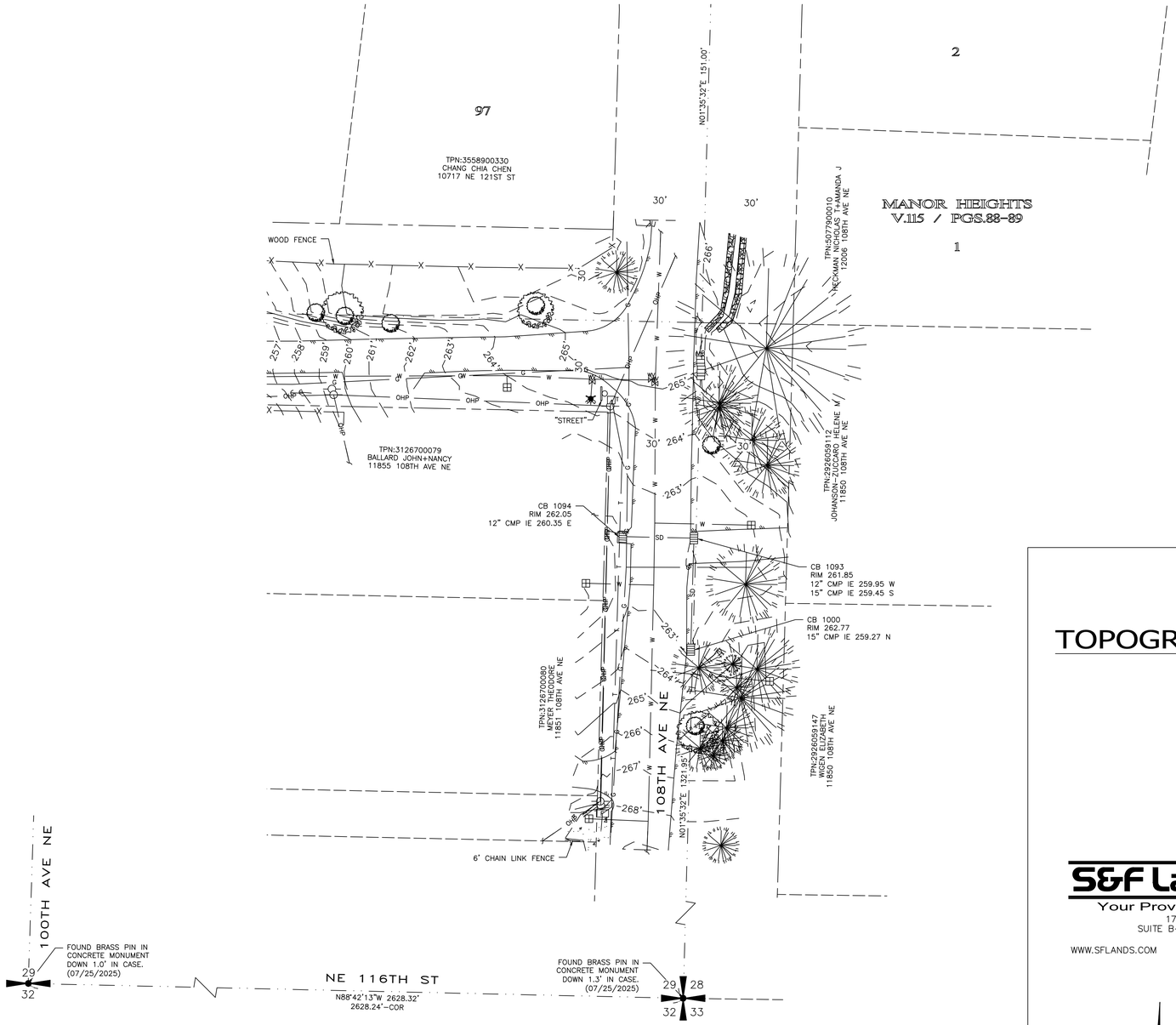
Appendix C Existing Conditions

TOPOGRAPHIC SURVEY

IN THE NE & SE 1/4 OF SW 1/4 SEC. 29, TWP. 26N, RGE 5E, W.M.
CITY OF KIRKLAND, KING COUNTY WASHINGTON



LEGEND:

DECORATIVE COLUMN	EASEMENT
FENCE GATE POST	LOT/PARCEL LINE
FOUND MONUMENT MAG NAIL	RIGHT–OF–WAY
FOUND MONUMENT BRASS CAP	BOUNDARY SECTION LINE
FOUND MONUMENT CONCRETE MONUMENT	CENTERLINE
MAILBOX	BUILDING
SIGN SITE	FLOW LINE CURB
TREE DECIDUOUS	STANDARD CURB
TREE CONIFER	EDGE OF PAVEMENT
FIBER OPTIC UNDERGROUND VAULT	EDGE OF CONCRETE
POWER/UTILITY POLE	EDGE OF GRAVEL
GUY ANCHOR	BREAKLINE
POWER LIGHT POLE	FENCE
SANITARY MANHOLE	SITE
STORM CLEAN OUT	FIBER OPTIC
STORM CATCH BASIN	UNDERGROUND POWER
TELEPHONE RISER	OVERHEAD POWER
WATER FIRE HYDRANT	GAS
WATER VALVE	SANITARY SEWER
WATER METER	STORM SEWER
	TELEPHONE
	WATER
	CONTOUR MAJOR
	CONTOUR MINOR
	BUILDING HATCH
	CONCRETE PAVER HATCH
	CONCRETE HATCH
	ROCK RETAINING WALL HATCH

TOPOGRAPHIC SURVEY

HORIZONTAL DATUM (BASIS OF BEARINGS):

WASHINGTON STATE PLANE COORDINATE SYSTEM NORTH ZONE, NAD83 (1991), BASED ON GPS OBSERVATIONS OF CITY OF KIRKLAND POINT DESIGNATION 44 AND 45. DISTANCES SHOWN HEREON ARE GROUND DISTANCES, US SURVEY FEET, SCALED ABOUT CONTROL POINT NO 4. TO CONVERT TO GRID DISTANCES MULTIPLY BY THE COMBINED FACTOR OF 1.0000385133.

VERTICAL DATUM:

NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), BASED ON CITY OF KIRKLAND POINT DESIGNATION 44, WITH AN ELEVATION OF 256.57 FEET, SET AT THE INTERSECTION OF NE 116TH ST AND 108TH AVE NE, SAID POINT ALSO BEING THE SOUTH QUARTER CORNER FOR SECTION 29, TOWNSHIP 26 NORTH, RANGE 5 EAST, W.M., AND CITY OF KIRKLAND POINT DESIGNATION 45, WITH AN ELEVATION OF 81.28, SET AT THE INTERSECTION OF NE 116TH ST AND 100TH AVE NE, SAID POINT ALSO BEING THE SOUTHWEST CORNER FOR SECTION 29, TOWNSHIP 26 NORTH, RANGE 5 EAST, W.M.

NOTES:

THE LOCATION OF EXISTING UNDERGROUND UTILITY FACILITIES SHOWN HEREON ARE BASED ON LOCATE MARKS REQUESTED FOR THIS SURVEY. THE SURVEYOR ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE DELINEATION OF SUCH UNDERGROUND UTILITIES BY THE RESPECTIVE UTILITY OWNERS, NOR FOR THE EXISTENCE OF BURIED OBJECTS WHICH ARE NOT SHOWN ON THE PLAN. ALL UTILITY LOCATIONS SHOULD BE FIELD VERIFIED PRIOR TO CONSTRUCTION.

FIELD WORK WAS COMPLETED ON JULY 28, 2025 1, 2025.

NO EASEMENTS, RESTRICTIONS, OR RESERVATIONS OF RECORD WHICH WOULD BE DISCLOSED BY TITLE REPORT ARE SHOWN.

EXISTING TAX LOT LINES ARE SHOWN BASED ON PUBLICLY AVAILABLE RECORDS.

S&F Land Services
Your Proven Geospatial Partner
1750 112TH AVENUE NE
SUITE B–216, BELLEVUE, WA 98004
(425) 832–3872
WWW.SFLANDS.COM EMAIL: INFO@SFLANDS.COM

20' 0 10' 20' 40'
SCALE: 1" = 20'

S&F Land Services
Your Proven Geospatial Partner
4905 SW SCHOLLS FERRY RD.
PORTLAND, OR 97225
(503) 345–0328
WWW.SFLANDS.COM EMAIL: INFO@SFLANDS.COM

DATE	JOB NO.	FIELD	DRAWN	CHECKED
JULY 30, 2025	2025–714–09	CP/JB	JM	ZLN

2571409_TOPO.dwg

SURVEY FOR:
STANTEC CONSULTING SERVICES INC
1687 114TH AVE SE
SUITE 100
BELLEVUE, WA 98004

CITY OF KIRKLAND, KING COUNTY WASHINGTON

TOPOGRAPHIC SURVEY

IN THE NE & SE 1/4 OF SW 1/4 SEC. 29, TWP. 26N, RGE 5E, W.M.
CITY OF KIRKLAND, KING COUNTY WASHINGTON

106TH AVE NE
NE 120TH PL
NE 120TH ST
IDYLWOOD DIV.2
V.86 / PGS.29-30
CHARLOTTE GARDENS DIV.2
V.170 / PGS.10-11
HARRIS JUANITA ACRES
V.20 / PG.59

FOUND PIN IN CONCRETE MONUMENT DOWN 0.7' IN CASE 0.2'S,X0.1'W, OF CALC (07/25/2025)
FOUND PIN IN CONCRETE MONUMENT DOWN 0.8' IN CASE 0.3'W, OF CALC (07/25/2025)
FOUND PUNCH IN 2" BRASS DISK DOWN 0.7' IN CASE 0.3'W,X0.1'S, OF CALC (07/25/2025)

TPN:3558900680 NEUPERT JAMES & RICE JULIE 10534 NE 120TH PL
TPN:3558900690 OLSON DANA J+SHAWNA G 10528 NE 120TH PL
TPN:3558900250 PAOLOZZI MARSHA ANN 10533 NE 120TH PL
TPN:3558900260 GERRY CURTIS 12006 106TH AVE NE
TPN:1525200010 HITZROTH THOMAS K 11925 106TH AVE NE
TPN:3126700083 CHEN SHI+MUOI LY 10615 NE 120TH ST
TPN:3126700084 THAI FELIX PUI GEE+LIU WANF 10623 NE 120TH ST
TPN:3126700085 AUCLAIR CHARLES AND DEBORAH 10635 NE 120TH ST
TPN:3126700082 DZIKON JANUSZ & GRAZYNA 10641 NE 120TH ST
TPN:3558900300 JOHNSON EDWARD R+LAVERNE P 10621 NE 121ST ST
TPN:3558900310 CATANA IOAN+FLOAREA 10705 NE 121ST ST
TPN:3558900320 POTHUKUCHI NIKHILA+VEERAMAN 10711 NE 121ST ST

CB 2203 RIM 172.53 12" CMP IE 168.93 N 12" CMP IE 168.73 S
CB 2204 RIM 172.43 12" CMP IE 168.83 E 12" CMP IE 168.83 N 12" CMP IE 168.73 W
CB 1715 RIM 174.71 12" CMP IE 170.96 E 12" CMP IE 170.91 W
CB 1688 RIM 178.22 12" CMP IE 174.27 NE 12" CMP IE 174.17 W
SSMH 1716 RIM 178.13 8" CONC IE 169.43 NE 8" CONC IE 168.93 S 8" CONC IE 168.33 NW
SSMH 1792 RIM 184.08 8" CONC IE 175.98 N
CB 2278 RIM 174.77 12" CPP IE 171.47 E 12" CPP IE 171.42 S
CB 1883 RIM 183.94 6" PVC IE 180.59 S 12" CPP IE 180.34 SE 12" CPP IE 180.29 W
CB 1831 RIM 187.54 12" CPP IE 183.39 E 12" CPP IE 183.34 NW
CB 1832 RIM 187.59 6" CPP IE 185.19 S 6" CPP IE 184.99 N 12" CPP IE 184.59 SE 12" CPP IE 184.39 W

Δ=23°52'27" R=250.00' L=104.17' CHORD=S11°39'38"E 103.42'
Δ=46°29'46" L=210.01' R=259.00' SD – CHORD=N35°15'32"E 204.34
S88°47'09"E 138.43'
S88°47'09"E 655.64'
N01°12'52"E 155.44'
N01°39'18"E 264.22'

"STOP/STREET"
"NO PARKING"
"SPEED LIMIT 25 MPH"
6' WOOD FENCE
4' CHAIN LINK FENCE

20' 0 10' 20' 40'
SCALE: 1" = 20'

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DATE	JOB NO.	FIELD	DRAWN	CHECKED
JULY 30, 2025	2025-714-09	CP/JB	JM	ZLN

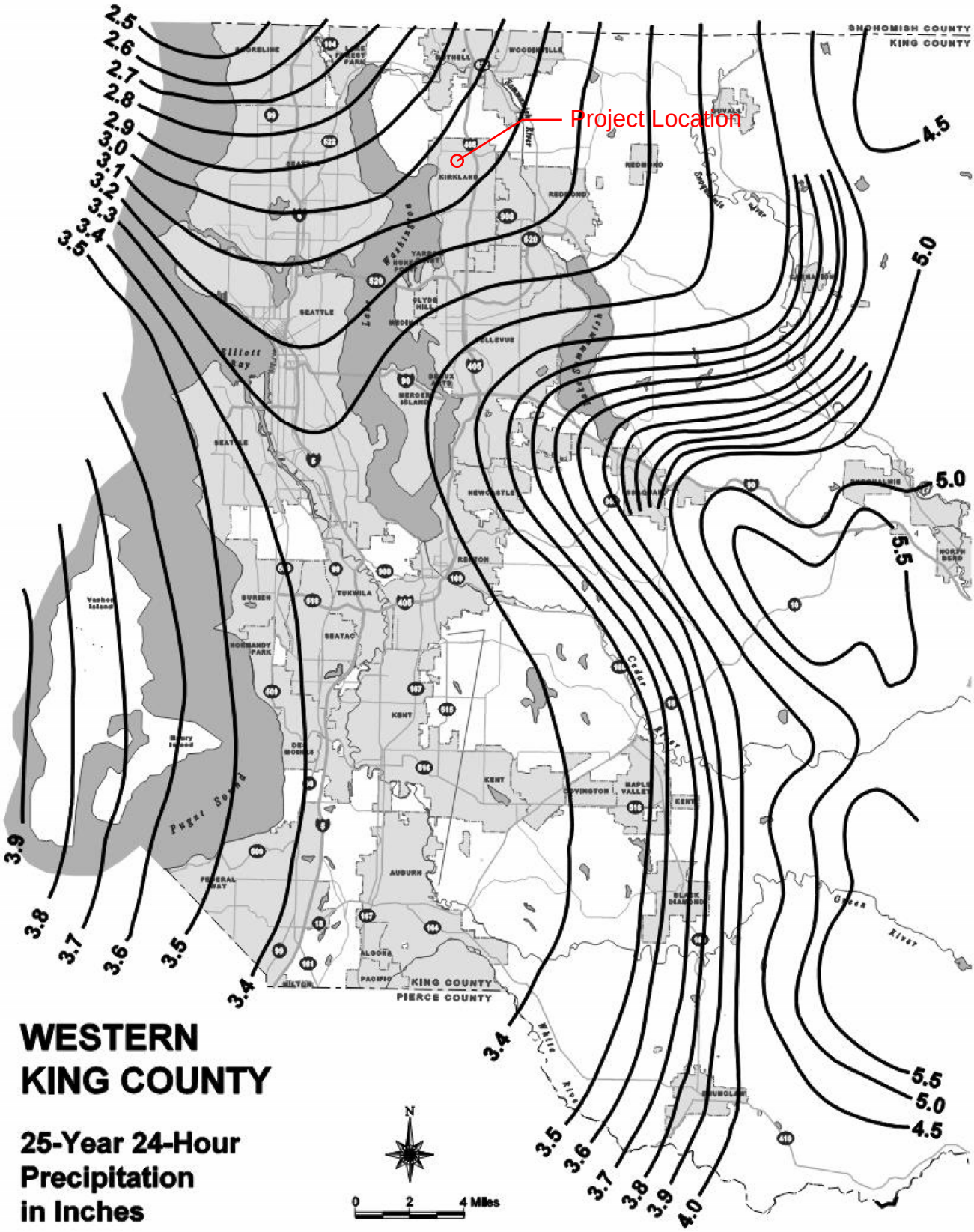
2571409_TOPO.dwg

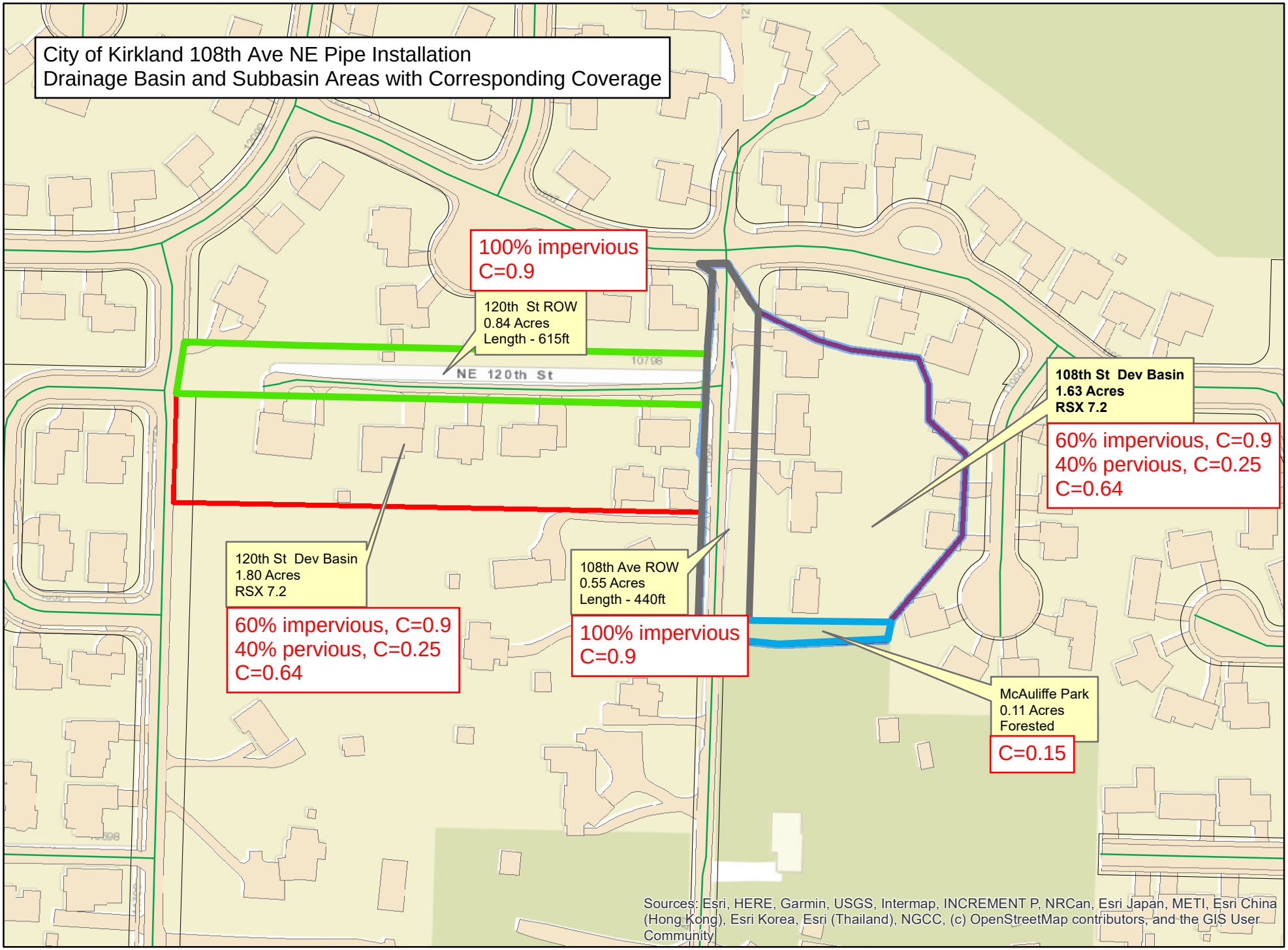
SURVEY FOR:
STANTEC CONSULTING SERVICES INC
1687 114TH AVE SE
SUITE 100
BELLEVUE, WA 98004

CITY OF KIRKLAND, KING COUNTY WASHINGTON

Appendix D Conveyance System Analysis, Design, and Calculations

FIGURE 3.2.1.C 25-YEAR 24-HOUR ISOPLUVIALS




City of Kirkland 108th Ave NE Pipe Installation
Drainage Basin and Subbasin Areas with Corresponding Coverage
100% impervious
C=0.9
120th St ROW
0.84 Acres
Length - 615ft
NE 120th St
108th St Dev Basin
1.63 Acres
RSX 7.2
60% impervious, C=0.9
40% pervious, C=0.25
C=0.64
120th St Dev Basin
1.80 Acres
RSX 7.2
60% impervious, C=0.9
40% pervious, C=0.25
C=0.64
108th Ave ROW
0.55 Acres
Length - 440ft
100% impervious
C=0.9
McAuliffe Park
0.11 Acres
Forested
C=0.15
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Kirkland 25-year Calculations

Project:	Kirkland
Job No.:	2002006449
Prepared by:	AL
Checked by:	BW
Revised:	

VALUES USED FOR THIS SPREADSHEET

P =	3.05	**25**
a =	2.66	year
b =	0.65	

STORM FREQUENCY (YRS)

			a	b
	2		1.58	0.58
	5		2.33	0.63
	10		2.44	0.64
	25		2.66	0.65
	50		2.75	0.65
	100		2.61	0.63

RUNOFF COEFFICIENTS

LAND COVER	C
Dense forest	0.10
Light forest	0.15
Pasture	0.20
Lawns	0.25
Playgrounds	0.30
Gravel areas	0.80
Pavement and roofs	0.90
Open water (ponds, lakes, wetlands)	1.00
FOR SINGLE FAMILY RES. AREA SEE KCSWM PAGE3.2.1-A	

MANNING'S COEFFICIENTS

"n" VALUES FOR PIPES	Uniform	Backwater
Concrete pipe, lined CPE and PP pipe	0.014	0.012
Annular Corrugated Metal Pipe	-	-
Plain or fully coated	0.028	0.024
Paved invert (full depth)	0.021	0.018
3" x 1" corrugation	0.031	0.027
6" x 2" corrugation	0.035	0.030
Helical	0.028	0.024
Spiral rib metal pipe and PVC	0.013	0.011
Ductile Iron pipe cement lined	0.014	0.012
Solid wall HDPE	0.009	0.009
SEE KCSWM TABLE 4.2.1.D		

Existing and Future Developed Area Flow Calculations (For Reference)

Sub-basin	Upstream Rim elev.	Upstm IE	Dwnstm IE	Sub-basin Description	Area (Ac.)	Area (Sf)	C	C*A	T_c (min)	i_r	I_r	Q_r (cfs)
120th St (Ex. ROW)	-	-	-		0.84	36590.40	0.90	0.756	6.300	0.804	2.453	1.854
120th St (Future Developed)	-	-	-	60% imp	1.80	78408.00	0.64	1.152	6.300	0.804	2.453	2.825
108th St (Ex. ROW)	-	-	-		0.55	23958.00	0.90	0.495	6.300	0.804	2.453	1.214
108th St (Future Developed)	-	-	-	60% imp	1.63	71002.80	0.64	1.043	6.300	0.804	2.453	2.558
McAuliffe Park	-	-	-		0.11	4791.60	0.15	0.017	6.300	0.804	2.453	0.040
				TOTAL	**4.93**						**TOTAL**	**8.492**

25 YEAR STORM FLOW CALCULATIONS

Upstm CB	Dnstm CB	Area (Ac.)	C	C*A	Sum(C*A)	T_c (min)	i_r	I_r	Q_r (cfs)
Ex.CB-1792	CB-09	1.06	0.62	0.657	0.657	6.300	0.804	2.453	1.612
CB-09	CB-08	0.14	0.90	0.126	0.783	6.300	0.804	2.453	1.921
CB-08	CB-07	1.09	0.71	0.774	1.557	6.300	0.804	2.453	3.819
CB-07	CB-06	0.66	0.72	0.475	2.032	6.300	0.804	2.453	4.984
CB-06	CB-05	0.66	0.72	0.475	2.508	6.300	0.804	2.453	6.150
CB-05	CB-03	0.66	0.72	0.475	2.983	6.300	0.804	2.453	7.315
CB-03	CB-02	0.00	0.00	0.000	2.983	6.300	0.804	2.453	7.315
CB-02	CB-01	0.66	0.72	0.475	3.458	6.300	0.804	2.453	8.481
CB-01	Ex. CB-7446	0.00	0.00	0.000	3.458	6.300	0.804	2.453	8.481

Note: Future site grading and routing of flows from future developmentis unknown. Tributary area to each catch basin is approximate

25 YEAR STORM BACKWATER ANALYSIS

Dnstm CB	**Upstm CB**	**Upstream Rim elev.**	**Dwnstm IE**	**Upstm IE**	**Qr (cfs)**	**Length (ft)**	**Pipe (ft)**	**n**	Barrel Area (ft^2)	Barrel Vel. (fps)	Bar Vel Head (ft)	TW elev. (ft)	Frict. Loss (ft)	Ent HGL elev (ft.)	Ent. Head Loss (ft.)	Exit Head Loss (ft.)	Outlet cont elev. (ft)	Inlet cont elev. (ft)	Appr. Vel. Head (ft)	Bend Head Loss (ft)	Junc. Head Loss (ft)	HW elev (ft.)	Freeboard (ft.)
CB-7446	CB-01	180.71	174.27	175.71	8.481	57.57	1.00	0.012	0.785	10.80	1.810	175.27	2.752	178.02	0.905	1.810	180.74	176.310	1.810	0.000	0.000	178.93	1.78
CB-01	CB-02	186.02	175.81	179.33	8.481	61.57	1.00	0.012	0.785	10.80	1.810	178.93	2.943	181.87	0.905	1.810	184.59	179.930	1.810	0.000	0.000	182.78	3.24
CB-02	CB-03	191.08	179.43	180.69	7.315	15.00	1.00	0.012	0.785	9.31	1.347	182.78	0.533	183.31	0.674	1.347	185.33	181.290	1.347	1.751	0.000	185.73	5.35
CB-03	CB-05	211.55	183.13	204.50	7.315	19.01	1.00	0.012	0.785	9.31	1.347	185.73	0.676	186.41	0.674	1.347	188.43	205.100	1.347	0.000	0.000	203.75	7.80
CB-05	CB-06	229.89	205.86	223.71	6.150	106.76	1.00	0.012	0.785	7.83	0.952	203.75	2.683	206.44	0.476	0.952	207.86	224.310	0.952	0.000	0.000	223.36	6.53
CB-06	CB-07	244.66	223.81	239.98	4.984	161.74	1.00	0.012	0.785	6.35	0.625	223.36	2.670	226.03	0.313	0.625	226.97	240.580	0.625	0.000	0.000	239.95	4.71
CB-07	CB-08	265.51	240.08	257.97	3.819	223.57	1.00	0.012	0.785	4.86	0.367	239.95	2.167	242.12	0.184	0.367	242.67	258.570	0.367	0.492	0.000	258.69	6.82
CB-08	CB-09	262.37	258.07	260.27	1.921	60.82	1.00	0.012	0.785	2.45	0.093	258.69	0.149	258.84	0.046	0.093	258.98	260.870	0.093	0.124	0.000	260.90	1.47

Appendix E Operations and Maintenance Plan

NO. 5 – CATCH BASINS AND MANHOLES

Maintenance Component	Defect or Problem	Condition When Maintenance is Needed	Results Expected When Maintenance is Performed
Structure	Sediment	Sediment exceeds 60% of the depth from the bottom of the catch basin to the invert of the lowest pipe into or out of the catch basin or is within 6 inches of the invert of the lowest pipe into or out of the catch basin.	Sump of catch basin contains no sediment.
	Trash and debris	Trash or debris of more than ½ cubic foot which is located immediately in front of the catch basin opening or is blocking capacity of the catch basin by more than 10%.	No Trash or debris blocking or potentially blocking entrance to catch basin.
		Trash or debris in the catch basin that exceeds $^1/_3$ the depth from the bottom of basin to invert the lowest pipe into or out of the basin.	No trash or debris in the catch basin.
		Dead animals or vegetation that could generate odors that could cause complaints or dangerous gases (e.g., methane).	No dead animals or vegetation present within catch basin.
		Deposits of garbage exceeding 1 cubic foot in volume.	No condition present which would attract or support the breeding of insects or rodents.
	Damage to frame and/or top slab	Corner of frame extends more than ¾ inch past curb face into the street (If applicable).	Frame is even with curb.
		Top slab has holes larger than 2 square inches or cracks wider than ¼ inch.	Top slab is free of holes and cracks.
		Frame not sitting flush on top slab, i.e., separation of more than ¾ inch of the frame from the top slab.	Frame is sitting flush on top slab.
	Cracks in walls or bottom	Cracks wider than ½ inch and longer than 3 feet, any evidence of soil particles entering catch basin through cracks, or maintenance person judges that catch basin is unsound.	Catch basin is sealed and is structurally sound.
		Cracks wider than ½ inch and longer than 1 foot at the joint of any inlet/outlet pipe or any evidence of soil particles entering catch basin through cracks.	No cracks more than $^1/_4$ inch wide at the joint of inlet/outlet pipe.
	Settlement/ misalignment	Catch basin has settled more than 1 inch or has rotated more than 2 inches out of alignment.	Basin replaced or repaired to design standards.
	Damaged pipe joints	Cracks wider than ½-inch at the joint of the inlet/outlet pipes or any evidence of soil entering the catch basin at the joint of the inlet/outlet pipes.	No cracks more than ¼-inch wide at the joint of inlet/outlet pipes.
	Contaminants and pollution	Any evidence of contaminants or pollution such as oil, gasoline, concrete slurries or paint.	Materials removed and disposed of according to applicable regulations. Source control BMPs implemented if appropriate. No contaminants present other than a surface oil film.
Inlet/Outlet Pipe	Sediment accumulation	Sediment filling 20% or more of the pipe.	Inlet/outlet pipes clear of sediment.
	Trash and debris	Trash and debris accumulated in inlet/outlet pipes (includes floatables and non-floatables).	No trash or debris in pipes.
	Damaged	Cracks wider than ½-inch at the joint of the inlet/outlet pipes or any evidence of soil entering at the joints of the inlet/outlet pipes.	No cracks more than ¼-inch wide at the joint of the inlet/outlet pipe.

NO. 5 – CATCH BASINS AND MANHOLES

Maintenance Component	Defect or Problem	Condition When Maintenance is Needed	Results Expected When Maintenance is Performed
Metal Grates (Catch Basins)	Unsafe grate opening	Grate with opening wider than $^{7}/_{8}$ inch.	Grate opening meets design standards.
	Trash and debris	Trash and debris that is blocking more than 20% of grate surface.	Grate free of trash and debris.
	Damaged or missing	Grate missing or broken member(s) of the grate. **Any open structure requires urgent maintenance**.	Grate is in place and meets design standards.
Manhole Cover/Lid	Cover/lid not in place	Cover/lid is missing or only partially in place. **Any open structure requires urgent maintenance**.	Cover/lid protects opening to structure.
	Locking mechanism Not Working	Mechanism cannot be opened by one maintenance person with proper tools. Bolts cannot be seated. Self-locking cover/lid does not work.	Mechanism opens with proper tools.
	Cover/lid difficult to Remove	One maintenance person cannot remove cover/lid after applying 80 lbs. of lift.	Cover/lid can be removed and reinstalled by one maintenance person.

NO. 6 – CONVEYANCE PIPES AND DITCHES

Maintenance Component	Defect or Problem	Conditions When Maintenance is Needed	Results Expected When Maintenance is Performed
Pipes	Sediment & debris accumulation	Accumulated sediment or debris that exceeds 20% of the diameter of the pipe.	Water flows freely through pipes.
	Vegetation/roots	Vegetation/roots that reduce free movement of water through pipes.	Water flows freely through pipes.
	Contaminants and pollution	Any evidence of contaminants or pollution such as oil, gasoline, concrete slurries or paint.	Materials removed and disposed of according to applicable regulations. Source control BMPs implemented if appropriate. No contaminants present other than a surface oil film.
	Damage to protective coating or corrosion	Protective coating is damaged; rust or corrosion is weakening the structural integrity of any part of pipe.	Pipe repaired or replaced.
	Damaged	Any dent that decreases the cross section area of pipe by more than 20% or is determined to have weakened structural integrity of the pipe.	Pipe repaired or replaced.
Ditches	Trash and debris	Trash and debris exceeds 1 cubic foot per 1,000 square feet of ditch and slopes.	Trash and debris cleared from ditches.
	Sediment accumulation	Accumulated sediment that exceeds 20% of the design depth.	Ditch cleaned/flushed of all sediment and debris so that it matches design.
	Noxious weeds	Any noxious or nuisance vegetation which may constitute a hazard to County personnel or the public.	Noxious and nuisance vegetation removed according to applicable regulations. No danger of noxious vegetation where County personnel or the public might normally be.
	Contaminants and pollution	Any evidence of contaminants or pollution such as oil, gasoline, concrete slurries or paint.	Materials removed and disposed of according to applicable regulations. Source control BMPs implemented if appropriate. No contaminants present other than a surface oil film.
	Vegetation	Vegetation that reduces free movement of water through ditches.	Water flows freely through ditches.
	Erosion damage to slopes	Any erosion observed on a ditch slope.	Slopes are not eroding.
	Rock lining out of place or missing (If Applicable)	One layer or less of rock exists above native soil area 5 square feet or more, any exposed native soil.	Replace rocks to design standards.

Appendix F Geotechnical Report

Geotechnical Report

City of Kirkland 108th Avenue NE Pipe Installation Project

Stantec

Prepared for:
City of Kirkland

Prepared by:
Stantec Consulting Ltd.

Date:
December 11, 2025

Project/File:
2002006449

Stantec Consulting Ltd.

Revision Record

Revision	Date	Description
A	11/10/2025	Draft, issued for internal review
B	12/11/2025	Draft, issued with 90% Design

Disclaimer

The conclusions in the Report titled Geotechnical Report are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from City of Kirkland (the "Client") and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

This Report is intended solely for use by the Client in accordance with Stantec's contract with the Client. While the Report may be provided by the Client to applicable authorities having jurisdiction and to other third parties in connection with the project, Stantec disclaims any legal duty based upon warranty, reliance or any other theory to any third party, and will not be liable to such third party for any damages or losses of any kind that may result.

Table of Contents

1 Introduction 1
1.1 Scope of Work 1
1.2 Project Understanding 1
1.3 Design Codes and Standards 2

2 Site Description and Geology 3
2.1 Physical Setting 3
2.2 Geological Setting 3

3 Geotechnical Investigation 4
3.1 Field Program 4
3.1.1 Site Reconnaissance 4
3.1.2 Utility Locating 4
3.1.3 Air-Vacuum 4
3.1.4 Traffic Control 4
3.1.5 Borehole Drilling and In-situ Testing 5
3.2 Laboratory Testing 5

4 Subsurface Conditions 6
4.1 Soil Conditions 6
4.1.1 Topsoil 6
4.1.2 Asphalt 6
4.1.3 Fill 6
4.1.4 Silt (ML) 6
4.1.5 Lean Clay (CL) 6
4.1.6 Sand (SP), Sand with Silt (SP-SM), Silty Sand (SM) 7
4.2 Groundwater Conditions 7
4.3 Potential Variation in Subsurface Conditions 8

5 Seismic Considerations 9
5.1 Seismic Hazard and Site Classification 9
5.2 Liquefaction Assessment 9
5.3 Discussion 10

6 Geotechnical Design Recommendations 11
6.1 Pipe Support and Settlement 11
6.2 Temporary Trench Excavation, Shoring, and Dewatering 11
6.2.1 Shored Excavations 12
6.2.2 Set-Back Distances 12
6.2.3 Groundwater Control 13
6.3 Pipe Bedding and Surround 13
6.4 Trench Backfill and Compaction 14
6.4.1 Re-Use of Existing Materials as Backfill 14
6.5 Pavement Restoration 15
6.6 Geotechnical Field Review During Construction 15

7 Closure 16
8 References 17

List of Tables

Table 1 Borehole Summary 5
Table 2 Seismic Design Parameters 9

List of Appendices

Appendix A Statement of General Conditions
Appendix B Borehole Location Plan
Appendix C Borehole Records
Appendix D Laboratory Test Results
Appendix E ASCE Seismic Hazard Report

1 Introduction

Stantec Consulting Ltd. (Stantec) has prepared this geotechnical report in support of the design of the proposed City of Kirkland 108th Avenue NE Pipe Installation Project (the Project). This geotechnical report presents the results of the geotechnical investigation program and design recommendations for the Project.

The work described in this report was carried out in general accordance with Stantec's *Statement of Qualifications – 108th Avenue NE Pipe Installation Project*, dated April 18, 2025, and subsequent geotechnical scope of services proposal titled *Kirkland Storm – Geotech Scope of Services*, which was developed in response to the City of Kirkland's *Request for Qualification – City of Kirkland 108th Avenue NE Pipe Installation Project*, dated March 27, 2025.

This report should be read in conjunction with the Statement of General Conditions, which is included in **Appendix A.**

1.1 Scope of Work

Stantec's geotechnical scope of work for the Project included the following:

- Review of available published information on subsurface soil and groundwater conditions for the Project site
- Utility clearance and permitting for proposed investigative locations
- Geotechnical site investigation comprising borehole drilling and in-situ testing at five locations along the proposed Project alignment
- Laboratory testing of soil samples collected during the geotechnical investigation
- Preparation of this report to provide geotechnical recommendations for the design and construction of the project, including as applicable:
    - Evaluation of suitability of site soils for proposed construction methods.
    - Earthworks (site preparation, excavation, material specifications, placement and compaction requirements, re-use).
    - Construction considerations related to encountered subsurface conditions.

1.2 Project Understanding

Based on the information provided in the City of Kirkland's Request for Qualification, we understand that the main objective of the Project is to alleviate flooding of the storm drainage system in the Juanita Neighborhood area. Specifically, there is an isolated storm drainage system on 108th Avenue NE near NE 120th Street that has a missing link and does not connect to a downstream stormwater conveyance system. The existing system consists of three interconnected catch basins that collect stormwater runoff from the drainage basin east of 108th Avenue NE. The system has documented several flooding events and the stormwater surcharging of the affected structures. In particular, the western catch basin type-I inlet (asset no. 1792) has surcharged and flooded downstream into the private parcel to the west of 108th Avenue NE.

Secondary to the concern of relieving the local drainage issue, the City of Kirkland desires to provide storm drainage infrastructure along NE 120th Street as there is currently no storm drainage system along the dead-end road and storm water currently sheet flows to the path of least resistance. This arrangement does not allow for future redevelopment of any of the properties located along NE 120th Street.

The proposed design alignment consists of Route 3 as described Stantec's Statement of Qualifications, which will connect the isolated storm drainage system on 108th Avenue NE to the existing storm drainage system on 106th Avenue NE via a new storm drainage pipeline along NE 120th Street. Based on our review of the drawing set titled *City of Kirkland 108th Ave NE Pipe Installation Project Kirkland, WA, 60% Design*, the proposed alignment includes approximately 840 linear feet of storm drain pipeline with depth of cover ranging from approximately 2 feet to approximately 9 feet, as well as ten catch basins founded at depths ranging from approximately 5 feet to approximately 12 feet below ground surface. Conventional open-cut construction methods are proposed for installation of the new storm drainage system.

1.3 Design Codes and Standards

Geotechnical engineering recommendations provided in this report were developed in accordance with the following design codes and standards:

- City of Kirkland Storm Drainage Pre-Approved Plans, 2025.
- Washington State Department of Transportation (WSDOT) Standard Specifications for Road, Bridge, and Municipal Construction, 2026 (herein referred to as WSDOT 2026)
- WSDOT Geotechnical Design Manual, 2022
- American Society of Civil Engineers, Minimum Design Loads and Associated Criteria for Buildings and Other Structures (ASCE 7-22), 2022

2 Site Description and Geology

2.1 Physical Setting

The Project site is situated within the road Right-of-Way of NE 120th Street between 106th Avenue NE and 108th Avenue NE in the Juanita Neighborhood of the City of Kirkland, Washington, and includes the following sections:

- Sta. 10+27 (Approx.) to Sta. 11+55.39: 106th Avenue NE, from existing Manhole STMH 7446 to NE 120th Street
- Sta. 20+74.69 to Sta. 26+97.05: NE 120th Street, from 106th Avenue NE to 108th Avenue NE
- Sta. 31+43.90 to Sta. 32+26.42: 108th Avenue NE, from NE 120th Street to existing Manhole STMH 1792

Public Land Survey Township mapping provided on the State of Washington's Geospatial Open Data Portal (Washington State Geographic Information Office, 2025) indicates that the Project site is located within Section 29 of Township 26 North, Range 05 East, SW ¼ Section.

The ground surface at the Project site slopes from east to west, with geodetic elevation ranging from approximately 179 feet at 106th Avenue NE to approximately 266 feet at 108th Avenue NE. NE 120th Street dead-ends approximately 250 feet east of 106th Avenue NE. An approximately 25-foot-high unpaved slope is present between the end of NE 120th Street and 106th Avenue NE. Surrounding land usage is low density residential.

2.2 Geological Setting

Based on the Washington Geological Survey's *Geologic Information Portal* interactive map (Washington Department of Natural Resources, 2025), the surficial soils at the site consist of geological unit Qgd (Pleistocene continental glacial drift): Pleistocene till and outwash clay, silt, sand, gravel, cobbles, and boulders deposited by or originating from continental glaciers; locally includes peat, nonglacial sediments, modified land, and artificial fill.

3 Geotechnical Investigation

A geotechnical investigation program was completed to identify and assess the existing soil stratigraphy at the site and estimate representative soil parameters for use in design. The geotechnical investigation program consisted of a field program, which included a site reconnaissance, utility locating, knifing, borehole drilling, sampling, and in-situ testing, followed by geotechnical laboratory testing.

3.1 Field Program

Stantec carried out a geotechnical investigation field program between September 2 and 10, 2025, which consisted of utility locating, utility clearance via knife, and drilling five boreholes (B-1 through B-5) with Standard Penetration Testing (SPT). A borehole location plan that shows the approximate locations of the boreholes is provided in **Appendix B**.

3.1.1 Site Reconnaissance

Prior to the field program, Stantec carried out a site reconnaissance to mark and confirm access to the proposed borehole locations and to identify potential obstructions or conflicts.

3.1.2 Utility Locating

Prior to the field program, Stantec submitted a notification to nearby utility owners using the Washington Utility Notification Center 811 system. The information received from the 811 Ticket was reviewed and implemented into the proposed borehole location plan allowing for respective distances from existing utilities.

Stantec retained the services of a subcontracted 3rd party utility locator, Geomarkout Locating Co., to carry out on-site delineation of existing utilities prior to finalizing the borehole locations on September 2, 2025. The on-site utility locating was performed using Ground Penetrating Radar (GPR) and electromagnetic (EM) scanning equipment.

3.1.3 Air-Vacuum

Air-vacuum is an excavation process in which soils are removed using pressurized air and vacuum suction to mitigate the risk of damage to existing underground utilities. All boreholes were air-vacuumed to a depth of 5 feet below ground surface to clear the boreholes for buried utilities prior to drilling. Air-vacuum was completed by the drilling subcontractor, Holt Services Inc., on September 8, 2025, prior to drilling.

3.1.4 Traffic Control

Prior to the field program, traffic control plans were submitted to the City of Kirkland for review. Stantec retained Traffic Management International to provide traffic control services during drilling of boreholes B-1, B-2, and B-5 on September 9, 2025.

3.1.5 Borehole Drilling and In-situ Testing

Geotechnical borehole drilling was carried out on September 9 and 10, 2025, by Holt Services Inc., using a truck mounted Mobile B60 drill rig. Boreholes B-1, B-2, B-4, and B-5 were advanced to a depth of 15 feet below existing ground surface using the hollow-stem auger drilling method. Borehole B-3 was advanced to a depth of 50 feet below existing ground surface using the mud-rotary drilling method.

In all boreholes except B-3, SPT was carried out and soil samples were collected from the SPT split barrel at approximately 2.5-foot depth intervals to the termination depth of 15 feet. In borehole B-3, SPT was carried out at 2.5-foot depth intervals above 30-foot depth and at 10-foot intervals from 30 feet to the termination depth at 50 feet. All boreholes were backfilled using bentonite chips in accordance with Department of Natural Resources requirements, and the ground surface at the boreholes was reinstated to as near existing condition as practically possible using either concrete dyed black to match the appearance of the surrounding asphalt, or topsoil. Excess soil cuttings were collected in a 55-gallon drum for offsite disposal. Borehole details are summarized in **Table 1**.

Table 1 Borehole Summary

Location ID	Latitude[1] (º N)	Longitude[1] (º W)	Approximate Ground Surface Elevation[2] (feet)	Drilling Method	Termination Depth (feet)
B-1	47.70793	122.19987	179	Hollow-stem Auger	15
B-2	47.70762	122.19987	185	Hollow-stem Auger	15
B-3	47.70761	122.19941	209	Mud Rotary	50
B-4	47.70758	122.19840	241	Hollow-stem Auger	15
B-5	47.70740	122.19733	263	Hollow-stem Auger	15

Notes:
1. Borehole coordinates collected using handheld GPS device and are accurate to approximately +/- 15 feet.
2. Ground surface elevations estimated using City of Kirkland ArcGIS 2’ topographic contour map (City of Kirkland, 2025) open data and are approximate.

The geotechnical site investigation was carried out under the full-time supervision of a Stantec geotechnical representative who located the boreholes, observed the drilling and testing operations, classified the soil conditions encountered, prepared field records, and collected soil samples for laboratory testing. Detailed Borehole Records are provided in **Appendix C**.

3.2 Laboratory Testing

The objectives of the geotechnical laboratory tests were to aid in the visual classification of the soil samples and to derive generalized soil parameters for the locations of interest. The laboratory testing was completed in accordance with the applicable ASTM standard testing procedures and included moisture content, Atterberg limits, and fines content tests.

Borehole records are provided in **Appendix C,** and the results of the laboratory tests are presented in **Appendix D**.

4 Subsurface Conditions

4.1 Soil Conditions

The following subsections describe the subsurface conditions encountered during Stantec's geotechnical explorations The subsurface soil conditions encountered within the boreholes were generally consistent with the published geological information as discussed above. **Appendix C** contains borehole records describing the soil and groundwater conditions encountered in the boreholes.

4.1.1 Topsoil

Topsoil was encountered at the ground surface in boreholes B-3, B-4, and B-5. The topsoil thickness was not recorded in borehole B-3 due to the surface of the borehole being air-vacuumed prior to drilling. In borehole B-4, the topsoil was approximately 5 inches thick and contained gravel. In borehole B-5, the topsoil was approximately 5 inches thick and contained organic debris. In all boreholes, the topsoil was underlain by native sandy soils.

4.1.2 Asphalt

Asphalt was encountered at the ground surface in boreholes B-1 and B-2. The asphalt thickness was approximately 3 inches in both boreholes. The asphalt was underlain by fill in both boreholes.

4.1.3 Fill

Fill was encountered below the asphalt in boreholes B-1 and B-2. The fill soils generally consisted of road base sand with gravel and silt, with wood/organic debris encountered in borehole B-2. The fill thickness was approximately 5 feet in both boreholes. The fill was underlain by silt in borehole B-1 and silty sand in borehole B-2.

4.1.4 Silt (ML)

Underlying the fill in borehole B-1, brown to blueish grey silt was encountered, extending to approximately 12.5-foot depth. The layer was described as dry to moist. At 7.5-foot depth, a seam of wet sand was observed. SPT blow counts in the silt layer indicated that the layer is dense.

One Atterberg limits test conducted on a sample taken from the silt layer indicated that the silt was non-plastic. The measured moisture content of the silt layer ranged between 24% and 25%.

4.1.5 Lean Clay (CL)

In borehole B-1, a thin layer of brown lean clay was encountered from approximately 12.5 feet to 13.5 feet. In borehole B-3, a layer of grey to blue lean clay was encountered at approximately 40-foot depth and was inferred to extend beyond the borehole termination depth of 50 feet. In both boreholes, the clay was

described as low plasticity and moist. SPT blow counts in the clay layer indicate that the layer is hard. The lateral continuity of the clay layer between boreholes B-1 and B-3 is not known.

One Atterberg limits test carried out in this layer in borehole B-3 indicate that the clay has low plasticity with a measured Liquid Limit of 32%, a Plastic Limit of 23%, and a Plasticity Index of 9, with a measured natural moisture content of 26%.

One grain size analysis (wash-sieve) test conducted on a sample from the clay layer in borehole B-1 provided the following particle size distribution:

- Gravel: 0%
- Sand: 22%
- Fines (i.e., clay and silt): 78%

4.1.6 Sand (SP), Sand with Silt (SP-SM), Silty Sand (SM)

Sand was encountered in all boreholes. The observed soil conditions, compactness conditions, and depth intervals are as follows:

- B-1: Dense poorly graded sand was encountered below the lean clay layer from approximately 13.5', inferred to extend beyond the borehole termination depth of 15 feet.
- B-2: Loose brown to light brown silty sand was encountered below the fill at approximately 5-foot depth, becoming dense below 10 feet and extending beyond the borehole termination depth of 15 feet.
- B-3: Loose to compact brown silty sand was encountered at 2.5-foot depth, transitioning to dense to very dense poorly graded sand with silt below approximately 10 feet, which extended to approximately 40 feet.
- B-4: Very dense brown poorly graded sand with silt was encountered below the topsoil, extending beyond the borehole termination depth of 15 feet.
- B-5: Compact to dense brown to dark brown silty sand was encountered below the topsoil, transitioning to very dense to dense brown to dark brown poorly graded sand with silt and gravel at approximately 10 feet, extending beyond the borehole termination depth of 15 feet.

Grain size analyses (wash-sieve and hydrometer) tests conducted on samples from the sand layer provided the following ranges of particle size distribution:

- Gravel: 0% – 3%
- Sand: 68% – 93%
- Fines (i.e., clay and silt): 7% – 33%

4.2 Groundwater Conditions

The presence of groundwater was inferred during drilling in boreholes B-1 and B-2 based on the observed change in moisture content of the recovered soil samples. In borehole B-1, groundwater was inferred at approximately 2.5-foot depth. However, this groundwater is inferred to be perched on the underlying low-

permeability soil layer, which was encountered at approximately 5-foot depth, and may not be representative of local groundwater levels. In borehole B-2, groundwater was inferred at approximately 7.5-foot depth.

Direct observation of groundwater depth was not possible during drilling of borehole B-3 due to the limitations of the mud rotary drilling method, which introduces drilling fluid to the subsurface materials.

Groundwater was not observed in boreholes B-4 and B-5. It is noted that no drilling fluid was used while drilling boreholes B-4 and B-5.

4.3 Potential Variation in Subsurface Conditions

The subsurface soil and groundwater conditions described above and expressed on the borehole's records are representative only at the borehole location and at the time of the exploration. Conditions can vary between the explored locations and at the time of construction. It is anticipated that groundwater conditions will vary with seasonal weather trends and precipitation events.

5 Seismic Considerations

5.1 Seismic Hazard and Site Classification

Site-specific design parameters were obtained from the interactive website maintained by ASCE in accordance with the provisions of ASCE 7-22 and are provided in **Table 2** and attached in **Appendix E**. The selection of seismic design parameters is based on the Maximum Considered Earthquake (MCER), which corresponds to a seismic event with a 2% probability of exceedance in 50 years. Seismic site class was estimated using SPT N-values based on the procedures outlined in ASCE 7-22.

Table 2 Seismic Design Parameters

Parameter	Value
Site Class	D
Mapped MCER Spectral Response Acceleration at Short Period, S_S (g)	1.42
Mapped MCER Spectral Response Acceleration at 1-second period, S_1 (g)	0.56
Site Modified Peak Ground Acceleration, PGA_M	0.53
Site Modified Earthquake Spectral Response Acceleration at Short Periods, S_{MS} (g)	1.54
Site Modified Considered Earthquake Spectral Response Acceleration at 1-Second Periods, S_{M1} (g)	1.20
Design Spectral Acceleration at 0.2-second period, S_{DS} (g)	1.03
Design Spectral Acceleration at 1.0-second period, S_{D1} (g)	0.80
Note: ‘g’ is the acceleration due to gravity	

5.2 Liquefaction Assessment

Liquefaction is a phenomenon where soils lose a significant part of their strength due to a rapid increase in pore pressure during a cyclic loading event (e.g., earthquake) reducing the soil’s effective stress. If the effective stress drops to zero due to 100% excess pore pressure response, the soil can behave more like a liquid rather than a solid. Liquefaction can occur in saturated cohesionless soils including gravel, sand, and silty soils with plasticity index PI less than 7. Accumulation of strain and deformation with seismic shaking, but without liquefaction triggering, is referred to as “cyclic mobility” and can occur in cohesive soils. Silts and clays with PI greater than 7 may not liquefy but may be susceptible to cyclic mobility (Idriss and Boulanger, 2008).

The methods used to evaluate liquefaction potential involve comparison of the cyclic shear stress in the ground induced by the earthquake loading (i.e., the Cyclic Stress Ratio [CSR]) to the shear resistance of the soil (i.e., the Cyclic Resistance Ratio [CRR]). The Factor of Safety against liquefaction is estimated as the ratio of CRR to CSR.

A preliminary liquefaction assessment of the subsurface soils was carried out using the simplified SPT-based method recommended by Idriss and Boulanger (2014). The peak ground acceleration (PGA) for site class D and a mean earthquake magnitude of 7 were used in the analyses. The results of the liquefaction assessment indicate that the subsurface soils encountered in borehole B-2 are susceptible to liquefaction

between approximately 7.5 feet and 10 feet under the 2,475-year return period earthquake shaking. Based on our analysis, we anticipate that up to 1 inch of settlement may occur in these materials during shaking.

Based on our review of the 60% Design Drawings, the pipeline invert depth near borehole B-2 is between 5 feet and 6 feet below ground surface. Additionally, catch basin CB-02 will be founded at approximately 9 feet below ground surface near borehole B-2. It is anticipated that the pipeline and CB-02 may be impacted by the liquefiable soils.

5.3 Discussion

The liquefiable soils encountered in borehole B-2 extended from the groundwater table to approximately 10 feet below ground surface. It is noted that there is uncertainty related to the depth of the groundwater table, which was inferred during drilling at approximately 7.5-foot depth. Liquefiable soils were not encountered in nearby borehole B-1, and the lateral continuity of the liquefiable layer is not well understood.

Liquefaction Potential mapping provided on KirklandMaps (City of Kirkland, 2025) indicates that the liquefaction potential at the site is ‘Low’.

Based on the information encountered in the borings, and our analysis, liquefaction may result in up to 1 inch of settlement during shaking. If the risk of settlement due to liquefiable soils is unacceptable, the risk may be reduced to acceptable levels by over excavating to remove the liquefiable soils, consisting of saturated loose (6 < SPT N < 9) silty sand, to expose the underlying dense (SPT N > 28) silty sand, which is not considered to be liquefiable. The liquefiable soils should be replaced with compacted granular fill as discussed in **Section 6.3**.

Trench excavation along 108th Avenue NE should be carried under the supervision of a Stantec Geotechnical Engineer such that the presence of potentially liquefiable soils (i.e., loose and saturated sandy soils) can be confirmed and over-excavation extents can be directed.

6 Geotechnical Design Recommendations

All pipe, manholes, catch basins, and appurtenances shall be laid on a properly prepared foundation in accordance with the WSDOT 2026.

6.1 Pipe Support and Settlement

The subsurface soils encountered in the boreholes at the anticipated invert depths of the proposed storm sewer consisted of the following:

- 106th Avenue NE: dense silt near Sta. 10+20, transitioning to loose silty sand near Sta. 11+50.
- NE 120th Street: loose to compact silty sand near Sta. 23+20, transitioning to very dense poorly graded sand with silt moving up chainage towards Sta 24+60.
- 108th Avenue NE: compact to dense silty sand

Based on the subsurface conditions encountered, we consider that the proposed storm sewer can be grade supported along NE 120th Street and 108th Avenue NE, provided recommendations provided in the following subsections are adhered to. As discussed in **Section 5.3**, excavation and replacement of liquefiable soils with compacted granular fill may be required if anticipated settlements are unacceptable along 106th Avenue NE near Sta. 11+50. Soft or compressible soils were not encountered below the proposed pipe invert and manhole base depths at the borehole locations other than borehole B-2. Accordingly, we anticipate post-construction settlement of grade-supported sewer pipes and manholes would be negligible. It is noted that the silt encountered in borehole B-1 is anticipated to be moisture sensitive and subject to moisture related disturbance if groundwater and surface water infiltration are not managed appropriately.

As soil stratigraphy is expected to vary between borehole locations, some over-excavation of soft soils and replacement with compacted granular fill may be required and should be anticipated. Excavation, backfilling and compaction work should be completed in accordance with the recommendations in subsequent subsections of this report. No other ground improvement is anticipated to be required to support the proposed storm sewer.

6.2 Temporary Trench Excavation, Shoring, and Dewatering

It is anticipated that the proposed storm sewer will be installed using open-cut excavations. It is understood that the pipe invert depths will vary from approximately 3 feet to 10 feet below the existing ground surface.

Excavations should be in accordance with City of Kirkland Plan No. CK-D.02 *Storm Trench Detail*.

When, after excavating to the foundation level, the material remaining in the trench bottom is determined to be unsuitable by the Geotechnical Engineer, excavation shall be continued to such additional depth and width as required by the Geotechnical Engineer. The trench foundation shall be backfilled to the bottom of the pipe zone using suitable granular material, and compacted to form a uniformly dense, unyielding foundation.

The maximum width of trench excavations at the top of pipe zone should be 30 inches for pipe up to and including 12-inch outer diameter (OD), and OD plus 16 inches for pipe larger than 12-inch OD. Excavations should be benched as needed to accommodate shoring. Excavation for manholes and other Structures connected to the pipelines shall be sufficient to provide a minimum of 12 inches between their surfaces and the sides of the excavation.

6.2.1 Shored Excavations

Per WSDOT 2026 section 7-08.3(1)B, and the Washington Industrial Safety and Health Act, trench excavations of 4-foot depth or greater must be shored. Based on the anticipated subsurface conditions, we envision that trench box/shoring cage or slide-rail shoring would be suitable to support excavations for installation of manholes and trench excavations to:

- Limit the work area
- Maximize usable roadway
- Maintain trench stability
- Allow for safe worker entry into excavations
- Minimize excavation volumes.

Trench boxes should not be used to support adjacent traffic, existing footings, or other structures.

The upright portion of any temporary excavation support should be continuous to mitigate soils passing through the supports. The existing asphalt and granular fill soils might need to be locally cut and excavated prior to the installation of temporary excavation supports.

Local slumping of the trench walls behind the temporary shoring, particularly for cuts in fill and granular soils, should be anticipated. This is particularly true for excavations adjacent to existing utility trenches, which may include granular and/or poor-quality backfill soils.

Voids between temporary shoring and the trench wall should be filled immediately with granular soil. Granular backfill should be available at the site for this purpose prior to the start of the excavation. As an alternative, control density fill (high-slump, low-strength concrete) could be used to fill the voids.

The excavation cut slopes and temporary trench support should be reviewed by the Contractor daily (or at shorter frequencies as required) for signs of instability. The Geotechnical Engineer should be notified immediately, and the excavation should be backfilled, if any noticeable displacement of the excavation walls or adjacent ground is noted to have been affected.

6.2.2 Set-Back Distances

Per WSDOT 2026 section 7-08.3(1)A, soil stockpiles, construction equipment, and any other equipment or materials that may pose a hazard to workers by falling into the trench must be kept at least 2 feet from the edge of the trench. However, for soil stockpiles or heavy construction traffic, Stantec recommends a minimum setback distance of 6 feet from the edge of trench excavation, due to the potential for loose,

unconsolidated fill materials near the ground surface, unless the shoring is designed to support surcharge loading at the ground surface.

If the roadways along the storm sewer construction zones may remain partially open to traffic during construction, a recommended minimum setback distance of 10 feet is to be maintained for vehicle traffic.

6.2.3 Groundwater Control

Groundwater was observed in boreholes B-1 and B-2 based on saturated soil layers at depths ranging from 2.5 feet to 7 feet below the existing ground surface. Based on the saturated soil layers observed in these boreholes, groundwater seepage (from infiltrated rainwater) or perched water should be anticipated during trench excavation along 106th Avenue NE.

Where the excavation advances below the groundwater level, we recommend sumps and pumps be used to control groundwater and/or surface water that has entered the excavation.

Groundwater was not observed in the boreholes along NE 120th Street or 108th Avenue NE. However, Stantec anticipates that the groundwater conditions along the proposed sanitary/storm sewer alignment would vary seasonally and, where possible, construction—particularly along 106th Avenue NE—should be planned for the summer months when drier weather is expected.

Sandbags or other physical barriers should be placed at the ground surface adjacent to the trench to direct surface runoff away from the excavation.

6.3 Pipe Bedding and Surround

The pipe bedding and surround material should extend a minimum of 4 inches above and below the surface of the pipe. The bedding material should be placed over competent and undisturbed native subgrade soil or on compacted and approved granular subgrade fill. The base of the excavation should be reviewed by Stantec prior to fill placement. Any native subgrade soil that becomes softened due to construction activities and/or exposure to excess moisture or precipitation should be excavated at the direction of the Geotechnical Engineer (up to a maximum depth of 12 inches below bedding layer) and replaced with imported granular material.

The City of Kirkland's Standard Specification Plan No. CK – D.02 *Storm Trench Detail*, pipe bedding and surround materials should consist of pea gravel if there is 6 feet or greater depth from the ground surface to the crown of the pipe. If the depth from the ground surface to the crown of the pipe is less than 6 feet, then pipe bedding and surround materials should consist of Crushed Surfacing Top Course (CSTC) per WSDOT 2026 section 9-03.9(3). However, per the General Pipe Installation Requirements provided in section 7-08 of WSDOT 2026 state that, per section 9-03.12(3), "Gravel Backfill for Pipe Zone Bedding" must be used as pipe bedding and surround material for storm sewers.

Stantec considers either material to be suitable for use as pipe bedding and surround, provided that, pipe zone bedding is compacted to 95% Modified Proctor Maximum Dry Density (MPMDD). Bedding shall be placed, spread, and compacted before the pipe is installed so that the pipe is uniformly supported along the barrel. Lifts of not more than 6 inches in thickness shall be placed and compacted along the sides of the

pipe to the height shown in the Standard Plans. Material shall be worked carefully under the pipe haunches and then compacted.

Additionally, per WSDOT2026, pipe zone bedding material shall provide uniform support along the entire pipe barrel, without load concentration at joint collars or bells. All adjustment to line and grade shall be made by scraping away or filling in with bedding material under the body of the pipe and not by blocking or wedging. Bedding disturbed by pipe movement, or by removal of shoring movement of a trench shield or box, shall be reconsolidated prior to backfill.

6.4 Trench Backfill and Compaction

All trench backfill above the pipe zone shall be placed in accordance with the City of Kirkland's Standard Specification Plan No. CK – D.02 *Storm Trench Detail*.

In paved areas, trench backfill above the pipe zone should consist of CSTC per WSDOT 2026 section 9-03.9(3) within 4-foot depth below the underside of pavement. Between 4-foot depth of the underside of pavement and the top of the pipe zone, trench backfill may consist of CSTC or an alternative backfill material approved by the Geotechnical Engineer. In unpaved areas, trench backfill may consist of CSTC or an alternative backfill material approved by the Geotechnical Engineer. The trench backfill should be placed in 12-inch-thick loose lifts and should be mechanically compacted to 95% MPMDD in paved areas, and 90% MPMDD in unpaved areas. Site review and testing of general backfill compaction should be carried out during construction, consisting of regular quality control testing by the Contractor.

Protruding rock, boulders, large cobbles, foreign material, and shoring must be removed to maintain a minimum clearance of 12 inches around all pipes and manholes before compaction.

6.4.1 Re-Use of Existing Materials as Backfill

The subsurface soils encountered within the anticipated trench extent in all boreholes except B-1 generally consisted of sand with silt content ranging from 7% to 24%. These materials are not anticipated to be broadly suitable for re-use as trench backfill due to measured fines contents greater than 10% per the specifications for CSTC provided in WSDOT 2026 section 9.03(9).

If the Contractor desires, based on the subsurface conditions encountered, and subject to City of Kirkland approval and completion of laboratory tests by the Contractor, the Contractor may request re-use of the native sandy soils as trench backfill (in place of CSTC) provided that the excavated material meets the specifications provided in WSDOT 2026 section 9.03(9), i.e., it is free of organics, debris, and deleterious materials; it is stockpiled and protected from moisture; and it can be compacted to at least 95% MPMDD.

Any stockpiled fills should be covered with polyethylene sheeting to provide protection against moisture and to prevent runoff. Erosion and sediment control will be necessary to prevent runoff from entering nearby waterbodies and watercourses. Different soil types should be handled in such a manner to minimize mixing and cross-contamination.

Any excavated soils proposed for re-use as fill should be free of organics, debris, and deleterious materials, and will be stockpiled and reviewed by the Geotechnical Engineer to confirm suitability prior to use. The

Contractor should not place any excavated soils without prior review and approval by the Geotechnical Engineer.

6.5 Pavement Restoration

Following completion of trench backfill, paved areas should be restored in accordance with City of Kirkland Standard Specification Plan No. CK – R.12 *Restoration Detail and Pavement Patching*, and to match the existing asphalt surface.

6.6 Geotechnical Field Review During Construction

Stantec should be retained to provide geotechnical field reviews during construction to verify that the subsurface conditions encountered are consistent with our design assumptions and that the work is being carried out in accordance with our recommendations. Field review by Stantec should include excavation subgrade review of soils proposed for use as structural fill and review of the placement and compaction of any subgrade and bedding fill soils.

7 Closure

This report was prepared for the exclusive use of the City of Kirkland for specific application to the City of Kirkland 108th Avenue NE Pipe Installation Project. Use of this report is subject to the Statement of General Conditions included in **Appendix A**. It is the responsibility of the City of Kirkland, who is identified as "the Client" within the Statement of General Conditions, to review the conditions and notify Stantec should any of them not be satisfied.

We trust that this report meets your present requirements. If you have any questions or require additional information, please contact the undersigned.

Regards,

Stantec Consulting Ltd.

Kootenay Alder EIT

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Reviewed by:

Allison Pyrch PE, GE

Principal, Geotechnical Engineer
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Allison.Pyrch@stantec.com

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Appendix A Statement of General Conditions

Stantec

STATEMENT OF GENERAL CONDITIONS

USE OF THIS REPORT: This professional work product ("hereinafter referred to as the Report") has been prepared for the sole benefit of the Client in accordance with Stantec's contract with the Client. While the Report may be provided by the Client to applicable authorities having jurisdiction and to other third parties in connection with the project, Stantec disclaims any legal duty based upon warranty, reliance, or any other theory to any third party, and will not be liable to such third party for any damages or losses of any kind that may result.

BASIS OF THIS REPORT: This Report relates solely to the site-specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The information, opinions, conclusions and/or recommendations made in this Report are in accordance with Stantec's present understanding of the site-specific project as described by the Client. The applicability of these is restricted to the site conditions encountered at the time the scope of work was conducted and do not take into account any subsequent changes. If the proposed site-specific project differs or is modified from what is described in this Report or if the site conditions are altered, this Report is no longer valid unless Stantec is requested by the Client to review and revise the Report to reflect the differing or modified project specifics and/or the altered site conditions. This Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose or site, and any unauthorized use or reliance is at the recipient's own risk.

STANDARD OF CARE: Preparation of this Report, and all associated work, was carried out in accordance with the normally accepted standard of care in the state or province of execution for the specific professional service provided to the Client. No other warranty is made.

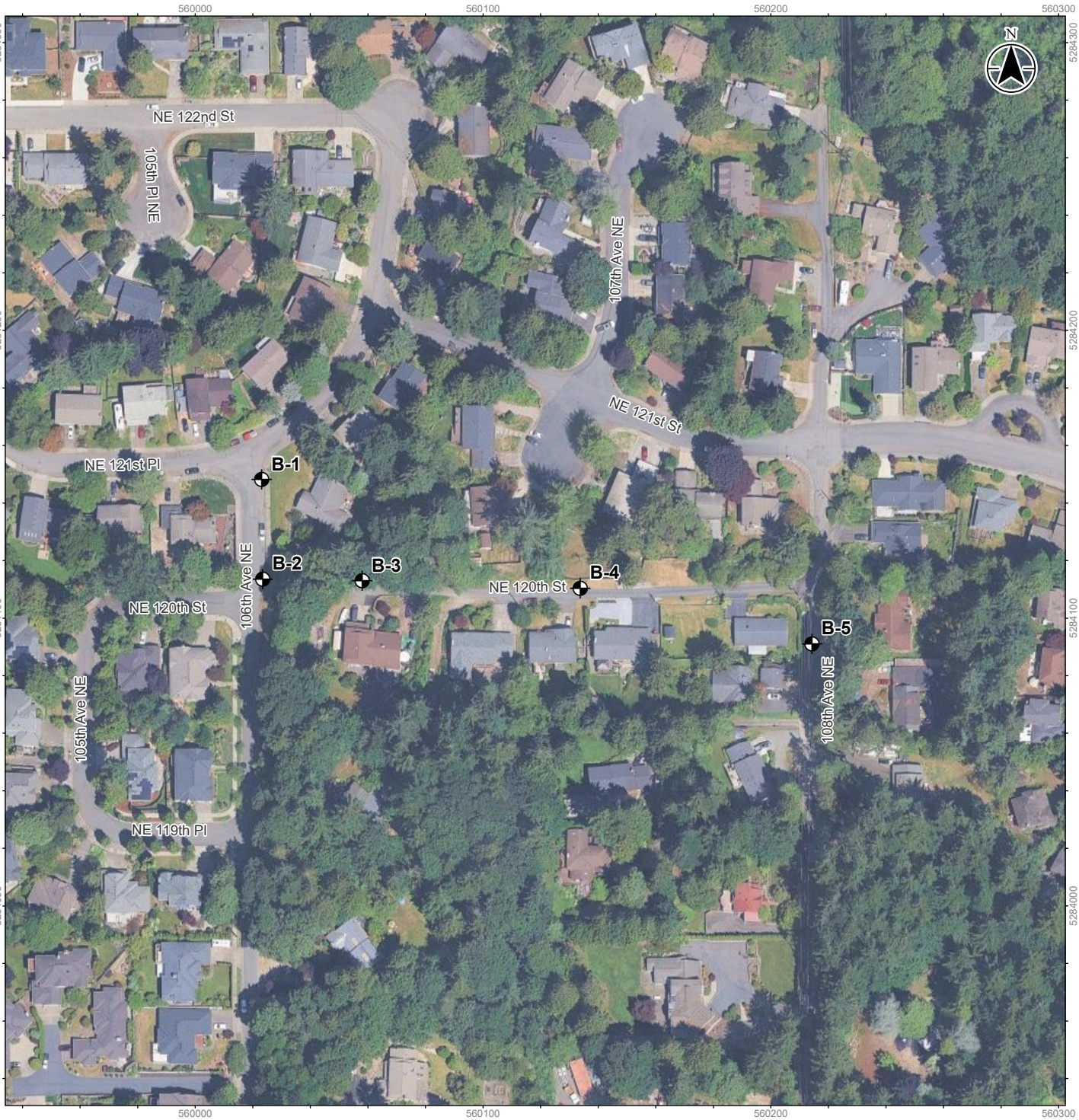
PROVIDED INFORMATION: Stantec has assumed all information received from the Client and third parties in the preparation of this Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

INTERPRETATION OF SITE CONDITIONS: Soil, rock, or other material descriptions, and statements regarding their condition, made in this Report are based on site conditions encountered by Stantec at the time of the scope of work and at the specific testing and/or sampling locations. Classifications and statements of condition have been made in accordance with normally accepted practices which are judgmental in nature; no specific description should be considered exact, but rather reflective of the anticipated material behaviour. Extrapolation of in-situ conditions can only be made to some limited extent beyond the sampling or test points. The extent depends on variability of the soil, rock and groundwater conditions as influenced by geological processes, construction activity, and site use.

VARYING OR UNEXPECTED CONDITIONS: Should any site or subsurface conditions be encountered that are different from those described in this Report or encountered at the test and/or sample locations, Stantec must be notified immediately to assess if the varying or unexpected conditions are substantial and if reassessments of the Report conclusions or recommendations are required. Stantec will not be responsible to any party for damages incurred as a result of failing to notify Stantec that differing site or subsurface conditions are present upon becoming aware of such conditions.

PLANNING, DESIGN, OR CONSTRUCTION: Development or design plans and specifications should be reviewed by Stantec geotechnical engineers, sufficiently ahead of initiating the next project stage (e.g., property acquisition, tender, construction, etc.), to confirm that this Report completely addresses the elaborated project specifics and that the contents of this Report have been properly interpreted. Specialty quality assurance services (e.g., field observations and testing) during construction are a necessary part of the evaluation of subsurface conditions and site work. Site work relating to the recommendations included in this Report should only be carried out in the presence of a qualified geotechnical engineer; Stantec cannot be responsible for site work carried out without being present.

Appendix B Borehole Location Plan



Notes:
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Data Sources: Local Agency Public Road - Line: Washington State Department of Transportation
Satellite: © OpenStreetMap (and) contributors, CC-BY-SA

Borehole Locations

0 10 20 30 40 50 m
1:2,000 (at original document size of 8.5x11)

Stantec

Project Location:
108th Avenue, City of Kirkland
Washington, USA
10T 560118 5284119

Project Number: 2002006449
Requested by KALDER 20251105
Prepared by RCOATTA 20251105
Checked by KALDER 20251105

Client/Project/Report
City of Kirkland
108th Avenue NE Pipe Installation Project

Figure No.
1

Page No.
1 of 1

Title
Borehole Location Plan

\\CA0183-PBAGF01\Workgroup\1232\projects\2002006449\figures\borehole_location_plan\borehole_location_plan.aprx Layout: fig_01_borehole_location_plan Map: Main Revised: 2025-11-05 Bycoatta

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data.
The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Appendix C Borehole Records

BOREHOLE RECORD

B-1

CLIENT: **City of Kirkland**
PROJECT: **108th Avenue NE Pipe Installation Project**
LOCATION: **Kirkland, WA**
DATE BORED: **September 9, 2025**

BH COORDINATES [UTM10] 47.70793N -122.19987E
PROJECT NO. : **2002006449**
BH ELEVATION: **179 ft**
DATUM: **WGS84**
WATER LEVEL: **3.5' during drilling**

DEPTH (ft)	ELEVATION (ft)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (in)	SAMPLES N-VALUE or RQD %	OTHER TESTS / REMARKS
0	179.0							
0	178.8	ASPHALT (3")						
1		FILL: sand with gravel and silt		SS	01	10		
2								
3				SS	02	7		Sieve at 2.5 ft G S Fines 29% 61% 11%
4								
5	174.0							
5		Dense brown to blueish grey SILT (ML) - non-plastic - dry to moist		SS	03	18	45	
6								
7								
8		- with sand, wet at 7.5'		SS	04	18	47	
9								
10								
11				SS	05	18	45	
12	166.5							
13	165.5	Hard brown lean CLAY (CL) with sand - low plasticity - moist		SS	06	18	43	Sieve at 12.5 ft G S Fines 0% 22% 78%
14	164.0	Dense light brown poorly graded SAND (SP) - coarse sand - moist						
15		End of Borehole at 15' - Soil conditions below 14' are inferred - Borehole backfill details as shown						
16								
17								
18								
19								
20								

UNDRAINED SHEAR STRENGTH, Cu (ksf)
LABORATORY TEST ▲ FIELD VANE TEST ◆
POCKET PEN. ★ POCKET SHEAR VANE ◘
50 kPa 100 kPa 150 kPa 200 kPa
WATER CONTENT & ATTERBERG LIMITS W_P W W_L
SPT (N-value) BLOWS/ft
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80

BACKFILL/ MONITOR WELL/ PIEZOMETER

ELEVATION (ft): 179 178 177 176 175 174 173 172 171 170 169 168 167 166 165 164 163 162 161 160 159

▽ Water Level Observed During Drilling

BACKFILL SYMBOL
ASPHALT GROUT CONCRETE
BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Holt Services Inc.
Drilling Method: Hollow-Stem Auger
Completion Depth: 15 ft

Logged By: TGS
Reviewed By: KA
Page 1 of 1

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BOREHOLE RECORD

B-2

Stantec

CLIENT: **City of Kirkland**
PROJECT: **108th Avenue NE Pipe Installation Project**
LOCATION: **Kirkland, WA**
DATE BORED: **September 9, 2025**

BH COORDINATES [UTM10] 47.70762N -122.19987E
PROJECT NO. : **2002006449**
BH ELEVATION: **185 ft**
DATUM: **WGS84**
WATER LEVEL: **7.5' during drilling**

UNDRAINED SHEAR STRENGTH, Cu (ksf)
LABORATORY TEST ▲ FIELD VANE TEST ◆
POCKET PEN. ★ POCKET SHEAR VANE ◘
50 kPa 100 kPa 150 kPa 200 kPa
WATER CONTENT & ATTERBERG LIMITS W_P W W_L
SPT (N-value) BLOWS/ft
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80

DEPTH (ft)	ELEVATION (ft)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (in)	SAMPLES N-VALUE or RQD %	OTHER TESTS / REMARKS
0	185.0							
	184.8	ASPHALT						
1		FILL: sand with gravel, trace wood debris		SS	01	5		
2								
3				SS	02	7		
4								
5	179.5			SS	03	10	6	Sieve/Hydro at 5.0 ft G 2% S 86% M 7% C 5%
6		Loose brown to light brown silty SAND (SM) - trace gravel - medium to fine sand - moist to wet						
7								
		▽ - wet below 7.5'						
8				SS	04	18	9	
9								
10	175.0							
		Dense brown to light brown silty SAND (SM) - medium to fine sand - moist to wet		SS	05	18	28	Sieve/Hydro at 10.0 ft G 0% S 68% M 27% C 6%
11								
12								
13				SS	06	18	43	
14								
15	170.0	End of Borehole at 15' - Soil conditions below 14' are inferred - Borehole backfill details as shown						
16								
17								
18								
19								
20								

BACKFILL/MONITOR WELL/PIEZOMETER

ELEVATION (ft): 185, 184, 183, 182, 181, 180, 179, 178, 177, 176, 175, 174, 173, 172, 171, 170, 169, 168, 167, 166, 165

▽ Water Level Observed During Drilling

BACKFILL SYMBOL
BENTONITE ASPHALT DRILL CUTTINGS GROUT SAND CONCRETE SLOUGH

Drilling Contractor: Holt Services Inc.
Drilling Method: Hollow-Stem Auger
Completion Depth: 15 ft

Logged By: TGS
Reviewed By: KA
Page 1 of 1

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Stantec

BOREHOLE RECORD

B-3

CLIENT: **City of Kirkland**
PROJECT: **108th Avenue NE Pipe Installation Project**
LOCATION: **Kirkland, WA**
DATE BORED: **September 10, 2025**

BH COORDINATES [UTM10] 47.70761N -122.19941E
PROJECT NO. : **2002006449**
BH ELEVATION: **209 ft**
DATUM: **WGS84**
WATER LEVEL: **Not observed**

DEPTH (ft)	ELEVATION (ft)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (in)	SAMPLES N-VALUE or RQD %	OTHER TESTS / REMARKS
0	209.0							
0		Air knife; no sample taken from 0.0' - 2.5'						
2	206.5							
3		Loose to compact brown silty SAND (SM) - fine sand - moist		SS	01			
5				SS	02	13	8	Sieve/Hydro at 5.0 ft G 1% S 84% M 9% C 6%
8				SS	03	16	14	
10	199.0							
10		Dense to very dense brown poorly graded SAND (SP-SM) with silt - medium to coarse sand - moist		SS	04	18	43	Sieve/Hydro at 10.0 ft G 0% S 89% M 7% C 4%
13				SS	05	18	80	
15				SS	06	18	77	
20								

UNDRAINED SHEAR STRENGTH, Cu (ksf)
LABORATORY TEST ▲ FIELD VANE TEST ◆
POCKET PEN. ★ POCKET SHEAR VANE ◘
50 kPa 100 kPa 150 kPa 200 kPa
WATER CONTENT & ATTERBERG LIMITS W_P W W_L
SPT (N-value) BLOWS/ft
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80

BACKFILL/ MONITOR WELL/ PIEZOMETER

ELEVATION (ft): 209 208 207 206 205 204 203 202 201 200 199 198 197 196 195 194 193 192 191 190 189

BACKFILL SYMBOL
ASPHALT GROUT CONCRETE
BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Holt Services Inc.
Drilling Method: Mud Rotary
Completion Depth: 50 ft

Logged By: TGS
Reviewed By: KA

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Stantec

BOREHOLE RECORD

B-3

CLIENT: **City of Kirkland**

PROJECT: **108th Avenue NE Pipe Installation Project**

LOCATION: **Kirkland, WA**

DATE BORED: **September 10, 2025**

BH COORDINATES [UTM10] 47.70761N -122.19941E

PROJECT NO. : **2002006449**

BH ELEVATION: **209 ft**

DATUM: **WGS84**

WATER LEVEL: **Not observed**

DEPTH (ft)	ELEVATION (ft)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (in)	SAMPLES N-VALUE or RQD %	OTHER TESTS / REMARKS
20		Dense to very dense brown poorly graded SAND (SP-SM) with silt - medium to coarse sand - moist		SS	07	18	74	
25				SS	08	18		
30				SS	09	18	90	
40	169.0							

UNDRAINED SHEAR STRENGTH, Cu (ksf)

LABORATORY TEST ▲ FIELD VANE TEST ◆

POCKET PEN. ★ POCKET SHEAR VANE ◘

50 kPa 100 kPa 150 kPa 200 kPa

WATER CONTENT & ATTERBERG LIMITS W_P W W_L

SPT (N-value) BLOWS/ft

Water Content (%) and Blow Count

10 20 30 40 50 60 70 80

BACKFILL/ MONITOR WELL/ PIEZOMETER

ELEVATION (ft)

189 188 187 186 185 184 183 182 181 180 179 178 177 176 175 174 173 172 171 170 169

BACKFILL SYMBOL: ASPHALT, GROUT, CONCRETE, BENTONITE, DRILL CUTTINGS, SAND, SLOUGH

Drilling Contractor: Holt Services Inc.

Drilling Method: Mud Rotary

Completion Depth: 50 ft

Logged By: TGS

Reviewed By: KA

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Stantec

BOREHOLE RECORD

B-3

CLIENT: **City of Kirkland**
PROJECT: **108th Avenue NE Pipe Installation Project**
LOCATION: **Kirkland, WA**
DATE BORED: **September 10, 2025**

BH COORDINATES [UTM10] 47.70761N -122.19941E
PROJECT NO. : **2002006449**
BH ELEVATION: **209 ft**
DATUM: **WGS84**
WATER LEVEL: **Not observed**

DEPTH (ft)	ELEVATION (ft)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (in)	SAMPLES N-VALUE or RQD %	OTHER TESTS / REMARKS
40		Hard grey to blue grey lean CLAY (CL) - low plasticity - moist		SS	10	18	80	
50	159.0	End of Borehole at 50' - Soil conditions below 41.5' are inferred - Borehole backfill details as shown						

UNDRAINED SHEAR STRENGTH, Cu (ksf)
LABORATORY TEST ▲ FIELD VANE TEST ◆
POCKET PEN. ★ POCKET SHEAR VANE ◘
50 kPa 100 kPa 150 kPa 200 kPa
WATER CONTENT & ATTERBERG LIMITS W_P W W_L
SPT (N-value) BLOWS/ft ●
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80

BACKFILL/ MONITOR WELL/ PIEZOMETER

ELEVATION (ft): 169 168 167 166 165 164 163 162 161 160 159 158 157 156 155 154 153 152 151 150 149

BACKFILL SYMBOL
ASPHALT GROUT CONCRETE
BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Holt Services Inc.
Drilling Method: Mud Rotary
Completion Depth: 50 ft

Logged By: TGS
Reviewed By: KA
Page 3 of 3

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Stantec

BOREHOLE RECORD

B-4

CLIENT: **City of Kirkland**
PROJECT: **108th Avenue NE Pipe Installation Project**
LOCATION: **Kirkland, WA**
DATE BORED: **September 10, 2025**

BH COORDINATES [UTM10] 47.70758N -122.19840E
WATER LEVEL: **Not observed**

PROJECT NO. : **2002006449**
BH ELEVATION: **241 ft**
DATUM: **WGS84**

DEPTH (ft)	ELEVATION (ft)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (in)	SAMPLES N-VALUE or RQD %	OTHER TESTS / REMARKS
0	241.0							
0	240.6	TOPSOIL						
0		Very dense brown poorly graded SAND (SP-SM) with silt - medium to fine sand - moist		SS	01	17		
3				SS	02	18		
5				SS	03	18	53	Sieve/Hydro at 5.0 ft G 0% S 93% M 4% C 3%
8				SS	04	18	65	
10				SS	05	18	70	
13				SS	06	18	58	
15	226.0	End of Borehole at 15' - Soil conditions below 14' are inferred - Borehole backfill details as shown						

UNDRAINED SHEAR STRENGTH, Cu (ksf)
LABORATORY TEST ▲ FIELD VANE TEST ◆
POCKET PEN. ★ POCKET SHEAR VANE ◘
50 kPa 100 kPa 150 kPa 200 kPa
WATER CONTENT & ATTERBERG LIMITS W_P W W_L
SPT (N-value) BLOWS/ft
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80

BACKFILL/ MONITOR WELL/ PIEZOMETER

ELEVATION (ft)
241 240 239 238 237 236 235 234 233 232 231 230 229 228 227 226 225 224 223 222 221

BACKFILL SYMBOL
ASPHALT GROUT CONCRETE
BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Holt Services Inc.
Drilling Method: Hollow-Stem Auger
Completion Depth: 15 ft

Logged By: TGS
Reviewed By: KA
Page 1 of 1

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BOREHOLE RECORD

B-5

CLIENT: **City of Kirkland**
PROJECT: **108th Avenue NE Pipe Installation Project**
LOCATION: **Kirkland, WA**
DATE BORED: **September 10, 2025**

BH COORDINATES [UTM10] 47.70740N -122.19733E
PROJECT NO. : **2002006449**
BH ELEVATION: **263 ft**
DATUM: **WGS84**
WATER LEVEL: **Not observed**

DEPTH (ft)	ELEVATION (ft)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (in)	SAMPLES N-VALUE or RQD %	OTHER TESTS / REMARKS
0	263.0							
0	262.6	TOPSOIL						
0		Compact to dense brown to dark brown silty SAND (SM) - trace gravel - fine to medium sand - moist		SS	01	5		
3				SS	02	14		Sieve at 2.5 ft G 3% S 73% Fines 24%
6				SS	03	14	22	
8				SS	04	18	33	Sieve/Hydro at 7.5 ft G 1% S 86% M 7% C 7%
10	253.0	Very dense to dense brown to dark brown poorly graded SAND (SP-SM) with silt and gravel - medium sand - moist		SS	05	15	70	Sieve/Hydro at 10.0 ft G 15% S 75% M 6% C 4%
13				SS	06	18	45	
15	248.0	End of Borehole at 15' - Soil conditions below 14' are inferred - Borehole backfill details as shown						

UNDRAINED SHEAR STRENGTH, Cu (ksf)
LABORATORY TEST ▲ FIELD VANE TEST ◆
POCKET PEN. ★ POCKET SHEAR VANE ◘
50 kPa 100 kPa 150 kPa 200 kPa
WATER CONTENT & ATTERBERG LIMITS W_P W W_L
SPT (N-value) BLOWS/ft
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80

BACKFILL/ MONITOR WELL/ PIEZOMETER

ELEVATION (ft): 263 262 261 260 259 258 257 256 255 254 253 252 251 250 249 248 247 246 245 244 243

BACKFILL SYMBOL
ASPHALT GROUT CONCRETE
BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Holt Services Inc.
Drilling Method: Hollow-Stem Auger
Completion Depth: 15 ft

Logged By: TGS
Reviewed By: KA

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Appendix D Laboratory Test Results

Stantec

Gradation Analysis

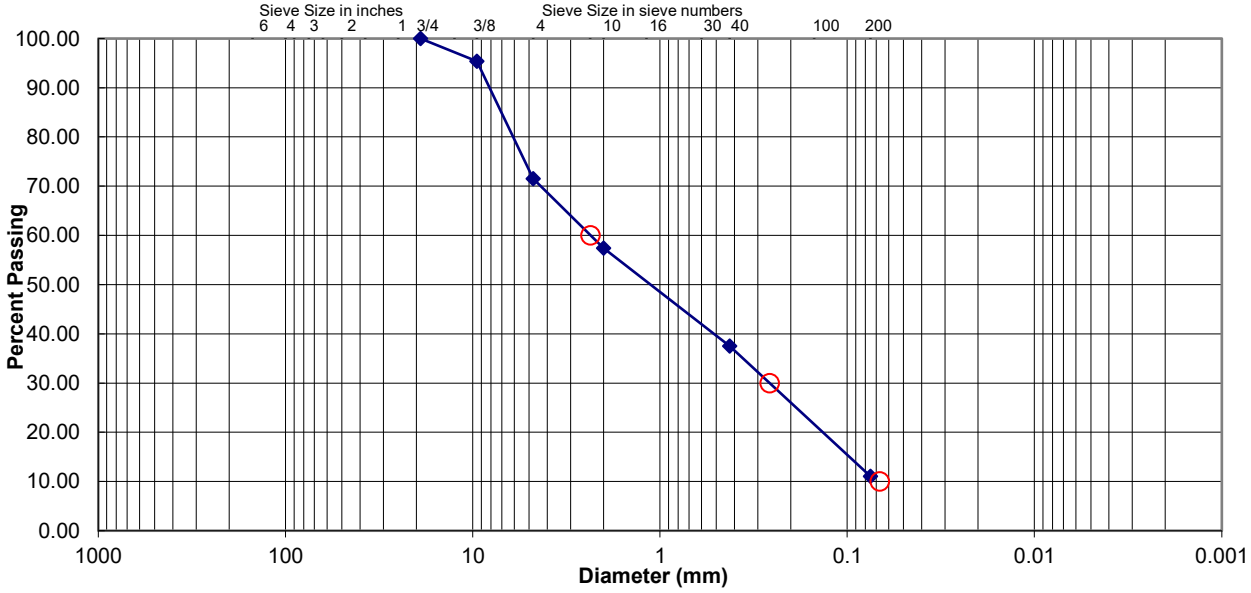
ASTM D 422

Project Name	108th Pipe	Project Number	2002006449
Source	B-1, 2.5'-5.0'	Lab ID	2
Preparation Method	ASTM D 1140 Method A	Date Received	10-10-2025
Soak Time (min)	300	Preparation Date	10-16-2025
Particle Shape	Rounded	Test Date	10-20-2025
Particle Hardness	Hard and Durable		
Sample Dry Mass (g)	224.51	Analysis Based on Total Sample.	
Moisture Content (%)	17.4		

Sieve Size	Grams Retained	% Retained	% Passing
3/4"	0.00	0.0	100.0
3/8"	10.35	4.6	95.4
No. 4	53.56	23.9	71.5
No. 10	31.75	14.1	57.4
No. 40	44.58	19.9	37.5
No. 200	59.49	26.5	11.0
Pan	24.78	11.0	---

% Gravel	28.5
% Sand	60.5
% Fines	11.0
Fines Classification	N/A
D_{10} (mm)	0.0671
D_{30} (mm)	0.2595
D_{60} (mm)	2.3459
Cu	34.97
Cc	0.43

Particle Size Distribution



Comments

Reviewed By RJ

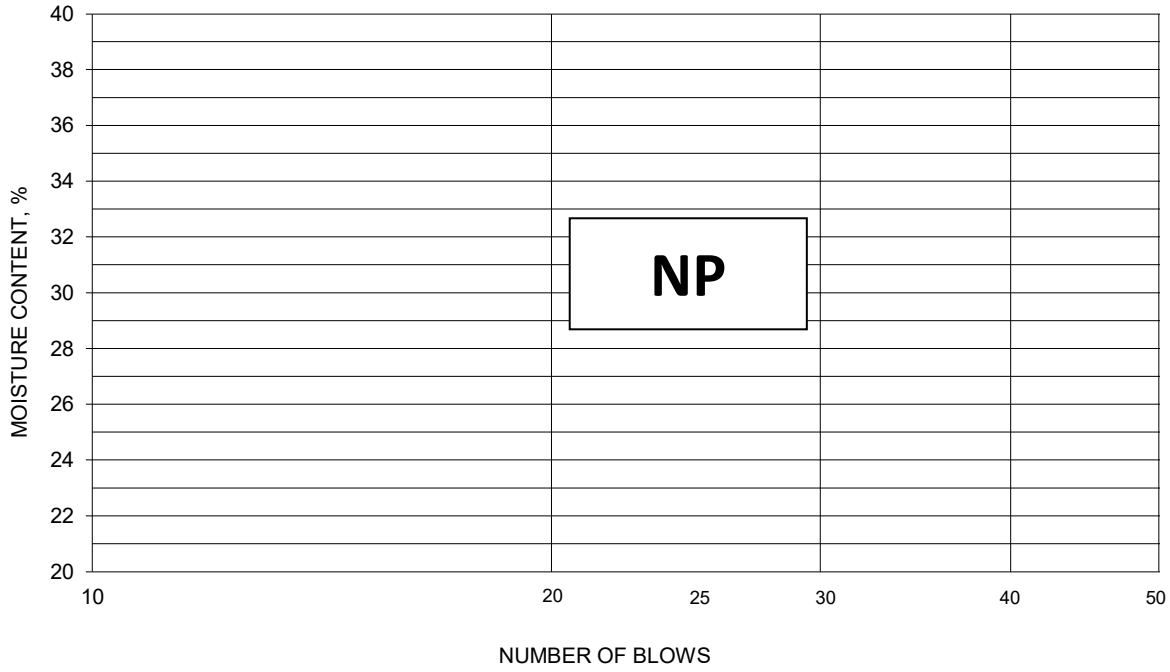
Stantec

ATTERBERG LIMITS

Project	108th Pipe			Project No.	2002006449
Source	B-1, 5.0'-7.5'			Lab ID	3
Tested By	DB	Test Method	ASTM D 4318 Method A	% + No. 40	5
Test Date	10-17-2025	Prepared	Dry	Date Received	10-10-2025

Wet Soil and Tare Mass (g)	Dry Soil and Tare Mass (g)	Tare Mass (g)	Number of Blows	Water Content (%)	Liquid Limit

Liquid Limit



PLASTIC LIMIT AND PLASTICITY INDEX

Wet Soil and Tare Mass (g)	Dry Soil and Tare Mass (g)	Tare Mass (g)	Water Content (%)	Plastic Limit	Plasticity Index

Comments _____

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Gradation Analysis

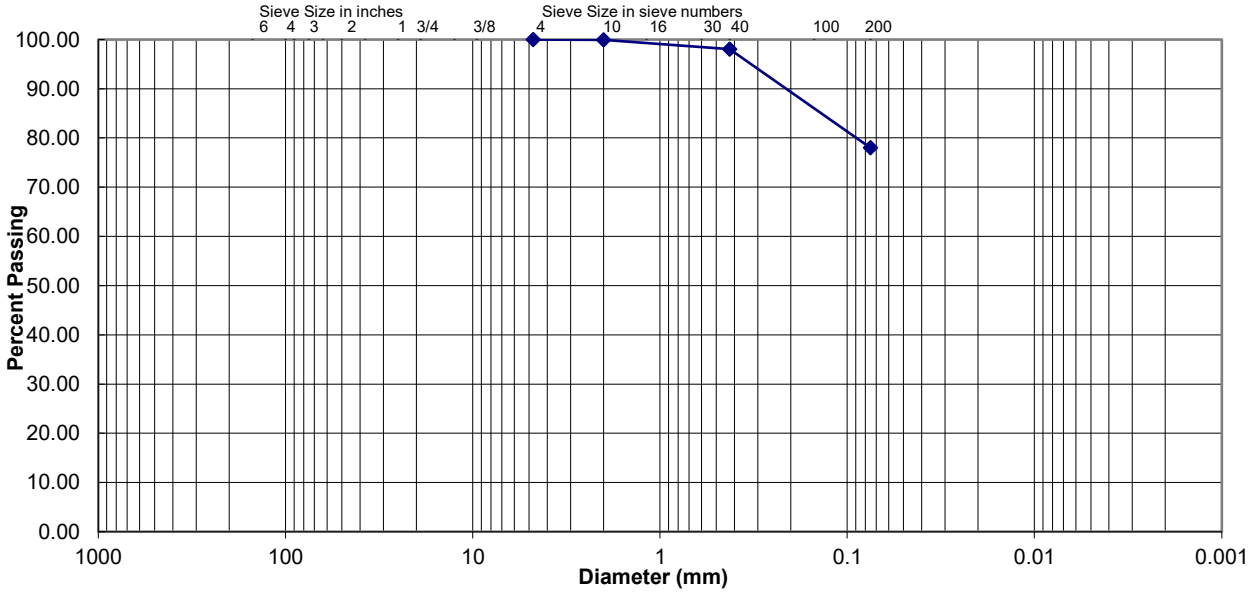
ASTM D 422

Project Name	108th Pipe	Project Number	2002006449
Source	B-1, 12.5'-15.0'	Lab ID	6
Preparation Method	ASTM D 1140 Method A	Date Received	10-10-2025
Soak Time (min)	330	Preparation Date	10-16-2025
Particle Shape	Rounded	Test Date	10-20-2025
Particle Hardness	Hard and Durable		
Sample Dry Mass (g)	285.57	Analysis Based on Total Sample.	
Moisture Content (%)	23.9		

Sieve Size	Grams Retained	% Retained	% Passing
No. 4	0.00	0.0	100.0
No. 10	0.17	0.1	99.9
No. 40	5.53	1.9	98.0
No. 200	57.11	20.0	78.0
Pan	222.76	78.0	---

% Gravel	0.0
% Sand	22.0
% Fines	78.0
Fines Classification	N/A
D_{10} (mm)	N/A
D_{30} (mm)	N/A
D_{60} (mm)	N/A
Cu	N/A
Cc	N/A

Particle Size Distribution



Comments

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Particle-Size Analysis of Soils
ASTM D 422

Project Name	108th Pipe	Project Number	2002006449
Source	B-2, 5.0'-7.5'	Lab ID	9

Sieve Analysis for the Portion Coarser than the No. 10 Sieve

Test Method	ASTM D 422
Prepared Using	ASTM D 421
Particle Shape:	Angular
Particle Hardness:	Hard and Durable
Tested By	AD
Test Date	10-20-2025
Date Received	10-10-2025

Maximum Particle Size: 3/8" Sieve

Sieve Size	% Passing
3/8"	100.0
No. 4	98.4
No. 10	96.5

D_{60} (mm)	0.263
D_{30} (mm)	0.120
D_{10} (mm)	0.040
Cc	1.35
Cu	6.51

Analysis for the Portion Finer than the No. 10 Sieve

Analysis Based on -3 inch Fraction Only

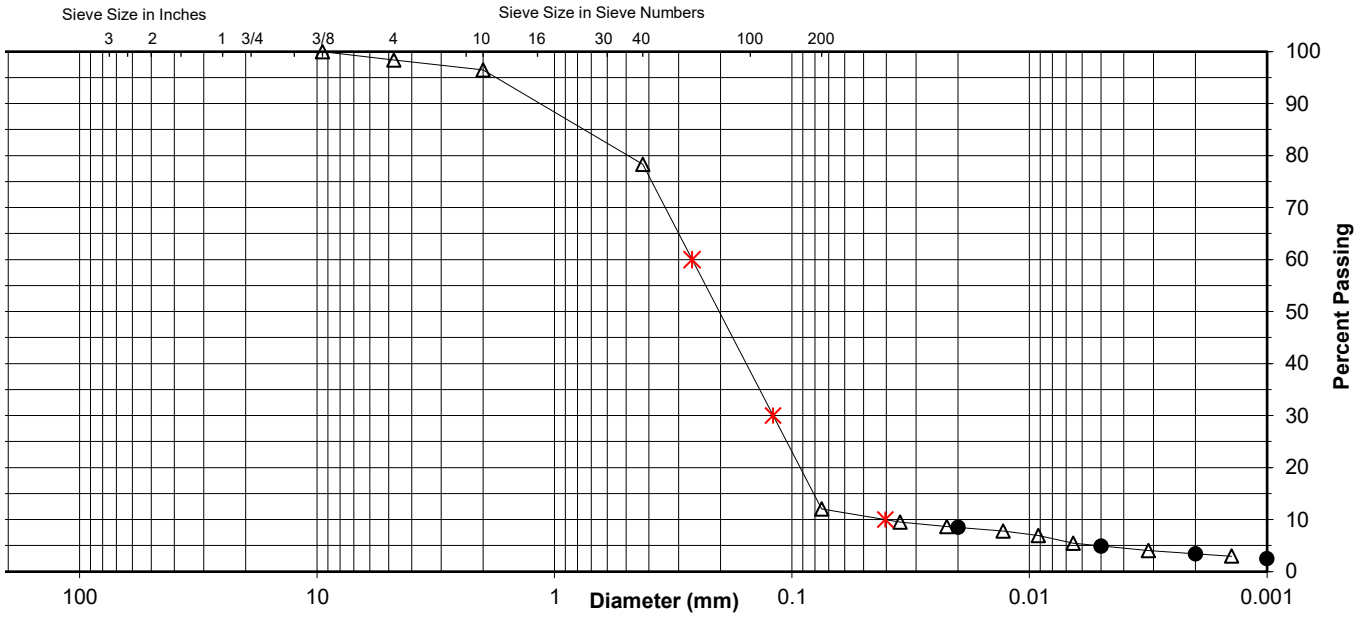
Specific Gravity 2.7

Dispersed Using Apparatus A - Mechanical, for 1 Minute

No. 40	78.3
No. 200	12.0
0.02 mm	8.5
0.005 mm	4.9
0.002 mm	3.4
0.001 mm	2.5

Particle Size Distribution

ASTM	Coarse Gravel	Fine Gravel	C. Sand	Medium Sand	Fine Sand	Silt	Clay
	0.0	1.6	1.9	18.2	66.3	7.1	4.9
AASHTO	Gravel			Coarse Sand	Fine Sand	Silt	Clay
	3.5			18.2	66.3	8.6	3.4



Comments

Reviewed By RJ

Stantec

Particle-Size Analysis of Soils
ASTM D 422

Project Name 108th Pipe
Source B-2, 10.0'-12.5'

Project Number 2002006449
Lab ID 11

Sieve Analysis for the Portion Coarser than the No. 10 Sieve

Test Method ASTM D 422
Prepared Using ASTM D 421

Particle Shape: Angular
Particle Hardness: Hard and Durable

Tested By TRH
Test Date 10-17-2025
Date Received 10-10-2025

Maximum Particle Size: 3/8" Sieve

Sieve Size	% Passing
3/8"	100.0
No. 4	99.9
No. 10	99.3

Analysis for the Portion Finer than the No. 10 Sieve

Analysis Based on -3 inch Fraction Only

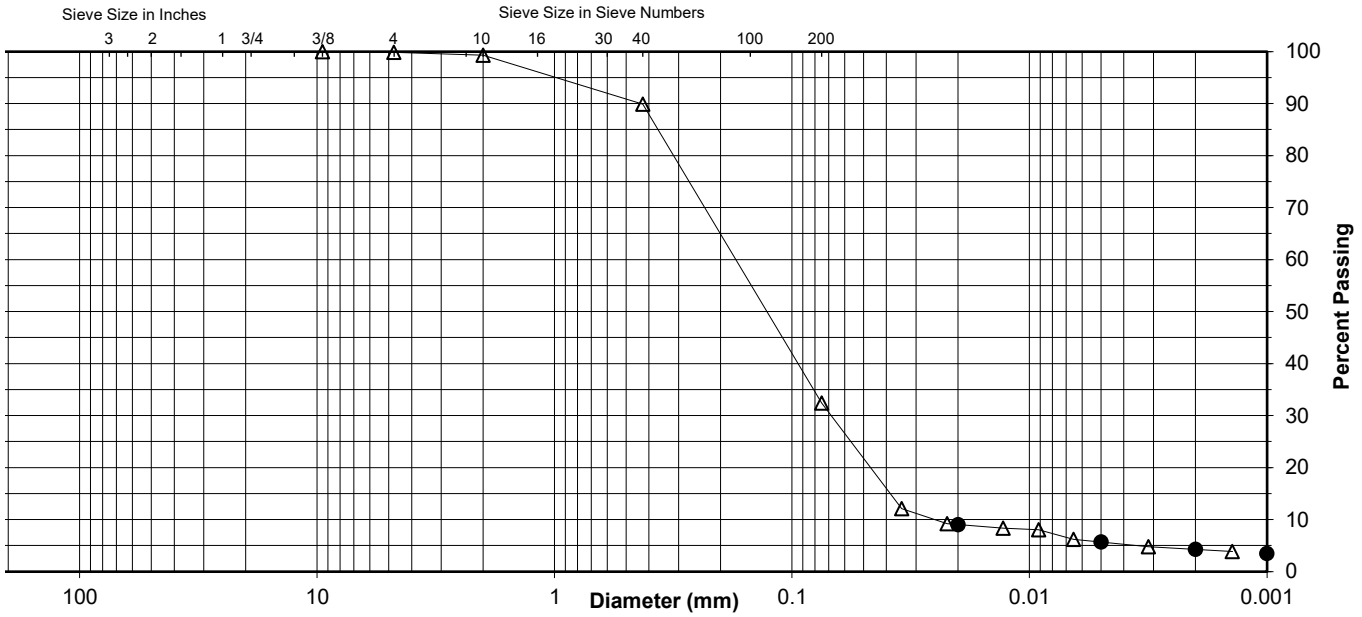
Specific Gravity 2.7

Dispersed Using Apparatus A - Mechanical, for 1 Minute

No. 40	89.9
No. 200	32.4
0.02 mm	9.0
0.005 mm	5.7
0.002 mm	4.3
0.001 mm	3.5

Particle Size Distribution

ASTM	Coarse Gravel	Fine Gravel	C. Sand	Medium Sand	Fine Sand	Silt	Clay
	0.0	0.1	0.6	9.4	57.5	26.7	5.7
AASHTO	Gravel			Coarse Sand	Fine Sand	Silt	Clay
	0.7			9.4	57.5	28.1	4.3



Comments

Reviewed By RJ

Stantec

Particle-Size Analysis of Soils
ASTM D 422

Project Name 108th Pipe
Source B-3, 5.0'-7.5'

Project Number 2002006449
Lab ID 14

Sieve Analysis for the Portion Coarser than the No. 10 Sieve

Test Method ASTM D 422
Prepared Using ASTM D 421

Particle Shape: Angular
Particle Hardness: Hard and Durable

Tested By TRH
Test Date 10-17-2025
Date Received 10-10-2025

Maximum Particle Size: 3/4" Sieve

Sieve Size	% Passing
3/4"	100.0
3/8"	99.1
No. 4	99.0
No. 10	98.9

Analysis for the Portion Finer than the No. 10 Sieve

Analysis Based on -3 inch Fraction Only

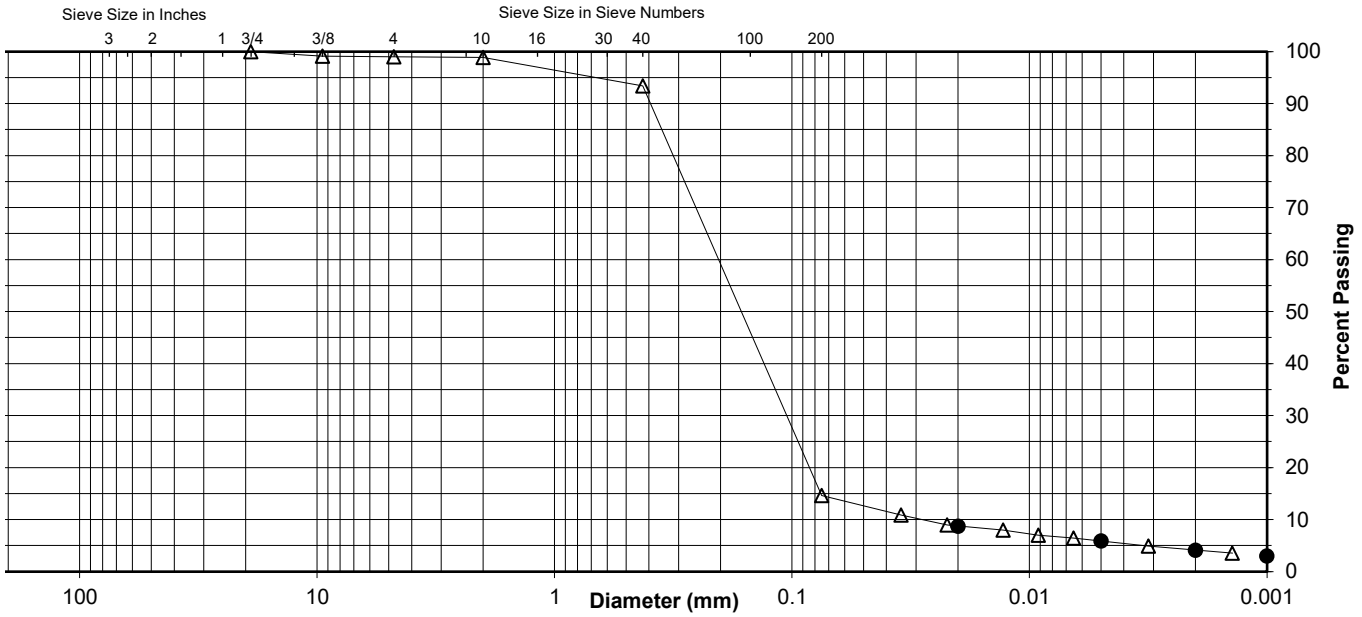
Specific Gravity 2.7

Dispersed Using Apparatus A - Mechanical, for 1 Minute

No. 40	93.4
No. 200	14.6
0.02 mm	8.7
0.005 mm	5.9
0.002 mm	4.1
0.001 mm	3.0

Particle Size Distribution

ASTM	Coarse Gravel	Fine Gravel	C. Sand	Medium Sand	Fine Sand	Silt	Clay
	0.0	1.0	0.1	5.5	78.8	8.7	5.9
AASHTO	Gravel			Coarse Sand	Fine Sand	Silt	Clay
	1.1			5.5	78.8	10.5	4.1



Comments

Reviewed By RJ

Stantec

Particle-Size Analysis of Soils
ASTM D 422

Project Name	108th Pipe	Project Number	2002006449
Source	B-3, 10.0'-12.5'	Lab ID	16

Sieve Analysis for the Portion Coarser than the No. 10 Sieve

Test Method	ASTM D 422
Prepared Using	ASTM D 421
Particle Shape:	Angular
Particle Hardness:	Hard and Durable
Tested By	TRH
Test Date	10-17-2025
Date Received	10-10-2025

Maximum Particle Size: 3/8" Sieve

Sieve Size	% Passing
3/8"	100.0
No. 4	99.9
No. 10	99.5

D_{60} (mm)	0.407
D_{30} (mm)	0.145
D_{10} (mm)	0.064
Cc	0.81
Cu	6.35

Analysis for the Portion Finer than the No. 10 Sieve

Analysis Based on -3 inch Fraction Only

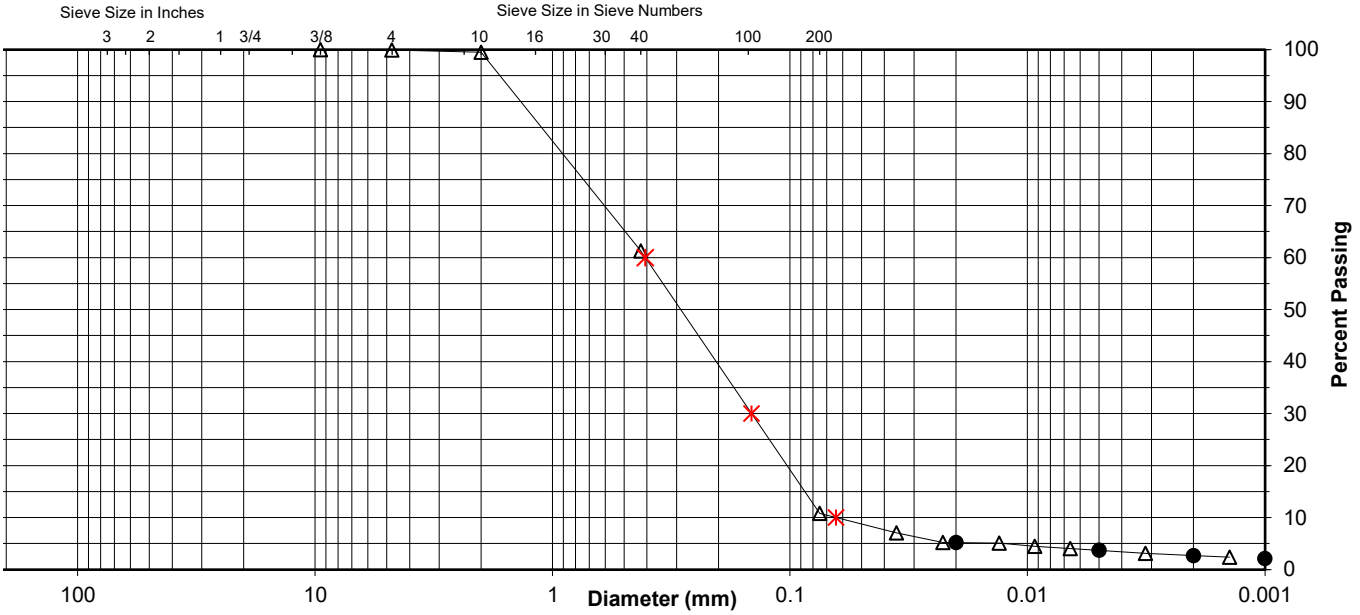
Specific Gravity 2.7

Dispersed Using Apparatus A - Mechanical, for 1 Minute

No. 40	61.3
No. 200	10.8
0.02 mm	5.2
0.005 mm	3.7
0.002 mm	2.7
0.001 mm	2.1

Particle Size Distribution

ASTM	Coarse Gravel	Fine Gravel	C. Sand	Medium Sand	Fine Sand	Silt	Clay
	0.0	0.1	0.4	38.2	50.5	7.1	3.7
AASHTO	Gravel			Coarse Sand	Fine Sand	Silt	Clay
	0.5			38.2	50.5	8.1	2.7



Comments

Reviewed By RJ

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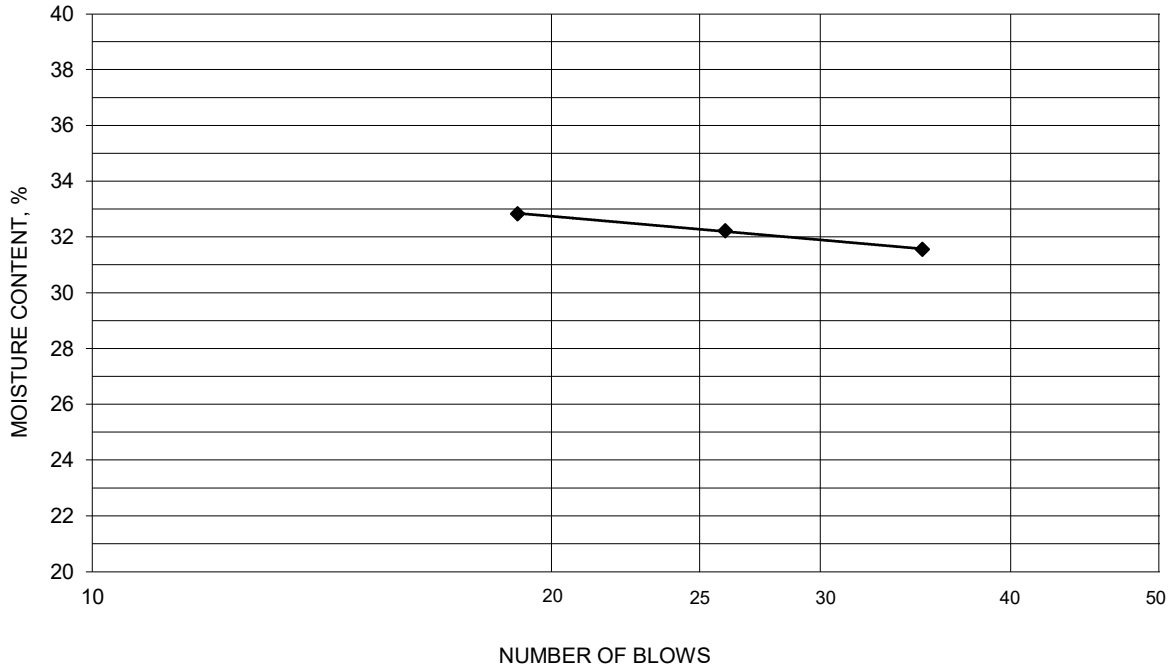
ATTERBERG LIMITS

Project	108th Pipe			Project No.	2002006449
Source	B-3, 40.0'-50.0'			Lab ID	22
Tested By	NSC	Test Method	ASTM D 4318 Method A	% + No. 40	5
Test Date	10-21-2025	Prepared	Dry	Date Received	10-10-2025

Wet Soil and Tare Mass (g)	Dry Soil and Tare Mass (g)	Tare Mass (g)	Number of Blows	Water Content (%)	Liquid Limit
19.75	17.56	10.89	19	32.8	
20.00	17.87	11.26	26	32.2	
20.74	18.49	11.36	35	31.6	32

Liquid Limit



PLASTIC LIMIT AND PLASTICITY INDEX

Wet Soil and Tare Mass (g)	Dry Soil and Tare Mass (g)	Tare Mass (g)	Water Content (%)	Plastic Limit	Plasticity Index
17.55	16.38	11.32	23.1	23	9
17.29	16.10	10.88	22.8		

Comments _____

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Particle-Size Analysis of Soils
ASTM D 422

Project Name	108th Pipe	Project Number	2002006449
Source	B-4, 5.0'-7.5'	Lab ID	25

Sieve Analysis for the Portion Coarser than the No. 10 Sieve

Test Method	ASTM D 422
Prepared Using	ASTM D 421
Particle Shape:	Angular
Particle Hardness:	Hard and Durable
Tested By	TRH
Test Date	10-17-2025
Date Received	10-10-2025

Maximum Particle Size: No. 4 Sieve

Sieve Size	% Passing
No. 4	100.0
No. 10	99.7

D_{60} (mm)	0.405
D_{30} (mm)	0.156
D_{10} (mm)	0.082
Cc	0.73
Cu	4.92

Analysis for the Portion Finer than the No. 10 Sieve

Analysis Based on -3 inch Fraction Only

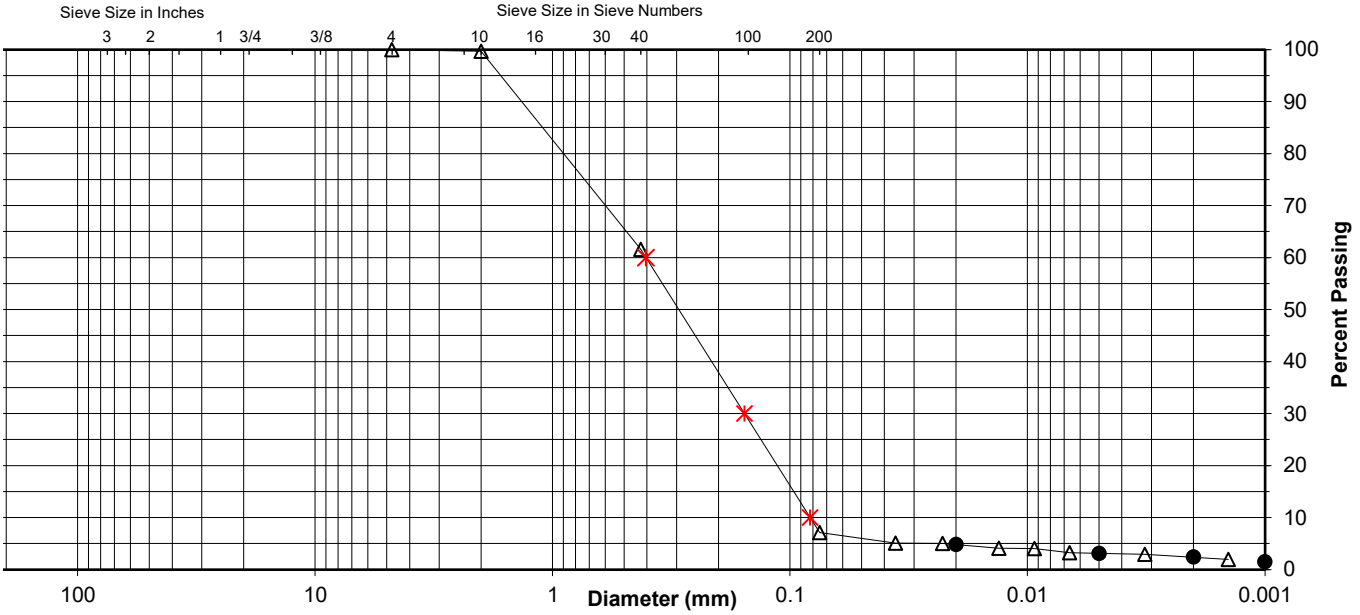
Specific Gravity 2.7

Dispersed Using Apparatus A - Mechanical, for 1 Minute

No. 40	61.6
No. 200	7.1
0.02 mm	4.8
0.005 mm	3.1
0.002 mm	2.4
0.001 mm	1.5

Particle Size Distribution

	Coarse Gravel	Fine Gravel	C. Sand	Medium Sand	Fine Sand	Silt	Clay
ASTM	0.0	0.0	0.3	38.1	54.5	4.0	3.1
AASHTO	Gravel			Coarse Sand	Fine Sand	Silt	Clay
	0.3			38.1	54.5	4.7	2.4



Comments

Reviewed By RJ

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Gradation Analysis

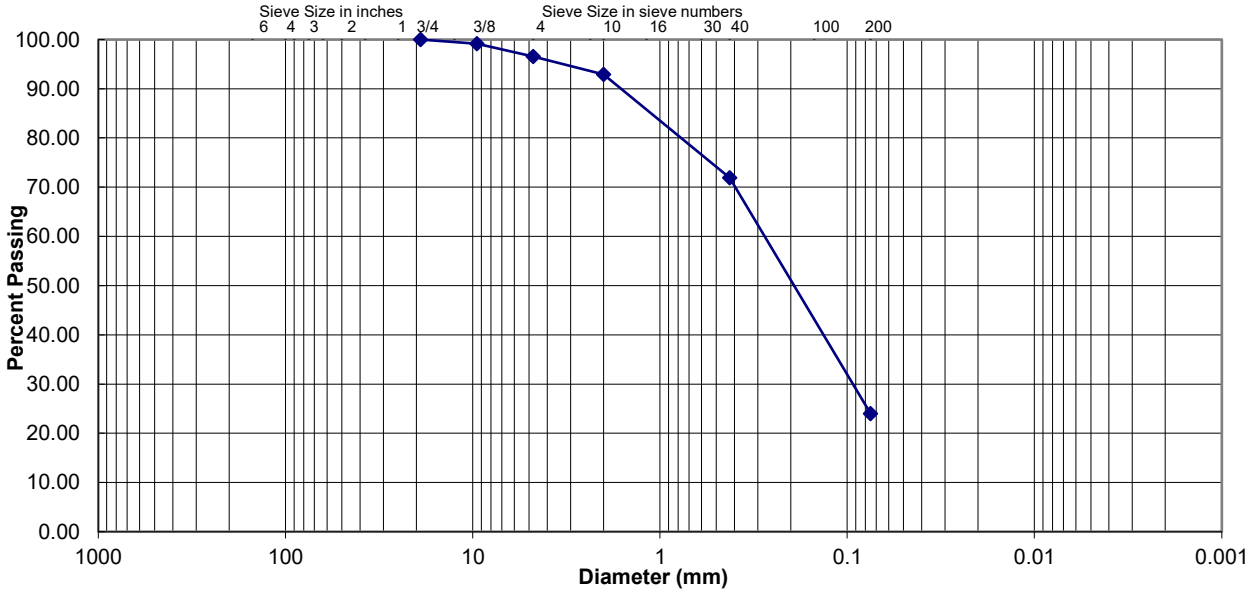
ASTM D 422

Project Name	108th Pipe	Project Number	2002006449
Source	B-5, 2.5'-5.0'	Lab ID	30
Preparation Method	ASTM D 1140 Method A	Date Received	10-10-2025
Soak Time (min)	360	Preparation Date	10-16-2025
Particle Shape	Rounded	Test Date	10-20-2025
Particle Hardness	Hard and Durable		
Sample Dry Mass (g)	253.43	Analysis Based on Total Sample.	
Moisture Content (%)	5.7		

Sieve Size	Grams Retained	% Retained	% Passing
3/4"	0.00	0.0	100.0
3/8"	2.11	0.8	99.2
No. 4	6.59	2.6	96.6
No. 10	9.24	3.6	92.9
No. 40	53.24	21.0	71.9
No. 200	121.51	47.9	24.0
Pan	60.74	24.0	---

% Gravel	3.4
% Sand	72.6
% Fines	24.0
Fines Classification	N/A
D_{10} (mm)	N/A
D_{30} (mm)	N/A
D_{60} (mm)	N/A
Cu	N/A
Cc	N/A

Particle Size Distribution



Comments

Reviewed By RJ

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Particle-Size Analysis of Soils
ASTM D 422

Project Name	108th Pipe	Project Number	2002006449
Source	B-5, 7.5'-10.0'	Lab ID	32

Sieve Analysis for the Portion Coarser than the No. 10 Sieve

Test Method	ASTM D 422
Prepared Using	ASTM D 421
Particle Shape:	Angular
Particle Hardness:	Hard and Durable
Tested By	TRH
Test Date	10-17-2025
Date Received	10-10-2025

Maximum Particle Size: 3/4" Sieve

Sieve Size	% Passing
3/4"	100.0
3/8"	99.6
No. 4	99.4
No. 10	99.0

Analysis for the Portion Finer than the No. 10 Sieve

Analysis Based on -3 inch Fraction Only

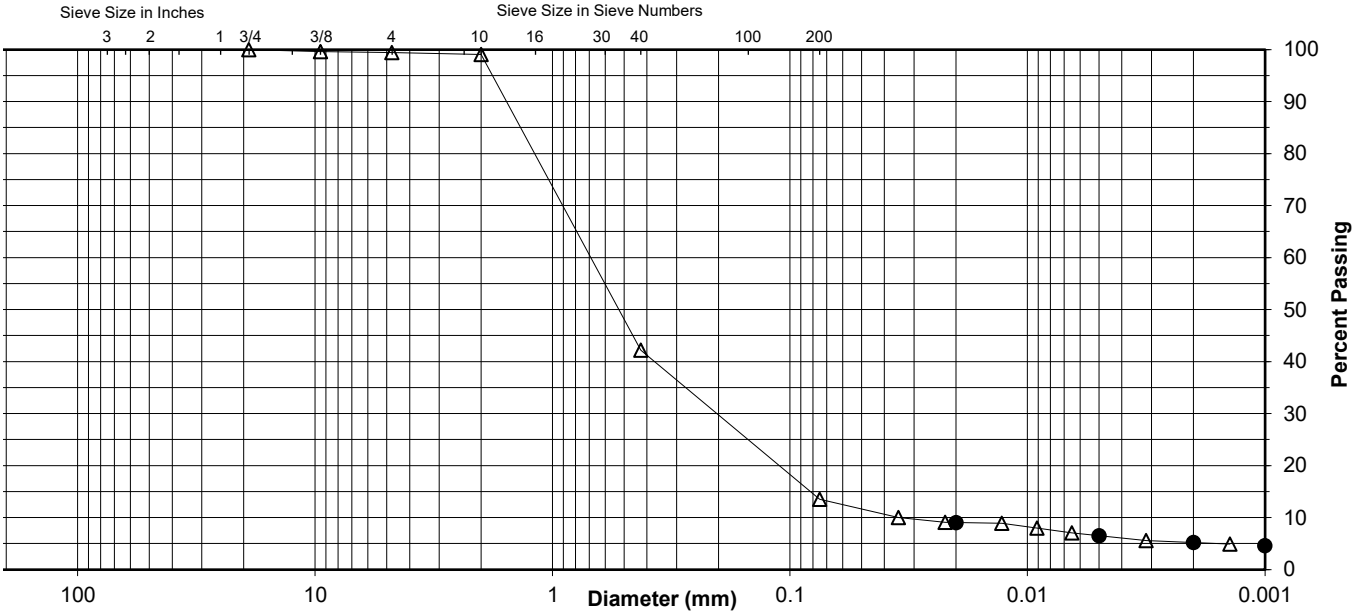
Specific Gravity 2.7

Dispersed Using Apparatus A - Mechanical, for 1 Minute

No. 40	42.2
No. 200	13.5
0.02 mm	9.0
0.005 mm	6.5
0.002 mm	5.2
0.001 mm	4.6

Particle Size Distribution

ASTM	Coarse Gravel	Fine Gravel	C. Sand	Medium Sand	Fine Sand	Silt	Clay
	0.0	0.6	0.4	56.8	28.7	7.0	6.5
AASHTO	Gravel			Coarse Sand	Fine Sand	Silt	Clay
	1.0			56.8	28.7	8.3	5.2



Comments

Reviewed By RJ

Stantec

Particle-Size Analysis of Soils
ASTM D 422

Project Name	108th Pipe	Project Number	2002006449
Source	B-5, 10.0'-12.5'	Lab ID	33

Sieve Analysis for the Portion Coarser than the No. 10 Sieve

Test Method	ASTM D 422
Prepared Using	ASTM D 421
Particle Shape:	Angular
Particle Hardness:	Hard and Durable
Tested By	TRH
Test Date	10-17-2025
Date Received	10-10-2025

Maximum Particle Size: 1 1/2" Sieve

Sieve Size	% Passing
1 1/2"	100.0
3/4"	96.8
3/8"	92.8
No. 4	85.1
No. 10	70.9

D_{60} (mm)	1.398
D_{30} (mm)	0.520
D_{10} (mm)	0.075
Cc	2.58
Cu	18.62

Analysis for the Portion Finer than the No. 10 Sieve

Analysis Based on -3 inch Fraction Only

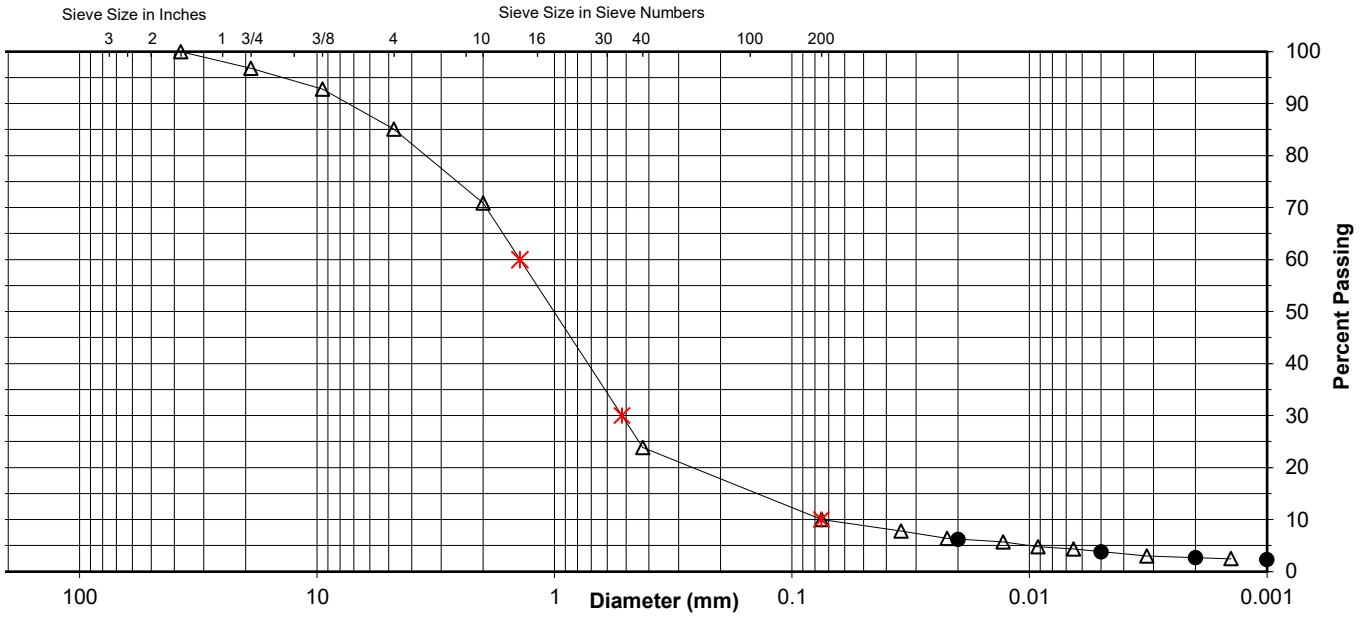
Specific Gravity 2.7

Dispersed Using Apparatus A - Mechanical, for 1 Minute

No. 40	23.9
No. 200	10.0
0.02 mm	6.2
0.005 mm	3.8
0.002 mm	2.7
0.001 mm	2.3

Particle Size Distribution

ASTM	Coarse Gravel	Fine Gravel	C. Sand	Medium Sand	Fine Sand	Silt	Clay
	3.2	11.7	14.2	47.0	13.9	6.2	3.8
AASHTO	Gravel			Coarse Sand	Fine Sand	Silt	Clay
	29.1			47.0	13.9	7.3	2.7



Comments

Reviewed By RJ

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Moisture Content of Soil

ASTM D 2216

Project Name 108th Pipe

Project Number 2002006449

Tested By AD/RJ

Test Method ASTM

Maximum Particle Size in Sample	No. 10	No. 4	3/8"	3/4"	1 1/2"	3"
Recommended Minimum Mass (g)	20	100	500	2,500	10,000	50,000

Material Type: Stratified, Laminated, Lensed, Homogeneous, Disturbed

Source	Lab ID	Date Tested	Material Type	Maximum Particle Size	Material Excluded Amount	Material Excluded Size	Pass Min. Mass? (Y/N)	Can Weight (g)	Wet Soil & Can Weight (g)	Dry Soil & Can Weight (g)	Moisture Content (%)
B-1, 5.0'-7.5'	3	10/16/25	Dist	No. 10			Yes	31.68	194.45	161.65	25.2
B-1, 10.0'-12.5'	5	10/16/25	Dist	No. 10			Yes	30.73	130.70	110.84	24.8
B-3, 40.0'-50.0'	22	10/16/25	Dist	No. 10			Yes	29.93	161.94	134.65	26.1

Comments

Reviewed By RJ

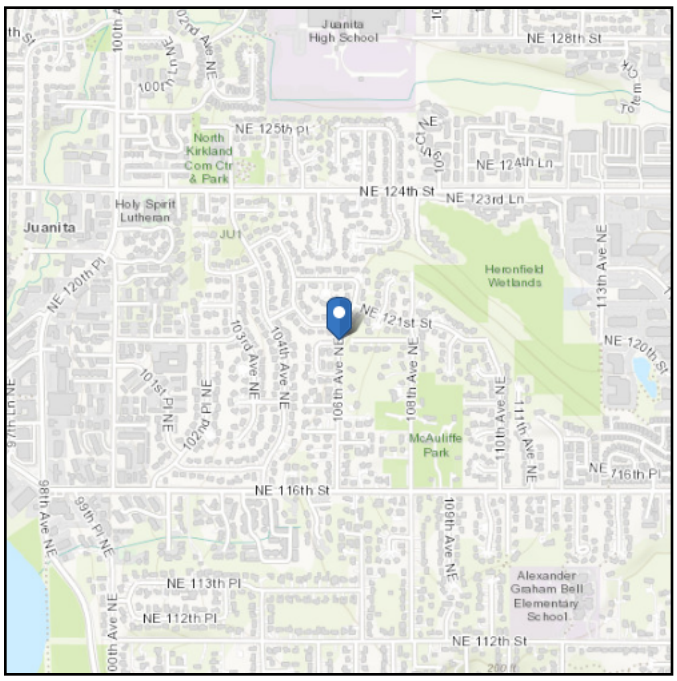
Appendix E ASCE Seismic Hazard Report

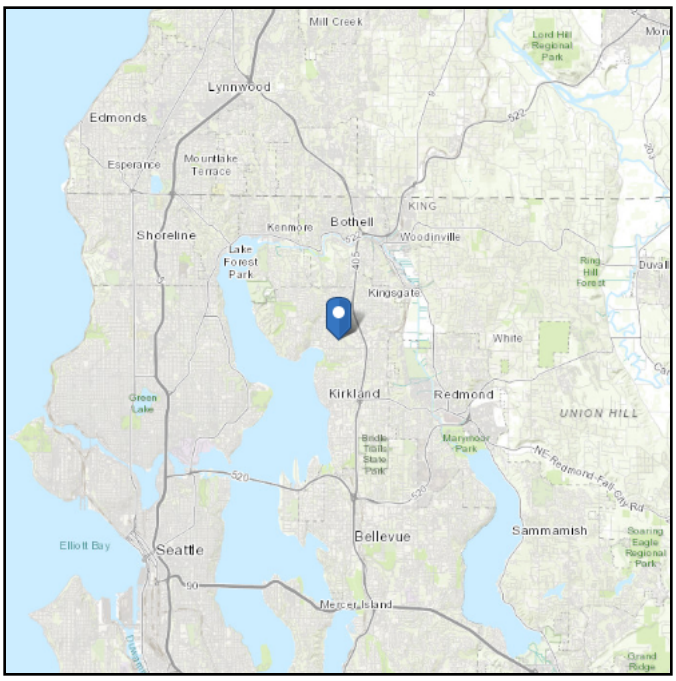
ASCE Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-22
Risk Category: I
Soil Class: D - Stiff Soil

Latitude: 47.707601
Longitude: -122.199899
Elevation: 184.45028059400983 ft (NAVD 88)





Seismic

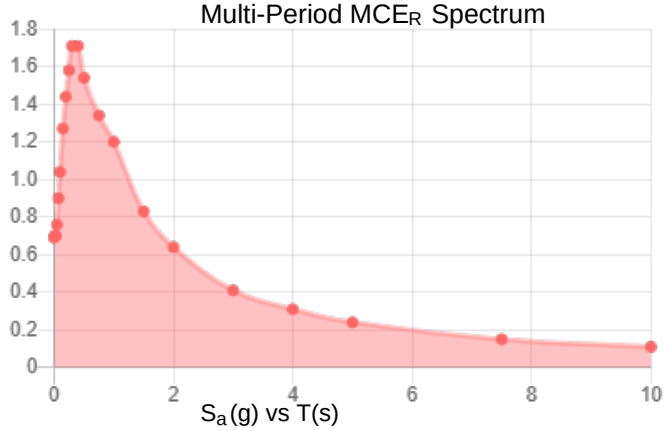
Site Soil Class: D - Stiff Soil

Results:

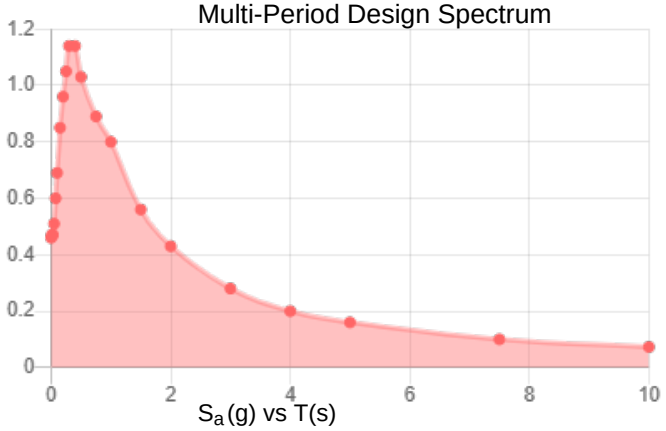
PGA_M :	0.53	T_L :	6
S_{MS} :	1.54	S_S :	1.42
S_{M1} :	1.2	S_1 :	0.56
S_{DS} :	1.03	V_{S30} :	260
S_{D1} :	0.8		

Seismic Design Category: D

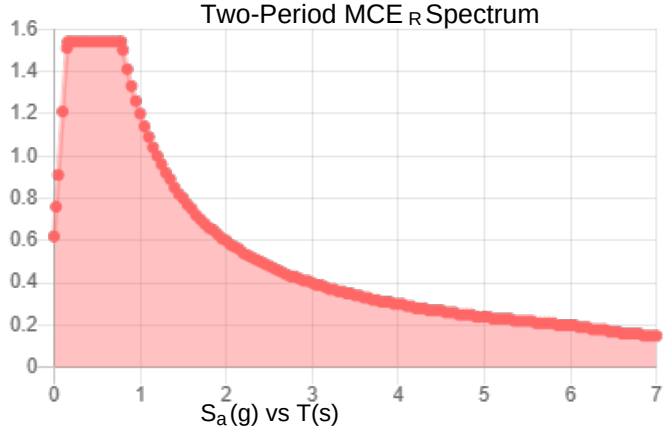
Multi-Period MCE_R Spectrum



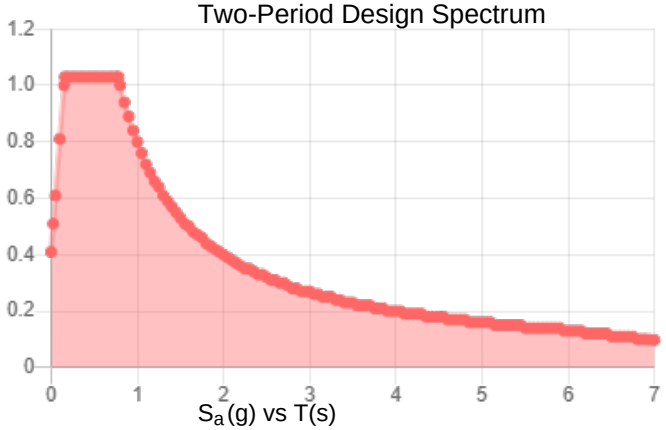
Multi-Period Design Spectrum



Two-Period MCE_R Spectrum



Two-Period Design Spectrum



MCE_R Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Design Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Data Accessed: **Fri Oct 31 2025**

Date Source:
USGS Seismic Design Maps based on ASCE/SEI 7-22 and ASCE/SEI 7-22 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-22 Ch. 21 are available from USGS.

The ASCE Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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With every community, we redefine what's possible.

Stantec is a global leader in sustainable engineering, architecture, and environmental consulting. The diverse perspectives of our partners and interested parties drive us to think beyond what's previously been done on critical issues like climate change, digital transformation, and future-proofing our cities and infrastructure. We innovate at the intersection of community, creativity, and client relationships to advance communities everywhere, so that together we can redefine what's possible.

Stantec Consulting Services Inc.
1687 114th Avenue SE, Suite 100
Bellevue, WA 98004
stantec.com

APPENDIX D:
ARBORIST REPORT

City of Kirkland

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108TH AVE NE
PIPE INSTALLATION PROJECT

Date Submitted: December 22, 2025

Submitted to:
Stantec Consulting Services Inc
Attn: Brian Wolf, PE
1687 114th Avenue SESuite 100
Bellevue, WA 98004

Prepared by:
Land Meets Water
Tristan Fields, ISA PN-8826AM
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Seattle, Washington, 98116
tristan@landmw.com
206-947-3958

LAND MEETS WATER

TABLE OF CONTENTS

Summary 1
Assignment 2
Observations 2
Existing Site Conditions 2
Tree Information 2
Discussion 3
Recommendations 4
KZC 95.34 Tree & Soil Protection During Development 5
Tree Protection Plan No CK-r.49 6
Applicable Definitions 7
Table 1 - KZC 95.30.1 Tree Condition Ratings 8
Table 2 - Tree Inventory 9

SUMMARY

Land Meets Water, LLC (LMW) completed a tree assessment and arborist analysis for the City of Kirkland 108th Avenue NE Pipe Installation Project. The purpose of this report is to document existing tree conditions within and adjacent to the project area, evaluate potential impacts associated with the proposed stormwater pipe installation, and provide preliminary recommendations regarding tree retention, removal, and replacement.

The project area is characterized by a steeply sloped street end with a small grouping of trees at the downslope terminus, including one large Bigleaf Maple (Acer macrophyllum) that will require removal to accommodate the proposed pipe alignment. Overall tree health varies across the site, with a mix of moderate- and poor-condition trees influenced by slope instability, restricted rooting volume, and adjacent urban infrastructure.

As part of the project, three trees are proposed for removal, including two regulated trees and one landmark tree, resulting in a requirement for five replacement trees in accordance with City of Kirkland Municipal Code.

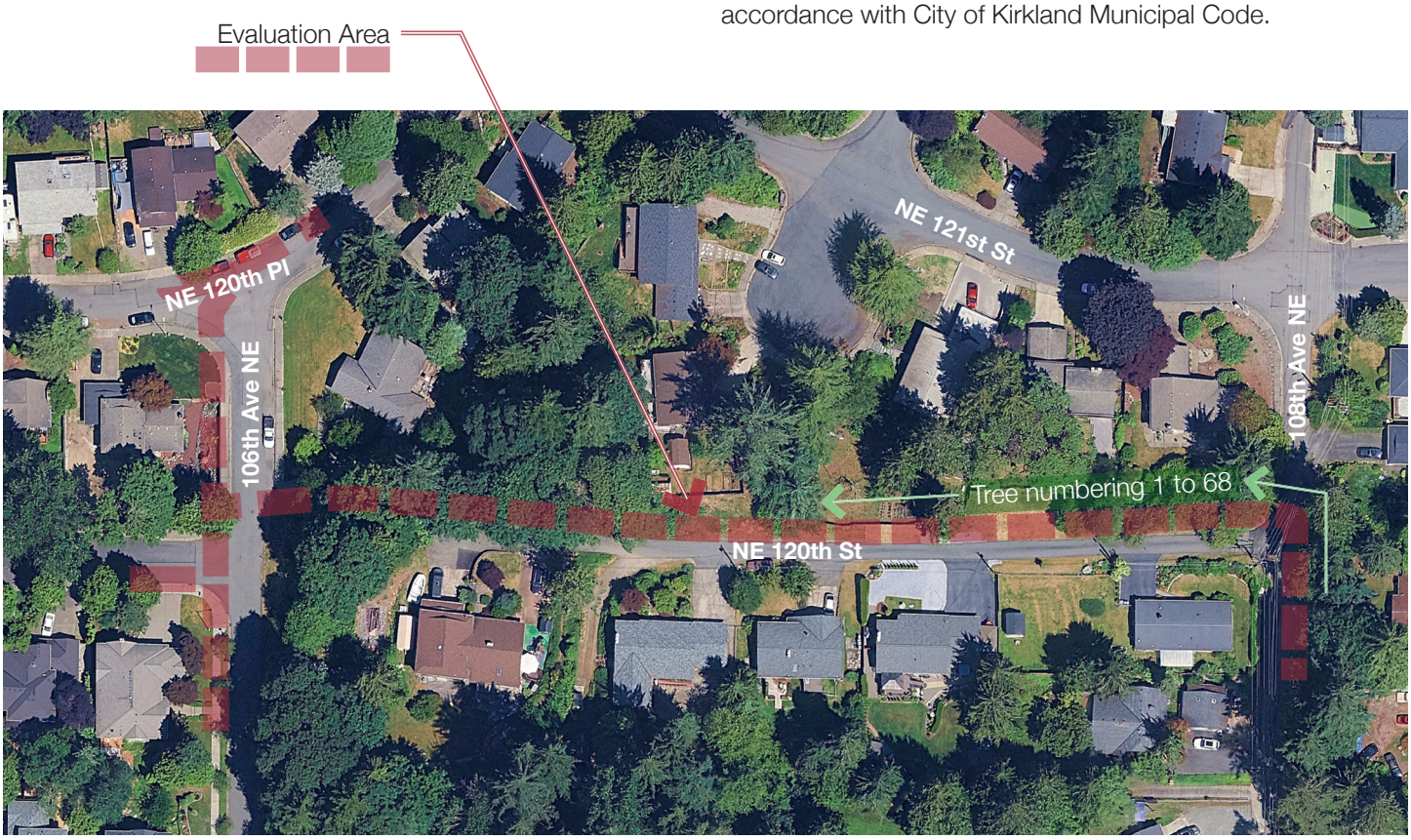


Image 1 - *An aerial view of the site and evaluation area. For more information, refer to the tree retention plan and Table 2—Tree Inventory.*

ASSIGNMENT

LMW was retained by Stantec to provide professional arborist services in support of the design and permitting phases of the 108th Avenue NE Pipe Installation Project. The assignment included conducting tree health assessments, reviewing anticipated construction impacts, preparing a tree inventory, and developing an arborist report consistent with the City of Kirkland Municipal Code, ANSI A300 standards, and ISA Best Management Practices. This report is intended to support design decision-making and permitting related to tree impacts associated with the proposed utility installation.

OBSERVATIONS

Field observations were conducted within the public right-of-way and immediately adjacent areas where construction impacts are anticipated. Trees were visually assessed from ground level without the use of advanced diagnostic equipment. Observations focused on overall tree health, structural condition, visible defects, species characteristics, and site-related constraints such as slope, proximity to pavement, utilities, and limited rooting space.

EXISTING SITE CONDITIONS

The project area is located at a street end along 108th Avenue NE near NE 120th Street. The site slopes steeply downward from the roadway toward a vegetated lower area. Existing vegetation is concentrated at the slope and toe of slope, where trees have established in constrained conditions influenced by grade, erosion, and proximity to existing infrastructure. Soils appear compacted near the roadway and more variable downslope, with signs of surface runoff and limited soil stability. These conditions affect both tree health and long-term retention potential.

TREE INFORMATION

Trees assessed within and adjacent to the project area were documented in a tree inventory prepared as part of this assignment. Each tree was assigned a unique identifier, species, diameter at breast height (DBH), condition rating, and regulatory classification per the City of Kirkland Municipal Code.

Notable trees within the project limits include the following Bigleaf Maples (Acer macrophyllum):

Tree ID 56 – Bigleaf Maple, 50-inch DBH, Landmark Tree, condition rated Fair to Poor due to slope position and structural stress; located within the proposed pipe installation footprint.

Tree ID 13 – Bigleaf Maple, 30-inch DBH, Landmark Tree, condition rated Good; adjacent to the construction corridor.

Tree ID 45.5 – Bigleaf Maple, 42-inch DBH, Landmark Tree, condition rated Good; located downslope of the street end.

Tree ID 7 – Bigleaf Maple, multi-stem (approx. 20-inch combined DBH), Regulated Tree, condition rated Good.

Additional trees on site include Douglas-fir (Pseudotsuga menziesii), Western Red Cedar (Thuja plicata), and smaller ornamental species, with DBHs ranging from approximately 8 inches to over 35 inches and condition ratings ranging from Good to Poor. Several trees exhibit decline related to slope

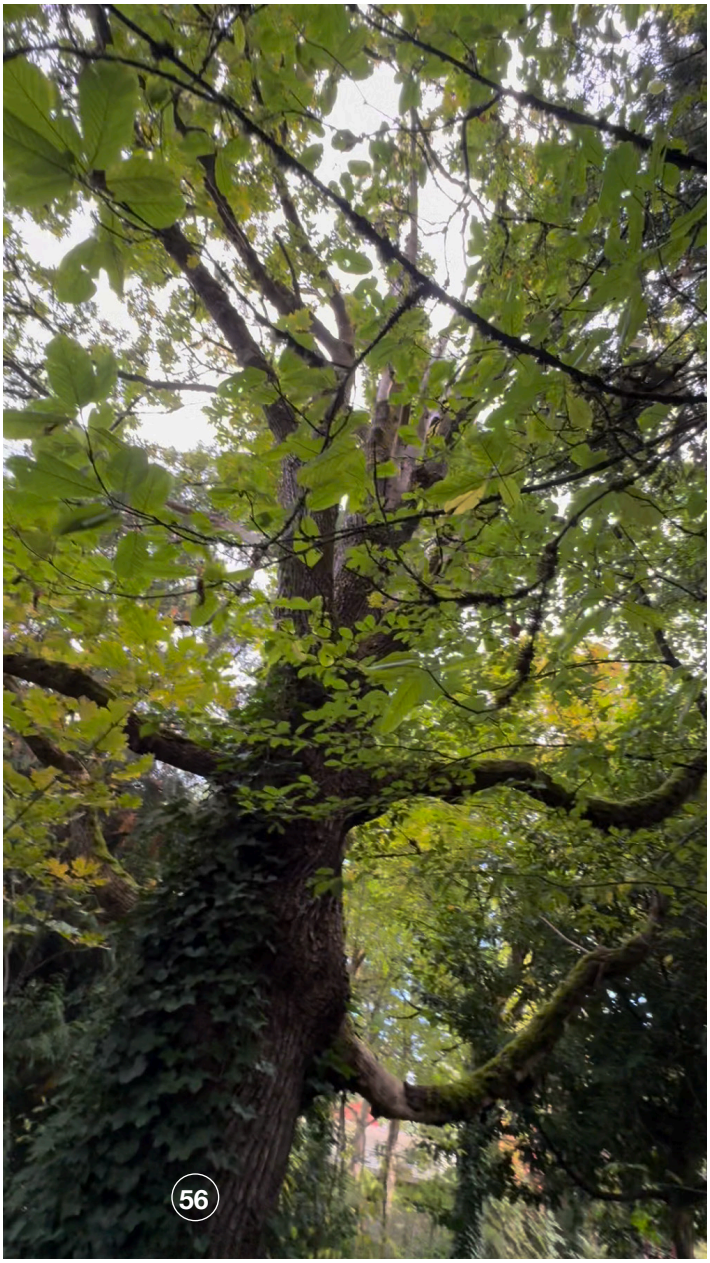


Image 2 - *Upward view into the canopy of the Bigleaf Maple (Tree 56), proposed for removal, showing the absence of a primary leader as visible through the foliage.*

instability, limited rooting volume, and proximity to existing infrastructure.

Tree Groves

A majority of the trees within and adjacent to the project area occur in small, spatially connected groupings that function as tree groves. These groves consist of trees with overlapping or adjacent root systems, shared soil conditions, and interdependent structural and ecological relationships, particularly along the steep slope and toe-of-slope areas at the street end.

Trees within these groves contribute collectively to slope stability, canopy cover, and visual screening, and their long-term viability is influenced by the condition and retention of adjacent trees. As a result, individual tree health, retention feasibility, and protection measures were evaluated not only on a tree-by-tree basis, but also in the context of grove function and cumulative impacts associated with construction activity.

Complete tree data are provided in the City of Kirkland–formatted tree inventory spreadsheet accompanying this report.

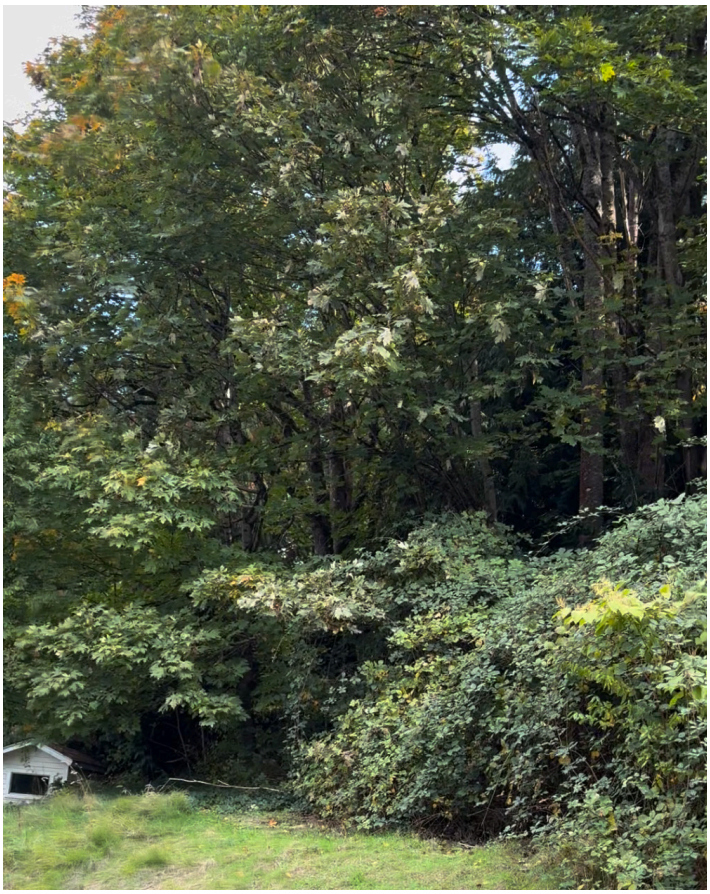


Image 3 - *Eastward view toward the street end showing the grove of trees within the proposed pipe installation impact area.*

DISCUSSION

Design Refinement to Avoid and Minimize Tree Impacts

During design development, the proposed stormwater pipe alignment was evaluated and refined in coordination with the project engineer to reduce impacts to existing trees and tree groves to the extent feasible. The alignment was adjusted to bypass a majority of the trees located within the grove area, resulting in reduced encroachment into critical root zones and avoidance of additional tree removals.

Despite these refinements, removal of one mature Bigleaf Maple and two regulated trees is required due to unavoidable conflicts associated with pipe depth, trench width, and construction access constraints within the street-end configuration.

The final alignment reflects a balance between achieving the project's stormwater conveyance objectives and minimizing impacts to retained trees and grove function, consistent with the intent of Kirkland Zoning Code (KZC) 95.34 to prioritize tree protection and soil preservation during development.

Tree Replacement

Tree removals associated with the project will require mitigation in accordance with the City of Kirkland Municipal Code. Under current regulations:

Regulated Trees (generally 8 inches DBH and greater) require replacement on a 1:1 basis based on DBH, unless otherwise approved by the City.

Landmark Trees (typically 30 inches DBH and greater) require replacement on a 3:1 basis, or payment of a fee-in-lieu when on-site replacement is not feasible.

Given the constrained nature of the street end and slope conditions, on-site replacement opportunities may be limited. Replacement planting may need to occur at an alternate City-approved location or through fee-in-lieu mitigation, subject to City review and approval. Replacement species should be selected for site suitability, long-term canopy contribution, and compatibility with urban infrastructure and maintenance constraints.

Tree Retention

Tree retention feasibility and recommended protection measures were evaluated with consideration of the requirements of KZC 95.34 – Tree and Soil Protection During Development, recognizing the constraints associated with utility installation in a steeply sloped right-of-way.

RECOMMENDATIONS

1. Proceed with removal of the mature Bigleaf Maple and other trees directly impacted by the proposed pipe installation, as identified during final design.
2. Implement tree protection measures for all retained trees during construction, including fencing and avoidance of equipment access within designated protection zones.
3. Coordinate with the City of Kirkland to confirm tree replacement quantities, locations, and species consistent with municipal code requirements.
4. All tree protection measures for retained trees shall be implemented in accordance with Kirkland Zoning Code (KZC) 95.34 – Tree and Soil Protection During Development, including protection of critical root zones, soil structure, and limitations on disturbance during construction (see below).

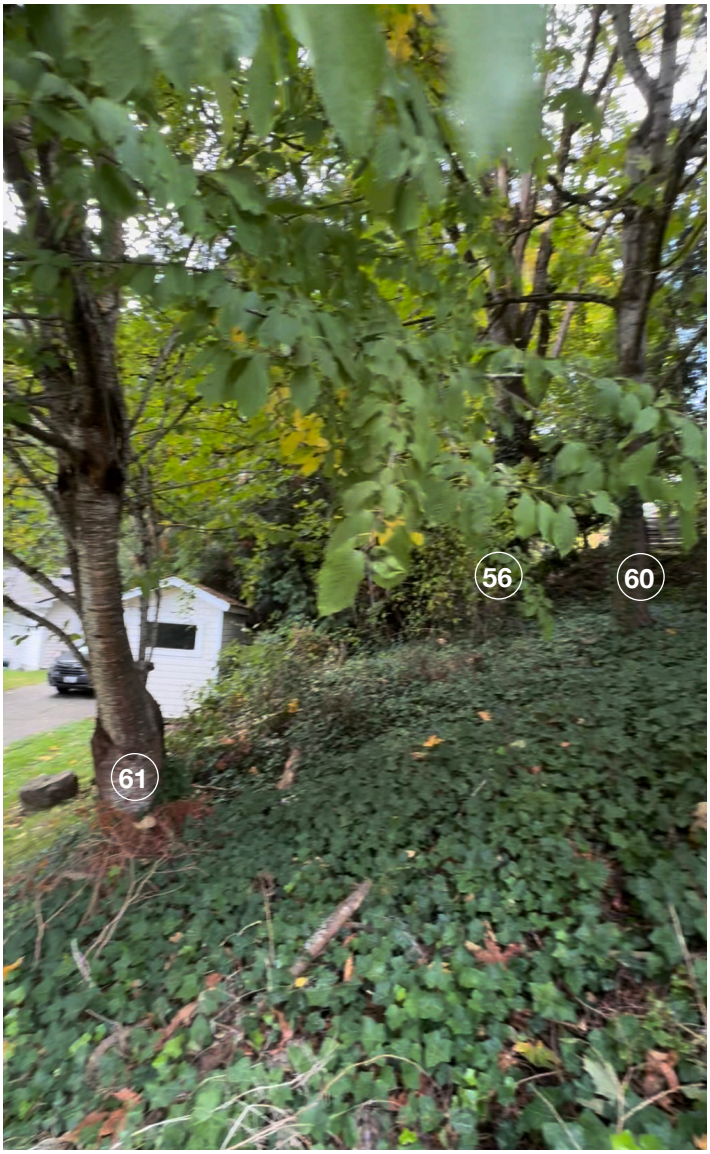


Image 4 - *Eastward view toward trees located within the proposed pipe installation impact area that are proposed for removal.*

KZC 95.34 TREE & SOIL PROTECTION DURING DEVELOPMENT

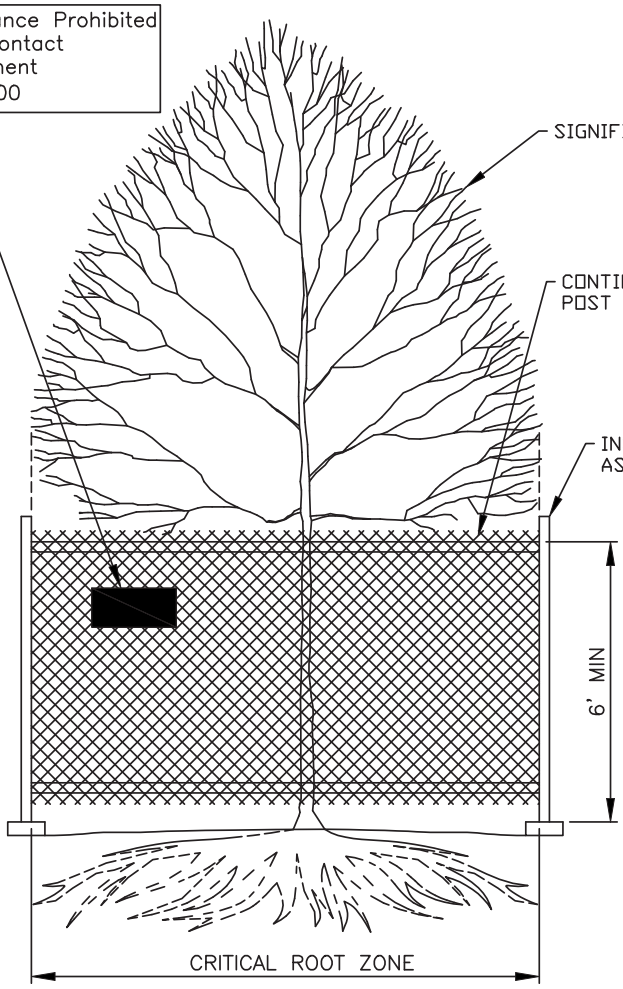
1. Placing Materials Near Trees. No person may conduct any activity within the TPZ of any tree designated to remain, including, but not limited to, operating or parking equipment, placing solvents, storing building material or stockpiling any materials, or dumping concrete washout or other chemicals. During construction, no person shall attach any object to any tree designated for protection.
2. Tree Protection Fence. Before development, land clearing, filling, or any land surface modifications, the applicant shall:
3. Erect and maintain readily visible temporary protective tree fencing at the approved TPZ which completely surrounds the protected area of all retained trees, groups of trees, vegetation, and native soil. Fences shall be constructed of chain link and be at least six feet high unless another type of fencing is authorized by the Planning Official.
4. Install highly visible signs spaced no further than 15 feet along the entirety of the tree protection fence. Said signage must be approved by the Planning Official and shall state at a minimum “Tree and Soil Protection Area, Entrance Prohibited” and provide the City phone number for Code Enforcement to report violations.
5. Site plans showing approved tree retention/protection shall be displayed on development sites in plain view with the general contractor or other responsible party’s phone number.
6. Prohibit excavation or compaction of soil or other potentially damaging activities within the fence; provided, that the Planning Official may allow such activities approved by a qualified professional arborist and under the supervision of a qualified professional arborist retained and paid for by the applicant.
7. If any disturbance is proposed within the inner critical root zone of one or more regulated trees on a neighboring property, the applicant shall provide evidence that the owner of said tree(s) has been notified in writing of the potential impact. The Planning Official may waive this requirement if the applicant’s qualified professional arborist can demonstrate, through non-injurious methods such as pneumatic root excavations, that there are no roots within the inner critical root zone.
8. Maintain the tree protection fence in its approved location for the duration of the project until the Planning Official authorizes its removal.
9. Ensure that any approved landscaping done in the protected zone subsequent to the removal of the barriers shall be accomplished with machinery from outside the protected zone or by hand.
10. If equipment is authorized to operate within the CRZ, the soil and CRZ of a tree must be covered with mulch to a depth of at least six inches or with plywood, steel plates or similar material in order to protect roots and soil from damage caused by heavy equipment.
11. Minimize root damage by hand-excavating a two-foot-deep trench, at the edge of the CRZ, to cleanly sever the roots of trees to be retained. Never rip or shred roots with heavy equipment.
12. Corrective pruning performed on protected trees in order to avoid damage from machinery or building activity.
13. Maintenance of trees throughout construction period by watering and fertilizing.
14. The grade shall not be elevated or reduced within the CRZ of trees to be preserved without the Planning Official’s authorization based on recommendations from a qualified professional arborist in compliance with ANSI A300 Part 5 Standard Practices for the Management of Trees and Shrubs During Site Planning, Site Development and Construction.
15. If the grade adjacent to a preserved tree is raised such that it could slough or erode into the tree’s CRZ, it shall be permanently stabilized to prevent soil erosion and suffocation of the roots.
16. The applicant shall not install an impervious surface within the CRZ of any tree to be retained without the authorization of the Planning Official. The Planning Official may require specific construction methods and/or use of aeration devices to ensure the tree’s survival and to minimize the potential for root-induced damage to the impervious surface.
17. To the greatest extent practical, utility trenches shall be located outside of the CRZ of trees to be retained. The Planning Official may require that utilities be tunneled under the roots of trees to be retained if the Planning Official determines that trenching would significantly reduce the chances of the tree’s survival.
18. Trees and other vegetation to be retained shall be protected from erosion and sedimentation. Clearing operations shall be conducted so as to expose the smallest practical area of soil to erosion for the least possible time. To control erosion, it is encouraged that shrubs, ground cover and stumps be maintained on the individual lots, where feasible.

TREE PROTECTION PLAN NO CK-R.49

FENCING SIGN DETAIL

Tree Protection Area, Entrance Prohibited
To report violations contact
City Code Enforcement
at (425) 587–3600

LAST REVISED: 1/2022



NOTES:

1. MINIMUM SIX (6) FOOT HIGH TEMPORARY, CONTINUOUS CHAIN LINK FENCE SHALL BE PLACED AT THE CRITICAL ROOT ZONE OR DESIGNATED LIMIT OF DISTURBANCE OF THE TREE TO BE SAVED, FENCE SHALL COMPLETELY ENCIRCLE SIGNIFICANT EXISTING TREE(S). INSTALL CONTINUOUS CHAIN LINK FENCING POST(S) USING PIER BLOCK ONLY AT MAXIMUM 10 (TEN) FEET O.C. 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 PORT 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. A PRINTED TREE PROTECTION AREA SIGN NOTING (TREE PROTECTION AREA – ENTRANCE PROHIBITED. TO REPORT VIOLATIONS, CONTACT CITY CODE ENFORCEMENT AT 425–587–3600.", MUST BE POSTED ALONG THE FENCE EVERY FIFTEEN (15) FEET. PRINT AND LAMINATE THE SIGN (AVAILABLE ONLINE) AND POST ON SITE.

CITY OF KIRKLAND	
PLAN NO. CK–R.49	
CITY OF KIRKLAND WASHINGTON	TREE PROTECTION

APPLICABLE DEFINITIONS
Kirkland Zoning Code Chapter 95

Critical Root Zone (CRZ) –The area encircling the trunk of a tree equal to one foot radius for every inch of DBH. Example: a 24-inch DBH tree has a 24-foot radius CRZ measured from the face of the trunk.

Diameter at Breast Height (DBH) – The diameter or thickness of a tree trunk measured at 4.5 feet above average grade. For trees with multiple trunks at 4.5 feet height, only trunks three inches DBH or greater shall be included. Where a tree splits into several trunks close to ground level, the DBH for the tree is the square root of the sum of the DBH for each individual stem squared (example with three trunks: DBH = square root [(stem1)2 + (stem2)2 + (stem3)2]). If a tree has been removed and only the stump remains that is below 4.5 feet tall, the size of the tree shall be the diameter of the top of the stump.

Impact – A condition or activity that adversely affects any part of a tree, including, but not limited to, the trunk, branches, or CRZ.

Inner Critical Root Zone (Inner CRZ) – An area half the distance of the CRZ that, when impacted, may compromise the structural integrity of the tree. Example: a 24-inch DBH tree has a 12-foot radius inner critical root zone measured from the face of the trunk.

Site Disturbance – Any development, construction, or related operation that could alter the subject property, including, but not limited to, soil compaction; tree or tree stump removal; road, driveway, or building construction; installation of utilities; or grading.

Tree Protection Zone (TPZ) – A defined area within and including an outer boundary, as determined by a qualified professional arborist, in which certain activities are prohibited or restricted to prevent or minimize potential impacts from construction or development, applicable to individual trees or groups of tree trunks, roots and soil. TPZ is measured in feet from the face of the trunk and may be determined using critical root zone, dripline, exploratory root excavations or other methodologies. The TPZ is variable depending on species, age and health of the tree, soil conditions and proposed construction. TPZ denotes the location of tree protection fencing.

Tree Removal – The removal of a tree, through either direct or indirect actions, including but not limited to: (1) clearing, damaging, girdling, or poisoning, in each case, resulting in an unhealthy or dead tree; (2) topping that results in the removal of more than 25 percent of the live crown; or (3) damage to roots or trunk that is likely to destroy the tree's structural integrity.

Trees – A tree or a group of trees may fall under one of the following definitions for purposes of this chapter:

Grove – A group of three or more viable regulated trees with overlapping or touching crowns that are located on a proposed development site; one of which is located in a required yard.

Hazard Tree – A tree/tree part assessed by a qualified professional arborist as having an extreme or high overall risk rating using the ISA Tree Risk Assessment Qualification (TRAQ) method in its most current form, as applied in KZC 95.25, that meets all the following criteria:

1) A tree with a combination of structural defects and/or disease which makes it subject to a high probability of failure;

2) Is in proximity to moderate to high-frequency occupied targets, persons or property that can be damaged by tree failure; and

3) The hazard condition of the tree cannot be lessened with reasonable and proper arboricultural practices nor can the target be removed.

Landmark Tree – A regulated tree with a minimum 26-inch DBH

Regulated Tree – A tree that is at least six inches DBH that is not listed on the Prohibited Plant List.

Retention Value – The Planning Official's designation of a tree based on information provided by a qualified professional arborist that is one of the following:

1) High – any of the following trees:

a) Grove.

b) Landmark tree.

c) A viable tree with any portion of the trunk located in a required yard, land use buffer, and/or common open space.

2) Moderate – A viable tree that is not a high retention value tree.

Viable Tree – A regulated tree on proposed development sites that fits the viable criteria in Table 95.30.2 based on the tree condition ratings pursuant to KZC 95.30. A tree that is not viable is also a tree in an area where removal is unavoidable due to the anticipated development activity after having applied the provisions in this chapter.

Wildlife Snag – The remaining trunk of a tree that is intentionally reduced in height and usually stripped of its branches with the intent of providing habitat.

Windfirm – A condition of a tree in which it withstands average peak local wind speeds and gusts.

TABLE 1 - KZC 95.30.1 TREE CONDITION RATINGS

Condition Rating	**Tree Health** *Twig and leaf density, size and growth, pest/ pathogen issues*	**Tree Structure** *Root flare, trunk condition, branch assembly*
Excellent	High or above average vigor with little or no twig dieback, discoloration or defoliation.	Trunk and root flare exhibit no visible defects or cavities. Branch structure and attachments are normal for species and free of defects.
Good	Vigor is normal for species. No significant damage due to diseases or pests. Any twig dieback, defoliation or discoloration is minor (up to 10% of the crown).	Well-developed structure. Defects are minor and can be corrected. Codominant stem formation may be present. Trees in groves may have asymmetries/deviations from an open-grown form of the same species.
Fair	Reduced vigor. Twig dieback, defoliation, discoloration, and/or dead branches up to 30% of the crown. Obvious signs of pest problems contribute to a lesser condition but is not likely to be fatal.	Visible evidence of trunk damage or cavities, large girdling roots or branch attachments that require moderate corrections.
Poor	Poor vigor, unhealthy and declining. Low foliage density with extensive (more than 50%) twig and/or branch dieback. Smaller-than-normal leaf size and little evidence of new growth.	Structural problems cannot be corrected, such as recent change in tree orientation, extensive trunk decay or poor branch attachments. Tree/tree part failure may occur at any time.

TABLE 2 - TREE INVENTORY

Unique Identifier	*Latin Name*	Common Name	DBH (in)	Class*	Health**	Retention Value***	Height	Location	Remove/ Snag/	Replace-ment	Notes
1	*Pseudotsuga menziesii*	Douglas Fir	30	Landmark	Good	High	100	Public			
2	*Thuja plicata*	Western Red Cedar	12	Regulated	Good	High	45	Public			
3	*Pseudotsuga menziesii*	Douglas Fir	10	Regulated	Good	High	40	Public			
4	*Pseudotsuga menziesii*	Douglas Fir	15	Regulated	Good	High	65	Public			
5	*Pseudotsuga menziesii*	Douglas Fir	11	Regulated	Good	High	45	Public			
6	*Pseudotsuga menziesii*	Douglas Fir	9	Regulated	Good	High	45	Public			
7	*Acer macrophyllum*	Bigleaf Maple	12,12,8.6 (20)	Regulated	Good	High	50	Public			
8	*Pseudotsuga menziesii*	Douglas Fir	30	Landmark	Good	High	100	Public			
9	*Pseudotsuga menziesii*	Douglas Fir	10	Regulated	Good	High	30	Public			
10	*Pseudotsuga menziesii*	Douglas Fir	28	Landmark	Good	High	75	Public			
11	*Abies grandis*	Grand Fir	6	Regulated	Good	High	20	Public			
12	*Tsuga heterophylla*	Western Hemlock	18	Regulated	Good	High	65	Public			
13	*Acer macrophyllum*	Bigleaf Maple	30	Landmark	Good	High	60	Public			
14	*Pseudotsuga menziesii*	Douglas Fir	22	Regulated	Good	High	70	Public			
15	*Cornus nuttallii*	Pacific Dogwood	8,8 (11)	Regulated	Good	High	30	Public			Dual leaders
16	*Pseudotsuga menziesii*	Douglas Fir	22	Regulated	Good	High	70	Public			
17	*Thuja plicata*	Western Red Cedar	27	Landmark	Good	High	70	Public			Dual leaders
18	*Thuja plicata*	Western Red Cedar	65	Landmark	Good	High	90	Public			Corrected 5 degree lean to north
19	*Thuja plicata*	Western Red Cedar	16	Regulated	Good	Moderate	45	Public			
20	*Tsuga heterophylla*	Western Hemlock	24,20 (31)	Regulated	Good	Moderate	80	Public			
21	*Crataegus phaenopyrum*	Washington Hawthorn	10,8,8,8,6 (16)	Regulated	Fair	Moderate	30	Public			Predation damage along trunk
22	*Crataegus monogyna*	English Hawthorn	3,2,2,3,3 (6)	Non-Regulated	Good		25	Public			
23	*Crataegus monogyna*	English Hawthorn	6	Non-Regulated	Good		16	Public			
24	*Prunus emarginata*	Bitter Cherry	5	Regulated	Poor	Moderate	15	Public			
25	*Cornus nuttallii*	Pacific Dogwood	14	Regulated	Fair	Moderate	35	Public			
26	*Acer macrophyllum*	Bigleaf Maple	50	Landmark	Fair	High	75	Private			Declining canopy
27	*Crataegus monogyna*	English Hawthorn	11	Non-Regulated	Good		25	Public			
28	*Thuja plicata*	Western Red Cedar	44	Landmark	Good	High	90	Public			
29	*Pseudotsuga menziesii*	Douglas Fir	38	Landmark	Good	High	100	Private			
30	*Pseudotsuga menziesii*	Douglas Fir	9	Regulated	Good	High	40	Public			
31	*Pseudotsuga menziesii*	Douglas Fir	12	Regulated	Good	High	40	Public			
32	*Prunus spp*	Plum	12	Regulated	Good	High	25	Public			
33	*Prunus serrulata*	Flowering Cherry	12	Regulated	Good	Moderate	30	Private			
34	*Prunus serrulata*	Flowering Cherry	8	Regulated	Good	Moderate	30	Private			
35	*Acer macrophyllum*	Bigleaf Maple	18	Regulated	Good	High	50	Public			
36	*Acer macrophyllum*	Bigleaf Maple	18	Regulated	Good	High	50	Public			
37	*Acer macrophyllum*	Bigleaf Maple	16	Regulated	Good	High	40	Public			
38	*Acer macrophyllum*	Bigleaf Maple	9	Regulated	Good	High	35	Public			
39	*Acer macrophyllum*	Bigleaf Maple	8	Regulated	Good	High	35	Public			

* KZC .860 Significant Tree Any tree that is at least six (6) inches in diameter measured at 4.5 feet from the ground (diameter at breast height). (Ord. 4010 § 3, 2005)

** The viability is based on the criteria in KZC 95.30(3)(c) and shown in Table 2

*** The value is based on the criteria in KZC 95.10(17)(h)(1) and shown in Applicable Definitions in this document

TABLE 2 - TREE INVENTORY

Unique Identifier	*Latin Name*	Common Name	DBH (in)	Class*	Health**	Retention Value***	Height	Location	Remove/ Snag/	Replace-ment	Notes
40	*Acer macrophyllum*	Bigleaf Maple	15	Regulated	Good	High	50	Public			
41	*Acer macrophyllum*	Bigleaf Maple	13	Regulated	Good	High	50	Public			
42	*Acer macrophyllum*	Bigleaf Maple	6	Regulated	Good	High	25	Public			
43	*Acer macrophyllum*	Bigleaf Maple	7	Regulated	Good	High	25	Public			
44	*Acer macrophyllum*	Bigleaf Maple	7	Regulated	Good	High	25	Public			
45	*Acer macrophyllum*	Bigleaf Maple	12	Regulated	Good	High	40	Public			
45.5	*Acer macrophyllum*	Bigleaf Maple	42	Landmark	Good	High	65	Private			
46	*Thuja plicata*	Western Red Cedar	19	Regulated	Good	High	70	Public			
47	*Acer macrophyllum*	Bigleaf Maple	6	Regulated	Fair	High	25	Public			Top die-off
48	*Acer macrophyllum*	Bigleaf Maple	12	Regulated	Good	High	30	Public			
49	*Acer macrophyllum*	Bigleaf Maple	11	Regulated	Good	High	30	Public			
50	*Acer macrophyllum*	Bigleaf Maple	8	Regulated	Good	High	20	Public			
51	*Acer macrophyllum*	Bigleaf Maple	18	Regulated	Good	High	45	Public			
52	*Acer macrophyllum*	Bigleaf Maple	7	Regulated	Good	High	30	Public			
53	*Prunus laurocerasus*	Cherry Laurel	8	Non-Regulated	Good		15	Public			
54	*Pseudotsuga menzisii*	Douglas Fir	26	Landmark	Good	High	90	Public			
55	*Thuja plicata*	Western Red Cedar	24	Regulated	Good	High	50	Public			
56	*Acer macrophyllum*	Bigleaf Maple	43	Landmark	Fair	High	50	Public	Remove	3	Central canopy in decline
57	*Prunus emarginata*	Bitter Cherry	8,6 (10)	Regulated	Good	High	30	Public			
58	*Thuja plicata*	Western Red Cedar	24,24,24, 28 (50)	Landmark	Good	High	50	Private			
59	*Acer macrophyllum*	Bigleaf Maple	40	Landmark	Good	High	80	Private			
60	*Acer macrophyllum*	Bigleaf Maple	14	Regulated	Good	High	40	Public	Remove	1	
61	*Prunus emarginata*	Bitter Cherry	22	Regulated	Good	High	65	Public	Remove	1	
62	*Prunus serrulata*	Flowering Cherry	4	Non-Regulated	Good		10	Public			
63	*Prunus serrulata*	Flowering Cherry	4	Non-Regulated	Good		10	Public			
64	*Acer rubrum*	Red Maple	11	Regulated	Good	Moderate	50	Public			
65	*Thuja plicata*	Western Red Cedar	35	Landmark	Good	High	60	Public			
66	*Thuja plicata*	Western Red Cedar	32	Landmark	Good	High	90	Priviate			
67	*Prunus spp*	Plum	12	Regulated	Good	Moderate	35	Public			
68	*Pinus strobus*	White pine	20	Regulated	Fair	Moderate	50	Private			In decline
								Total Replacements		**5**	

* KZC .860 Significant Tree Any tree that is at least six (6) inches in diameter measured at 4.5 feet from the ground (diameter at breast height). (Ord. 4010 § 3, 2005)

** The viability is based on the criteria in KZC 95.30(3)(c) and shown in Table 2

*** The value is based on the criteria in KZC 95.10(17)(h)(1) and shown in Applicable Definitions in this document

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