

Set No. _____

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

**JUANITA DRIVE MULTIMODAL,
INTERSECTION AND SAFETY
IMPROVEMENTS**

CIP No. STC-0089

Job No. 39-23-PW

October 2023

Bid Document



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

CITY OF KIRKLAND

DEPARTMENT OF PUBLIC WORKS

Juanita Drive Multimodal, Intersection and Safety Improvements

Job No. 39-23-PW

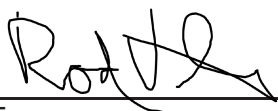
Certificate of Engineer:

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



Erick E. Olson, P.E.

Approved for Construction:



Rod Steitzer, P.E.
Capital Projects Manager



**CITY OF KIRKLAND
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INVITATION TO BID

Notice is hereby given that the City of Kirkland will receive sealed bids in the office of the Purchasing Agent, City Hall, 123 Fifth Avenue, Kirkland, Washington, at 10:00 a.m. local time on November 17, 2023 for the project hereinafter referred to as:

Juanita Drive Multimodal, Intersection and Safety Improvements

CIP No. STC-0089

Job No. 39-23-PW

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

The work to be performed under these specifications consists of furnishing all labor, tools, materials, and equipment necessary for construction of the **Juanita Drive Multimodal, Intersection and Safety Improvements**.

- This Contract provides for the construction of the City of Kirkland Juanita Drive Multimodal, Intersection and Safety Improvements on Juanita Drive at the 120th St intersection and from 124th St to 133rd Pl, including roadway widening and structural retaining walls for new left turn lanes at 128th St and 132nd St; construction of curb, gutter, sidewalk, buffered bike lanes, and illumination system on the east side of Juanita Dr; storm conveyance, detention, and water quality systems, landscaping, and Northshore Utility District water and sewer system. This estimated construction cost is in the range of \$9,500,000 to \$9,800,000 including all taxes.

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

Questions regarding this project shall be submitted by email only to Laura Drake, P.E. at LDrake@kirklandwa.gov. Bidders shall submit questions no later than 1:00 p.m. November 7, 2023.

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

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

Published:

Daily Journal of Commerce	October 27, 2023 & November 3, 2023
Seattle Times	October 27, 2023 & November 3, 2023
City of Kirkland Website	October 27, 2023 & November 3, 2023

GENERAL INFORMATION, PROPOSAL & CONTRACT



CITY OF KIRKLAND

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CITY OF KIRKLAND INFORMATION FOR BIDDERS

Bidders must bid on all items contained in the proposal.

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

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

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

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

The lump sum or unit prices must be shown in the spaces provided on the bid schedule.

Show total bid price in both words and figures on the Proposal.

The Proposal form must be completed in full, signed and dated.

4. BID BOND

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

5. NON-COLLUSION AFFIDAVIT - Notarized

6. STATEMENT OF BIDDER'S QUALIFICATIONS

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

7. SUBCONTRACTOR IDENTIFICATION LIST

This form must be completed for HVAC, plumbing, and electrical subcontractors if the estimate exceeds \$1,000,000.

8. CONTRACTOR CERTIFICATION WAGE LAW COMPLIANCE

This form must be filled out by contractor.

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

1. CONTRACT

This agreement is to be executed by the successful bidder.

2. PERFORMANCE AND PAYMENT BOND

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

3. LABOR, MATERIALS, AND TAXES PAYMENT BOND

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

MUST BE SUBMITTED WITH PROPOSAL

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

5. CERTIFICATES OF INSURANCE

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

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

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

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

CITY OF KIRKLAND

BIDDER RESPONSIBILITY CRITERIA

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

- ☐ 1. Have a current certificate of registration as a contractor in compliance with chapter 18.27 RCW, which must have been in effect at the time of bid submittal;
- ☐ 2. Have a current Washington Unified Business Identifier (UBI) number;
- ☐ 3. Have:
 - a. Industrial Insurance (workers' compensation) coverage for the bidder's employees working in Washington, as required in Title 51 RCW;
 - b. A Washington Employment Security Department number, as required in Title 50 RCW;
 - c. A Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW;
- ☐ 4. Not be disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065(3). **Meet responsibility criteria in RCW 39.04.350**
- ☐ 5. Until December 31, 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



Juanita Drive Multimodal, Intersection and Safety Improvements

CIP No. STC-0089

Job No. 39-23-PW

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

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

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

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

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

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

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

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

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

MUST BE SUBMITTED WITH PROPOSAL

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

Within the three-year period immediately preceding the date of the bid solicitation for this Project, bidder has not been determined by a final and binding citation and notice of assessment issued by the department of labor and industries or through a civil judgment entered by a court of limited or general jurisdiction to have willfully violated, as defined in RCW 49.48.082, any provision of chapter 49.46, 49.48, or 49.52 RCW.

The undersigned bids and agrees to complete all construction of the **Juanita Drive Multimodal, Intersection and Safety Improvements CIP No. STC-0089, Job No. 39-23-PW** for the following:

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

Washington State Sales Tax 10.2% (*in figures*): \$ _____

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

MUST BE SUBMITTED WITH PROPOSAL

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 **Juanita Drive Multimodal, Intersection and Safety Improvements****

CIP No. STC-0089
Job No. 39-23-PW.

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Juanita Drive Multimodal, Intersection and Safety Improvements

CITY OF KIRKLAND

BID SCHEDULE

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

SCHEDULE A - GENERAL						
Item No.	Item Description	Spec Ref.	Est. Qty.	Unit	Unit Price	Amount
1	Minor Change	1-04	1	Eq. Adj.	\$290,000.00	\$290,000.00
2	Construction Surveying	1-05	1	LS	\$	\$
3	Record Drawings (Min. Bid \$2,000)	1-05	1	LS	\$	\$
4	SPCC Plan	1-07	1	LS	\$	\$
5	Mobilization	1-09	1	LS	\$	\$
6	Project Temporary Traffic Control	1-10	1	LS	\$	\$
7	Clearing and Grubbing	2-01	1	LS	\$	\$
8	Removal of Structures and Obstructions	2-02	1	LS	\$	\$
9	Remove/Abandon Storm System	2-02	1	LS	\$	\$
10	Asphalt Conc. Pavement Removal	2-02	5,610	SY	\$	\$
11	Cement Conc. Pavement Removal	2-02	5,050	SY	\$	\$
12	Cement Conc. Sidewalk Removal	2-02	330	SY	\$	\$
13	Cement Conc. Curb Removal	2-02	1,020	LF	\$	\$
14	Adjust Gas Valve to Grade	2-02	4	EA	\$	\$
15	Roadway Excavation Incl. Haul	2-03	1	LS	\$	\$
16	Gravel Borrow Incl. Haul	2-03	6,580	TN	\$	\$
17	Unsuitable Foundation Excavation Incl. Haul	2-03	150	CY	\$	\$
18	Shoring or Extra Excavation Cl. A	2-09	1	LS	\$	\$
19	Shoring or Extra Excavation Cl. B	2-09	1	LS	\$	\$
20	Crushed Surfacing Top Course	4-04	2,040	TN	\$	\$
21	Planing Bituminous Pavement	5-04	3,080	SY	\$	\$
22	HMA Cl. 1/2 In. PG 58H-22	5-04	2,970	TN	\$	\$
23	Commercial HMA Driveway	5-04	70	TN	\$	\$
24	Asphalt Wedge Curb	5-04	30	LF	\$	\$
25	Stamped Cement Conc. Pavement	5-05	140	SF	\$	\$
26	Flex MSE Retaining Wall	6-14	320	SF	\$	\$
27	Shaft - 30 In. Diam.	6-16	1,480	LF	\$	\$
28	Furnishing Soldier Pile - W12x40	6-16	620	LF	\$	\$
29	Furnishing Soldier Pile - HP12x63	6-16	570	LF	\$	\$
30	Furnishing Soldier Pile - W18x76	6-16	410	LF	\$	\$
31	Timber Lagging	6-16	4,690	SF	\$	\$
32	Timber Fascia	6-16	1,700	BF	\$	\$
33	Prefabricated Drainage Mat	6-16	530	SY	\$	\$
34	Removing Soldier Pile Shaft Obstructions	6-16	1	EST	\$50,000.00	\$50,000.00
35	Filterra Unit with Internal Bypass	7-03	1	EA	\$	\$

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Juanita Drive Multimodal, Intersection and Safety Improvements

CITY OF KIRKLAND

BID SCHEDULE

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

SCHEDULE A - GENERAL						
Item No.	Item Description	Spec Ref.	Est. Qty.	Unit	Unit Price	Amount
36	Solid Wall PVC Storm Sewer Pipe 8 In. Diam.	7-04	10	LF	\$	\$
37	Solid Wall PVC Storm Sewer Pipe 12 In. Diam.	7-04	1,540	LF	\$	\$
38	Solid Wall PVC Storm Sewer Pipe 18 In. Diam.	7-04	1,500	LF	\$	\$
39	Solid Wall PVC Storm Sewer Pipe 24 In. Diam.	7-04	60	LF	\$	\$
40	Solid Wall PVC Storm Sewer Pipe 24 In. Diam. for Outfall at STA 44+50	7-04	70	LF	\$	\$
41	Ductile Iron Storm Sewer Pipe 12 In. Diam.	7-04	160	LF	\$	\$
42	Ductile Iron Storm Sewer Pipe 18 In. Diam.	7-04	70	LF	\$	\$
43	Catch Basin Type 1	7-05	17	EA	\$	\$
44	Catch Basin Type 1L	7-05	9	EA	\$	\$
45	Catch Basin Type 2 48 In. Diam.	7-05	14	EA	\$	\$
46	Catch Basin Type 2 54 In. Diam.	7-05	1	EA	\$	\$
47	Catch Basin Type 2 60 In. Diam.	7-05	1	EA	\$	\$
48	Manhole Additional Height 48 In. Diam. Type 2	7-05	5	LF	\$	\$
49	Concrete Inlet	7-05	1	EA	\$	\$
50	Flow Splitter	7-05	1	EA	\$	\$
51	Frame and Vaned Grate	7-05	32	EA	\$	\$
52	Open Curb Face Frame and Grate	7-05	12	EA	\$	\$
53	Solid Locking Lid	7-05	20	EA	\$	\$
54	Conversion Riser	7-05	6	EA	\$	\$
55	Debris Cage	7-05	1	EA	\$	\$
56	Stormwater Detention Vault	7-06	1	LS	\$	\$
57	Erosion Control and Water Pollution Prevention	8-01	1	LS	\$	\$
58	Inlet Protection	8-01	44	EA	\$	\$
59	High Visibility Fence	8-01	1,600	LF	\$	\$
60	High Visibility Silt Fence	8-01	610	LF	\$	\$
61	Fence for Tree Protection	8-01	1,310	LF	\$	\$
62	Pipe Inlet Protection	8-01	4	EA	\$	\$
63	Pipe Outlet Protection	8-01	2	EA	\$	\$
64	Topsoil Type A	8-02	240	CY	\$	\$
65	Seeded Lawn Installation	8-02	3,600	SY	\$	\$
66	Bark or Wood Chip Mulch	8-02	40	CY	\$	\$
67	Fine Compost	8-02	30	CY	\$	\$
68	PSIPE Nyssa sylvatica 'David Odom'/ Afterburner Tupelo; 2.5" Cal., 12'-14' Ht.	8-02	9	EA	\$	\$
69	PSIPE Pinus contorta 'Contorta'/ Shore Pine; 7'-8' Ht.	8-02	8	EA	\$	\$
70	PSIPE Thuja plicata/ Western Red Cedar; 7'-8' Ht.	8-02	13	EA	\$	\$

MUST BE SUBMITTED WITH PROPOSAL

Juanita Drive Multimodal, Intersection and Safety Improvements

CITY OF KIRKLAND

BID SCHEDULE

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

SCHEDULE A - GENERAL						
Item No.	Item Description	Spec Ref.	Est. Qty.	Unit	Unit Price	Amount
71	PSIPE Tsuga mertensiana/ Mountain Hemlock; 7'-8' Ht.	8-02	9	EA	\$	\$
72	PSIPE Acer circinatum/ Vine Maple; 6'-7' Ht., 3-5 Canes Min.	8-02	16	EA	\$	\$
73	Property Restoration	8-02	1	FA	\$20,000.00	\$20,000.00
74	Cement Conc. Traffic Curb and Gutter	8-04	4,150	LF	\$	\$
75	Cement Conc. Pedestrian Curb	8-04	270	LF	\$	\$
76	Extruded Curb	8-04	60	LF	\$	\$
77	Potholing	8-05	10	EA	\$	\$
78	Cement Conc. Driveway Entrance	8-06	400	SY	\$	\$
79	Precast Sloped Mountable Curb	8-07	60	LF	\$	\$
80	Median Curb	8-07	80	LF	\$	\$
81	Centerline Rumble Strip	8-08	1,190	LF	\$	\$
82	Raised Pavement Marker Type 2	8-09	10	HUND	\$	\$
83	Beam Guardrail Type 31	8-11	70	LF	\$	\$
84	Beam Guardrail Anchor Type 11	8-11	1	EA	\$	\$
85	Coated Chain Link Fence	8-12	980	LF	\$	\$
86	Safety Railing	8-12	60	LF	\$	\$
87	Adjust Monument Case and Cover	8-13	1	EA	\$	\$
88	Monument Case and Cover	8-13	1	EA	\$	\$
89	Cement Conc. Sidewalk	8-14	1,860	SY	\$	\$
90	Cement Conc. Curb Ramp	8-14	170	SY	\$	\$
91	Detectable Warning Surface	8-14	160	SF	\$	\$
92	Mailbox Support Type 1	8-18	6	EA	\$	\$
93	Mailbox Cluster	8-18	4	EA	\$	\$
94	Illumination System, Complete	8-20	1	LS	\$	\$
95	Rectangular Rapid Flashing Beacon System, Complete	8-20	1	LS	\$	\$
96	Permanent Signing	8-21	1	LS	\$	\$
97	Removal of Pavement Markings	8-22	1	LS	\$	\$
98	Paint Line	8-22	16,400	LF	\$	\$
99	Plastic Line	8-22	200	LF	\$	\$
100	Painted Wide Line	8-22	840	LF	\$	\$
101	Profiled Plastic Line	8-22	3,610	LF	\$	\$
102	Plastic Bike Lane Symbol	8-22	31	EA	\$	\$
103	Plastic Pesedstrian Lane Symbol	8-22	1	EA	\$	\$
104	Plastic Crosswalk Line	8-22	570	SF	\$	\$
105	Plastic Green Bike Crossing Line	8-22	1,550	SF	\$	\$

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Juanita Drive Multimodal, Intersection and Safety Improvements

CITY OF KIRKLAND

BID SCHEDULE

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

SCHEDULE A - GENERAL						
Item No.	Item Description	Spec Ref.	Est. Qty.	Unit	Unit Price	Amount
106	Plastic Stop Line	8-22	130	LF	\$	\$
107	Plastic Traffic Arrow	8-22	40	EA	\$	\$
108	Modular Block Wall	8-24	1,260	SF	\$	\$
109	Gravity Block Wall	8-24	1,680	SF	\$	\$
				Schedule A Total =		
SCHEDULE B - NORTHSHORE UTILITY DISTRICT (WATER & SEWER)						
Item No.	Item Description	Spec Ref.	Est. Qty.	Unit	Unit Price	Amount
201	Crushed Surfacing Top Course (shall be same unit bid price as BI #20 in Schedule A)	4-04	460	TN	\$	\$
202	Planing Bituminous Pavement (shall be same unit bid price as BI #21 in Schedule A)	5-04	2,430	SY	\$	\$
203	HMA Cl. 1/2 In. PG 58H-22 (shall be same unit bid price as BI #22 in Schedule A)	5-04	1,080	TN	\$	\$
204	Property Restoration	8-02	1	FA	\$25,000.00	\$25,000.00
205	Cement Conc. Traffic Curb and Gutter	8-04	60	LF	\$	\$
206	Cement Conc. Pedestrian Curb	8-04	80	LF	\$	\$
207	Rolled Curb	8-04	90	LF	\$	\$
208	Monument Case and Cover	8-13	1	EA	\$	\$
209	Adjust Monument Case and Cover	8-13	1	EA	\$	\$
210	Cement Conc. Sidewalk	8-14	40	SY	\$	\$
211	Cement Conc. Curb Ramp	8-14	40	SY	\$	\$
212	Detectable Warning Surface	8-14	50	SF	\$	\$
213	Trench Safety System	NUD	1	LS	\$	\$
214	Additional Potholing, If Required	NUD	5	EA	\$	\$
215	Existing Pressure Reducing Valve Station 56 Abandonment	NUD	1	LS	\$	\$
216	Existing Pressure Reducing Valve Station 57 Rehabilitation	NUD	1	LS	\$	\$
217	Existing Pressure Reducing Valve Station 58 Abandonment	NUD	1	LS	\$	\$
218	8" CL 52 DI RJ Water Main	NUD	420	LF	\$	\$
219	12" CL 52 DI RJ Water Main	NUD	2,050	LF	\$	\$
220	Removal of Existing Water Main	NUD	2,000	LF	\$	\$
221	Gate Valve Assembly - 8"	NUD	12	EA	\$	\$
222	Gate Valve Assembly - 12"	NUD	2	EA	\$	\$
223	Fire Hydrant Assembly	NUD	9	EA	\$	\$
224	Air & Vacuum Relief Valve - 2"	NUD	2	EA	\$	\$
225	2" Blow-Off Assembly	NUD	1	EA	\$	\$
226	Connection to Existing Water Svstem	NUD	18	EA	\$	\$

MUST BE SUBMITTED WITH PROPOSAL

Juanita Drive Multimodal, Intersection and Safety Improvements

CITY OF KIRKLAND

BID SCHEDULE

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

SCHEDULE A - GENERAL						
Item No.	Item Description	Spec Ref.	Est. Qty.	Unit	Unit Price	Amount
227	Additional DI Fittings (If Required)	NUD	1,000	LB	\$	\$
228	1" Water Service and Reconnection	NUD	30	EA	\$	\$
229	1" Private PRV (If Required)	NUD	30	EA	\$	\$
230	48" Sewer Saddle Manhole	NUD	1	EA	\$	\$
231	48" Sewer Manhole - Additional Depth	NUD	4	VF	\$	\$
232	Remove and Replace Manhole Frame and Cover	NUD	10	EA	\$	\$
233	Imported Foundation Gravel (If Required)	NUD	50	TN	\$	\$
234	Imported Backfill Gravel - Crushed Surfacing Top Course	NUD	2,310	TN	\$	\$
235	Replace Valve Box	NUD	9	EA	\$	\$
236	Replace Side Sewer to Property Line	NUD	310	LF	\$	\$
237	Side Sewer Cleanout	NUD	7	EA	\$	\$
238	Connection to Existing Sewer System	NUD	12	EA	\$	\$
239	Manhole Section and Cone	NUD	4	EA	\$	\$
					Schedule B Subtotal =	
					Sales Tax (10.2%) =	
					Schedule B Total =	
					Total Construction Cost (Schedule A + B) =	



MUST BE SUBMITTED WITH PROPOSAL

BID DEPOSIT

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

SIGN

HERE _____

BID BOND

KNOW ALL MEN BY THESE PRESENTS:

That we, _____, as

Principal, and

_____, as

Surety, are held and firmly bound unto the City of Kirkland, as Obligee, in the penal sum of

_____ dollars, for

the payment of which the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, by these presents.

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

Project Name _____ Job _____
Number _____

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

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

PRINCIPAL:

SURETY:

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

**CITY OF KIRKLAND
NON-COLLUSION AFFIDAVIT**

Juanita Drive Multimodal, Intersection and Safety Improvements
JOB NO. 39-23-PW

STATE OF WASHINGTON)
) SS
COUNTY OF KING)

The undersigned, being duly sworn, on oath deposes and says that the person(s), firm, association, partnership or corporation herein named has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the project for which this proposal is submitted.

Firm Name

Authorized Signature

Type Name

Title

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

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

NOTICE TO ALL BIDDERS

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

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

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

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

Contractor Name: _____ Contact: _____

Business Address: _____

Business phone: _____ Fax: _____

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

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

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

Project Name	Amount	Owner/Agency	Contact	Phone	Year Completed

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

Bank reference(s): _____

Washington State Contractor Registration No.: _____

Uniform Business Identification No.: _____

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

Authorized Signature: _____

Print Name: _____ Title: _____

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

RCW 39.30.060 requires the following:

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

**CITY OF KIRKLAND
SUBCONTRACTOR IDENTIFICATION LIST**

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

Proposed Subcontractors and items of work to be performed:

Subcontractor Name: _____

Item Numbers: _____

Subcontractor Name: _____

Item Numbers: _____

Subcontractor Name: _____

Item Numbers: _____

Subcontractor Name: _____

Item Numbers: _____

- make additional pages if necessary -

Work to be performed by Prime Contractor:

Item Numbers: _____



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

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

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

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

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

Title: _____
Title of person signing certificate

Place: _____
Print city and state where signed

Date: _____

**CITY OF KIRKLAND
BIDDER'S CHECKLIST**

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

Juanita Drive Multimodal, Intersection and Safety Improvements.

JOB 39-23-PW

INFORMATION ONLY

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



CITY OF KIRKLAND

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**CITY OF KIRKLAND
PUBLIC WORKS AGREEMENT**

Juanita Drive Multimodal, Intersection and Safety Improvements
JOB NO.39-23-PW

This agreement is made and entered into this _____ day of _____, 20____, by and between **CONTRACTOR NAME**, hereinafter called the "Contractor" and the City of Kirkland, hereinafter called the "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: "Juanita Drive Multimodal, Intersection and Safety Improvements
JOB NO.39-23-PW

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

- A. 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: _____

STATE OF WASHINGTON)

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

) 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 **Juanita Drive Multimodal, Intersection and Safety Improvements JOB NO.39-23-PW**, which is hereby made a part of this bond as if fully set forth herein;

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

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

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

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

Signed this _____ day of _____, 2____.

Principal: _____

Surety: _____

By: _____

By: _____

Title: _____

Title: _____

Address: _____

Address: _____

City/Zip: _____

City/Zip: _____

Telephone: () _____

Telephone: () _____

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



LABOR, MATERIAL AND TAXES PAYMENT BOND
Surety to have an A.M. Best rating of A:-VII or better.

Bond No. _____

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

WHEREAS, Principal has been awarded, and is about to enter into, a Contract with City of Kirkland for **Juanita Drive Multimodal, Intersection and Safety Improvements JOB NO. 39-23-PW**, which contract is by this reference made a part hereof;

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

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

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

(Form continues on next page)

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

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

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

Signed this _____ day of _____, 2____

Principal: _____ Surety: _____

By: _____ By: _____

Title: _____ Title: _____

Address: _____ Address: _____

City/Zip: _____ City/Zip: _____

Telephone: () _____ Telephone: () _____

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

END OF LABOR, MATERIAL AND TAXES PAYMENT BOND FORM



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

Juanita Drive Multimodal, Intersection and Safety Improvements
JOB NO. 39-23-PW

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

Select
One

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

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

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

CONTRACTOR:

Signature: _____

Print or Type Name: _____

Title: _____

Date: _____



RETAINAGE BOND
RETURN THIS FORM IF RETAINAGE BOND OPTION IS SELECTED

Contract Title	_____
Contract Number	_____
Contractor Name	_____

The Undersigned, _____, existing under and by virtue of the laws of the State of Washington and authorized to do business in the State of Washington as Principal, and _____ organized and existing under the laws of the State of _____ and authorized to transact business in the State of Washington as Surety, are jointly and severally held and bound unto _____, hereinafter called Oblige, 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 Oblige, for the Contract specified above, Contract ID Number _____.

WHEREAS, said contract and RCW 60.28 require the Oblige 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 Oblige 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 Oblige. 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 Oblige on estimates during the progress of construction.
2. Any suit under this bond must be instituted within the time provided by applicable law.

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

SURETY

PRINCIPAL

By: _____
Name/Title

By: _____
Name/Title

OF: _____

OF: _____

Surety Name and Local Office of Agent: _____

Surety Address and Phone of Local Office and Agent: _____



CITY OF KIRKLAND
RETAINED PERCENTAGE ESCROW AGREEMENT

Juanita Drive Multimodal, Intersection and Safety Improvements
JOB NO.39-23-PW

Escrow No. _____

City of Kirkland
123 Fifth Avenue
Kirkland, Washington 98033

Contractor: _____

Address: _____

Project Description: _____

TO: Escrow Bank or Trust Company:

Name: _____

Address: _____

Attention: _____

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

INSTRUCTIONS

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

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

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

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

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

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

CONTRACTOR:

CITY OF KIRKLAND:

By: _____
Signature

By: _____
Signature

Print or Type Name

Print or Type Name

Title

Title

Address: _____

123 Fifth Avenue
Kirkland, Washington 98033

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

ESCROW BANK OR TRUST CO:

By: _____
Authorized Signature

Print or Type Name

Title

Securities Authorized by City of Kirkland (select one):

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

RETURN THIS SIGNED AGREEMENT TO:

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



CITY OF KIRKLAND RETAINAGE RELEASE REQUIREMENTS

DOCUMENTS REQUIRED TO BE ON FILE PRIOR TO RELEASE OF RETAINAGE

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

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

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

Department of Revenue
Excise Tax Division
Olympia, Washington 98504

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

Department of Labor/Industries

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

Department of Revenue
Department of Labor and Industries
Employment Security Department

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

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

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

SPECIAL PROVISIONS

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INTRODUCTION

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

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

The accompanying Plans and these Specifications and any Addenda thereto, show and describe the location and type of work to be performed under the Juanita Drive Multimodal, Intersection and Safety Improvements Project.

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

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

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

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

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

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

Also incorporated into the Contract Documents by reference are:

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

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

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DIVISION 1 GENERAL REQUIREMENTS

DESCRIPTION OF WORK

This Contract provides for the multimodal, intersection, and safety improvements on Juanita Drive at the 120th St intersection, and from 124th St to 133rd Pl, including roadway widening and structural retaining walls for new left turn lanes at 128th St and 132nd St; construction of curb, gutter, sidewalk, buffered bike lanes, and illumination system on the east side of Juanita Dr; storm conveyance, detention, and water quality systems, landscaping, and Northshore Utility District water and sewer system; 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 24, 2011 APWA GSP)

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

Add the following new section:

1-02.1(1) Supplemental Qualifications Criteria

(January 1, 2016 COK GSP)

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

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

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

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

Supplemental Criteria. Contracting Agency acknowledges that Change Orders (changes, extra work, requests for equitable adjustment and claims (defined as including demands for money or time in excess of the contract amount or contract time)) are ubiquitous on public works construction projects. The expeditious resolution of Change Orders is critical to the on budget and on time successful completion of a public works project. Thus, the City has established the following relevant supplemental bidder responsibility criteria applicable for the project:

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

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

1-02.2 Plans and Specifications

(*****)

Delete this section and replace it with the following:

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

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

To Prime Contractor	No. of Sets	Basis of Distribution
Reduced plans (11" x 17")	4	Furnished automatically upon award.
Contract Provisions	4	Furnished automatically upon award.
Large plans (e.g., 22" x 34")	1	Furnished only upon request.

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

1-02.4(1) General

(December 30, 2022 APWA GSP Option B)

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

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

1-02.5 Proposal Forms

(July 31, 2017 APWA GSP)

Delete this section and replace it with the following:

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

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

1-02.6 Preparation of Proposal

(December 10, 2020 APWA GSP Option B)

Supplement the second paragraph with the following:

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

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

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

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

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

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

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

1-02.7 Bid Deposit

(March 8, 2013 APWA GSP)

Supplement this section with the following:

Bid bonds shall contain the following:

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

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

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

1-02.8 Noncollusion Declaration and Lobbying Certification

(January 1, 2016 COK GSP)

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

Conflict of Interest

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

1-02.9 Delivery of Proposal

(January 19, 2022 APWA GSP, Option A)

Delete this section and replace it with the following:

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

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

- DBE Utilization Certification (WSDOT 272-056)

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

DBE Utilization Certification

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

DBE Written Confirmation and/or GFE Documentation

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

DBE Bid Item Breakdown and DBE Trucking Credit Form

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

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

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

1-02.10 Withdrawing, Revising, or Supplementing Proposal

(July 23, 2015 APWA GSP)

Delete this section and replace it with the following:

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

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

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

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

1-02.13 Irregular Proposals

(December 30, 2022 APWA GSP)

Delete this section and replace it with the following:

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

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

1-02.14 Disqualification of Bidders

(May 17, 2018 APWA GSP, Option B)

Delete this section and replace it with the following:

A Bidder will be deemed not responsible if the Bidder does not meet the mandatory bidder responsibility criteria in RCW 39.04.350(1), as amended; or does not meet Supplemental Criteria 1-7 listed in this Section.

The Contracting Agency will verify that the Bidder meets the mandatory bidder responsibility criteria in RCW 39.04.350(1), and Supplemental Criteria 1-2. Evidence that the Bidder meets Supplemental Criteria 3-7 shall be provided by the Bidder as stated later in this Section.

1. Delinquent State Taxes

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

2. Federal Debarment

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

3. **Subcontractor Responsibility**

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

4. **Claims Against Retainage and Bonds**

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

5. **Public Bidding Crime**

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

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

- A. **Criterion:** The Bidder shall not have had any public works contract terminated for cause or terminated for default by a government agency in the five years prior to the bid submittal

date, unless there are extenuating circumstances and such circumstances are deemed acceptable to the Contracting Agency.

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

7. **Lawsuits**

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

As evidence that the Bidder meets the Supplemental Criteria stated above, the apparent low Bidder must submit to the Contracting Agency by 12:00 P.M. (noon) of the second business day following the bid submittal deadline, a written statement verifying that the Bidder meets the supplemental criteria together with supporting documentation (sufficient in the sole judgment of the Contracting Agency) demonstrating compliance with the Supplemental Criteria. The Contracting Agency reserves the right to request further documentation as needed from the low Bidder and documentation from other Bidders as well to assess Bidder responsibility and compliance with all bidder responsibility criteria. The Contracting Agency also reserves the right to obtain information from third-parties and independent sources of information concerning a Bidder's compliance with the mandatory and supplemental criteria, and to use that information in their evaluation. The Contracting Agency may consider mitigating factors in determining whether the Bidder complies with the requirements of the supplemental criteria.

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

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

If the final determination affirms that the Bidder is not responsible, the Contracting Agency will not execute a contract with any other Bidder until at least two business days after the Bidder determined to be not responsible has received the Contracting Agency's final determination.

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

1-02.15 Pre-Award Information

(December 30, 2022 APWA GSP)

Revise this section to read:

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

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

1-03 AWARD AND EXECUTION OF CONTRACT

1-03.1 Consideration of Bids

(December 30, 2022 APWA GSP)

Revise the first paragraph to read:

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

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

7. Any other information or action taken that is deemed necessary to ensure that the bidder is the lowest responsible bidder.

1-03.3 Execution of Contract

(January 19, 2022 APWA GSP)

Revise this section to read:

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

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

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

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

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

1-03.4 Contract Bond

(January 1, 2016 COK GSP)

Revise the first paragraph to read:

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

1. Be on Contracting Agency-furnished form(s);
2. Be signed by an approved surety (or sureties) that:
 - a. Is registered with the Washington State Insurance Commissioner, and
 - b. Appears on the current Authorized Insurance List in the State of Washington published by the Office of the Insurance Commissioner, and
 - c. Have an A.M. best rating of A:VII or better.
3. Guarantee that the Contractor will perform and comply with all obligations, duties, and conditions under the Contract, including but not limited to the duty and obligation to indemnify, defend, and

protect the Contracting Agency against all losses and claims related directly or indirectly from any failure:

- a. Of the Contractor (or any of the employees, subcontractors, or lower tier subcontractors of the Contractor) to faithfully perform and comply with all contract obligations, conditions, and duties, or
 - b. Of the Contractor (or the subcontractors or lower tier subcontractors of the Contractor) to pay all laborers, mechanics, subcontractors, lower tier subcontractors, material person, or any other person who provides supplies or provisions for carrying out the work;
4. Be conditioned upon the payment of taxes, increases, and penalties incurred on the project under titles 50, 51, and 82 RCW; and
 5. Be accompanied by a power of attorney for the Surety's officer empowered to sign the bond; and
 6. Be signed by an officer of the Contractor empowered to sign official statements (sole proprietor or partner). If the Contractor is a corporation, the bond(s) must be signed by the president or vice president, unless accompanied by written proof of the authority of the individual signing the bond(s) to bind the corporation (i.e., corporate resolution, power of attorney, or a letter to such effect signed by the president or vice president).

1-03.7 Judicial Review (December 30, 2022 APWA GSP)

Revise this section to read:

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

(April 25, 2019 COK GSP)

Add the following new section:

1-03.8 Escrow Bid Documentation Preservation

Scope and Purpose

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

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

Definition: Bid Documentation

The term "Bid documentation" as used in this specification means any writings, working papers, computer printouts, charts, and any other data compilations which contain or reflect all information, data, and calculations used by the Contractor to determine the Bid in bidding for this project. The term "Bid documentation" includes but is not limited to Contractor equipment rates, Contractor overhead rates, labor rates, efficiency or productivity factors, arithmetic extensions, and quotations from Subcontractors and materialmen to the extent that such rates and quotations were used by the Contractor

in formulating and determining the amount of the Bid. The term "Bid documentation" also includes any manuals which are standard to the industry used by the Contractor in determining the Bid for this project. Such manuals may be included in the Bid documentation by reference. The term does not include Bid documents provided by the Contracting Agency for use by the Contractor in bidding on this project.

Submittal of Bid Documentation

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

Affidavit

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

Verification

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

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

Supplementation

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

Duration and Use

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

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

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

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

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

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

Remedies for Refusal or Failure to Provide Bid Documentation

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

Confidentiality of Bid Documentation

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

Cost and Escrow Instructions

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

1-04 SCOPE OF THE WORK

1-04.1 Intent of the Contract

(January 1, 2016 COK GSP)

Supplement this Section with the following:

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

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

(December 30, 2022 APWA GSP)

Revise the second paragraph to read:

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

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

1-04.4 Changes

(January 19, 2022 APWA GSP)

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

1-04.4(1) Minor Changes

(May 30, 2019 APWA GSP)

Delete the first paragraph and replace it with the following:

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

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

(January 19, 2022 APWA GSP)

Revise item 1 of the first paragraph to read:

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

1-04.6 Variation in Estimated Quantities

(December 30, 2022 APWA GSP, Option B)

Revise the first paragraph to read:

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

1-04.11 Final Cleanup

(January 1, 2016 COK GSP)

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

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

The Contractor shall:

1. Remove all rubbish, surplus materials, discarded materials, falsework, piling, camp buildings, temporary structures, equipment, and debris;
2. Remove from the Project, all unneeded, oversized rock left from grading, surfacing, or paving unless the Contract specifies otherwise or the Engineer approves otherwise;
3. On all concrete and asphalt pavement work, flush the pavement clean and remove the wash water and debris;
4. Sweep and flush structure decks and remove wash water and debris;
5. Clean out from all open culverts and drains, inlets, catch basins, manholes and water main valve chambers, within the limits of the Project Site, all dirt and debris of any kind that is the result of the Contractor's operations;
6. Level and fine grade all excavated material not used for backfill where the Contract requires;

7. Fine grade all slopes;
8. Upon completion of grading and cleanup operations at any privately-owned site for which a written agreement between the Contractor and property owner is required, the Contractor shall obtain and furnish to the Engineer a written release from all damages, duly executed by the property owner, stating that the restoration of the property has been satisfactorily accomplished.;

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

(*****)

Supplement this section with the following:

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

(January 27, 2021 COK GSP)

Add new Section 1-04.12

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

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

1-05 CONTROL OF WORK

1-05.1 Authority of the Engineer

(January 27, 2021 COK GSP)

Section 1-05.1 is supplemented with the following:

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

1-05.4 Conformity With and Deviations From Plans and Stakes

(*****)

Add new Section 1-05.4(1).

1-05.4(1) Roadway and Utility Surveys

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

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

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

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

1. Construction centerline or an offset to construction centerline shall be staked at all angle points and 100-foot intervals on tangents.
2. Offset stakes of JUT Centerline at all angle points and at 50-foot intervals on tangents
 - a. Cut/fill shall reference the elevations of the lowest conduit.
 - b. Offset shall reference the location of the center of trench and list the width of the trench section.
3. Offset stakes of all structure control/location points shown on the undergrounding Plans.
 - a. Each vault, handhold, and junction box shall have a sets of off-set points provided each location point shown in the location tables Cut/Fill shall reference elevations of the finish grade of the top lid of the structure.
 - b. Each pole riser and stub up, shall have at least one set of off-set hubs provided with cut/fills to finish ground elevations.
 - c. Finish grade elevations of all structures shall be determined by the Contractor based on the typical sections and details provide on the Contract Drawings.
4. Offset stakes at face or walls.
5. Offset staking of all drainage structures and drainage pipes at 50-foot intervals. At each drainage structure, place face of curb control on both sides of structure. Contractor to pull string line between the two control points when structures are set to confirm frame and grates are aligned to future curb and gutter placement. If any discrepancy is found between drainage offset information and face of curb, face of curb shall be used to set drainage structures.
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.

(*****)

Supplement the COK GSP above with the following:

Payment

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

"Construction Surveying", lump sum.

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

1-05.7 Removal of Defective and Unauthorized Work

(October 1, 2005 APWA GSP)

Supplement this section with the following:

If the Contractor fails to remedy defective or unauthorized work within the time specified in a written notice from the Engineer, or fails to perform any part of the work required by the Contract Documents, the Engineer may correct and remedy such work as may be identified in the written notice, with Contracting Agency forces or by such other means as the Contracting Agency may deem necessary.

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

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

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

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

1-05.9 Equipment

(January 1, 2016 COK GSP)

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

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

(*****)

Supplement the COK GSP above with the following:

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

1-05.10 Guarantees

(January 1, 2016 COK GSP)

Section 1-05.10 is supplemented as follows:

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

1-05.11 Final Inspection

Delete this section and replace it with the following:

1-05.11 Final Inspections and Operational Testing

(October 1, 2005 APWA GSP)

1-05.11(1) Substantial Completion Date

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

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

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

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

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

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

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

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

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

1-05.11(3)Operational Testing

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

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

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

Add the following new Section:

1-05.12(1)One-Year Guarantee Period

(March 8, 2013 APWA GSP)

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

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

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

1-05.13 Superintendents, Labor, and Equipment of Contractor

(August 14, 2013 APWA GSP)

Delete the sixth and seventh paragraphs of this section.

1-05.14 Cooperation with Other Contractors

*(*****)*

Supplement this Section with the following:

The Contractor shall coordinate the work with other Contractors and utility companies, which also have facilities in the project area which are to be relocated or adjusted to grade, including but not limited to relocation of PSE poles and guy anchors, removal of PSE luminaires, adjustment of gas valves, and relocation/adjustment of other Franchise utility facilities which are in conflict with proposed improvements. See Section 1-07.17 of these Special Provisions for more information.

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

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

- Providing each utility with an overall project schedule showing private utility impacts requiring coordination.
- Providing each utility with a three week look ahead showing any private utility work required that could impact the Critical Path of the project schedule.

- All phone conversations and emails between the Contractor and utilities in regards to schedules and coordination shall be documented on a record of communication and provided to the Owner.

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

1-05.15 Method of Serving Notices

(December 30, 2022 APWA GSP)

Revise the second paragraph to read:

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

Add the following new section:

1-05.16 Water and Power

(October 1, 2005 APWA GSP)

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

Add the following new section:

1-05.17 Oral Agreements

*(*****)*

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

Add the following new section:

1-05.18 Record Drawings

*(*****)*

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

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

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

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

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

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

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

Making Entries on the Record Drawings:

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

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

Payment will be made for the following bid item:

“Record Drawings (Min. Bid \$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.

Add the following new section:

1-05.19 Daily Construction Report

(November 19, 2019 COK GSP)

The Contractor and Subcontractors shall maintain daily, a Daily Construction Report of the Work. The Diary must be kept and maintained by Contractor's designated project superintendent(s). Entries must be made on a daily basis and must accurately represent all of the project activities on each day. Contractor shall provide signed copies of diary sheets from the previous week to Engineer at each Weekly Coordination Meeting.

Every single diary sheet/page must have:

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

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

1. Day and date.
2. Weather conditions, including changes throughout the day.
3. Complete description of work accomplished during the day, with adequate references to the Plans and Contract Provisions so the reader can easily and accurately identify said work on the Plans. Identify location/description of photographs or videos taken that day.
4. Each and every changed condition, dispute or potential dispute, incident, accident, or occurrence of any nature whatsoever which might affect Contractor, Contracting Agency, or any third party in any manner. This shall be provided on a separate page for other information.
5. List all materials received and stored on- or off-site by Contractor that day for future installation, including the manner of storage and protection of the same.
6. List materials installed that day.
7. List all Subcontractors working on-site that day.
8. List the number of Contractor's employees working during each day, by category of employment.
9. List Contractor's equipment on the site that day; showing which were in use, and which idle.

10. Notations to explain inspections, testing, stake-out, and all other services furnished by Contracting Agency or other party during the day.
11. Verify the daily (including non-work days) inspection and maintenance of traffic control devices and condition of the traveled roadway surfaces.
12. Any other information that serves to give an accurate and complete record of the nature, quantity, and quality of Contractor's progress on each day.
13. Add; Officials and visitors onsite
14. Change Orders
15. Occurrence of testing, staking or special inspections

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

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

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

Add the following new section:

1-05.20 Preconstruction Photos or Video

(*****)

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

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

- The City of Kirkland
- KPG Psomas

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

1-06 CONTROL OF MATERIAL

Section 1-06 is supplemented with the following:

1-06.1 Approval of Materials Prior to Use

(April 3, 2017 WSDOT GSP)

Section 1-06.1 is supplemented with the following:

For each proposed material that is required to be submitted for approval using either the QPL or RAM process the Contractor will be allowed to submit for approval two material sources or manufacturers per material type at no cost. Additional material sources or manufacturers may be submitted for

approval and will be processed at a cost of \$125.00 per material source or manufacturer submitted by QPL submittal and \$400.00 per material submitted by RAM. All costs for processing additional material sources or manufacturers will be deducted from monies due or that may come due to the Contractor. Subject to a request by the Contractor and a determination by the Engineer the costs for processing may be waived.

(January 1, 2016 COK GSP)

Section 1-06.1 is supplemented as follows:

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

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

(February 17, 2022 COK GSP)

Revise the first paragraph to read:

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

1-06.6 Recycled Materials

(January 4, 2016 APWA GSP)

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

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

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

*(*****)*

Supplement section 1-06.6 with the following:

Recycled concrete will not be allowed as foundation gravel, pipe bedding, or trench backfill for any Ductile Iron pipe installed.

*(*****)*

Add the following new section:

1-06.7 Shop Drawings and Submittals

1-06.7(1) General

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

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

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

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

1-06.7(2) Required Information

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

City of Kirkland
Public Works Department
Attn: Juanita Drive Multimodal, Intersection, and Safety Improvements
Laura Drake
123 5th Ave.
Kirkland, WA 98033

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

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

1-06.7(3) Review Schedule

Shop drawings and submittals will be reviewed as promptly as possible and transmitted to Contractor not later than 10 Working Days after receipt by the Engineer. The Contractor shall revise and resubmit

previously rejected submittals as necessary to obtain approval. Delays caused by the need for resubmittal may not be a basis for an extension of contract time or delay damages at the discretion of the Owner. One set of electronic shop drawings will be returned to the Contractor via email after review.

1-06.7(4) Substitutions

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

1-06.7(5) After Contract Execution

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

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

1-06.7(6) Equivalent Materials

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

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

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

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

1-07 LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLIC

1-07.1 Laws to be Observed

(October 1, 2005 APWA GSP)

Supplement this section with the following:

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

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

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

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

(January 1, 2021 COK GSP)

Section 1-07.1 is supplemented with the following:

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

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

Compliance with Laws

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

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

(January 1, 2016 COK GSP)

Section this section with the following:

Contractor's Safety Responsibilities

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

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

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

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

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

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

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

(April 3, 2006 WSDOT GSP)

Section 1-07.1 is supplemented with the following:

Confined Space

Confined spaces are known to exist at the following locations:

- Existing and proposed vaults, excavations, structures, utility systems, and manholes.

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

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

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

1-07.2 State Taxes

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

1-07.2 State Sales Tax

(June 27, 2011 APWA GSP)

The Washington State Department of Revenue has issued special rules on the State sales tax. Sections 1-07.2(1) through 1-07.2(3) are meant to clarify those rules. The Contractor should contact the

Washington State Department of Revenue for answers to questions in this area. The Contracting Agency will not adjust its payment if the Contractor bases a bid on a misunderstood tax liability.

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

The Contracting Agency will pay the retained percentage (or release the Contract Bond if a FHWA-funded Project) only if the Contractor has obtained from the Washington State Department of Revenue a certificate showing that all contract-related taxes have been paid (RCW 60.28.051). The Contracting Agency may deduct from its payments to the Contractor any amount the Contractor may owe the Washington State Department of Revenue, whether the amount owed relates to this contract or not. Any amount so deducted will be paid into the proper State fund.

1-07.2(1) State Sales Tax — Rule 171

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

1-07.2(2) State Sales Tax — Rule 170

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

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

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

1-07.2(3) Services

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

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

(January 1, 2021 COK GSP)

Supplement this section with the following:

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

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

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

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

1-07.5(3) State Department of Ecology

(January 1, 2021 COK GSP)

Supplement this section with the following:

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

CSWGP Permit Number (if issued): _____

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

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

Revise the paragraph 6 to read:

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

Revise the paragraph 8 to read:

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

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

(January 1, 2021 COK GSP)

Delete this section and replace it with the following:

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

1-07.6 Permits and Licenses

(January 1, 2021 COK GSP)

Add new Section 1-07.6(1):

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

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

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

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

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

(*****)

A Hydraulic Project Approval (HPA) Permit has been obtained by the Contracting Agency for the storm system improvements in the NE 120th St vicinity. See Appendix F for permit, including in-water work window (July 1 to September 30, 2023), and other requirements.

All costs associated with complying with permit requirements is considered incidental to the bid items for the work being performed.

(January 1, 2021 COK GSP)

Add new Section 1-07.6(2):

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

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

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

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

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

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

1-07.7 Load Limits

Section 1-07.7 is supplemented with the following:

(March 13, 1995 WSDOT GSP)

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

1-07.9 Wages

1-07.9(5) Required Documents

1-07.9(5)A General

(December 30, 2022 APWA GSP)

This section is revised to read:

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

1-07.14 Responsibility for Damage

(January 1, 2016 COK GSP)

Section 1-07.14 is supplemented with the following:

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

1-07.15 Temporary Water Pollution/Erosion Control

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

(January 10, 2019 COK GSP)

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

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

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

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

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

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

1-07.16 Protection and Restoration of Property

1-07.16(2) Vegetation Protection and Restoration

*Section 1-07.16(2) is supplemented with the following:
(August 2, 2010 WSDOT GSP)*

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

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

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

1-07.16(3) Fences, Mailboxes, Incidentals

(January 1, 2016 COK GSP)

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

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

1-07.17 Utilities and Similar Facilities

(January 1, 2020 COK GSP)

Section 1-07.17 is supplemented with the following:

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

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

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

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

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

5. Cable Television – minimum 48 hours in advance
6. Transit – minimum 21 days in advance

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

Utility	Agency/Company	Address	Contact	Phone
Water / Sewer (North area of Kirkland)	Northshore Utility District	6380 NE 185th St Kenmore, WA 98028	George Matote	(425) 521-3727
Streets	City of Kirkland	123 Fifth Avenue Kirkland, WA 98033	Chris Gavigan	(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	(509) 218-1294
Cable	Comcast	1525 - 75th St SW, Suite 200 Everett, WA 98203	Chris Combs	(425) 273-7832
School District Transportation	Lake Washington School District	15212 NE 95th St Redmond, WA 98052	Jeff Miles	(425) 936-1120
Transit	King County METRO	MS SVQ-TR-0100 1270 6th Ave S Seattle, WA 98134	David Freeman	(206) 477-1140 (206) 477-0438

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

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

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

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

Other Notifications

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

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

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

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

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

(January 1, 2016 COK GSP)

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

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

1-07.18 Public Liability and Property Damage Insurance

(December 30, 2022 APWA GSP)

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

1-07.18 Insurance

1-07.18(1) General Requirements

- A. The Contractor shall procure and maintain the insurance described in all subsections of section 1-07.18 of these Special Provisions, from insurers with a current A. M. Best rating of not less than A-: VII and licensed to do business in the State of Washington. The Contracting Agency reserves the right to approve or reject the insurance provided, based on the insurer's financial condition.
- B. The Contractor shall keep this insurance in force without interruption from the commencement of the Contractor's Work through the term of the Contract and for thirty (30) days after the Physical Completion date, unless otherwise indicated below.
- C. If any insurance policy is written on a claims-made form, its retroactive date, and that of all subsequent renewals, shall be no later than the effective date of this Contract. The policy shall state that coverage is claims made and state the retroactive date. Claims-made form coverage shall be maintained by the Contractor for a minimum of 36 months following the Completion Date or earlier termination of this

Contract, and the Contractor shall annually provide the Contracting Agency with proof of renewal. If renewal of the claims made form of coverage becomes unavailable, or economically prohibitive, the Contractor shall purchase an extended reporting period (“tail”) or execute another form of guarantee acceptable to the Contracting Agency to assure financial responsibility for liability for services performed.

- D. The Contractor’s Automobile Liability, Commercial General Liability and Excess or Umbrella Liability insurance policies shall be primary and non-contributory insurance as respects the Contracting Agency’s insurance, self-insurance, or self-insured pool coverage. Any insurance, self-insurance, or self-insured pool coverage maintained by the Contracting Agency shall be excess of the Contractor’s insurance and shall not contribute with it.
- E. The Contractor shall provide the Contracting Agency and all additional insureds with written notice of any policy cancellation, within two business days of their receipt of such notice.
- F. The Contractor shall not begin work under the Contract until the required insurance has been obtained and approved by the Contracting Agency
- G. Failure on the part of the Contractor to maintain the insurance as required shall constitute a material breach of contract, upon which the Contracting Agency may, after giving five business days’ notice to the Contractor to correct the breach, immediately terminate the Contract or, at its discretion, procure or renew such insurance and pay any and all premiums in connection therewith, with any sums so expended to be repaid to the Contracting Agency on demand, or at the sole discretion of the Contracting Agency, offset against funds due the Contractor from the Contracting Agency.
- H. All costs for insurance shall be incidental to and included in the unit or lump sum prices of the Contract and no additional payment will be made.

1-07.18(2) Additional Insured

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

- the Contracting Agency and its officers, elected officials, employees, agents, and volunteers
- KPG Psomas
- Northshore Utility District

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

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

1-07.18(3) Subcontractors

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

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

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

1-07.18(4) Verification of Coverage

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

Verification of coverage shall include:

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

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

1-07.18(5) Coverages and Limits

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

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

1-07.18(5)A Commercial General Liability

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

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

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

Such policy must provide the following minimum limits:

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

1-07.18(5)B Automobile Liability

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

Such policy must provide the following minimum limit:

\$1,000,000	Combined single limit each accident
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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)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
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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 fire fighting equipment at all times. Provision shall be made by the Contractor to ensure the proper functioning of all gutters, sewer inlets, drainage ditches and culverts, irrigation ditches and natural water courses, and storm sewer facilities throughout the project. Temporary interruption of service will be allowed only with the permission of the Engineer.

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

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

Pedestrian Control and Protection

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

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

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

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

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

1-07.23(1) Construction Under Traffic

(May 2, 2017 APWA GSP)

Revise the third sentence of the second paragraph to read:

Accessibility to existing or temporary pedestrian push buttons shall not be impaired; if approved by the Contracting Agency activating pedestrian recall timing or other accommodation may be allowed during construction.

1-07.23(2) Construction and Maintenance of Detours

*(*****)*

Supplement this section with the following:

Measurement and Payment

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

*(*****)*

Add the following new Section:

1-07.23(3) Communication/Dissemination of Information

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

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

1-07.24 Rights of Way

*(*****)*

Delete this Section and replace it with the following:

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

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

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

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

Each property owner shall be given minimum 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.

All Temporary Construction Easements (TCE) acquired for this project are shown on the Plans. All TCEs will expire on December 31, 2024; the Contractor shall have all work completed within TCEs prior to this date.

Contractor is limited to nine (9) months of work on private property within TCEs, from initial disturbance to final restoration.

(January 1, 2021 COK GSP)

Section 1-07.24 is supplemented with the following:

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

The Contractor shall file with the Engineer signed property release forms for all properties disturbed or damaged by the Contractor's operations.

*(*****)*

Supplement this Section with the following:

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

(*****)

Add the following new section:

1-07.29 Field Office for the Engineer's Staff

The Contractor shall provide a field office on or adjacent to the Project Site for the use of the Engineer's staff within five (5) Working Days from the Notice to Proceed Date. The field office, its location, and an alternate date if necessary, shall be subject to the approval of the Engineer and shall be established at the pre-construction meeting. The field office shall meet the following requirements:

1. The field office shall be a weather-tight building; either portable or permanent structure a minimum of eight (8) feet wide with not less than 360 square feet of clear floor space, having at least one door, and a window area of not less than 40 square feet. Windows shall open to allow ventilation. Doors and windows shall be provided with bug screens. The interior walls shall be covered with material suitable for displaying Contract Plans and progress charts, etc.
2. To deter break-in and theft, window and door glass shall be protected with heavy security screens on metal frames bolted to the walls and doors. At a minimum all doors shall have 1 deadbolt cylinder lock. The Contractor shall provide 6 sets of keys for each lock.
3. The field office shall be level and, if portable, the structure shall be supported on blocks. If more than three (3) steps are required to enter the office, a floor-level landing of at least 12 square feet with railing shall be provided. Steps and landing shall be stable and slip resistant. A 3 sided boot brush shall be provided at each field office entrance.
4. The Contractor shall be responsible for maintaining and cleaning the field office; repairing any damage to the structure, equipment and appurtenances; providing janitorial services including supplying appropriate toilet room paper products; disposal receptacle for feminine hygiene products; refilling applicable dispensers with drinking water cups, and paper towels; cleaning windows and sweeping floors; and emptying trash receptacles and recyclables, disposing trash, and relining trash receptacles and recyclables.
5. The office shall be furnished with the following furniture, equipment and appurtenances reasonably presentable, in good working order, and acceptable to the Engineer:
 - a. Dedicated restroom facility including hand sanitizer or wash station.
 - b. Drafting table, 6 foot x 4 foot minimum,
 - c. Executive chair, each with seat cushion, adjustable height seat, tilt back, arm rests, and floor wheels (two);
 - d. Office desk, 30" x 60" minimum size, with at least 4 drawers which can be locked with key & one of which is set up for file folders, 2 sets of keys each desk (two);
 - e. Office table 36" x 72" (two), 1 Conference table 4' x 10';
 - f. Office chairs with seat & back cushion (eight);
 - g. Trash receptacles and recycle bins
 - h. Color Photocopy/Color Printer/Color Scanner/Fax multifunction machine with multiple tray frontload including 3 paper trays (8-1/2 x 11-inch, 8-1/2 x 14-inch, and 11 x 17 inch) with the following:
 - Understorage cabinet, floor wheels to accommodate service technician.
 - Preset reduction to 50% and enlarge to 200% plus zoom in 1% increments.

- Bypass tray
 - Replacement toner cartridge (1 cartridge for each color)
 - Capability to scan directly to PDF color at 300 dpi
 - Plain paper fax capable
 - Connection to office network and set up to allow the sending of scanned documents as email attachments
 - 400 sheets of each size 20 lb. bright paper with no more than 30% recycle post-consumer content.
 - Repair and maintenance service contract with 4 hour service response on-site parts and labor;
- i. The contractor shall provide a business-grade internet connection with one (1) static public IPv4 address and no data cap and a **minimum bandwidth of 40 Mbps download/20 Mbps upload**. The contractor shall provide for 24-hour technical support and shall be responsible for working with the ISP or other vendors to resolve any technical issues that may arise with the internet connection. The contractor shall provide cabling (CAT 5E or better) to support a local area network inside the field office and shall include RJ-45 jacks at each workstation (desk or table locations to be to be addressed at the pre-construction meeting per Section 1-08.1(2)). The contractor shall provide an uplink to the internet via a RJ-45 jack. If the hardware provided by the ISP includes a router or firewall, the firewall shall be placed into “passthrough” or “bridge” mode such that a third-party firewall may be used with a public IP address downstream of the ISP-provided equipment.
 - j. White board (3’H x4’W) with eight (8) dry erase markers and 1 white board eraser.
6. Electric power of sufficient capacity to operate an electric heater, air conditioner and other required equipment; at least one set of grounded outlets per wall.

After obtaining inspection and approval of the field office electrical system and the proposed temporary power connection hook-up from City, the Contractor shall provide a minimum 15 Working Days advance notice to the local power utility requesting a temporary power drop and connection. Generators (gas and diesel) for producing electrical power will not be allowed unless the Engineer permits such in writing.

7. Contractor shall provide drinking water with disposable cup dispenser filled with cups
8. The Contractor shall provide heating and air-conditioning of sufficient capacity to heat the office to 70 °F within 1 hour, and to cool the office 15 °F within 1 hour.

If the Contractor fails to provide a field office at the location on the date agreed to at the pre-construction meeting, the Engineer will provide Written Notice of such and shall have the right to withhold progress payments in accordance with Section 1-09.9(3). If within 5 Working Days of the Engineer sending this Written Notice the Contractor has not provided the field office, then the Engineer will have the option to provide the field office. If the Engineer elects to provide the field office, the Engineer will give the Contractor a second Written Notice of such; will within three (3) Working Days of giving the second Written Notice provide the field office meeting the requirements specified in Section 1-07.29; and will charge the Contractor by deducting from monies due or to become due the Contractor on progress payments, all costs associated with the field office as specified in Section 1-07.29. Upon deliverance of the second Written Notice, the Contractor’s right to provide the field office shall be forfeited.

The field office, equipment, and appurtenances supplied by the Contractor shall revert to and be removed by the Contractor when the Engineer, via the Written Notice of Physical Completion to the Contractor, establishes the Physical Completion Date. If the Contractor removes, closes, or discontinues the services specified in Section 1-07.29 prior to receiving the Written Notice of Physical Completion without first obtaining approval from the Engineer, the Contractor will be charged Liquidated Damages in accordance with Section 1-08.9.

All costs for the work required to provide and maintain the field office including regular expenses for telephone, internet, electricity, etc.; incidental constructions to accommodate; and to procure all permits and licenses required for the field office to meet the requirements of Section 1-07.29, shall be included in the lump sum Contract Price Bid for "Mobilization." All costs for the work required to relocate the field office, if required, shall be considered incidental to the Bid item "Mobilization."

1-08 PROSECUTION AND PROGRESS

Add the following new section:

1-08.0 Preliminary Matters

(May 25, 2006 APWA GSP)

1-08.0(1) Preconstruction Conference

(October 10, 2008 APWA GSP)

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

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

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

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

(January 1, 2021 COK GSP)

Add the following new section:

1-08.0(2) Hours of Work

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

exclusive of weekends and holidays observed by the City of Kirkland and identified in Section 1-08.5 of the Standard Specifications.

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

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

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

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

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

4. Consider multiple work shifts (such as a sequential 8-hour day period followed by an 8-hour night period) as multiple working days with respect to Contract Time, even if those multiple shifts occur in a single 24-hour period.

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

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

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

Arterial Streets

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

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

6 th St/6 th St S/108 th Ave NE	Central Way/NE 85 th St	South City Limits
90 th Ave NE/NE 131st Way/NE 132nd St	NE 134 th St	132nd Ave NE
120 th Ave NE/116 th Ave NE/116 th Way NE	NE 112 th St	NE 132 nd St
124th Ave NE	NE 85th St	NE 124th St
124th Ave NE	NE 132 nd St	NE 145 th Pl (City Limits)

1-08.1 Subcontracting

(January 1, 2016 COK GSP)

Section 1-08.1 is supplemented with the following:

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

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

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

1-08.3 Progress Schedule

(January 1, 2016 COK GSP)

Supplement this section with the following:

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

1-08.3(2)A Type A Progress Schedule

*(*****)*

Revise this Section to read:

The Contractor shall submit 1 electronic copy of a Type A Progress Schedule via email no later than at the preconstruction conference, or some other mutually agreed upon submittal time. The schedule may be a critical path method (CPM) schedule, bar chart, or other standard schedule format. Regardless of which format used, the schedule shall identify the critical path. The Engineer will evaluate the Type A Progress Schedule and approve or return the schedule for corrections within 15 calendar days of receiving the submittal.

The Contractor shall show all Northshore Utility District (NUD) work on the schedule, including the specific sequencing required for the water system work. Refer to NUD specifications in Appendix E for more information.

(*****)

Add the following new section:

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

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

Working Days

The project schedule shall be based on total allowed contract Working Days, with 10 days of float to account for unexpected site changes, Minor Changes and Force Account work.

Traffic Control Plans

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

Notifications

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

Coordination With Other Contractors

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

1-08.4 Prosecution of Work

Delete this section and replace it with the following:

1-08.4 Notice to Proceed and Prosecution of Work

(July 23, 2015 APWA GSP)

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

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

(*****)

Notice to Proceed will be given on February 26, 2024, unless a different date is mutually agreed upon between the Owner and Contractor.

1-08.5 Time for Completion

(December 30, 2022 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 any partial or whole day 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 Project Engineer prior to establishing a completion date:
 - a. Certified Payrolls (per Section 1-07.9(5)).
 - b. Material Acceptance Certification Documents
 - c. Monthly Reports of Amounts Credited as DBE Participation, as required by the Contract Provisions.
 - d. Final Contract Voucher Certification
 - e. Copies of the approved "Affidavit of Prevailing Wages Paid" for the Contractor and all Subcontractors
 - f. A copy of the Notice of Termination sent to the Washington State Department of Ecology (Ecology); the elapse of 30 calendar days from the date of receipt of the Notice of Termination by Ecology; and no rejection of the Notice of Termination by Ecology. This requirement will not apply if the Construction Stormwater General Permit is transferred back to the Contracting Agency in accordance with Section 8-01.3(16).
 - g. Property owner releases per Section 1-07.24

(January 1, 2016 COK GSP)

Section 1-08.5 is supplemented with the following:

This project shall be physically completed in its entirety within **260** working days, including 10 days of float for unexpected site changes, Minor Changes and Force Account work.

1-08.9 Liquidated Damages

(January 1, 2016 COK GSP)

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

Accordingly, the Contractor agrees:

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

LIQUIDATED DAMAGES FORMULA

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

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

Where:

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

C = original Contract amount

T = original time for Physical Completion

1-09 MEASUREMENT AND PAYMENT

1-09.2 Weighing Equipment

1-09.2(1) General Requirements for Weighing Equipment

(December 30, 2022 APWA GSP, Option 2)

Revise item 4 of the fifth paragraph to read:

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

1-09.2(5) Measurement

(December 30, 2022 APWA GSP)

Revise the first paragraph to read:

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

1-09.6 Force Account

(December 30, 2022 APWA GSP)

Supplement this section with the following:

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

1-09.7 Mobilization

(December 30, 2022 APWA GSP)

Delete this Section and replace it with the following:

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

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

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

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

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

1-09.9 Payments

(December 30, 2022 APWA GSP)

Section 1-09.9 is revised to read:

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

The Contractor shall submit a breakdown of the cost of lump sum bid items at the Preconstruction Conference, to enable the Project Engineer to determine the Work performed on a monthly basis. A

breakdown is not required for lump sum items that include a basis for incremental payments as part of the respective Specification. Absent a lump sum breakdown, the Project Engineer will make a determination based on information available. The Project Engineer's determination of the cost of work shall be final.

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

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

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

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

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

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

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

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

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

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

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

(January 1, 2016 COK GSP)

Section 1-09.9 is supplemented with the following:

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

1-09.11 Disputes and Claims

1-09.11(3) Time Limitation and Jurisdiction

(December 30, 2022 APWA GSP)

Revise this section to read:

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

1-09.13 Claims Resolution

1-09.13(3)A Arbitration General

(January 19, 2022 APWA GSP)

Revise the third paragraph to read:

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

1-09.13(4) Venue for Litigation

(December 30, 2022 APWA GSP)

Revise this section to read:

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

1-10 TEMPORARY TRAFFIC CONTROL

1-10.2 Traffic Control Management

1-10.2(1) General

(October 3, 2022 WSDOT GSP)

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

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

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

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

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

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

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

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

1-10.2(2) Traffic Control Plans

(*****)

Delete the first paragraph and replace it with the following:

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

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

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

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

The Contracting Agency will require up to 10 working days to review and comment on the Contractor's submitted Traffic Control Plan.

1-10.3 Traffic Control Labor, Procedures and Devices

1-10.3(2) Traffic Control Procedures

(*****)

Supplement this section with the following:

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

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

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

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

1-10.3(3)C Portable Changeable Message Sign

(*****)

Supplement this section with the following:

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

1-10.5 Payment

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

(*****)

Supplement this Section with the following:

"Project Temporary Traffic Control", lump sum.

Costs for layout, installation, removal, and transport of project signage shall be included with the Contract lump sum price for "Project Temporary Traffic Control." This Bid item shall also constitute full compensation for all labor, tools, equipment, and materials necessary and incidental to maintaining temporary driving surface as required by Section 1-07.23(1), traffic and pedestrian control as required throughout the project duration in compliance with the MUTCD including, but not limited to, reflective signage, barricades, lights, traffic cones, and temporary pavement markings. Providing a minimum of three (3) individuals, including 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 three (3) Portable Changeable Message Signs from 7 calendar days prior to the start of construction and throughout the project duration shall be included in the lump sum Bid item "Project Temporary Traffic Control".

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

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

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

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

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

END OF DIVISION 1

DIVISION 2 EARTHWORK

2-01 CLEARING, GRUBBING, AND ROADSIDE CLEANUP

2-01.1 Description

This section is supplemented with the following:

The Contractor shall consider the clearing and grubbing limits for this project to be all areas within the limits specified on the Site Preparation Plans, or 1-foot beyond the proposed improvements, whichever is greater. The Contractor shall allow 48 hours for the Engineer to approve the clearing limits before commencing activities. At the direction of the Engineer, the limits shall be adjusted in the field. When marking the limits, the Contractor shall protect from damage existing landscaping items and private improvements, including but not limited to vegetation, rockeries, mailboxes, signs, irrigation, and other items.

2-01.2 Disposal of Usable Material and Debris

This section is supplemented with the following:

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

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

This section is supplemented with the following:

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

2-01.3 Construction Requirements

2-01.3(1) Clearing

This section is revised to read:

1. Fell trees only within the clearing limits as identified on the Plans.
2. Leave standing and protect all trees, roots, and native growth outside of the clearing limits or that have not been identified by the Engineer for removal. Where roots extend into the improvement area and are in conflict with the proposed improvements, they shall be sawcut and allowed to dry prior to backfill, except as noted in item 3 below.
3. Removal of trees shall include removal of stumps and roots to minimum 6 inches below existing or finished subgrade, whichever is lower, unless noted otherwise on the Plans.
4. Completely remove all stumps in conflict with proposed utilities, structures, walls and foundations.
5. To avoid disturbance outside clearing limits, roots requiring removal shall be cut at the clearing limits.
6. Contractor shall take all necessary precautions to protect adjacent trees, utilities, and other improvements from damage.

7. Trim all trees to remain to the height specified by the Engineer or to a minimum height of 8 feet above proposed sidewalk and 14 feet above the finish roadway surface. Neatly cut all limbs close to the tree trunk.
8. Trim trees, brush, and shrubs encroaching over the right-of-way line as necessary to accommodate the proposed improvements.
9. Trim trees and other vegetation as necessary to provide clear, unobstructed view of roadway signs. Determination of "clear and unobstructed" shall be at the sole discretion of the Engineer.
10. Trees designated on the Plans as wildlife snags shall be cut at 10-15 feet above existing ground, as directed by the Engineer based on distance from potential fall targets. The final height of the snag should be less than the distance to any potential target such as the roadway or adjacent structures. Rough up the top of the snag to create a jagged surface with deep grooves and fissures that allow water to penetrate into the snag. Remove all lateral branches.
11. Along the proposed illumination system on the east side of Juanita Dr from 29+00 to 62+00, the Contractor shall trim all existing tree limbs around luminaires to an 8-foot radius around the fixture, from 2 feet above the fixture.

(February 17, 2022 COK GSP)

This Section is supplemented with the following:

12. 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.

2-01.3(2) Grubbing

(January 1, 2020 COK GSP)

This Section is supplemented with the following:

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

2-01.3(4) Roadside Cleanup

Delete this section and replace it with the following:

2-01.3(4) Cleanup and Restoration

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

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

Add the following new sub-section:

2-01.3(5) Tree Removal and Protection

All existing trees not noted on the Plans for removal shall be retained and protected during construction as shown on the Plans. Tree protection shall be installed where shown and as detailed on the Plans.

If the construction operation causes irreparable damage to the tree or its roots, the Contractor shall be responsible for all work and materials required to mitigate the damage, as directed by the Engineer.

2-01.3(4) Roadside Cleanup

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

2-01.3(4) Cleanup and Restoration

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

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

2-02 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

2-02.1 Description

This section is supplemented with the following:

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

1. Remove and dispose of mailbox clusters and salvage mailboxes for reinstallation (dispose of existing mailbox if property owner provides a new box):
 - a. Juanita Dr. ~STA 27+75
 - b. Juanita Dr. ~STA 36+00
2. Remove and dispose of approximately 14 mailbox assemblies throughout the project site and salvage mailbox(es) for reinstallation (dispose of existing mailbox if property owner provides a new box).
3. Expose cone section of existing storm drain structure and rotate existing eccentric cone so that the opening is within the proposed sidewalk, regrout structure to be watertight, and install new steps/ladder per C.O.K. Standard Plan CK-D.09 (Juanita Dr ~STA 17+00).
4. Remove and dispose of ~26 linear feet of ~1-foot-high rockery at Juanita Dr ~STA 17+00 and reinstall/realign ~5 linear feet of landscape blocks at each end of rockery (~10 linear feet total) as required to construct improvements (Juanita Dr ~STA 17+00 and ~17+25). Dispose of excess blocks at each end.
5. Remove and dispose of ~8 linear feet of small rockery (~1 foot high) at Juanita Dr STA 26+00.
6. Remove and dispose of gate and associated hardware (Juanita Dr ~STA 29+80).
7. Remove and salvage yard lights to property owner (Juanita Dr. ~STA 46+00). If property owner doesn't want to retain possession, Contractor shall dispose of the yard lights.

8. Remove ~30 linear feet of landscape blocks and salvage to property owner (~15 linear feet at Juanita Dr STA 52+75 and ~15 linear feet at Juanita Dr STA 53+30). If property owner doesn't want to retain possession, Contractor shall dispose of landscape blocks.
9. Remove and dispose of ~15 linear feet of rock driveway border (Juanita Dr ~STA 54+20).
10. Remove and dispose of ~15 linear feet of wood/RR tie driveway border (Juanita Dr ~STA 54+50).
11. Remove and dispose of ~75 linear feet of 7-foot high wood fence (Juanita Dr ~STA 55+00).
12. Remove and dispose of ~5 linear feet of wood landscape border (Juanita Dr ~STA 54+80).
13. Remove and reinstall/realign rock landscape border as required to construct improvements (Juanita Dr ~STA 55+60).
14. Remove and dispose of ~30 linear feet of 6-foot high wood fence (Agarwal Parcel at Juanita Dr ~STA 56+00).
15. Remove and dispose of ~75 linear feet of 6-foot high wood fence (Agarwal Parcel).
16. Remove and dispose of ~10 linear feet of ~5-foot high brick wall and metal fence to angle as required to construct improvements. Salvage address plaque to property owner (Agarwal Parcel). Method and limits of cutting/removal of brick wall shall be approved by the Engineer prior to commencing this work.
17. Remove and dispose of ~10 linear feet of ~1-foot high brick wall (Agarwal Parcel).
18. Remove and dispose of ~10 linear feet of ~1-foot high landscape blocks (Agarwal Parcel).
19. Remove and dispose of ~75 linear feet of brick landscape border (Agarwal Parcel).
20. Remove and dispose of ~30 linear feet of small rockery ~1-2 feet high (Agarwal Parcel).
21. Remove and salvage yard light to owner (Agarwal Parcel). If property owner doesn't want to retain possession, Contractor shall dispose of the yard light.
22. Remove and dispose of ~80 linear feet of 6-foot high wood fence (Juanita Dr ~STA 61+00).

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

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

2-02.3 Construction Requirements

Supplement this section with the following:

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

The Contractor shall remove storm structures as identified on the Plans and backfill the voids. If deemed usable by the Owner, castings shall be salvaged and returned to the Owner. The Contractor shall dispose of all other elements.

All portions of abandoned utility systems (previously abandoned or abandoned by this project) that conflict with the proposed improvements or are noted specifically for removal on the Plans shall be removed and disposed of. Segments of existing pipes not removed shall be abandoned in place by completely filling with CDF, then bricked and grouted at each end. Segments of existing CMP pipe not in conflict with proposed improvements nor specifically called out for removal shall be inspected by CCTV, and the video shall be provided to the Engineer for review prior to filling with CDF. Based on the video, the Engineer will direct the Contractor to either fill the CMP pipe with CDF, or fully remove the pipe if it is significantly rotted/damaged. For CMP pipes, CCTV and filling with CDF is considered included in the lump sum bid item "Remove/Abandon Storm System".

Voids left by the removal or abandonment of items shall be backfilled with Gravel Borrow as approved by the Engineer and compacted to 95 percent of maximum density as specified in Section 2-03.3(14)D of the Standard Specifications.

All material removed for the construction of the project shall be hauled off-site to a legal disposal site by the Contractor, except for materials specifically noted for salvage, reinstallation, or relocation. The Contractor shall determine the requirements of his selected disposal site related to accepting the material to be deposited on the site. Testing of the material by the disposal site or refusal of the site to accept the material shall not be the basis for additional payment or for an extension of the Contract time. The cost of all such requirements shall be included in the various Bid prices in the Proposal.

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

Supplement this section with the following:

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

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

Per the Geotechnical Report in the Appendix and the Existing Conditions and Pothole Plans, there is a 10-inch layer of cement concrete pavement located under asphalt pavement along a significant portion of the project site which must be removed where encountered. Removal of the cement concrete pavement is included in the Bid item "Cement Conc. Pavement Removal". Refer to Existing Conditions and Pothole Plans and the Geotechnical Report for approximate pavement depths.

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

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

A clean, vertical butt joint shall be provided between any surface that is to remain and the portion to be removed. Edges of pavement that becomes damaged after initial sawcutting shall be recut by the Contractor to provide a clean, vertical joint.

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

Add the following new sections:

2-02.3(4) Salvage

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

2-02.3(5) Adjust Utility to Finished Grade

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

the location of all utilities prior to paving the new surface. Final adjustment shall be smooth and flush with finished grade.

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

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

Any damage occurring due to the Contractor's operations shall be repaired at the Contractor's own expense. All materials to be reused or salvaged shall be thoroughly cleaned. The Contractor shall be responsible for referencing and keeping a record of all structures and appurtenances encountered and shall submit a copy of these references to the Engineer.

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

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

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

Contractor shall adjust existing PSE gas valve boxes to finished grade. If damaged during construction, the Contractor is responsible for the cost of replacing the gas valve box and shall coordinate with PSE for a replacement.

2-02.4 Measurement

Supplement this Section with the following:

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

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

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

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

"Cement Conc. 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 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.

“Adjust Gas Valve to Grade” will be measured per each existing gas valve adjusted to finished grade. Separate measurement will not be made for interim utility adjustments.

2-02.5 Payment

Supplement this Section with the following:

“Removal of Structures and Obstructions”, lump sum.

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

“Remove/Abandon Storm System”, lump sum.

The lump sum Contract price for “Remove/Abandon Storm System” shall be full compensation for all costs necessary and incidental to completely remove and/or abandon the portions of storm system indicated on the Plans, as described herein, or as required to perform the Work, including but not limited to excavation, disposal of materials, filling pipes to be abandoned in-place with CDF and bricking and grouting the ends, CCTV of existing CMP pipes to be abandoned in-place, backfilling voids, compacting backfill, and restoring the area to existing grade.

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

The unit Contract price for “Asphalt Conc. Pavement Removal” shall be full compensation for all costs necessary and incidental to completely removing and disposing of asphalt concrete pavement, regardless of depth, including but not limited to sawcutting.

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

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

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

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

“Adjust Gas Valve to Grade”, per each.

The unit Contract price for “Adjust Existing Gas Valve to Grade” shall be full compensation for all costs necessary and incidental to adjusting the existing valve to finished grade.

2-03 ROADWAY EXCAVATION AND EMBANKMENT

2-03.1 Description

Supplement this section with the following:

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

This work also includes unsuitable foundation excavation.

2-03.2 Materials

Supplement this section with the following:

Fill material for embankment construction, stormwater detention vault backfill, soldier pile wall backfill, non-structural modular block wall backfill, and unsuitable foundation excavation shall be Gravel Borrow per Standard Specification Section 9-03.14(1).

Fill material for structural Gravity Block wall shall be Crushed Surfacing Top Course per section 4-04.

2-03.3 Construction Requirements

Supplement this section with the following:

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

2-03.3(7) Disposal of Surplus Material

Supplement this section with the following:

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

2-03.3(14)C Compacting Earth Embankments

Supplement this section with the following:

Embankments shall be placed and compacted per Method C.

2-03.3(14)E Unsuitable Foundation Excavation

Supplement this section with the following:

The Contractor shall excavate to the proposed foundation of pavement, sidewalks, and walls; the Engineer will then inspect the conditions of existing material in the excavation and determine the extent, if required, of unsuitable foundation excavation. The Contractor shall perform the excavation to the limits directed by the Engineer, then backfill unsuitable foundation excavation with Gravel Borrow and compact to 95% dry density.

2-03.4 Measurement

Supplement this section with the following:

No specific unit of measurement shall apply to the lump sum item of "Roadway Excavation Incl. Haul". Earthwork quantities were computed by means of electronic data processing equipment, by use of the

average end area method utilizing digital terrain modeling techniques, without shrinkage or swelling factors. Quantities are calculated from the assumed average bottom of existing pavement to subgrade elevation.

Only one determination of the original ground elevation will be made on this project. If discrepancies are discovered in ground elevations that will materially affect the quantities of earthwork, the original computations of earthwork quantities will be adjusted accordingly. All excavation required for roadway, walls, sidewalks and curbs, including subgrade excavation, or not identified for payment under other Bid items, shall be included in the lump sum price for "Roadway Excavation Incl. Haul". The lump sum cost for "Roadway Excavation Incl. Haul" in the Proposal is based on **2,200 CY** of excavation measured in place. This calculation is based on the assumption that the average existing pavement section thickness is 14". See Geotechnical Report in Appendix and the Existing Conditions and Pothole Plans for existing pavement depths, which vary throughout the project and may be in excess of the assumed average thickness.

The survey basemap and digital terrain model Civil3D files will be made available to the Contractor upon request.

Should the Owner direct the Contractor to perform additional excavation beyond that shown on the Contract Plans, the additional roadway excavation will be measured and paid for at a unit cost determined by dividing the lump sum bid amount by the cubic yards specified above.

If the Contractor does not agree with the "Roadway Excavation Incl. Haul" quantity shown above the Contractor shall employ their own survey crew to conduct survey as needed to develop a digital terrain model as outlined in the Standard Specifications and present this information to the Owner. Should it be determined that the quantities are in error, the lump sum bid amount will be adjusted by a unit price calculated as described above. All costs required to survey the site, develop the model, and compare the model to the pre-construction model shall be borne by the Contractor.

Refer to Section 2-09 for structure excavation.

No separate measurement for payment will be made for disposal of surplus materials. All costs associated with this work shall be included with the other various Bid items in the Proposal.

Compaction of all material as required by this Contract, regardless of method, will not be measured for separate payment and shall be considered incidental to and included in the cost of the Bid item for the material being placed.

"Unsuitable Foundation Excavation Incl. Haul" will be measured per cubic yard in place for material removed. The amount of such excavation is unknown; therefore, a quantity has been estimated based on field observations to provide a common basis for bidding. The unit price submitted shall be used for all such excavation. Material that must be excavated to construct the improvements to the lines and grades shown on the Plans, regardless of the nature of the material, will not be measured as unsuitable foundation excavation. Additional unsuitable material excavated as directed by the Engineer or City Construction Inspector to provide a stable subgrade will be measured as "Unsuitable Foundation Excavation Incl. Haul".

2-03.5 Payment

Supplement this section with the following:

"Roadway Excavation Incl. Haul", lump sum.

The lump sum Contract price for “Roadway Excavation, Incl. Haul” shall be full compensation for all costs necessary and incidental to establish subgrade for surface improvements.

“Unsuitable Foundation Excavation Incl. Haul”, per cubic yard.

The unit Contract price for “Unsuitable Foundation Excavation Incl. Haul” shall be full compensation for all costs necessary and incidental to performing the work, including but not limited to excavation, geotextile for soil stabilization, compaction, and quarry spalls. To provide a common basis for all bidders, the Contracting Agency has entered an amount in the proposal to become part of the total bid by the Contractor.

2-04 HAUL

Add the following new section:

2-04.2 Hauling on Other Than State Highways

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

2-04.5 Payment

Supplement this section with the following:

All costs associated with hauling materials of any description to, from, and within the project site, including loading and disposal, shall be considered incidental and shall be included in the appropriate unit Bid prices in the Proposal and no further compensation will be paid.

2-06 SUBGRADE PREPARATION

2-06.3 Construction Requirements

Supplement this Section with the following:

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

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

2-07 WATER

2-07.3 Construction Requirements

Supplement this Section with the following:

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

The City will provide water at no expense to the Contractor. The Contractor will be required to obtain water from the City Public Works yard. If preferred, the Contractor may instead purchase water from the local water district at no cost to the Owner.

2-09 STRUCTURE EXCAVATION

2-09.3 Construction Requirements

2-09.3(1) General Requirements

2-09.3(1)D Disposal of Excavated Material

Supplement this section with the following:

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

2-09.4 Measurement

Supplement this section with the following:

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

No specific unit of measurement shall apply to the lump sum item “Shoring or Extra Excavation Cl. A”. Shoring or extra excavation for the stormwater detention vault will be measured and paid under the lump sum Bid item “Shoring or Extra Excavation Cl. A”. No measurement will be made for any other class of structure excavation and shall be considered incidental to the improvement being installed.

2-09.5 Payment

Supplement this section with the following:

“Shoring or Extra Excavation Cl. B”, lump sum.

The lump sum Contract price for “Shoring or Extra Excavation Cl. B” shall be full compensation for all costs necessary and incidental to designing, furnishing, installing, and removing shoring systems. When extra excavation is used in lieu of constructing the shoring, cofferdam, sheet piles, or caisson, the lump sum contract price shall be full pay for all excavation, backfill, compaction, and other work required for Extra Excavation Cl. B.

2-11 TRIMMING AND CLEANUP

2-11.1 Description

Supplement this section with the following:

During construction, and then upon completion of the work, the Contractor shall thoroughly comb and search the surrounding area and remove any construction material or garbage thrown or discarded amongst the trees, bushes, ditches, etc., such as paint cans, cartons, broken pipe, pavement pieces, paper, bottles, etc., and shall tidy up the surrounding general area to make it neat in appearance, including removal of debris that may or may not have been deposited by Contractor’s operation.

Paved surfaces, existing and new, shall be thoroughly cleaned (i.e. by street sweeper) upon completion of work within the area, and shall require daily cleaning if dust or mud exists. Prior to Physical Completion, all hard surfaces shall be clean.

2-11.3 Construction Requirements

Add the following new subsections:

2-11.3(1) Routine Cleaning General

1. Retain all stored materials and equipment in an orderly fashion allowing maximum access, not impeding drainage or traffic, and providing protection.
2. Do not allow the accumulation of scrap, debris, waste material, and other items not required for this work.
3. At least once a week, and more often if necessary or as directed by the Construction Inspector, the Contractor shall completely remove all scrap, debris, and waste material from the project site.
4. Provide adequate storage for all materials awaiting removal from the project site, observing all requirements for fire protection and protection of the environment.

Site

1. Daily and more often if necessary or as directed, inspect the site and pick up all scrap, debris, and waste material. Remove all such items to the place designated for their storage until it can be disposed of.
2. Weekly, and more often if necessary or directed, inspect all arrangements of materials stored on the site, restack, tidy, or otherwise service all arrangements to meet the requirements above.
3. Maintain the site in a neat and orderly condition at all times so as to meet the approval of the Owner.

2-11.3(2) Final Cleaning

Prior to final inspection for Physical Completion, remove from the job site all tools, surplus materials, equipment, scrap, debris, and waste.

2-11.4 Measurement

Delete this section and replace with the following:

Trimming and cleanup shall be considered incidental to the lump sum Contract price for "Mobilization" and will not be measured for separate payment.

END OF DIVISION 2

DIVISION 3
AGGREGATE PRODUCTION AND ACCEPTANCE

3-01 PRODUCTION FROM QUARRY AND PIT SITES

3-01.4 Contractor Furnished Material Sources

Supplement this section with the following:

No source has been provided for any imported materials necessary for the construction of this improvement.

The Contractor shall make arrangements to obtain the necessary materials at no expense to the City, and all costs of acquiring, producing, and placing this material in the finished work shall be included in the unit Contract prices for the various items involved.

If the source of materials provided by the Contractor necessitates hauling over roads other than City streets, the Contractor at its own expense shall make all arrangements for the use of haul routes.

3-01.6 Payment

Supplement this section with the following:

All costs of any work required under Division 3 shall be incidental to and included in the unit contract prices for the various items in the Proposal.

END OF DIVISION 3

DIVISION 4 BASES

4-04 BALLAST AND CRUSHED SURFACING

4-04.1 Description

Supplement this section with the following:

Crushed surfacing shall be placed in accordance with the Standard Specifications and the Plans, or as directed by the Engineer.

Ballast

4-04.2 Materials

Supplement this section with the following:

Crushed Surfacing Top Course per Section 9-03.9(3) shall be used under concrete and paved surfaces, for trench backfill and pipe bedding, structure backfill, gravity block wall backfill, retaining wall foundations, and as specified herein and shown on the Plans.

Permeable Ballast Base Course per Section 9-03.9(2) shall be used beneath the storm detention vault as specified herein and shown on the Plans.

4-04.4 Measurement

Supplement this section with the following:

“Crushed Surfacing Top Course” will be measured per ton based on certified truck tickets collected by the inspector at the end of each working day.

Truck tickets for Crushed Surfacing Top Course to be paid under this item per Ton (not incidental to other items) **shall be provided to the Inspector on the day of delivery**. If not provided on the day of delivery, the CSTC will be considered incidental to other Bid items (such as trench bedding and backfill), unless prior arrangements have been made with the Inspector.

Crushed Surfacing Top Course used for trench backfill, pipe bedding, structure backfill, and other items as shown on the Plans and described herein will not be measured for payment and is considered incidental to and included in other Bid items in the Contract.

Crushed surfacing material used for temporary purposes, including but not limited to driving surfaces, will not be measured for payment unless it is incorporated into construction of the final improvements as required by the Plans.

Should the Contractor **not** prepare subgrade to the correct line and grades and crushed surfacing materials are placed in excess of the depths required by the Plans, the excess depth will not be measured for payment. The crushed surfacing in these areas will instead be measured by neat line to be converted to tons for deduction in quantities accepted based on the certified truck tickets.

Water used in placing and compacting surfacing materials shall be considered incidental to the material being placed.

Permeable ballast base course will not be measured for separate payment and is considered incidental to the “Stormwater Detention Vault” Lump Sum cost in Section 7-06.

4-04.5 Payment

Supplement this section with the following:

“Crushed Surfacing Top Course”, per ton.

The unit Contract price for “Crushed Surfacing Top Course” shall be full compensation for all costs necessary and incidental to satisfactorily completing the work as defined in the Plans, Standard Specifications and these Special Provisions.

It is the Contractor’s responsibility to track crushed surfacing materials measured per ton separately from crushed surfacing materials incidental to other Bid items by providing separate stockpiles or another method acceptable by the Engineer. Should the Contractor not provide separate stockpiles or other method as outlined above, crushed surfacing material paid for per ton will not be based on certified truck tickets, but instead be measured by neat line to be converted to tons based neat line measurements in the field and on the cross sections provided in the Plans.

END OF DIVISION 4

DIVISION 5 SURFACE TREATMENTS AND PAVEMENTS

(*****)

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

5-04 Hot Mix Asphalt

5-04.1 Description

This Work shall consist of providing and placing one or more layers of plant-mixed hot mix asphalt (HMA) on a prepared foundation or base in accordance with these Specifications and the lines, grades, thicknesses, and typical cross-sections shown in the Plans. The manufacture of HMA may include warm mix asphalt (WMA) processes in accordance with these Specifications. WMA processes include organic additives, chemical additives, and foaming.

HMA shall be composed of asphalt binder and mineral materials as may be required, mixed in the proportions specified to provide a homogeneous, stable, and workable mixture.

5-04.2 Materials

Materials shall meet the requirements of the following sections:

Asphalt Binder	9-02.1(4)
Cationic Emulsified Asphalt	9-02.1(6)
Anti-Stripping Additive	9-02.4
HMA Additive	9-02.5
Aggregates	9-03.8
Recycled Asphalt Pavement	9-03.8(3)B
Mineral Filler	9-03.8(5)
Recycled Material	9-03.21
Portland Cement	9-01
Sand	9-03.1(2)
(As noted in 5-04.3(5)C for crack sealing)	
Joint Sealant	9-04.2
Foam Backer Rod	9-04.2(3)A

The Contract documents may establish that the various mineral materials required for the manufacture of HMA will be furnished in whole or in part by the Contracting Agency. If the documents do not establish the furnishing of any of these mineral materials by the Contracting Agency, the Contractor shall be required to furnish such materials in the amounts required for the designated mix. Mineral materials include coarse and fine aggregates, and mineral filler.

The Contractor may choose to utilize recycled asphalt pavement (RAP) in the production of HMA. The RAP may be from pavements removed under the Contract, if any, or pavement material from an existing stockpile.

The Contractor may use up to 20 percent RAP by total weight of HMA with no additional sampling or testing of the RAP. The RAP shall be sampled and tested at a frequency of one sample for every 1,000 tons produced and not less than ten samples per project. The asphalt content and gradation test data shall be reported to the Contracting Agency when submitting the mix design for approval on the QPL. The Contractor shall include the RAP as part of the mix design as defined in these Specifications.

The grade of asphalt binder shall be as required by the Contract. Blending of asphalt binder from different sources is not permitted.

The Contractor may only use warm mix asphalt (WMA) processes in the production of HMA with 20 percent or less RAP by total weight of HMA. The Contractor shall submit to the Engineer for approval the process that is proposed and how it will be used in the manufacture of HMA.

Production of aggregates shall comply with the requirements of Section 3-01.

Preparation of stockpile site, the stockpiling of aggregates, and the removal of aggregates from stockpiles shall comply with the requirements of Section 3-02.

5-04.2(1) How to Get an HMA Mix Design on the QPL

If the contractor wishes to submit a mix design for inclusion in the Qualified Products List (QPL), please follow the WSDOT process outlined in Standard Specification 5-04.2(1).

5-04.2(1)A Vacant

5-04.2(2) Mix Design – Obtaining Project Approval

No paving shall begin prior to the approval of the mix design by the Engineer.

Nonstatistical evaluation will be used for all HMA not designated as Commercial HMA in the contract documents.

Commercial evaluation will be used for Commercial HMA and for other classes of HMA in the following applications: sidewalks, road approaches, ditches, slopes, paths, trails, gores, prelevel, and pavement repair. Other nonstructural applications of HMA accepted by commercial evaluation shall be as approved by the Project Engineer. Sampling and testing of HMA accepted by commercial evaluation will be at the option of the Project Engineer. The Proposal quantity of HMA that is accepted by commercial evaluation will be excluded from the quantities used in the determination of nonstatistical evaluation.

Nonstatistical Mix Design. Fifteen days prior to the first day of paving the contractor shall provide one of the following mix design verification certifications for Contracting Agency review;

- The WSDOT Mix Design Evaluation Report from the current WSDOT QPL, or one of the mix design verification certifications listed below.
- The proposed HMA mix design on WSDOT Form 350-042 with the seal and certification (stamp & signature) of a valid licensed Washington State Professional Engineer.
- The Mix Design Report for the proposed HMA mix design developed by a qualified City or County laboratory that is within one year of the approval date.**

The mix design shall be performed by a lab accredited by a national authority such as Laboratory Accreditation Bureau, L-A-B for Construction Materials Testing, The Construction Materials Engineering Council (CMEC's) ISO 17025 or AASHTO Accreditation Program (AAP) and shall supply evidence of participation in the AASHTO: resource proficiency sample program.

Mix designs for HMA accepted by Nonstatistical evaluation shall;

- Have the aggregate structure and asphalt binder content determined in accordance with WSDOT Standard Operating Procedure 732 and meet the requirements of Sections 9-03.8(2), except that Hamburg testing for ruts and stripping are at the discretion of the Engineer, and 9-03.8(6).
- Have anti-strip requirements, if any, for the proposed mix design determined in accordance with AASHTO T 283 or T 324, or based on historic anti-strip and aggregate source compatibility from previous WSDOT lab testing.

At the discretion of the Engineer, agencies may accept verified mix designs older than 12 months from the original verification date with a certification from the Contractor that the materials and sources are the same as those shown on the original mix design.

Commercial Evaluation Approval of a mix design for “Commercial Evaluation” will be based on a review of the Contractor’s submittal of WSDOT Form 350-042 (For commercial mixes, AASHTO T 324 evaluation is not required) or a Mix Design from the current WSDOT QPL or from one of the processes allowed by this section. Testing of the HMA by the Contracting Agency for mix design approval is not required.

For the Bid Item Commercial HMA, the Contractor shall select a class of HMA and design level of Equivalent Single Axle Loads (ESAL’s) appropriate for the required use.

5-04.2(2)B Using Warm Mix Asphalt Processes

The Contractor may elect to use additives that reduce the optimum mixing temperature or serve as a compaction aid for producing HMA. Additives include organic additives, chemical additives and foaming processes. The use of Additives is subject to the following:

- Do not use additives that reduce the mixing temperature more than allowed in Section 5-04.3(6) in the production of mixtures.
- Before using additives, obtain the Engineer’s approval using WSDOT Form 350-076 to describe the proposed additive and process.

5-04.3 Construction Requirements

5-04.3(1) Weather Limitations

Do not place HMA for wearing course on any Traveled Way beginning October 1st through March 31st of the following year without written concurrence from the Engineer.

Do not place HMA on any wet surface, or when the average surface temperatures are less than those specified below, or when weather conditions otherwise prevent the proper handling or finishing of the HMA.

Minimum Surface Temperature for Paving

Compacted Thickness (Feet)	Wearing Course	Other Courses
Less than 0.10	55°F	45°F
0.10 to .20	45°F	35°F
More than 0.20	35°F	35°F

5-04.3(2) Paving Under Traffic

When the Roadway being paved is open to traffic, the requirements of this Section shall apply.

The Contractor shall keep intersections open to traffic at all times except when paving the intersection or paving across the intersection. During such time, and provided that there has been an advance warning to the public, the intersection may be closed for the minimum time required to place and compact the mixture. In hot weather, the Engineer may require the application of water to the pavement to accelerate the finish rolling of the pavement and to shorten the time required before reopening to traffic.

Before closing an intersection, advance warning signs shall be placed and signs shall also be placed marking the detour or alternate route.

During paving operations, temporary pavement markings shall be maintained throughout the project. Temporary pavement markings shall be installed on the Roadway prior to opening to traffic. Temporary pavement markings shall be in accordance with Section 8-23.

All costs in connection with performing the Work in accordance with these requirements, except the cost of temporary pavement markings, shall be included in the unit Contract prices for the various Bid items involved in the Contract.

5-04.3(3) Equipment

5-04.3(3)A Mixing Plant

Plants used for the preparation of HMA shall conform to the following requirements:

1. **Equipment for Preparation of Asphalt Binder** – Tanks for the storage of asphalt binder shall be equipped to heat and hold the material at the required temperatures. The heating shall be accomplished by steam coils, electricity, or other approved means so that no flame shall be in contact with the storage tank. The circulating system for the asphalt binder shall be designed to ensure proper and continuous circulation during the operating period. A valve for the purpose of sampling the asphalt binder shall be placed in either the storage tank or in the supply line to the mixer.
2. **Thermometric Equipment** – An armored thermometer, capable of detecting temperature ranges expected in the HMA mix, shall be fixed in the asphalt binder feed line at a location near the charging valve at the mixer unit. The thermometer location shall be convenient and safe for access by Inspectors. The plant shall also be equipped with an approved dial-scale

thermometer, a mercury actuated thermometer, an electric pyrometer, or another approved thermometric instrument placed at the discharge chute of the drier to automatically register or indicate the temperature of the heated aggregates. This device shall be in full view of the plant operator.

3. **Heating of Asphalt Binder** – The temperature of the asphalt binder shall not exceed the maximum recommended by the asphalt binder manufacturer nor shall it be below the minimum temperature required to maintain the asphalt binder in a homogeneous state. The asphalt binder shall be heated in a manner that will avoid local variations in heating. The heating method shall provide a continuous supply of asphalt binder to the mixer at a uniform average temperature with no individual variations exceeding 25°F. Also, when a WMA additive is included in the asphalt binder, the temperature of the asphalt binder shall not exceed the maximum recommended by the manufacturer of the WMA additive.
4. **Sampling and Testing of Mineral Materials** – The HMA plant shall be equipped with a mechanical sampler for the sampling of the mineral materials. The mechanical sampler shall meet the requirements of Section 1-05.6 for the crushing and screening operation. The Contractor shall provide for the setup and operation of the field testing facilities of the Contracting Agency as provided for in Section 3-01.2(2).
5. **Sampling HMA** – The HMA plant shall provide for sampling HMA by one of the following methods:
 - a. A mechanical sampling device attached to the HMA plant.
 - b. Platforms or devices to enable sampling from the hauling vehicle without entering the hauling vehicle.

5-04.3(3)B Hauling Equipment

Trucks used for hauling HMA shall have tight, clean, smooth metal beds and shall have a cover of canvas or other suitable material of sufficient size to protect the mixture from adverse weather. Whenever the weather conditions during the work shift include, or are forecast to include, precipitation or an air temperature less than 45°F or when time from loading to unloading exceeds 30 minutes, the cover shall be securely attached to protect the HMA.

The contractor shall provide an environmentally benign means to prevent the HMA mixture from adhering to the hauling equipment. Excess release agent shall be drained prior to filling hauling equipment with HMA. Petroleum derivatives or other coating material that contaminate or alter the characteristics of the HMA shall not be used. For live bed trucks, the conveyer shall be in operation during the process of applying the release agent.

5-04.3(3)C Pavers

HMA pavers shall be self-contained, power-propelled units, provided with an internally heated vibratory screed and shall be capable of spreading and finishing courses of HMA plant mix material in lane widths required by the paving section shown in the Plans.

The HMA paver shall be in good condition and shall have the most current equipment available from the manufacturer for the prevention of segregation of the HMA mixture installed, in good condition, and in working order. The equipment certification shall list the make, model, and year of the paver and any equipment that has been retrofitted.

The screed shall be operated in accordance with the manufacturer's recommendations and shall effectively produce a finished surface of the required evenness and texture without tearing, shoving, segregating, or gouging the mixture. A copy of the manufacturer's recommendations shall be provided upon request by the Contracting Agency. Extensions will be allowed provided they produce the same results, including ride, density, and surface texture as obtained by the primary screed. Extensions without augers and an internally heated vibratory screed shall not be used in the Traveled Way.

When specified in the Contract, reference lines for vertical control will be required. Lines shall be placed on both outer edges of the Traveled Way of each Roadway. Horizontal control utilizing the reference line will be permitted. The grade and slope for intermediate lanes shall be controlled automatically from reference lines or by means of a mat referencing device and a slope control device. When the finish of the grade prepared for paving is superior to the established tolerances and when, in the opinion of the Engineer, further improvement to the line, grade, cross-section, and smoothness can best be achieved without the use of the reference line, a mat referencing device may be substituted for the reference line. Substitution of the device will be subject to the continued approval of the Engineer. A joint matcher may be used subject to the approval of the Engineer. The reference line may be removed after the completion of the first course of HMA when approved by the Engineer. Whenever the Engineer determines that any of these methods are failing to provide the necessary vertical control, the reference lines will be reinstalled by the Contractor.

The Contractor shall furnish and install all pins, brackets, tensioning devices, wire, and accessories necessary for satisfactory operation of the automatic control equipment.

If the paving machine in use is not providing the required finish, the Engineer may suspend Work as allowed by Section 1-08.6. Any cleaning or solvent type liquids spilled on the pavement shall be thoroughly removed before paving proceeds.

5-04.3(3)D Material Transfer Device or Material Transfer Vehicle

A Material Transfer Device/Vehicle (MTD/V) shall only be used with the Engineer's approval, unless other-wise required by the contract.

Where an MTD/V is required by the contract, the Engineer may approve paving without an MTD/V, at the request of the Contractor. The Engineer will determine if an equitable adjustment in cost or time is due.

When used, the MTD/V shall mix the HMA after delivery by the hauling equipment and prior to laydown by the paving machine. Mixing of the HMA shall be sufficient to obtain a uniform temperature throughout the mixture. If a windrow elevator is used, the length of the windrow may be limited in urban areas or through intersections, at the discretion of the Engineer.

To be approved for use, an MTV:

1. Shall be self-propelled vehicle, separate from the hauling vehicle or paver.
2. Shall not be connected to the hauling vehicle or paver.
3. May accept HMA directly from the haul vehicle or pick up HMA from a windrow.

4. Shall mix the HMA after delivery by the hauling equipment and prior to placement into the paving machine.
5. Shall mix the HMA sufficiently to obtain a uniform temperature throughout the mixture.

To be approved for use, an MTD:

1. Shall be positively connected to the paver.
2. May accept HMA directly from the haul vehicle or pick up HMA from a windrow.
3. Shall mix the HMA after delivery by the hauling equipment and prior to placement into the paving machine.
4. Shall mix the HMA sufficiently to obtain a uniform temperature throughout the mixture.

5-04.3(3)E Rollers

Rollers shall be of the steel wheel, vibratory, oscillatory, or pneumatic tire type, in good condition and capable of reversing without backlash. Operation of the roller shall be in accordance with the manufacturer's recommendations. When ordered by the Engineer for any roller planned for use on the project, the Contractor shall provide a copy of the manufacturer's recommendation for the use of that roller for compaction of HMA. The number and weight of rollers shall be sufficient to compact the mixture in compliance with the requirements of Section 5-04.3(10). The use of equipment that results in crushing of the aggregate will not be permitted. Rollers producing pickup, washboard, uneven compaction of the surface, displacement of the mixture or other undesirable results shall not be used.

5-04.3(4) Preparation of Existing Paved Surfaces

When the surface of the existing pavement or old base is irregular, the Contractor shall bring it to a uniform grade and cross-section as shown on the Plans or approved by the Engineer.

Preleveling of uneven or broken surfaces over which HMA is to be placed may be accomplished by using an asphalt paver, a motor patrol grader, or by hand raking, as approved by the Engineer.

Compaction of preleveling HMA shall be to the satisfaction of the Engineer and may require the use of small steel wheel rollers, plate compactors, or pneumatic rollers to avoid bridging across preleveled areas by the compaction equipment. Equipment used for the compaction of preleveling HMA shall be approved by the Engineer.

Before construction of HMA on an existing paved surface, the entire surface of the pavement shall be clean. All fatty asphalt patches, grease drippings, and other objectionable matter shall be entirely removed from the existing pavement. All pavements or bituminous surfaces shall be thoroughly cleaned of dust, soil, pavement grindings, and other foreign matter. All holes and small depressions shall be filled with an appropriate class of HMA. The surface of the patched area shall be leveled and compacted thoroughly. Prior to the application of tack coat, or paving, the condition of the surface shall be approved by the Engineer.

A tack coat of asphalt shall be applied to all paved surfaces on which any course of HMA is to be placed or abutted; except that tack coat may be omitted from clean, newly paved surfaces at the discretion of the Engineer. Tack coat shall be uniformly applied to cover the existing pavement with a thin film of residual asphalt free of streaks and bare spots at a rate between 0.02 and 0.10 gallons per square yard

of retained asphalt. The rate of application shall be approved by the Engineer. A heavy application of tack coat shall be applied to all joints. For Roadways open to traffic, the application of tack coat shall be limited to surfaces that will be paved during the same working shift. The spreading equipment shall be equipped with a thermometer to indicate the temperature of the tack coat material.

Equipment shall not operate on tacked surfaces until the tack has broken and cured. If the Contractor's operation damages the tack coat it shall be repaired prior to placement of the HMA.

The tack coat shall be CSS-1, or CSS-1h emulsified asphalt. The CSS-1 and CSS-1h emulsified asphalt may be diluted once with water at a rate not to exceed one part water to one part emulsified asphalt. The tack coat shall have sufficient temperature such that it may be applied uniformly at the specified rate of application and shall not exceed the maximum temperature recommended by the emulsified asphalt manufacturer.

5-04.3(4)A Crack Sealing

5-04.3(4)A1 General

When the Proposal includes a pay item for crack sealing, seal all cracks ¼ inch in width and greater.

Cleaning: Ensure that cracks are thoroughly clean, dry and free of all loose and foreign material when filling with crack sealant material. Use a hot compressed air lance to dry and warm the pavement surfaces within the crack immediately prior to filling a crack with the sealant material. Do not overheat pavement. Do not use direct flame dryers. Routing cracks is not required.

Sand Slurry: For cracks that are to be filled with sand slurry, thoroughly mix the components and pour the mixture into the cracks until full. Add additional CSS-1 cationic emulsified asphalt to the sand slurry as needed for workability to ensure the mixture will completely fill the cracks. Strike off the sand slurry flush with the existing pavement surface and allow the mixture to cure. Top off cracks that were not completely filled with additional sand slurry. Do not place the HMA overlay until the slurry has fully cured.

The sand slurry shall consist of approximately 20 percent CSS-1 emulsified asphalt, approximately 2 percent portland cement, water (if required), and the remainder clean Class 1 or 2 fine aggregate per section 9-03.1(2). The components shall be thoroughly mixed and then poured into the cracks and joints until full. The following day, any cracks or joints that are not completely filled shall be topped off with additional sand slurry. After the sand slurry is placed, the filler shall be struck off flush with the existing pavement surface and allowed to cure. The HMA overlay shall not be placed until the slurry has fully cured. The requirements of Section 1-06 will not apply to the portland cement and sand used in the sand slurry.

In areas where HMA will be placed, use sand slurry to fill the cracks.

In areas where HMA will not be placed, fill the cracks as follows:

1. Cracks ¼ inch to 1 inch in width - fill with hot poured sealant.
2. Cracks greater than 1 inch in width – fill with sand slurry.

Hot Poured Sealant: For cracks that are to be filled with hot poured sealant, apply the material in accordance with these requirements and the manufacturer's recommendations. Furnish a Type 1 Working Drawing of the manufacturer's product information and recommendations to the Engineer prior to the start of work, including the manufacturer's recommended heating time and temperatures, allowable storage time and temperatures after initial heating, allowable reheating criteria, and application temperature range. Confine hot poured sealant material within the crack. Clean any overflow of sealant from the pavement surface. If, in the opinion of the Engineer, the Contractor's method of sealing the cracks with hot poured sealant results in an excessive amount of material on the pavement surface, stop and correct the operation to eliminate the excess material.

5-04.3(4)A2 Crack Sealing Areas Prior to Paving

In areas where HMA will be placed, use sand slurry to fill the cracks.

5-04.3(4)A3 Crack Sealing Areas Not to be Paved

In areas where HMA will not be placed, fill the cracks as follows:

- A. Cracks ¼ inch to 1 inch in width - fill with hot poured sealant.
- B. Cracks greater than 1 inch in width – fill with sand slurry.

5-04.3(4)B Vacant

5-04.3(4)C Pavement Repair

The Contractor shall excavate pavement repair areas and shall backfill these with HMA in accordance with the details shown in the Plans and as marked in the field. The Contractor shall conduct the excavation operations in a manner that will protect the pavement that is to remain. Pavement not designated to be removed that is damaged as a result of the Contractor's operations shall be repaired by the Contractor to the satisfaction of the Engineer at no cost to the Contracting Agency. The Contractor shall excavate only within one lane at a time unless approved otherwise by the Engineer. The Contractor shall not excavate more area than can be completely finished during the same shift, unless approved by the Engineer.

Unless otherwise shown in the Plans or determined by the Engineer, excavate to a depth of 1.0 feet. The Engineer will make the final determination of the excavation depth required. The minimum width of any pavement repair area shall be 40 inches unless shown otherwise in the Plans. Before any excavation, the existing pavement shall be sawcut or shall be removed by a pavement grinder. Excavated materials will become the property of the Contractor and shall be disposed of in a Contractor-provided site off the Right of Way or used in accordance with Sections 2-02.3(3) or 9-03.21.

Asphalt for tack coat shall be required as specified in Section 5-04.3(4). A heavy application of tack coat shall be applied to all surfaces of existing pavement in the pavement repair area.

Placement of the HMA backfill shall be accomplished in lifts not to exceed 0.35-foot compacted depth. Lifts that exceed 0.35-foot of compacted depth may be accomplished with the approval of the Engineer. Each lift shall be thoroughly compacted by a mechanical tamper or a roller.

5-04.3(5) Producing/Stockpiling Aggregates and RAP

Aggregates and RAP shall be stockpiled according to the requirements of Section 3-02. Sufficient storage space shall be provided for each size of aggregate and RAP. Materials shall be removed from stockpile(s) in a manner to ensure minimal segregation when being moved to the HMA plant for

processing into the final mixture. Different aggregate sizes shall be kept separated until they have been delivered to the HMA plant.

5-04.3(5)A Vacant

5-04.3(6) Mixing

After the required amount of mineral materials, asphalt binder, recycling agent and anti-stripping additives have been introduced into the mixer the HMA shall be mixed until complete and uniform coating of the particles and thorough distribution of the asphalt binder throughout the mineral materials is ensured.

When discharged, the temperature of the HMA shall not exceed the optimum mixing temperature by more than 25°F as shown on the reference mix design report or as approved by the Engineer. Also, when a WMA additive is included in the manufacture of HMA, the discharge temperature of the HMA shall not exceed the maximum recommended by the manufacturer of the WMA additive. A maximum water content of 2 percent in the mix, at discharge, will be allowed providing the water causes no problems with handling, stripping, or flushing. If the water in the HMA causes any of these problems, the moisture content shall be reduced as directed by the Engineer.

Storing or holding of the HMA in approved storage facilities will be permitted with approval of the Engineer, but in no event shall the HMA be held for more than 24 hours. HMA held for more than 24 hours after mixing shall be rejected. Rejected HMA shall be disposed of by the Contractor at no expense to the Contracting Agency. The storage facility shall have an accessible device located at the top of the cone or about the third point. The device shall indicate the amount of material in storage. No HMA shall be accepted from the storage facility when the HMA in storage is below the top of the cone of the storage facility, except as the storage facility is being emptied at the end of the working shift.

Recycled asphalt pavement (RAP) utilized in the production of HMA shall be sized prior to entering the mixer so that a uniform and thoroughly mixed HMA is produced. If there is evidence of the recycled asphalt pavement not breaking down during the heating and mixing of the HMA, the Contractor shall immediately suspend the use of the RAP until changes have been approved by the Engineer. After the required amount of mineral materials, RAP, new asphalt binder and asphalt rejuvenator have been introduced into the mixer the HMA shall be mixed until complete and uniform coating of the particles and thorough distribution of the asphalt binder throughout the mineral materials, and RAP is ensured.

5-04.3(7) Spreading and Finishing

The mixture shall be laid upon an approved surface, spread, and struck off to the grade and elevation established. HMA pavers complying with Section 5-04.3(3) shall be used to distribute the mixture. Unless otherwise directed by the Engineer, the nominal compacted depth of any layer of any course shall not exceed the following:

HMA Class 1"	0.35 feet
HMA Class ¾" and HMA Class ½"	
wearing course	0.30 feet
other courses	0.35 feet
HMA Class ⅜"	0.15 feet

On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical, the paving may be done with other equipment or by hand.

When more than one JMF is being utilized to produce HMA, the material produced for each JMF shall be placed by separate spreading and compacting equipment. The intermingling of HMA produced from more than one JMF is prohibited. Each strip of HMA placed during a work shift shall conform to a single JMF established for the class of HMA specified unless there is a need to make an adjustment in the JMF.

5-04.3(8) Aggregate Acceptance Prior to Incorporation in HMA

For HMA accepted by nonstatistical evaluation the aggregate properties of sand equivalent, uncompacted void content and fracture will be evaluated in accordance with Section 3-04. Sampling and testing of aggregates for HMA accepted by commercial evaluation will be at the option of the Engineer.

5-04.3(9) HMA Mixture Acceptance

Acceptance of HMA shall be as provided under nonstatistical, or commercial evaluation.

Nonstatistical evaluation will be used for the acceptance of HMA unless Commercial Evaluation is specified.

Commercial evaluation will be used for Commercial HMA and for other classes of HMA in the following applications: sidewalks, road approaches, ditches, slopes, paths, trails, gores, prelevel, temporary pavement, and pavement repair. Other nonstructural applications of HMA accepted by commercial evaluation shall be as approved by the Engineer. Sampling and testing of HMA accepted by commercial evaluation will be at the option of the Engineer.

The mix design will be the initial JMF for the class of HMA. The Contractor may request a change in the JMF. Any adjustments to the JMF will require the approval of the Engineer and may be made in accordance with this section.

HMA Tolerances and Adjustments

1. **Job Mix Formula Tolerances** – The constituents of the mixture at the time of acceptance shall be within tolerance. The tolerance limits will be established as follows:

For Asphalt Binder and Air Voids (Va), the acceptance limits are determined by adding the tolerances below to the approved JMF values. These values will also be the Upper Specification Limit (USL) and Lower Specification Limit (LSL) required in Section 1-06.2(2)D2

Property	Non-Statistical Evaluation	Commercial Evaluation
Asphalt Binder	+/- 0.5%	+/- 0.7%
Air Voids, Va	2.5% min. and 5.5% max	N/A

For Aggregates in the mixture:

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

Aggregate Percent Passing	Non-Statistical Evaluation	Commercial Evaluation
1", ¾", ½", and 3/8" sieves	+/- 6%	+/- 8%

No. 4 sieve	+/-6%	+/- 8%
No. 8 Sieve	+/- 6%	+/-8%
No. 200 sieve	+/- 2.0%	+/- 3.0%

- b. Second, adjust the preliminary upper and lower acceptance limits determined from step (a) the minimum amount necessary so that none of the aggregate properties are outside the control points in Section 9-03.8(6). The resulting values will be the upper and lower acceptance limits for aggregates, as well as the USL and LSL required in Section 1-06.2(2)D2.
2. Job Mix Formula Adjustments – An adjustment to the aggregate gradation or asphalt binder content of the JMF requires approval of the Engineer. Adjustments to the JMF will only be considered if the change produces material of equal or better quality and may require the development of a new mix design if the adjustment exceeds the amounts listed below.
 - a. **Aggregates** –2 percent for the aggregate passing the 1½", 1", ¾", ½", ⅜", and the No. 4 sieves, 1 percent for aggregate passing the No. 8 sieve, and 0.5 percent for the aggregate passing the No. 200 sieve. The adjusted JMF shall be within the range of the control points in Section 9-03.8(6).
 - b. **Asphalt Binder Content** – The Engineer may order or approve changes to asphalt binder content. The maximum adjustment from the approved mix design for the asphalt binder content shall be 0.3 percent

5-04.3(9)A Vacant

5-04.3(9)B Vacant

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

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

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

A lot is represented by randomly selected samples of the same mix design that will be tested for acceptance. A lot is defined as the total quantity of material or work produced for each Job Mix Formula placed. Only one lot per JMF is expected. A subplot shall be equal to one day's production or 800 tons, whichever is less except that the final subplot will be a minimum of 400 tons and may be increased to 1200 tons.

All of the test results obtained from the acceptance samples from a given lot shall be evaluated collectively. If the Contractor requests a change to the JMF that is approved, the material produced after the change will be evaluated on the basis of the new JMF for the remaining sublots in the current lot and for acceptance of subsequent lots. For a lot in progress with a CPF less than 0.75, a new lot will begin at the Contractor's request after the Engineer is satisfied that material conforming to the Specifications can be produced.

Sampling and testing for evaluation shall be performed on the frequency of one sample per subplot.

5-04.3(9)C2 Mixture Nonstatistical Evaluation Sampling

Samples for acceptance testing shall be obtained by the Contractor when ordered by the Engineer. The Contractor shall sample the HMA mixture in the presence of the Engineer and in accordance with

AASH-TO T 168. A minimum of three samples should be taken for each class of HMA placed on a project. If used in a structural application, at least one of the three samples shall to be tested.

Sampling and testing HMA in a Structural application where quantities are less than 400 tons is at the discretion of the Engineer.

For HMA used in a structural application and with a total project quantity less than 800 tons but more than 400 tons, a minimum of one acceptance test shall be performed. In all cases, a minimum of 3 samples will be obtained at the point of acceptance, a minimum of one of the three samples will be tested for conformance to the JMF:

- If the test results are found to be within specification requirements, additional testing will be at the Engineer's discretion.
- If test results are found not to be within specification requirements, additional testing of the remaining samples to determine a Composite Pay Factor (CPF) shall be performed.

5-04.3(9)C3 Mixture Nonstatistical Evaluation – Acceptance Testing

Testing of HMA for compliance of V_a will at the option of the Contracting Agency. If tested, compliance of V_a will use WSDOT SOP 731.

Testing for compliance of asphalt binder content will be by WSDOT FOP for AASHTO T 308.

Testing for compliance of gradation will be by FOP for WAQTC T 27/T 11.

5-04.3(9)C4 Mixture Nonstatistical Evaluation – Pay Factors

For each lot of material falling outside the tolerance limits in 5-04.3(9), the Contracting Agency will determine a Composite Pay Factor (CPF) using the following price adjustment factors:

Table of Price Adjustment Factors	
Constituent	Factor "F"
All aggregate passing: 1½", 1", ¾", ½", ⅜" and No.4 sieves	2
All aggregate passing No. 8 sieve	15
All aggregate passing No. 200 sieve	20
Asphalt binder	40
Air Voids (V_a) (where applicable)	20

Each lot of HMA produced under Nonstatistical Evaluation and having all constituents falling within the tolerance limits of the job mix formula shall be accepted at the unit Contract price with no further evaluation. When one or more constituents fall outside the nonstatistical tolerance limits in the Job Mix Formula shown in Table of Price Adjustment Factors, the lot shall be evaluated in accordance with Section 1-06.2 to determine the appropriate CPF. The nonstatistical tolerance limits will be used in the calculation of the CPF and the maximum CPF shall be 1.00. When less than three sublots exist, backup samples of the existing sublots or samples from the Roadway shall be tested to provide a minimum of three sets of results for evaluation.

5-04.3(9)C5 Vacant

5-04.3(9)C6 Mixture Nonstatistical Evaluation – Price Adjustments

For each lot of HMA mix produced under Nonstatistical Evaluation when the calculated CPF is less than 1.00, a Nonconforming Mix Factor (NCMF) will be determined. The NCMF equals the algebraic difference of CPF minus 1.00 multiplied by 60 percent. The total job mix compliance price adjustment will be calculated as the product of the NCMF, the quantity of HMA in the lot in tons, and the unit Contract price per ton of mix.

If a constituent is not measured in accordance with these Specifications, its individual pay factor will be considered 1.00 in calculating the Composite Pay Factor (CPF).

5-04.3(9)C7 Mixture Nonstatistical Evaluation - Retests

The Contractor may request a subplot be retested. To request a retest, the Contractor shall submit a written request within 7 calendar days after the specific test results have been received. A split of the original acceptance sample will be retested. The split of the sample will not be tested with the same tester that ran the original acceptance test. The sample will be tested for a complete gradation analysis, asphalt binder content, and, at the option of the agency, V_a . The results of the retest will be used for the acceptance of the HMA in place of the original subplot sample test results. The cost of testing will be deducted from any monies due or that may come due the Contractor under the Contract at the rate of \$500 per sample.

5-04.3 (9)D Mixture Acceptance – Commercial Evaluation

If sampled and tested, HMA produced under Commercial Evaluation and having all constituents falling within the tolerance limits of the job mix formula shall be accepted at the unit Contract price with no further evaluation. When one or more constituents fall outside the commercial tolerance limits in the Job Mix Formula shown in 5-04.3(9), the lot shall be evaluated in accordance with Section 1-06.2 to determine the appropriate CPF. The commercial tolerance limits will be used in the calculation of the CPF and the maximum CPF shall be 1.00. When less than three sublots exist, backup samples of the existing sublots or samples from the street shall be tested to provide a minimum of three sets of results for evaluation.

For each lot of HMA mix produced and tested under Commercial Evaluation when the calculated CPF is less than 1.00, a Nonconforming Mix Factor (NCMF) will be determined. The NCMF equals the algebraic difference of CPF minus 1.00 multiplied by 60 percent. The Job Mix Compliance Price Adjustment will be calculated as the product of the NCMF, the quantity of HMA in the lot in tons, and the unit Contract price per ton of mix.

If a constituent is not measured in accordance with these Specifications, its individual pay factor will be considered 1.00 in calculating the Composite Pay Factor (CPF).

5-04.3(10) HMA Compaction Acceptance

HMA mixture accepted by nonstatistical evaluation that is used in traffic lanes, including lanes for intersections, ramps, truck climbing, weaving, and speed change, and having a specified compacted course thickness greater than 0.10-foot, shall be compacted to a specified level of relative density. The specified level of relative density shall be a Composite Pay Factor (CPF) of not less than 0.75 when evaluated in accordance with Section 1-06.2, using a LSL of 92.0 (minimum of 92 percent of the maximum density). The maximum density shall be determined by WSDOT FOP for AASHTO T 729. The specified level of density attained will be determined by the evaluation of the density of the pavement. The density of the pavement shall be determined in accordance with WSDOT FOP for WAQTC TM 8, except that gauge correlation will be at the discretion of the Engineer, when using the nuclear density gauge and WSDOT SOP 736 when using cores to determine density.

Tests for the determination of the pavement density will be taken in accordance with the required procedures for measurement by a nuclear density gauge or roadway cores after completion of the finish rolling.

If the Contracting Agency uses a nuclear density gauge to determine density the test procedures FOP for WAQTC TM 8 and WSDOT SOP T 729 will be used on the day the mix is placed and prior to opening to traffic.

Roadway cores for density may be obtained by either the Contracting Agency or the Contractor in accordance with WSDOT SOP 734. The core diameter shall be 4-inches minimum, unless otherwise approved by the Engineer. Roadway cores will be tested by the Contracting Agency in accordance with WSDOT FOP for AASHTO T 166.

If the Contract includes the Bid item "Roadway Core" the cores shall be obtained by the Contractor in the presence of the Engineer on the same day the mix is placed and at locations designated by the Engineer. If the Contract does not include the Bid item "Roadway Core" the Contracting Agency will obtain the cores.

For a lot in progress with a CPF less than 0.75, a new lot will begin at the Contractor's request after the Engineer is satisfied that material conforming to the Specifications can be produced.

HMA mixture accepted by commercial evaluation and HMA constructed under conditions other than those listed above shall be compacted on the basis of a test point evaluation of the compaction train. The test point evaluation shall be performed in accordance with instructions from the Engineer. The number of passes with an approved compaction train, required to attain the maximum test point density, shall be used on all subsequent paving.

HMA for preleveling shall be thoroughly compacted. HMA that is used for preleveling wheel rutting shall be compacted with a pneumatic tire roller unless otherwise approved by the Engineer.

Test Results

For a subplot 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 subplot. The relative density of the core will replace the relative density determined by the nuclear density gauge for the subplot 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 subplot have been provided or made available to the Contractor. Core locations shall be outside of wheel paths and as determined by the Engineer. Traffic control shall be provided by the Contractor as requested by the Engineer. Failure by the Contractor to provide the requested traffic control will result in forfeiture of the request for cores. When the CPF for the lot based on the results of the HMA cores is less than 1.00, the cost for the coring will be deducted from any monies due or that may become due the Contractor under the Contract at the rate of \$200 per core and the Contractor shall pay for the cost of the traffic control.

5-04.3(10)A HMA Compaction – General Compaction Requirements

Compaction shall take place when the mixture is in the proper condition so that no undue displacement, cracking, or shoving occurs. Areas inaccessible to large compaction equipment shall be compacted by other mechanical means. Any HMA that becomes loose, broken, contaminated, shows an excess or deficiency of asphalt, or is in any way defective, shall be removed and replaced with new hot mix that shall be immediately compacted to conform to the surrounding area.

The type of rollers to be used and their relative position in the compaction sequence shall generally be the Contractor's option, provided the specified densities are attained. Unless the Engineer has approved otherwise, rollers shall only be operated in the static mode when the internal temperature of the mix is less than 175°F. Regardless of mix temperature, a roller shall not be operated in a mode that results in checking or cracking of the mat. Rollers shall only be operated in static mode on bridge decks.

5-04.3(10)B HMA Compaction – Cyclic Density

Low cyclic density areas are defined as spots or streaks in the pavement that are less than 90 percent of the theoretical maximum density. At the Engineer's discretion, the Engineer may evaluate the HMA pavement for low cyclic density, and when doing so will follow WSDOT SOP 733. A \$500 Cyclic Density Price Adjustment will be assessed for any 500-foot section with two or more density readings below 90 percent of the theoretical maximum density.

5-04.3(10)C Vacant

5-04.3(10)D HMA Nonstatistical Compaction

5-04.3(10)D1 HMA Nonstatistical Compaction – Lots and Sublots

HMA compaction which is accepted by nonstatistical evaluation will be based on acceptance testing performed by the Contracting Agency dividing the project into compaction lots.

A lot is represented by randomly selected samples of the same mix design that will be tested for acceptance. A lot is defined as the total quantity of material or work produced for each Job Mix Formula placed. Only one lot per JMF is expected. A subplot shall be equal to one day's production or 400 tons,

whichever is less except that the final subplot will be a minimum of 200 tons and may be increased to 800 tons. Testing for compaction will be at the rate of 5 tests per subplot per WSDOT T 738.

The subplot locations within each density lot will be determined by the Engineer. For a lot in progress with a CPF less than 0.75, a new lot will begin at the Contractor's request after the Engineer is satisfied that material conforming to the Specifications can be produced.

HMA mixture accepted by commercial evaluation and HMA constructed under conditions other than those listed above shall be compacted on the basis of a test point evaluation of the compaction train. The test point evaluation shall be performed in accordance with instructions from the Engineer. The number of passes with an approved compaction train, required to attain the maximum test point density, shall be used on all subsequent paving.

HMA for preleveling shall be thoroughly compacted. HMA that is used to prelevel wheel ruts shall be compacted with a pneumatic tire roller unless otherwise approved by the Engineer.

5-04.3(10)D2 HMA Compaction Nonstatistical Evaluation – Acceptance Testing

The location of the HMA compaction acceptance tests will be randomly selected by the Engineer from within each subplot, with one test per subplot.

5-04.3(10)D3 HMA Nonstatistical Compaction – Price Adjustments

For each compaction lot with one or two sublots, having all sublots attain a relative density that is 92 percent of the reference maximum density the HMA shall be accepted at the unit Contract price with no further evaluation. When a subplot does not attain a relative density that is 92 percent of the reference maximum density, the lot shall be evaluated in accordance with Section 1-06.2 to determine the appropriate CPF. The maximum CPF shall be 1.00, however, lots with a calculated CPF in excess of 1.00 will be used to offset lots with CPF values below 1.00 but greater than 0.90. Lots with CPF lower than 0.90 will be evaluated for compliance per 5-04.3(11). Additional testing by either a nuclear moisture-density gauge or cores will be completed as required to provide a minimum of three tests for evaluation.

For compaction below the required 92% a Non-Conforming Compaction Factor (NCCF) will be determined. The NCCF equals the algebraic difference of CPF minus 1.00 multiplied by 40 percent. The Compaction Price Adjustment will be calculated as the product of CPF, the quantity of HMA in the compaction control lot in tons, and the unit Contract price per ton of mix.

5-04.3(11) Reject Work

5-04.3(11)A Reject Work General

Work that is defective or does not conform to Contract requirements shall be rejected. The Contractor may propose, in writing, alternatives to removal and replacement of rejected material. Acceptability of such alternative proposals will be determined at the sole discretion of the Engineer. HMA that has been rejected is subject to the requirements in Section 1-06.2(2) and this specification, and the Contractor shall submit a corrective action proposal to the Engineer for approval.

5-04.3(11)B Rejection by Contractor

The Contractor may, prior to sampling, elect to remove any defective material and replace it with new material. Any such new material will be sampled, tested, and evaluated for acceptance.

5-04.3(11)C Rejection Without Testing (Mixture or Compaction)

The Engineer may, without sampling, reject any batch, load, or section of Roadway that appears defective. Material rejected before placement shall not be incorporated into the pavement. Any rejected section of Roadway shall be removed.

No payment will be made for the rejected materials or the removal of the materials unless the Contractor requests that the rejected material be tested. If the Contractor elects to have the rejected material tested, a minimum of three representative samples will be obtained and tested. Acceptance of rejected material will be based on conformance with the nonstatistical acceptance Specification. If the CPF for the rejected material is less than 0.75, no payment will be made for the rejected material; in addition, the cost of sampling and testing shall be borne by the Contractor. If the CPF is greater than or equal to 0.75, the cost of sampling and testing will be borne by the Contracting Agency. If the material is rejected before placement and the CPF is greater than or equal to 0.75, compensation for the rejected material will be at a CPF of 0.75. If rejection occurs after placement and the CPF is greater than or equal to 0.75, compensation for the rejected material will be at the calculated CPF with an addition of 25 percent of the unit Contract price added for the cost of removal and disposal.

5-04.3(11)D Rejection - A Partial Sublot

In addition to the random acceptance sampling and testing, the Engineer may also isolate from a normal sublot any material that is suspected of being defective in relative density, gradation or asphalt binder content. Such isolated material will not include an original sample location. A minimum of three random samples of the suspect material will be obtained and tested. The material will then be statistically evaluated as an independent lot in accordance with Section 1-06.2(2).

5-04.3(11)E Rejection - An Entire Sublot

An entire sublot that is suspected of being defective may be rejected. When a sublot is rejected a minimum of two additional random samples from this sublot will be obtained. These additional samples and the original sublot will be evaluated as an independent lot in accordance with Section 1-06.2(2).

5-04.3(11)F Rejection - A Lot in Progress

The Contractor shall shut down operations and shall not resume HMA placement until such time as the Engineer is satisfied that material conforming to the Specifications can be produced:

1. When the Composite Pay Factor (CPF) of a lot in progress drops below 1.00 and the Contractor is taking no corrective action, or
2. When the Pay Factor (PF) for any constituent of a lot in progress drops below 0.95 and the Contractor is taking no corrective action, or
3. When either the PFi for any constituent or the CPF of a lot in progress is less than 0.75.

5-04.3(11)G Rejection - An Entire Lot (Mixture or Compaction)

An entire lot with a CPF of less than 0.75 will be rejected.

5-04.3(12) Joints

5-04.3(12)A HMA Joints

5-04.3(12)A1 Transverse Joints

The Contractor shall conduct operations such that the placing of the top or wearing course is a continuous operation or as close to continuous as possible. Unscheduled transverse joints will be allowed and the roller may pass over the unprotected end of the freshly laid mixture only when the placement of the course must be discontinued for such a length of time that the mixture will cool below compaction temperature. When the Work is resumed, the previously compacted mixture shall be cut back to produce a slightly beveled edge for the full thickness of the course.

A temporary wedge of HMA constructed on a 20H:1V shall be constructed where a transverse joint as a result of paving or planing is open to traffic. The HMA in the temporary wedge shall be separated from the permanent HMA by strips of heavy wrapping paper or other methods approved by the Engineer. The wrapping paper shall be removed and the joint trimmed to a slightly beveled edge for the full thickness of the course prior to resumption of paving.

The material that is cut away shall be wasted and new mix shall be laid against the cut. Rollers or tamping irons shall be used to seal the joint.

5-04.3(12)A2 Longitudinal Joints

The longitudinal joint in any one course shall be offset from the course immediately below by not more than 6 inches nor less than 2 inches. All longitudinal joints constructed in the wearing course shall be located at a lane line or an edge line of the Traveled Way. A notched wedge joint shall be constructed along all longitudinal joints in the wearing surface of new HMA unless otherwise approved by the Engineer. The notched wedge joint shall have a vertical edge of not less than the maximum aggregate size or more than 1/2 of the compacted lift thickness and then taper down on a slope not steeper than 4H:1V. The sloped portion of the HMA notched wedge joint shall be uniformly compacted.

5-04.3(12)B Bridge Paving Joint Seals

5-04.3(12)B1 HMA Sawcut and Seal

Prior to placing HMA on the bridge deck, establish sawcut alignment points at both ends of the bridge paving joint seals to be placed at the bridge ends, and at interior joints within the bridge deck when and where shown in the Plans. Establish the sawcut alignment points in a manner that they remain functional for use in aligning the sawcut after placing the overlay.

Submit a Type 1 Working Drawing consisting of the sealant manufacturer's application procedure.

Construct the bridge paving joint seal as specified on the Plans and in accordance with the detail shown in the Standard Plans. Construct the sawcut in accordance with the detail shown in the Standard Plan. Construct the sawcut in accordance with Section 5-05.3(8)B and the manufacturer's application procedure.

5-04.3(12)B2 Paved Panel Joint Seal

Construct the paved panel joint seal in accordance with the requirements specified in section 5-04.3(12)B1 and the following requirement:

1. Clean and seal the existing joint between concrete panels in accordance with Section 5-01.3(8) and the details shown in the Standard Plans.

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5-04.3(13) Surface Smoothness

The completed surface of all courses shall be of uniform texture, smooth, uniform as to crown and grade, and free from defects of all kinds. The completed surface of the wearing course shall not vary more than 1/8 inch from the lower edge of a 10-foot straightedge placed on the surface parallel to the centerline. The transverse slope of the completed surface of the wearing course shall vary not more than 1/4 inch in 10 feet from the rate of transverse slope shown in the Plans.

When deviations in excess of the above tolerances are found that result from a high place in the HMA, the pavement surface shall be corrected by one of the following methods:

1. Removal of material from high places by grinding with an approved grinding machine, or
2. Removal and replacement of the wearing course of HMA, or
3. By other method approved by the Project Engineer.

Correction of defects shall be carried out until there are no deviations anywhere greater than the allowable tolerances.

Deviations in excess of the above tolerances that result in a low place in the HMA and deviations resulting from a high place where corrective action, in the opinion of the Project Engineer, will not produce satisfactory results will be removed and replaced at the contractor's expense.

When Portland cement concrete pavement is to be placed on HMA, the surface tolerance of the HMA shall be such that no surface elevation lies above the plan grade minus the specified plan depth of Portland cement concrete pavement. Prior to placing the Portland cement concrete pavement, any such irregularities shall be brought to the required tolerance by grinding or other means approved by the Project Engineer.

When utility appurtenances such as manhole covers and valve boxes are located in the traveled way, the roadway shall be paved before the utility appurtenances are adjusted to the finished grade.

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

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

Locations of existing surfacing to be planed are as shown in the Drawings.

Where planing an existing pavement is specified in the Contract, the Contractor must remove existing surfacing material and to reshape the surface to remove irregularities. The finished product must be a prepared surface acceptable for receiving an HMA overlay.

Use the cold milling method for planing unless otherwise specified in the Contract. Do not use the planer on the final wearing course of new HMA.

Conduct planing operations in a manner that does not tear, break, burn, or otherwise damage the surface which is to remain. The finished planed surface must be slightly grooved or roughened and must be free from gouges, deep grooves, ridges, or other imperfections. The Contractor must repair any damage to the surface by the Contractor's planing equipment, using an Engineer approved method.

Repair or replace any metal castings and other surface improvements damaged by planing, as determined by the Engineer.

A tapered wedge cut must be planed longitudinally along curb lines sufficient to provide a minimum of 4 inches of curb reveal after placement and compaction of the final wearing course. The dimensions of the wedge must be as shown on the Drawings or as specified by the Engineer.

A tapered wedge cut must also be made at transitions to adjoining pavement surfaces (meet lines) where butt joints are shown on the Drawings. Cut butt joints in a straight line with vertical faces 2 inches or more in height, producing a smooth transition to the existing adjoining pavement.

After planing is complete, planed surfaces must be swept, cleaned, and if required by the Contract, patched and preleveled.

The Engineer may direct additional depth planing. Before performing this additional depth planing, the Contractor must conduct a hidden metal in pavement detection survey as specified in Section 5-04.3(14)A.

5-04.3(14)A Pre-Planing Metal Detection Check

Before starting planing of pavements, and before any additional depth planing required by the Engineer, the Contractor must conduct a physical survey of existing pavement to be planed with equipment that can identify hidden metal objects.

Should such metal be identified, promptly notify the Engineer.

See Section 1-07.16(1) regarding the protection of survey monumentation that may be hidden in pavement.

The Contractor is solely responsible for any damage to equipment resulting from the Contractor's failure to conduct a pre-planing metal detection survey, or from the Contractor's failure to notify the Engineer of any hidden metal that is detected.

5-04.3(14)B Paving and Planing Under Traffic

5-04.3(14)B1 General

In addition the requirements of Section 1-07.23 and the traffic controls required in Section 1-10, unless otherwise specified by the Contract Documents or approved by the Engineer in writing, the Contractor shall comply with the following:

1. Intersections:

- a. Keep intersections open to traffic at all times, except when paving or planing operations through an intersection requires closure. Such closure must be kept to the minimum time required to place and compact the HMA mixture, or plane as appropriate. For paving, schedule such closure to individual lanes or portions thereof that allows the traffic volumes and schedule of traffic volumes required in the approved traffic control plan. Schedule work so that adjacent intersections are not impacted at the same time and comply with the traffic control restrictions required by the Traffic Engineer. Each individual intersection closure or partial closure, must be addressed in the traffic control plan, which must be submitted to and accepted by the Engineer, see Section 1-10.2(2).
 - b. When planing or paving and related construction must occur in an intersection, consider scheduling and sequencing such work into quarters of the intersection, or half or more of an intersection with side street detours. Be prepared to sequence the work to individual lanes or portions thereof.
 - c. Should closure of the intersection in its entirety be necessary, and no trolley service is impacted, keep such closure to the minimum time required to place and compact the HMA mixture, plane, remove asphalt, tack coat, and as needed.
 - d. Any work in an intersection requires advance warning in both signage and a number of Working Days advance notice as determined by the Engineer, to alert traffic and emergency services of the intersection closure or partial closure.
 - e. Allow new compacted HMA asphalt to cool to ambient temperature before any traffic is allowed on it. Traffic is not allowed on newly placed asphalt until approval has been obtained from the Engineer.
2. Temporary centerline marking, post-paving temporary marking, temporary stop bars, and maintaining temporary pavement marking must comply with Section 8-23.
3. Permanent pavement marking must comply with Section 8-22.

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

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

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

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

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

1. A copy of the accepted traffic control plan, see Section 1-10.2(2), detailing each day's traffic control as it relates to the specific requirements of that day's planing and paving. Briefly describe the sequencing of traffic control consistent with the proposed planing and paving sequence, and scheduling of placement of temporary pavement markings and channelizing devices after each day's planing, and paving.
2. A copy of each intersection's traffic control plan.
3. Haul routes from Supplier facilities, and locations of temporary parking and staging areas, including return routes. Describe the complete round trip as it relates to the sequencing of paving operations.
4. Names and locations of HMA Supplier facilities to be used.
5. List of all equipment to be used for paving.
6. List of personnel and associated job classification assigned to each piece of paving equipment.
7. Description (geometric or narrative) of the scheduled sequence of planing and of paving, and intended area of planing and of paving for each day's work, must include the directions of proposed planing and of proposed paving, sequence of adjacent lane paving, sequence of skipped lane paving, intersection planing and paving scheduling and sequencing, and proposed notifications and coordinations to be timely made. The plan must show HMA joints relative to the final pavement marking lane lines.
8. Names, job titles, and contact information for field, office, and plant supervisory personnel.
9. A copy of the approved Mix Designs.
10. Tonnage of HMA to be placed each day.
11. Approximate times and days for starting and ending daily operations.

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

At least 2 Working Days before the first paving operation and the first planing operation, or as scheduled by the Engineer for future paving and planing operations to ensure the Contractor has adequately prepared for notifying and coordinating as required in the Contract, the Contractor must be prepared to discuss that day's operations as they relate to other entities and to public safety and convenience, including driveway and business access, garbage truck operations, Metro transit operations and working around energized overhead wires, school and nursing home and hospital and other accesses, other contractors who may be operating in the area, pedestrian and bicycle traffic, and emergency services. The Contractor, and Subcontractors that may be part of that day's operations, must meet with the Engineer and discuss the proposed operation as it relates to the submitted planing plan and paving plan, approved traffic control plan, and public convenience and safety. Such discussion includes, but is not limited to:

1. General for both Paving Plan and for Planing Plan:
 - a. The actual times of starting and ending daily operations.

- b. In intersections, how to break up the intersection, and address traffic control and signalization for that operation, including use of peace officers.
 - c. The sequencing and scheduling of paving operations and of planing operations, as applicable, as it relates to traffic control, to public convenience and safety, and to other contractors who may operate in the Project Site.
 - d. Notifications required of Contractor activities, and coordinating with other entities and the public as necessary.
 - e. Description of the sequencing of installation and types of temporary pavement markings as it relates to planning and to paving.
 - f. Description of the sequencing of installation of, and the removal of, temporary pavement patch material around exposed castings and as may be needed
 - g. Description of procedures and equipment to identify hidden metal in the pavement, such as survey monumentation, monitoring wells, street car rail, and castings, before planning, see Section 5-04.3(14)B2.
 - h. Description of how flaggers will be coordinated with the planing, paving, and related operations.
 - i. Description of sequencing of traffic controls for the process of rigid pavement base repairs.
 - j. Other items the Engineer deems necessary to address.
2. Paving – additional topics:
- a. When to start applying tack and coordinating with paving.
 - b. Types of equipment and numbers of each type equipment to be used. If more pieces of equipment than personnel are proposed, describe the sequencing of the personnel operating the types of equipment. Discuss the continuance of operator personnel for each type equipment as it relates to meeting Specification requirements.
 - c. Number of JMFs to be placed, and if more than one JMF how the Contractor will ensure different JMFs are distinguished, how pavers and MTVs are distinguished if more than one JMF is being placed at the time, and how pavers and MTVs are cleaned so that one JMF does not adversely influence the other JMF.
 - d. Description of contingency plans for that day's operations such as equipment breakdown, rain out, and Supplier shutdown of operations.
 - e. Number of sublots to be placed, sequencing of density testing, and other sampling and testing.

5-04.3(15) Sealing Pavement Surfaces

Apply a fog seal where shown in the plans. Construct the fog seal in accordance with Section 5-02.3. Unless otherwise approved by the Engineer, apply the fog seal prior to opening to traffic.

5-04.3(16) HMA Road Approaches

HMA approaches shall be constructed at the locations shown in the Plans or where staked by the Engineer. The Work shall be performed in accordance with Section 5-04.

5-04.4 Measurement

“HMA Cl. ½ In. PG 58H-22” and “Commercial HMA Driveway” 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.

“Asphalt Wedge Curb” will be measured per linear foot along the finished flowline.

Cold Mix, if used by the Contractor, will not be measured for separate payment and shall be considered incidental to the lump sum bid item “Project Temporary Traffic Control”.

HMA used for temporary patching will not be measured for separate payment and shall be considered included in the lump sum item “Project Temporary Traffic Control”.

HMA shall be measured based on certified truck tickets collected on the day of paving.

No measurement will be made for asphalt used in conjunction with adjusting utilities to finished grade or used for any temporary purposes.

5-04.5 Payment

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

“HMA Cl. ½ In. PG 58H-22”, per ton.

“Commercial HMA Driveway”, per ton.

The unit Contract price per ton for “HMA Cl. ½ In. PG 58H-22” and “Commercial HMA Driveway” shall be full compensation for all costs, including anti-stripping additive, incurred to carry out the requirements of Section 5-04 except for those costs included in other items which are included in this Subsection and which are included in the Proposal.

All costs for minimizing drop-offs and maintaining access to existing streets and driveways including, but not limited to steel sheeting, cold mix, and channelization devices, shall be included in the lump sum bid item “Project Temporary Traffic Control”. No additional or separate compensation will be considered.

“Asphalt Wedge Curb”, per linear foot.

The unit bid price of “Asphalt Wedge Curb” shall include all necessary labor and equipment to satisfactorily place the wedge curb as detailed on the Plans. The material costs for “Asphalt Wedge Curb” shall be paid per the bid item “HMA Cl. ½” PG 58H-22”, per ton.

5-05 CEMENT CONCRETE PAVEMENT

5-05.1 Description

Supplement this section with the following:

This work shall also include constructing decorative stamped cement concrete pavement within the median, as shown on the Plans.

5-05.2 Materials

Supplement this section with the following:

Cement concrete pavement shall be constructed with a Class 4000 Portland Cement Concrete mix conforming to the requirements of Section 6-02.

5-05.3 Construction Requirements

Supplement this section with the following:

Full depth expansion joints and contraction/control joints shall be constructed with 10-foot max spacing, or as approved by the Engineer.

Stamped Cement Concrete Pavement shall be installed flush with adjacent cement concrete curb.

Stamping and texturing tools for Stamped Cement Concrete Pavement will require four (4) weeks lead time per stamping tool.

Antique release and sealer shall be applied evenly to the surface of fresh concrete according to the manufacturer's specifications.

Catalog product cut sheets for stamping tools, antique release and sealer shall be submitted to Engineer for approval prior to providing mock-up samples.

Contractor shall provide pavement and joint layout in the field for Engineer approval prior to installation.

5-05.3(11) Finishing

Supplement this section with the following:

Finish of cement concrete pavement for driveways shall match as closely as possible to the existing finish of private driveways.

Stamped Cement Concrete Pavement noted in the Plans within the median shall receive stamp pattern and finish.

Finish of Stamped Cement Concrete Pavement shall be achieved using 'Cobblestone' pattern - BST5000 textured mats and Chiseled Slate – BST7618 touch-up skins as well as Chiseled Slate – BSTR0976 touch-up roller sleeve available from Butterfield Color, phone 1-800-282-3388, or approved equal. Cobblestone pattern surface texture shall be achieved using imprinting texture, stencils, detailing tools to create a running bond pattern of square and rectangular shapes with grout lines. Edges, corners and texture shall be as shown on the Plans.

Stamped Cement Concrete Pavement shall receive antiquing release agent and sealer (including additive) application, as follows:

- Butterfield Color® #PT12 Perma-Tique Antiquing Agent – Storm Gray
- Butterfield Color® Clear-Guard™ Cure & Seal

Completed work not meeting the visual quality of the approved sample shall be removed and replaced by the Contractor at no additional cost to the Owner.

5-05.4 Measurement

Supplement this section with the following:

“Stamped Cement Conc. Pavement” will be measured per square foot.

5-05.5 Payment

Supplement this section with the following:

“Stamped Cement Conc. Pavement”, per square foot.

The unit Contract price for “Stamped Cement Conc. Pavement” shall be full compensation for all costs necessary and incidental to installing stamped cement concrete pavement, including but not limited to excavation; crushed surfacing top course; compaction; forming, cement concrete, jointing, stamping, welded wire mesh, curing and sealing.

END OF DIVISION 5

DIVISION 6 STRUCTURES

6-14 GEOSYNTHETIC RETAINING WALLS

6-14.1 Description

Supplement this Section with the following:

This work consists of furnishing and installing retaining walls with Flex MSE systems as shown on the Plans and specified herein, or an approved equal.

6-14.2 Materials

Supplement this Section with the following:

Flex MSE Vegetated Geomodular Block Faced Structural Earth Wall Materials

Flex MSE Bag

Mechanical Property	Test Method	M.A.R.V.	
GRAB TENSILE STRENGTH	ASTM D4632	90 lbs	401 N
ELONGATION	ASTM D4632	50 %	
TRAP TEAR	ASTM D4533	40 lbs	178 N
CBR PUNCTURE	ASTM D6241	250 lbs	1113 N
APPARENT OPENING SIZE	ASTM D4751	#60 Sieve	.25 mm
PERMITTIVITY	ASTM D4491	2.00 SEC-1	
WATER FLOW RATE	ASTM D4491	145 gpm/ft2	5907 l/min/m2
UV RESISTANCE @ 500 HOURS	ASTM D4355	70 %	
MASS/UNIT WEIGHT	ASTM D5261	3.8 oz/yd2	128.8 g/m2

The retaining walls have been designed on the basis of Flex MSE Bags (12" width x 30" length x 6" height). Actual Filled Bag dimensions may vary. Alternative methods of support system, including other Geobag facings, will require redesign of the walls by the Engineer and may not be substituted without written authorization from the engineer of record.

Flex MSE Bag fill material

Flex MSE Bag fill material must conform to the project specifications. Flex MSE Vegetative Bag fill material is mixed by volume at 66% 3/4" minus granular content (less than 5% Fines) and 34% high quality compost or compost-amended clay free topsoil. Deviations from the Specification must be approved by the Engineer. This Vegetative Medium Specification is considered proprietary to Flex MSE and nontransferable in the event of any material change.

Flex MSE Plate

Property	Test Method	M.A.R.V.
DENSITY	ASTM D792	.903G/cc
MELT FLOW	ASTM D1238	20.0/10 g/min
TENSILE STRENGTH AT YIELD	ASTM D638	4,800 psi
FLEXURAL MODULUS	ASTM D790	215,000 psi
NOTCHED IZOD IMPACT	ASTM D256	0.5 ft-lb/in
Physical Properties		
SOFTENING TEMP		120 C
COMBUSTION TEMP		300 C
FLASH POINT		No flash point below 200 C
DENSITY	DIN EN ISO 1183-1,Verf.A	1 – 1.3 g/cm3
BULK DENSITY	DIN EN ISO 60	0.6 – 0.9 g/cm3

Flex MSE plates are branded and distinguished by three spikes and two Friction Strip/Grid Hook arrays on the top side, and 8 spikes on the bottom. Flex MSE Plates measure 4” by 11 ¼”.

Backfill

Backfill within the geogrid reinforced zone shall be meet the gradation requirements of “Structural Earth Wall WSS 9-03.14(4)

Backfill shall be compacted to > 95% modified proctor.

Vegetation

Apply Hydroseed materials to the face of the Flex MSE structure in a manner that achieves complete coverage of all contours of the exposed Bag face. Mulch type must be consistent with the application’s Slope. Engineered hydroseed products for Extreme Slopes must be used in applications steeper than 0.5:1 (Bonded Fibre Matrix and Flexible Growth Medium products). Seed mixtures will be purchased from accredited sources with guaranteed standard germination rates. Purchased Seed quality and mix constituents must be confirmed with a Project Supervisor or Engineer prior to application.

Flex MSE structures must have a Vegetation Plan in place prior to construction and be fully vegetated according to the current Specification, Installation Guide and official Design plans within 18-months after MSE Wall construction.

6-14.3 Construction Requirements

Section 6-14.3 is supplemented with the following:

The planned FlexMSE structure required length and height, and face inclination, shall be as necessary to repair the embankment face where it is disturbed by trenching activities to install the outfall structure near Station 44+50. Wall batter shall be such that it provides for a minimum 3-feet wide horizontal bench behind the guardrail posts along the edge of the road. The length of the wall shall be sufficient

to repair the embankment impacted by the trenching activities. The bags at the ends of the FlexMSE shall be turned into the remaining undisturbed slope area and embedded a minimum of 1-foot.

Contractor shall coordinate with the engineer on FlexMSE wall alignment, height, and wall face inclination.

The Contractor shall excavate to the lines and grades shown on the Plans to install the outfall piping and structure.

The Engineer will observe wall foundation and approve subgrade prior to a placement of initial row of bags and any fill materials.

The first course of Flex MSE Plates and GTX Bags shall be placed on the approved gravel pad and subgrade.

Flex MSE Bags shall be assembled and installed with the interlocking Plates at 1:1 component ratio, as per current Trexiana Specification and Installation Guides.

Backfill shall be placed and compacted within the extension of the required backfill.

Backfill materials shall be placed and compacted in lifts not to exceed 8 inches where hand compaction equipment is used and not more than 12 inches where heavy compaction equipment is used.

Backfill materials shall be compacted to 95% of the maximum density as determined by ASTM D1557 (Modified Proctor) or equivalent. The moisture content of the backfill materials prior to and during compaction shall be uniformly distributed throughout each layer and shall be within 2% of the optimum moisture content for compaction.

Only lightweight hand-operated equipment shall be allowed within 2.5-feet of the front face of the facing units.

At the end of each day of operation, the Contractor shall slope the last lift of reinforced backfill away from the facing units to direct runoff away from the wall face. The Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

6-14.4 Measurement

Section 6-14.4 is supplemented with the following:

Permanent geosynthetic reinforced retaining wall will be measured by the square foot of face of completed wall. Corner wrap area and extensions of the geosynthetic wall will be included in the measurement of the square foot of face of completed geosynthetic retaining wall.

6-14.5 Payment

Section 6-14.5 is supplemented with the following:

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

“Flex MSE Retaining Wall”, per square foot.

All costs in connection with constructing the geosynthetic retaining wall as specified shall be included in the unit Contract price per square foot for “Flex MSE Retaining Wall” including backfill, compaction, foundation, geogrid, and furnishing and installing the temporary forming system.

6-16 SOLDIER PILE AND SOLDIER PILE TIEBACK WALLS

6-16.1 Description

Supplement this Section with the following:

This work shall consist of constructing soldier pile walls with timber lagging and fascia as specified herein and as shown on the Plans.

6-16.3(6)C Permanent Lagging

Supplement this Section with the following:

Permanent Lagging, including Timber, shall be as shown in the Plans. Timber Lagging shall be Douglas Fir No. 2 or better and shall be treated with waterborne wood preservative in accordance with AWP Standards U1 and T1, User Category UC4B or UC4C. Waterborne wood preservative shall be ACZA (Ammoniacal Copper Zinc Arsenate), 0.6pcf minimum retention. Manual or field applied wood preservative shall be liberally applied Copper Napthenate complying with AWP Standard M4.

6-16.4 Measurement

Supplement this Section with the following:

“Timber Fascia” will be measured per board foot.

6-16.5 Payment

Supplement this Section with the following:

“Shaft - 30 In. Diam.”, per linear foot.

“Furnishing Soldier Pile – ___x___”, per linear foot.

“Prefabricated Drainage Mat”, per square yard.

“Timber Lagging”, per square foot.

“Timber Fascia”, per board foot.

The unit contract price for “Timber Lagging” and “Timber Fascia” shall include all costs necessary and incidental to installing lagging and fascia, including but not limited to timber, spacers, blocking, nails, and screws, and as specified herein or on the Plans.

The unit contract price for “Timber Lagging” shall also include all costs necessary and incidental to backfilling the wall and installing wall drains, including but not limited to pea gravel backfill, drain pipe and connection to storm structure, drain rock, and geotextile filter fabric as shown on the Plans.

“Removing Soldier Pile Shaft Obstructions”, estimated.

Payment for removing obstructions, as defined in Section 6-16.3(3), will be made for the changes in shaft construction methods necessary to remove the obstruction. The Contractor and the Engineer shall evaluate the effort made and reach agreement on the need to change tooling and/or equipment, actual employees utilized, and the actual number of hours involved for each. Once these cost items and their

duration have been agreed upon, the payment amount will be determined using the rate and markup methods specified in Section 1-09.6. For the purpose of providing a common proposal for all bidders, the Contracting Agency has entered an amount for the item "Removing Soldier Pile Shaft Obstructions" in the bid proposal to become a part of the total Bid by the Contractor.

If the shaft construction equipment is idled as a result of the obstruction removal work and cannot be reasonably reassigned within the project, then standby payment for the idled equipment will be added to the payment calculations. If labor is idled as a result of the obstruction removal work and cannot be reasonably reassigned within the project, then all labor costs resulting from Contractor labor agreements and established Contractor policies will be added to the payment calculations.

The Contractor shall perform the amount of obstruction work estimated by the Contracting Agency within the original time of the contract. The Engineer will consider a time adjustment and additional compensation for costs related to the extended duration of the shaft construction operations, provided:

1. The dollar amount estimated by the Contracting Agency has been exceeded, and
2. The Contractor shows that the obstruction removal work represents a delay to the completion of the project based on actual drilling rates for adjacent piles.

END OF DIVISION 6

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

Add the following new section:

7-03 STORMWATER QUALITY TREATMENT VAULTS

7-03.1 Description

This work shall consist of installing Contech Filtterra® vaults for water quality treatment as shown on the Plans.

7-03.1(1) Submittals

- A. Submittals for the stormwater filters shall include the following items in accordance with Division 1, GENERAL REQUIREMENTS.
1. Shop Drawings for each stormwater media filter system installation including size, location, inlet and outlet inverts, appurtenant piping; bedding, backfill, concrete top slab, lid details, and anchorage tiedown system details. The concrete top slab design shall provide H-20 loading for each system.
 2. Complete materials list.
 3. Manufacturer's recommended installation and maintenance procedures.
 4. Manufacturer's certificate of satisfactory installation and warranty.

7-03.2 Materials

7-03.2(1) Filtterra Units

Filtterra stormwater media filter units shall consist of Precast Filtterra® units, as manufactured by Contech Engineered Solutions LLC, 9100 Centre Pointe Drive, West Chester, Ohio 45069 (800) 338-1122.

Filtterra® units shall have a General Use Level Designation (GULD) for Enhanced treatment from the State of Washington Department of Ecology through the TAPE program.

Each Filtterra® unit consists of a precast concrete vault; underdrain system consisting of underdrain stone to a depth of 6 inches, perforated pipe, and cleanout; filter media to a depth of 21 inches; top slab with integrally-cast tree frame and grate, cleanout cover, and galvanized angle nosing; and mulch to a depth of 3 inches. Conduits shall be precast into the vault walls as detailed on the Plans to accommodate irrigation supply lines.

Filtterra® Top Slab: Standard Flat Top

Supplied Filtterra® units shall include inspection and maintenance by the supplier, or a supplier-approved contractor, for a minimum period of one year, consisting of two scheduled visits. The maintenance visits shall include the following tasks:

1. Filtterra® unit inspection.

2. Foreign debris, silt, mulch & trash removal.
3. Filter media evaluation and recharge as necessary.
4. Plant health evaluation and pruning or replacement as necessary.
5. Replacement of mulch.
6. Disposal of all maintenance refuse items.
7. Maintenance records updated, stored, and submitted to the City of Kirkland.

Prior to each maintenance visit, the City of Kirkland Public Works' Storm & Surface Water Division shall be notified and allowed to inspect the facility and observe the maintenance of the Filterra® Bioretention System by the supplier or supplier-approved contractor.

7-03.2(3) Filterra Unit Bedding and Backfill

- A. Foundation material shall be pea gravel, and backfill materials shall be Crushed Surfacing Top Course.

7-03.2(4) Warranties

- A. Manufacturer shall warrant all products to be free from defects in materials and workmanship for a minimum of 1 year from the date of installation. Manufacturer shall inspect and repair or replace defective parts during warranty period at no additional cost to Owner.

7-03.3 Construction Requirements

7-03.3(1) Filterra Unit Installation

Filterra® units shall be constructed as detailed in the Plans and in accordance with these Special Provisions and the manufacturer's installation instructions.

Each unit shall be constructed at the locations and elevations according to the sizes shown on the approved Plans. Any modifications to the elevation or location shall be at the direction of and approved by the Engineer.

If the Filterra® unit is stored before installation, the top slab shall be placed on the box using the 2x4 wood provided, to prevent any contamination from the site. All internal fittings supplied (if any), must be left in place as per the delivery.

The unit shall be placed on a compacted sub-grade with a minimum 6-inch gravel base. The unit shall be placed such that the unit and top slab match the grade of the curb in the area of the unit. Compact undisturbed sub-grade materials to 95% of maximum density at +1- 2% of optimum moisture. Unsuitable material below sub-grade shall be replaced to the site Engineer's approval.

The 4-inch outlet pipe from each unit shall be connected to an adjacent catch basin as shown on the Plans, using 6-inch diameter drain pipe, as specified in Section 7-01 of these Special Provisions, with a maximum of two 45-degree bend fittings.

Once the unit is set, the internal wooden forms and protective mesh cover shall be left intact. Remove only the temporary wooden shipping blocks between the box and top slab. The top lid shall be sealed onto the box section before backfilling, using a non-shrink grout, butyl rubber or similar waterproof seal. The boards on top of the lid and boards sealed in the unit's throat must NOT be removed. The

Supplier (Contech or its authorized dealer) will remove these sections at the time of activation. Backfilling shall be performed in a careful manner, bringing the appropriate fill material up in 6-inch lifts on all sides. Precast sections shall be set in a manner that will result in a watertight joint. Installation of Filterra® unit shall conform to ASTM specification C891 “Standard Practice for Installation of Underground Precast Utility Structures”.

The contractor is responsible for inlet protection/sediment control and cleaning around each Filterra unit.

It is the contractor’s responsibility to source acceptable plant and have them available for Contech Activation crews after installation of the unit has been completed.

The curb and gutter adjacent to each Filterra unit shall be cast in place following installation of the Filterra unit, providing a depressed gutter section as detailed in the Plans. Dowel bars from the pre-cast Filterra unit shall be bent to extend into the cast-in-place depressed gutter as detailed on the Plans. Throat protection device provided with Filterra unit shall remain in place until the site is stabilized and the Filterra unit is activated by Filterra supplier.

The contractor shall verify that the elevation of the next downstream catch basin is lower than the gutter elevation adjacent to the Filterra unit.

7-03.3(3) Installation Warranty

Manufacturer's representative shall observe installation of the stormwater filters and shall provide a certificate of satisfactory installation to Owner prior to operation.

7-03.3(4) Operational Testing

The manufacturer’s representative shall participate in and observe operational testing of the stormwater treatment systems for design performance. All observed problems shall be rectified prior to Owner acceptance.

7-03.4 Measurement

All Filterra Units will be 6’ x 4’ standard size and will be measured per each.

7-03.5 Payment

Payment will be made in accordance with Section 1-04.1 for the following bid items when included in the proposal:

“Filterra Unit with Internal Bypass” per each

The unit contract price per each for the Filterra Unit shall be full pay for furnishing all labor, tools, equipment, and materials necessary to install a Filterra Unit of the size and type indicated on the Plans in accordance with the Plans and Specifications.

The unit contract price per each for Filterra Unit shall also include excavation, plant material (where applicable), pea gravel foundation material, CSTC backfill, grates and lids, compaction, adjustment to finished grade, depressed gutter (for Filterra Unit opening and hood), facility activation, and one year of inspection and maintenance by supplier.

Shoring shall be paid as specified in 2-09.5.

7-04 STORM SEWERS

7-04.2 Materials

Supplement this section with the following:

Trench backfill and pipe bedding shall be Crushed Surfacing Top Course per Section 9-03.9(3).

Storm pipe shall be as shown on the Plans: Solid Wall PVC SDR 35 per Section 9-05.12(1), or Ductile Iron Pipe CL 50 per Section 9-30.1(1).

Recycled materials are not allowed to be used as bedding for any pipe material.

7-04.3 Construction Requirements

7-04.3(1) Cleaning and Testing

(*****)

Supplement this section with the following:

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

Supplement this section with the following:

"Solid Wall PVC Storm Sewer Pipe ___ In. Diam." will be measured per linear foot of installed pipe along the invert, from center of structure to center of structure.

"Solid Wall PVC Storm Sewer Pipe 24 In. Diam. for Outfall at STA 44+50" will be measured per linear foot of installed pipe along the invert, from center of structure to center of structure.

"Ductile Iron Storm Sewer Pipe ___ In. Diam." will be measured per linear foot of installed pipe along the invert, from center of structure to center of structure.

Pipe placed in excess of the length shown on the Plans, unless approved by the Engineer, will not be measured for payment.

7-04.5 Payment

Supplement this section with the following:

“Solid Wall PVC Storm Sewer Pipe ___ In. Diam.”, per linear foot.

“Solid Wall PVC Storm Sewer Pipe 24 In. Diam. for Outfall at STA 44+50”, per linear foot.

“Ductile Iron Storm Sewer Pipe ___ In. Diam.”, per linear foot.

The unit Contract price for “Solid Wall PVC Storm Sewer Pipe ___ In. Diam.”, “Solid Wall PVC Storm Sewer Pipe 24 In. Diam. for Outfall at STA 44+50”, and “Ductile Iron Storm Sewer Pipe ___ In. Diam.” shall be full compensation for all costs necessary and incidental to storm sewer pipe installation, including but not limited to trench excavation and dewatering; disposal of excavated materials; CSTC pipe bedding and CSTC trench backfill; compaction; fittings; connection to new and existing drainage structures; and procuring, hauling, placing, cleaning, and testing pipe.

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

7-05.3 Construction Requirements

Supplement this section with the following:

All storm pipe penetrations to catch storm structures shall be grouted inside and out to produce a water-tight seal. If necessary, new pipe inlets and outlets for existing drainage structures shall be formed by core drilling or other means.

All Type 1 Catch Basins and Curb Inlets in the flowline shall have a vaned grate per C.O.K. Standard Plan CK-D.14, unless noted otherwise on the Plans.

Temporary diversion of surface flow may be necessary if this work is performed during a rain event. Surface flow may be diverted by pumping or providing an overland flow pipe within the gutter to low points outside of the work area. No turbid runoff shall be allowed to enter the storm drainage system. This work, if necessary, shall be considered included in the Bid item “Erosion Control and Water Pollution Prevention” in Section 8-01.

Debris Cage shall mounted on existing catch basin as shown in the plans, be per City of Kirkland Standard Plan CK-D.44.

Add the following new Sub-Sections:

7-05.3(5) Connection to Drainage Structure

The locations, type, and size of the existing catch basins and storm lines have been determined from available records and are approximate; however, it is anticipated that connections to these existing facilities may be made, in general, as shown on the Plans.

It shall be the responsibility of the Contractor to determine the exact location, type, and size of the existing facilities prior to starting work on each connection, and to provide any alterations, as required at no additional cost to the Owner.

The Contractor shall clean and re-grout existing structures where connections are made.

When connecting to a structure, openings must be core drilled, unless an existing knockout is available. Connections shall be made with watertight rubber boots, sand collars, manhole adapter, or other

approved watertight connections, except for concrete, ductile iron or corrugated metal pipe for which connections shall be made with non-shrink Portland cement grout to make a watertight fit.

7-05.3(6) Connection to Existing Pipe

The location, type and size of existing storm sewer pipe has been determined from available records, and are approximate. However, it is anticipated that connection may be made, in general, as shown on the Plans.

It shall be the responsibility of the Contractor to determine the exact location, type, and size of the existing facilities prior to starting work on each connection, and to provide any alterations, as required at no additional cost to the City.

Connect existing pipe to a new concrete structure using a knockout, if available, or by core drilling the structure. Connections shall be made with watertight rubber boots, sand collars, manhole adapter, or other approved watertight connections, except for concrete, ductile iron or corrugated metal pipe. For concrete, ductile iron, or corrugated metal pipe the connections shall be made with non-shrink Portland cement grout to make a watertight fit.

Connections/couplings to existing corrugated metal pipe shall be made with dimpled repair band, as approved by the Owner.

7-05.4 Measurement

Supplement this section with the following:

“Flow Splitter”, will be measured per each.

“Frame and Vaned Grate”, will be measured per each.

“Open Curb Face Frame and Grate”, will be measured per each.

“Solid Locking Lid”, will be measured per each.

“Conversion Riser” will be measured per each.

“Debris Cage” will be measured per each.

Connecting to existing pipe or structure will not be measured for separate payment and shall be included in the cost of the new structure or pipe being installed.

Shoring or Extra Excavation Class B will be measured as specified in Section 2-09.4.

7-05.5 Payment

Supplement this section with the following:

“Catch Basin Type 1”, per each.

“Catch Basin Type 1L”, per each.

“Catch Basin Type 2 __ In. Diam.”, per each.

“Concrete Inlet”, per each.

The unit Contract price for “Catch Basin Type 1”, “Catch Basin Type 1L”, “Catch Basin Type 2 __ In. Diam.” and “Concrete Inlet” shall be full compensation for all costs necessary and incidental to furnish

and install storm structure, including but not limited to excavation, foundation material, CSTC backfill, compaction, grouting of inlet and outlet pipes, and ladders.

“Flow Splitter”, per each.

The unit Contract price for “Flow Splitter” shall be full compensation for all costs necessary and incidental to furnish and install the structure and flow splitter with two overflow risers as detailed on the Plans, including but not limited to excavation, compaction, foundation material, CSTC backfill, watertight connection of inlet and outlet pipes, ladder and overflow riser including fabricated pipe, couplings, straps, and internal connections.

All cost of interim adjustments of structures required though out construction shall be in included in the unit Contract price for the item being adjusted. Interim adjustments shall not be measured for payment.

“Frame and Vaned Grate”, per each.

“Open Curb Face Frame and Grate”, per each.

“Solid Locking Lid”, per each.

“Conversion Riser”, per each.

The unit Contract price for castings listed above shall be full compensation for all costs necessary and incidental to furnish and install new castings on new or existing drainage structures as shown on the Plans, including but not limited to removing and disposal/salvage of existing castings, new castings, new adjustment sections, grouting and CDF, adjustment to finished grade, and restoration of surrounding surface.

“Debris Cage”, per each.

The unit Contract price for “Debris Cage” shall be full compensation for all costs necessary and incidental to install debris barriers, including but not limited to cage, hardware, and mounting to structure.

Add the following new section:

7-06 STORMWATER DETENTION VAULT

7-06.1 Description

This work shall consist of construction of a stormwater detention vault of the type and size noted in the Plans.

Submittals

The Contractor shall submit Shop Drawings for detention vault installation including size, location, and elevations; bottom and top slab, footings, end walls, access openings, vented grates and supports, risers, joints, ladders, control structure and appurtenant piping, valves, access ways, and confined space vent details.

Design Live Load (over and around the vaults) for Fire Department Apparatus Loading:

- a. HS 20 Truck Loading, **and;**

- b. Stabilizer outrigger maximum reaction = 45,000-lbs concentrated load
This load must be applied on an 18-inch by 18-inch area and also applied as an unfactored load on a 10-inch by 14-inch area.

Drawings and calculations shall be sealed, signed, and dated by a Professional Engineer licensed in the State of Washington for review by the Owner.

Include the following in the submittal:

1. The submittal drawings shall provide all structural details for all vault components.
2. Complete materials list.
3. Documentation of corrosion protection package elements and all site-specific protection needs.
4. Manufacturer's data and calculations to demonstrate compliance with product criteria included within these Specifications.
5. Manufacturer's recommended installation and maintenance procedures.
6. Manufacturer's certificate of satisfactory installation and warranty.

7-06.2 Materials

The detention vault shall be constructed with precast concrete panels, with exception of the base which may be cast in place. The detention vault shall conform to applicable ASTM C858 underground precast utility standards. Precast detention vault and components shall include the following:

1. Fittings and knockouts for inlet and outlet pipes, access risers, castings, grates, and vents.
2. Access manhole risers, access risers, and access steps per City of Kirkland Standards.
3. Lifting lugs at balancing points for handling and installation.
4. Identification nameplates affixed to a prominent location, durable and legible throughout equipment life.
5. Vault penetrations shall be sized to accommodate connections to the Vault made with a Kor-n-Seal boot, or approved equivalent.
6. Locking manhole frames and covers shall have the word "DRAIN" on the cover.
7. All metal parts shall be corrosion resistant.
8. Precast vault panels shall have an approved water tight gasket system.
9. Stormwater detention vault shall include a sign affixed to each of the access risers indicating "CAUTION – CONFINED SPACE ENTRY, AUTHORIZED PERSONNEL ONLY" or similar. Signs shall be clearly visible upon entry through access risers.
10. The 5-foot by 10-foot grated, access door (hatch) shown on the Plans shall be rated for H-20 loading, galvanized steel, removable, hinged and lift-assisted, and comply with ADA standards. Prefabricated vault sections may require structural modifications to support the 5-foot by 10-foot opening.

Manufacturer shall warrant all products to be free from defects in materials and workmanship for a minimum of 1 year from the date of installation. Manufacturer shall inspect and repair and replace defective parts during warranty period at no additional cost to Owner.

Backfill materials for vault installation shall be Crushed Surfacing Top Course per Section 9-03.9(3).

Foundation materials for vault installation shall be permeable ballast per Section 9.03.9(2).

7-06.3 Construction Requirements

7-06.3(1) General

- A. Installation of detention vault and appurtenances shall be in accordance with the Drawings and the manufacturers recommended installation procedures.
- B. Bedding and backfill for detention vault shall be installed in accordance with Division 2, Earthwork.
- C. Contractor shall exercise extreme care in the site storage, transport, and installation of the detention vault, and appurtenant piping. Damage as a result of improper handling or installation shall be the sole responsibility of Contractor and shall be repaired in accordance with manufacturer recommendations at no additional cost to Owner.
- D. Cl. A shoring or extra excavation for the vault is limited as specified in section 2-09 and as shown in the Plans.
- E. Manufacturer's representative shall observe installation of detention vault and shall provide a certificate of satisfactory installation to Owner prior to operation.

7-06.4 Measurement

No specific unit of measurement shall apply to the lump sum item "Stormwater Detention Vault."

7-06.5 Payment

"Stormwater Detention Vault", lump sum.

The lump sum Contract price for "Stormwater Detention Vault" shall be full compensation for all costs necessary and incidental to complete the vault installation according to the Plans and Specifications, including but not limited to Contractor-provided structural vault design, structure excavation including haul, dewatering of excavation, permeable ballast foundation material, CSTC backfill to top of vault lid, compaction, testing and cleaning, geotextile, submittals, and furnishing and placing of all accessories such as the control structure, access covers, grates, vents and risers, ventilation piping and covers, adjustment rings, access steps, grating, joints, gate valves, flanges, and other hardware to provide a complete installation.

Embankment material above vault lid will be measured and paid under the Bid item "Gravel Borrow Incl. Haul" in Section 2-03.

7-07 CLEANING EXISTING DRAINAGE STRUCTURES

7-07.5 Payment

Delete this Section and replace with the following:

All costs associated with cleaning existing drainage structures shall be considered incidental to and included in the Bid items for storm sewer pipe and no additional payment shall be made.

7-08 GENERAL PIPE INSTALLATION REQUIREMENTS

7-08.3 Construction Requirements

7-08.3(1)B Shoring

Supplement this Section with the following:

Shoring design shall be the responsibility of the Contractor. No implication of methods, means, or materials is implied within the Bid Documents.

7-08.3(3) Backfilling

Supplement this Section with the following:

Backfilling and surface restoration shall closely follow the installation of the pipe, so that not more than 50 feet of the trench line is left open at any one time without approval of the City. When public safety concerns exist, the City may require more stringent backfilling standards.

Trench backfill and pipe bedding material shall be:

Crushed Surfacing Top Course

9-03.9(3)

7-08.4 Measurement

Supplement this Section with the following:

No measurement or payment will be made for structure excavation, trench excavation, foundation material, pipe bedding, structure backfill, and trench backfill, but instead will be considered incidental to and included in the structure or pipe being installed.

7-09 WATER MAINS

Delete Sections 7-09.1 through 7-09.5 and replace with the Northshore Utility District Specifications, included in the Contract Appendix E.

7-12 VALVES FOR WATER MAIN

Delete Sections 7-12.1 through 7-12.5 and replace with the Northshore Utility District Specifications, included in the Contract Appendix E.

7-14 HYDRANTS

Delete Sections 7-14.1 through 7-14.5 and replace with the Northshore Utility District Specifications, included in the Contract Appendix E.

7-15 SERVICE CONNECTIONS

Delete Sections 7-15.1 through 7-15.5 and replace with the Northshore Utility District Specifications, included in the Contract Appendix E.

7-17 SANITARY SEWERS

Delete Sections 7-17.1 through 7-17.5 and replace with the Northshore Utility District Specifications, included in the Contract Appendix E.

7-18 SIDE SEWERS

Delete Sections 7-18.1 through 7-18.5 and replace with the Northshore Utility District Specifications, included in the Contract Appendix E.

7-19 SEWER CLEANOUTS

Delete Sections 7-19.1 through 7-19.5 and replace with the Northshore Utility District Specifications, included in the Contract Appendix E.

END OF DIVISION 7

DIVISION 8 MISCELLANEOUS CONSTRUCTION

8-01 EROSION CONTROL AND WATER POLLUTION CONTROL

8-01.1 Description

Supplement this section with the following:

The Contractor shall install and maintain all temporary and permanent erosion control measures and Best Management Practices (BMPs) in accordance with the Contract Documents, Standard Specifications, Permit Conditions, the Contractors “Stormwater Pollution Prevention Plan” (SWPPP) and as directed by the Engineer or the City. Such measures shall include, but are not necessarily limited to:

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

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

Site Specific BMPs and SWPPP Plan

The Contractor shall submit his or her own Storm Water Pollution Prevention Plan (SWPPP) to the City for review and approval prior to the commencement of clearing, grubbing, or grading activities.

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

All fines for non-compliance with applicable stormwater-related permits shall be the sole responsibility of the Contractor. No payment will be made to the Contractor for fines resulting from permit violations.

8-01.3 Construction Requirements

Supplement this section with the following:

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

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

At no time shall more than 1 foot of sediment be allowed to accumulate within a catch basin. All catch basins and conveyance lines shall be cleaned at a time designated by the City Construction Inspector. The cleaning operation shall not flush sediment-laden water into the downstream system. The cleaning shall be conducted using an approved vacuum truck capable of jet rodding the lines. The collection and disposal of the sediment shall be the responsibility of the Contractor at no cost to the City.

8-01.3(1) General

8-01.3(1)A Submittals

Supplement this section with the following:

Stormwater Pollution Prevention Plan

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

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

The Ecology template can be found at the following link:

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

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

8-01.3(1)C Water Management

Supplement this section with the following:

The Contractor will be responsible for meeting the SWPPP requirements.

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

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

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

8-01.3(8) Street Cleaning

Supplement this section with the following:

The Contractor shall provide for cleaning all surfaced roadways that have become dirty as a result of the execution of this project. This shall be done at the completion of each day's activities or more often if directed by the Engineer. Street sweepers with a vacuum function shall be the only acceptable method for street cleaning. Flushing will not be permitted.

Contractor shall have a vacuum sweeper available, full-time, for the duration of the project. Not having a full-time vacuum sweeper available and/or sufficient additional materials to react in a timely manner to changes may be grounds for the City to issue a Stop Work Order until the Contractor remedies the deficiency, or the City may elect to have complete the street sweeping and deduct the cost from monies due to the Contractor. Time spent under a Stop Work Order in this situation shall not be grounds for a claim for additional payment or additional Working Days.

Roadway sweeping and cleaning shall be considered included in the lump sum Contract price for “Erosion Control and Water Pollution Prevention”.

8-01.3(9)D Inlet Protection

Supplement this Section with the following:

Inlet protection can be in the form of internal devices and shall be installed prior to clearing, grubbing or earthwork activities. Inlet protection shall be installed on existing catch basins, new catch basins, and those immediately downstream of the project site that could possibly receive sediment laden runoff from the site. Inlet protection shall meet the requirements of City of Kirkland Standard Plan CK-E.11.

When the depth of accumulated sediment and debris reaches approximately one-half the height of an internal device or one-third the height of the external device (or less if specified by the manufacturer), the deposits shall be removed. Contractor shall be responsible for removing catch basin inserts upon completion of the project.

8-01.3(16) Removal

Supplement this section with the following:

Removing Temporary Erosion / Water Pollution Control BMPs

The Contractor shall removal all Temporary Erosion / Water Pollution Control BMPs within twenty (20) days after final stabilization, landscape restoration, or after the BMPs are no longer needed. Trapped sediment shall be removed or stabilized on site.

Add the following new Sections:

8-01.3(17)Protection of Existing Trees and Shrubs

The Contractor shall carefully protect existing trees and shrubs that are not designated for removal during the course of construction against cutting, breaking or skinning of roots, skinning or bruising of bark. The Contractor shall plan all operations to avoid creating situations in which trees and shrubs may be damaged. Notify the Engineer if construction may damage trees and shrubs; the Contractor shall not proceed with Work until directed by the Engineer.

Root Protection

Cut exposed roots cleanly and keep moist with straw mulch and burlap or equivalent during the time trenches are open. Hand dig trenches in areas with extensive roots. Roots larger than 3-inches in diameter shall be left intact and the Engineer notified for instructions on how to proceed.

Damages for Loss or Injury to Existing Trees and Shrubs to Remain

The Contractor shall be liable for damage to trees and shrubs. In the event of injuries to the crown, trunk or root system of existing trees and shrubs resulting from the Contractor's failure to protect them (the just value of which is determined by the *Valuation of Landscape Trees, Shrubs, and Other Plants*, (Current Edition) damages shall be deducted from the total amount due the Contractor.

8-01.3(18)Suspension of Work

If at any time during the life of this Contract the Contractor requests to suspend work due to weather conditions or other constraints, it shall be the Contractor's responsibility to meet the Erosion Control and Water Pollution Prevention requirements of the Bid Documents, including maintenance and repair of BMPs already installed, at all times during suspension.

8-01.4 Measurement

8-01.4(3) Reinstating Unit Items with Lump Sum Erosion Control and Water Pollution Prevention

Supplement this section with the following:

"Inlet Protection" will be measured per each.

"High Visibility Silt Fence" will be measured per linear foot.

"High Visibility Fence" will be measured per linear foot.

"Fence for Tree Protection" will be measured per linear foot.

"Pipe Inlet Protection" will be measured per each.

"Pipe Outlet Protection" will be measured per each.

8-01.5 Payment

8-01.5(3) Reinstating Unit Items with Lump Sum Erosion Control and Water Pollution Prevention

Supplement this section with the following:

“Erosion Control and Water Pollution Prevention”, lump sum.

The lump sum Contract price for “Erosion Control and Water Pollution Prevention” shall be full compensation for all costs necessary and incidental to installation, maintenance, repair, and removal of erosion control facilities, and removal and disposal of sediment, as specified on the Plans and Standard Specifications for which specific Bid items are not provided, including but not limited to preparation and implementation of SWPPP, compliance with CGSWP, ESC lead, all temporary erosion control measures described within special provisions, standard specifications, and shown on the Plans, cleaning and rehabilitating the site after BMPs are removed, street sweeping, and other incidental items of works necessary to establish and maintain TESC measures.

“Inlet Protection”, per each.

The unit Contract price for “Inlet Protection” shall be full compensation for all costs necessary and incidental to installing, maintaining, and removing inlet protection at the locations shown on the Plans and where directed by the Engineer.

“High Visibility Silt Fence”, per linear foot.

The unit Contract price for “High Visibility Silt Fence” shall be full compensation for all costs necessary and incidental to installing and maintaining the high visibility silt fence at the locations shown on the Plans and where directed by the Engineer.

“High Visibility Fence”, per linear foot.

The unit Contract price for “High Visibility Fence” shall be full compensation for all costs necessary and incidental to installing and maintaining the high visibility fence at the locations shown on the Plans and where directed by the Engineer.

“Fence for Tree Protection”, per linear foot.

The unit Contract price for “Fence for Tree Protection” shall be full compensation for all costs necessary and incidental to installing and maintaining the tree protection fence at the locations shown on the Plans and where directed by the Engineer.

“Pipe Inlet Protection”, per each.

The unit Contract price for “Pipe Inlet Protection” shall be full compensation for all costs necessary and incidental to construct as detailed on the Plans, including but not limited to excavation, quarry spalls, geotextile for separation, beveled end of pipe, and debris barrier.

“Pipe Outlet Protection”, per each.

The unit Contract price for “Pipe Outlet Protection” shall be full compensation for all costs necessary and incidental to construct as detailed on the Plans, including but not limited to excavation, rip rap, beveled end of pipe, and geotextile for separation.

8-02 ROADSIDE RESTORATION

8-02.1 Description

Supplement this section with the following:

All plant material required by the Bid Documents shall be plant species including plant establishment (PSIPE) per the Standard Specifications.

8-02.2 Materials

Supplement this section with the following:

Topsoil Type A	Section 9-14.2(1)
Seed	Section 9-14.3
Fertilizer	Section 9-14.4
Bark or Wood Chip Mulch	Section 9-14.5(3)
Fine Compost	Section 9-14.5(8)
Tree Watering Bag System	Section 9-14.9

8-02.3 Construction Requirements

8-02.3(1) Responsibility During Construction

Supplement this Section with the following:

Landscape construction is anticipated to begin after all curbs, sidewalks, and associated roadside work is completed. Landscape materials shall not be installed until weather permits and installation has been authorized by the Engineer. If water restrictions are anticipated or in force, planting of landscape materials may be delayed.

Throughout planting operations, the Contractor shall keep the premises clean, free of excess soils, plants, and other materials, including refuse and debris, resulting from the Contractor's work. At the end of each workday, and as each planting area is completed, it shall be neatly dressed, and all surrounding walks and paved areas shall be cleaned to the satisfaction of the Engineer. No flushing will be allowed. At the conclusion of work, the Contractor shall remove surplus soils, materials, and debris from the construction site and shall leave the project in a condition acceptable to the Engineer.

8-02.3(2)A Roadside Work Plan

Supplement this Section with the following:

The Roadside Work Plan shall be submitted to the Engineer and approved at least one week prior to initiating proposed work. The use of chemical herbicides shall be considered on a case-by-case basis. The Contractor must submit, as part of the Work Plan, the intent to use chemical herbicides to the Engineer for approval prior to use.

8-02.3(4) Topsoil

Supplement this Section with the following:

Thoroughly scarify subgrade in all areas to be seeded or planted, and all restoration areas, to a minimum depth of eight inches (8"). Scarified subgrade shall be inspected and approved by the Engineer prior to placement of topsoil. Remove all construction debris and rocks over two inches (2") in diameter prior to the placement of topsoil.

Areas around existing trees to remain shall not be cultivated within the dripline of the tree or any other areas which appear to have a significant number of existing tree roots. Topsoil Type A shall be used in any areas requiring additional soil to bring subgrade up to grade, prior to the placement of required depth of topsoil A as noted on the Plans. Remove all construction debris prior to placing topsoil.

Upon approval of the subgrade by Engineer, Topsoil Type A shall be installed in a single lift to the depth shown on the Plans. Remove rocks, roots, and debris over one (1) inch in diameter. Lightly compact soil and establish a smooth and uniform finished grade that protects against obstruction to surface drainage and ponding. Finish grade after installation of topsoil shall be 1" plus the specified depth of mulch below the top of adjacent curbs or paved surfaces.

Any additional fine grading to get a firm smooth surface in all planted or seeded areas shall be considered incidental to and included in the unit contract price for placement and installation of Topsoil Type A.

The costs of removing all excess material and debris shall be considered incidental to and included in the unit contract prices of other items in this contract.

8-02.3(4)A Topsoil Type A

Supplement this Section with the following:

Topsoil Type A shall conform to Section 9-14.2(1) of these Special Provisions and shall be supplied by a Contractor's supplied source, and as approved by the Engineer.

8-02.3(6)B Fertilizers

Supplement this Section with the following:

Fertilizer shall be a standard commercial grade of organic or inorganic fertilizer as specified in Section 9-14.4 of these Special Provisions. All fertilizers shall be furnished in standard unopened containers with weight, name of plant nutrients and manufacturer's guaranteed statement of analysis clearly marked, in accordance with State and Federal law.

Shrubs shall be fertilized at a rate according to fertilizer manufacturer's recommendations.

All fertilizer shall be pre-mixed prior to bringing on the job.

Fertilizer tablets shall be considered incidental to and included in the unit contract price for plants.

8-02.3(8)A Dates and Conditions for Planting

Supplement this section with the following:

All plant material shall be legibly tagged. Tagging may be by species or variety with minimum of one tag per ten trees, shrubs, or groundcovers. Remove all tagging prior to final acceptance.

The Contracting Agency shall reserve the option of selecting and inspecting plant material at the nursery. The Contractor shall provide the Contracting Agency with at least one week notice prior to preparing plants for shipping and delivery. The Contractor shall neither deliver to site nor install plant materials until authorized by the Contracting Agency.

Cold storage of plants shall not be permitted.

If planting is delayed more than 24 hours after delivery, set balled and burlapped plants on the ground, well protected with soil or wet peat. Adequately cover all roots of bare root material with soil or wet

peat. Protect rootballs from freezing, sun, drying winds or mechanical damage. Water plant material as necessary until planted.

Plants shall not be stored for more than one week. Longer storage period at project site will result in rejection of plant materials by the Contracting Agency.

8-02.3(8)B Plant Installation

Supplement this Section with the following:

All plant material shall be planted as detailed on the Plans.

Tree planting pits shall be amended with 3" Fine Compost tilled into the native soil throughout the planting pit.

Scarify sides and bottom of planting pits prior to planting. Sufficient planting soil shall be placed around the plant and compacted so as to ensure that the location of the ground line at the top of the root ball is the same as in the nursery.

Plant shrubs upright and rotate in order to give the best appearance or relationship to adjacent plants, topography and structures.

When shrub planting pit is backfilled halfway, evenly place fertilizer plant adjacent to the root system at a depth that is between the middle and bottom of the root system. Do not injure root system. Place and compact planting topsoil carefully to avoid injury to roots; fill all voids.

When the planting pit is three-quarters (3/4) backfilled, fill with water and allow water to soak away. If water does not drain within ½ hour, notify the Engineer. Fill pits with additional soil to finish grade and continue backfilling as detailed on the Plans.

Install Tree Watering Bag System, one each per tree, per manufacturer's recommendations. Tree Watering Bags shall be considered incidental to and included in the unit cost for trees. Tree Watering Bag System shall be per Section 9-14.9 of these Special Provisions.

The Contractor shall be responsible for watering and fertilizing all planted areas during the one-year establishment period.

8-02.3(11) Bark or Wood Chip Mulch

Supplement this Section with the following:

Bark or wood chip mulch shall be placed over disturbed areas where shown on the Plans to a depth no less than two inches (2"). Thoroughly water and hose down plants with a fine spray to wash the leaves of the plants immediately after application.

Bark or wood chip mulch shall meet the requirements of Section 9-14.5(3) Bark or Wood Chips of these Special Provisions and shall be supplied by a Contractor's supplied source, and as approved by the Engineer.

8-02.3(13) Plant Establishment

Supplement this Section with the following:

Plant establishment shall consist of insuring resumption and continued growth of all planted material for a period of one (1) year. This shall include, but is not limited to, labor and materials necessary for

removal and replacement of any rejected plant material planted under this Contract, and refilling and maintaining tree watering bags.

The Contractor shall establish a regular schedule (day of week and time) for site visits for the duration of the plant establishment period. The Contractor shall provide notification of all site visits 24-hours in advance for those which are not in accordance with the regular schedule visits. Within 2-working days after each site visit the contractor shall provide the Owner with a written report of all work completed during the site visit. Failure to provide the written report or to complete site visits will be consider Failure to Comply and will result in a suspension of the time for plant establishment period(s).

During the plant establishment period, plants identified as dead, dying, or damaged shall be replaced within one week of the time they are identified.

Plant establishment period shall be one (1) year from time of Final Acceptance.

Suspension of Time

Failure to Comply

Failure to comply with corrective steps as outlined by the Engineer shall result in a suspension of time for plant establishment period(s).

Suspension Relief

Any such suspension of time shall not be lifted until all unsatisfactory conditions have been corrected to the satisfaction of the Engineer.

Suspension and Penalties

If a suspension of time is in effect for more than fifteen (15) calendar days without effective action being taken by the Contractor, the Contracting Agency will have justification to take corrective steps and to deduct all costs thereof from moneys due the Contractor.

Plant Establishment Plan

Prior to completion of initial planting as defined in Section 8-02.3(12) and in accordance with Section 8-02.3(13), the Contractor shall submit a Plant Establishment Plan for approval by the Engineer. The Plan shall define the Work necessary to maintain all Contract areas during the period between completion of initial planting through final acceptance at the completion of the plant establishment period.

The Plant Establishment Plan shall show the scheduling, frequency, dates, materials and equipment utilized, whichever may apply, for all maintenance activities including, but not limited to, the following:

- A. Plant Establishment
 - 1. Pruning
 - 2. Fertilizing
 - 3. Watering - amount in inches per week
 - a. Frequency of refilling tree watering bags (min. once per week, or more often if required to establish trees in a healthy and thriving condition)
 - 4. Weed Control and Chemical Application - post and pre-emergent (to be approved by Engineer)
 - 5. Litter and Debris Removal
 - 7. Erosion Control Methods and Procedures

8. Plant Replacement

B. Other items as defined by the Contractor's Plant Establishment Plan

Also indicate the following:

A. Maintenance Supervisor/Responsible Contact Name

1. Local address

2. Local telephone number

B. Emergency Contact Name - 24 hours, 7 days per week availability

1. Local address

2. Local telephone number

C. Sign and date the Plant Establishment Plan

Should this Plan become unworkable at any time during the specified period, the Contractor shall submit and receive approval of a revised Plan. Failure to comply with the Plant Establishment Plan or to revise the Plan as outlined by the Engineer, shall result in a suspension of time for plant establishment period as outlined above.

Plant establishment shall be considered incidental to and included in the unit contract price for all plant material.

Add the following new section:

8-02.3(17) Property Restoration

Property restoration shall consist of placement of additional plant materials, sod, seed, bark mulch, slope restoration behind sidewalks, timber edgings, relocating private fencing, and other work not currently identified on the plans, as directed by the Engineer.

All materials shall conform to Sections 9-14 Erosion Control and Roadside Planting and 9-15 Irrigation System of the Standard Specifications.

The Contractor is specifically reminded that any unnecessary damage caused by construction activities will be repaired at the Contractor's expense.

Restore all disturbed areas to original condition or better. Grass areas shall be restored with sod unless otherwise directed.

Removal of tree roots outside the limits of construction, as directed by the Engineer and under the supervision of a certified arborist, shall be paid for under "Property Restoration".

Topsoil shall be Type A and Bark Mulch shall be medium grade fir or hemlock.

The force account item provided for property restoration also includes any adjustments and/or replacements of existing irrigation systems not covered under Section 8-03 Irrigation Systems of the Special Provisions. This work shall also consist of modifying existing landscape lighting systems as may become necessary by these improvements.

The Contractor is advised that protecting existing private irrigation and lighting systems from damage does not constitute a basis for claim or extra work. "Property Restoration" has been provided as a basis

for modifications or improvements to private lighting systems and irrigation systems that may become necessary but could not be foreseen prior to construction.

8-02.4 Measurement

Supplement this section with the following:

The pay quantities for the plant materials will be determined by count of the number of satisfactorily installed plants accepted by the Engineer.

“Topsoil Type A”, “Bark or Wood Chip Mulch” and “Fine Compost” will be measured per cubic yard in the haul conveyance at the point of delivery.

“Seeded Lawn Installation” will be measured per square yard along the ground slope line of seeded lawn installed, established and accepted by the Engineer.

No specific unit of measurement will apply to the force account for “Property Restoration”.

8-02.5 Payment

Supplement this section with the following:

“Topsoil Type A”, per cubic yard.

“Bark or Wood Chip Mulch”, per cubic yard.

“Fine Compost”, per cubic yard.

The unit contract prices per cubic yard for “Topsoil Type A”, “Bark or Wood Chip Mulch” and “Fine Compost” shall be full compensation for all costs necessary to furnish and place the materials as required in these Specifications and as shown in the Plans.

“Seeded Lawn Installation”, per square yard.

The unit contract price per square yard for “Seeded Lawn Installation” shall be full compensation for all costs necessary to furnish and install the seeded lawn as required in these Specifications and as shown on the Plans.

“PSIPE_____”, per each.

The unit contract price for “PSIPE _____”, per each, shall be full compensation for all materials, labor, tools, equipment, and supplies necessary to fine grade, produce, plant, cultivate and cleanup for the particular items called for in the plans. Fertilizer and Tree Watering Bag System shall be incidental to the above bid items and all costs shall be included in the unit contract prices. All costs associated with the maintenance of the landscaping, including weeding, pruning and caring for planted areas during the one year plant establishment period shall be considered incidental to and included in the unit contract price for “PSIPE_____”, per each.

Any incidental work required to complete the roadside planting specified herein but not specifically mentioned in these Specifications shall be incidental to the roadside planting, and all costs therefore shall be included in the unit contract prices of the bid items.

“Property Restoration”, by Force Account, as provided by Section 1-09.6.

“Property Restoration” will include any work, equipment or materials required to restore property to original condition not covered by other Bid items, measured per Force Account.

8-04 CURBS, GUTTERS, AND SPILLWAYS

8-04.3 Construction Requirements

8-04.3(1) Cement Concrete Curbs, Gutters, and Spillways

Replace the first paragraph of this Section with the following:

Cement concrete curbs shall be constructed with air-entrained Class 4000 Portland Cement Concrete per Standard Specifications Section 6-02.

All curbs shall be poured separately and prior to sidewalks and curb ramps.

Supplement this section with the following:

Curbs shall be protected against damage or defacement of any kind until it has been accepted by the Engineer. Work that is not acceptable to the Engineer because of damage or defacement shall be removed and replaced by the Contractor at his own expense.

Pigmented curing compounds shall not be used on curbs and gutters. Only clear curing compounds will be permitted.

The Contractor shall have the subgrade prepared and the line or formwork for curbs placed at least 24 hours prior to installing curbs. Compliance shall be checked by the Contractor when forms are set and when concrete is poured. Any modification of grading from that shown on the Plans as required for ADA compliance shall be approved by the Engineer. Minor adjustment shall be considered changes to the Plan elevations of three inches or less. The work to revise the lines, formwork and subgrade for minor adjustments shall be considered incidental to the bid price for the type of curb being installed. If the lines and formwork are not in conformance with the Plans, all adjustments, regardless of size, shall be at the sole expense of the Contractor. Adjustments to the lines and grades shall not constitute a basis for claims for additional contract time or expenses.

Install curb expansion joints at 10' spacing; ensure curb expansion joints are in alignment with sidewalk joints.

8-04.4 Measurement

Supplement this section with the following:

“Cement Conc. Traffic Curb and Gutter” will be measured per linear foot.

“Cement Conc. Pedestrian Curb” will be measured per linear foot.

“Extruded Curb” will be measured per linear foot.

“Rolled Curb” will be measured per linear foot, including transitions to other curb types.

Raised curb (18-inch reveal), where detailed in the Plans, will be measured and paid as **2x** the “Cement Conc. Traffic Curb and Gutter” Bid item, including transition sections.

Precast Sloped Mountable Curb and Median Curb shall be measured and paid per Section 8-07.

8-04.5 Payment

Supplement this section with the following:

“Cement Conc. Traffic Curb and Gutter”, per linear foot.

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

“Extruded Curb”, per linear foot.

“Rolled Curb”, per linear foot.

The unit Contract price for “Cement Conc. Traffic Curb and Gutter”, “Cement Conc. Pedestrian Curb”, “Extruded Curb”, and “Rolled Curb” shall be full compensation for all costs necessary and incidental to completely install curbs to lines and grades specified on the Plans, including but not limited to forming, form adjustments, procuring and pouring concrete, joint materials, finishing, curing, and stripping forms.

Add the following new section:

8-05 MISCELLANEOUS WORK

8-05.1 Description

This work shall consist of providing miscellaneous construction work and documentation as described herein.

8-05.3 Construction Requirements

8-05.3(1) Potholing

Potholing has been included in the Proposal for the use in the determination of the location of existing utilities in advance of the Contractor's operations. The Engineer shall approve all potholing requests from the Contractor prior to potholing. Additionally, the Contractor shall provide potholes at Engineer's request. The Contractor shall review the utility markings in the field after construction staking has been provided but prior to starting of installation of and utilities or foundations for signal or light poles.

When potholing is performed the Contractor shall:

1. Receive prior written approval from the Engineer for the location of the proposed pothole.
2. Contact on-call utility services prior to performing potholes.
3. Excavate down to the existing utility.
4. Record the horizontal (station and offset) and vertical location (elevation) of the found utility.
5. Provide the Engineer an Information Data sheet showing the location of the existing utility and location of the proposed utility, and note if a conflict exists between the proposed and existing utility.

Should a conflict exist, the Contractor shall notify the Engineer in as soon as possible. The Engineer will provide a revised design within seven (7) working days upon the receipt of the written notification of a utility conflict.

To be considered for payment, potholing must be done prior to starting trenching, excavation work, or foundation construction.

8-05.4 Measurement

“Potholing” will be measured per each for each pothole location approved in writing by the Engineer, regardless of the type or number of utilities, depth, and location of the potholing being performed.

8-05.5 Payment

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

“Potholing”, per each.

The unit Contract price for “Potholing” shall be full compensation for all costs necessary and incidental to completely perform each pothole, including but not limited to exposing the locations of existing utilities, recording vertical and horizontal locations, recording the size, material and depth of the existing utility, CSTC backfill, determining if a conflict exists, providing a data sheet, and compacting excavated areas per City of Kirkland Policies and as described herein. This unit price shall also include the cost for rescheduling work as required to allow the City time (up to seven working days) to issue any design modifications that may be required.

For the purposes of bidding equality, the Contracting Agency has furnished an estimated quantity for Potholing. Actual payment for this work will be made only for the actual amount of work performed as authorized and deemed necessary by the Engineer and may differ from the estimated amount provided.

8-06 CEMENT CONCRETE DRIVEWAY ENTRANCES

8-06.2 Materials

Supplement this section with the following:

Cement concrete driveway approaches shall be constructed with air-entrained Class 4000 Portland Cement Concrete per Standard Specifications Section 6-02.

8-06.3 Construction Requirements

Supplement this section with the following:

The Contractor shall confirm each driveway configuration with the Engineer prior to pouring concrete. The Contractor’s failure to gain the Engineer’s approval could result in rejection of the work and subsequent replacement at no cost to the Owner if found to be unsatisfactory.

Contractor shall provide protection of all concrete as required to allow access to the property. For properties with a single vehicle access point, the driveway shall be constructed as required to maintain access at all times. This is not limited to but may include protecting driveways with steel sheets.

Compliance with current ADA Standards is required. Minor modifications to the grades and dimensions shown on the Plans may be required to meet current standards. Prior to pouring concrete at driveway entrance locations, the Contractor shall have each driveway entrance inspected and receive written approval from the on-site inspector that the forms are set in compliance with ADA Standards. Driveway entrances poured without written approval which do not meet the current ADA standards shall be removed and replaced at the Contractors expense, regardless of whether they conform to the dimensions shown on the Plans.

8-06.4 Measurement

Supplement this section with the following:

“Cement Conc. Driveway Entrance” will be measured per square yard regardless of depth. Driveway entrances will be measured for payment from the back of curb to the back of sidewalk along the width of the driveway drop, including transition flares.

Thickened (6-inch) cement concrete sidewalk noted in the Plans, where above the stormwater detention vault, will be paid under the Bid item “Cement Conc. Driveway Entrance”.

8-06.5 Payment

Supplement this section with the following:

“Cement Conc. Driveway Entrance”, per square yard.

The unit Contract price for “Cement Conc. Driveway Entrance”, shall be full compensation for all costs necessary and incidental to complete installation of driveway entrances at the locations identified and to the lines and grades shown on the Plans.

8-07 PRECAST TRAFFIC CURB

8-07.3 Construction Requirements

Supplement this section with the following:

Precast Sloped Mountable Curb shall be per WSDOT Standard Plan F-10.62, painted yellow, and shall utilize radius blocks to complete curves shown in the Plans.

Median Curb shall be per City of Kirkland Standard Plan CK-R.19A, painted yellow.

8-07.4 Measurement

Supplement this section with the following:

“Median Curb” will be measured per linear foot along the finished centerline of curb.

8-07.5 Payment

Supplement this section with the following:

“Median Curb”, per linear foot.

The unit Contract price for “Median Curb” shall be full compensation for all costs necessary and incidental to the complete installation, including but not limited to precast curb sections, adhesive, joint sealing, painting, and tack coat.

8-08 RUMBLE STRIPS

8-08.4 Measurement

Supplement this section with the following:

“Centerline Rumble Strip”, will be measured per linear foot.

8-08.5 Payment

Supplement this section with the following:

“Centerline Rumble Strip”, per linear foot.

8-11 GUARDRAIL

8-11.5 Payment

Supplement this section with the following:

“Beam Guardrail Type 31”, per linear foot.

The unit Contract price for “Beam Guardrail Type 31”, shall be full compensation for all costs necessary and incidental to complete the removal and replacement of existing guardrail with new guardrail at the locations identified on the Plans, including but not limited to disposal of existing guardrail, excavation, backfill, posts, blocks, guardrail, hardware, fittings, and connections to existing guardrail.

8-12 CHAIN LINK FENCE AND WIRE FENCE

8-12.3 Construction Requirements

Supplement this section with the following:

This work also includes installing 3-foot tall black thermoplastic powder coated chain link fence at the locations as shown on the Plans per City of Kirkland Standard Plan CK-R.51A, and installing 3-foot tall safety railing at the locations shown on the Plans per City of Kirkland Standard Plan CK-R.51.

8-12.4 Measurement

Supplement this Section with the following:

“Coated Chain Link Fence” will be measured per linear foot.

“Safety Railing” will be measured per linear foot.

8-12.5 Payment

Supplement this Section with the following:

“Coated Chain Link Fence”, per linear foot.

The unit Contract price for “Coated Chain Link Fence” shall be full compensation for all costs necessary and incidental to the complete the installation of fencing, including but not limited to excavation, concrete, chain link fabric, posts, rails, black powder coating, and all associated assembly hardware.

“Safety Railing”, per linear foot.

The unit Contract price for “Safety Railing” shall be full compensation for all costs necessary and incidental to the complete the installation of railing, including but not limited to mounting in sidewalk, grout, sleeves, rails and posts, balusters, welding, fittings, and hardware.

8-13 MONUMENT CASES

8-13.3 Construction Requirements

Supplement this Section with the following:

Existing monuments within the project limits have been identified on the Plans.

Where shown in the Plans or where directed by the Engineer, existing monument case and cover shall be adjusted to the finished grade. The existing monument shall be carefully protected so as not to disturb its location in any way. The Contractor shall have a licensed professional land surveyor locate the monument in accordance with 1-05.5(2) prior to the case and cover adjustment if any disturbance of the monument is probable. The existing cast iron ring and cover shall be removed and thoroughly cleaned before reinstalling at finished grade.

Monuments in conflict with proposed improvements as shown in the Plans, or disturbed during construction, shall be removed and reset, with a new monument case and cover.

The Contractor along with the Professional Land Surveyor (PLS) engaged in construction surveying for the Contractor shall be responsible for perpetuating and documenting existing monuments in compliance with the Application for Permit to Remove or Destroy a Survey monument (WAC 332-120). Following approval by the Public Land Survey Office at the Department of Natural Resources (DNR), copies of approved permits shall be forwarded to the City. After monuments are replaced Contractor shall file a Record of Survey or Land Corner Record as required by (DNR) and provide copy to the City for review.

The Contractor shall work diligently to protect from harm any property corners which are encountered during construction. All disturbed property corners shall be replaced by a PLS at no additional cost to the city.

8-13.4 Measurement

Supplement this Section with the following:

“Adjust Monument Case and Cover” will be measured per each.

“Monument Case and Cover” will be measured per each.

8-13.5 Payment

Supplement this Section with the following:

“Adjust Monument Case and Cover”, per each.

The unit Contract price for “Adjust Monument Case and Cover” shall be full compensation for costs necessary and incidental to complete the work, including but not limited to survey; removal, cleaning, and reinstallation; adjustment to finish grade and interim adjustments if required; and perpetuation requirements if monument is disturbed.

“Monument Case and Cover”, per each.

The unit Contract price for “Monument Case and Cover” shall be full compensation for costs necessary and incidental to complete the work, including but not limited to resetting, surveying, perpetuation and documentation, new case and cover, and adjustment to finish grade.

8-14 CEMENT CONCRETE SIDEWALKS

8-14.2 Materials

Supplement this section with the following:

Cement concrete sidewalk and curb ramps shall be constructed with air-entrained Class 4000 Portland Cement Concrete per Standard Specifications Section 6-02.

8-14.3 Construction Requirements

Replace this Section with the following:

The Contractor shall have the subgrade prepared and the line or formwork for sidewalk placed at least 24 hours prior to installing cement concrete sidewalks. Compliance shall be checked by the prime contractor when forms are set and when concrete is poured. Any modification of grading from that shown on the Plans as required for ADA compliance shall be approved by the Engineer. Minor adjustment shall be considered changes the Plan elevations or offsets of 3 inches or less. The work to revise the lines, formwork and subgrade for minor adjustments shall be considered incidental to the bid price for cement concrete sidewalk. If the lines and formwork are not in conformance with the Plans all adjustments, regardless of size, shall be at the sole expense of the Contractor. Adjustments to the lines and grades shall not constitute a basis for claims for additional contract time or expenses.

Sidewalk cross slope shall be 1.5% maximum.

Add the following new sections:

8-14.3(6) Curb Ramps

Curb ramps must comply with all current ADA standards; minor modifications to the grades and dimensions shown on the Plans may be required to meet current standards. Ramps which do not meet the current ADA standards shall be removed and replaced at the Contractor’s expense.

Per the Standard Specifications, detectable warning surfaces shall be furnished and installed on each curb ramp. Detectable warning surface shall be per City of Kirkland Standard Plan CK-R.25B.

8-14.4 Measurement

Supplement this Section with the following:

“Cement Conc. Sidewalk” will be measured per square yard across finished sidewalk surface.

“Cement Conc. Curb Ramp” will be measured per square yard across finished concrete curb ramp surface, including flares and landings.

Thickened (6-inch) cement concrete sidewalk as noted in the plans where above the stormwater detention vault shall be measured and paid as “Cement Conc. Driveway Entrance”, per square yard.

8-14.5 Payment

Supplement this Section with the following:

“Cement Conc. Sidewalk”, per square yard.

The unit Contract price for “Cement Conc. Sidewalk” shall be full compensation for all costs necessary and incidental to the complete installation of cement concrete sidewalk, including but not limited to forms and form adjustments, procuring and placing concrete, jointing, and finishing.

“Cement Conc. Curb Ramp”, per square yard.

The unit Contract price for “Cement Conc. Curb Ramp” shall be full compensation for all costs necessary and incidental to the complete installation of cement concrete curb ramps, including but not limited to forms, form adjustments, procuring and placing concrete, joint materials, finishing, excavation, spoils haul and disposal.

8-18 MAILBOX SUPPORT

8-18.3 Construction Requirements

Supplement this section with the following:

At the locations shown on the Plans or directed by the Engineer, mailboxes shall either be reinstalled on new wood supports with all new hardware per WSDOT Standard Plan H-70.10, or reinstalled on new mailbox clusters with all new hardware per City of Kirkland Standard Plan CK-R.45.

Remove and dispose of existing mailbox supports and hardware.

Where property owner elects to provide a new mailbox, the Contractor shall install the new mailbox on new support with new hardware and salvage the existing mailbox to the property owner.

8-18.4 Measurement

Supplement this section with the following:

“Mailbox Support Type 1” will be measured per each.

“Mailbox Cluster” will be measured per each.

8-18.5 Payment

Supplement this section with the following:

“Mailbox Support Type 1”, per each.

The unit Contract price for “Mailbox Support Type 1” shall be full compensation for all costs necessary and incidental to complete the Work, including but not limited to maintaining temporary mail services, reinstalling each existing mailbox (or installing new box if provided by property owner) on a new support, new hardware, excavation, and backfill.

“Mailbox Cluster”, per each.

The unit Contract price for “Mailbox Cluster” shall be full compensation for all costs necessary and incidental to complete the Work, including but not limited to maintaining temporary mail services, reinstalling each existing mailboxes (or installing new box if provided by property owner), treated wood posts, roof and support, PVC sleeves, sand, new hardware, excavation, and backfill.

8-20 ILLUMINATION, TRAFFIC SIGNAL SYSTEMS, INTELLIGENT TRANSPORTATION SYSTEMS, AND ELECTRICAL

8-20.1 Description

Supplement this Section with the following:

This work shall consist of furnishing, installing and field testing all materials and equipment necessary to complete in place, fully functional systems of any or all of the following types, all in accordance with approved methods, WSDOT design guidelines, City of Kirkland guidelines and Standard Details, the Plans, the WSDOT Standard Specifications, the WSDOT Standard Plans, and these Special Provisions:

1. Illumination System
2. Rectangular Rapid Flashing Beacon (RRFB) System

The work involves, but shall not be limited to, the furnishing, installing and field testing of foundations, electrical service cabinets, luminaire poles and bases, luminaires, , pedestrian push buttons, RRFB light bars, RRFB controller with cabinet, junction boxes, conduit, wiring, as well as other incidental work and materials as may be required to complete the installation of fully functional systems.

Unless otherwise noted, the location of poles, cabinets, conduits, junction boxes and appurtenances shown in the Plans are approximate; and the exact location will be verified by the Engineer in the field.

8-20.1(2) Industry Codes and Standards

Supplement this Section with the following:

National Electric Safety Code (NESC), Secretary NESC, NESC Committee, IEEE Pose Office Box 1331, 445 Hoes Lane, Piscataway, NJ 08855-1331.

8-20.1(3) Permitting and Inspections

Supplement this Section with the following:

All permitting, inspection and testing shall be paid for by the Contractor. The Contractor shall comply with all laws, ordinances, rules, orders, and regulations relating to the performance of the work, the protection of adjacent property, and the maintenance of all other facilities. The Contractor will be required to comply with all the provisions of these instruments and shall save and hold the City of Kirkland harmless from any damage which may be incurred as a result of the Contractor's failure to comply with all the terms of these permits.

The City Electrical Inspector shall inspect and approve the electrical portions of the project. The Contractor shall notify the City Electrical Inspector at least 24 hours in advance of required field inspection. Before work begins, the Contractor shall contact the City of Kirkland Electrical Inspector to coordinate a schedule of electrical inspection (call the request line at 425-587-3613). This project shall be accomplished in compliance with WAC 296-46B-010 Traffic Management Systems and shall conform to the current adopted version of the NEC.

Prior to PSE energizing service cabinets, a Transportation Maintenance and electrical inspection must be passed with a copy of the electrical control permit and inspection sticker inside cabinets.

8-20.1(4) Errors and Omissions

Section 8-20.1(4) is added as follows:

The Contractor shall immediately notify the Engineer upon discovery of any errors or omissions in the Contract Documents, in the layout as given by survey points and instructions, or of any discrepancy between the Contract Documents and the physical conditions of the locality. If deemed necessary, the Engineer shall rectify the matter and advise the Contractor accordingly. Any work done after such discovery without authorization by the Engineer will be done at the Contractor's risk.

8-20.2 Materials

Supplement this Section with the following:

General

All materials and methods required under this Section, unless otherwise superseded herein, shall conform to the National Electric Code (NEC) and the Manual on Uniform Traffic Control Devices (MUTCD) as adopted by the State of Washington.

All materials shall be handled in loading, unloading and erecting in such a manner that they will not be damaged. Any parts that are damaged due to the Contractor's operations shall be repaired or replaced at the Contractor's expense. All repairs shall be to the approval of the Engineer.

The Engineer reserves the right to inspect the manufacturing process of all materials. Approval to install materials and equipment must be obtained from the Engineer at the job site before installation. Final inspection and acceptance of the installed materials will not be given until final installation and testing has been completed on the systems.

Materials shall be as specified in Section 9-29 of the Standard Specifications and Section 9-29 of these Special Provisions.

When submitting material lists for approval, the Contractor shall identify all revisions or changes to manufacturer names, component names, and model numbers listed in these Special Provisions. The Contractor shall also include a brief justification for the revision or change.

Guarantees

The supplier shall furnish to the Contracting Agency any guarantee or warranty furnished as a normal trade practice in connection with any equipment supplied for this Contract.

8-20.2(1) Equipment List and Drawings

Remove "If required to do so" from the first sentence of the second paragraph.

After the last paragraph, add the following:

Manufacturer's technical information shall be submitted for all poles, arms, luminaires, RRFB light bars, RRFB controller with cabinet, electrical service cabinets, wire, conduit, junction boxes and all other items to be used on the Project. All approvals by the Engineer must be received by the Contractor before material will be allowed on the job site. Materials not approved will not be permitted on the job site. Final ground and roadway cross sections at the locations of the standards shall be submitted for approval along with the shop drawings. Submittal shall also include a cable vault installation plan showing the exact proposed installation location by roadway station, offset and the scheduled sequence for each cable vault installation.

A material staging plan, should the Contractor propose Contracting Agency-owned property for staging areas, should be submitted before any materials are allowed on that site.

Manufacturer's data for all materials proposed for use in the Contract which require approval shall be submitted in one complete package.

All shop drawings for luminaire and RRFB poles that are not listed on the WSDOT Pre-Approved Plans shall be stamped by a State of Washington registered Structural Engineer.

The Engineer shall have 14 calendar days to review information for each submittal that is made. The actual time required for approval is dependent upon the completeness and appropriateness of the Shop Drawings as submitted.

Any deficiencies will require additional time for approval based on the degree of the deficiency and the additional review time required. If the Shop Drawings are returned to the Contractor to correct deficiencies, an additional 14 calendar days may be required for the approval process.

If more than 14 calendar days are required for routine approval of Shop Drawings that are completed and accurate, the Contractor will be granted an extension of time equal to the additional review time.

Approval of shop drawings does not constitute final acceptance or guarantee of the material, but is solely to assist the Contractor in providing the specified materials.

For each proposed material that is required to be submitted for approval using either the OPL or RAM process the Contractor will be allowed to submit for approval two materials per material type at no cost. Additional materials may be submitted for approval and will be processed at a cost of \$150.00 per material submitted by QPL submittal and \$350.00 per material submitted by RAM. All costs for processing additional materials will be deducted from monies due or that may come due to the Contractor. Subject to a request by the Contractor and a determination by the Engineer the costs for processing may be waived.

Manufacturer's data for materials proposed for the illumination, and RRFB systems for use in the Contract which require approval shall be submitted in one complete package.

8-20.3 Construction Requirements

8-20.3(1) General

Supplement this Section with the following:

All adjacent surfaces damaged by the Contractor's operations shall be repaired at his expense.

All equipment shall be handled and protected so as to prevent damage. Damaged equipment, if any, shall be repaired or replaced by the Contractor to the satisfaction of the Engineer at no additional cost to the Owner.

The Contractor is advised that safe wiring labels required by the State of Washington Department of Labor and Industries shall apply on this project.

At locations of proposed luminaires, the existing trees shall be cleared of all branches and limbs in such a manner that does not obstruct the new light distribution. See Section 2-01.3 for the extents of clearing required.

Power Source Coordination:

The Contractor shall coordinate all of the installation details for the electrical service cabinet(s) with Puget Sound Energy (PSE). Within four (4) weeks after Notice to Proceed, the Contractor shall meet with PSE Representative in the field to verify clearances to existing overhead power lines and the location of power sources as shown in the Plans and shall notify the Engineer immediately if any conflicts exist.

8-20.3(2) Excavating and Backfilling

Supplement this Section with the following:

The location of existing underground utilities, when shown on the Plans, is approximate only, and the Contractor shall be responsible for determining their exact location. The Contractor shall check with the utility companies concerning any possible conflict prior to commencing excavation in any area, as not all utilities may be shown on the Plans.

If a conflict is suspected, the Contractor shall contact the Engineer. The Engineer will determine if potholing is required. Potholing will be paid per Section 8-05 of these Special Provisions.

Conduit Trench Construction

To avoid conflicts with other utilities, the trench may be sloped or drifted.

Trench construction shall conform to the following:

1. The pavement shall be sawcut full-depth. The cuts shall be parallel to each other and extend 12 inches beyond each edge of the trench.
2. Trench depth shall provide 2 feet minimum cover over conduits.
3. Minimum trench bedding width shall be the conduit diameters plus 2 inches between conduits plus 2 inches on each side of trench.
4. Conduit bedding shall be clean sand. Trench backfill shall be Crushed Surfacing Top Course.

8-20.3(4) Foundations

Supplement this Section with the following:

Foundations for RRFB poles, streetlight poles, and cabinets shall be as specified in the Plans, in these Special Provisions, and in the Standard Plans and Specifications.

Concrete shall be placed against undisturbed earth where possible. Prior to placing the concrete, the Contractor shall block out around any other underground utilities that may lie in the excavated base to prevent foundation adherence to the utility line. Concrete foundations shall be troweled, brushed, edged and finished. All concrete on the anchor bolts shall be immediately removed following pouring of the foundation. Conduits shall be temporarily capped during the pour to prevent concrete from entering.

Foundation locations indicated in the Plans may be slightly revised in the field by the Engineer to improve effectiveness or due to unforeseen conflicts with existing facilities. Prior to foundation excavation, all locations shall be approved by the Engineer.

Luminaire pole foundations that are located near soldier pile wall shall have their foundations excavated by means of a vactor truck. The space between the soldier pile wall and the face of foundation shall be either concrete matching the type of the luminaire pole shaft or shall be CDF material.

Pole foundations in sidewalks shall be placed flush with the finished surface of the sidewalk unless otherwise shown in the Plans. The foundation and sidewalk shall be separated by a 3/4-inch expansion joint such that the foundation can be removed without damage to the surrounding sidewalk. The top 4 inches of all foundations shall be square with sides equal to the diameter.

The void between the foundation and the pole flange shall be no larger than 4 inches and shall be completely filled around the conduit(s) with dry pack mortar and neatly troweled. A plastic drain, 1/2-inch diameter, shall be placed in the mortar to provide drainage from the interior of the pole to the exterior. The plastic drain pipe shall be neatly trimmed flush with the surfaces.

The dry pack mortar shall consist of a 1:3 cement to fine sand mixture with enough water to allow the mixture to stick together when molded into a ball by hand, but will not exude water when pressed.

Luminaire pole foundation shall be per WSDOT Std. J-28.30

RRFB Pole Foundations shall be per WSDOT Std. Plan J-20.11

8-20.3(5) Conduit

8-20.3(5)A General

Supplement this Section with the following:

The size of conduit shall be as shown on the Plans.

All conduit installed underground shall have metal detectable Underground Hazard Marking Tape per Section 9-15(18) per the Standard Specifications. The Tape shall be 6 inches wide, legend "Caution-Electric Line Buried Below," placed approximately 12 inches above the conduit.

8-20.3(5)A3 Damaged or Blocked Conduits

Section 8-20.3(5)A3 is added as follows:

Damaged or blocked conduits shall be repaired by the Contractor. The Contractor shall attempt to remove debris in the conduit by blowing in air. The Contractor shall be careful not to blow air towards the service or controller cabinet. If the blockage doesn't break free, the Contractor shall identify the potential blocked/damaged location using a fish tape. Once the blockage location is identified the Contractor shall attempt to remove the existing cabling (if any) from the conduit. If the cabling is removed, the Contractor shall attempt to pass a fish tape through the conduit again. If the fish tape passes through the conduit past the identified blockage point easily, the Contractor shall attempt to reinstall all existing cabling along with any new cabling called out in the Contract Plans. If the existing cabling cannot be removed, or reinstalled after removal, the Contractor shall excavate down to the conduit blockage point and repair the conduit break. The Contractor shall obtain approval from the Engineer prior to removing existing cabling or beginning excavation. All cabling shall be removed from the conduit prior to repairing the broken conduit. Once the conduit is repaired, the Contractor shall restore the disturbed area. The removal of cable, excavation, conduit repair, and surface restoration will be paid for by force account. The cost for other work needed to identify and remedy blocked conduits as described in this section shall be incidental to lump sum items for the illumination and RRFB work.

Pull Tape

Each conduit run shall contain a pull tape meeting the requirements of Section 9-29.27 of these Special Provisions, which shall be tied off at both ends.

To allow for utility locates to occur in conduit segments that do not contain electrical conductors, the Contractor shall add a detectable pull tape in one of the conduits in the same trench. All other spare conduit may utilize non-detectable pull tape.

8-20.3(6) Junction Boxes, Cable Vaults, and Pull boxes

Supplement this Section with the following:

The locations of the junction boxes as shown in the Plans are approximate and the exact locations shall be determined in the field by the Contractor and approved by the Engineer prior to installation. Junction boxes shall be located outside the traveled way, curb ramps and landings, and driveways. The new junction box shall not interfere with any other previous or relocated installation. The lid shall also be flush with its frame and with the surrounding area whether it is shoulder, sidewalk, or other surface. All junction boxes installed in pedestrian access routes shall have non-skid, factory-coated lids and frames per Section 9-29.2(1)A and 9-29.2(2) of these Special Provisions.

When junction boxes are installed in the sidewalk or adjusted prior to construction of finished grade, pre-molded joint filler for expansion joints may be placed around the junction boxes. The joint filler shall be removed prior to adjustment to finished grade.

The Contractor shall not damage any existing conduits when replacing or excavating existing junction boxes. The Contractor is to maintain the integrity of all junction boxes during reconfiguration of the conduits, installation of new conduits or when excavating.

Damage to the junction boxes, pull boxes, cable vaults and the associated conduit system, or wiring resulting from the Contractor's operations, shall be replaced at no additional cost to the Contracting Agency.

8-20.3(9) Bonding, Grounding

Supplement this Section with the following:

All new and existing junction boxes, cable vaults and pull boxes that an equipment-grounding conductor is pulled to shall be bonded in accordance with Standard Specifications Section 8-20.3(9).

Location wires shall not be connected to the equipment-grounding system.

The Contractor shall provide and install bonding and grounding wires as described in Standard Specifications and the National Electric Code for any new metallic junction box and any modified existing junction boxes. For the purposes of this section, a box shall be considered "modified" if new current-carrying conductors are installed, including low-voltage conductors, or if the box is adjusted to grade, or if the box lid is modified.

8-20.3(10) Service, Transformer, and ITS Cabinets

Supplement this Section with the following:

Electrical service cabinet(s) shall be single phase 120/240 Volt, 3 wire 60 cycle A.C.

The Electrical service cabinet(s) shall be per City of Kirkland Standard Plan CK-TS.10.

The service points shall be as noted on the Plans and shall be verified with the electrical servicing utility (the Contractor to coordinate a power service point availability, with a power company).

The Contractor shall install new conduit, as shown on the Plans, from the New Electrical Service cabinet to the PSE power source (coordinate work with PSE prior to cabinet base installation). In

addition, the Contractor shall provide service conductors from the electrical service to the power source with at least 30 feet of service wire coiled and coordinate the connection with PSE Representative. All connections and interfacing with PSE shall conform to PSE requirements.

The Contractor shall have services inspected by the Electrical Inspector and shall be solely responsible for coordination with the power company to have the service energized. The Contractor shall notify the Inspector when the service is ready for connection and shall coordinate with PSE. The Contractor shall pay all connection fees.

The Contractor shall coordinate with PSE to label the service cabinet in a way that is acceptable to PSE.

All service cabinets shall be shipped and delivered to the job site in a protective covering with suitable dunnage to prevent damage to the exterior surface.

8-20.3(13) Illumination Systems

8-20.3(13)C Luminaires

Supplement this Section with the following:

Each roadway luminaire shall be installed with a shorting cap on each individual luminaire fixture.

The illumination system shall be energized from a single photoelectric cell mounted on top of the electrical service cabinet(s) as shown on the City of Kirkland Standard Drawing CK-TS.10.

8-20.3(14)F Rectangular Rapid Flashing Beacon (RRFB) System

Section 8-20.3(14)F is added as follows:

The Contractor shall furnish and install AC hardwired Rectangular Rapid Flashing Beacon (RRFB) systems, including foundations, poles, pole mounted controller cabinet, light bars, ADA compliant push buttons, signs and all associated equipment per the Plans, these Special Provisions, Section 9-29.28 and per manufacturer's recommendation and/or as directed by the Engineer.

The Contractor shall coordinate with the City Electrical Inspector for RRFB system final operational testing.

8-20.3(17) "As-Built" Plans

Supplement this section with the following:

The Contractor shall keep current "pencil redline" as-built drawings for any installation and/or modification. As-built drawings shall be available to the Engineer upon request.

8-20.4 Measurement

Supplement this section with the following:

All below listed "_____ System, Complete", shall be per lump sum for a complete system and no specific unit of measurement will apply.

8-20.5 Payment

Supplement this section with the following:

"Illumination System, Complete", lump sum.

The lump sum Contract price shall be full compensation for the costs of all tools, equipment, materials, and labor necessary and incidental to provide a complete and operational illumination system, including but not limited to: foundations, luminaire poles, arms, luminaires, junction boxes, electrical service cabinet(s), electrical service cabinet foundation(s), excavation, conduit, wiring, pull rope, vector truck excavation, CDF backfill, extra excavation, bedding, backfill, surface restoration for items where a specific bid item is not provided in the proposal, required permitting, testing, and inspection, removing equipment, coordination with utilities, and all other Work and materials as specified herein and shown in the Plans.

“Rectangular Rapid Flashing Beacon System, Complete”, per lump sum.

The lump sum Contract price shall be full compensation for the costs of all tools, equipment, materials, and labor necessary and incidental to provide a complete and operational Rectangular Rapid Flashing Beacon (RRFB) system, including but not limited to: foundations, poles, push buttons, RRFB light bars, RRFB controller and cabinet, signs on poles, junction boxes, wiring, conduit, excavation, bedding, backfill, surface restoration for items where a specific bid item is not provided in the proposal, required testing and inspection, and all other Work and materials as specified and shown in the Plans.

8-21 PERMANENT SIGNING

8-21.3 Construction Requirements

Supplement this section with the following:

Signs shall be manufactured and installed in accordance with the current edition of WSDOT's Washington State Sign Fabrication Manual, the Manual on Uniform Traffic Control Devices (MUTCD), and all provisions of Section 9-28 (Signing Materials and Fabrication), and WSDOT Standard Plans.

Existing signs shall be removed and replaced with new signs at the locations as indicated on the Plans, with all new posts, foundations, hardware, and plaques, unless otherwise noted. Existing sign plaques noted for reinstallation shall be protected during construction and reinstalled in original condition.

Signs noted for reinstallation that become damaged as a result of construction for this project shall be replaced at the Contractor's expense. Any damage to signs not noted for removal as a result of construction activities shall also be replaced at the Contractor's expense.

Regulatory signs must remain visible to traffic and pedestrians at all times; temporary placement of regulatory signs may be necessary by portable sign stand or other means. Temporary regulatory signs shall be placed as close to the original sign's location as practicable. All regulatory sign placement, whether temporary or permanent, shall follow the requirements of the Manual on Uniform Traffic Control Devices (MUTCD), latest version.

The City will provide up to four “Businesses Are Open” signs; the Contractor shall install the signs back to back on a 4x4” wood post at business locations, at locations approved by the Engineer. The Contractor shall install, maintain, and return the signs to the City upon project completion.

The City will provide two project information signs; the Contractor shall install the signs on a minimum of two 4x4” wood posts at a location approved by the Engineer. The Contractor shall install, maintain, and return the signs to the City upon project completion.

8-21.5 Payment

Supplement this section with the following:

“Permanent Signing”, lump sum.

The lump sum Contract price for “Permanent Signing” shall be full compensation for all costs necessary and incidental to complete the work, including but not limited to removing existing signing, temporarily reinstalling signs to accommodate construction activities, sign posts, excavation and backfill, hardware, foundations, and plaques.

8-22 PAVEMENT MARKING

8-22.4 Measurement

Supplement this section with the following:

No specific unit of measurement will apply to the lump sum item “Removal of Pavement Markings”.

The measurement for “Paint Line” will also include 6-inch wide paint lines.

The measurement for “Profiled Plastic Line” will also include 6-inch wide profiled plastic lines.

“Plastic Pedestrian Lane Symbol”, will be measured per each.”

“Plastic Green Bike Crossing Line”, will be measured per square foot, not including spaces between lines. Measurement will also include white plastic end lines.

8-22.5 Payment

Supplement this section with the following:

“Removal of Pavement Markings”, lump sum.

The lump sum Contract price for “Removal of Pavement Markings” shall be full compensation for all costs necessary and incidental to removing existing pavement markings in conflict with improvements, as shown on the Plans or directed by the Engineer.

“Plastic Pedestrian Lane Symbol”, per each.

“Plastic Green Bike Crossing Line”, per square foot.

8-24 ROCK AND GRAVITY BLOCK WALL AND GABION CRIBBING

8-24.1 Description

Supplement this section with the following:

This work shall consist of constructing structural gravity block walls and non-structural modular block walls as detailed on the Plans and per manufacturer’s recommendations.

8-24.2 Materials

Supplement this section with the following:

Non-structural modular block wall shall be 21-inch straight-faced near vertical Keystone standard blocks units as manufactured by Keystone Retaining Wall Systems, or approved equivalent. Blocks shall be manufacturer’s standard color Gray.

Precast concrete blocks wall units for gravity blocks walls shall be Gravity Retaining Blocks (28-inch to 41-inch) as manufactured by Redi-Rock, as shown on the website www.redi-rock.com.

8-24.3 Construction Requirements

Supplement this section with the following:

Minimum embedment for all block walls shall be 6 inches.

8-24.3(1) Excavation

Supplement this section with the following:

The existing ground shall be excavated to provide uniform flat subgrade compacted to 95% of maximum dry density prior to placing 6-inch, Crushed Surfacing Top Course foundation pad.

8-24.3(1)E Rock Placement and Backfill

This section is to be supplemented with the following:

All block walls shall have a 12-inch wide drainage course and 4-inch perforated drainage pipe placed behind the back of wall per manufacturer's recommendations, the drain pipe shall be extended out from the ends of the wall to daylight or connect to a drainage structure as shown in the Plans.

Backfill for Gravity block walls shall be Crushed Surfacing Top Course.

Backfill for Modular block walls shall be Gravel Borrow.

8-24.4 Measurement

Supplement this section with the following:

"Modular Block Wall" will be measured per square foot of wall face from the top cap block to a maximum of 12 inches below finished grade.

"Gravity Block Wall" will be measured per square foot of wall face from the top of wall to the toe of wall as shown on the Plans.

8-24.5 Payment

Supplement this section with the following:

"Modular Block Wall", per square foot.

The unit Contract price for "Modular Block Wall" shall be full compensation for all costs necessary and incidental to the complete installation, including but not limited to blocks, CSTC foundation, drain rock, wall drain pipe and connection to storm structure, geotextile filter fabric, compaction, and unit core fill.

"Gravity Block Wall" per square foot.

The unit Contract price for "Gravity Block Wall" shall be full compensation for costs necessary and incidental to the complete installation, including but not limited to blocks, CSTC foundation, CSTC backfill, unit core fill, drain rock, cleanouts, wall drain pipe and connection to storm structure, geotextile filter fabric, compaction, and coordination with the manufacturer.

END OF DIVISION 8

DIVISION 9 MATERIALS

9-03 AGGREGATES

9-03.21 Recycled Material

Supplement this section with the following:

Recycled materials are not allowed to be used as bedding material for any pipe or utility type.

9-14 EROSION CONTROL AND ROADSIDE PLANTING

9-14.2(1) Topsoil Type A

Supplement this section with the following:

Topsoil Type A shall be 50% pure organic compost and 50% sand or sandy loam. The soil shall be high in organic content and comprised of fully composted and mature organic materials.

Refer to Section 9-14.4(8) Compost of the Standard Specifications for compost requirements. No fresh sawdust or other fresh wood by-products shall be added to extend the volume after the composting process.

Chemical and physical characteristic of Topsoil Type A shall comply with the following:

Screen Size	7/16" Maximum (Approximate Particle Size)
Total Nitrogen	0.25% Minimum
Organic Matter	10% Minimum
pH Range	5.5 to 7.5
Conductivity	5 mmhos/cm Maximum

The Contractor shall provide a complete analysis of Topsoil Type A with one cubic foot sample for review and approval

9-14.3 Seed

Supplement this section with the following:

The grass seed dealer shall mix the grass seed. The Contractor shall furnish the Engineer with a dealer's guaranteed statement of the composition, mixture, and the percentage of purity and germination of each variety.

The seed mixtures for hydroseeding shall conform to the composition specified below:

	% Weight	% Purity	% Germination
Lolimum perenne/Perennial Rye (2 Varieties Dasher 3 and Cutter II or approved equal)	70	98	90

Festuca rubra var. Garnet	15	98	90
Festuca rubra spp. Fallax or Windward	15	98	90

Seed shall be applied at the rate recommended by the seed supplier.

9-14.4 Fertilizer

Supplement this section with the following:

All fertilizer applications for trees and shrubs shall follow Washington State University, National Arborist Association or other accepted agronomic or horticultural standards.

Fertilizer for seed planting areas shall be slow release low phosphorus containing Nitrogen-Phosphorus-Potassium at 3-1-2 ratio by weight.

Fertilizer for plant materials shall be Agriform slow release 20-10-5 NPK tablets, or approved equal.

9-14.5(3) Bark or Wood Chip Mulch

Supplement this section with the following:

Bark mulch shall be medium grade composted ground fir or hemlock bark.

The bark shall be uniform in color, free from weed seeds, sawdust and splinters. The mulch shall not contain resin, tannin, wood fiber or other compounds detrimental to plant life. The moisture content of bagged mulch shall not exceed 22%. The acceptable size range of bark mulch material is ½-inch to 1-inch with maximum of 20% passing the ½-inch screen.

9-14.7 Plant Materials

9-14.7(2) Quality

Supplement this section with the following:

Plant material shall be free from disfiguring knots, swollen grafts, sunscald injuries, bark abrasions, evidence of improper pruning or other objectionable disfigurement.

Potted and container stock shall be well rooted and vigorous enough to ensure survival and healthy growth. Shrubs shall have full foliage (not leggy). Container stock shall be grown in its delivery container for not less than six (6) months, but not for more than two (2) years. Root bound or broken containers will not be accepted. Bare root, liner and root stock with dried or shriveled roots from exposure will not be accepted.

Measurements, caliper, branching, grading, quality, balling and burlapping shall follow the Code of Standards of the American Associate of Nurserymen in the American Standard for Nursery Stock, ANSI 260.1, latest edition. Measurements shall be taken with all branches in their normal growing position. Plants shall not be pruned prior to delivery to site.

9-14.7(3) Handling and Shipping

Supplement this section with the following:

All plant material shall be transported to planting locations with care to prevent damage. Tie back branches as necessary, and protect bark from chafing with burlap bags. Do not drag plant materials along ground without proper protection of roots and branches. Protect rootballs from environmental or mechanical damage and water as necessary to keep roots moist. Do not store plants for more than one week.

Add the following new section:

9-14.9 Tree Watering Bag System

Tree watering bag system shall be commercially available, 15-gallon, slow-release watering bag with two (2) water-release points per bag. Materials: UV-stabilized polyethylene with nylon zipper and polypropylene handle straps; color: green.

9-29 ILLUMINATION, SIGNAL, ELECTRICAL

9-29.1 Conduit, Innerduct, and Outerduct

Supplemented this section with the following:

Conduit Sealing

Cabinet conduit sealing shall be one of the following:

1. Duo-fill 400 – self expanding waterproof foam
2. Jackmoon – Triplex Duct Plugs
3. O-Z Gedney – Conduit Sealing Bushings

Mechanical plugs shall be installed per manufacturer's recommendations.

9-29.2 Junction Boxes, Cable Vaults, and Pull Boxes

Supplement this section with the following:

Type 1 and Type 2 junction boxes shall be concrete and shall be as noted in the Plans and in conformance with WSDOT Standard Plan J-40.10. Type 8 junction boxes (dual lid) shall conform to WSDOT Standard Plan J-40.30.

All junction boxes shall have lockable covers and non-slip surface on the cover and frame. All covers and frames shall be hot-dip galvanized at the factory.

9-29.2(1)A Standard Duty Junction Boxes

Supplement this section with the following:

Grounding lugs shall be stainless steel and shall be mechanically and electrically bonded. Junction

Non-Concrete Junction Boxes shall not be allowed on the project.

Junction box markings shall conform to Section 9-29.2(4) of the Standard Specifications, except shall be marked per the following schedule:

<u>System Type</u>	<u>Legend</u>
Illumination	LT
RRFB	TS

When Junction Boxes are shown on the plans to share two different power circuits, the higher voltage circuit shall dictate the marking that is applied to the Junction Box Lid.

The Non-slip lid and frame shall be made of the following material:

Non-slip lid	ASTM A36 flat steel
Non-slip frame	ASTM A36 flat steel

Slip-Resistance Surfacing for Junction Boxes, Cable Vaults, and Pull Boxes

Where slip-resistant junction boxes, cable vaults, or pull boxes are required, each box or vault shall have slip-resistant surfacing material applied to the steel lid and frame of the box or vault. Where exposed portion of the frame is ½ inch wide or less, slip-resistant surfacing material may be omitted from that portion of the frame.

Slip-resistant surfacing material shall be identified with a permanent marking on the underside of each box or vault lid where it is applied. The permanent marking shall be formed with a mild steel weld bead, with a line thickness of at least 1.8 inch. The marking shall include a two character identification code for the type of material used and the year of manufacture or application. The following materials are approved for application as slip-resistant material, and shall use the associated identification codes:

1. Harsco Industrial IKG, Mebac #1 – Steel: M1
2. W.S. Molnar Co., SlipNOT Grade 3 – Course: S3
3. Thermion, SafTrax TH604 Grade #1 – Coarse: T1

9-29.3(2) Electrical Conductors and Cable

Supplement this section with the following:

Each illumination wire shall be numbered at each terminal end with a wrap-around type numbering strip bearing the circuit number shown on the Plans.

The Contractor shall provide and install all necessary wiring, fuses, and fittings so as to complete the installation of the RRFB, and lighting equipment as required. All materials and installation methods, except as noted otherwise herein, shall comply with applicable sections of the National Electrical Code.

9-29.6 Light and Signal Standards

9-29.6(1)A Luminaire Poles

Section 9-29.6(1)A is added as follows:

Light Standards with Type 1 Luminaire Arm

Lighting standards shall be WSDOT Std. Plan J-28.10 and shall be fabricated in conformance with the methods and materials specified on the pre-approved plans listed below, provided the following requirements have been satisfied:

- (a) Pole Mounting Height shall be as shown on the Plans and verified by the Engineer prior to fabrication. Fabrication tolerance shall be ±6 inches.

(b) All other requirements of the Special Provisions have been satisfied.

Fabricator	Pre-Approved Drawing No.	Rev.	Mounting Height(s) (feet)
Valmont Ind., Inc.	DB01164, Sheets 1-5 of 5	B	30, 35, 40, and 50
Ameron Pole Products Division	WA15LT3721, Sheets 1 and 2 of 2	A	20, 25, 30, 35, 40, 45, and 50
Millerbend Manufacturing Co.	74515-WA-LP1-SB, Sheets 1-3 of 3	G	30, 35, 40, and 50

9.29(7) Luminaire Fusing and Electrical Connections at Light Standard Bases, Cantilever Bases, and Sign Bridge Bases

9-29.7(1) Unfused Quick-Disconnect Connector Kits

Delete first paragraph and replace with the following:

Junction Box Illumination splices shall be C-Tap with mastic/tape.

9-29.7(2) Fused Quick – Disconnect Kits

Delete the first paragraph and replace with the following:

Luminaire pole fusing shall be SEC Single Fused Connector Kit, Model 1791-SF. Fuses shall be Bussman Type FNM, Reliance MEN, or Gould-Shawmut TRM, and shall be slow burn 10 A.

Fused disconnect splice kits shall be installed in the handhole at every luminaire pole.

9-29.10(1) Conventional Roadway Luminaires

Replace this section with the following:

Conventional LED roadway luminaires shall be furnished and installed by the Contractor and shall meet the general requirements of Section 9-29 Illumination, Signals, and Electrical of the Standard Specifications.

Head module for the Conventional Roadway Luminaires shall be cobra-head configuration with an aluminum housing with universal four-bolt slip fitter mounts to 2" diameter tenon. Electrical components shall be accessed without tools and shall be mounted on a removable power door. Power door shall include quick disconnects to terminal block and LED board. Housing shall be fade and abrasion resistant powder coat per Section 6-07 of these Special Provisions.

LEDs shall produce a minimum of 70% of initial intensity at 70,000 hours of life. LEDs shall be tested in accordance with IESNA LM-80 testing procedures and testing results shall be provided to the Engineer.

Conventional LED roadway luminaires shall be classified as full cutoff with 0% total lumens above 90°.

Nominal color temperature shall be 4000K.

Driver shall contain integral surge protector.

Optical systems shall be IP66 rated.

All furnished roadway LED luminaires as noted in the Plans shall be:

- Leotek Green Cobra Midsize Street Light with 60 LEDs (110watts), Universal 120-277V Electronic Driver, 3000k Nominal Color Temperature, Type 4 Light Distribution, Gray Factory Finish, Factory set at 800mA Drive Current. (GCM3-60J-MV-30K-3R-160).
- Leotek Green Cobra Midsize Street Light with 60 LEDs (125watts), Universal 120-277V Electronic Driver, 3000k Nominal Color Temperature, Type 4 Light Distribution, Gray Factory Finish, Factory set at 970mA Drive Current. (GCM3-60J-MV-30K-4-170).
- Or Engineer approved equal.

Conventional Roadway Luminaire Performance Specifications

If “approved equal” roadway luminaire fixture is selected for use in this Contract, the roadway luminaire manufacturer shall meet the following criteria (in addition to the above listed requirements):

- Luminaire photometric shall meet the project design criteria (minimum average and maximum uniformity) without altering luminaire mounting height or modifying pole locations as shown on the Plans. The design criteria must be met accounting for both roadway luminaires and decorative luminaires per Section 9-29.10(2) of the Standard Specifications. Luminaires shall be laboratory tested by certified independent testing laboratories in accordance with IES LM-79 testing procedures. The Contractor’s provided illumination calculations (in the form of an AGI-32 file including roadway and pedestrian scale luminaires) shall meet the following requirements and be subject to the Engineer’s approval.
 - Curved Arterial Roadway with Low Pedestrian Conflict, Illuminance Method (Juanita Drive) 0.8 Fc Average Illuminance
3.0:1 Average Uniformity (Avg/Min)
 - Straight Arterial Roadway with Low Pedestrian Conflict, Luminance Method (Juanita Drive) 0.6 cd/m² Average Luminance
3.5:1 Average Uniformity (Avg/Min)
0.3 Maximum Veiling Ratio
 - Intersection of Arterial/Local Roadways with Low Pedestrian Conflict, Illuminance Method 1.2 Fc Average Illuminance
3.0:1 Average Uniformity (Avg/Min)
 - Sidewalk/Shared Use Paths with Low Pedestrian Conflict, Illuminance Method 0.3 Fc Average Illuminance
6.0:1 Average Uniformity (Avg/Min)
0.1 Fc Minimum Vertical Illuminance

These light levels and uniformity ratios were derived from IESNA RP-8-18 “Recommended Practice for Design and Maintenance of Roadway and Parking Facility Lighting” and per City of Kirkland Standards. A light loss factor (LLF) of 0.81 was used, representing a lumen depreciation factor of 0.9 and a dirt accumulation factor of 0.9.

- An AGI-32 file with luminaire locations and calculation areas may be obtained from the Engineer upon request.

- All furnished roadway LED luminaires shall be of the same manufacturer. Modifications from the Plans must be clearly outlined and presented to the Engineer.
- Luminaire appearance and size shall be subject to the Engineer's approval.
- Ease of maintenance, including tool-less entry, and availability of spare components shall be demonstrated to the Engineer.

9-29.11 Control Equipment

9-29.11(2) Photoelectric Controls

Supplement this section with the following:

The photo-cell to control the system shall be mounted on top the service/contractor cabinet(s).

Photoelectric controls shall be a plug-in device, rated to operate on 120 volts, 60Hz. The unit shall consist of a light sensitive element connected to the necessary control relays. The unit shall be so designed that a failure of any electric component will energize the lighting circuit.

The photo-cell shall be a solid state device with stable turn on values in the temperature range of -55 degrees C to + 70 degrees C. The photo-cell shall be rated for a 20-year (or higher) life expectancy.

9-29.24 Service Cabinets

Section 9-29.24 is supplemented with the following:

The Electrical Service cabinets shall be per City of Kirkland Standard Plan CK-TS.05A. The Breaker configuration shall be per City of Kirkland Standard Plan CK-TS.05B. The street lighting service cabinet shall be as called out herein in section 8-20 of these Special Provisions and as shown on the City of Kirkland Standard Plans.

Add the following new Sections:

9-29.28 Rectangular Rapid Flashing Beacon (RRFB) Assembly

The rectangular rapid flashing beacons (RRFB) assembly lights and controller **shall be AC powered (as shown on the plans), Eltec model per City of Kirkland RRFB Policy R-24. RRFB mounted equipment shall be per City of Kirkland RRFB Policy R-24, the Plans and details and shall be complete in all respects.** Signs shall be per the Plans.

The rectangular rapid flashing beacons (RRFB) assembly APS Style Pedestrian Push Buttons shall be the iNX Push Button Station by Polara. APS Push Style Pedestrian Push buttons shall be yellow in color with one 9" x 12" R10-25 sign (PUSH BUTTON TO TURN ON WARNING LIGHTS).

The rectangular rapid flashing beacon (RRFB) pole and base assembly shall be per City of Kirkland RRFB Policy R-24, the Plans and details and shall be complete in all respects capable of supporting RRFB equipment per the Plans, and shall consist of two (2) subassemblies. Pole length shall be a minimum of 16'.

Pole Subassembly

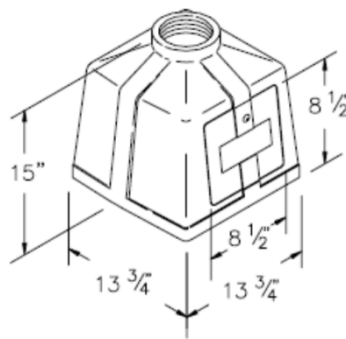
The pole shall be a 4 inch - 8 NPT pipe manufactured from Schedule 40, spun aluminum meeting the following minimum requirements:

- Standard 4" SCH 40 ASTM A53 Grade B pipe.
- The bottom of the pipe shall be threaded to screw into the breakaway base assembly. Threading and deburring of the pole shall be in accordance with the basic dimensions of American National Standard Taper Pipe Threads, NPT (ANSI B1.2).
- Packaging: Threaded end shall have protective cap to prevent thread damage. Cardboard sleeve shall cover the entire length of shaft to protect surface finish during storage and shipment.

Base Subassembly

The pole base shall be breakaway, square aluminum pedestal base with aluminum door meeting the following minimum requirements:

- Square cast aluminum with natural finish, minimum weight of 21 lbs. with dimensions as shown in the Figure below.



- Upper end shall be threaded to receive a 4" NPT pipe shaft. Base threads shall be tapped to allow full pole engagement w/o exposed threads on the pole.
- The base shall be of such design that it may be fastened to a foundation with four (4) 3/4" anchor bolts located 90 degrees apart on the bottom of the base.
- There shall be slots in the bottom of the base 1 1/2" wide and 2 1/2" long measured along the circumference of the bolt circle, allowing a proper fit even if the bolts are placed slightly off center. The base plate shall accommodate bolt circle of 12" and anchor bolts with a diameter of 3/4".
- The base shall be equipped with a removable aluminum door. Door opening shall be free of burrs and sharp edges and be no less than 8 1/2" square. The door shall be attached to the base using one stainless steel socket button head screw to prevent unauthorized entry.
- The base housing and its components shall be fabricated free of voids, pits, dents, molding sand and excessive foundry grinding marks. All design radii shall be smooth and intact. Exterior surface finish shall be smooth and cosmetically acceptable by being free of molding fins, cracks and other exterior blemishes.

- Frangibility: The base shall meet or exceed 1985 AASHTO breakaway requirements. Test reports from an FHWA approved independent laboratory shall be provided certifying that the base has been tested and meets all applicable requirements. In addition, a statement of certification from the FHWA stating such tests have been accepted and approved shall be supplied.
- Structural Integrity: In order to prove structural soundness a certification from a recognized independent structural laboratory shall be provided certifying that the base will withstand a bending moment of 10,750 ft. lbs. Such test shall be performed in the following manner:
 - A force shall be applied at a distance from the bottom of the base in order to produce a moment. All bases must reach a moment capacity of 10,750 ft. lbs. without breaking, cracking or rupturing in any manner.
 - After force has been removed, the lever arm shall return to within .250" of its original rest position.
 - All tests shall be made using 4" schedule 40 Steel Pipe.
 - Hardware: (6) 5/16"-18 x 1½" Socket Head Capscrews (3) 5/16" Dia. x 3/4" Roll Pins
 - Finish: Collar Segment: Alodine 1200
 - Fasteners: Zinc w/ Yellow Di-Chromate

Rapid Flashing Beacons

Rapid Flashing Beacon (RFB) indications shall comply with the dimensional, operational, and flash pattern requirements of Federal Highway Administration (FHWA) Interim Approval 21 (IA-21, Conditions 4, 5, and 6, excluding Condition 5f; https://mutcd.fhwa.dot.gov/resources/interim_approval/ia21/index.htm). RFB systems shall be capable of providing, at a minimum, the following two-channel flashing patterns:

1. NEMA Standard 50-50:

- Channel one is ON and channel two is OFF for 0.5 seconds.
- Channel one is OFF and channel two is ON for 0.5 seconds.
(Cycle repeats; the total flashing pattern cycle length is 1.00 second.)

2. RFB "WW+S" Pattern (IA-21 Condition 5b):

- Channel one is ON and channel two is OFF for 0.05 seconds.
- Both channels are OFF for 0.05 seconds.
- Channel one is OFF and channel two is ON for 0.05 seconds.
- Both channels are OFF for 0.05 seconds.
- Channel one is ON and channel two is OFF for 0.05 seconds.

- Both channels are OFF for 0.05 seconds.
- Channel one is OFF and channel two is ON for 0.05 seconds.
- Both channels are OFF for 0.05 seconds.
- Both channels are ON for 0.05 seconds.
- Both channels are OFF for 0.05 seconds.
- Both channels are ON for 0.05 seconds.
- Both channels are OFF for 0.25 seconds.

(Cycle repeats; the total flashing pattern cycle length is 0.80 seconds.)

The flashing pattern shall be user-selectable in the field.

RRFB system pushbuttons shall include a locator tone, but shall not include tactile arrows, speech messages, or vibrotactile indications. RRFB system pushbuttons may include speech message and vibrotactile functionality, provided these features can be deactivated. RFB system pushbuttons shall use a 9" x 12" R10-25 sign. The R10-25 sign may include integral yellow warning lights.

9-35.5 Portable Changeable Message Signs

(January 10, 2022 WSDOT GSP)

Section 9-35.5 is revised to read:

PCMS, mPCMS, and truck mounted PCMS shall meet the requirements of the MUTCD and the following general requirements:

1. Use light emitting diode (LED) technology capable of emitting a yellow or amber image when displayed with a flat black image matching the background when not activated.
2. Be capable of displaying 3-lines of at least 8 alphanumeric characters with a minimum of one pixel separation between each line.
3. Be capable of displaying 2 phases of messages at 2.0 second display each in addition to 3 phases of messages at 1.5 second display each.
4. PCMS characters shall be at least 18 inches in height.
5. mPCMS characters shall be at least 12 inches in height.
6. Truck-mounted PCMS characters shall be at least 10 inches in height.
7. The sign display shall be covered by a stable, impact resistant polycarbonate face. The sign face shall be non-glare from all angles and shall not degrade due to exposure to ultraviolet light.

8. Be capable of simultaneously activating all pixels for the purpose of pixel diagnostics. This feature shall not occur when the sign is displaying an active message.
9. The light source shall be energized only when the sign is displaying an active message.
10. Primary source of power shall be solar power with a battery backup to provide continuous operation when failure of the primary power source occurs.
11. The sign controller software shall be NTCIP compliant.

The PCMS panels and related equipment shall be permanently mounted on a trailer or truck with all needed controls and power generating equipment.

END OF DIVISION 9

END OF SPECIAL PROVISIONS

PREVAILING WAGE RATES

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

Washington State Prevailing Wage

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

Journey Level Prevailing Wage Rates for the Effective Date: 11/17/2023

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

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

King	Divers & Tenders	Hyperbaric Worker - Compressed Air Worker 72.01 - 74.00 PSI	\$120.76	15J	4C		View
King	Divers & Tenders	Manifold Operator	\$80.82	15J	4C		View
King	Divers & Tenders	Manifold Operator Mixed Gas	\$85.82	15J	4C		View
King	Divers & Tenders	Remote Operated Vehicle Operator/Technician	\$80.82	15J	4C		View
King	Divers & Tenders	Remote Operated Vehicle Tender	\$75.41	15J	4C		View
King	Dredge Workers	Assistant Engineer	\$79.62	5D	3F		View
King	Dredge Workers	Assistant Mate (Deckhand)	\$79.01	5D	3F		View
King	Dredge Workers	Boatmen	\$79.62	5D	3F		View
King	Dredge Workers	Engineer Welder	\$81.15	5D	3F		View
King	Dredge Workers	Leverman, Hydraulic	\$82.77	5D	3F		View
King	Dredge Workers	Mates	\$79.62	5D	3F		View
King	Dredge Workers	Oiler	\$79.01	5D	3F		View
King	Drywall Applicator	Journey Level	\$74.96	15J	4C		View
King	Drywall Tapers	Journey Level	\$74.50	5P	1E		View
King	Electrical Fixture Maintenance Workers	Journey Level	\$37.19	5L	1E		View
King	Electricians - Inside	Cable Splicer	\$105.59	7C	4E		View
King	Electricians - Inside	Cable Splicer (tunnel)	\$113.52	7C	4E		View
King	Electricians - Inside	Certified Welder	\$101.98	7C	4E		View
King	Electricians - Inside	Certified Welder (tunnel)	\$109.56	7C	4E		View
King	Electricians - Inside	Construction Stock Person	\$49.28	7C	4E		View
King	Electricians - Inside	Journey Level	\$98.38	7C	4E		View
King	Electricians - Inside	Journey Level (tunnel)	\$105.59	7C	4E		View
King	Electricians - Motor Shop	Journey Level	\$48.68	5A	1B		View
King	Electricians - Powerline Construction	Cable Splicer	\$93.00	5A	4D		View
King	Electricians - Powerline Construction	Certified Line Welder	\$85.42	5A	4D		View
King	Electricians - Powerline Construction	Groundperson	\$55.27	5A	4D		View
King	Electricians - Powerline Construction	Heavy Line Equipment Operator	\$85.42	5A	4D		View
King	Electricians - Powerline Construction	Journey Level Lineperson	\$85.42	5A	4D		View
King	Electricians - Powerline Construction	Line Equipment Operator	\$73.35	5A	4D		View
King	Electricians - Powerline Construction	Meter Installer	\$55.27	5A	4D	8W	View
King	Electricians - Powerline Construction	Pole Sprayer	\$85.42	5A	4D		View
King	Electricians - Powerline Construction	Powderperson	\$63.50	5A	4D		View
King	Electronic Technicians	Journey Level	\$63.38	7E	1E		View
King	Elevator Constructors	Mechanic	\$107.49	7D	4A		View
King	Elevator Constructors	Mechanic In Charge	\$116.13	7D	4A		View
King	Fabricated Precast Concrete Products	All Classifications - In-Factory Work Only	\$21.34	5B	1R		View

King	Fence Erectors	Fence Erector	\$50.07	15J	11P	8Y	View
King	Fence Erectors	Fence Laborer	\$50.07	15J	11P	8Y	View
King	Flaggers	Journey Level	\$50.07	15J	11P	8Y	View
King	Glaziers	Journey Level	\$79.16	7L	1Y		View
King	Heat & Frost Insulators And Asbestos Workers	Journey Level	\$87.15	15H	11C		View
King	Heating Equipment Mechanics	Journey Level	\$96.42	7F	1E		View
King	Hod Carriers & Mason Tenders	Journey Level	\$62.49	15J	11P	8Y	View
King	Industrial Power Vacuum Cleaner	Journey Level	\$15.74		1		View
King	Inland Boatmen	Boat Operator	\$61.41	5B	1K		View
King	Inland Boatmen	Cook	\$56.48	5B	1K		View
King	Inland Boatmen	Deckhand	\$57.48	5B	1K		View
King	Inland Boatmen	Deckhand Engineer	\$58.81	5B	1K		View
King	Inland Boatmen	Launch Operator	\$58.89	5B	1K		View
King	Inland Boatmen	Mate	\$57.31	5B	1K		View
King	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Cleaner Operator	\$49.48	15M	11O		View
King	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Foamer Operator	\$49.48	15M	11O		View
King	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Grout Truck Operator	\$49.48	15M	11O		View
King	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Head Operator	\$47.41	15M	11O		View
King	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Technician	\$41.20	15M	11O		View
King	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	TV Truck Operator	\$44.31	15M	11O		View
King	Insulation Applicators	Journey Level	\$74.96	15J	4C		View
King	Ironworkers	Journeyman	\$85.80	15K	11N		View
King	Laborers	Air, Gas Or Electric Vibrating Screed	\$59.07	15J	11P	8Y	View
King	Laborers	Airtrac Drill Operator	\$60.90	15J	11P	8Y	View
King	Laborers	Ballast Regular Machine	\$59.07	15J	11P	8Y	View
King	Laborers	Batch Weighman	\$50.07	15J	11P	8Y	View
King	Laborers	Brick Pavers	\$59.07	15J	11P	8Y	View
King	Laborers	Brush Cutter	\$59.07	15J	11P	8Y	View
King	Laborers	Brush Hog Feeder	\$59.07	15J	11P	8Y	View
King	Laborers	Burner	\$59.07	15J	11P	8Y	View
King	Laborers	Caisson Worker	\$60.90	15J	11P	8Y	View
King	Laborers	Carpenter Tender	\$59.07	15J	11P	8Y	View
King	Laborers	Cement Dumper-paving	\$60.15	15J	11P	8Y	View
King	Laborers	Cement Finisher Tender	\$59.07	15J	11P	8Y	View
King	Laborers	Change House Or Dry Shack	\$59.07	15J	11P	8Y	View

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

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

King	Laborers	Tugger Operator	\$60.15	15J	11P	8Y	View
King	Laborers	Tunnel Work-Compressed Air Worker 0-30 psi	\$175.79	15J	11P	9B	View
King	Laborers	Tunnel Work-Compressed Air Worker 30.01-44.00 psi	\$180.82	15J	11P	9B	View
King	Laborers	Tunnel Work-Compressed Air Worker 44.01-54.00 psi	\$184.50	15J	11P	9B	View
King	Laborers	Tunnel Work-Compressed Air Worker 54.01-60.00 psi	\$190.20	15J	11P	9B	View
King	Laborers	Tunnel Work-Compressed Air Worker 60.01-64.00 psi	\$192.32	15J	11P	9B	View
King	Laborers	Tunnel Work-Compressed Air Worker 64.01-68.00 psi	\$197.42	15J	11P	9B	View
King	Laborers	Tunnel Work-Compressed Air Worker 68.01-70.00 psi	\$199.32	15J	11P	9B	View
King	Laborers	Tunnel Work-Compressed Air Worker 70.01-72.00 psi	\$201.32	15J	11P	9B	View
King	Laborers	Tunnel Work-Compressed Air Worker 72.01-74.00 psi	\$203.32	15J	11P	9B	View
King	Laborers	Tunnel Work-Guage and Lock Tender	\$62.59	15J	11P	8Y	View
King	Laborers	Tunnel Work-Miner	\$62.59	15J	11P	8Y	View
King	Laborers	Vibrator	\$60.15	15J	11P	8Y	View
King	Laborers	Vinyl Seamer	\$59.07	15J	11P	8Y	View
King	Laborers	Watchman	\$45.51	15J	11P	8Y	View
King	Laborers	Welder	\$60.15	15J	11P	8Y	View
King	Laborers	Well Point Laborer	\$60.15	15J	11P	8Y	View
King	Laborers	Window Washer/Cleaner	\$45.51	15J	11P	8Y	View
King	Laborers - Underground Sewer & Water	General Laborer & Topman	\$59.07	15J	11P	8Y	View
King	Laborers - Underground Sewer & Water	Pipe Layer	\$60.15	15J	11P	8Y	View
King	Landscape Construction	Landscape Construction/Landscaping Or Planting Laborers	\$45.51	15J	11P	8Y	View
King	Landscape Construction	Landscape Operator	\$82.25	15J	11G	8X	View
King	Landscape Maintenance	Groundskeeper	\$17.87		1		View
King	Lathers	Journey Level	\$74.96	15J	4C		View
King	Marble Setters	Journey Level	\$69.07	7E	1N		View
King	Metal Fabrication (In Shop)	Fitter/Certified Welder	\$42.17	15I	11E		View
King	Metal Fabrication (In Shop)	General Laborer	\$30.07	15I	11E		View
King	Metal Fabrication (In Shop)	Mechanic	\$43.63	15I	11E		View
King	Metal Fabrication (In Shop)	Welder/Burner	\$39.28	15I	11E		View
King	Millwright	Journey Level	\$76.51	15J	4C		View
King	Modular Buildings	Cabinet Assembly	\$15.74		1		View
King	Modular Buildings	Electrician	\$15.74		1		View
King	Modular Buildings	Equipment Maintenance	\$15.74		1		View
King	Modular Buildings	Plumber	\$15.74		1		View
King	Modular Buildings	Production Worker	\$15.74		1		View
King	Modular Buildings	Tool Maintenance	\$15.74		1		View
King	Modular Buildings	Utility Person	\$15.74		1		View

King	Modular Buildings	Welder	\$15.74		<u>1</u>		View
King	Painters	Journey Level	\$51.71	<u>6Z</u>	<u>11J</u>		View
King	Pile Driver	Crew Tender	\$80.82	<u>15J</u>	<u>4C</u>		View
King	Pile Driver	Journey Level	\$75.41	<u>15J</u>	<u>4C</u>		View
King	Plasterers	Journey Level	\$70.91	<u>7Q</u>	<u>1R</u>		View
King	Plasterers	Nozzleman	\$74.91	<u>7Q</u>	<u>1R</u>		View
King	Playground & Park Equipment Installers	Journey Level	\$15.74		<u>1</u>		View
King	Plumbers & Pipefitters	Journey Level	\$100.69	<u>6Z</u>	<u>1G</u>		View
King	Power Equipment Operators	Asphalt Plant Operators	\$83.62	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Assistant Engineer	\$78.65	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Barrier Machine (zipper)	\$82.88	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Batch Plant Operator: concrete	\$82.88	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Boat Operator	\$83.95	<u>7A</u>	<u>11H</u>	<u>8X</u>	View
King	Power Equipment Operators	Bobcat	\$78.65	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Brokk - Remote Demolition Equipment	\$78.65	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Brooms	\$78.65	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Bump Cutter	\$82.88	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Cableways	\$83.62	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Chipper	\$82.88	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Compressor	\$78.65	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Concrete Finish Machine - Laser Screed	\$78.65	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Concrete Pump - Mounted Or Trailer High Pressure Line Pump, Pump High Pressure	\$82.25	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Concrete Pump: Truck Mount With Boom Attachment Over 42 M	\$83.62	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Concrete Pump: Truck Mount With Boom Attachment Up To 42m	\$82.88	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Conveyors	\$82.25	<u>15J</u>	<u>11G</u>	<u>8X</u>	View
King	Power Equipment Operators	Cranes Friction: 200 tons and over	\$86.48	<u>7A</u>	<u>11H</u>	<u>8X</u>	View
King	Power Equipment Operators	Cranes, A-frame: 10 tons and under	\$78.95	<u>7A</u>	<u>11H</u>	<u>8X</u>	View
King	Power Equipment Operators	Cranes: 100 tons through 199 tons, or 150' of boom (including jib with attachments)	\$84.77	<u>7A</u>	<u>11H</u>	<u>8X</u>	View
King	Power Equipment Operators	Cranes: 20 tons through 44 tons with attachments	\$83.20	<u>7A</u>	<u>11H</u>	<u>8X</u>	View
King	Power Equipment Operators	Cranes: 200 tons- 299 tons, or 250' of boom including jib with attachments	\$85.66	<u>7A</u>	<u>11H</u>	<u>8X</u>	View
King	Power Equipment Operators	Cranes: 300 tons and over or 300' of boom including jib with attachments	\$86.48	<u>7A</u>	<u>11H</u>	<u>8X</u>	View

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

King	Power Equipment Operators	Mechanics: All (Leadmen - \$0.50 per hour over mechanic)	\$84.46	15J	11G	8X	View
King	Power Equipment Operators	Motor Patrol Graders	\$83.62	15J	11G	8X	View
King	Power Equipment Operators	Mucking Machine, Mole, Tunnel Drill, Boring, Road Header And/or Shield	\$83.62	15J	11G	8X	View
King	Power Equipment Operators	Oil Distributors, Blower Distribution & Mulch Seeding Operator	\$78.65	15J	11G	8X	View
King	Power Equipment Operators	Outside Hoists (Elevators and Manlifts), Air Tuggers, Strato	\$82.25	15J	11G	8X	View
King	Power Equipment Operators	Overhead, bridge type Crane: 20 tons through 44 tons	\$83.20	7A	11H	8X	View
King	Power Equipment Operators	Overhead, bridge type: 100 tons and over	\$84.77	7A	11H	8X	View
King	Power Equipment Operators	Overhead, bridge type: 45 tons through 99 tons	\$83.95	7A	11H	8X	View
King	Power Equipment Operators	Pavement Breaker	\$78.65	15J	11G	8X	View
King	Power Equipment Operators	Pile Driver (other Than Crane Mount)	\$82.88	15J	11G	8X	View
King	Power Equipment Operators	Plant Oiler - Asphalt, Crusher	\$82.25	15J	11G	8X	View
King	Power Equipment Operators	Posthole Digger, Mechanical	\$78.65	15J	11G	8X	View
King	Power Equipment Operators	Power Plant	\$78.65	15J	11G	8X	View
King	Power Equipment Operators	Pumps - Water	\$78.65	15J	11G	8X	View
King	Power Equipment Operators	Quad 9, Hd 41, D10 And Over	\$83.62	15J	11G	8X	View
King	Power Equipment Operators	Quick Tower: no cab, under 100 feet in height base to boom	\$82.88	15J	11G	8X	View
King	Power Equipment Operators	Remote Control Operator On Rubber Tired Earth Moving Equipment	\$83.62	15J	11G	8X	View
King	Power Equipment Operators	Rigger and Bellman	\$78.95	7A	11H	8X	View
King	Power Equipment Operators	Rigger/Signal Person, Bellman(Certified)	\$82.56	7A	11H	8X	View
King	Power Equipment Operators	Rollagon	\$83.62	15J	11G	8X	View
King	Power Equipment Operators	Roller, Other Than Plant Mix	\$78.65	15J	11G	8X	View
King	Power Equipment Operators	Roller, Plant Mix Or Multi-lift Materials	\$82.25	15J	11G	8X	View
King	Power Equipment Operators	Roto-mill, Roto-grinder	\$82.88	15J	11G	8X	View
King	Power Equipment Operators	Saws - Concrete	\$82.25	15J	11G	8X	View
King	Power Equipment Operators	Scraper, Self Propelled Under 45 Yards	\$82.88	15J	11G	8X	View
King	Power Equipment Operators	Scrapers - Concrete & Carry All	\$82.25	15J	11G	8X	View
King	Power Equipment Operators	Scrapers, Self-propelled: 45 Yards And Over	\$83.62	15J	11G	8X	View
King	Power Equipment Operators	Service Engineers: Equipment	\$82.25	15J	11G	8X	View
King	Power Equipment Operators	Shotcrete/Gunite Equipment	\$78.65	15J	11G	8X	View
King	Power Equipment Operators	Shovel, Excavator, Backhoe, Tractors Under 15 Metric Tons	\$82.25	15J	11G	8X	View
King	Power Equipment Operators	Shovel, Excavator, Backhoe: Over 30 Metric Tons To 50 Metric Tons	\$83.62	15J	11G	8X	View

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

King	Power Equipment Operators-Underground Sewer & Water	Chipper	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Compressor	\$78.65	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Concrete Finish Machine - Laser Screed	\$78.65	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Concrete Pump - Mounted Or Trailer High Pressure Line Pump, Pump High Pressure	\$82.25	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Concrete Pump: Truck Mount With Boom Attachment Over 42 M	\$83.62	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Concrete Pump: Truck Mount With Boom Attachment Up To 42m	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Conveyors	\$82.25	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Cranes Friction: 200 tons and over	\$86.48	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Cranes, A-frame: 10 tons and under	\$78.95	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Cranes: 100 tons through 199 tons, or 150' of boom (including jib with attachments)	\$84.77	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Cranes: 20 tons through 44 tons with attachments	\$83.20	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Cranes: 200 tons- 299 tons, or 250' of boom including jib with attachments	\$85.66	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Cranes: 300 tons and over or 300' of boom including jib with attachments	\$86.48	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Cranes: 45 tons through 99 tons, under 150' of boom(including jib with attachments)	\$83.95	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Cranes: Friction cranes through 199 tons	\$85.66	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Cranes: through 19 tons with attachments, a-frame over 10 tons	\$82.56	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Crusher	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Deck Engineer/Deck Winches (power)	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Derricks, On Building Work	\$83.62	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Dozers D-9 & Under	\$82.25	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Drill Oilers: Auger Type, Truck Or Crane Mount	\$82.25	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Drilling Machine	\$84.46	15J	11G	8X	View

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

King	Power Equipment Operators-Underground Sewer & Water	Overhead, bridge type Crane: 20 tons through 44 tons	\$83.20	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Overhead, bridge type: 100 tons and over	\$84.77	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Overhead, bridge type: 45 tons through 99 tons	\$83.95	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Pavement Breaker	\$78.65	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Pile Driver (other Than Crane Mount)	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Plant Oiler - Asphalt, Crusher	\$82.25	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Posthole Digger, Mechanical	\$78.65	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Power Plant	\$78.65	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Pumps - Water	\$78.65	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Quad 9, Hd 41, D10 And Over	\$83.62	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Quick Tower: no cab, under 100 feet in height base to boom	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Remote Control Operator On Rubber Tired Earth Moving Equipment	\$83.62	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Rigger and Bellman	\$78.95	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Rigger/Signal Person, Bellman(Certified)	\$82.56	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Rollagon	\$83.62	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Roller, Other Than Plant Mix	\$78.65	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Roller, Plant Mix Or Multi-lift Materials	\$82.25	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Roto-mill, Roto-grinder	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Saws - Concrete	\$82.25	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Scraper, Self Propelled Under 45 Yards	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Scrapers - Concrete & Carry All	\$82.25	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Scrapers, Self-propelled: 45 Yards And Over	\$83.62	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Shotcrete/Gunite Equipment	\$78.65	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Shovel, Excavator, Backhoe, Tractors Under 15 Metric Tons	\$82.25	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Shovel, Excavator, Backhoe: Over 30 Metric Tons To 50 Metric Tons	\$83.62	15J	11G	8X	View

King	Power Equipment Operators-Underground Sewer & Water	Shovel, Excavator, Backhoes, Tractors: 15 To 30 Metric Tons	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Shovel, Excavator, Backhoes: Over 50 Metric Tons To 90 Metric Tons	\$84.46	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Shovel, Excavator, Backhoes: Over 90 Metric Tons	\$85.33	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Slipform Pavers	\$83.62	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Spreader, Topsider & Screedman	\$83.62	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Subgrader Trimmer	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Tower Bucket Elevators	\$82.25	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Tower Crane: over 175' through 250' in height, base to boom	\$85.66	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Tower crane: up to 175' in height base to boom	\$84.77	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Tower Cranes: over 250' in height from base to boom	\$86.48	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Transporters, All Track Or Truck Type	\$83.62	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Trenching Machines	\$82.25	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Truck Crane Oiler/Driver: 100 tons and over	\$83.20	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Truck crane oiler/driver: under 100 tons	\$82.56	7A	11H	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Truck Mount Portable Conveyor	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Vac Truck (Vactor Guzzler, Hydro Excavator)	\$82.88	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Welder	\$83.62	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Wheel Tractors, Farmall Type	\$78.65	15J	11G	8X	View
King	Power Equipment Operators-Underground Sewer & Water	Yo Yo Pay Dozer	\$82.88	15J	11G	8X	View
King	Power Line Clearance Tree Trimmers	Journey Level In Charge	\$57.22	5A	4A		View
King	Power Line Clearance Tree Trimmers	Spray Person	\$54.32	5A	4A		View
King	Power Line Clearance Tree Trimmers	Tree Equipment Operator	\$57.22	5A	4A		View
King	Power Line Clearance Tree Trimmers	Tree Trimmer	\$51.18	5A	4A		View
King	Power Line Clearance Tree Trimmers	Tree Trimmer Groundperson	\$38.99	5A	4A		View
King	Refrigeration & Air Conditioning Mechanics	Journey Level	\$93.51	6Z	1G		View
King	Residential Brick Mason	Journey Level	\$69.07	7E	1N		View
King	Residential Carpenters	Journey Level	\$36.44		1		View

King	Residential Cement Masons	Journey Level	\$46.64		<u>1</u>		View
King	Residential Drywall Applicators	Journey Level	\$74.96	<u>15J</u>	<u>4C</u>		View
King	Residential Drywall Tapers	Journey Level	\$36.36		<u>1</u>		View
King	Residential Electricians	Journey Level	\$48.80		<u>1</u>		View
King	Residential Glaziers	Journey Level	\$28.93		<u>1</u>		View
King	Residential Insulation Applicators	Journey Level	\$28.18		<u>1</u>		View
King	Residential Laborers	Journey Level	\$29.73		<u>1</u>		View
King	Residential Marble Setters	Journey Level	\$27.38		<u>1</u>		View
King	Residential Painters	Journey Level	\$23.47		<u>1</u>		View
King	Residential Plumbers & Pipefitters	Journey Level	\$100.69	<u>6Z</u>	<u>1G</u>		View
King	Residential Refrigeration & Air Conditioning Mechanics	Journey Level	\$93.51	<u>6Z</u>	<u>1G</u>		View
King	Residential Sheet Metal Workers	Journey Level	\$96.42	<u>7F</u>	<u>1E</u>		View
King	Residential Soft Floor Layers	Journey Level	\$57.11	<u>5A</u>	<u>3J</u>		View
King	Residential Sprinkler Fitters (Fire Protection)	Journey Level	\$58.26	<u>5C</u>	<u>2R</u>		View
King	Residential Stone Masons	Journey Level	\$69.07	<u>7E</u>	<u>1N</u>		View
King	Residential Terrazzo Workers	Journey Level	\$62.36	<u>7E</u>	<u>1N</u>		View
King	Residential Terrazzo/Tile Finishers	Journey Level	\$24.39		<u>1</u>		View
King	Residential Tile Setters	Journey Level	\$21.04		<u>1</u>		View
King	Roofers	Journey Level	\$61.95	<u>5A</u>	<u>3H</u>		View
King	Roofers	Using Irritable Bituminous Materials	\$64.95	<u>5A</u>	<u>3H</u>		View
King	Sheet Metal Workers	Journey Level (Field or Shop)	\$96.42	<u>7F</u>	<u>1E</u>		View
King	Shipbuilding & Ship Repair	New Construction Boilermaker	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	New Construction Carpenter	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	New Construction Crane Operator	\$41.83	<u>7V</u>	<u>1</u>		View
King	Shipbuilding & Ship Repair	New Construction Electrician	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	New Construction Heat & Frost Insulator	\$87.15	<u>15H</u>	<u>11C</u>		View
King	Shipbuilding & Ship Repair	New Construction Laborer	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	New Construction Machinist	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	New Construction Operating Engineer	\$41.83	<u>7V</u>	<u>1</u>		View
King	Shipbuilding & Ship Repair	New Construction Painter	\$51.95	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	New Construction Pipefitter	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	New Construction Rigger	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	New Construction Sheet Metal	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	New Construction Shipwright	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	New Construction Warehouse/Teamster	\$41.83	<u>7V</u>	<u>1</u>		View
King	Shipbuilding & Ship Repair	New Construction Welder / Burner	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Boilermaker	\$51.85	<u>7X</u>	<u>4J</u>		View

King	Shipbuilding & Ship Repair	Ship Repair Carpenter	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Crane Operator	\$45.06	<u>7Y</u>	<u>4K</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Electrician	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Heat & Frost Insulator	\$87.15	<u>15H</u>	<u>11C</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Laborer	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Machinist	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Operating Engineer	\$45.06	<u>7Y</u>	<u>4K</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Painter	\$51.95	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Pipefitter	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Rigger	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Sheet Metal	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Shipwright	\$51.85	<u>7X</u>	<u>4J</u>		View
King	Shipbuilding & Ship Repair	Ship Repair Warehouse / Teamster	\$45.06	<u>7Y</u>	<u>4K</u>		View
King	Sign Makers & Installers (Electrical)	Journey Level	\$58.04	<u>0</u>	<u>1</u>		View
King	Sign Makers & Installers (Non-Electrical)	Journey Level	\$37.08	<u>0</u>	<u>1</u>		View
King	Soft Floor Layers	Journey Level	\$66.32	<u>15J</u>	<u>4C</u>		View
King	Solar Controls For Windows	Journey Level	\$15.74		<u>1</u>		View
King	Sprinkler Fitters (Fire Protection)	Journey Level	\$93.99	<u>5C</u>	<u>1X</u>		View
King	Stage Rigging Mechanics (Non Structural)	Journey Level	\$15.74		<u>1</u>		View
King	Stone Masons	Journey Level	\$69.07	<u>7E</u>	<u>1N</u>		View
King	Street And Parking Lot Sweeper Workers	Journey Level	\$19.09		<u>1</u>		View
King	Surveyors	Assistant Construction Site Surveyor	\$82.56	<u>7A</u>	<u>11H</u>	<u>8X</u>	View
King	Surveyors	Chainman	\$78.95	<u>7A</u>	<u>11H</u>	<u>8X</u>	View
King	Surveyors	Construction Site Surveyor	\$83.95	<u>7A</u>	<u>11H</u>	<u>8X</u>	View
King	Surveyors	Drone Operator (when used in conjunction with survey work only)	\$78.95	<u>7A</u>	<u>11H</u>	<u>8X</u>	View
King	Surveyors	Ground Penetrating Radar Operator	\$78.95	<u>7A</u>	<u>11H</u>	<u>8X</u>	View
King	Telecommunication Technicians	Journey Level	\$63.38	<u>7E</u>	<u>1E</u>		View
King	Telephone Line Construction - Outside	Cable Splicer	\$40.11	<u>5A</u>	<u>2B</u>		View
King	Telephone Line Construction - Outside	Hole Digger/Ground Person	\$26.67	<u>5A</u>	<u>2B</u>		View
King	Telephone Line Construction - Outside	Telephone Equipment Operator (Light)	\$33.49	<u>5A</u>	<u>2B</u>		View
King	Telephone Line Construction - Outside	Telephone Lineperson	\$37.90	<u>5A</u>	<u>2B</u>		View
King	Terrazzo Workers	Journey Level	\$62.36	<u>7E</u>	<u>1N</u>		View
King	Tile Setters	Journey Level	\$62.36	<u>7E</u>	<u>1N</u>		View
King	Tile, Marble & Terrazzo Finishers	Finisher	\$53.19	<u>7E</u>	<u>1N</u>		View

King	Traffic Control Stripers	Journey Level	\$89.54	15L	1K		View
King	Truck Drivers	Asphalt Mix Over 16 Yards	\$74.95	15J	11M	8L	View
King	Truck Drivers	Asphalt Mix To 16 Yards	\$74.02	15J	11M	8L	View
King	Truck Drivers	Dump Truck	\$74.02	15J	11M	8L	View
King	Truck Drivers	Dump Truck & Trailer	\$74.95	15J	11M	8L	View
King	Truck Drivers	Other Trucks	\$74.95	15J	11M	8L	View
King	Truck Drivers - Ready Mix	Transit Mix	\$74.95	15J	11M	8L	View
King	Well Drillers & Irrigation Pump Installers	Irrigation Pump Installer	\$17.71		1		View
King	Well Drillers & Irrigation Pump Installers	Oiler	\$15.74		1		View
King	Well Drillers & Irrigation Pump Installers	Well Driller	\$18.00		1		View

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

See RCW [39.12.010](#)

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

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

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

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

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

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

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

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

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

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

WAC 296-127-018 Agency filings affecting this section

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

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

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

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

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

(ii) At multiple points at the project; or

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

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

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

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

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

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

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

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

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

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

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

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

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

Overtime Codes

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

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

Overtime Codes Continued

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

Overtime Codes Continued

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

Overtime Codes Continued

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

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

EXCEPTION:

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

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

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

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

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

Overtime Codes Continued

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

Overtime Codes Continued

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

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

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

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

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

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

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

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

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

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

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

Overtime Codes Continued

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

Overtime Codes Continued

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

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

Holiday Codes

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

Holiday Codes Continued

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

Holiday Codes Continued

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

Holiday Codes Continued

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

Note Codes

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

Note Codes Continued

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

Note Codes Continued

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Note Codes Continued

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

APPENDIX A

GEOTECHNICAL
REPORT

REPORT OF GEOTECHNICAL ENGINEERING SERVICES

City of Kirkland
Juanita Drive Intersection and Safety Improvements
Kirkland, Washington

For
KPG, P.S.
April 15, 2022

GeoDesign Project: KPG-111-01



April 15, 2022

KPG, P.S.
2502 Jefferson Avenue
Tacoma, WA 98402

Attention: Erick Olson, P.E. and Terry Wright, P.E.

Report of Geotechnical Engineering Services
City of Kirkland
Juanita Drive Intersection and Safety Improvements
Kirkland, Washington
GeoDesign Project: KPG-111-01

GeoDesign, Inc. is pleased to submit this report of geotechnical engineering services to support the City of Kirkland's Juanita Drive Intersection and Safety Improvements project located in Kirkland, Washington. This report has been prepared in accordance with our proposal dated August 2, 2019.

We appreciate the opportunity to be of service to you. Please contact us if you have questions regarding this report.

Sincerely,

GeoDesign, Inc.

Kevin J. Lamb, P.E.
Principal Engineer

TAP:KJL:kt

Attachments

One copy submitted (via email only)

Document ID: KPG-111-01-041522-geor.docx

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Results

ACRONYMS AND ABBREVIATIONS

AASHTO	American Association of State Highway and Transportation Officials
AC	asphalt concrete
AOS	apparent opening size
ASTM	American Society for Testing and Materials
BGS	below ground surface
BMP	best management practice
CMU	concrete masonry unit
FHWA	Federal Highway Administration
g	gravitational acceleration (32.2 feet/second ²)
GPS	global positioning system
H:V	horizontal to vertical
HMA	hot mix asphalt
LID	low-impact development
LiDAR	light detection and ranging
MSL	mean sea level
NP	not present
OSHA	Occupational Safety and Health Administration
PCC	portland cement concrete
pcf	pounds per cubic foot
PGA	peak ground acceleration
psf	pounds per square foot
psi	pounds per square inch
PVC	polyvinyl chloride
ROW	right-of-way
SFZ	Seattle Fault Zone
SPT	standard penetration test
WSDOT	Washington State Department of Transportation
WSS	Washington Standard Specifications for Road, Bridge, and Municipal Construction (2020)

1.0 INTRODUCTION

This report presents the results of GeoDesign's geotechnical engineering services for the City of Kirkland's Juanita Drive Intersection and Safety Improvements project located in Kirkland, Washington. The project extends northward along Juanita Drive NE from near NE 112th Street to NE 132nd Street, as shown on Figures 2 through 8.

Proposed improvements include the following:

- NE 112th Street: intersection realignment
- Between NE 120th Street and NE 122nd Place: widening to accommodate new center turn lane, bike lanes, and walkway pedestrian crossing
- NE 124th Street widening to accommodate new sidewalk/walkway
- Between NE 124th Street and NE 132nd Street: widening to accommodate buffered bike lanes and walkway
- At Juanita Drive NE intersections at NE 128th Street and NE 132nd Street: widening to accommodate new left turn lanes
- Various locations: LID infrastructure using stormwater infiltration, if feasible

Realignment and widening will require construction of retaining walls to establish required grades. Stormwater management improvements may include the construction of detention vaults and, if feasible, infiltrative LID elements, depending on site conditions.

The site location relative to the surrounding physical features is shown on Figure 1. Acronyms and abbreviations used herein are defined above, immediately following the Table of Contents.

2.0 PURPOSE AND SCOPE OF SERVICES

The purpose of this study was to gather and review available subsurface information, evaluate subsurface conditions, and provide geotechnical recommendations to support design and construction of the planned improvements. We performed the following:

- Reviewed preliminary plans and readily available geotechnical, geological, and environmental reports along the alignment and explorations along Juanita Drive NE.
- Planned, coordinated, and managed the field explorations.
- Performed geotechnical laboratory analyses on disturbed soil samples collected from the explorations.
- Prepared this report summarizing our findings, conclusions, and recommendations related to the following:
 - Existing pavement section, subsurface conditions, and results of laboratory testing.
 - Feasibility of infiltration stormwater and preliminary infiltration rates.
 - Identify applicable retaining wall types and anticipate cut slope inclinations.
 - Luminaire pole foundation based on 2019 WSDOT *Geotechnical Design Manual*.
 - Preliminary geologic critical areas assessment and evaluate if proposed improvements will impact the existing slope. Slope stability analyses to quantify the impacts on the slope stability was completed as required by Chapter 85 of the Kirkland Zoning Code.

3.0 SITE CONDITIONS

The project alignment is approximately 1.26 miles long extending northward along Juanita Drive NE from near the intersection with NE 112th Street to NE 132nd Street. We observed the existing conditions during site visits to mark the boring locations, to check utility locates, and to complete the subsurface explorations.

3.1 SURFACE CONDITIONS

Juanita Drive NE has generally been cut through undulating hills, with exception of the south portion of the site and other isolated areas that have been constructed through cuts and a sidehill embankment on the west-facing slope overlooking Lake Sammamish. The pavement surface along the alignment consists of HMA, which is generally in good condition. The site is primarily bordered by residential properties, except at the intersection with NE 122nd Place where commercial properties are present.

The south portion of the road grades uphill toward the north with an approximate elevation change of 180 feet. The remainder of the alignment north of 79th Way NE varies in elevation between approximately 275 and 375 feet above MSL. Slopes are present along the project alignment on both sides of the roadway.

3.1.1 Slopes

Widening will generally be completed on the east side of the Juanita Drive NE to accommodate the reconfiguration of the road. Retaining and shoring walls will be used to support the road cuts that are anticipated to vary up to approximately 13 feet in height.

Chapter 5 of the City of Kirkland Zoning Code defines Landslide Hazard Areas as follows:

High Landslide Hazard Areas are defined as:

- “1. Areas that have shown movement during the Holocene epoch or that are underlain or covered by mass wastage debris of that epoch; or*
- 2. Areas with both of the following characteristics:*
 - a. Slopes steeper than 15 percent that intersect geologic contacts with a relatively permeable sediment overlying a relatively impermeable sediment;*
and
 - b. Springs; or*
- 3. Areas potentially unstable because of rapid stream incision, stream bank erosion, or undercutting by wave action; or*
- 4. Any area with a slope of 40 percent or steeper over a height of at least 10 feet.*
- 5. For areas meeting the criteria of subsection (1) through (4) of the definition, the high landslide hazard area also includes the area within a horizontal distance “H” equal to either the height of the slope or 50 feet, whichever is greater.”*

Moderate Landslide Hazard Areas are defined as:

“Areas with slopes between 15 and 40 percent which do not meet the definition of high landslide hazard area.”

The slopes bordering the project alignment along Juanita Drive NE include fill embankment slopes generally on the west side of the road and cut slopes on the east side of the road. Figures 9 through 15 present the distribution of slopes along the project alignment and identify slopes with inclinations between 15 and 40 percent and slopes 40 percent or greater in accordance with the City of Kirkland Zoning Code Chapter 85 Definitions 5.20.178.5. Existing slope areas adjacent to the project alignment that meet the definition of High Landslide Hazard Areas or Moderate Landslide Hazard Areas are shown on Figures 9 through 15.

We reviewed geologic maps of the area and landslides are not mapped adjacent to Juanita Drive NE within the project alignment. We also reviewed LiDAR imagery, and surficial indications of landslides were not observed within the project alignment in the 2016 LiDAR imagery.

We completed a site reconnaissance along the project alignment ROW and we did not observe any surficial indications of slope instability in the geologic hazard areas or in other areas along the project alignment.

Most of the areas mapped as geologic landslide hazard areas on the east side of the project alignment are cut slopes created during road construction. Where widening is proposed, the slopes will be re-graded and supported with engineered retaining walls. The anticipated type of retaining or shoring wall to support re-grading is indicated on Figures 2 through 15.

Based on our on-site observations and review of available mapping, we did not see any evidence of slope instability that would cause slopes between 15 and 40 percent to be classified as High Landslide Hazard Areas.

3.2 SUBSURFACE CONDITIONS

Subsurface conditions at the site were evaluated through a review of existing geologic maps and by drilling borings. Surficial geology of the area is mapped as glacial till. Grading activities during development and road construction through the area have included the placement of fill over portions of the mapped surficial geology deposits.

We drilled seven borings (B-1 through B-7) to depths between 7.9 and 15.9 feet BGS at the locations shown on Figures 2 through 8. A description of the field exploration and laboratory testing programs, the exploration logs, and results of laboratory testing are presented in Appendix A.

Beneath the pavement, and topsoil where present, subsurface soil conditions along the alignment generally consist of fill overlying glacial till. Glacial till is present beneath the fill or beneath the surficial material at all locations and all the borings were completed within the very dense glacial till.

Pavement, fill, and glacial till are described below.

3.2.1 Pavement

Borings B-1 and B-3 through B-7 were completed through the roadway pavement. Aggregate base was not observed beneath the pavement. The pavement consisted of either AC or AC overlying PCC and varied from 8 to 16 inches in thickness, as summarized in Table 1.

Table 1. AC Pavement Section at Exploration Locations

Boring	AC (inches)	PCC (inches)
B-1	8	NP
B-3	16	NP
B-4	16	NP
B-5	6	10
B-6	5	10
B-7	4	8

Boring B-2 was performed in the grass shoulder along the road and encountered approximately 12 inches of topsoil with a 6-inch-thick root zone.

3.2.2 Fill

Fill was encountered beneath the pavement in borings B-1 and B-7. The fill extends to depths of approximately 4.5 feet BGS. The fill generally consists of very loose to medium dense, silty sand to sand with varying amounts of silt and minor amounts of gravel.

3.2.3 Glacial Till

Glacial till is present beneath the fill or the surficial material in all borings. The glacial till material encountered in the borings consists generally of medium dense to very dense deposits of silty sand or silty gravel with varying amounts of silt, sand, and gravel. All borings were completed within the glacial till deposits.

3.3 GROUNDWATER

Groundwater was not encountered during drilling. Occasional saturated zones were encountered but are considered to be perched water at the interface of less dense and more dense soil, such as near the contact between the fill and underlying dense glacial till. The local groundwater table is anticipated to be greater than 25 deep based on published nearby borings and well logs.

3.4 SEISMICITY

Washington State is situated at a convergent continental margin and is susceptible to subduction zone, intraplate, and shallow crustal source earthquakes. We reviewed published geologic maps for the site vicinity to evaluate seismic hazards. The site is approximately 8.9 miles north of the SFZ, which is a result of shallow crustal faulting.

The SFZ represents a 2- to 4-mile-wide zone, extending from the Kitsap Peninsula near Bremerton to the Sammamish Plateau. Within the SFZ are several east- to west-trending fault

splays of the Seattle fault (Johnson et al., 1999). The Seattle fault is thought to be a reverse fault, with the south side “shoved up.” The SFZ is considered an active major fault and is capable of producing earthquakes of Magnitude ~7 with associated surface rupture and ground motions, posing a significant hazard to the Puget Sound Region (Sherrod et al., 2004). Geologic evidence indicates at least three episodes of movement on the fault within the last 10,000 years, with the most recent earthquake with surface rupture approximately 1,100 years ago (Nelson et al., 2000).

4.0 LABORATORY TESTING

Laboratory tests were conducted on specific soil samples collected from the explorations to assist in characterizing certain physical parameters of the soil. Geotechnical index tests that were performed included the determination of natural water content and grain-size analyses. These tests were performed in GeoDesign’s accredited soils laboratory. All tests were conducted in general accordance with appropriate ASTM standards (ASTM, 2019). A discussion of laboratory test methodology and the test results are presented in Appendix A. Test results are also shown, where appropriate, on the exploration logs in Appendix A.

5.0 GEOLOGIC HAZARDOUS AREAS

5.1 LANDSLIDE HAZARDS

Kirkland Zoning Code, Chapter 85, addresses development on property containing geologically hazardous areas. As indicated above, Geologic Hazard Areas are present adjacent to the ROW along portions of the project alignment as indicated on Figures 9 through 15. Generally, improvements are not planned on the west side of the roadway; therefore, geologic hazards located west of Juanita Drive NE will not be impacted by the proposed work.

The geologic hazard areas located on the east side of the site are generally a result of past grading activities for the road. The geologic hazard areas appear stable, and indications of slope instability or excessive erosion were not observed along the project alignment. Widening will be completed along the east side of the road to accommodate reconfiguration, which will require re-grading the slope areas. The proposed slope cuts will generally be supported with retaining walls engineered to provide adequate safety factors to prevent slope failure.

Re-grading will generally consist of slope cuts on the east side of the road that will be supported by retaining or shoring walls. Based on our observations and slope stability analysis (the results of which are summarized below), the proposed road widening will **not** impact the geologic hazard areas on the west side of the road and will replace the hazard areas on the east side of the road with engineered structures.

5.1.1 Slope Stability Analysis

Slope stability analyses were performed to evaluate the impact of re-grading the slopes on the east side of Juanita Drive NE and supporting the cuts with engineered retaining structures. The analyses were completed using the software program Slope/W (version 10.2) by Geo-Studio International, Ltd. The software has a graphic-user interface for defining the slope geometry, inputting soil parameters, and defining the search limits for the entry and exist points of the

failure surfaces. The program performs two-dimensional limit equilibrium analyses to compute the factor of safety for failure surfaces located within the search limits defined by the user.

The factor of safety against slope failure is simplistically defined as the ratio of the forces resisting slope movement (i.e., soil strength, soil mass, etc.) to the forces driving slope movement (i.e., gravity, water pressure, earthquake shaking). The program estimates the location and geometry of “critical failure surfaces” within the user-defined search area. Critical failure surfaces are those failure surfaces with the lowest factors of safety and define the path of the failure surface through the subsurface material. A factor of safety of 1.00 implies that the forces resisting a landslide exactly equal those tending to produce a landslide. Therefore, a factor of safety of 1.05 means that the forces resisting a landslide exceed those tending to cause a landslide by 5 percent.

The “critical failure surface” search limits were adjusted to analyze for existing global slope stability and to evaluate the proposed construction impacts on slope stability. Analyses were completed for both static and pseudo-static conditions. Pseudo-static methods are used to model seismic loading conditions.

5.1.2 Soil Parameters

Soil parameters used in the slope stability analyses were based on laboratory testing, boring explorations, SPT N-value correlations, and our experience with similar soil conditions. The soil input parameters used for stability analyses are presented in Table 2. A discussion of the laboratory test procedures and test results are presented in Appendix A.

Table 2. Slope/W Soil Input Parameters

Soil	Moist Unit Weight (pcf)	Friction Angle (degrees)	Cohesion (psf)
Existing Fill	120	32	50
New Fill	120	35	0
Glacial Till	125	36	100

5.1.3 Analysis Methodology and Results

Slope stability analysis was completed for three sections that we considered critical sections. The locations are identified as:

- A-A' near Station 102+00, as shown on Figures 2 and 9
- B-B' near Station 42+50, as shown on Figures 6 and 13
- C-C' near Station 46+00, as shown on Figures 6 and 13

Pseudo-static conditions were modeled using a PGA of 0.295 g, which is approximately 50 percent of the PGA for the 2 percent in 50-year probability of exceedance (return period of 2,475 years) event. The results of the slope stability analyses are presented in Table 3 and Appendix B.

Table 3. Slope Stability Factor of Safety

Wall Station	Wall Type Analyzed	Approximate Slope/Wall Height (feet)	Condition	Factor of Safety	
				Static Condition	Pseudo-Static Condition
A-A' 102+00	Soldier Pile	14/14	Existing	3.02	1.55
			Proposed	2.88	1.64
B-B' 42+50	Soldier Pile	9/9	Existing	1.97	1.27
			Proposed	5.25	1.89
C-C' 46+00	Gravity Block	15/9	Existing	1.65	1.13
			Proposed	2.24	1.48

The proposed retaining walls will replace geologic hazard areas along the east side of the road with engineered structures that will provide increased levels of slope stability compared to the existing conditions for both the static and pseudo-static loading conditions. The resulting factor of safety of the re-graded slopes or slope cuts supported with engineered structures will remain well above standard of practice-acceptable factors of safety for engineered slopes and walls.

5.2 EROSION HAZARDS

The unimproved slopes along the project alignment that are greater than 15 percent also meet the Kirkland Zoning Code definition of Erosion Hazard Areas. Construction activities that disturb these areas will temporarily increase the erosion hazard within the project area. The increase in the erosion hazard is considered temporary and is expected to return to existing levels once vegetation is re-established in disturbed areas.

Erosion control and stabilization measure BMPs should be implemented to mitigate the temporary increase in the erosion hazard because of the re-grading activities. Erosion control measures implemented in the disturbed areas should be in accordance with the 2016 King County Surface Water Design Manual that the City of Kirkland has adopted along with addenda to the documents adopted in January 2017.

Erosion control BMPs for the anticipated work include (but are not limited to) the use of mulch, jute/burlap netting, erosion control nets and blankets to protect the ground surface, and straw wattles or log erosion barriers to reduce runoff velocities. Based on the project area slope inclinations, we recommend a wattle spacing of approximately 20 feet (measured parallel with the slope) on slopes up to 40 percent. Wattle spacing should be decreased to 10 feet on slopes in excess of 40 percent.

We anticipate appropriate BMPs, such as jute matting, straw wattles, and/or erosion control blankets, will be used after re-grading is completed, which will also help to remove invasive plants. The BMP measures will reduce the potential for erosion and support establishment of permanent vegetation on the slope. These measures should be sufficient to address the increased erosion potential during construction such that the risk of slope instability on the site or to adjacent areas is not increased above existing levels.

6.0 DESIGN RECOMMENDATIONS

6.1 GENERAL

Based on our review of available information; the condition of the existing road and adjacent areas; and the results of our explorations, laboratory testing, and analyses, it is our opinion the proposed improvements are feasible and will not significantly impact the adjacent areas.

Provided the project is constructed in accordance with our geotechnical recommendations, and BMPs are used, we believe that the risks of soil instability and erosion associated with the proposed improvements will be minimal along the project alignment and to adjacent properties. The following is a summary of our recommendations:

- The proposed improvements primarily include construction of cut walls on the east side of Juanita Drive NE. Anticipated walls will be between approximately 6 and 15 feet in height. Appropriate retaining or shoring walls for the anticipated conditions and heights include gravity block walls, soil nail walls, or soldier pile walls, depending on location.
- The proposed impacts of site grading and fill placement will not impact existing slope stability if properly retained.
- Infiltration of on-site stormwater is possible, but based on the presence of glacially consolidated soil, on-site infiltration rates will be very slow. In addition, stormwater infiltration is not recommended anywhere along the project alignment uphill of significant steep slope areas on the west side between the following stations:
 - Stations 15+00 and 18+00
 - Stations 42+50 and 44+50
 - Stations 56+00 and 60+00
- Over-excavations below structural elements may be necessary to stabilize soft soil where roadside drainage swales currently exist. Soft subgrade soil encountered at foundation subgrade should be over-excavated to firm material and backfilled with WSS 9-03.9(2) – Permeable Ballast, WSS 9-13.7(2) – Backfill for Rock Wall, or WSS 9-03.9(3) – Crushed Surfacing Base Course
- Groundwater was not encountered in our explorations and we do not expect groundwater to impact design. Perched water may be encountered and we anticipate that sumps within the excavation will be suitable for dewatering.

Our specific recommendations for the planned improvements are presented in the following sections.

6.2 EXCAVATION

6.2.1 Permanent Slopes

Permanent cut or fill slopes should not exceed a gradient of 2H:1V, unless specifically evaluated for stability. Slopes that will be maintained by mowing should not be constructed steeper than 3H:1V. Slopes should be planted with appropriate vegetation to provide protection against erosion as soon as possible after grading. Surface water runoff should be collected and directed away from slopes to prevent water from running down the face of the slope.

6.2.2 Trench Cuts and Shoring

Excavations can be completed with conventional earthwork equipment. However, some sloughing and caving of the sidewalls should be expected in utility trench excavations. Trench cuts and footing excavations should stand vertical to a depth of at least 4 feet, provided perched groundwater seepage does not occur in the trench walls. Open excavations may be used to excavate trenches with depths between 4 and 15 feet, provided the walls of the excavation are cut at a slope of 1.5H:1V, groundwater seepage does not occur, and with the understanding that some sloughing may occur. Steeper temporary cut slopes up to 1H:1V are permissible in the very dense glacial till deposits but would require daily inspection by the geotechnical engineer or other competent person.

The use of approved temporary shoring or casing is recommended for excavations that extend below groundwater or if vertical walls are required for cuts deeper than 4 feet. If shoring is used, we recommend that the type and design of the shoring system be the responsibility of the contractor, who is in the best position to choose a system that fits the overall plan of operation. Temporary shoring may be designed using an equivalent fluid density 35 pcf for drained conditions.

All excavations should be made in accordance with applicable OSHA and state regulations. While we have described certain approaches to utility trench excavations in the foregoing discussion, the contractor should be responsible for selecting the excavation and dewatering methods, monitoring the trench excavations for safety, and providing shoring as required to protect personnel and adjacent areas.

6.2.3 Temporary Dewatering

We did not observe groundwater in any of the explorations completed along the project alignment and anticipate that it is more than 25 feet BGS in the project vicinity. However, perched water, specifically near the interface of fill overlying dense glacial till, could be encountered during project construction. If perched water is encountered, dewatering of excavations may be required. The sidewalls of the trenches will need to be shored or flattened if seepage is encountered. We anticipate sumps within the excavation will be sufficient to control groundwater.

6.3 RETAINING WALLS

6.3.1 General

The proposed widening to accommodate the new sidewalk areas will require slope cuts. Based on the preliminary plans, we understand the wall types consist of gravity CMU walls, soldier pile walls, and soil nail or tieback anchor walls.

The following recommendations should be used for design of retaining structures that are used to achieve grade changes, including temporary shoring or shielding.

6.3.2 Wall Design Parameters

Our retaining wall design recommendations are based on the following assumptions: (1) the walls consist of conventional, gravity, cantilevered, or embedded walls, (2) the walls are less than 15 feet in height, (3) the backfill is drained and consists of structural fill or retaining wall select

backfill, as defined in the “Fill Materials” section, and (4) the surface behind the wall is inclined less than 2H:1V. Re-evaluation of our recommendations will be required if the retaining wall design criteria for the project varies from these assumptions.

The magnitude of lateral earth pressures that develop against retaining walls depends on the degree to which the wall can yield laterally and other factors that include surcharge loads, groundwater and drainage conditions, slope of backfill in front of and behind the wall, method of backfill placement, degree of backfill compaction, and the type of backfill material.

If the wall is allowed to rotate or yield so the top of the wall moves an amount equal to or greater than approximately 0.001 times its height (a yielding wall), an “active” soil pressure condition will develop. If the wall is restrained against lateral movement or tilting (a non-yielding wall), an “at-rest” soil pressure condition will develop. We anticipate that all the shoring or retaining walls for the project will be free to rotate or yield such that active lateral earth pressure conditions develop. If any below-grade detention vaults are planned, we anticipate the vault walls will likely be restrained and at-rest soil pressure conditions will develop against them.

We recommend yielding walls with level backfill at the top of the wall, under drained conditions, be designed for an equivalent fluid density of 35 pcf for active soil conditions. We recommend the below-grade walls that are restrained from rotation, with level backfill at the top of the wall, under drained conditions, be designed for an equivalent fluid density of 55 pcf for at-rest soil conditions.

Resistance to lateral loads will develop through friction along the base of conventional walls and through passive resistance on the embedded portion of the wall and foundation. Base friction resistance may be computed using a coefficient of friction of 0.4 applied to the dead load forces. If a slope is located at the base of the walls, to rely on the passive resistance, a minimum of 5 feet of horizontal clearance must exist between the face of the bottom of the wall and the adjacent downslopes.

6.3.3 Wall Surcharges

Design should include appropriate lateral pressures caused by surcharge loads located within a horizontal distance equal to the height of the wall (zone of influence). Traffic loads within the zone of influence should be designed with a uniformly distributed load equal to an additional 2 feet of fill, approximately 250 psf.

The design equivalent fluid density should be increased for walls that retain sloping soil. We recommend the lateral earth pressures presented above be increased using the factors in Table 4 when designing walls that retain sloping soil.

Table 4. Lateral Earth Pressure Increase Factors for Slope Soil Backfill

Slope of Retained Soil (degrees)	Lateral Earth Pressure Increase Factor
0	1.00
10	1.04
20	1.19
30	1.58

If other building foundations or other surcharges are located within a horizontal distance from the back of a wall equal to the height of the wall, additional pressures may need to be accounted for in the wall design. Figure 16 presents formulas for determining the magnitude of the surcharge-induced lateral earth pressures.

Static lateral earth pressures acting on walls should also be increased to account for seismic loading conditions. We recommend a seismic load increment of 6 times the height of the wall (6H in psf). This is based on a pseudo-static analysis using the Mononobe-Okabe equation for lateral earth pressure and a PGA of 0.295 g, which is approximately 50 percent of the PGA for the 2 percent in 50-year probability of exceedance (return period of 2,475 years) event. A reduced PGA value is warranted if the PGA is only experienced for a few short durations during an earthquake and the ground motion is cyclical.

The height of the wall used in the above equation should be measured from the finished ground surface in front of the wall to the top of the wall. The seismic pressure should be applied as a uniform rectangular pressure from the top of the wall to the elevation of the finished ground surface in front of the wall, and the resultant should be applied at 0.6H of the exposed wall height.

These recommendations assume that adequate drainage will be provided behind below-grade walls and retaining structures, as discussed below.

6.3.4 Retaining Wall Foundation

Subgrade conditions are generally expected to be medium dense to very dense glacially consolidated soil. There may be isolated areas where new walls will be located in areas where existing drainage swales are present. Soil conditions at the base of the drainage swale may consist of loose or saturated fill or disturbed native soil, which will require over-excavation and replacement with stabilization material.

Over-excavation of unsuitable subgrade soil should extend to firm native material. The geotechnical engineer should observe retaining wall foundation subgrades. We anticipate a maximum over-excavation depth of 2 feet will be sufficient for estimating earthwork quantities where retaining wall alignment is over existing drainage swales. Over-excavations beneath foundation elements should be backfilled with stabilization material as discussed above. Over-excavations should also extend 6 inches laterally beyond the edges of the foundations for each foot excavated below the planned bottom of footing.

Foundations supported on dense glacially consolidated material, stabilization material, or structural fill overlying the glacially consolidated material should be designed for an allowable bearing pressure of 3,500 psf. This is a net bearing pressure; the weight of the footing and overlying backfill can be ignored in calculating footing sizes. The recommended allowable bearing pressure applies to the total of dead plus long-term live loads and may be increased by one-third to account for short-term loads, such as those resulting from wind or seismic forces.

Foundations for walls located in level ground areas should be founded at least 12 inches below the adjacent grade. An exception to this is for walls sited in close proximity to descending ground. If the ground descends at a slope of 2H:1V or steeper below a wall, a minimum embedment depth of 2 feet is required.

Based on our analysis, total post-construction static (consolidation-induced) settlement for conventional and semi-rigid foundation systems should be less than 1 inch, with differential settlement of up to ½ inch.

6.3.5 Retaining Wall Drainage

We recommend the walls be provided with drainage to reduce the potential for hydrostatic water pressure buildup. Positive drainage should be provided behind gravity retaining walls by placing a minimum 1-foot-wide zone of drain rock directly behind the wall. The free-draining backfill should meet the criteria for WSS 9-03.12(4) – Gravel Backfill for Drains. The free-draining backfill zone should extend from the base of the wall to within 2 feet of the finished ground surface. The top 1 foot of fill should consist of relatively impermeable soil to prevent infiltration of surface water into the wall drainage zone. For walls where seepage at the face of a wall is not objectionable, the walls can be provided with weep holes to discharge water from the free-draining wall backfill material. The weep holes should be 3 inches in diameter and spaced approximately every 8 feet center-to-center along the base of the walls. The weep holes should be backed with galvanized, heavy-wire mesh to help prevent loss of the backfill material.

If weep holes are not preferred, a minimum 4-inch-diameter, perforated drainpipe should be installed within the free-draining material at the base of each wall. Drainpipe should consist of smooth-walled, perforated PVC pipe. The pipes should be placed with minimum slopes of 0.5 percent and routed to a suitable discharge location. The pipe installations should include a cleanout riser with cover located at the upper end of each pipe run. The cleanouts could be placed in flush-mounted access boxes.

6.4 SHORING WALLS

6.4.1 Cantilever Soldier Pile Wall

A cantilever wall consisting of soldier piles with treated timber or concrete lagging is being considered for the wall near the intersection of Juanita Drive NE and 80th Avenue NE and the wall south of the intersection of Juanita Drive NE and NE 128th Street.

6.4.1.1 Soldier Piles

The soldier piles should be embedded a minimum of 6 feet into the dense glacial till, which varies between 1 foot and 4 feet BGS at the different wall locations. Additional embedment may be necessary to provide sufficient resistance against kick-out at the toe of the excavation; we

anticipate a minimum embedment depth of 1.5 times the depth of the excavation will be required. Embedment depths should be designed based on the values provided on Figure 17. We recommend using factors of safety of 1.5 and 2.0 for design against overturning and kick-out, respectively.

6.4.1.2 Lagging

Lagging typically consists of treated timber planks or concrete panels. Permanent lagging should meet the specifications provided in WSS 9-09 – Timber and Lumber. Lagging should be installed and backfilled on newly excavated faces the same working day the face is excavated and should be designed to resist lateral earth and surcharge pressures. To account for soil arching effects, the lagging should be designed to resist 50 percent of the recommended lateral earth pressures. Thin gaps should be left between individual timber lagging elements for drainage. A geosynthetic drainage panel should be installed behind the concrete slab lagging to prevent the buildup of hydrostatic pressures.

6.4.1.3 Drainage

Drainage behind shoring wall lagging, if left exposed, should be provided for by placing a geocomposite drainage mat, similar to Miradrain 6000xl or G100NC, behind the lagging to the bottom of the wall. If temporary timber lagging will be covered with shotcrete or concrete panels, the drainage composite may be placed between the lagging and the final facing material. A drainage path should be provided between the lagging members by leaving a 1/8-inch-wide space between them. The composite drainage panels should either be connected to weep holes at the bottom of the wall or to a tightline system installed in front of the wall.

6.4.2 Soil Nail or Tieback Anchor Wall

We understand that a shotcrete face soil nail wall option is also being considered for the retaining wall located north of the intersection with NE 128th Street. The recommendations below are also applicable to tieback anchors.

Soil nail walls are a passive reinforcement system that uses closely spaced steel bars (nails) installed in rows down the slope face to reinforce the soil. The excavated face is then covered with a reinforced facing, typically composed of shotcrete. After the shotcrete facing is installed, bearing plates are placed over the soil nails along with a lock-off nut on the nail to facilitate load transfer from the facing to the nail. Excavation, nail installation, and facing installation is completed in stages varying from 3 to 6 feet deep. As a passive system, a small amount of ground deformation behind the wall is allowed to mobilize the soil nail strength.

Tieback anchors are a reinforcement system that uses multiple steel strands that are installed in rows then prestressed following installation. A variety of methods are available for construction of tieback anchors. Therefore, we recommend that the contractor be responsible for selecting the appropriate bonded length and installation methods to achieve the required capacity. Tieback anchors should be locked off at 100 percent of the design load.

Based on the results of explorations and laboratory testing, Table 5 presents parameters that can be used for soil nail or tieback anchor wall design.

Table 5. Unfactored Soil Nail or Tieback Anchor Wall Parameters

Material	Soil Unit Weight (pcf)	Soil Cohesion Static (psf)	Soil Cohesion Seismic (psf)	Soil Friction Static (degrees)	Soil Friction Seismic (degrees)	Ultimate Bond Strength (psf)
Glacial Till	125	100	100	36	36	2,200

In very dense, glacially over-consolidated soil, horizontal reinforcement spacing should be no greater than 8 feet and vertical reinforcement spacing should be no greater than 6 feet. In all other soil, horizontal and vertical spacing should be 6 feet or less. Reinforcement may be arranged in a square row and column pattern or an offset diamond pattern. Horizontal rows are preferred, but sloping rows may be used to optimize the reinforcement pattern. As much as possible, rows should be linear so that each individual reinforcement elevation can be easily interpolated from the station and elevation of the beginning and ending reinforcement in that row. Reinforcements that cannot be placed in a row must have station and elevation individually identified on the plans. Reinforcements in the top row of the wall shall have at least 1 foot of soil cover over the top of the drill hole during installation. Reinforcements should be inclined at least 10 degrees downward from horizontal. Centralizers should be installed at a maximum spacing of 8 feet and a minimum distance of 1.5 feet from both ends of the reinforcements. Embedment depths should be designed based on the values provided on Figures 18 and 19.

The ultimate pullout resistances described in Table 5 are based on exploration data and published values by FHWA and AASHTO and should be considered preliminary. We recommend that the pre-production pullout tests on sacrificial anchors be conducted to establish that anchor lengths and capacities are consistent with the contractor's chosen method of installation. We recommend a minimum of two tests be performed in each anticipated soil type. Performance tests should be performed to 200 percent of the design load and in accordance with the guidelines provided in *Recommendations for Prestressed Rock and Soil Anchors* (2014). In addition to pre-production pullout tests, proof testing should be completed on a minimum of 5 percent of the production nails in each nail row or a minimum of one nail per row. The locations shall be designated by the engineer. Proof testing should be completed in accordance with the guidelines provided in *Recommendations for Prestressed Rock and Soils Anchors* (2014).

If tieback anchors are used, we recommend all tiebacks be proof tested to at least 133 percent of the design prior to being locked off.

We recommend that soil nail or tieback anchor walls be constructed with sheet drains behind the walls to attain minimum drainage coverage of 30 to 50 percent. If water seepage is encountered during wall construction, we recommend 100 percent drainage coverage of the water seepage zone. The drainage pipe should be sloped and routed to drain toward a suitable discharge.

6.5 STORMWATER INFILTRATION

6.5.1 Design Infiltration Rate

As discussed in the "Subsurface Conditions" section, the soil underlying the site typically includes a layer of fill underlain by dense glacial till or dense glacial till beneath the surficial topsoil

materials. We anticipate that stormwater infiltration is feasible, provided infiltration facilities are not located uphill of critical slope areas and overflow protection is considered.

The glacial till encountered throughout the project area will control the infiltration rate. Infiltration rates based on grain-size distributions are not appropriate for glacially consolidated soil. Based on our experience in the area, we anticipate an average long-term infiltration rate of less than 0.1 inch per hour will be typical of the glacial till. We recommend in situ infiltration testing be completed prior to final design of infiltration facilities.

6.5.2 Groundwater Separation

Groundwater was not observed in our explorations and is expected at depths greater than 25 feet BGS. The required groundwater separation from the base of the facilities and the local water elevation of 5 feet should be achievable.

6.5.3 Slope Considerations

Core Requirement #9 of the 2016 King County Surface Water Design Manual requires evaluation of the site to address the feasibility of infiltrating stormwater as a flow control method and its impact of adjacent slope areas.

Geologic hazard areas consisting of Moderate and High Landslide Hazard Areas are present at various locations along the project alignment. We reviewed the mapped geologic critical areas downslope of the project alignment and recommend that stormwater management avoid infiltrating stormwater between the following Stations:

- Stations 15+00 and 18+00
- Stations 42+50 and 44+50
- Stations 56+00 and 60+00

Infiltration of stormwater within and uphill of these areas should be avoided as it would increase hydrostatic groundwater pressure and decrease slope stability.

6.6 LUMINARIES FOUNDATION DESIGN

We understand the luminaire foundations will be installed on the east side of Juanita Drive NE between NE 124th Street and NE 133rd Place.

6.6.1 Design Parameters

We understand the poles will have a drilled shaft foundation and will be constructed in accordance with the methodology of the 2019 WSDOT *Geotechnical Design Manual*, Chapter 17, "Foundation Design for Signals, Signs, Noise Barriers, Culverts, and Buildings." We have assumed generally flat ground conditions at both locations; if the ground is sloping away from the foundation, additional embedment may be required. Foundation recommendations in accordance with Chapter 17 are provided below for the locations described above.

Soil parameters and soil classifications as defined by Table 17-2 of WSDOT's (2019) *Geotechnical Design Manual* for pole foundation design are presented in Table 6. Because we did not conduct a subsurface exploration at each location, the depths in Table 6 are approximate and should be

confirmed during construction of the luminaire foundations. Fill was observed to a depth of 4.5 feet BGS in B-7. If luminaires are located near B-7, a reduced lateral bearing pressure is provided for fill in Table 6.

Table 6. Luminaire Pole Recommended Soil Parameters and Allowable Lateral Bearing Pressure

Foundation Type	Soil Classification	Depth (feet)	Allowable Lateral Soil Bearing Pressure (psf)	Friction Angle (degrees)	Moist Unit Weight (pcf)
Cantilever Signals and Strain Pole Standards (Types II, III, IV, and V)	Very Hard Soil (Glacial Till)	2 to 10	4,500	36	125
	Loose to Medium Dense Silty Sand (Fill)	0 to varies 5	1100	30	110

The upper 1.0 foot of soil contribution should be neglected in design.

We recommend a minimum embedded depth of 6 feet into the glacial till.

6.6.2 Luminaire Pole Foundation Construction Considerations

We recommend that drilled shaft foundations for the poles be installed using the WSDOT procedure. Concrete should be cast neat against excavation sides or sacrificial casing if left in place. The use of steel casing, drilling mud, or other types of procedures should be used as necessary to control the sloughing of sidewalls. Based on the conditions encountered in the borings, perched groundwater may be encountered, which could cause caving; in which case, casing will be necessary at least below perched water to control the caving and sloughing. Casing can be left in place or removed. Slough should be removed from the bottom of the excavation before concrete is placed, as loose or disturbed soil in the excavation base could result in increased settlement.

Excavating the pole foundations with a backhoe or tracked excavator, rather than a drill rig, can result in a void space between the temporary form and the excavation sidewall. Loose, disturbed material should be removed from the sides and base of the excavation to expose firm, undisturbed material. Concrete should be poured directly against the exposed soil in the sides of the excavation. If a form is used, the annular space between the form and the sides of the excavation should be backfilled with controlled density fill with an unconfined compressive strength of 100 psi.

We recommend that GeoDesign be retained to provide geotechnical construction observation services during foundation excavation and/or drilling. We will evaluate and confirm the adequacy of the subgrade soil with respect to the anticipated conditions based on the borings and foundation design recommendations presented in this report.

7.0 CONSTRUCTION CONSIDERATIONS

7.1 FILL MATERIALS

Fill material may be required for site grading, backfilling over-excavations, pavement support, installation of utilities, and drainage. The Aggregate Source Approval certificates should not be used as acceptance that the material coming from WSDOT-approved borrow pit will meet gradation or performance requirements. Confirmation sampling and testing should be performed on all proposed aggregate. The recommended fill materials are discussed below.

7.1.1 On-Site Soil

The native on-site soil below the existing pavement generally consists of sand and gravel with varying amounts of silt. On-site soil may be suitable for use as embankment fill during dry weather when moisture conditioning can be completed. Use of on-site embankment fill should be subject to approval by the City of Kirkland and the geotechnical engineer.

7.1.2 Structural Fill

Imported granular material used for structural fill should be naturally occurring pit- or quarry-run rock, crushed rock, or crushed gravel and sand and should meet the specifications provided in WSS 9-03.14(1) – Gravel Borrow, with the exception that the percentage passing the U.S. Standard No. 200 sieve does not exceed 5 percent by dry weight. The reduced percentage passing the U.S. Standard No. 200 sieve results in a material less susceptible to deteriorating under wet weather conditions.

7.1.3 Hardscape/Pavement Base Course

Imported granular material used as aggregate base beneath hardscape areas should consist of 1¼-inch-minus material meeting the specifications provided in the WSS 9-03.9(3) – Crushed Surfacing Base Course or Top Course material, with the exception that the aggregate should have less than 5 percent by dry weight passing the U.S. Standard No. 200 sieve and at least two mechanically fractured faces. The imported granular material should be placed in lifts with a maximum uncompacted thickness of 12 inches and compacted to not less than 95 percent of the maximum dry density, as determined by ASTM D1557.

7.1.4 Trench Backfill

Backfill for utility trenches beneath improved areas should consist of structural fill, as defined above, and compacted in accordance with the specifications for structural fill. Utility trenches beneath unimproved areas, such as landscaped areas, or areas where structural support is not necessary for surface improvements may be backfilled with on-site excavation spoils or common borrow meeting WSS 9-03.14(3), Option 3 and compacted to a minimum of 90 percent of the maximum dry density, as determined by ASTM D1557.

7.1.5 Stabilization Material

Stabilization material to backfill over-excavations or to stabilize soft subgrade areas may consist of either:

- WSS 9-03.9(2) – Permeable Ballast, or
- WSS 9-13.7(2) – Backfill for Rock Wall

The initial lift of stabilization material used to fill over-excavations should be 12 inches thick and compacted to a firm condition. Successive lifts should be 12 inches thick and compacted to a dense and unyielding condition.

To prevent migration of the fine-grained subgrade soil upwards or structural fill, stabilization fabric should be placed between the stabilization material prior to placing structural fill. The geotextile should conform to the specifications for woven stabilization geotextile as defined in the "Geosynthetics" section.

7.2 GEOSYNTHETICS

If geotextiles are used on this project, the geotextiles should be installed in conformance with the specifications provided in WSS 2-12 – Construction Geosynthetic.

7.2.1 Stabilization Geotextile

To provide subgrade stabilization, reinforcement, and drainage, a geosynthetic is recommended in areas where soft subgrade conditions are encountered. This can be accomplished using a two-layer system composed of biaxial or triaxial geogrid and non-woven geotextile filter fabric or with the use of a single layer of heavy-duty geotextile with high permittivity characteristics such as Mirafi RS380i. The geotextile should conform to the specifications for woven soil stabilization material provided in WSS 9-33.2(1) – Geotextile Properties, Table 3 Geotextile for Separation or Soil Stabilization and meet the AOS and water permittivity requirements in WSS 9-33.2(1) – Geotextile Properties, Table 5, Class A.

7.3 WET WEATHER CONSIDERATIONS

This section describes additional recommendations with potential budget and schedule impacts that may affect the owner and site contractor if earthwork occurs during the wet season. These recommendations are based on site conditions and our experience on previous construction projects completed in the area.

- Soil encountered in the explorations contains a variable amount of silt. The material will be susceptible to deterioration during wet weather. If construction is completed or extends into the wet season, we recommend stabilizing the areas of the site where construction traffic is anticipated using a gravel working pad.
- Earthwork should be accomplished in small sections to minimize exposure to wet weather.
- Excavation or the removal of unsuitable soil should be followed promptly by the placement of appropriate stabilization material.
- The size of construction equipment and access to the area should be limited to prevent soil disturbance.
- Increased handling, excavation, and disposal of wet and disturbed surface material should be expected.
- Protection of exposed soil subgrades and stockpiles will be required.
- Heavy rainfall can occur during winter months and can compromise earthwork schedules in this region.
- Frozen ground should not be proof rolled or compacted, and fill should not be placed over frozen ground.

8.0 OBSERVATION OF CONSTRUCTION

Recommendations provided in this report assume that GeoDesign will be retained to provide geotechnical consultation and observation services during construction. Satisfactory earthwork performance depends to a large degree on the quality of construction. Subsurface conditions observed during construction should be compared with those encountered during the subsurface explorations. Recognition of changed conditions often requires experience; therefore, GeoDesign personnel should visit the site with sufficient frequency to detect whether subsurface conditions change significantly from those anticipated and to verify that the work is completed in accordance with the construction drawings and specifications.

Observation and laboratory testing of the proposed fill material should be completed to verify that it is in conformance with our recommendations. Observation of the placement and compaction of the fill should be performed to verify it meets the required compaction and will be capable of providing the structural support for the proposed infrastructure. A sufficient number of in-place density tests should be performed as the fill is placed to verify the required relative compaction is being achieved.

9.0 LIMITATIONS

We have prepared this report for use by KPG, P.S. and its consultants in design of this project. The data and report can be used for bidding or estimating purposes, but our report, conclusions, and interpretations should not be construed as warranty of the subsurface conditions and are not applicable to other nearby building sites.

Exploration observations indicate soil conditions only at specific locations and only to the depths penetrated. They do not necessarily reflect soil strata or water level variations that may exist between exploration locations. If subsurface conditions differing from those described are noted during the course of excavation and construction, re-evaluation will be necessary.

The site development plans and design details were preliminary at the time this report was prepared. If design changes are made, we request that we be retained to review our conclusions and recommendations and to provide a written modification or verification.

The scope of our services does not include services related to construction safety precautions and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in this report for consideration in design.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with generally accepted practices in this area at the time this report was prepared. No warranty, express or implied, should be understood.

◆ ◆ ◆

We appreciate the opportunity to be of continued service to you. Please call if you have questions concerning this report or if we can provide additional services.

Sincerely,

GeoDesign, Inc.



Tyler A. Pierce, P.E.
Project Engineer



Kevin J. Lamb, P.E.
Principal Engineer



Signed 04/15/2022

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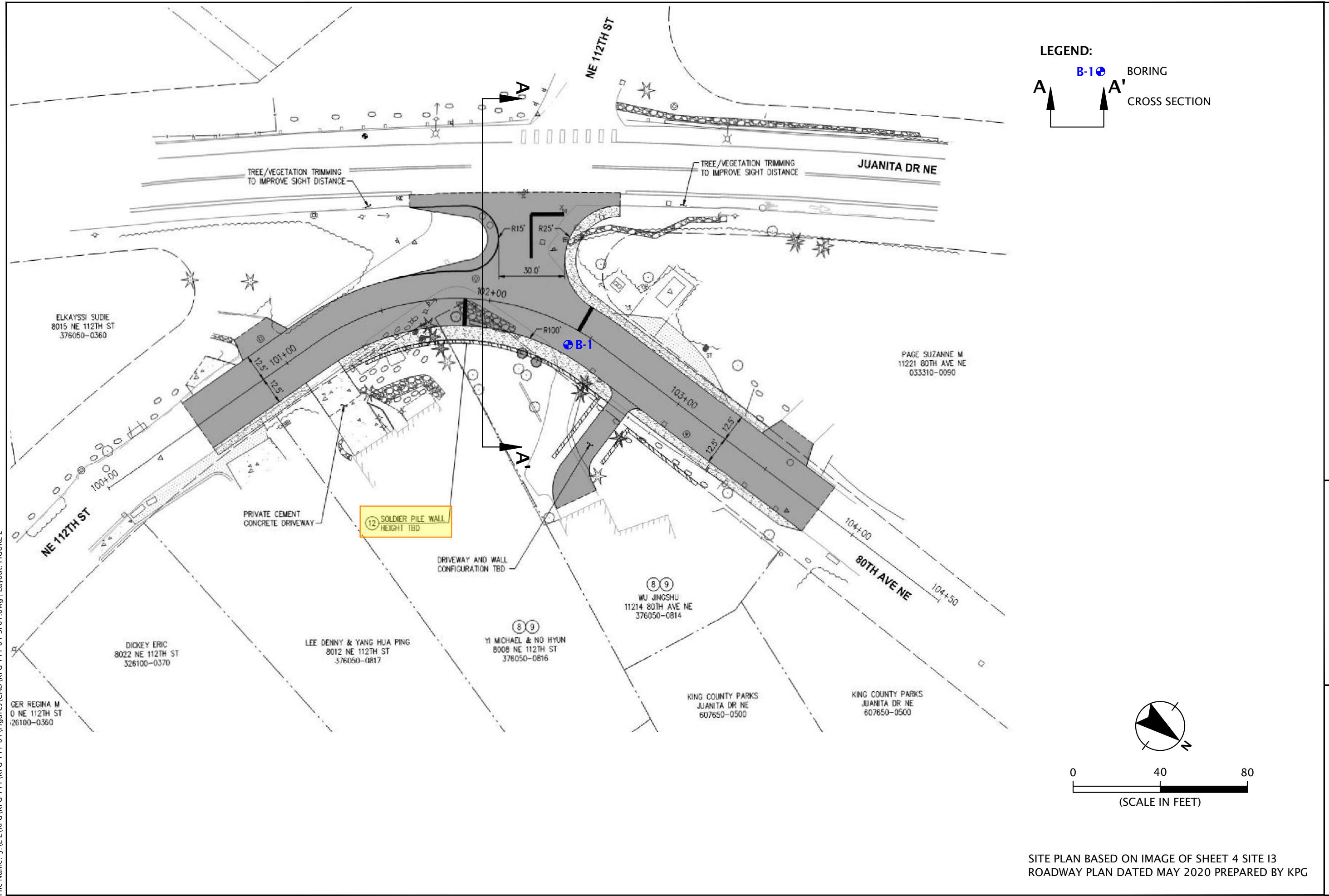
Sherrod, B.L., T.M. Brocher, C.S. Weaver, R.C. Bucknam, R.J. Blakely, H.M. Kelsey, A.R. Nelson, and R. Haugerud, 2004, *Holocene fault scarps near Tacoma, Washington*, *Geology*, 32, p. 9-12.

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FIGURES

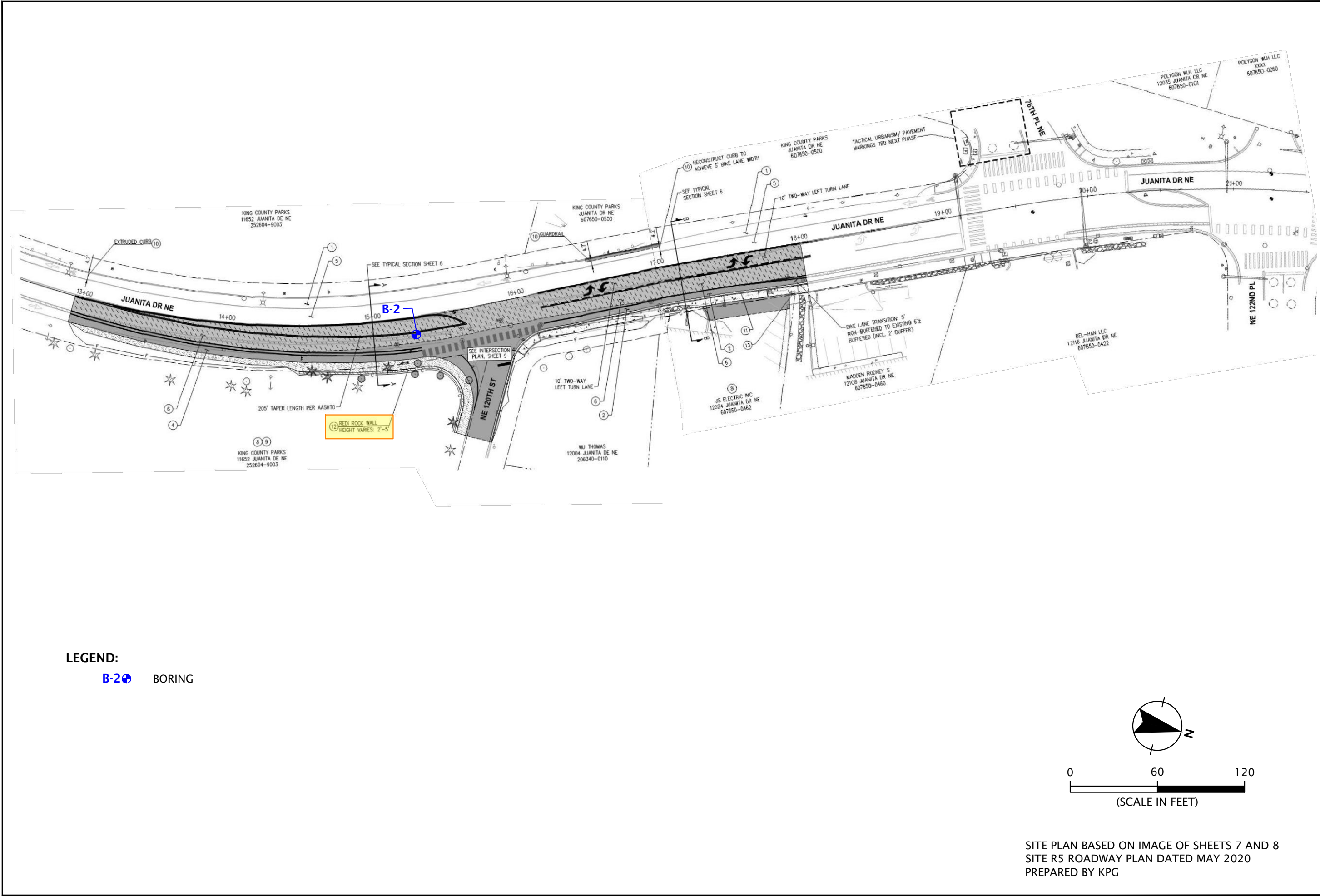



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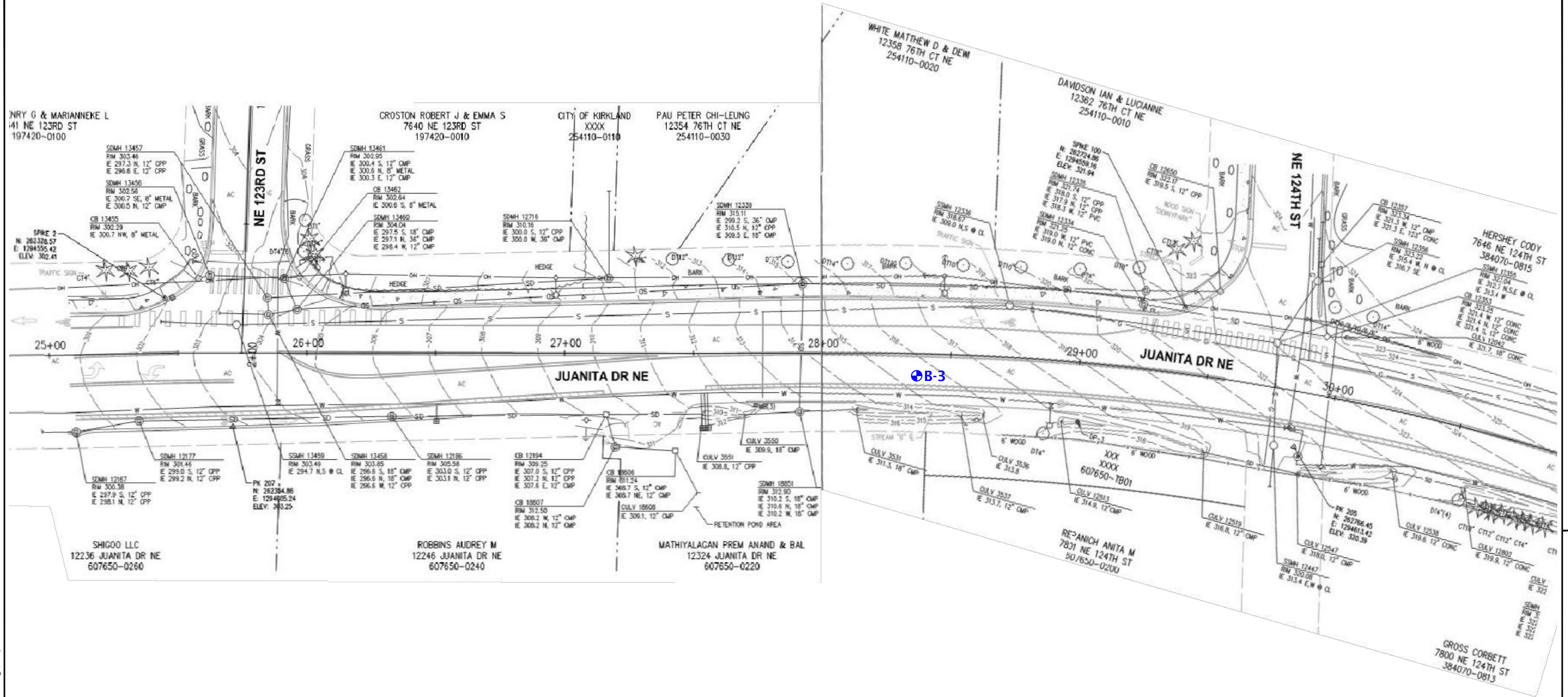


SITE PLAN BASED ON IMAGE OF SHEET 4 SITE I3
ROADWAY PLAN DATED MAY 2020 PREPARED BY KPG

 AN  COMPANY	KPG-111-01	SITE PLAN - PROPOSED CONDITIONS	
	APRIL 2022	JUANITA DR INTERSECTION/SAFETY IMPROVEMENT KIRKLAND, WA	FIGURE 2

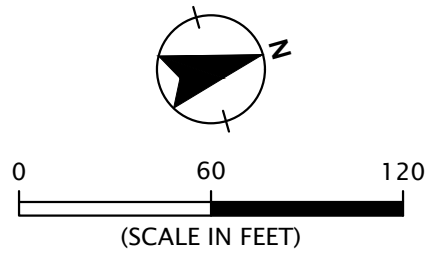
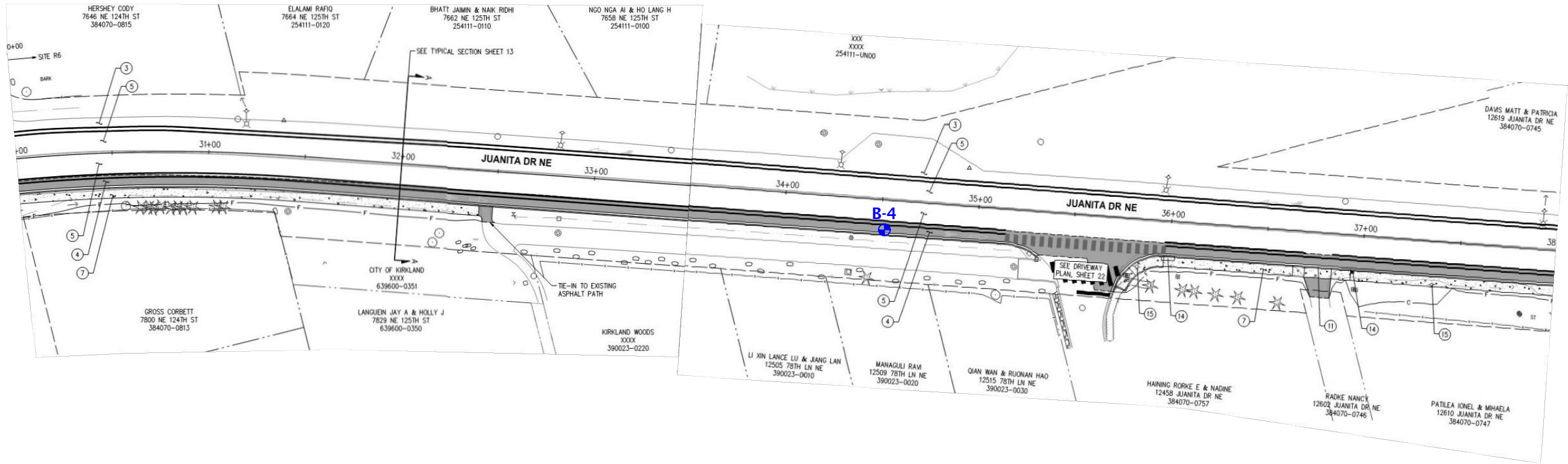


	KPG-111-01	SITE PLAN - PROPOSED CONDITIONS	
	APRIL 2022	JUANITA DR INTERSECTION/SAFETY IMPROVEMENT KIRKLAND, WA	FIGURE 3



SITE PLAN BASED ON IMAGE OF SHEET 12 SITE NM4
EXISTING CONDITIONS DATED MAY 2020
PREPARED BY KPG

LEGEND:
B-4 BORING



SITE PLAN BASED ON IMAGE OF SHEETS 14 AND 15
SITE R6 ROADWAY PLAN DATED MAY 2020
PREPARED BY KPG

SITE PLAN - PROPOSED CONDITIONS

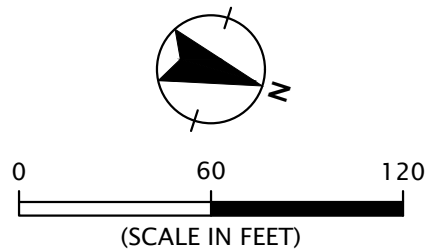
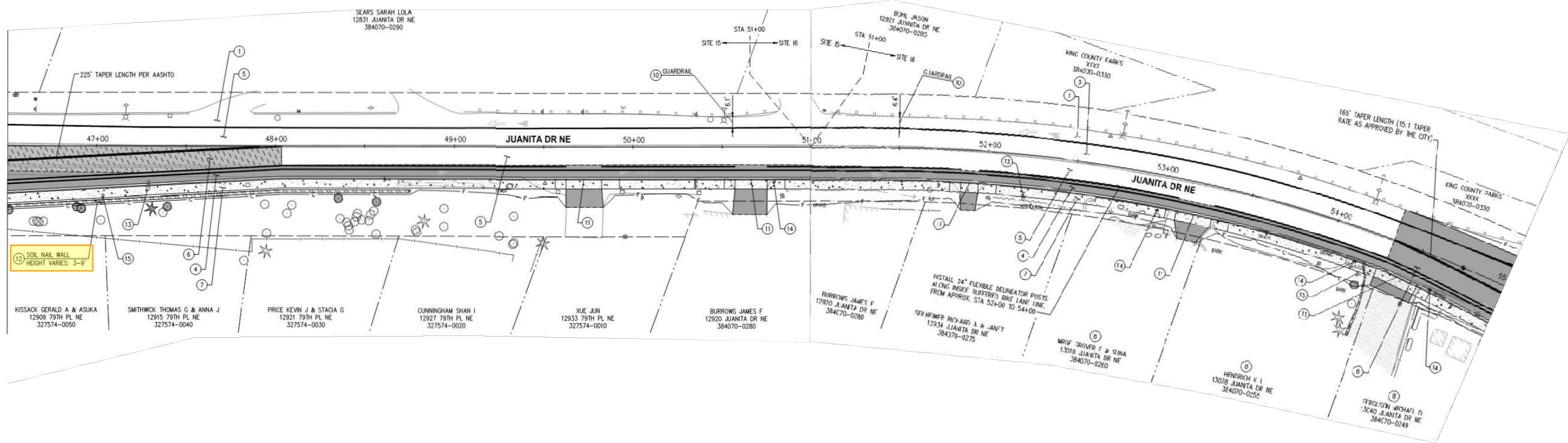
JUANITA DR INTERSECTION/SAFETY IMPROVEMENT
KIRKLAND, WA

KPG-111-01

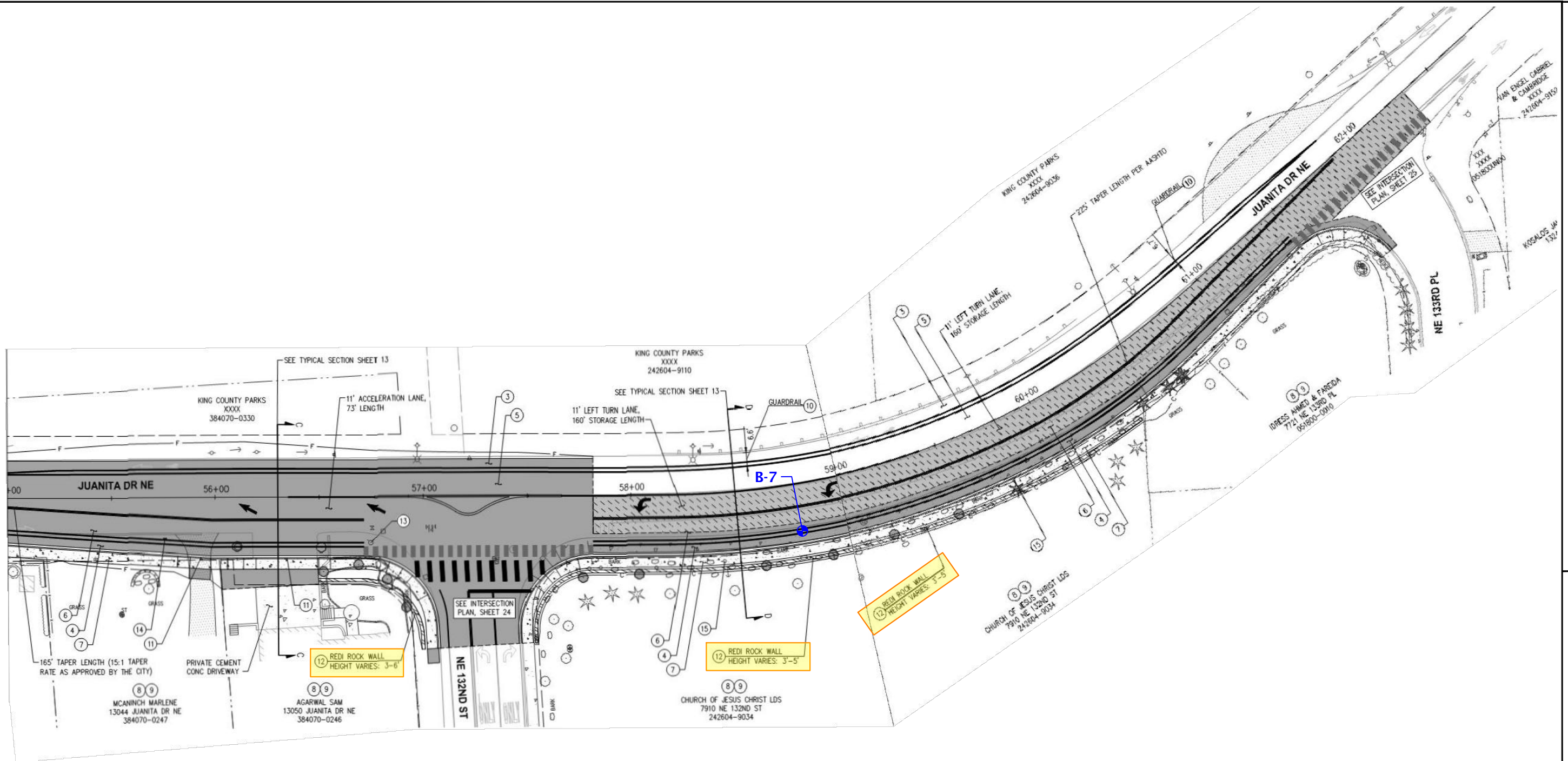
APRIL 2022

GEODESIGN
AN **NIVIS** COMPANY

FIGURE 5

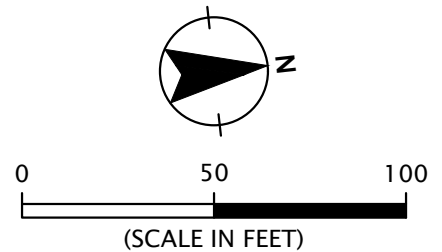


SITE PLAN BASED ON IMAGE OF SHEETS 18 AND 19
SITE 16 ROADWAY PLAN DATED MAY 2020
PREPARED BY KPG



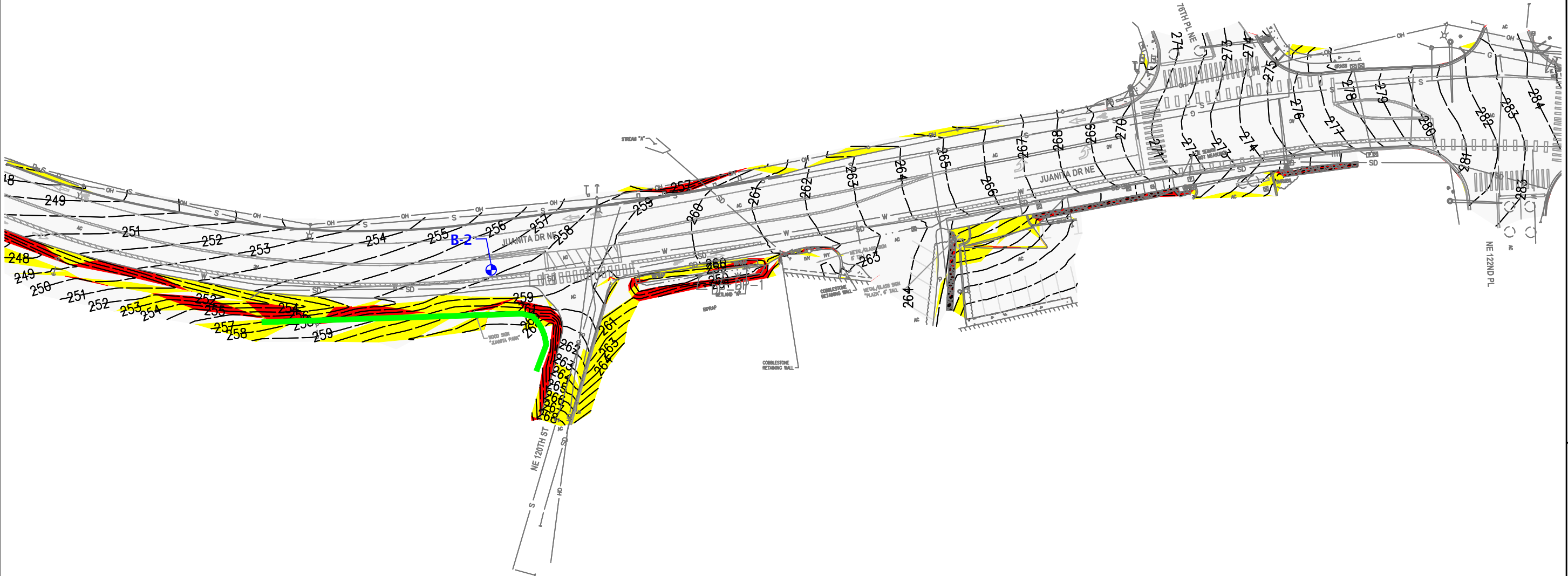
LEGEND:

B-7 BORING







SITE PLAN BASED ON IMAGE OF SHEETS 18 AND 19
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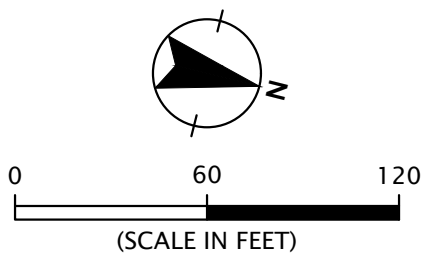
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LEGEND:

-  B-2 BORING
-  PROPOSED RETAINING WALL

SLOPE TABLE			
COLOR	MINIMUM SLOPE	MAXIMUM SLOPE	CITY OF KIRKLAND CHAPTER 85 CRITICAL AREAS: GEOLOGIC HAZARD CLASSIFICATION
	15%	40%	MODERATE LANDSLIDE HAZARD AREA
	40%	>40%	HIGH LANDSLIDE HAZARD AREA



SITE PLAN BASED ON DRAWING FROM KPG JULY 24, 2020

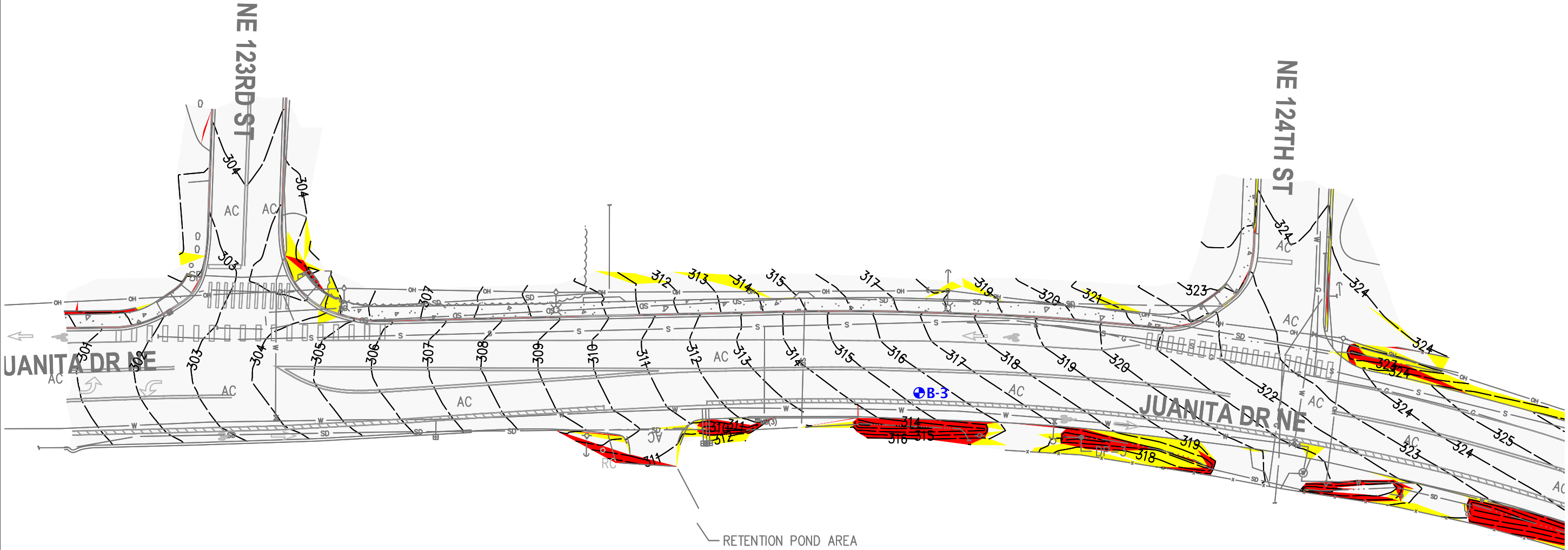
SITE PLAN - EXISTING CONDITIONS

JUANITA DR INTERSECTION/SAFETY IMPROVEMENT
KIRKLAND, WA

KPG-111-01

APRIL 2022

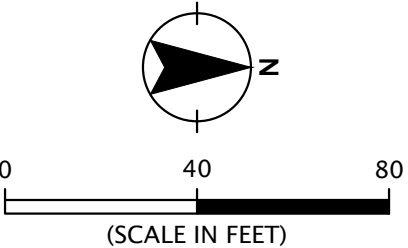




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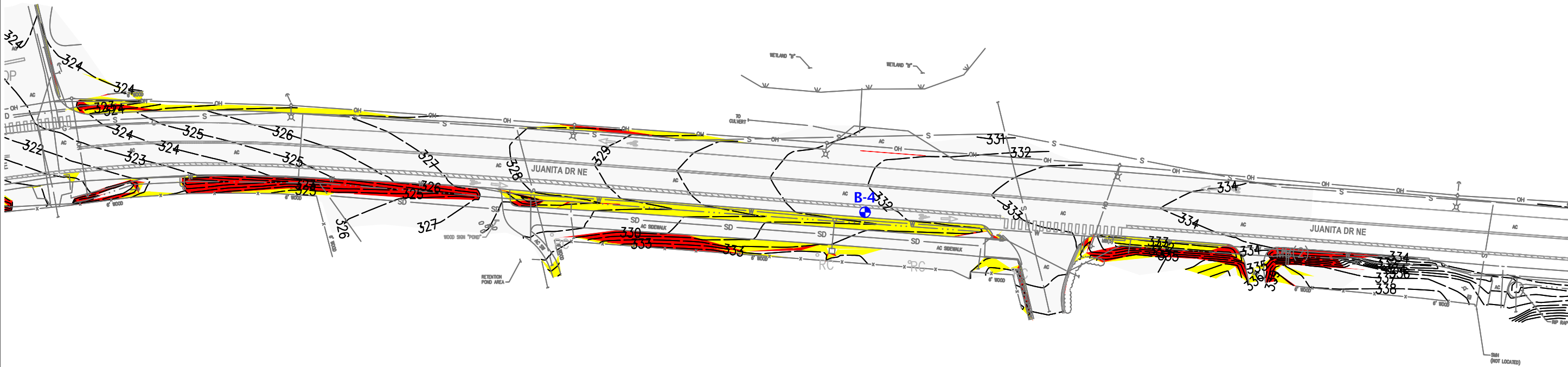
B-3 BORING

SLOPE TABLE			
COLOR	MINIMUM SLOPE	MAXIMUM SLOPE	CITY OF KIRKLAND CHAPTER 85 CRITICAL AREAS: GEOLOGIC HAZARD CLASSIFICATION
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<div></div>	40%	>40%	HIGH LANDSLIDE HAZARD AREA



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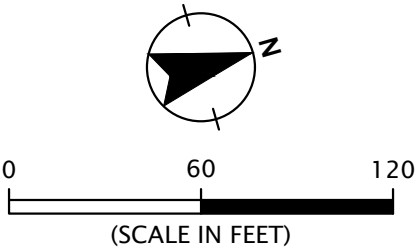
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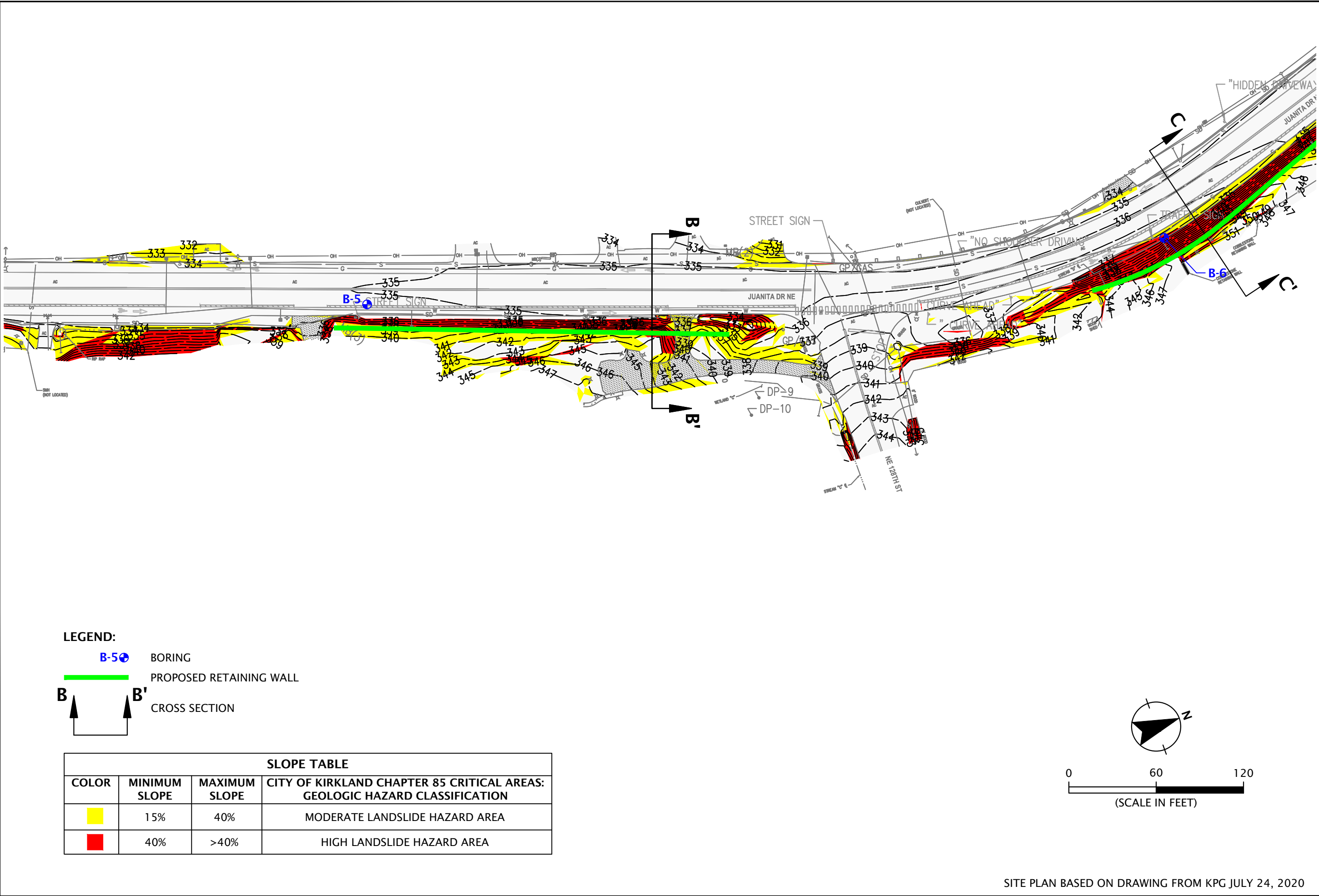
B-4 BORING

SLOPE TABLE			
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<div></div>	40%	>40%	HIGH LANDSLIDE HAZARD AREA



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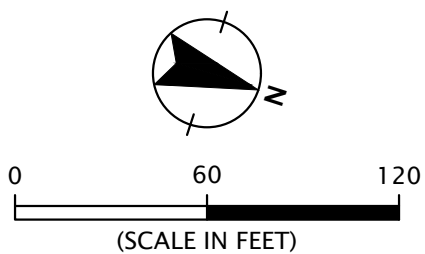
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LEGEND:

 PROPOSED RETAINING WALL

SLOPE TABLE			
COLOR	MINIMUM SLOPE	MAXIMUM SLOPE	CITY OF KIRKLAND CHAPTER 85 CRITICAL AREAS: GEOLOGIC HAZARD CLASSIFICATION
	15%	40%	MODERATE LANDSLIDE HAZARD AREA
	40%	>40%	HIGH LANDSLIDE HAZARD AREA



SITE PLAN BASED ON DRAWING FROM KPG JULY 24, 2020

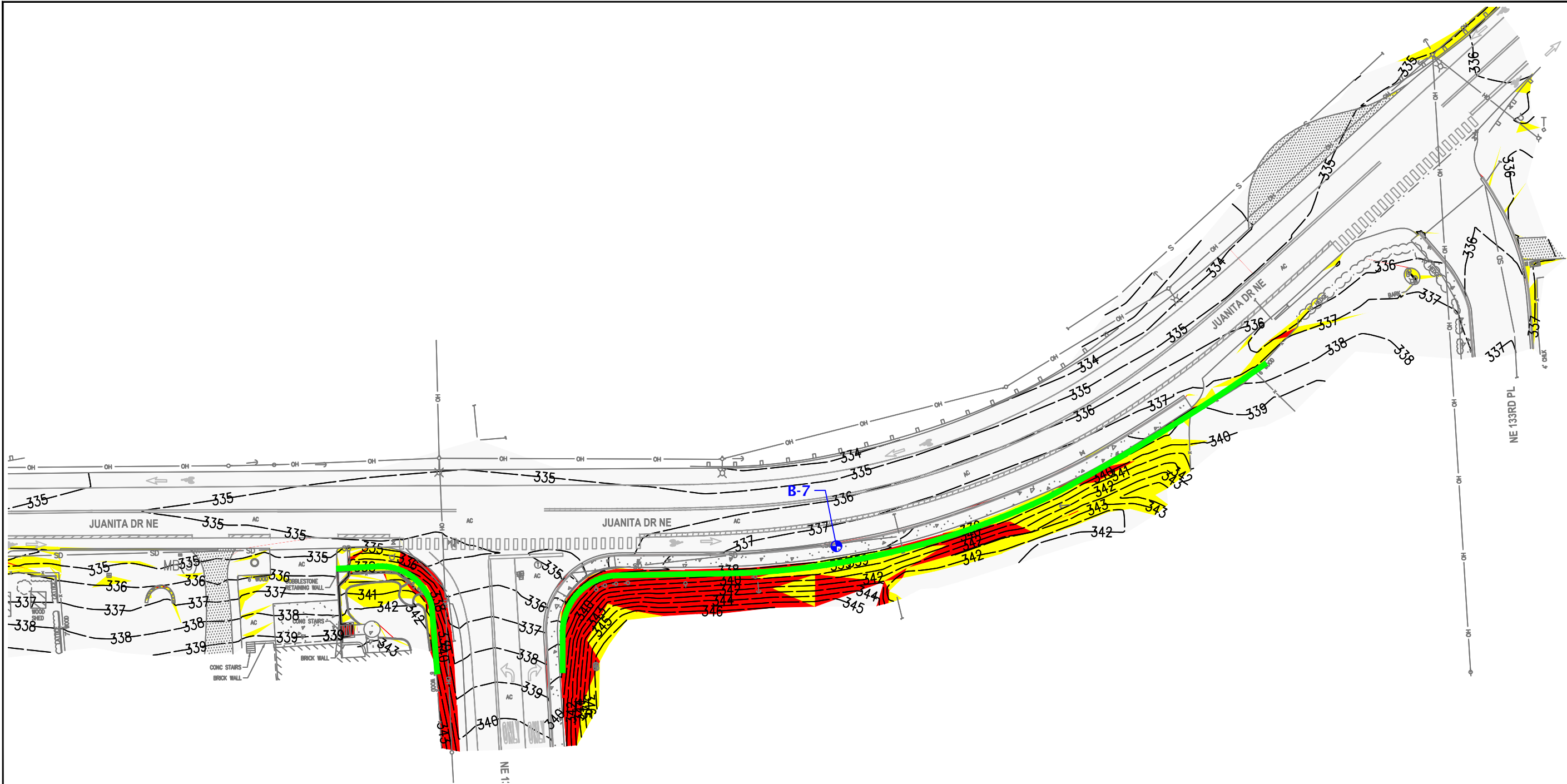
SITE PLAN - EXISTING CONDITIONS

JUANITA DR INTERSECTION/SAFETY IMPROVEMENT
KIRKLAND, WA

KPG-111-01

APRIL 2022

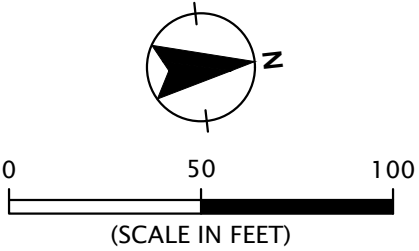




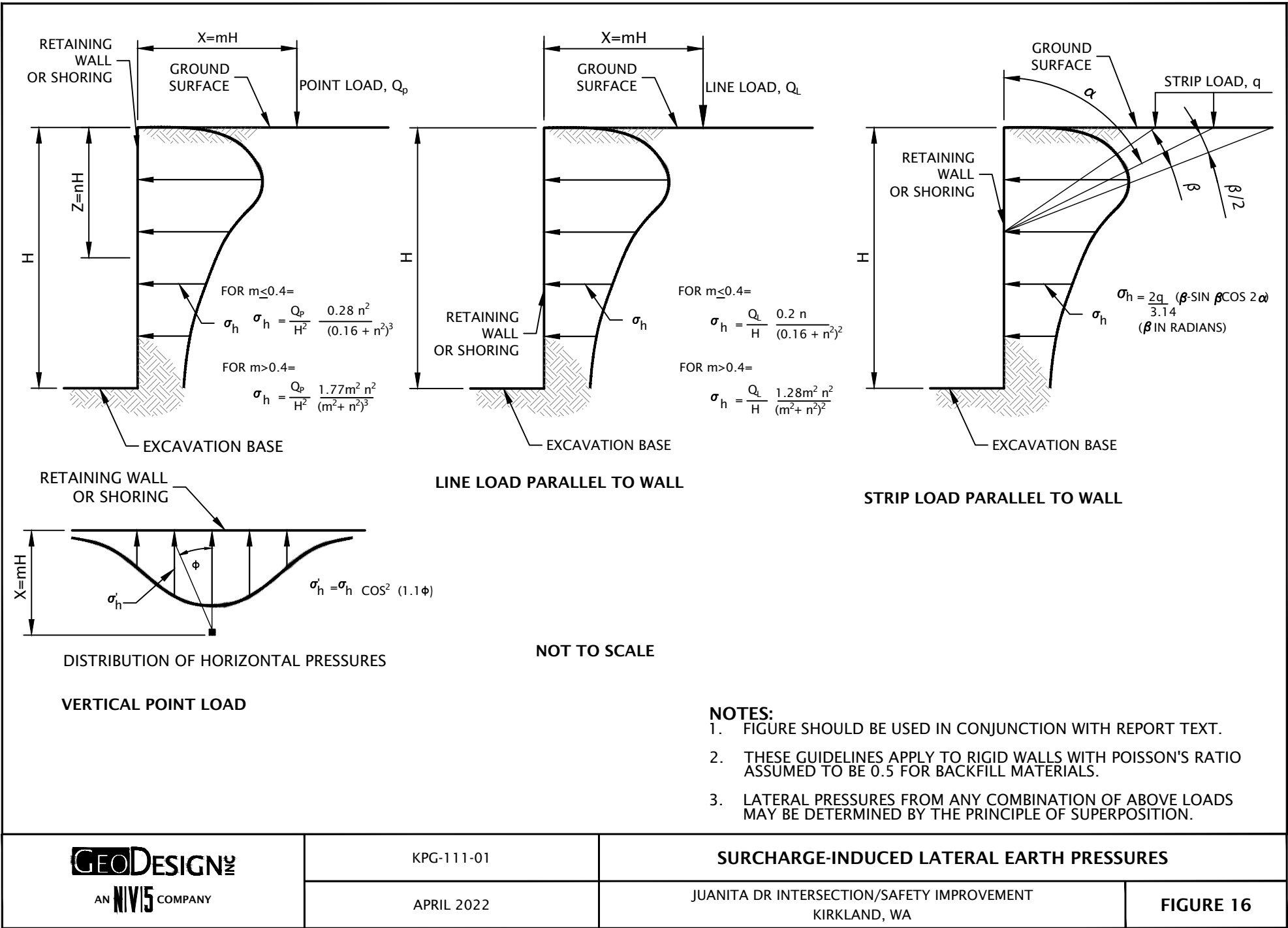
LEGEND:

- B-7 BORING
— PROPOSED RETAINING WALL

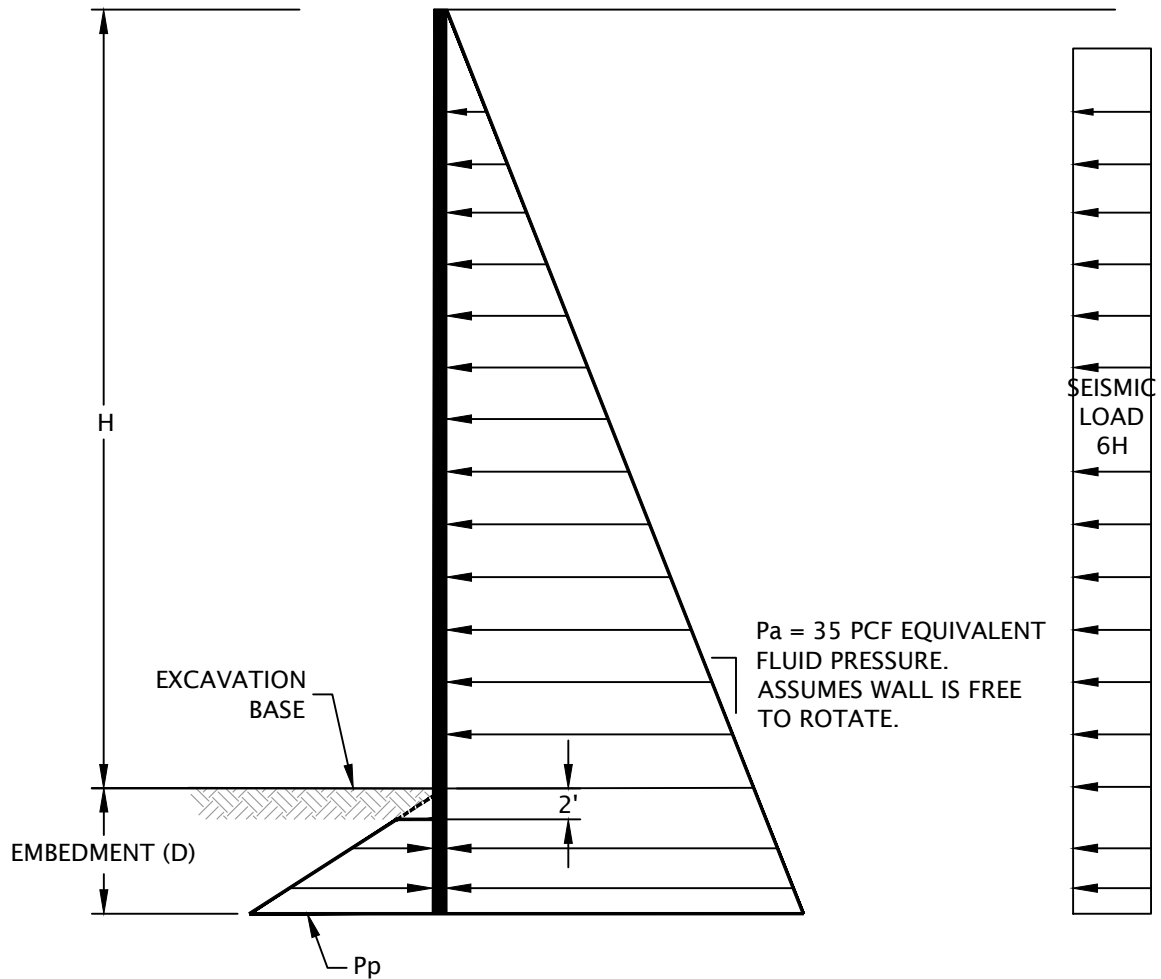
SLOPE TABLE			
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■	15%	40%	MODERATE LANDSLIDE HAZARD AREA
■	40%	>40%	HIGH LANDSLIDE HAZARD AREA



SITE PLAN BASED ON DRAWING FROM KPG JULY 24, 2020



RECOMMENDED DESIGN PARAMETERS FOR CANTILEVERED WALL



EXPLANATION:

Pp = 350 D PCF IN UNDISTURBED GLACIALLY CONSOLIDATED SOIL

H_1 = HEIGHT OF EXPOSED SOLDIER PILE IN FEET

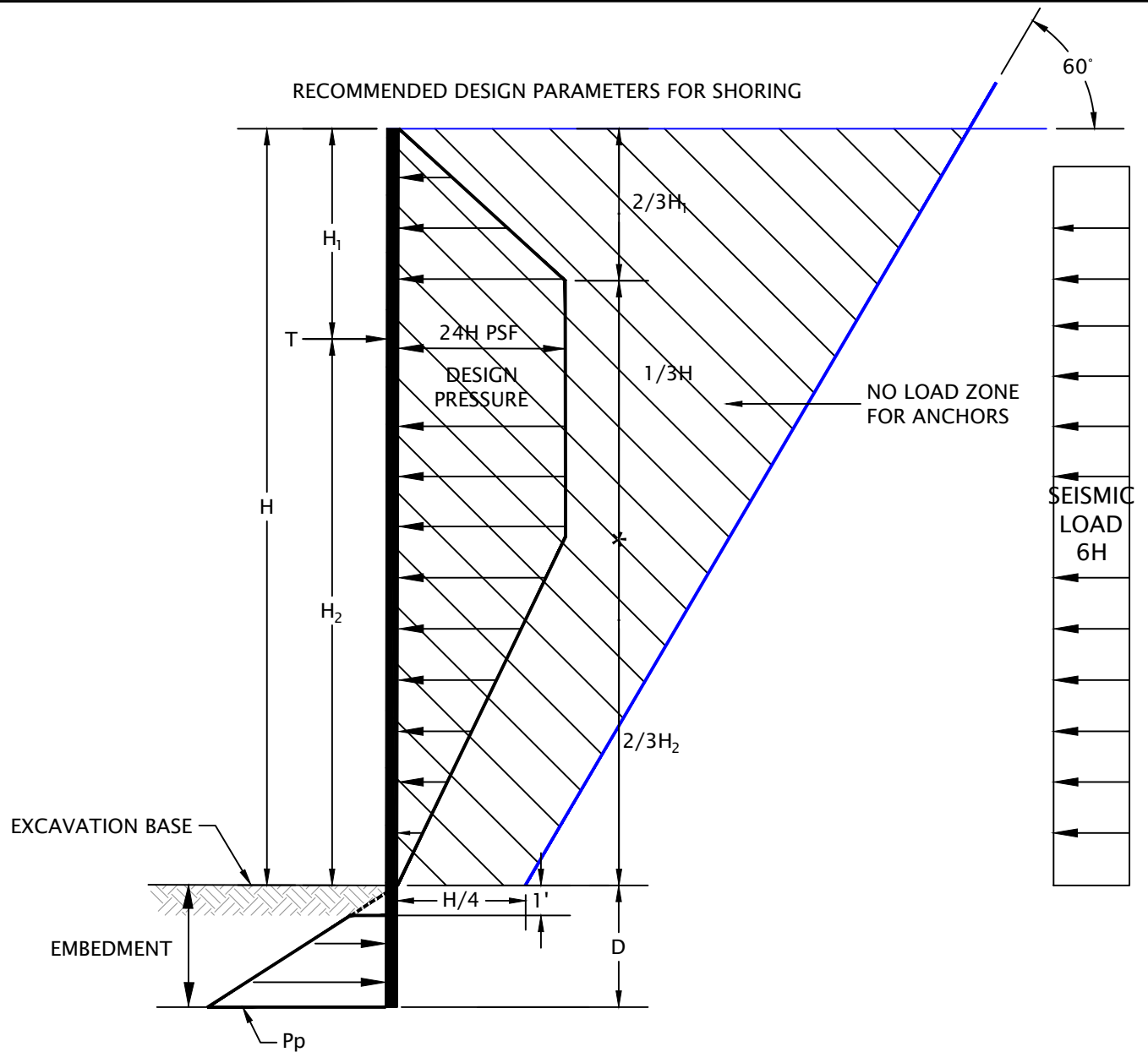
PASSIVE PRESSURE ACTS OVER 3X THE PILE WIDTH IN UNDISTURBED GLACIALLY CONSOLIDATED SOIL

ACTIVE PRESSURE ACTS OVER 1X THE PILE WIDTH

NOTES:

1. FIGURE DOES NOT INCLUDE LATERAL EARTH PRESSURES INDUCED BY SLOPED BACKFILL OR SURROUNDING LOADS.
2. LATERAL EARTH PRESSURE ASSUMES WATER WILL BE MAINTAINED BELOW THE BASE OF THE EXCAVATION.
3. THE LATERAL EARTH PRESSURES ARE UNFACTORED.

RECOMMENDED DESIGN PARAMETERS FOR SHORING



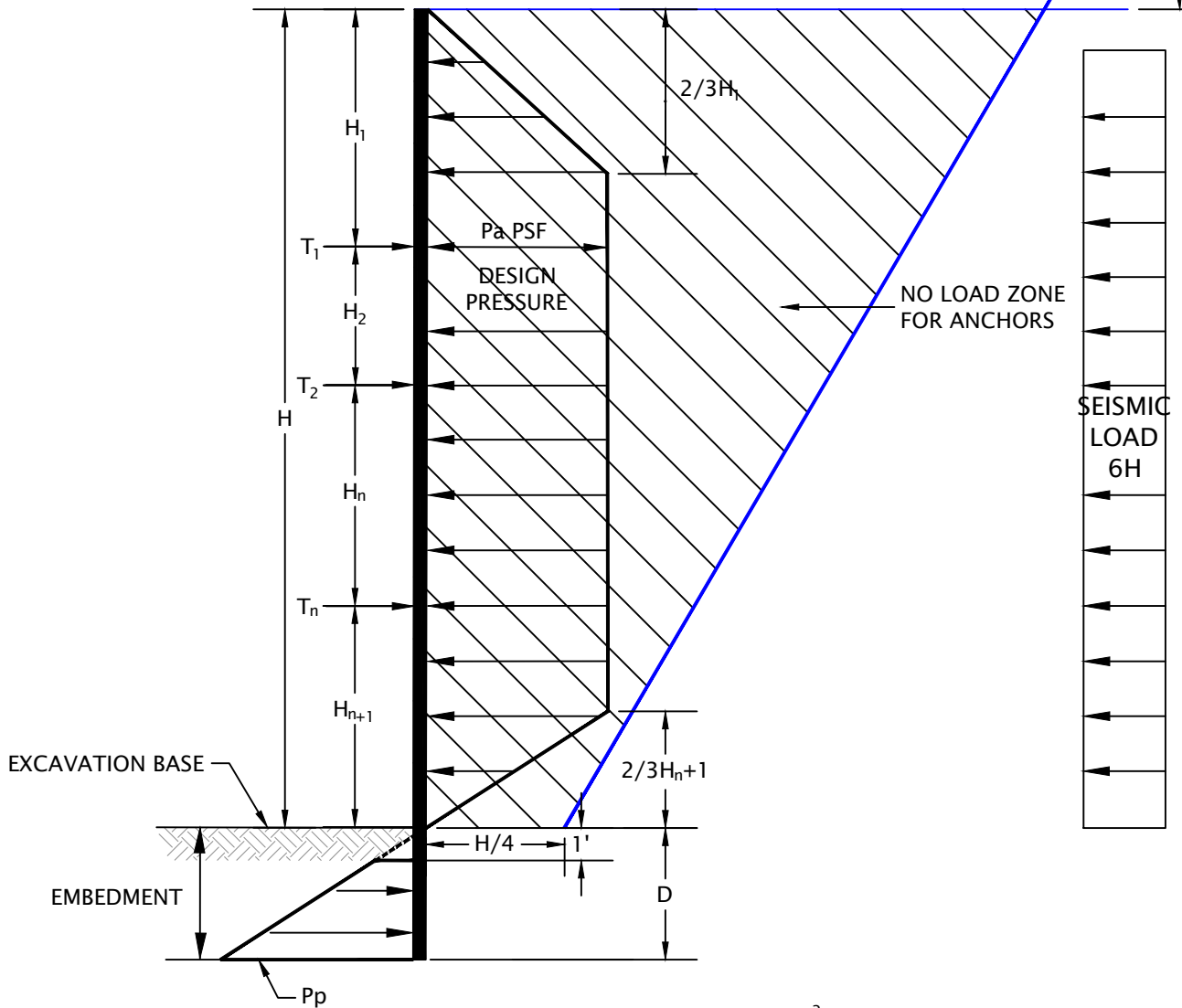
EXPLANATION:

P_p = 350 PCF IN UNDISTURBED GLACIALLY CONSOLIDATED SOIL (PASSIVE PRESSURE P_p ACTS OVER 3X THE PILE WIDTH)
 H = DEPTH OF EXCAVATION IN FEET
 D = EMBEDMENT DEPTH
 T = TIEBACK ANCHOR

NOTES:

1. DOES NOT INCLUDE SURCHARGE OR SEISMIC LOADS.
2. RETAINED SOIL IS ASSUMED TO BE LEVEL.
3. THE LATERAL EARTH PRESSURES ARE UNFACTORED.
4. THIS PRESSURE DIAGRAM IS VALID FOR A SINGLE ROW OF TIEBACK ANCHORS.

RECOMMENDED DESIGN PARAMETERS FOR SHORING



$$P_a = \frac{24H^2}{H - \frac{1}{3}H_1 - \frac{1}{3}H_{n+1}} \text{ POUNDS PER SQUARE FOOT}$$

EXPLANATION:

P_p = 350 PCF IN UNDISTURBED GLACIALLY CONSOLIDATED SOIL
(PASSIVE PRESSURE P_p ACTS OVER 3X THE PILE WIDTH)
 H = DEPTH OF EXCAVATION IN FEET
 D = EMBEDMENT DEPTH
 T = TIEBACK ANCHOR

NOTES:

1. DOES NOT INCLUDE SURCHARGE OR SEISMIC LOADS.
2. RETAINED SOIL IS ASSUMED TO BE LEVEL.
3. THE LATERAL EARTH PRESSURES ARE UNFACTORED.
4. THIS PRESSURE DIAGRAM IS VALID FOR MULTIPLE ROWS OF TIEBACK ANCHORS.

APPENDIX A

APPENDIX A

FIELD EXPLORATIONS

GENERAL

Subsurface conditions at the site were explored by drilling seven borings (B-1 through B-7) to depths between 7.9 and 15.9 feet BGS. The borings were completed between on June 22, July 12, and July 13, 2020. The borings were drilled by Boretect¹ with a trailer-mounted drill rig using hollow-stem auger drilling techniques. The exploration logs are presented in this appendix. The locations of the explorations were determined based on existing conditions, field measurements and hand-held GPS. This information should be considered accurate to the degree implied by the methods used.

SOIL SAMPLING

A member of our geology staff observed the explorations. We collected representative samples of the various soil encountered in the explorations for geotechnical laboratory testing. The samplers were driven with a 140-pound hammer free-falling 30 inches. The number of blows required to drive the sampler 1 foot, or as otherwise indicated, into the soil is shown adjacent to the sample symbols on the exploration logs. Disturbed soil samples were collected from the samplers at 2.5-foot intervals. Sampling methods and intervals are shown on the exploration logs.

SOIL CLASSIFICATION

The soil samples were classified in accordance with the “Exploration Key” (Table A-1) and “Soil Classification System” (Table A-2), which are presented in this appendix. The exploration logs indicate the depths at which the soils or their characteristics change, although the change could be gradual. A horizontal line between soil types indicates an observed change. If the change was gradual, the change is indicated using a dashed line. Classifications are shown on the exploration logs.

LABORATORY TESTING

CLASSIFICATION










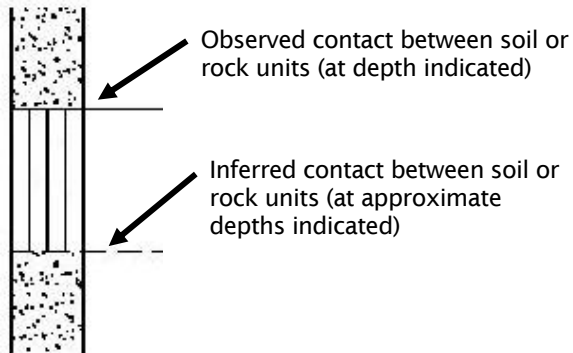

The soil samples were classified in the laboratory to confirm field classifications. The laboratory classifications are shown on the exploration logs if those classifications differed from the field classifications.

MOISTURE CONTENT

Moisture content determinations were completed on select soil samples in general accordance with ASTM D2216. The moisture content is a ratio of the weight of the water to soil in a test sample and is expressed as a percentage. The test results are presented in this appendix.

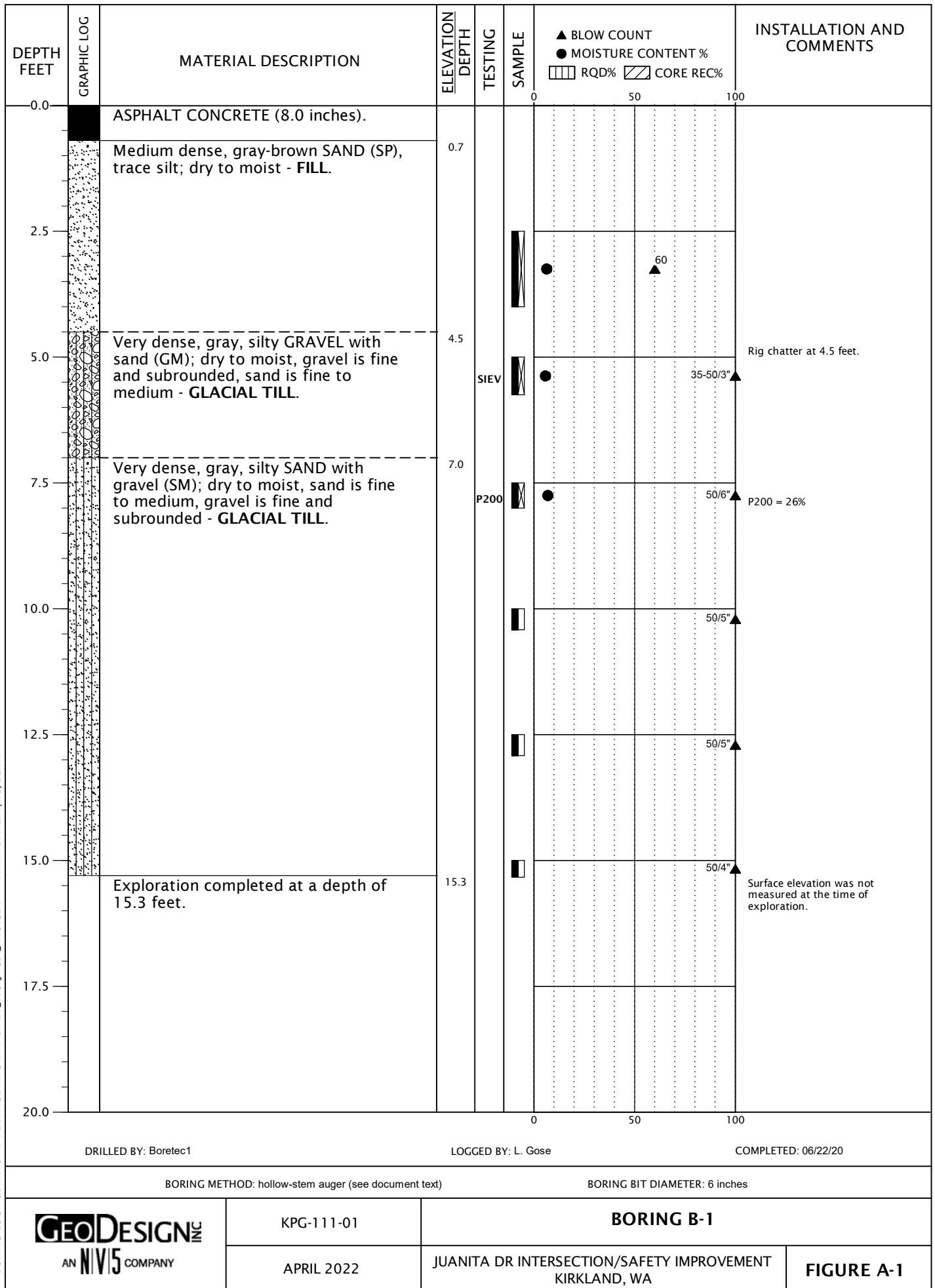
GRAIN-SIZE ANALYSIS

We completed grain-size analyses on select soil samples in order to determine the distribution of soil particle sizes. The testing was completed in general accordance with ASTM C117/ASTM C136 or ASTM D1140 (P200). The test results are presented in this appendix.

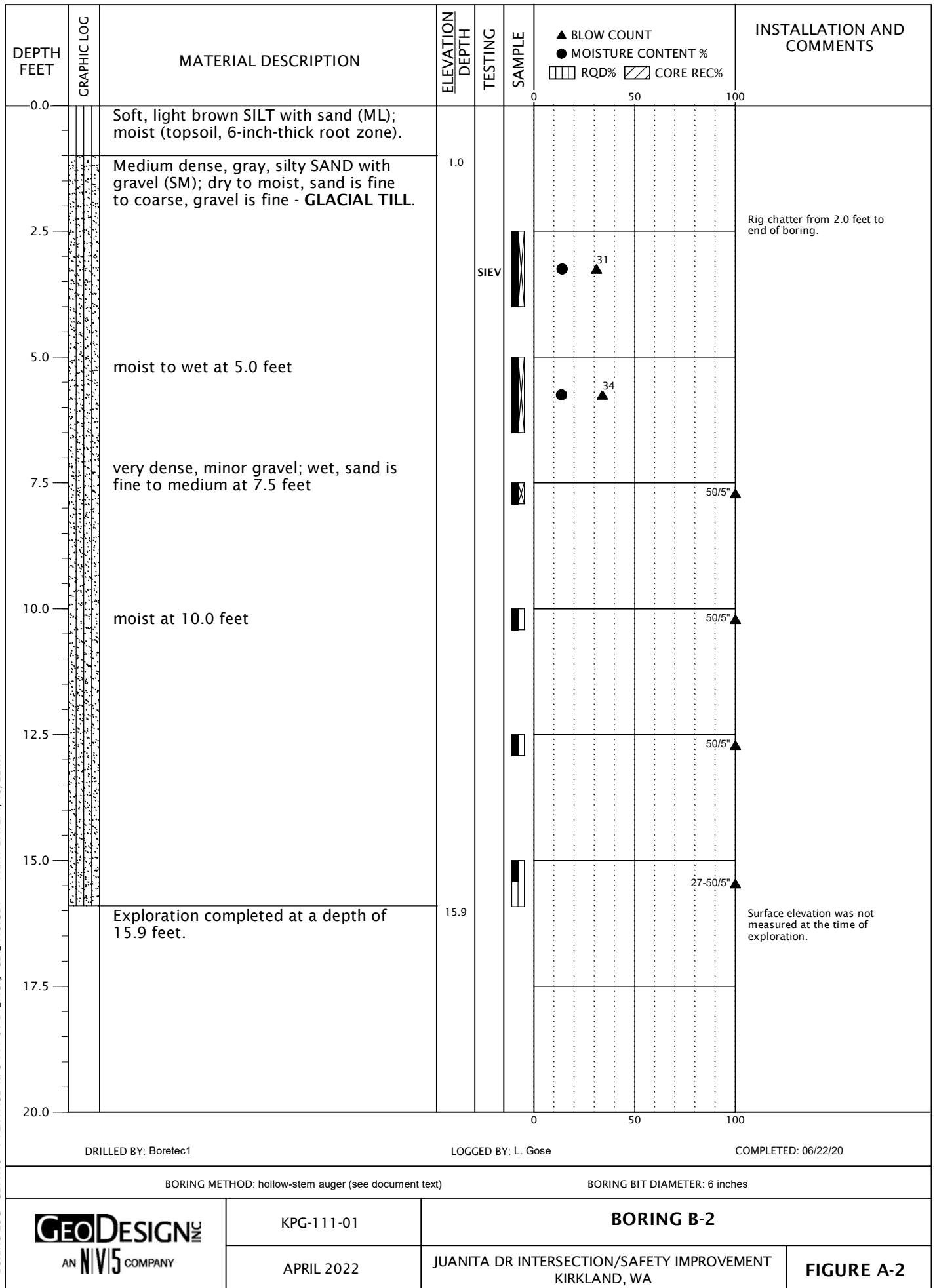
SYMBOL		SAMPLING DESCRIPTION	
        	Location of sample collected in general accordance with ASTM D1586 using Standard Penetration Test with recovery		
	Location of sample collected using thin-wall Shelby tube or Geoprobe® sampler in general accordance with ASTM D1587 with recovery		
	Location of sample collected using Dames & Moore sampler and 300-pound hammer or pushed with recovery		
	Location of sample collected using Dames & Moore sampler and 140-pound hammer or pushed with recovery		
	Location of sample collected using 3-inch-O.D. California split-spoon sampler and 140-pound hammer with recovery		
	Location of grab sample		
	Rock coring interval		
	Water level during drilling		
	Water level taken on date shown		
<div>Graphic Log of Soil and Rock Types</div> 			
GEOTECHNICAL TESTING EXPLANATIONS			
ATT	Atterberg Limits	P	Pushed Sample
CBR	California Bearing Ratio	PP	Pocket Penetrometer
CON	Consolidation	P200	Percent Passing U.S. Standard No. 200 Sieve
DD	Dry Density		
DS	Direct Shear	RES	Resilient Modulus
HYD	Hydrometer Gradation	SIEV	Sieve Gradation
MC	Moisture Content	TOR	Torvane
MD	Moisture-Density Relationship	UC	Unconfined Compressive Strength
NP	Non-Plastic	VS	Vane Shear
OC	Organic Content	kPa	Kilopascal
ENVIRONMENTAL TESTING EXPLANATIONS			
CA	Sample Submitted for Chemical Analysis	ND	Not Detected
P	Pushed Sample	NS	No Visible Sheen
PID	Photoionization Detector Headspace Analysis	SS	Slight Sheen
		MS	Moderate Sheen
ppm	Parts per Million	HS	Heavy Sheen
		EXPLORATION KEY	
		TABLE A-1	

RELATIVE DENSITY - COARSE-GRAINED SOIL									
Relative Density		Standard Penetration Resistance		Dames & Moore Sampler (140-pound hammer)		Dames & Moore Sampler (300-pound hammer)			
Very Loose		0 – 4		0 – 11		0 – 4			
Loose		4 – 10		11 – 26		4 – 10			
Medium Dense		10 – 30		26 – 74		10 – 30			
Dense		30 – 50		74 – 120		30 – 47			
Very Dense		More than 50		More than 120		More than 47			
CONSISTENCY - FINE-GRAINED SOIL									
Consistency		Standard Penetration Resistance		Dames & Moore Sampler (140-pound hammer)		Dames & Moore Sampler (300-pound hammer)		Unconfined Compressive Strength (tsf)	
Very Soft		Less than 2		Less than 3		Less than 2		Less than 0.25	
Soft		2 – 4		3 – 6		2 – 5		0.25 – 0.50	
Medium Stiff		4 – 8		6 – 12		5 – 9		0.50 – 1.0	
Stiff		8 – 15		12 – 25		9 – 19		1.0 – 2.0	
Very Stiff		15 – 30		25 – 65		19 – 31		2.0 – 4.0	
Hard		More than 30		More than 65		More than 31		More than 4.0	
PRIMARY SOIL DIVISIONS				GROUP SYMBOL		GROUP NAME			
COARSE-GRAINED SOIL (more than 50% retained on No. 200 sieve)		GRAVEL (more than 50% of coarse fraction retained on No. 4 sieve)		CLEAN GRAVEL (< 5% fines)		GW or GP		GRAVEL	
				GRAVEL WITH FINES (≥ 5% and ≤ 12% fines)		GW-GM or GP-GM		GRAVEL with silt	
						GW-GC or GP-GC		GRAVEL with clay	
				GRAVEL WITH FINES (> 12% fines)		GM		silty GRAVEL	
						GC		clayey GRAVEL	
						GC-GM		silty, clayey GRAVEL	
		SAND (50% or more of coarse fraction passing No. 4 sieve)		CLEAN SAND (<5% fines)		SW or SP		SAND	
				SAND WITH FINES (≥ 5% and ≤ 12% fines)		SW-SM or SP-SM		SAND with silt	
						SW-SC or SP-SC		SAND with clay	
				SAND WITH FINES (> 12% fines)		SM		silty SAND	
						SC		clayey SAND	
						SC-SM		silty, clayey SAND	
FINE-GRAINED SOIL (50% or more passing No. 200 sieve)		Liquid limit less than 50		ML		SILT			
				CL		CLAY			
				CL-ML		silty CLAY			
				OL		ORGANIC SILT or ORGANIC CLAY			
		Liquid limit 50 or greater		MH		SILT			
				CH		CLAY			
				OH		ORGANIC SILT or ORGANIC CLAY			
				PT		PEAT			
HIGHLY ORGANIC SOIL									
MOISTURE CLASSIFICATION			ADDITIONAL CONSTITUENTS						
TermField Test			Secondary granular components or other materials such as organics, man-made debris, etc.						
			Silt and Clay In:			Sand and Gravel In:			
			Percent	Fine-Grained Soil	Coarse-Grained Soil	Percent	Fine-Grained Soil	Coarse-Grained Soil	
dry									
moist									
wet									


BORING LOG - GDI-NV5 - 1 PER PAGE KPG-111-01-B1_7.GPJ GDI-NV5.GDT PRINT DATE: 4/15/22:KT



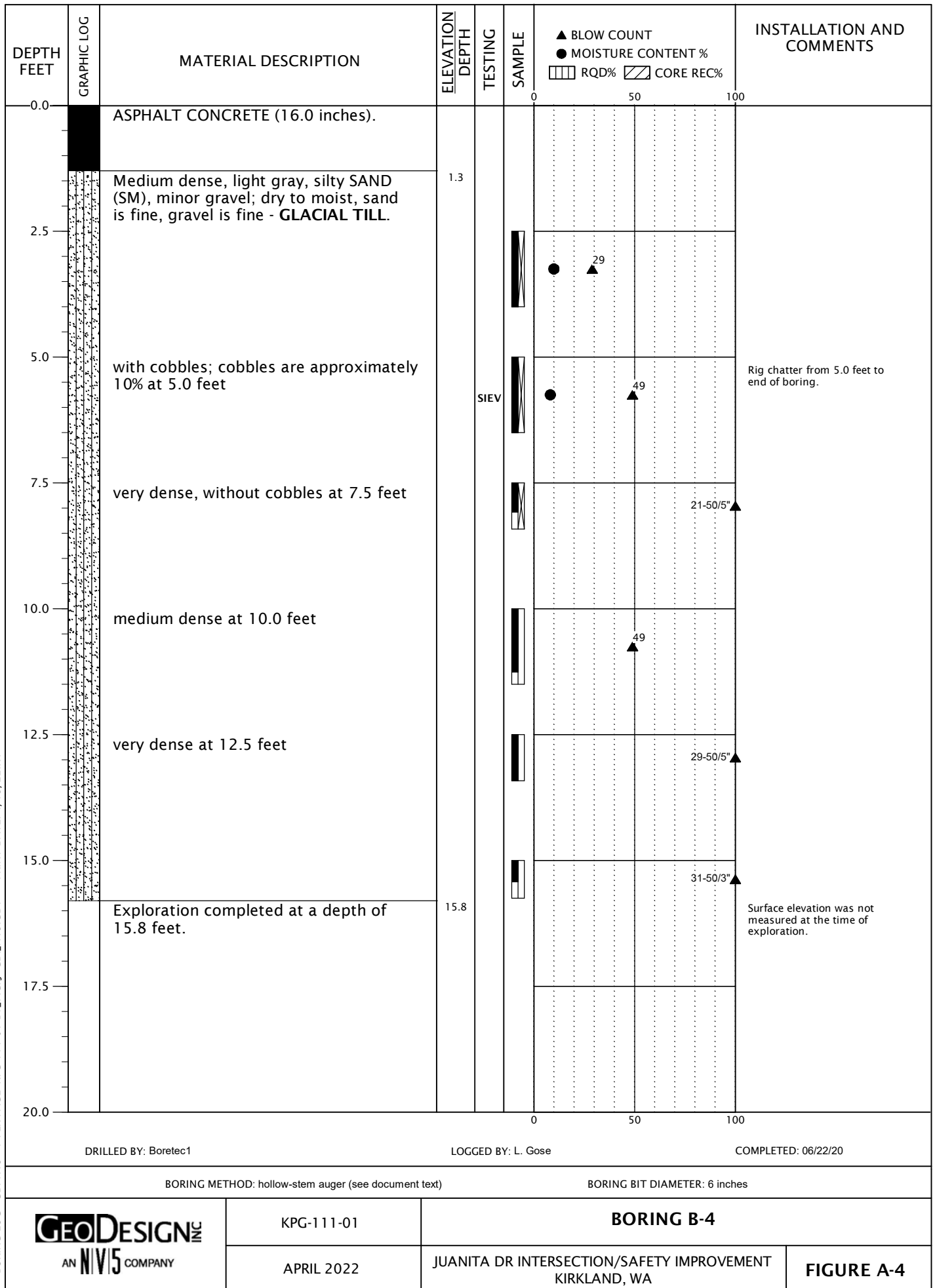
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BORING LOG - GDI-NV5 - 1 PER PAGE KPG-111-01-B1_7.GPJ GDI-NV5.GDT PRINT DATE: 4/15/22:KT

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	▲ BLOW COUNT ● MOISTURE CONTENT % ▨ RQD% ▨ CORE REC%	INSTALLATION AND COMMENTS
0.0		ASPHALT CONCRETE (16.0 inches).				0 50 100	
2.5		Medium dense, gray-brown with red mottled, silty SAND (SM), minor gravel; moist, sand is fine to coarse, gravel is fine - GLACIAL TILL.	1.3				
5.0		gray at 5.0 feet		SIEV			
7.5		very dense at 7.5 feet					
7.9		Exploration completed at a depth of 7.9 feet.	7.9			50/5"	Surface elevation was not measured at the time of exploration.
10.0							
12.5							
15.0							
17.5							
20.0						0 50 100	
DRILLED BY: Boretect1		LOGGED BY: L. Gose		COMPLETED: 07/12/20			
BORING METHOD: hollow-stem auger (see document text)				BORING BIT DIAMETER: 6 inches			
		KPG-111-01	BORING B-3				
		APRIL 2022	JUANITA DR INTERSECTION/SAFETY IMPROVEMENT KIRKLAND, WA		FIGURE A-3		

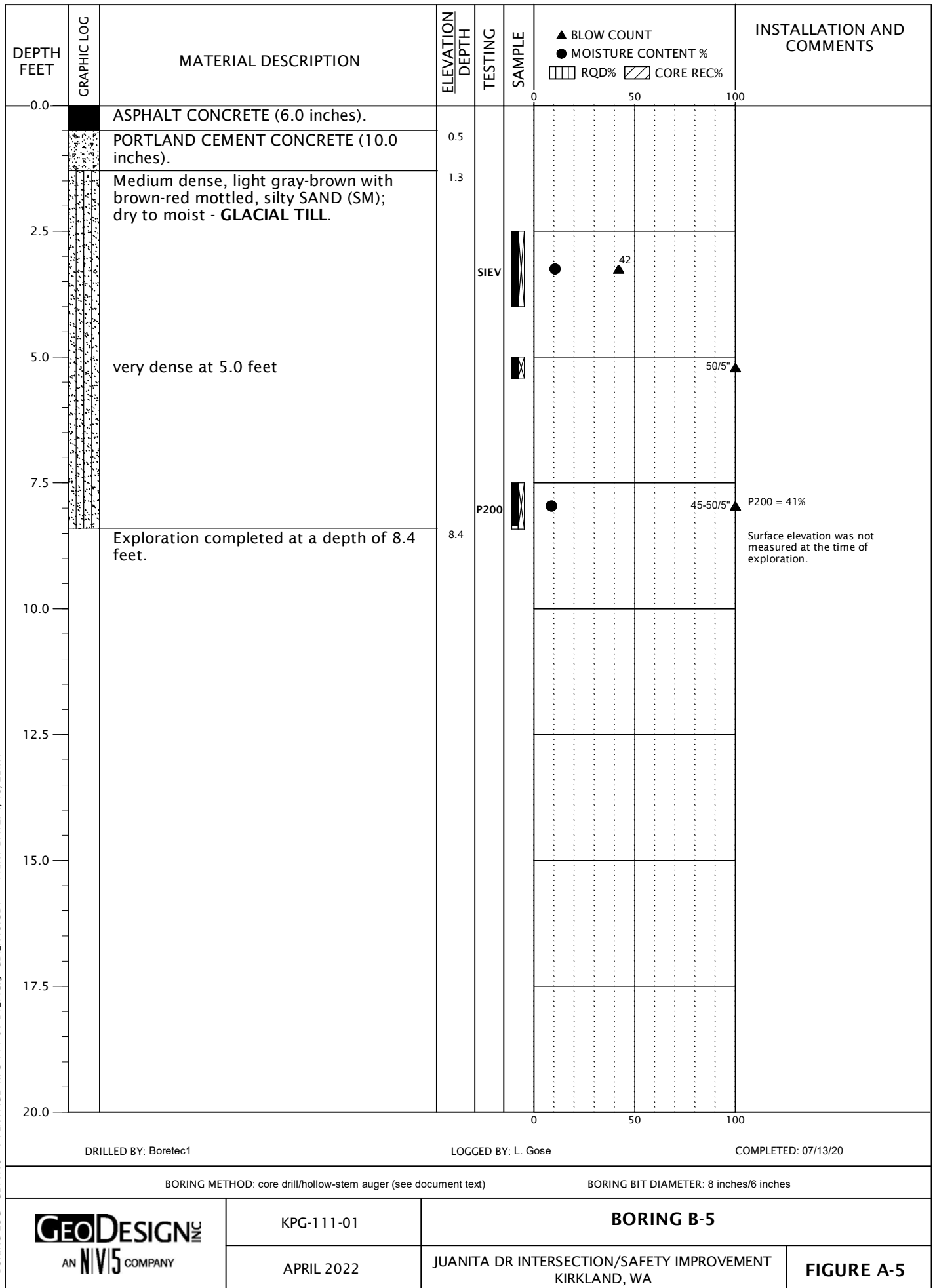
BORING LOG - GDI-NV5 - 1 PER PAGE KPG-111-01-B1_7.GPJ GDI-NV5.GDT PRINT DATE: 4/15/22:KT



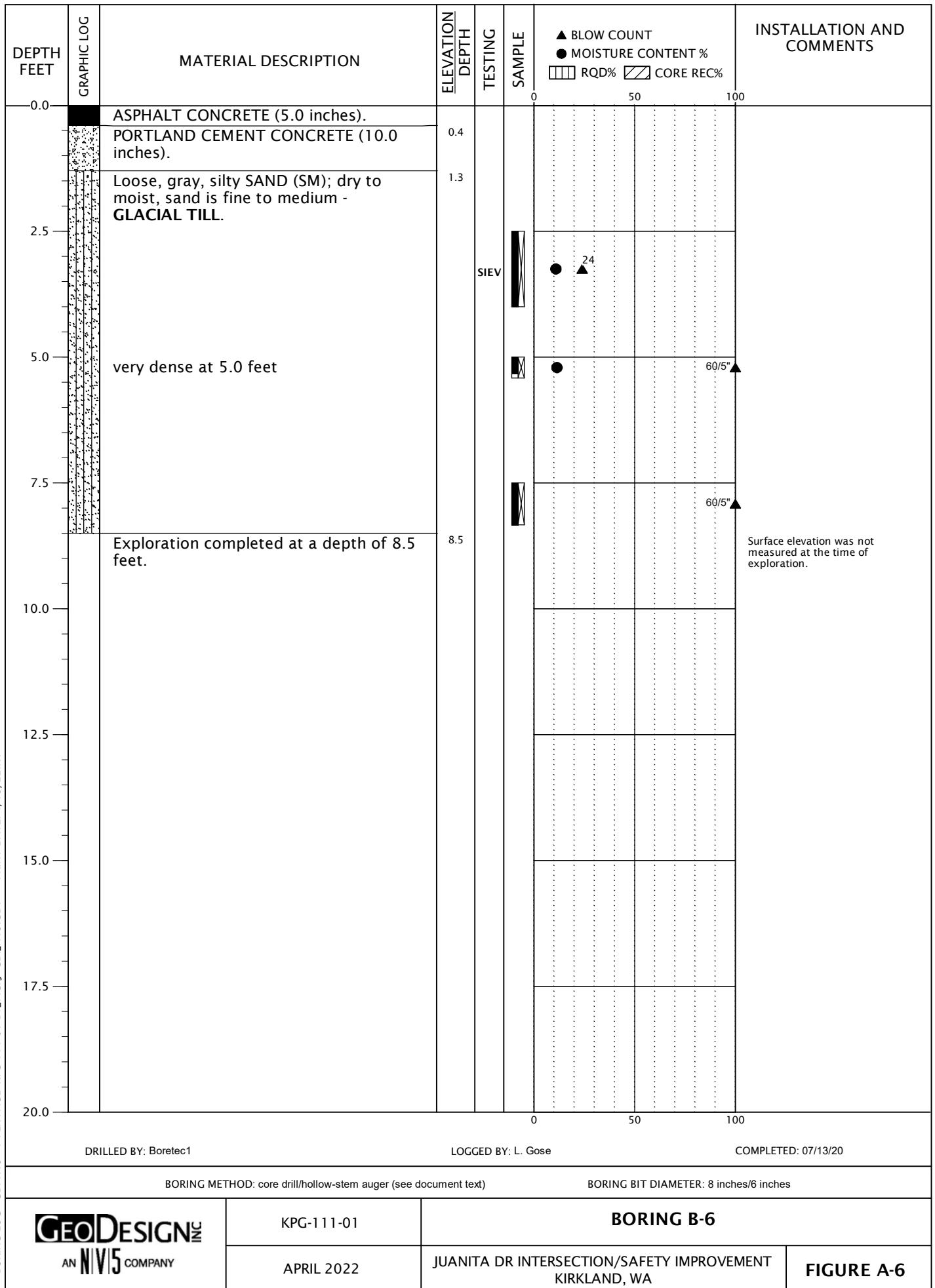
Rig chatter from 5.0 feet to end of boring.

Surface elevation was not measured at the time of exploration.


BORING LOG - GDI-NV5 - 1 PER PAGE KPG-111-01-B1_7.GPJ GDI-NV5.GDT PRINT DATE: 4/15/22:KT

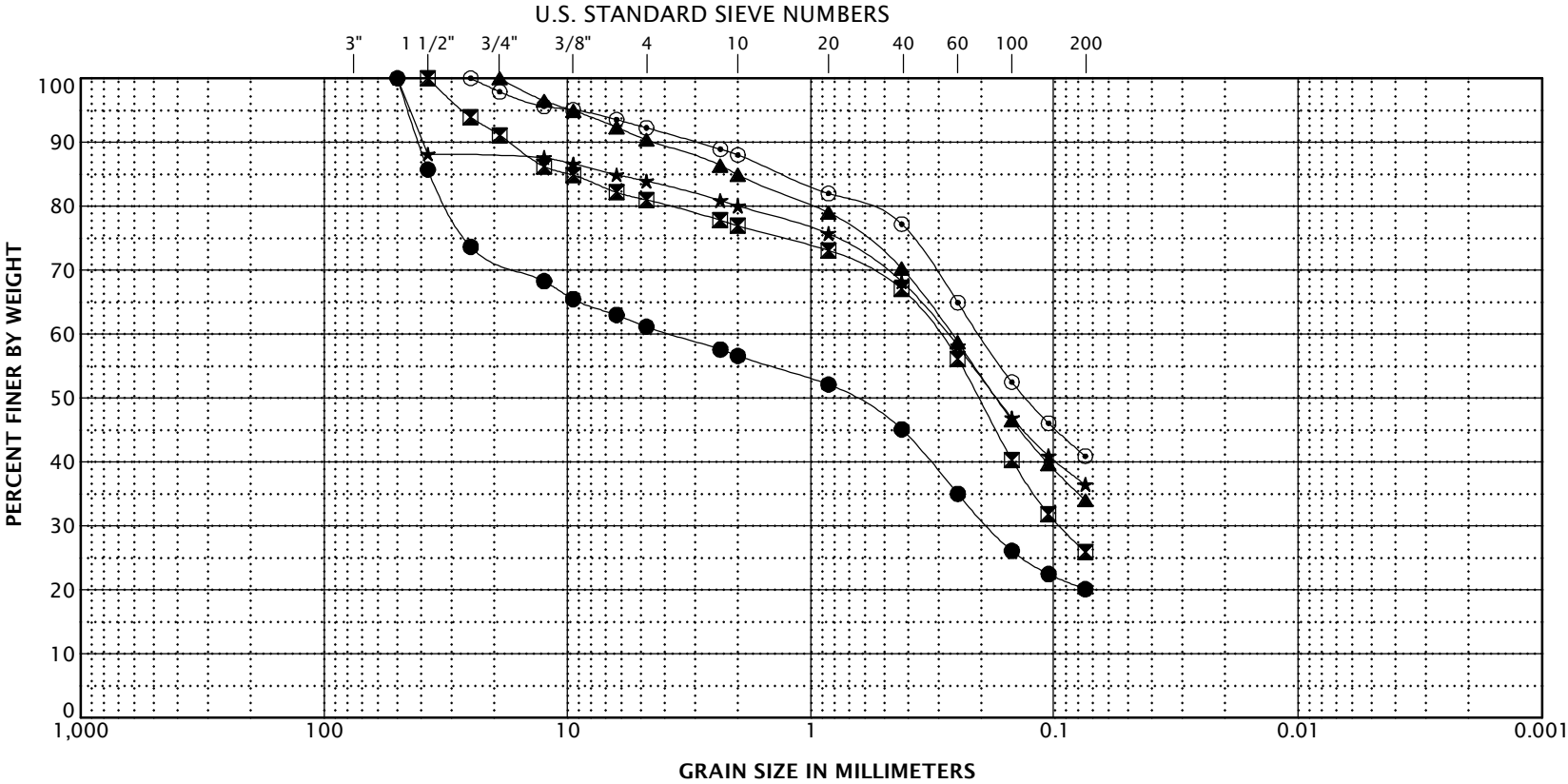


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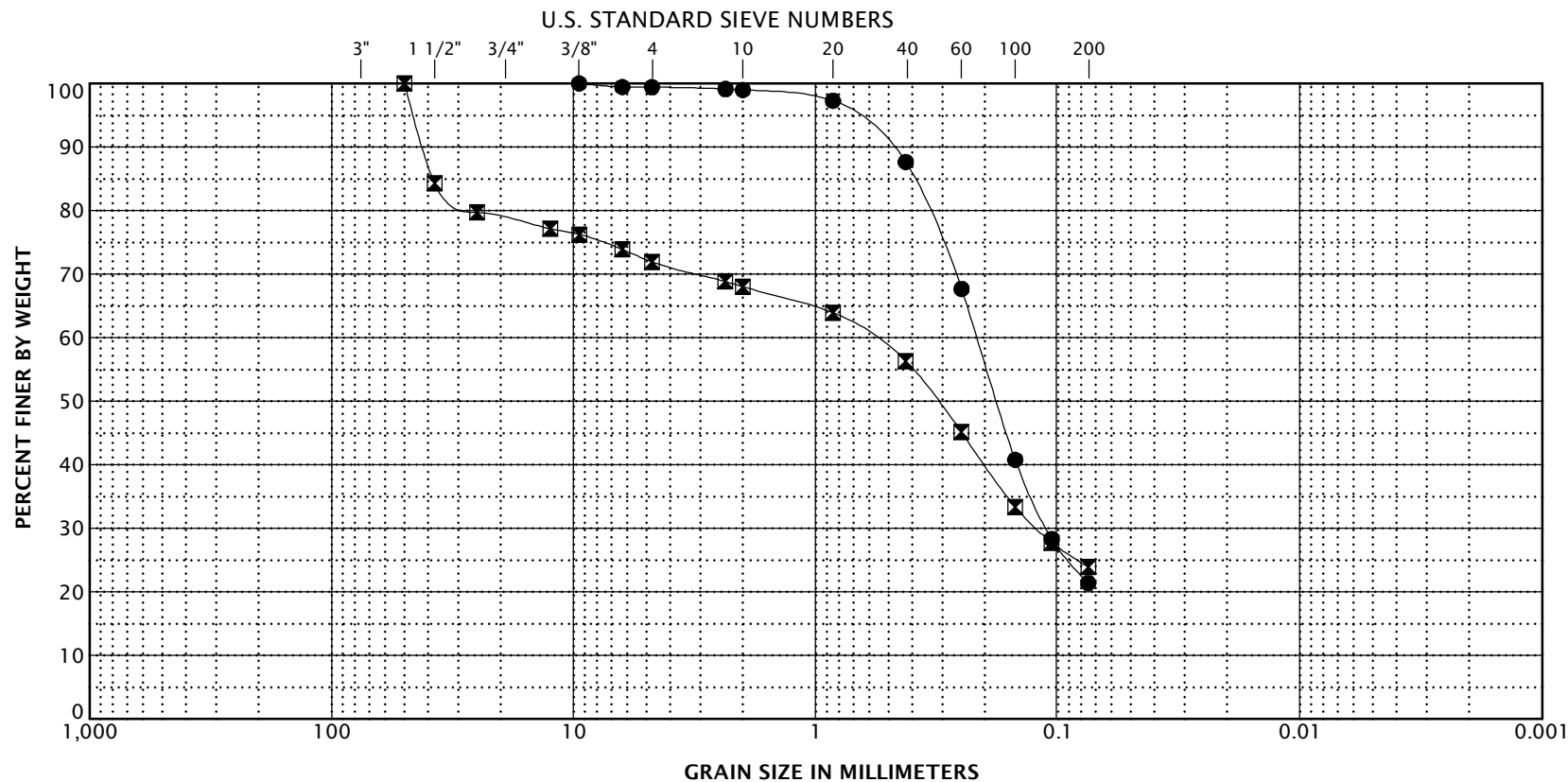
Surface elevation was not measured at the time of exploration.

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	▲ BLOW COUNT ● MOISTURE CONTENT % ▨ RQD% ▨ CORE REC%	INSTALLATION AND COMMENTS
0.0		ASPHALT CONCRETE (4.0 inches).					
0.3		PORTLAND CEMENT CONCRETE (8.0 inches).	0.3				
1.0		Very loose, brown, silty SAND (SM), minor gravel; moist, sand is fine, gravel is fine and subrounded - FILL.	1.0				
2.5							
4.5		Medium dense, gray with brown mottled, silty SAND with cobbles (SM); dry to moist, sand is fine, cobbles are approximately 20% and subrounded - GLACIAL TILL.	4.5				
7.5		dense at 7.5 feet					
9.0		Exploration completed at a depth of 9.0 feet.	9.0				
10.0							
12.5							
15.0							
17.5							
20.0							
DRILLED BY: Boretec1		LOGGED BY: L. Gose		COMPLETED: 07/13/20			
BORING METHOD: core drill/hollow-stem auger (see document text)				BORING BIT DIAMETER: 8 inches/6 inches			
		KPG-111-01	BORING B-7				
		APRIL 2022	JUANITA DR INTERSECTION/SAFETY IMPROVEMENT KIRKLAND, WA			FIGURE A-7	




BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

KEY	EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	MOISTURE CONTENT (PERCENT)	D60	D50	D30	D10	D5	GRAVEL (PERCENT)	SAND (PERCENT)	SILT (PERCENT)	CLAY (PERCENT)
●	B-1	5.0	6	3.80	0.69	0.19			39	41	20	
⊠	B-2	2.5	14	0.30	0.21	0.10			19	55	26	
▲	B-3	2.5	11	0.26	0.17				10	56	34	
★	B-4	5.0	8	0.28	0.17				16	47	36	
⊙	B-5	2.5	10	0.20	0.13				8	51	41	



BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

[illegible]

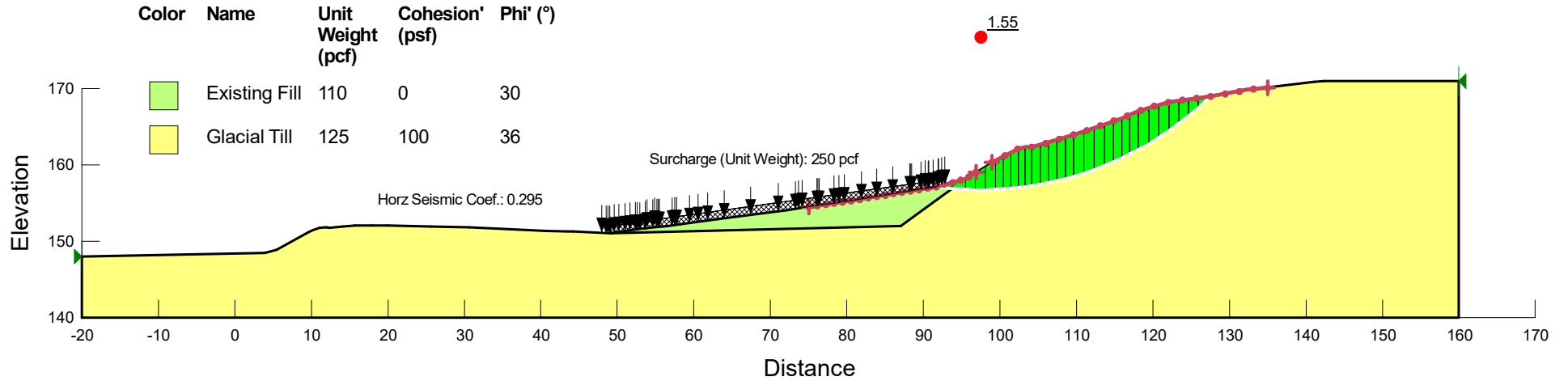
SAMPLE INFORMATION			MOISTURE CONTENT (PERCENT)	DRY DENSITY (PCF)	SIEVE			ATTERBERG LIMITS		
EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	ELEVATION (FEET)			GRAVEL (PERCENT)	SAND (PERCENT)	P200 (PERCENT)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
B-1	2.5		6							
B-1	5.0		6		39	41	20			
B-1	7.5		7				26			
B-2	2.5		14		19	55	26			
B-2	5.0		14							
B-3	2.5		11		10	56	34			
B-3	5.0		11							
B-4	2.5		10							
B-4	5.0		8		16	47	36			
B-5	2.5		10		8	51	41			
B-5	7.5		9				41			
B-6	2.5		11		1	78	21			
B-6	5.0		11							
B-7	2.5		13				29			
B-7	5.0		7		28	48	24			
				KPG-111-01		SUMMARY OF LABORATORY DATA				
				APRIL 2022		JUANITA DR INTERSECTION/SAFETY IMPROVEMENT KIRKLAND, WA			FIGURE A-9	

APPENDIX B

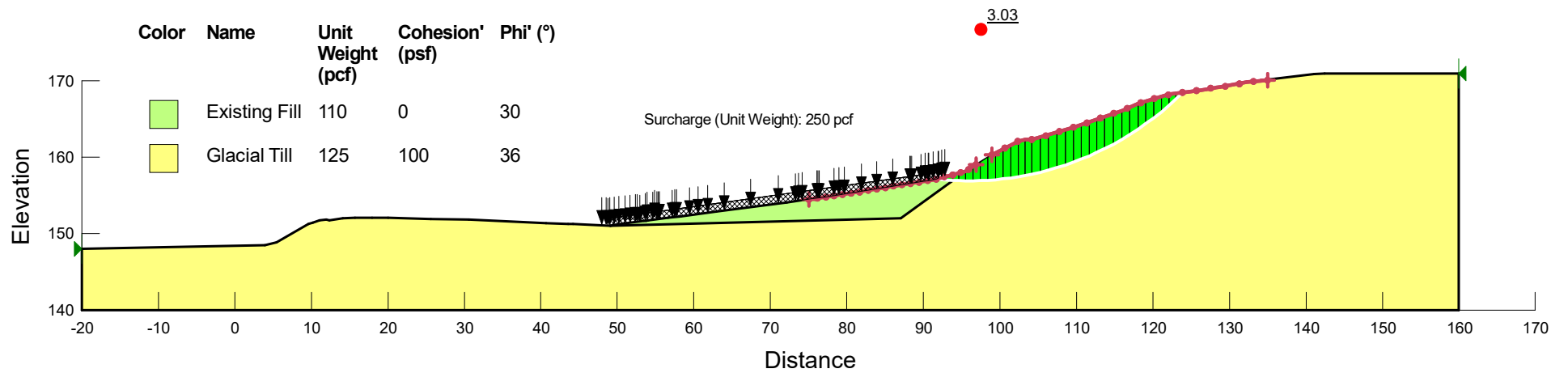
APPENDIX B

SLOPE STABILITY ANALYSIS RESULTS

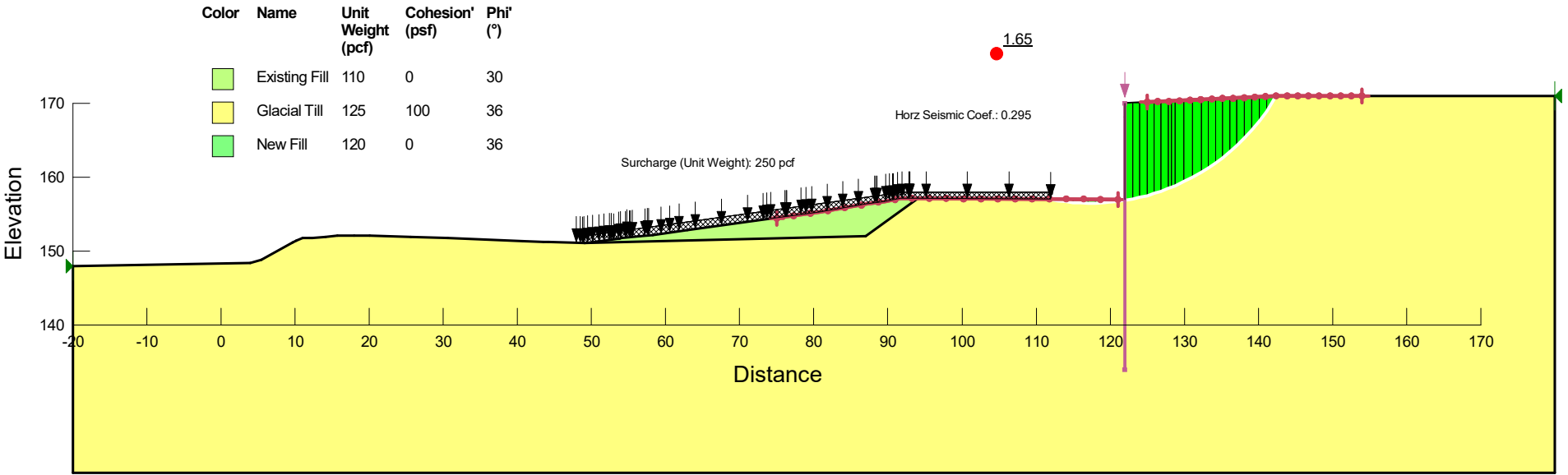
KPG-111-01 - A-A' Existing Seismic



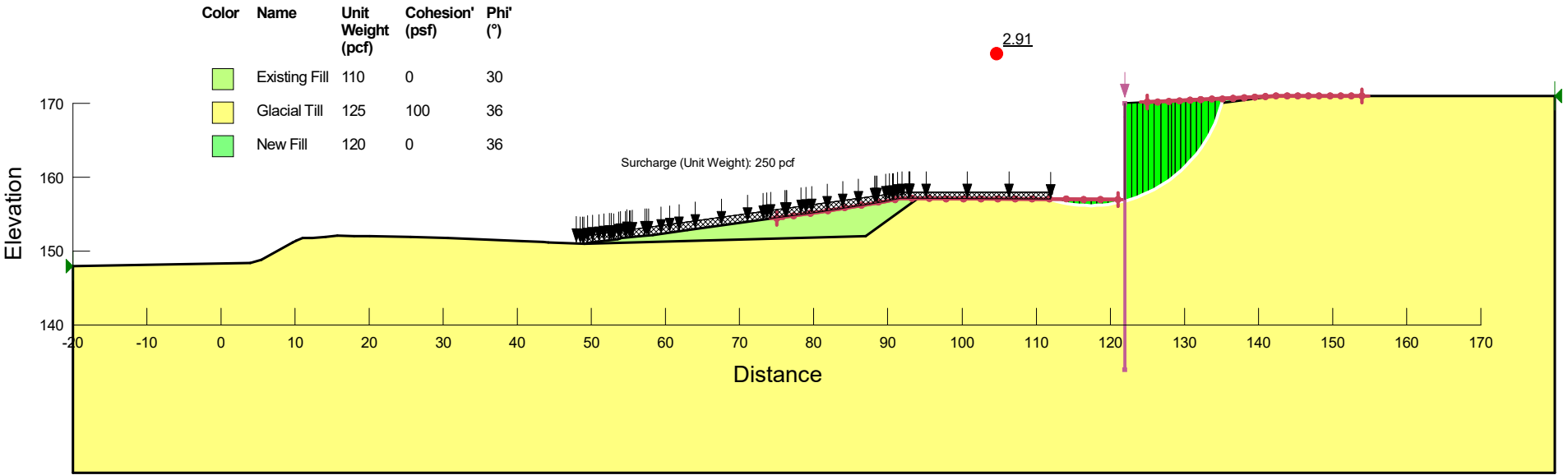
KPG-111-01 - A-A' Existing Static



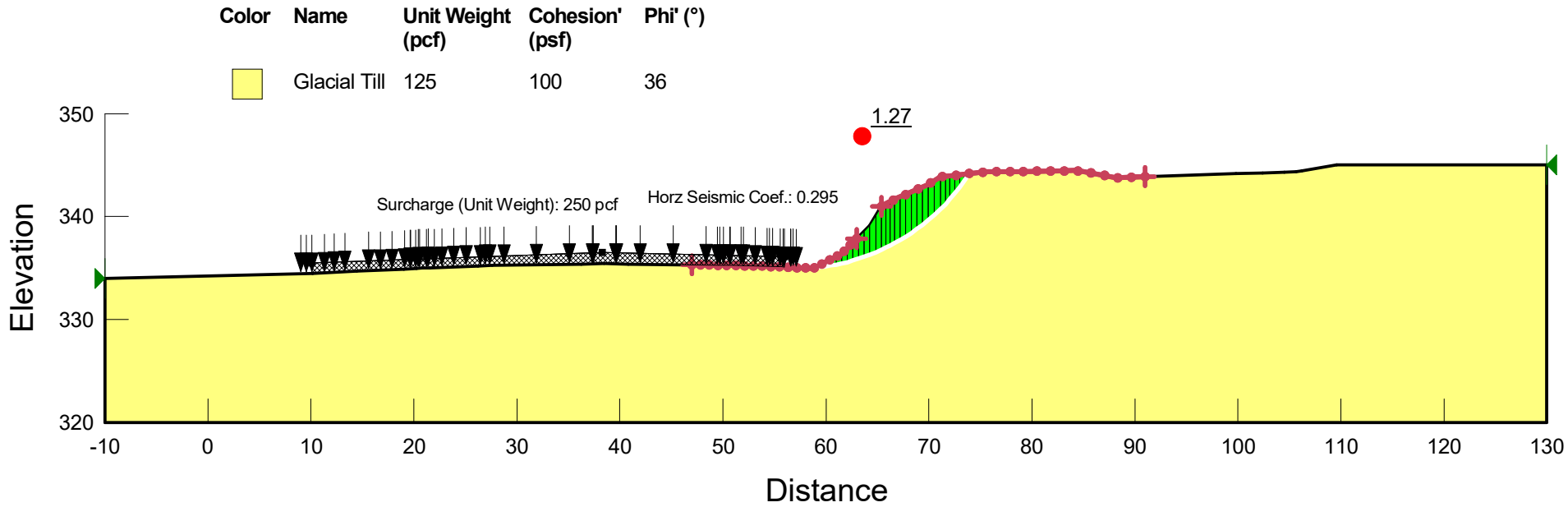
KPG-111-01 - A-A' - Proposed - Seismic



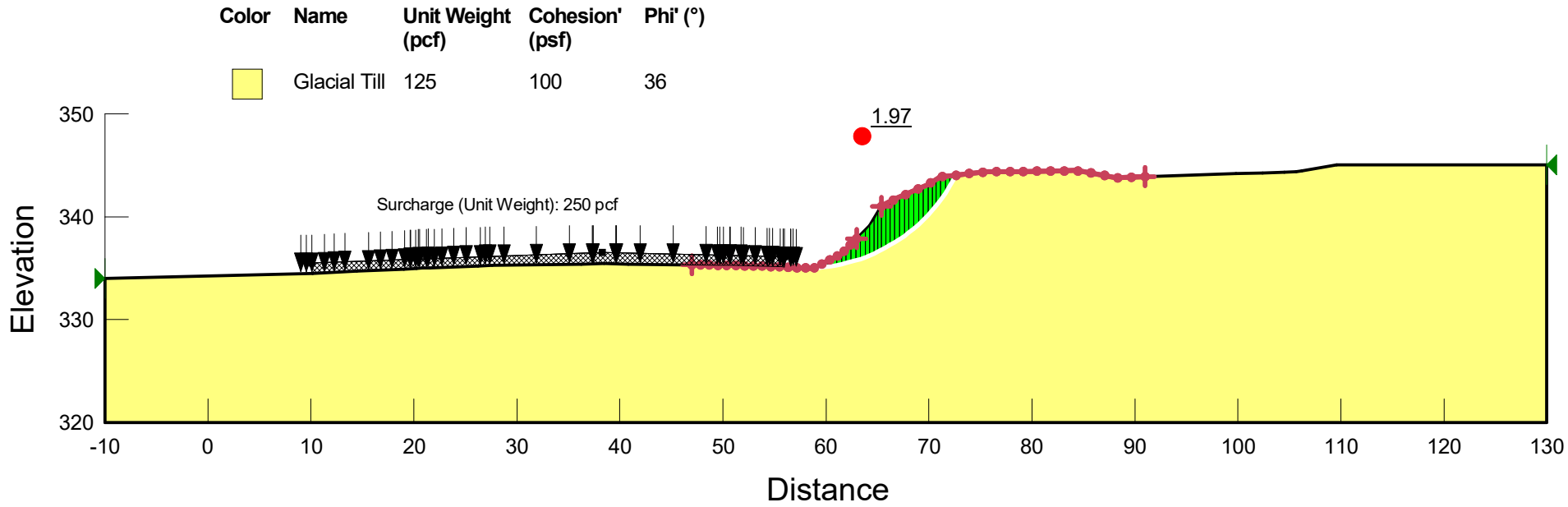
KPG-111-01 - A-A' - Proposed - Static



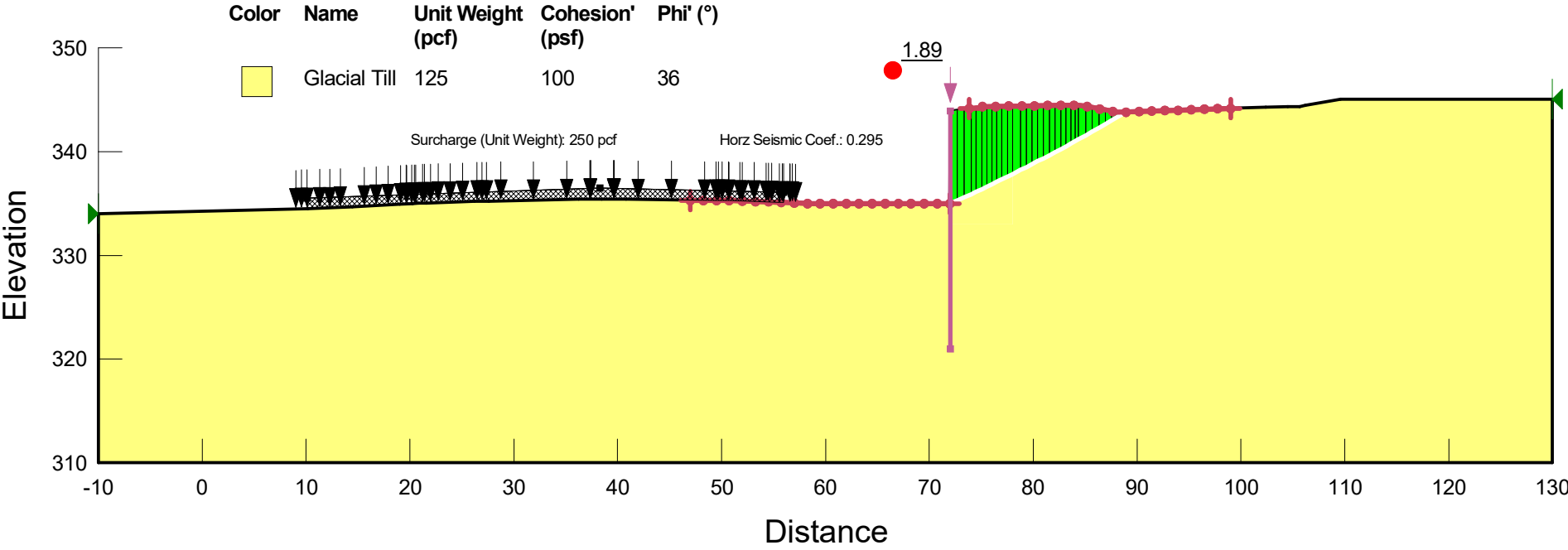
KPG-111-01 - B-B' - Existing - Seismic



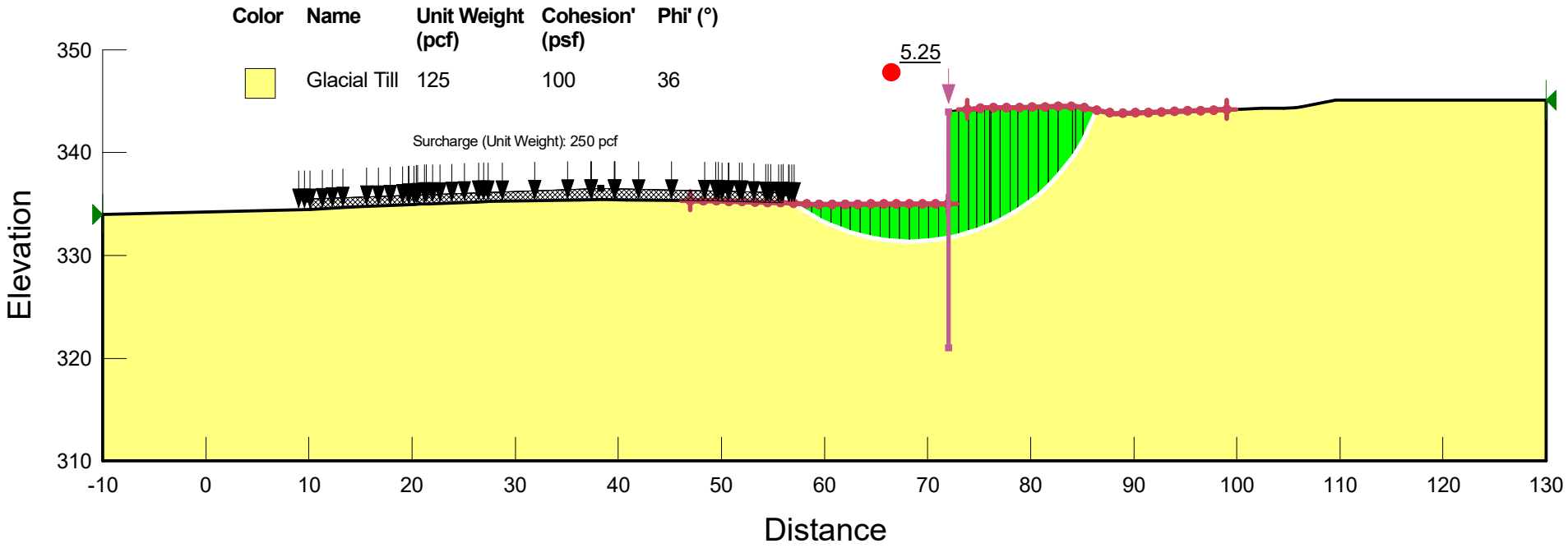
KPG-111-01 - B-B' - Existing - Static



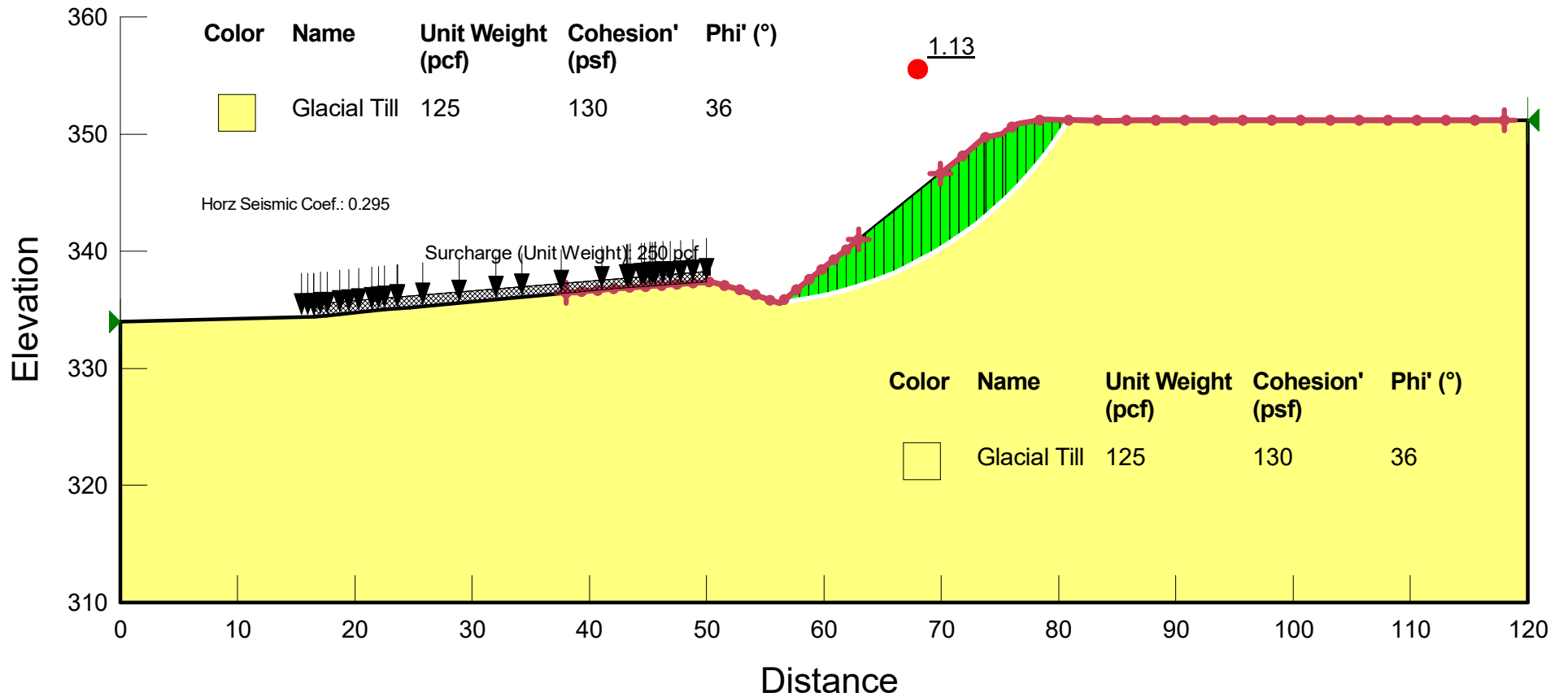
KPG-111-01 - B-B' - Proposed - Seismic



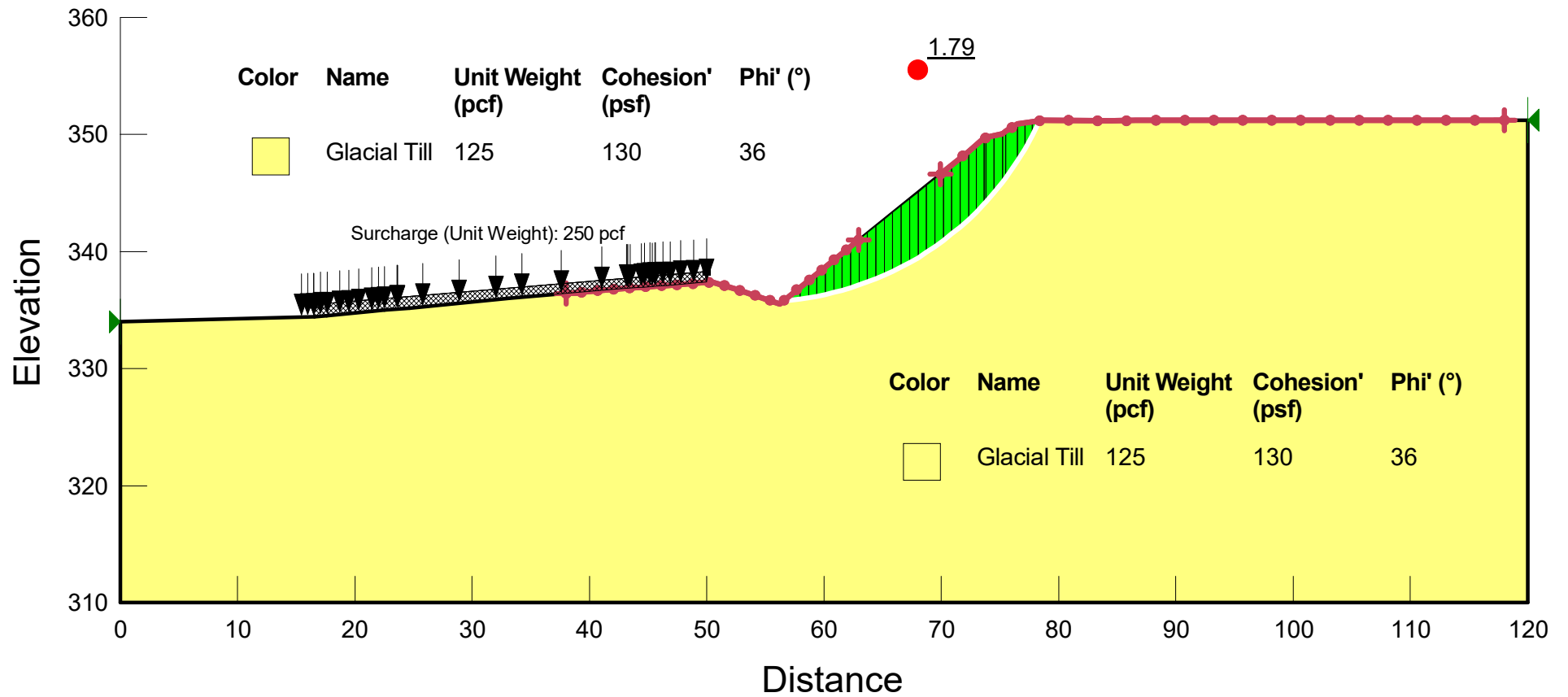
KPG-111-01 - B-B' - Proposed - Static



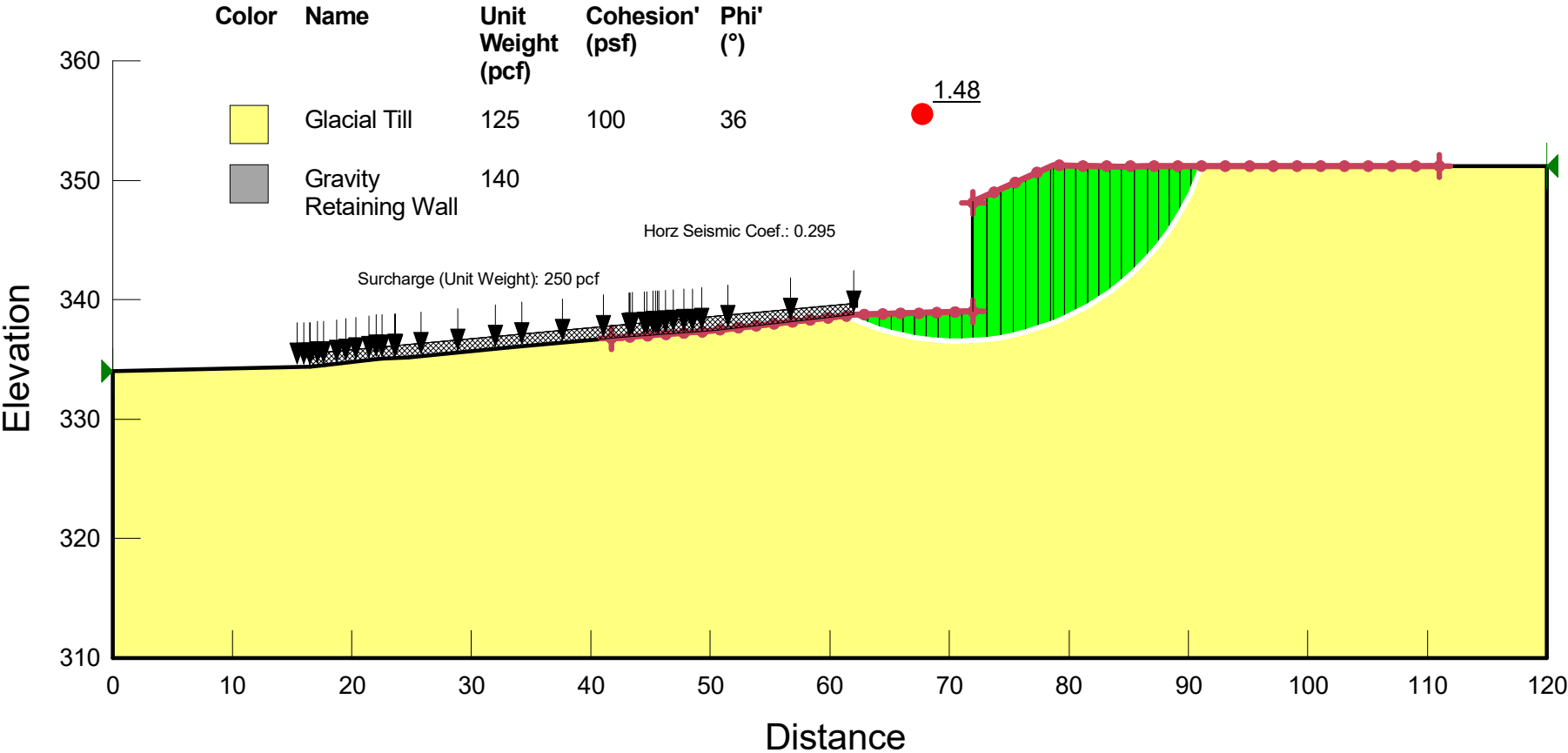
KPG-111-01 - Section C-C' - Existing Condition - Seismic



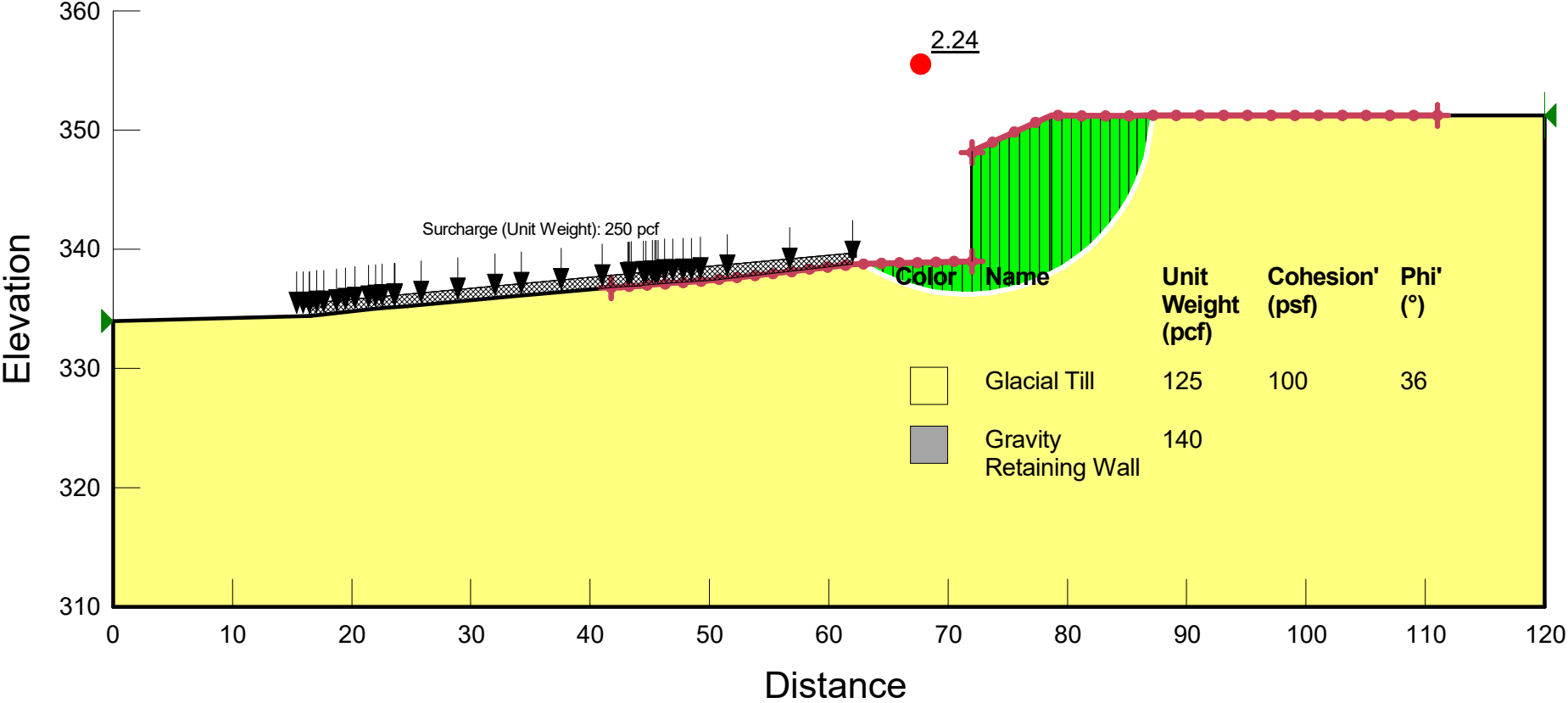
KPG-111-01 - Section C-C' - Existing Condition - Static

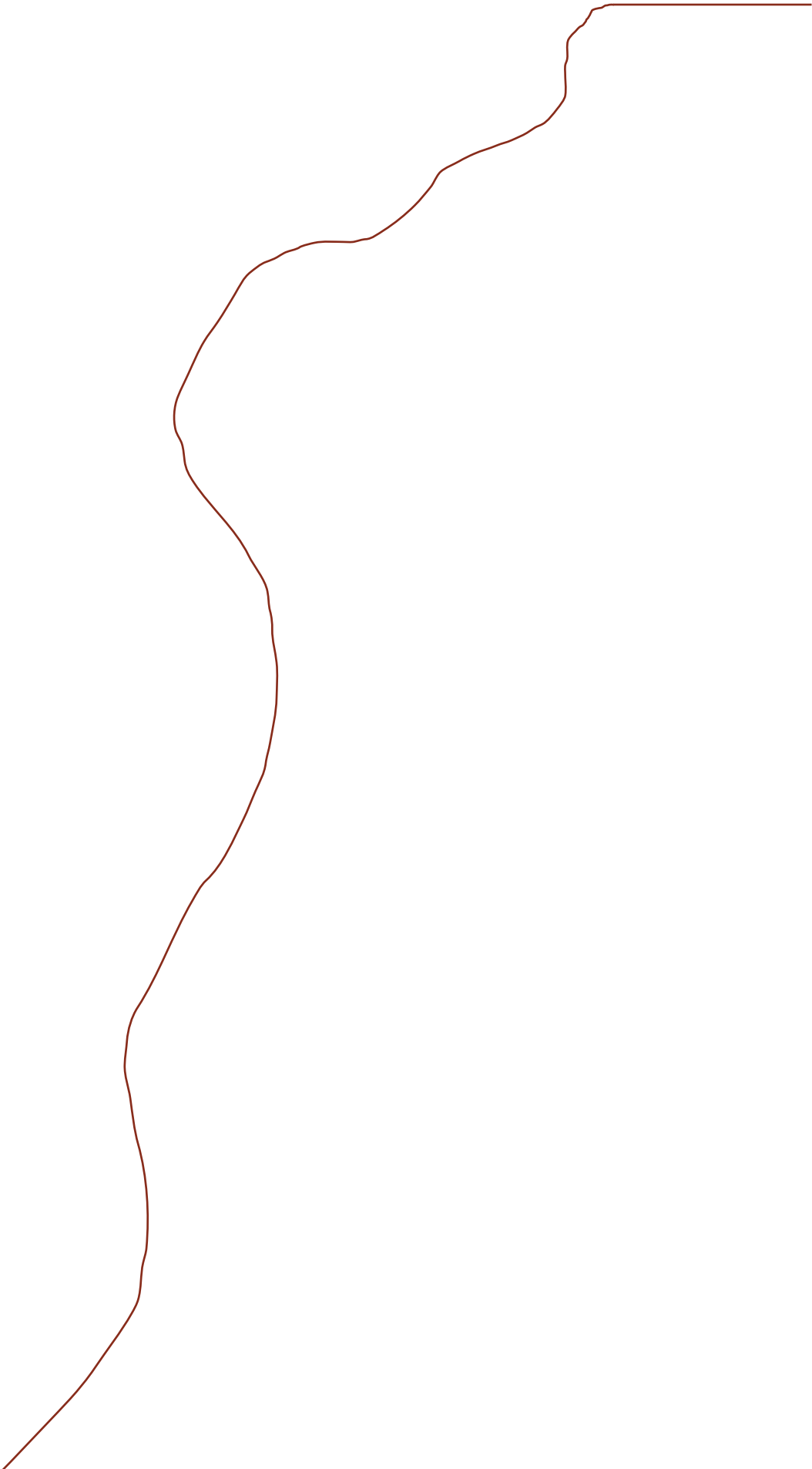


KPG-111-01 - Section C-C' - Proposed - Seismic



KPG-111-01 - Section C-C' - Proposed Condition - Static





ADDENDUM TRANSMITTAL

To:	Erick Olson, P.E.	From:	Tyler A. Pierce, P.E. Kevin J. Lamb, P.E.
Company:	KPG PSOMAS	Date:	January 26, 2023
Address:	2502 Jefferson Avenue Tacoma, WA 98402		

cc:	n/a
-----	-----

Project No.:	KPG-111-01
RE:	City of Kirkland Juanita Drive Intersection and Safety Improvements

Original File Name	Date	Document Title
KPG-111-01-041522	4/15/22	Report of Geotechnical Engineering Services; City of Kirkland; Juanita Drive Intersection and Safety Improvements; Kirkland, Washington

Addendum Number	Date	Description
1	1/26/23	Review Letter Response (attached)

kt

Attachment

One copy submitted

Document ID: KPG-111-01-012623-geoat-1.docx

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MEMORANDUM

To:	Erick Olson, P.E.	From:	Tyler A. Pierce, P.E. Kevin J. Lamb, P.E.
Company:	KPG PSOMAS	Date:	January 26, 2023
Address:	2502 Jefferson Avenue Tacoma, WA 98402		
cc:	n/a		
Project No.:	KPG-111-01		
RE:	Addendum 1 Review Letter Response City of Kirkland Juanita Drive Intersection and Safety Improvements Kirkland, Washington		

We have prepared this addendum to address the comments to our April 15, 2022, geotechnical engineering report¹ for the City of Kirkland, Juanita Drive NE Intersection and Safety Improvements project prepared by GeoEngineers, Inc, dated October 14, 2022.²

The comments and the responses are provided below.

GeoEngineers Comment #1

We take no exception to the geotechnical characterization, analysis, conclusions and recommendation provided in the GeoDesign geotechnical report.

NV5 Response to Comment #1

No response required.

GeoEngineers Comment #2

We note that new stormwater outfalls are planned south of NE 120th Street (see Sheet 24 of the 60% Review Submittal plan set) and north of NE 128th Street (see Sheet 31 of the 60% Review Submittal plan set). GeoDesign should comment on the potential impact, if any, of these new outfalls on the adjacent slope in these locations.

¹ GeoDesign, Inc., 2022. *Report of Geotechnical Engineering Services; City of Kirkland; Juanita Drive Intersection and Safety Improvements; Kirkland, Washington*, dated April 15, 2022. GeoDesign Project: KPG-111-01

² GeoEngineers, Inc., 2022. *Geotechnical Peer Review Services – Review Letter 1; Juanita Drive Multi-Modal, Intersection and Safety Improvements; NE 112th Street to NE 132 [sic] Street; Kirkland, Washington*, dated October 14, 2022. GeoEngineers File No. 0231-163-00

MEMORANDUM

NV5 Response to Comment #2

The location of the NE 120th Street outfall is on the east side of Juanita Drive NE and discharges into an existing swale currently being used for stormwater management. The proposed reconfiguration of the existing outfall in the swale will not impact adjacent slope areas on the east side of the swale and will not impact the slope areas on the west side of the road.

The outfall located west of Juanita Drive NE near the intersection with NE 128th Street will require reconstructing the roadway embankment slope after installation of the new outfall. The existing fill embankment slope is inclined at approximately 1.5H:1V and is surfaced with riprap spalls and one-man rocks. A vegetated face Flexmse reinforced soil slope (RSS) is planned to reconstruct the embankment slope and will provide for increased slope stability and a narrow level area at the top of the slope. The Flexmse system has been used previously in Kirkland and consists of individual geosynthetic bags with frictional connectors between them as facing that is tied to the geogrid reinforcement that extends back from the slope face. The slope will be constructed slightly steeper than the existing unreinforced slope to provide an approximately 3-foot-wide, level bench area behind the guardrail posts. The slope will be determined in the field based on actual excavation conditions and is expected to be approximately 1H:1V. The factor of safety (FOS) for global slope stability of the RSS exceeds the standard FOS of 1.5.

GeoEngineers Comment #3

In accordance with KZC 85.25(2), GeoDesign shall provide a statement that they reviewed the final project plans and the plans conform to their geotechnical recommendations.

NV5 Response to Comment #3

We have reviewed the 90 percent plans dated July 2022. Based on our review, geotechnical-related aspects of the plans conform to the recommendations provided in our 2022 report.

GeoEngineers Comment #4

In accordance with KZC 85.25(2), the geotechnical engineer should be present on site during land surface modification and foundation installation activities and should submit a final report certifying substantial compliance with the geotechnical recommendations and geotechnical-related permit requirements. Please confirm that GeoDesign will provide construction monitoring for this project.

MEMORANDUM

NV5 Response to Comment #4

NV5 will have an active role in the construction of the retaining walls and during earthwork directly adjacent to the critical slope areas.

TAP:KJL:kt

One copy submitted

Document ID: KPG-111-01-012623-geoa-1.docx

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Signed 01/26/2023

**ADDENDUM TRANSMITTAL**

To:	Erick Olson, P.E.	From:	Kevin J. Lamb, P.E.
Company:	KPG PSOMAS	Date:	August 10, 2023
Address:	2502 Jefferson Avenue Tacoma, WA 98402		

cc:	n/a
-----	-----

Project No.:	KPG-111-01
RE:	City of Kirkland Juanita Drive Intersection and Safety Improvements

Original File Name	Date	Document Title
KPG-111-01-041522	4/15/22	Report of Geotechnical Engineering Services; City of Kirkland; Juanita Drive Intersection and Safety Improvements; Kirkland, Washington

Addendum Number	Date	Description
1	1/26/23	Review Letter Response
2	8/10/23	Stormwater Detention Vault (attached)

kt

Attachment

One copy submitted

Document ID: KPG-111-01-081023-geoat-2.docx

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MEMORANDUM

To:	Erick Olson, P.E.	From:	Kevin J. Lamb, P.E.
Company:	KPG PSOMAS	Date:	August 10, 2023
Address:	2502 Jefferson Avenue Tacoma, WA 98402		
cc:	n/a		
Project No.:	KPG-111-01		
RE:	Addendum 2 Stormwater Detention Vault City of Kirkland Juanita Drive Intersection and Safety Improvements Kirkland, Washington		

INTRODUCTION

We have prepared this addendum to provide additional geotechnical recommendations to support design and construction of the stormwater detention vault that has recently been included in the City of Kirkland Juanita Drive NE Intersection and Safety Improvements project. The proposed stormwater detention vault will be located at the northeast corner of the intersection of Juanita Drive NE and NE 128th Street. The proposed site is within the existing right-of-way east of the roadway in a shallow depression or swale area.

The vault will be rectangular in shape and extend to an anticipated depth of approximately 13 feet below ground surface (BGS).

We provided a geotechnical investigation report for the project, dated April 15, 2022, and a report addendum, dated January 26, 2023.^{1,2} The investigation did not include recommendations to address the detention vault construction.

CONDITIONS

Stormwater is currently directed into the low area and into a catch basin that directs the flow into a culvert below Juanita Drive NE, near the east edge of the proposed stormwater detention vault. The culvert extends westward below the road and outlets to a drainage ravine on the west side of the road. Below the outlet is a steep drop of several feet to the bottom of the ravine. Concrete slabs

¹ GeoDesign, Inc., 2022. *Report of Geotechnical Engineering Services; City of Kirkland; Juanita Drive Intersection and Safety Improvements; Kirkland, Washington*, dated April 15, 2022. GeoDesign Project: KPG-111-01

² NV5, 2023. *Addendum 1; Review Letter Response; City of Kirkland; Juanita Drive Intersection and Safety Improvements; Kirkland, Washington*, dated January 26, 2023. Project: KPG-111-01

MEMORANDUM

and boulders are present to dissipate the flow from the outlet to the bottom of the ravine. The road is constructed on a fill embankment over the culvert. The embankment slope above the culvert outlet on the west side of the road is steep at an approximate inclination of 1.5 horizontal to 1 vertical (H:V), with a vertical height of approximately 25 feet. Quarry spall fill is exposed along the slope above the culvert.

Subsurface conditions were explored at the location of the proposed detention vault by drilling one boring (B-8) to a depth of 21.5 feet BGS within the footprint of the proposed vault. The approximate location of the boring is shown on Figure 1, and the exploration log is presented in the Attachment. Subsurface conditions encountered include fill composed of silty sand to a depth of 10 feet BGS that is underlain by glacial till, as described below.

Fill: The fill consists of brown, silty sand that extends to a depth of 10 feet BGS. The fill generally decreases in density with increasing depth and is very loose below a depth of approximately 7.5 feet BGS.

Glacial Till: The glacial till consists of silty sand with gravel and the upper 2.5 feet of the deposit has been loosened through weathering and root growth. The glacial till is generally medium dense to a depth of 12.5 feet BGS, below which the deposit is very dense.

Groundwater was encountered during drilling at a depth of 19.5 feet BGS. A standpipe piezometer was installed in the boring. Subsequent groundwater level measurements on July 28, 2023, indicate groundwater at a depth of approximately 18 feet BGS.

VAULT RECOMMENDATIONS

We anticipate the vault will be excavated to approximately 13 feet below existing site grades. The subsurface conditions at the base of the excavation are anticipated to consist of very dense glacial till material that will provide adequate support for the vault structure. Loose to medium dense, silty sand fill will be exposed in the excavation sidewalls and may be prone to sloughing in excavation slopes inclined in excess of 1H:1V. Groundwater is not expected in the vault excavation, although isolated zones of perched groundwater may be encountered but can likely be managed with sumps inside the excavation. Recommendations for design and construction of the vault are provided below.

BELOW-GRADE WALLS

The following recommendations should be used for design of below-grade walls, including temporary shoring or shielding, within the vault excavation or vicinity. Our below-grade wall design recommendations are based on the following assumptions: (1) the lid of the vault will prevent the sidewalls from rotating, resulting in at-rest lateral earth pressure conditions developing against the vault walls, (2) the vault walls are less than 12 feet in height, (3) the backfill is drained and consists

MEMORANDUM

of imported granular material, and (4) the backfill has a slope flatter than 4H:1V. Re-evaluation of our recommendations will be required if the retaining wall design criteria for the project varies from these assumptions.

Design Parameters

Lateral earth pressures for design of the detention vault walls should be estimated using an equivalent fluid density of 50 pounds per cubic foot (pcf), assuming the walls will be restrained from rotation (i.e., detention vault, basement walls internally braced by the roof or first floor slab). Walls are assumed to be restrained if movement at the top of the wall, during backfilling, is less than $H/1,000$, where H is the wall height.

Static lateral earth pressures acting on walls should also be increased to account for seismic loading. The seismic pressure should be estimated as follows:

- For rigid, non-yielding walls and at-rest soil conditions, a value of nine times the height of the wall: $9H$ (pounds per square foot)

The height of the wall used in the above equation should be measured from the finished ground surface in front of the wall to the top of the wall. The seismic pressure should be applied as a uniform rectangular pressure from the top of the wall to the elevation of the finished ground surface in front of the wall and the resultant should be applied at $0.6H$ of the exposed wall height.

The recommended lateral earth pressures do not account for surcharges. If surcharges (e.g., building foundations, vehicles, terraced walls, etc.) are located within a horizontal distance from the back of a wall equal to the height of the wall, additional pressures will need to be accounted for in the wall design. An additional 2 feet of fill, representing a typical traffic surcharge, should be included in the design if vehicles are allowed to operate a horizontal distance equal to the height of the wall.

These recommendations are based on the assumption that adequate drainage will be provided behind below-grade walls. Frictional resistance should be taken as 0.35 and a passive equivalent fluid density of 300 pcf should be used to evaluate lateral resistance.

Vault Foundation

Dense glacial till is expected at the base of the vault excavation. We recommend over-excavating and installing a 6-inch-thick layer of crushed rock in accordance with Washington Standard Specifications for Road, Bridge, and Municipal Construction – 2022 (WSS) 9-03.9(3) – Crushed Surfacing Base Course to provide uniform support and protect the surface from deterioration during wet weather construction. We estimate settlement will be less than $\frac{3}{4}$ inch, with differential settlement of up to $\frac{1}{2}$ inch across the width of the vault.

MEMORANDUM

Drainage

Positive drainage should be provided behind below-grade walls by placing a minimum 1.5-foot-wide zone of free-draining backfill directly behind the wall. The free-draining backfill should meet the criteria for WSS 9-03.12(4) – Gravel Backfill for Drains. The free-draining backfill zone should extend from the base of the wall to within 3 feet of the finished ground surface. The top 3 feet of fill should consist on-site silty sand compacted to a dense condition to decrease the potential for infiltration of surface water into the wall drainage zone.

A minimum 4-inch-diameter, perforated drainpipe should be installed within the free-draining material at the base of the vault. The drainpipe should consist of smooth-walled, perforated or slotted PVC pipe. The pipes should be laid with minimum slopes of 0.5 percent and routed to a suitable discharge location, such as across the culvert outlet location on the west side of Juanita Drive NE. The pipe installations should include a cleanout riser with cover located at the upper end of each pipe run. The cleanouts could be placed in flush-mount access boxes.

We recommend using a non-woven geotextile drainage material between drain rock material and native soil to separate drain rock from adjacent materials and reduce the potential for erosion of fines into the drain rock pore space. The geotextile should conform to the specifications for non-woven separation material provided in WSS 9-33.2(1) – Geotextile Properties, Table 3, Geotextile for Separation or Soil Stabilization.

Wall Backfill

Backfill should consist of imported structural fill or suitable on-site excavation spoils that are approved by the geotechnical engineer and owner. Imported granular material used for structural fill should be naturally occurring pit- or quarry-run rock, crushed rock, or crushed gravel and sand and should meet the specifications provided in WSS 9-03.14(1) – Gravel Borrow, with the exception that the percentage passing the U.S. Standard No. 200 sieve does not exceed 5 percent by dry weight.

Structural fill should be placed in lifts with a maximum uncompacted thickness of 12 inches and compacted to not less than 95 percent of the maximum dry density, as determined by American Society for Testing and Materials (ASTM) D1557.

Backfill adjacent to walls should be compacted to a lesser standard to reduce the potential for generation of excessive pressure on the walls. Backfill located within a horizontal distance of 3 feet from retaining walls should be compacted to approximately 92 percent of the maximum dry density, as determined by ASTM D1557. Backfill placed within 3 feet of walls should be compacted in lifts less than 6 inches thick using hand-operated tamping equipment (such as a jumping jack or vibratory plate compactor). If flatwork (slabs, sidewalk, or pavement) will be placed adjacent to walls, we recommend that the upper 2 feet of fill be compacted to 95 percent of the maximum dry density, as determined by ASTM D1557.

MEMORANDUM

Settlement

Settlement of up to 1 percent of the wall height commonly occurs immediately adjacent to the wall as the wall rotates and develops active lateral earth pressures. Consequently, we recommend that construction of flatwork within a horizontal distance equal to the height of the wall be postponed at least four weeks after construction, unless survey data indicates that settlement is complete prior to that time.

◆ ◆ ◆

We appreciate the opportunity to be of continued service to you. Please call if you have questions concerning this addendum or if we can provide additional services.

KJL:kt

Attachments

One copy submitted

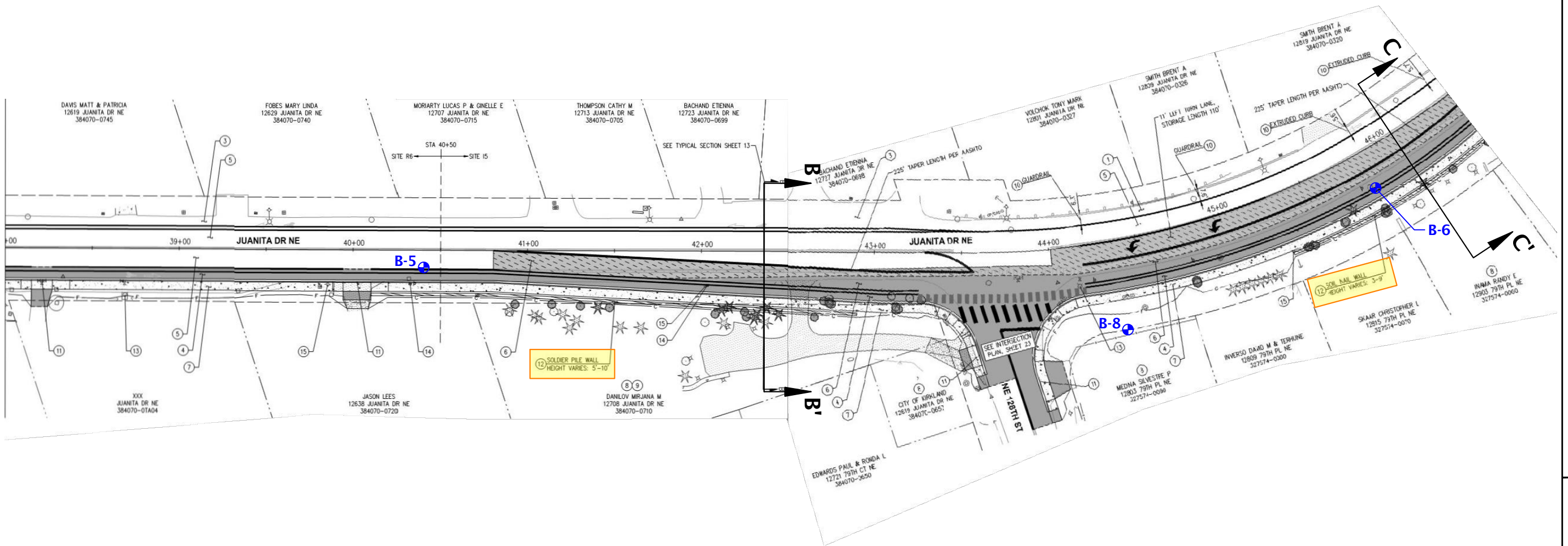
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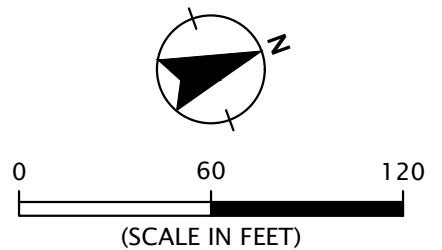
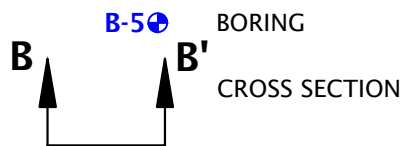


Signed 08/10/2023

FIGURES



LEGEND:



SITE PLAN BASED ON IMAGE OF SHEET 16 SITE R6-15
ROADWAY PLAN DATED MAY 2020 AND SHEET 17
SITE I5 ROADWAY PLAN DATED MAY 2020
PREPARED BY KPG

SITE PLAN - PROPOSED CONDITIONS

JUANITA DR INTERSECTION/SAFETY IMPROVEMENT
KIRKLAND, WA

KPG-111-01

AUGUST 2023

NV5

FIGURE 1

ATTACHMENT

MEMORANDUM

ATTACHMENT

FIELD EXPLORATIONS

GENERAL










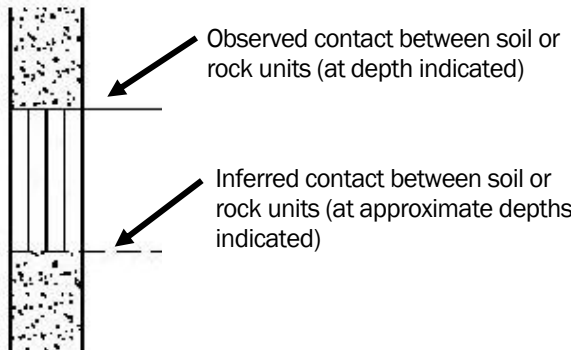

We drilled one boring (B-8) to a depth of 21.5 feet BGS on June 29, 2023. Drilling services were provided by Borettec1 of Bellevue, Washington, using a track-mounted drill rig and hollow-stem auger drilling techniques. The exploration log is presented in this attachment.


SOIL SAMPLING


A member of our geotechnical staff observed the exploration. We collected representative samples of the various soil encountered in the exploration for classification using 1½-inch-inside diameter split-spoon sampler (SPT) in general accordance with ASTM D1586. The sampler was driven with a 140-pound hammer free falling 30 inches. The number of blows required to drive the sampler 1 foot, or as otherwise indicated, into the soil is shown adjacent to the sample symbols on the exploration log. Disturbed soil samples were collected from the samplers at 2.5-foot intervals. Sampling methods and intervals are shown on the exploration log.


SOIL CLASSIFICATION

The soil samples were classified in accordance with the “Exploration Key” (Table A-1) and “Soil Classification System” (Table A-2), which are presented in this attachment. The exploration log indicates the depths at which the soils or their characteristics change, although the change could be gradual. A horizontal line between soil types indicates an observed change. If the change was gradual, the change is indicated using a dashed line. Classifications are shown on the exploration log.

SYMBOL		SAMPLING DESCRIPTION	
	Location of sample collected in general accordance with ASTM D1586 using Standard Penetration Test (SPT) with recovery		
	Location of sample collected using thin-wall Shelby tube or Geoprobe® sampler in general accordance with ASTM D1587 with recovery		
	Location of sample collected using Dames & Moore sampler and 300-pound hammer or pushed with recovery		
	Location of sample collected using Dames & Moore sampler and 140-pound hammer or pushed with recovery		
	Location of sample collected using 3-inch-outside diameter California split-spoon sampler and 140-pound hammer with recovery		
	Location of grab sample		
	Rock coring interval		
	Water level during drilling		
	Water level taken on date shown		
<div><div>Graphic Log of Soil and Rock Types</div></div>			
GEOTECHNICAL TESTING EXPLANATIONS			
ATT	Atterberg Limits	P	Pushed Sample
CBR	California Bearing Ratio	PP	Pocket Penetrometer
CON	Consolidation	P200	Percent Passing U.S. Standard No. 200 Sieve
DD	Dry Density		
DS	Direct Shear	RES	Resilient Modulus
HYD	Hydrometer Gradation	SIEV	Sieve Gradation
MC	Moisture Content	TOR	Torvane
MD	Moisture-Density Relationship	UC	Unconfined Compressive Strength
NP	Non-Plastic	VS	Vane Shear
OC	Organic Content	kPa	Kilopascal
ENVIRONMENTAL TESTING EXPLANATIONS			
CA	Sample Submitted for Chemical Analysis	ND	Not Detected
P	Pushed Sample	NS	No Visible Sheen
PID	Photoionization Detector Headspace Analysis	SS	Slight Sheen
		MS	Moderate Sheen
ppm	Parts per Million	HS	Heavy Sheen
		EXPLORATION KEY	
		TABLE A-1	

RELATIVE DENSITY - COARSE-GRAINED SOIL							
Relative Density	Standard Penetration Test (SPT) Resistance		Dames & Moore Sampler (140-pound hammer)		Dames & Moore Sampler (300-pound hammer)		
Very loose	0 – 4		0 – 11		0 – 4		
Loose	4 – 10		11 – 26		4 – 10		
Medium dense	10 – 30		26 – 74		10 – 30		
Dense	30 – 50		74 – 120		30 – 47		
Very dense	More than 50		More than 120		More than 47		
CONSISTENCY - FINE-GRAINED SOIL							
Consistency	Standard Penetration Test (SPT) Resistance	Dames & Moore Sampler (140-pound hammer)	Dames & Moore Sampler (300-pound hammer)	Unconfined Compressive Strength (tsf)			
Very soft	Less than 2	Less than 3	Less than 2	Less than 0.25			
Soft	2 – 4	3 – 6	2 – 5	0.25 – 0.50			
Medium stiff	4 – 8	6 – 12	5 – 9	0.50 – 1.0			
Stiff	8 – 15	12 – 25	9 – 19	1.0 – 2.0			
Very stiff	15 – 30	25 – 65	19 – 31	2.0 – 4.0			
Hard	More than 30	More than 65	More than 31	More than 4.0			
PRIMARY SOIL DIVISIONS			GROUP SYMBOL	GROUP NAME			
COARSE-GRAINED SOIL (more than 50% retained on No. 200 sieve)	GRAVEL (more than 50% of coarse fraction retained on No. 4 sieve)	CLEAN GRAVEL (< 5% fines)	GW or GP	GRAVEL			
		GRAVEL WITH FINES (≥ 5% and ≤ 12% fines)	GW-GM or GP-GM	GRAVEL with silt			
			GW-GC or GP-GC	GRAVEL with clay			
		GRAVEL WITH FINES (> 12% fines)	GM	silty GRAVEL			
			GC	clayey GRAVEL			
			GC-GM	silty, clayey GRAVEL			
	SAND (50% or more of coarse fraction passing No. 4 sieve)	CLEAN SAND (<5% fines)	SW or SP	SAND			
		SAND WITH FINES (≥ 5% and ≤ 12% fines)	SW-SM or SP-SM	SAND with silt			
			SW-SC or SP-SC	SAND with clay			
		SAND WITH FINES (> 12% fines)	SM	silty SAND			
			SC	clayey SAND			
			SC-SM	silty, clayey SAND			
FINE-GRAINED SOIL (50% or more passing No. 200 sieve)		SILT AND CLAY	Liquid limit less than 50	ML	SILT		
	CL			CLAY			
	CL-ML			silty CLAY			
	Liquid limit 50 or greater		OL	ORGANIC SILT or ORGANIC CLAY			
		MH	SILT				
		CH	CLAY				
	OH	ORGANIC SILT or ORGANIC CLAY					
HIGHLY ORGANIC SOIL			PT	PEAT			
MOISTURE CLASSIFICATION		ADDITIONAL CONSTITUENTS					
Term	Field Test	Secondary granular components or other materials such as organics, man-made debris, etc.					
		Percent	Silt and Clay In:		Percent	Sand and Gravel In:	
	Fine-Grained Soil		Coarse-Grained Soil			Fine-Grained Soil	Coarse-Grained Soil
dry	very low moisture, dry to touch						
moist	damp, without visible moisture	< 5	trace	trace	< 5	trace	trace
		5 – 12	minor	with	5 – 15	minor	minor
wet	visible free water, usually saturated	> 12	some	silty/clayey	15 – 30	with	with
					> 30	sandy/gravelly	Indicate %
		SOIL CLASSIFICATION SYSTEM					TABLE A-2

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	▲ BLOW COUNT ● MOISTURE CONTENT % ▨ RQD% ▨ CORE REC%	INSTALLATION AND COMMENTS
0.0		Medium dense, brown, silty SAND (SM); dry to moist (topsoil to 6 inches) - FILL.					Flush-mount monument with 1.5 feet of concrete surface seal
2.5						25	Bentonite chips
5.0						17	
7.5		grades to very loose at 7.5 feet				3	
10.0		Medium dense, gray-brown, silty SAND with gravel (SM); moist - GLACIAL TILL.	10.0			28	12/20 filter pack sand
12.5		grades to very dense at 12.5 feet				50/6"	2-inch, Schedule 40 PVC screen, 0.010- inch slot width
15.0						50/6"	
17.5							
20.0						78	6-inch-long threaded end cap
22.5		Exploration completed at a depth of 21.5 feet.	21.5				Well no. BPG 852 set at 20.0 feet
25.0		SPT completed using two wraps with a cathead.					Surface elevation was not measured at the time of exploration.
27.5							
30.0							
DRILLED BY: Boretect1		LOGGED BY: R. Hilal		COMPLETED: 06/29/23			
BORING METHOD: hollow-stem auger (see document text)				BORING BIT DIAMETER: 2 1/2 inches			
		KPG-111-01	BORING B-8				
		AUGUST 2023	JUANITA DR. INTERSECTION/SAFETY IMPROVEMENT KIRKLAND, WA			FIGURE A-1	

 19.5 feet, during drilling

APPENDIX B

CONSTRUCTION STORMWATER GENERAL PERMIT

Issuance Date: November 18, 2020
Effective Date: January 1, 2021
Expiration Date: December 31, 2025

CONSTRUCTION STORMWATER GENERAL PERMIT

National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge
General Permit for Stormwater Discharges Associated with Construction Activity

State of Washington
Department of Ecology
Olympia, Washington 98504

In compliance with the provisions of
Chapter 90.48 Revised Code of Washington
(State of Washington Water Pollution Control Act)
and
Title 33 United States Code, Section 1251 et seq.
The Federal Water Pollution Control Act (The Clean Water Act)

Until this permit expires, is modified, or revoked, Permittees that have properly
obtained coverage under this general permit are authorized to discharge in accordance
with the special and general conditions that follow.



Vincent McGowan, P.E.
Water Quality Program Manager
Washington State Department of Ecology

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SUMMARY OF PERMIT REPORT SUBMITTALS

Refer to the Special and General Conditions within this permit for additional submittal requirements. Appendix A provides a list of definitions. Appendix B provides a list of acronyms.

Table 1 Summary of Required Submittals

Permit Section	Submittal	Frequency	First Submittal Date
S5.A and S8	High Turbidity/Transparency Phone Reporting	As Necessary	Within 24 hours
S5.B	Discharge Monitoring Report	Monthly*	Within 15 days following the end of each month
S5.F and S8	Noncompliance Notification – Telephone Notification	As necessary	Within 24 hours
S5.F	Noncompliance Notification – Written Report	As necessary	Within 5 Days of non-compliance
S9.D	Request for Chemical Treatment Form	As necessary	Written approval from Ecology is required prior to using chemical treatment (with the exception of dry ice, CO ₂ or food grade vinegar to adjust pH)
G2	Notice of Change in Authorization	As necessary	
G6	Permit Application for Substantive Changes to the Discharge	As necessary	
G8	Application for Permit Renewal	1/permit cycle	No later than 180 days before expiration
S2.A	Notice of Permit Transfer	As necessary	
G19	Notice of Planned Changes	As necessary	
G21	Reporting Anticipated Non-compliance	As necessary	

NOTE: *Permittees must submit electronic Discharge Monitoring Reports (DMRs) to the Washington State Department of Ecology monthly, regardless of site discharge, for the full duration of permit coverage. Refer to Section S5.B of this General Permit for more specific information regarding DMRs.

Table 2 Summary of Required On-site Documentation

Document Title	Permit Conditions
Permit Coverage Letter	See Conditions S2, S5
Construction Stormwater General Permit (CSWGP)	See Conditions S2, S5
Site Log Book	See Conditions S4, S5
Stormwater Pollution Prevention Plan (SWPPP)	See Conditions S5, S9
Site Map	See Conditions S5, S9

SPECIAL CONDITIONS

S1. PERMIT COVERAGE

A. Permit Area

This Construction Stormwater General Permit (CSWGP) covers all areas of Washington State, except for federal operators and Indian Country as specified in Special Condition S1.E.3 and 4.

B. Operators Required to Seek Coverage Under this General Permit

1. Operators of the following construction activities are required to seek coverage under this CSWGP:
 - a. Clearing, grading and/or excavation that results in the disturbance of one or more acres (including off-site disturbance acreage related to construction-support activity as authorized in S1.C.2) and discharges stormwater to surface waters of the State; and clearing, grading and/or excavation on sites smaller than one acre that are part of a larger common plan of development or sale, if the common plan of development or sale will ultimately disturb one acre or more and discharge stormwater to surface waters of the State.
 - i. This category includes forest practices (including, but not limited to, class IV conversions) that are part of a construction activity that will result in the disturbance of one or more acres, and discharge to surface waters of the State (that is, forest practices that prepare a site for construction activities); and
 - b. Any size construction activity discharging stormwater to waters of the State that the Washington State Department of Ecology (Ecology):
 - i. Determines to be a significant contributor of pollutants to waters of the State of Washington.
 - ii. Reasonably expects to cause a violation of any water quality standard.
2. Operators of the following activities are not required to seek coverage under this CSWGP (unless specifically required under Special Condition S1.B.1.b, above):
 - a. Construction activities that discharge all stormwater and non-stormwater to groundwater, sanitary sewer, or combined sewer, and have no point source discharge to either surface water or a storm sewer system that drains to surface waters of the State.
 - b. Construction activities covered under an Erosivity Waiver (Special Condition S1.F).
 - c. Routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

C. Authorized Discharges

1. ***Stormwater Associated with Construction Activity.*** Subject to compliance with the terms and conditions of this permit, Permittees are authorized to discharge stormwater associated with construction activity to surface waters of the State or to a storm sewer system that drains to surface waters of the State. (Note that “surface waters of the

State” may exist on a construction site as well as off site; for example, a creek running through a site.)

2. ***Stormwater Associated with Construction Support Activity.*** This permit also authorizes stormwater discharge from support activities related to the permitted construction site (for example, an on-site portable rock crusher, off-site equipment staging yards, material storage areas, borrow areas, etc.) provided:
 - a. The support activity relates directly to the permitted construction site that is required to have an NPDES permit; and
 - b. The support activity is not a commercial operation serving multiple unrelated construction projects, and does not operate beyond the completion of the construction activity; and
 - c. Appropriate controls and measures are identified in the Stormwater Pollution Prevention Plan (SWPPP) for the discharges from the support activity areas.
3. ***Non-Stormwater Discharges.*** The categories and sources of non-stormwater discharges identified below are authorized conditionally, provided the discharge is consistent with the terms and conditions of this permit:
 - a. Discharges from fire-fighting activities.
 - b. Fire hydrant system flushing.
 - c. Potable water, including uncontaminated water line flushing.
 - d. Hydrostatic test water.
 - e. Uncontaminated air conditioning or compressor condensate.
 - f. Uncontaminated groundwater or spring water.
 - g. Uncontaminated excavation dewatering water (in accordance with S9.D.10).
 - h. Uncontaminated discharges from foundation or footing drains.
 - i. Uncontaminated or potable water used to control dust. Permittees must minimize the amount of dust control water used.
 - j. Routine external building wash down that does not use detergents.
 - k. Landscape irrigation water.

The SWPPP must adequately address all authorized non-stormwater discharges, except for discharges from fire-fighting activities, and must comply with Special Condition S3. At a minimum, discharges from potable water (including water line flushing), fire hydrant system flushing, and pipeline hydrostatic test water must undergo the following: dechlorination to a concentration of 0.1 parts per million (ppm) or less, and pH adjustment to within 6.5 – 8.5 standard units (su), if necessary.

D. Prohibited Discharges

The following discharges to waters of the State, including groundwater, are prohibited:

1. Concrete wastewater
2. Wastewater from washout and clean-up of stucco, paint, form release oils, curing compounds and other construction materials.
3. Process wastewater as defined by 40 Code of Federal Regulations (CFR) 122.2 (See Appendix A of this permit).
4. Slurry materials and waste from shaft drilling, including process wastewater from shaft drilling for construction of building, road, and bridge foundations unless managed according to Special Condition S9.D.9.j.
5. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance.
6. Soaps or solvents used in vehicle and equipment washing.
7. Wheel wash wastewater, unless managed according to Special Condition S9.D.9.
8. Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, unless managed according to Special Condition S9.D.10.

E. Limits on Coverage

Ecology may require any discharger to apply for and obtain coverage under an individual permit or another more specific general permit. Such alternative coverage will be required when Ecology determines that this CSWGP does not provide adequate assurance that water quality will be protected, or there is a reasonable potential for the project to cause or contribute to a violation of water quality standards.

The following stormwater discharges are not covered by this permit:

1. Post-construction stormwater discharges that originate from the site after completion of construction activities and the site has undergone final stabilization.
2. Non-point source silvicultural activities such as nursery operations, site preparation, reforestation and subsequent cultural treatment, thinning, prescribed burning, pest and fire control, harvesting operations, surface drainage, or road construction and maintenance, from which there is natural runoff as excluded in 40 CFR Subpart 122.
3. Stormwater from any federal operator.
4. Stormwater from facilities located on **Indian Country** as defined in 18 U.S.C. §1151, except portions of the Puyallup Reservation as noted below.

Indian Country includes:

- a. All land within any Indian Reservation notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation. This includes all federal, tribal, and Indian and non-Indian privately owned land within the reservation.
- b. All off-reservation Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.
- c. All off-reservation federal trust lands held for Native American Tribes.

Puyallup Exception: Following the *Puyallup Tribes of Indians Land Settlement Act of 1989*, 25 U.S.C. §1773; the permit does apply to land within the Puyallup Reservation except for discharges to surface water on land held in trust by the federal government.

5. Stormwater from any site covered under an existing NPDES individual permit in which stormwater management and/or treatment requirements are included for all stormwater discharges associated with construction activity.
6. Stormwater from a site where an applicable Total Maximum Daily Load (TMDL) requirement specifically precludes or prohibits discharges from construction activity.

F. Erosivity Waiver

Construction site operators may qualify for an Erosivity Waiver from the CSWGP if the following conditions are met:

1. The site will result in the disturbance of fewer than five (5) acres and the site is not a portion of a common plan of development or sale that will disturb five (5) acres or greater.
2. Calculation of Erosivity “R” Factor and Regional Timeframe:
 - a. The project’s calculated rainfall erosivity factor (“R” Factor) must be less than five (5) during the period of construction activity, (See the CSWGP homepage <http://www.ecy.wa.gov/programs/wq/stormwater/construction/index.html> for a link to the EPA’s calculator and step by step instructions on computing the “R” Factor in the *EPA Erosivity Waiver Fact Sheet*). The period of construction activity starts when the land is first disturbed and ends with final stabilization. In addition:
 - b. The entire period of construction activity must fall within the following timeframes:
 - i. For sites west of the Cascades Crest: June 15 – September 15.
 - ii. For sites east of the Cascades Crest, excluding the Central Basin: June 15 – October 15.
 - iii. For sites east of the Cascades Crest, within the Central Basin: no timeframe restrictions apply. The Central Basin is defined as the portions of Eastern Washington with mean annual precipitation of less than 12 inches. For a map of the Central Basin (Average Annual Precipitation Region 2), refer to: <http://www.ecy.wa.gov/programs/wq/stormwater/construction/resourcesguidance.html>.
3. Construction site operators must submit a complete Erosivity Waiver certification form at least one week before disturbing the land. Certification must include statements that the operator will:
 - a. Comply with applicable local stormwater requirements; and
 - b. Implement appropriate erosion and sediment control BMPs to prevent violations of water quality standards.
4. This waiver is not available for facilities declared significant contributors of pollutants as defined in Special Condition S1.B.1.b or for any size construction activity that could

reasonably expect to cause a violation of any water quality standard as defined in Special Condition S1.B.1.b.ii.

5. This waiver does not apply to construction activities which include non-stormwater discharges listed in Special Condition S1.C.3.
6. If construction activity extends beyond the certified waiver period for any reason, the operator must either:
 - a. Recalculate the rainfall erosivity “R” factor using the original start date and a new projected ending date and, if the “R” factor is still under 5 *and* the entire project falls within the applicable regional timeframe in Special Condition S1.F.2.b, complete and submit an amended waiver certification form before the original waiver expires; *or*
 - b. Submit a complete permit application to Ecology in accordance with Special Condition S2.A and B before the end of the certified waiver period.

S2. APPLICATION REQUIREMENTS

A. Permit Application Forms

1. ***Notice of Intent Form***

- a. Operators of new or previously unpermitted construction activities must submit a complete and accurate permit application (Notice of Intent, or NOI) to Ecology.
- b. Operators must apply using the electronic application form (NOI) available on Ecology’s website (<http://ecy.wa.gov/programs/wq/stormwater/construction/index.html>). Permittees unable to submit electronically (for example, those who do not have an internet connection) must contact Ecology to request a waiver and obtain instructions on how to obtain a paper NOI.

Department of Ecology
Water Quality Program - Construction Stormwater
PO Box 47696
Olympia, Washington 98504-7696

- c. The operator must submit the NOI at least 60 days before discharging stormwater from construction activities and must submit it prior to the date of the first public notice (See Special Condition S2.B, below, for details). The 30-day public comment period begins on the publication date of the second public notice. Unless Ecology responds to the complete application in writing, coverage under the general permit will automatically commence on the 31st day following receipt by Ecology of a *completed* NOI, or the issuance date of this permit, whichever is later; unless Ecology specifies a later date in writing as required by WAC173-226-200(2). See S8.B for Limits on Coverage for New Discharges to TMDL or 303(d)-Listed Waters.
- d. If an applicant intends to use a Best Management Practice (BMP) selected on the basis of Special Condition S9.C.4 (“demonstrably equivalent” BMPs), the applicant must notify Ecology of its selection as part of the NOI. In the event the applicant selects BMPs after submission of the NOI, the applicant must provide notice of the

selection of an equivalent BMP to Ecology at least 60 days before intended use of the equivalent BMP.

- e. Applicants must notify Ecology if they are aware of contaminated soils and/or groundwater associated with the construction activity. Provide detailed information with the NOI (as known and readily available) on the nature and extent of the contamination (concentrations, locations, and depth), as well as pollution prevention and/or treatment BMPs proposed to control the discharge of soil and/or groundwater contaminants in stormwater. Examples of such detail may include, but are not limited to:
 - i. List or table of all known contaminants with laboratory test results showing concentration and depth,
 - ii. Map with sample locations,
 - iii. Related portions of the Stormwater Pollution Prevention Plan (SWPPP) that address the management of contaminated and potentially contaminated construction stormwater and dewatering water,
 - iv. Dewatering plan and/or dewatering contingency plan.

2. *Transfer of Coverage Form*

The Permittee can transfer current coverage under this permit to one or more new operators, including operators of sites within a Common Plan of Development, provided:

- i. The Permittee submits a complete Transfer of Coverage Form to Ecology, signed by the current and new discharger and containing a specific date for transfer of permit responsibility, coverage and liability (including any Administrative Orders associated with the permit); and
- ii. Ecology does not notify the current discharger and new discharger of intent to revoke coverage under the general permit. If this notice is not given, the transfer is effective on the date specified in the written agreement.

When a current discharger (Permittee) transfers a portion of a permitted site, the current discharger must also indicate the remaining permitted acreage after the transfer. Transfers do not require public notice.

3. *Modification of Coverage Form*

Permittees must notify Ecology regarding any changes to the information provided on the NOI by submitting an Update/Modification of Permit Coverage form in accordance with General Conditions G6 and G19. Examples of such changes include, but are not limited to:

- i. Changes to the Permittee's mailing address,
- ii. Changes to the on-site contact person information, and
- iii. Changes to the area/acreage affected by construction activity.

B. Public Notice

For new or previously unpermitted construction activities, the applicant must publish a public notice at least one time each week for two consecutive weeks, at least 7 days apart, in a newspaper with general circulation in the county where the construction is to take place. The notice must be run after the NOI has been submitted and must contain:

1. A statement that *“The applicant is seeking coverage under the Washington State Department of Ecology’s Construction Stormwater NPDES and State Waste Discharge General Permit.”*
2. The name, address, and location of the construction site.
3. The name and address of the applicant.
4. The type of construction activity that will result in a discharge (for example, residential construction, commercial construction, etc.), and the total number of acres to be disturbed over the lifetime of the project.
5. The name of the receiving water(s) (that is, the surface water(s) to which the site will discharge), or, if the discharge is through a storm sewer system, the name of the operator of the system and the receiving water(s) the system discharges to.
6. The statement: *Any persons desiring to present their views to the Washington State Department of Ecology regarding this application, or interested in Ecology’s action on this application, may notify Ecology in writing no later than 30 days of the last date of publication of this notice. Ecology reviews public comments and considers whether discharges from this project would cause a measurable change in receiving water quality, and, if so, whether the project is necessary and in the overriding public interest according to Tier II antidegradation requirements under WAC 173-201A-320. Comments can be submitted to: Department of Ecology, PO Box 47696, Olympia, Washington 98504-7696 Attn: Water Quality Program, Construction Stormwater.*

S3. COMPLIANCE WITH STANDARDS

- A. Discharges must not** cause or contribute to a violation of surface water quality standards (Chapter 173-201A WAC), groundwater quality standards (Chapter 173-200 WAC), sediment management standards (Chapter 173-204 WAC), and human health-based criteria in the Federal water quality criteria applicable to Washington. (40 CFR Part 131.45) Discharges that are not in compliance with these standards are prohibited.
- B. Prior to the discharge** of stormwater and non-stormwater to waters of the State, the Permittee must apply All Known, Available, and Reasonable methods of prevention, control, and Treatment (AKART). This includes the preparation and implementation of an adequate SWPPP, with all appropriate BMPs installed and maintained in accordance with the SWPPP and the terms and conditions of this permit.
- C. Ecology presumes** that a Permittee complies with water quality standards unless discharge monitoring data or other site-specific information demonstrates that a discharge causes or contributes to a violation of water quality standards, when the Permittee complies with the following conditions. The Permittee must fully:

1. Comply with all permit conditions, including; planning, sampling, monitoring, reporting, and recordkeeping conditions.
 2. Implement stormwater BMPs contained in stormwater management manuals published or approved by Ecology, or BMPs that are demonstrably equivalent to BMPs contained in stormwater management manuals published or approved by Ecology, including the proper selection, implementation, and maintenance of all applicable and appropriate BMPs for on-site pollution control. (For purposes of this section, the stormwater manuals listed in Appendix 10 of the *Phase I Municipal Stormwater Permit* are approved by Ecology.)
- D. Where construction sites** also discharge to groundwater, the groundwater discharges must also meet the terms and conditions of this CSWGP. Permittees who discharge to groundwater through an injection well must also comply with any applicable requirements of the Underground Injection Control (UIC) regulations, Chapter 173-218 WAC.

S4. MONITORING REQUIREMENTS, BENCHMARKS, AND REPORTING TRIGGERS

A. Site Log Book

The Permittee must maintain a site log book that contains a record of the implementation of the SWPPP and other permit requirements, including the installation and maintenance of BMPs, site inspections, and stormwater monitoring.

B. Site Inspections

Construction sites one (1) acre or larger that discharge stormwater to surface waters of the State must have site inspections conducted by a Certified Erosion and Sediment Control Lead (CESCL). Sites less than one (1) acre may have a person without CESCL certification conduct inspections. (See Special Conditions S4.B.3 and B.4, below, for detailed requirements of the Permittee's CESCL.)

Site inspections must include all areas disturbed by construction activities, all BMPs, and all stormwater discharge points under the Permittee's operational control.

1. The Permittee must have staff knowledgeable in the principles and practices of erosion and sediment control. The CESCL (sites one acre or more) or inspector (sites less than one acre) must have the skills to assess the:
 - a. Site conditions and construction activities that could impact the quality of stormwater; and
 - b. Effectiveness of erosion and sediment control measures used to control the quality of stormwater discharges. The SWPPP must identify the CESCL or inspector, who must be present on site or on-call at all times. The CESCL (sites one (1) acre or more) must obtain this certification through an approved erosion and sediment control training program that meets the minimum training standards established by Ecology. (See BMP C160 in the manual, referred to in Special Condition S9.C.1 and 2.)
2. The CESCL or inspector must examine stormwater visually for the presence of suspended sediment, turbidity, discoloration, and oil sheen. BMP effectiveness must be evaluated to

determine if it is necessary to install, maintain, or repair BMPs to improve the quality of stormwater discharges.

Based on the results of the inspection, the Permittee must correct the problems identified, by:

- a. Reviewing the SWPPP for compliance with Special Condition S9 and making appropriate revisions within 7 days of the inspection.
 - b. Immediately beginning the process of fully implementing and maintaining appropriate source control and/or treatment BMPs, within 10 days of the inspection. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when an extension is requested by a Permittee within the initial 10-day response period.
 - c. Documenting BMP implementation and maintenance in the site log book.
3. The CESCL or inspector must inspect all areas disturbed by construction activities, all BMPs, and all stormwater discharge points at least once every calendar week and within 24 hours of any discharge from the site. (For purposes of this condition, individual discharge events that last more than one (1) day do not require daily inspections. For example, if a stormwater pond discharges continuously over the course of a week, only one (1) inspection is required that week.) Inspection frequency may be reduced to once every calendar month for inactive sites that are temporarily stabilized.
4. The Permittee must summarize the results of each inspection in an inspection report or checklist and enter the report/checklist into, or attach it to, the site log book. At a minimum, each inspection report or checklist must include:
 - a. Inspection date and time.
 - b. Weather information.
 - c. The general conditions during inspection.
 - d. The approximate amount of precipitation since the last inspection.
 - e. The approximate amount of precipitation within the last 24 hours.
 - f. A summary or list of all implemented BMPs, including observations of all erosion/sediment control structures or practices.
 - g. A description of:
 - i. BMPs inspected (including location).
 - ii. BMPs that need maintenance and why.
 - iii. BMPs that failed to operate as designed or intended, and
 - iv. Where additional or different BMPs are needed, and why.
 - h. A description of stormwater discharged from the site. The Permittee must note the presence of suspended sediment, turbidity, discoloration, and oil sheen, as applicable.

- i. Any water quality monitoring performed during inspection.
- j. General comments and notes, including a brief description of any BMP repairs, maintenance, or installations made following the inspection.
- k. An implementation schedule for the remedial actions that the Permittee plans to take if the site inspection indicates that the site is out of compliance. The remedial actions taken must meet the requirements of the SWPPP and the permit.
- l. A summary report of the inspection.
- m. The name, title, and signature of the person conducting the site inspection, a phone number or other reliable method to reach this person, and the following statement:
I certify that this report is true, accurate, and complete to the best of my knowledge and belief.

Table 3 Summary of Primary Monitoring Requirements

Size of Soil Disturbance ¹	Weekly Site Inspections	Weekly Sampling w/ Turbidity Meter	Weekly Sampling w/ Transparency Tube	Weekly pH Sampling ²	CESCL Required for Inspections?
Sites that disturb less than 1 acre, but are part of a larger Common Plan of Development	Required	Not Required	Not Required	Not Required	No
Sites that disturb 1 acre or more, but fewer than 5 acres	Required	Sampling Required – either method ³		Required	Yes
Sites that disturb 5 acres or more	Required	Required	Not Required ⁴	Required	Yes

¹ Soil disturbance is calculated by adding together all areas that will be affected by construction activity. Construction activity means clearing, grading, excavation, and any other activity that disturbs the surface of the land, including ingress/egress from the site.

² If construction activity results in the disturbance of 1 acre or more, and involves significant concrete work (1,000 cubic yards of concrete or recycled concrete placed or poured over the life of a project) or the use of engineered soils (soil amendments including but not limited to Portland cement-treated base [CTB], cement kiln dust [CKD], or fly ash), and stormwater from the affected area drains to surface waters of the State or to a storm sewer stormwater collection system that drains to other surface waters of the State, the Permittee must conduct pH sampling in accordance with Special Condition S4.D.

³ Sites with one or more acres, but fewer than 5 acres of soil disturbance, must conduct turbidity or transparency sampling in accordance with Special Condition S4.C.4.a or b.

⁴ Sites equal to or greater than 5 acres of soil disturbance must conduct turbidity sampling using a turbidity meter in accordance with Special Condition S4.C.4.a.

C. Turbidity/Transparency Sampling Requirements

1. Sampling Methods

- a. If construction activity involves the disturbance of five (5) acres or more, the Permittee must conduct turbidity sampling per Special Condition S4.C.4.a, below.
- b. If construction activity involves one (1) acre or more but fewer than five (5) acres of soil disturbance, the Permittee must conduct either transparency sampling *or* turbidity sampling per Special Condition S4.C.4.a or b, below.

2. Sampling Frequency

- a. The Permittee must sample all discharge points at least once every calendar week when stormwater (or authorized non-stormwater) discharges from the site or enters any on-site surface waters of the state (for example, a creek running through a site); sampling is not required on sites that disturb less than an acre.
- b. Samples must be representative of the flow and characteristics of the discharge.
- c. Sampling is not required when there is no discharge during a calendar week.
- d. Sampling is not required outside of normal working hours or during unsafe conditions.
- e. If the Permittee is unable to sample during a monitoring period, the Permittee must include a brief explanation in the monthly Discharge Monitoring Report (DMR).
- f. Sampling is not required before construction activity begins.
- g. The Permittee may reduce the sampling frequency for temporarily stabilized, inactive sites to once every calendar month.

3. Sampling Locations

- a. Sampling is required at all points where stormwater associated with construction activity (or authorized non-stormwater) is discharged off site, including where it enters any on-site surface waters of the state (for example, a creek running through a site).
- b. The Permittee may discontinue sampling at discharge points that drain areas of the project that are fully stabilized to prevent erosion.
- c. The Permittee must identify all sampling point(s) in the SWPPP and on the site map and clearly mark these points in the field with a flag, tape, stake or other visible marker.
- d. Sampling is not required for discharge that is sent directly to sanitary or combined sewer systems.
- e. The Permittee may discontinue sampling at discharge points in areas of the project where the Permittee no longer has operational control of the construction activity.

4. Sampling and Analysis Methods

- a. The Permittee performs turbidity analysis with a calibrated turbidity meter (turbidimeter) either on site or at an accredited lab. The Permittee must record the results in the site log book in nephelometric turbidity units (NTUs).
- b. The Permittee performs transparency analysis on site with a 1¾ inch diameter, 60 centimeter (cm)-long transparency tube. The Permittee will record the results in the site log book in centimeters (cm).

Table 4 Monitoring and Reporting Requirements

Parameter	Unit	Analytical Method	Sampling Frequency	Benchmark Value
Turbidity	NTU	SM2130	Weekly, if discharging	25 NTUs
Transparency	Cm	Manufacturer instructions, or Ecology guidance	Weekly, if discharging	33 cm

5. Turbidity/Transparency Benchmark Values and Reporting Triggers

The benchmark value for turbidity is 25 NTUs. The benchmark value for transparency is 33 centimeters (cm). Note: Benchmark values do not apply to discharges to segments of water bodies on Washington State's 303(d) list (Category 5) for turbidity, fine sediment, or phosphorus; these discharges are subject to a numeric effluent limit for turbidity. Refer to Special Condition S8 for more information and follow S5.F – Noncompliance Notification for reporting requirements applicable to discharges which exceed the numeric effluent limit for turbidity.

- a. Turbidity 26 – 249 NTUs, or Transparency 32 – 7 cm:

If the discharge turbidity is 26 to 249 NTUs; or if discharge transparency is 32 to 7 cm, the Permittee must:

- i. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs, and no later than 10 days of the date the discharge exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period.
- ii. Review the SWPPP for compliance with Special Condition S9 and make appropriate revisions within 7 days of the date the discharge exceeded the benchmark.
- iii. Document BMP implementation and maintenance in the site log book.

- b. Turbidity 250 NTUs or greater, or Transparency 6 cm or less:

If a discharge point's turbidity is 250 NTUs or greater, or if discharge transparency is less than or equal to 6 cm, the Permittee must complete the reporting and adaptive

management process described below. For discharges which are subject to a numeric effluent limit for turbidity, see S5.F – Noncompliance Notification.

- i. Within 24 hours, telephone or submit an electronic report to the applicable Ecology Region's Environmental Report Tracking System (ERTS) number (or through Ecology's Water Quality Permitting Portal [WQWebPortal] – Permit Submittals when the form is available), in accordance with Special Condition S5.A.
 - **Central Region** (Okanogan, Chelan, Douglas, Kittitas, Yakima, Klickitat, Benton): (509) 575-2490
 - **Eastern Region** (Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman): (509) 329-3400
 - **Northwest Region** (Kitsap, Snohomish, Island, King, San Juan, Skagit, Whatcom): (425) 649-7000
 - **Southwest Region** (Grays Harbor, Lewis, Mason, Thurston, Pierce, Clark, Cowlitz, Skamania, Wahkiakum, Clallam, Jefferson, Pacific): (360) 407-6300

These numbers and a link to the ERTS reporting page are also listed at the following website: <http://www.ecy.wa.gov/programs/wq/stormwater/construction/index.html>.

- ii. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, addressing the problems within 10 days of the date the discharge exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period.
- iii. Sample discharges daily until:
 - a) Turbidity is 25 NTUs (or lower); or
 - b) Transparency is 33 cm (or greater); or
 - c) The Permittee has demonstrated compliance with the water quality standard for turbidity:
 - 1) No more than 5 NTUs over background turbidity, if background is less than 50 NTUs, or
 - 2) No more than 10% over background turbidity, if background is 50 NTUs or greater; or

*Note: background turbidity in the receiving water must be measured immediately upstream (upgradient) or outside of the area of influence of the discharge.
 - d) The discharge stops or is eliminated.
- iv. Review the SWPPP for compliance with Special Condition S9 and make appropriate revisions within seven (7) days of the date the discharge exceeded the benchmark.

- v. Document BMP implementation and maintenance in the site log book.

Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with permit benchmarks.

D. pH Sampling Requirements – Significant Concrete Work or Engineered Soils

If construction activity results in the disturbance of 1 acre or more, *and* involves significant concrete work (significant concrete work means greater than 1000 cubic yards placed or poured concrete or recycled concrete used over the life of a project) or the use of engineered soils (soil amendments including but not limited to Portland cement-treated base [CTB], cement kiln dust [CKD], or fly ash), and stormwater from the affected area drains to surface waters of the State or to a storm sewer system that drains to surface waters of the State, the Permittee must conduct pH sampling as set forth below. Note: In addition, discharges to segments of water bodies on Washington State's 303(d) list (Category 5) for high pH are subject to a numeric effluent limit for pH; refer to Special Condition S8.

1. The Permittee must perform pH analysis on site with a calibrated pH meter, pH test kit, or wide range pH indicator paper. The Permittee must record pH sampling results in the site log book.
2. During the applicable pH monitoring period defined below, the Permittee must obtain a representative sample of stormwater and conduct pH analysis at least once per week.
 - a. For sites with significant concrete work, the Permittee must begin the pH sampling period when the concrete is first placed or poured and exposed to precipitation, and continue weekly throughout and after the concrete placement, pour and curing period, until stormwater pH is in the range of 6.5 to 8.5 (su).
 - b. For sites with recycled concrete where monitoring is required, the Permittee must begin the weekly pH sampling period when the recycled concrete is first exposed to precipitation and must continue until the recycled concrete is fully stabilized with the stormwater pH in the range of 6.5 to 8.5 (su).
 - c. For sites with engineered soils, the Permittee must begin the pH sampling period when the soil amendments are first exposed to precipitation and must continue until the area of engineered soils is fully stabilized.
3. The Permittee must sample pH in the sediment trap/pond(s) or other locations that receive stormwater runoff from the area of significant concrete work or engineered soils before the stormwater discharges to surface waters.
4. The benchmark value for pH is 8.5 standard units. Anytime sampling indicates that pH is 8.5 or greater, the Permittee must either:
 - a. Prevent the high pH water (8.5 or above) from entering storm sewer systems or surface waters of the state; *or*
 - b. If necessary, adjust or neutralize the high pH water until it is in the range of pH 6.5 to 8.5 (su) using an appropriate treatment BMP such as carbon dioxide (CO₂) sparging, dry ice or food grade vinegar. The Permittee must obtain written approval from Ecology before using any form of chemical treatment other than CO₂ sparging, dry ice or food grade vinegar.

S5. REPORTING AND RECORDKEEPING REQUIREMENTS

A. High Turbidity Reporting

Anytime sampling performed in accordance with Special Condition S4.C indicates turbidity has reached the 250 NTUs or more (or transparency less than or equal to 6 cm), high turbidity reporting level, the Permittee must notify Ecology within 24 hours of analysis either by calling the applicable Ecology Region's Environmental Report Tracking System (ERTS) number by phone or by submitting an electronic ERTS report (through Ecology's Water Quality Permitting Portal (WQWebPortal) – Permit Submittals when the form is available). See the CSWGP website for links to ERTS and the WQWebPortal. (<http://www.ecy.wa.gov/programs/wq/stormwater/construction/index.html>) Also, see phone numbers in Special Condition S4.C.5.b.i.

B. Discharge Monitoring Reports (DMRs)

Permittees required to conduct water quality sampling in accordance with Special Conditions S4.C (Turbidity/Transparency), S4.D (pH), S8 (303[d]/TMDL sampling), and/or G12 (Additional Sampling) must submit the results to Ecology.

Permittees must submit monitoring data using Ecology's WQWebDMR web application accessed through Ecology's Water Quality Permitting Portal.

Permittees unable to submit electronically (for example, those who do not have an internet connection) must contact Ecology to request a waiver and obtain instructions on how to obtain a paper copy DMR at:

Department of Ecology
Water Quality Program - Construction Stormwater
PO Box 47696
Olympia, WA 98504-7696

Permittees who obtain a waiver not to use WQWebDMR must use the forms provided to them by Ecology; submittals must be mailed to the address above. Permittees must submit DMR forms to be received by Ecology within 15 days following the end of each month.

If there was no discharge during a given monitoring period, all Permittees must submit a DMR as required with "no discharge" entered in place of the monitoring results. DMRs are required for the full duration of permit coverage (from the first full month following the effective date of permit coverage up until Ecology has approved termination of the coverage). For more information, contact Ecology staff using information provided at the following website: www.ecy.wa.gov/programs/wq/permits/paris/contacts.html.

C. Records Retention

The Permittee must retain records of all monitoring information (site log book, sampling results, inspection reports/checklists, etc.), Stormwater Pollution Prevention Plan, copy of the permit coverage letter (including Transfer of Coverage documentation) and any other documentation of compliance with permit requirements for the entire life of the construction project and for a minimum of five (5) years following the termination of permit coverage. Such information must include all calibration and maintenance records, and records of all data used to complete the application for this permit. This period of retention must be extended during

the course of any unresolved litigation regarding the discharge of pollutants by the Permittee or when requested by Ecology.

D. Recording Results

For each measurement or sample taken, the Permittee must record the following information:

1. Date, place, method, and time of sampling or measurement.
2. The first and last name of the individual who performed the sampling or measurement.
3. The date(s) the analyses were performed.
4. The first and last name of the individual who performed the analyses.
5. The analytical techniques or methods used.
6. The results of all analyses.

E. Additional Monitoring by the Permittee

If the Permittee samples or monitors any pollutant more frequently than required by this permit using test procedures specified by Special Condition S4 of this permit, the sampling results for this monitoring must be included in the calculation and reporting of the data submitted in the Permittee's DMR.

F. Noncompliance Notification

In the event the Permittee is unable to comply with any part of the terms and conditions of this permit, and the resulting noncompliance may cause a threat to human health or the environment (such as but not limited to spills or fuels or other materials, catastrophic pond or slope failure, and discharges that violate water quality standards), or exceed numeric effluent limitations (see S8 – Discharges to 303(d) or TMDL Waterbodies), the Permittee must, upon becoming aware of the circumstance:

1. Notify Ecology within 24 hours of the failure to comply by calling the applicable Regional office ERTS phone number (refer to Special Condition S4.C.5.b.i, or go to <https://ecology.wa.gov/About-us/Get-involved/Report-an-environmental-issue> to find contact information for the regional offices.)
2. Immediately take action to prevent the discharge/pollution, or otherwise stop or correct the noncompliance, and, if applicable, repeat sampling and analysis of any noncompliance immediately and submit the results to Ecology within five (5) days of becoming aware of the violation (See S5.F.3, below, for details on submitting results in a report).
3. Submit a detailed written report to Ecology within five (5) days of the time the Permittee becomes aware of the circumstances, unless requested earlier by Ecology. The report must be submitted using Ecology's Water Quality Permitting Portal (WQWebPortal) – Permit Submittals, unless a waiver from electronic reporting has been granted according to S5.B. The report must contain a description of the noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The Permittee must report any unanticipated bypass and/or upset that exceeds any effluent limit in the permit in accordance with the 24-hour reporting requirement contained in 40 C.F.R. 122.41(l)(6).

Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with the terms and conditions of this permit or the resulting liability for failure to comply. Upon request of the Permittee, Ecology may waive the requirement for a written report on a case-by-case basis, if the immediate notification is received by Ecology within 24 hours.

G. Access to Plans and Records

1. The Permittee must retain the following permit documentation (plans and records) on site, or within reasonable access to the site, for use by the operator or for on-site review by Ecology or the local jurisdiction:
 - a. General Permit
 - b. Permit Coverage Letter
 - c. Stormwater Pollution Prevention Plan (SWPPP)
 - d. Site Log Book
 - e. Erosivity Waiver (if applicable)
2. The Permittee must address written requests for plans and records listed above (Special Condition S5.G.1) as follows:
 - a. The Permittee must provide a copy of plans and records to Ecology within 14 days of receipt of a written request from Ecology.
 - b. The Permittee must provide a copy of plans and records to the public when requested in writing. Upon receiving a written request from the public for the Permittee's plans and records, the Permittee must either:
 - i. Provide a copy of the plans and records to the requester within 14 days of a receipt of the written request; *or*
 - ii. Notify the requester within 10 days of receipt of the written request of the location and times within normal business hours when the plans and records may be viewed; and provide access to the plans and records within 14 days of receipt of the written request; *or*

Within 14 days of receipt of the written request, the Permittee may submit a copy of the plans and records to Ecology for viewing and/or copying by the requester at an Ecology office, or a mutually agreed location. If plans and records are viewed and/or copied at a location other than at an Ecology office, the Permittee will provide reasonable access to copying services for which a reasonable fee may be charged. The Permittee must notify the requester within 10 days of receipt of the request where the plans and records may be viewed and/or copied.

S6. PERMIT FEES

The Permittee must pay permit fees assessed by Ecology. Fees for stormwater discharges covered under this permit are established by Chapter 173-224 WAC. Ecology continues to assess permit fees until the permit is terminated in accordance with Special Condition S10 or revoked in accordance with General Condition G5.

S7. SOLID AND LIQUID WASTE DISPOSAL

The Permittee must handle and dispose of solid and liquid wastes generated by construction activity, such as demolition debris, construction materials, contaminated materials, and waste materials from maintenance activities, including liquids and solids from cleaning catch basins and other stormwater facilities, in accordance with:

- A. Special Condition S3, Compliance with Standards.
- B. WAC 173-216-110.
- C. Other applicable regulations.

S8. DISCHARGES TO 303(d) OR TMDL WATERBODIES

A. Sampling and Numeric Effluent Limits For Certain Discharges to 303(d)-Listed Water Bodies

1. Permittees who discharge to segments of water bodies listed as impaired by the State of Washington under Section 303(d) of the Clean Water Act for turbidity, fine sediment, high pH, or phosphorus, must conduct water quality sampling according to the requirements of this section, and Special Conditions S4.C.2.b-f and S4.C.3.b-d, and must comply with the applicable numeric effluent limitations in S8.C and S8.D.
2. All references and requirements associated with Section 303(d) of the Clean Water Act mean the most current listing by Ecology of impaired waters (Category 5) that exists on January 1, 2021, or the date when the operator's complete permit application is received by Ecology, whichever is later.

B. Limits on Coverage for New Discharges to TMDL or 303(d)-Listed Waters

Construction sites that discharge to a TMDL or 303(d)-listed waterbody are not eligible for coverage under this permit *unless* the operator:

1. Prevents exposing stormwater to pollutants for which the waterbody is impaired, and retains documentation in the SWPPP that details procedures taken to prevent exposure on site; *or*
2. Documents that the pollutants for which the waterbody is impaired are not present at the site, and retains documentation of this finding within the SWPPP; *or*
3. Provides Ecology with data indicating the discharge is not expected to cause or contribute to an exceedance of a water quality standard, and retains such data on site with the SWPPP. The operator must provide data and other technical information to Ecology that sufficiently demonstrate:
 - a. For discharges to waters without an EPA-approved or -established TMDL, that the discharge of the pollutant for which the water is impaired will meet in-stream water quality criteria at the point of discharge to the waterbody; *or*
 - b. For discharges to waters with an EPA-approved or -established TMDL, that there is sufficient remaining wasteload allocation in the TMDL to allow construction stormwater discharge and that existing dischargers to the waterbody are subject to compliance schedules designed to bring the waterbody into attainment with water quality standards.

Operators of construction sites are eligible for coverage under this permit only after Ecology makes an affirmative determination that the *discharge will not cause or contribute to the existing impairment or exceed the TMDL*.

C. Sampling and Numeric Effluent Limits for Discharges to Water Bodies on the 303(d) List for Turbidity, Fine Sediment, or Phosphorus

1. Permittees who discharge to segments of water bodies on the 303(d) list (Category 5) for turbidity, fine sediment, or phosphorus must conduct turbidity sampling in accordance with Special Condition S4.C.2 and comply with either of the numeric effluent limits noted in Table 5 below.
2. As an alternative to the 25 NTUs effluent limit noted in Table 5 below (applied at the point where stormwater [or authorized non-stormwater] is discharged off-site), Permittees may choose to comply with the surface water quality standard for turbidity. The standard is: no more than 5 NTUs over background turbidity when the background turbidity is 50 NTUs or less, or no more than a 10% increase in turbidity when the background turbidity is more than 50 NTUs. In order to use the water quality standard requirement, the sampling must take place at the following locations:
 - a. Background turbidity in the 303(d)-listed receiving water immediately upstream (upgradient) or outside the area of influence of the discharge.
 - b. Turbidity at the point of discharge into the 303(d)-listed receiving water, inside the area of influence of the discharge.
3. Discharges that exceed the numeric effluent limit for turbidity constitute a violation of this permit.
4. Permittees whose discharges exceed the numeric effluent limit must sample discharges daily until the violation is corrected and comply with the non-compliance notification requirements in Special Condition S5.F.

Table 5 Turbidity, Fine Sediment & Phosphorus Sampling and Limits for 303(d)-Listed Waters

Parameter identified in 303(d) listing	Parameter Sampled	Unit	Analytical Method	Sampling Frequency	Numeric Effluent Limit ¹
<ul style="list-style-type: none"> • Turbidity • Fine Sediment • Phosphorus 	Turbidity	NTU	SM2130	Weekly, if discharging	25 NTUs, at the point where stormwater is discharged from the site; <i>OR</i> In compliance with the surface water quality standard for turbidity (S8.C.2.a)

¹ Permittees subject to a numeric effluent limit for turbidity may, at their discretion, choose either numeric effluent limitation based on site-specific considerations including, but not limited to, safety, access and convenience.

D. Discharges to Water Bodies on the 303(d) List for High pH

1. Permittees who discharge to segments of water bodies on the 303(d) list (Category 5) for high pH must conduct pH sampling in accordance with the table below, and comply with the numeric effluent limit of pH 6.5 to 8.5 su (Table 6).

Table 6 pH Sampling and Limits for 303(d)-Listed Waters

Parameter identified in 303(d) listing	Parameter Sampled/Units	Analytical Method	Sampling Frequency	Numeric Effluent Limit
High pH	pH /Standard Units	pH meter	Weekly, if discharging	In the range of 6.5 – 8.5 su

2. At the Permittee's discretion, compliance with the limit shall be assessed at one of the following locations:
 - a. Directly in the 303(d)-listed waterbody segment, inside the immediate area of influence of the discharge; *or*
 - b. Alternatively, the Permittee may measure pH at the point where the discharge leaves the construction site, rather than in the receiving water.
3. Discharges that exceed the numeric effluent limit for pH (outside the range of 6.5 – 8.5 su) constitute a violation of this permit.
4. Permittees whose discharges exceed the numeric effluent limit must sample discharges daily until the violation is corrected and comply with the non-compliance notification requirements in Special Condition S5.F.

E. Sampling and Limits for Sites Discharging to Waters Covered by a TMDL or another Pollution Control Plan

1. Discharges to a waterbody that is subject to a Total Maximum Daily Load (TMDL) for turbidity, fine sediment, high pH, or phosphorus must be consistent with the TMDL. Refer to <http://www.ecy.wa.gov/programs/wq/tmdl/TMDLsbyWria/TMDLbyWria.html> for more information on TMDLs.
 - a. Where an applicable TMDL sets specific waste load allocations or requirements for discharges covered by this permit, discharges must be consistent with any specific waste load allocations or requirements established by the applicable TMDL.
 - i. The Permittee must sample discharges weekly, unless otherwise specified by the TMDL, to evaluate compliance with the specific waste load allocations or requirements.
 - ii. Analytical methods used to meet the monitoring requirements must conform to the latest revision of the *Guidelines Establishing Test Procedures for the Analysis of Pollutants* contained in 40 CFR Part 136.
 - iii. Turbidity and pH methods need not be accredited or registered unless conducted at a laboratory which must otherwise be accredited or registered.
 - b. Where an applicable TMDL has established a general waste load allocation for construction stormwater discharges, but has not identified specific requirements, compliance with Special Conditions S4 (Monitoring) and S9 (SWPPPs) will constitute compliance with the approved TMDL.
 - c. Where an applicable TMDL has not specified a waste load allocation for construction stormwater discharges, but has not excluded these discharges, compliance with Special Conditions S4 (Monitoring) and S9 (SWPPPs) will constitute compliance with the approved TMDL.
 - d. Where an applicable TMDL specifically precludes or prohibits discharges from construction activity, the operator is not eligible for coverage under this permit.

S9. STORMWATER POLLUTION PREVENTION PLAN

The Permittee must prepare and properly implement an adequate Stormwater Pollution Prevention Plan (SWPPP) for construction activity in accordance with the requirements of this permit beginning with initial soil disturbance and until final stabilization.

A. The Permittee's SWPPP must meet the following objectives:

1. To identify best management practices (BMPs) which prevent erosion and sedimentation, and to reduce, eliminate or prevent stormwater contamination and water pollution from construction activity.
2. To prevent violations of surface water quality, groundwater quality, or sediment management standards.
3. To control peak volumetric flow rates and velocities of stormwater discharges.

B. General Requirements

1. The SWPPP must include a narrative and drawings. All BMPs must be clearly referenced in the narrative and marked on the drawings. The SWPPP narrative must include documentation to explain and justify the pollution prevention decisions made for the project. Documentation must include:
 - a. Information about existing site conditions (topography, drainage, soils, vegetation, etc.).
 - b. Potential erosion problem areas.
 - c. The 13 elements of a SWPPP in Special Condition S9.D.1-13, including BMPs used to address each element.
 - d. Construction phasing/sequence and general BMP implementation schedule.
 - e. The actions to be taken if BMP performance goals are not achieved—for example, a contingency plan for additional treatment and/or storage of stormwater that would violate the water quality standards if discharged.
 - f. Engineering calculations for ponds, treatment systems, and any other designed structures. When a treatment system requires engineering calculations, these calculations must be included in the SWPPP. Engineering calculations do not need to be included in the SWPPP for treatment systems that do not require such calculations.
2. The Permittee must modify the SWPPP if, during inspections or investigations conducted by the owner/operator, or the applicable local or state regulatory authority, it is determined that the SWPPP is, or would be, ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site. The Permittee must then:
 - a. Review the SWPPP for compliance with Special Condition S9 and make appropriate revisions within 7 days of the inspection or investigation.
 - b. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, addressing the problems no later than 10 days from the inspection or investigation. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when an extension is requested by a Permittee within the initial 10-day response period.
 - c. Document BMP implementation and maintenance in the site log book.

The Permittee must modify the SWPPP whenever there is a change in design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to waters of the State.

C. Stormwater Best Management Practices (BMPs)

BMPs must be consistent with:

1. *Stormwater Management Manual for Western Washington* (most current approved edition at the time this permit was issued), for sites west of the crest of the Cascade Mountains; *or*

2. *Stormwater Management Manual for Eastern Washington* (most current approved edition at the time this permit was issued), for sites east of the crest of the Cascade Mountains; *or*
3. Revisions to the manuals listed in Special Condition S9.C.1 & 2, or other stormwater management guidance documents or manuals which provide an equivalent level of pollution prevention, that are approved by Ecology and incorporated into this permit in accordance with the permit modification requirements of WAC 173-226-230; *or*
4. Documentation in the SWPPP that the BMPs selected provide an equivalent level of pollution prevention, compared to the applicable stormwater management manuals, including:
 - a. The technical basis for the selection of all stormwater BMPs (scientific, technical studies, and/or modeling) that support the performance claims for the BMPs being selected.
 - b. An assessment of how the selected BMP will satisfy AKART requirements and the applicable federal technology-based treatment requirements under 40 CFR part 125.3.

D. SWPPP – Narrative Contents and Requirements

The Permittee must include each of the 13 elements below in Special Condition S9.D.1-13 in the narrative of the SWPPP and implement them unless site conditions render the element unnecessary and the exemption from that element is clearly justified in the SWPPP.

1. Preserve Vegetation/Mark Clearing Limits
 - a. Before beginning land-disturbing activities, including clearing and grading, clearly mark all clearing limits, sensitive areas and their buffers, and trees that are to be preserved within the construction area.
 - b. Retain the duff layer, native topsoil, and natural vegetation in an undisturbed state to the maximum degree practicable.
2. Establish Construction Access
 - a. Limit construction vehicle access and exit to one route, if possible.
 - b. Stabilize access points with a pad of quarry spalls, crushed rock, or other equivalent BMPs, to minimize tracking sediment onto roads.
 - c. Locate wheel wash or tire baths on site, if the stabilized construction entrance is not effective in preventing tracking sediment onto roads.
 - d. If sediment is tracked off site, clean the affected roadway thoroughly at the end of each day, or more frequently as necessary (for example, during wet weather). Remove sediment from roads by shoveling, sweeping, or pickup and transport of the sediment to a controlled sediment disposal area.
 - e. Conduct street washing only after sediment removal in accordance with Special Condition S9.D.2.d.
 - f. Control street wash wastewater by pumping back on site or otherwise preventing it from discharging into systems tributary to waters of the State.

3. Control Flow Rates

- a. Protect properties and waterways downstream of construction sites from erosion and the associated discharge of turbid waters due to increases in the velocity and peak volumetric flow rate of stormwater runoff from the project site, as required by local plan approval authority.
- b. Where necessary to comply with Special Condition S9.D.3.a, construct stormwater infiltration or detention BMPs as one of the first steps in grading. Assure that detention BMPs function properly before constructing site improvements (for example, impervious surfaces).
- c. If permanent infiltration ponds are used for flow control during construction, protect these facilities from sedimentation during the construction phase.

4. Install Sediment Controls

The Permittee must design, install and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, the Permittee must:

- a. Construct sediment control BMPs (sediment ponds, traps, filters, infiltration facilities, etc.) as one of the first steps in grading. These BMPs must be functional before other land disturbing activities take place.
- b. Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site.
- c. Direct stormwater runoff from disturbed areas through a sediment pond or other appropriate sediment removal BMP, before the runoff leaves a construction site or before discharge to an infiltration facility. Runoff from fully stabilized areas may be discharged without a sediment removal BMP, but must meet the flow control performance standard of Special Condition S9.D.3.a.
- d. Locate BMPs intended to trap sediment on site in a manner to avoid interference with the movement of juvenile salmonids attempting to enter off-channel areas or drainages.
- e. Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration, unless infeasible.
- f. Where feasible, design outlet structures that withdraw impounded stormwater from the surface to avoid discharging sediment that is still suspended lower in the water column.

5. Stabilize Soils

- a. The Permittee must stabilize exposed and unworked soils by application of effective BMPs that prevent erosion. Applicable BMPs include, but are not limited to: temporary and permanent seeding, sodding, mulching, plastic covering, erosion

control fabrics and matting, soil application of polyacrylamide (PAM), the early application of gravel base on areas to be paved, and dust control.

- b. The Permittee must control stormwater volume and velocity within the site to minimize soil erosion.
- c. The Permittee must control stormwater discharges, including both peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion.
- d. Depending on the geographic location of the project, the Permittee must not allow soils to remain exposed and unworked for more than the time periods set forth below to prevent erosion.

West of the Cascade Mountains Crest

During the dry season (May 1 - September 30): 7 days

During the wet season (October 1 - April 30): 2 days

East of the Cascade Mountains Crest, except for Central Basin*

During the dry season (July 1 - September 30): 10 days

During the wet season (October 1 - June 30): 5 days

The Central Basin*, East of the Cascade Mountains Crest

During the dry Season (July 1 - September 30): 30 days

During the wet season (October 1 - June 30): 15 days

***Note: The Central Basin** is defined as the portions of Eastern Washington with mean annual precipitation of less than 12 inches.

- e. The Permittee must stabilize soils at the end of the shift before a holiday or weekend if needed based on the weather forecast.
- f. The Permittee must stabilize soil stockpiles from erosion, protected with sediment trapping measures, and where possible, be located away from storm drain inlets, waterways, and drainage channels.
- g. The Permittee must minimize the amount of soil exposed during construction activity.
- h. The Permittee must minimize the disturbance of steep slopes.
- i. The Permittee must minimize soil compaction and, unless infeasible, preserve topsoil.

6. Protect Slopes

- a. The Permittee must design and construct cut-and-fill slopes in a manner to minimize erosion. Applicable practices include, but are not limited to, reducing continuous length of slope with terracing and diversions, reducing slope steepness, and roughening slope surfaces (for example, track walking).
- b. The Permittee must divert off-site stormwater (run-on) or groundwater away from slopes and disturbed areas with interceptor dikes, pipes, and/or swales. Off-site stormwater should be managed separately from stormwater generated on the site.
- c. At the top of slopes, collect drainage in pipe slope drains or protected channels to prevent erosion.

- i. West of the Cascade Mountains Crest: Temporary pipe slope drains must handle the peak 10-minute flow rate from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. Alternatively, the 10-year, 1-hour flow rate predicted by an approved continuous runoff model, increased by a factor of 1.6, may be used. The hydrologic analysis must use the existing land cover condition for predicting flow rates from tributary areas outside the project limits. For tributary areas on the project site, the analysis must use the temporary or permanent project land cover condition, whichever will produce the highest flow rates. If using the Western Washington Hydrology Model (WWHM) to predict flows, bare soil areas should be modeled as "landscaped area."
 - ii. East of the Cascade Mountains Crest: Temporary pipe slope drains must handle the expected peak flow rate from a 6-month, 3-hour storm for the developed condition, referred to as the short duration storm.
- d. Place excavated material on the uphill side of trenches, consistent with safety and space considerations.
- e. Place check dams at regular intervals within constructed channels that are cut down a slope.
- 7. Protect Drain Inlets
 - a. Protect all storm drain inlets made operable during construction so that stormwater runoff does not enter the conveyance system without first being filtered or treated to remove sediment.
 - b. Clean or remove and replace inlet protection devices when sediment has filled one-third of the available storage (unless a different standard is specified by the product manufacturer).
- 8. Stabilize Channels and Outlets
 - a. Design, construct and stabilize all on-site conveyance channels to prevent erosion from the following expected peak flows:
 - i. West of the Cascade Mountains Crest: Channels must handle the peak 10-minute flow rate from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. Alternatively, the 10-year, 1-hour flow rate indicated by an approved continuous runoff model, increased by a factor of 1.6, may be used. The hydrologic analysis must use the existing land cover condition for predicting flow rates from tributary areas outside the project limits. For tributary areas on the project site, the analysis must use the temporary or permanent project land cover condition, whichever will produce the highest flow rates. If using the WWHM to predict flows, bare soil areas should be modeled as "landscaped area."
 - ii. East of the Cascade Mountains Crest: Channels must handle the expected peak flow rate from a 6-month, 3-hour storm for the developed condition, referred to as the short duration storm.
 - b. Provide stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes, and downstream reaches at the outlets of all conveyance systems.

9. Control Pollutants

Design, install, implement and maintain effective pollution prevention measures to minimize the discharge of pollutants. The Permittee must:

- a. Handle and dispose of all pollutants, including waste materials and demolition debris that occur on site in a manner that does not cause contamination of stormwater.
- b. Provide cover, containment, and protection from vandalism for all chemicals, liquid products, petroleum products, and other materials that have the potential to pose a threat to human health or the environment. Minimize storage of hazardous materials on-site. Safety Data Sheets (SDS) should be supplied for all materials stored. Chemicals should be kept in their original labeled containers. On-site fueling tanks must include secondary containment. Secondary containment means placing tanks or containers within an impervious structure capable of containing 110% of the volume of the largest tank within the containment structure. Double-walled tanks do not require additional secondary containment.
- c. Conduct maintenance, fueling, and repair of heavy equipment and vehicles using spill prevention and control measures. Clean contaminated surfaces immediately following any spill incident.
- d. Discharge wheel wash or tire bath wastewater to a separate on-site treatment system that prevents discharge to surface water, such as closed-loop recirculation or upland land application, or to the sanitary sewer with local sewer district approval.
- e. Apply fertilizers and pesticides in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Follow manufacturers' label requirements for application rates and procedures.
- f. Use BMPs to prevent contamination of stormwater runoff by pH-modifying sources. The sources for this contamination include, but are not limited to: bulk cement, cement kiln dust, fly ash, new concrete washing and curing waters, recycled concrete stockpiles, waste streams generated from concrete grinding and sawing, exposed aggregate processes, dewatering concrete vaults, concrete pumping and mixer washout waters. (Also refer to the definition for "concrete wastewater" in Appendix A – Definitions.)
- g. Adjust the pH of stormwater or authorized non-stormwater if necessary to prevent an exceedance of groundwater and/or surface water quality standards.
- h. Assure that washout of concrete trucks is performed off-site or in designated concrete washout areas only. Do not wash out concrete truck drums onto the ground, or into storm drains, open ditches, streets, or streams. Washout of small concrete handling equipment may be disposed of in a formed area awaiting concrete where it will not contaminate surface or groundwater. Do not dump excess concrete on site, except in designated concrete washout areas. Concrete spillage or concrete discharge directly to groundwater or surface waters of the State is

prohibited. At no time shall concrete be washed off into the footprint of an area where an infiltration BMP will be installed.

- i. Obtain written approval from Ecology before using any chemical treatment, with the exception of CO₂, dry ice or food grade vinegar, to adjust pH.
- j. Uncontaminated water from water-only based shaft drilling for construction of building, road, and bridge foundations may be infiltrated provided the wastewater is managed in a way that prohibits discharge to surface waters. Prior to infiltration, water from water-only based shaft drilling that comes into contact with curing concrete must be neutralized until pH is in the range of 6.5 to 8.5 (su).

10. Control Dewatering

- a. Permittees must discharge foundation, vault, and trench dewatering water, which have characteristics similar to stormwater runoff at the site, in conjunction with BMPs to reduce sedimentation before discharge to a sediment trap or sediment pond.
- b. Permittees may discharge clean, non-turbid dewatering water, such as well-point groundwater, to systems tributary to, or directly into surface waters of the State, as specified in Special Condition S9.D.8, provided the dewatering flow does not cause erosion or flooding of receiving waters. Do not route clean dewatering water through stormwater sediment ponds. Note that "surface waters of the State" may exist on a construction site as well as off site; for example, a creek running through a site.
- c. Other dewatering treatment or disposal options may include:
 - i. Infiltration
 - ii. Transport off site in a vehicle, such as a vacuum flush truck, for legal disposal in a manner that does not pollute state waters.
 - iii. Ecology-approved on-site chemical treatment or other suitable treatment technologies (See S9.D.9.i, regarding chemical treatment written approval).
 - iv. Sanitary or combined sewer discharge with local sewer district approval, if there is no other option.
 - v. Use of a sedimentation bag with discharge to a ditch or swale for small volumes of localized dewatering.
- d. Permittees must handle highly turbid or contaminated dewatering water separately from stormwater.

11. Maintain BMPs

- a. Permittees must maintain and repair all temporary and permanent erosion and sediment control BMPs as needed to assure continued performance of their intended function in accordance with BMP specifications.
- b. Permittees must remove all temporary erosion and sediment control BMPs within 30 days after achieving final site stabilization or after the temporary BMPs are no longer needed.

12. Manage the Project

- a. Phase development projects to the maximum degree practicable and take into account seasonal work limitations.
- b. Inspect, maintain and repair all BMPs as needed to assure continued performance of their intended function. Conduct site inspections and monitoring in accordance with Special Condition S4.
- c. Maintain, update, and implement the SWPPP in accordance with Special Conditions S3, S4, and S9.

13. Protect Low Impact Development (LID) BMPs

The primary purpose of on-site LID Stormwater Management is to reduce the disruption of the natural site hydrology through infiltration. LID BMPs are permanent facilities.

- a. Permittees must protect all LID BMPs (including, but not limited to, Bioretention and Rain Garden facilities) from sedimentation through installation and maintenance of erosion and sediment control BMPs on portions of the site that drain into the Bioretention and/or Rain Garden facilities. Restore the BMPs to their fully functioning condition if they accumulate sediment during construction. Restoring the facility must include removal of sediment and any sediment-laden bioretention/ rain garden soils, and replacing the removed soils with soils meeting the design specification.
- b. Permittees must maintain the infiltration capabilities of LID BMPs by protecting against compaction by construction equipment and foot traffic. Protect completed lawn and landscaped areas from compaction due to construction equipment.
- c. Permittees must control erosion and avoid introducing sediment from surrounding land uses onto permeable pavements. Do not allow muddy construction equipment on the base material or pavement. Do not allow sediment-laden runoff onto permeable pavements or base materials.
- d. Permittees must clean permeable pavements fouled with sediments or no longer passing an initial infiltration test using local stormwater manual methodology or the manufacturer's procedures.
- e. Permittees must keep all heavy equipment off existing soils under LID BMPs that have been excavated to final grade to retain the infiltration rate of the soils.

E. SWPPP – Map Contents and Requirements

The Permittee's SWPPP must also include a vicinity map or general location map (for example, a USGS quadrangle map, a portion of a county or city map, or other appropriate map) with enough detail to identify the location of the construction site and receiving waters within one mile of the site.

The SWPPP must also include a legible site map (or maps) showing the entire construction site. The following features must be identified, unless not applicable due to site conditions.

1. The direction of north, property lines, and existing structures and roads.
2. Cut and fill slopes indicating the top and bottom of slope catch lines.

3. Approximate slopes, contours, and direction of stormwater flow before and after major grading activities.
4. Areas of soil disturbance and areas that will not be disturbed.
5. Locations of structural and nonstructural controls (BMPs) identified in the SWPPP.
6. Locations of off-site material, stockpiles, waste storage, borrow areas, and vehicle/equipment storage areas.
7. Locations of all surface water bodies, including wetlands.
8. Locations where stormwater or non-stormwater discharges off-site and/or to a surface waterbody, including wetlands.
9. Location of water quality sampling station(s), if sampling is required by state or local permitting authority.
10. Areas where final stabilization has been accomplished and no further construction-phase permit requirements apply.
11. Location or proposed location of LID facilities.

S10. NOTICE OF TERMINATION

Partial terminations of permit coverage are not authorized.

A. The site is eligible for termination of coverage when it has met any of the following conditions:

1. The site has undergone final stabilization, the Permittee has removed all temporary BMPs (except biodegradable BMPs clearly manufactured with the intention for the material to be left in place and not interfere with maintenance or land use), and all stormwater discharges associated with construction activity have been eliminated; *or*
2. All portions of the site that have not undergone final stabilization per Special Condition S10.A.1 have been sold and/or transferred (per Special Condition S2.A), and the Permittee no longer has operational control of the construction activity; *or*
3. For residential construction only, the Permittee has completed temporary stabilization and the homeowners have taken possession of the residences.

B. When the site is eligible for termination, the Permittee must submit a complete and accurate Notice of Termination (NOT) form, signed in accordance with General Condition G2, to:

Department of Ecology
Water Quality Program - Construction Stormwater
PO Box 47696
Olympia, WA 98504-7696

When an electronic termination form is available, the Permittee may choose to submit a complete and accurate Notice of Termination (NOT) form through the Water Quality Permitting Portal rather than mailing a hardcopy as noted above.

The termination is effective on the 31st calendar day following the date Ecology receives a complete NOT form, unless Ecology notifies the Permittee that termination request is denied because the Permittee has not met the eligibility requirements in Special Condition S10.A.

Permittees are required to comply with all conditions and effluent limitations in the permit until the permit has been terminated.

Permittees transferring the property to a new property owner or operator/Permittee are required to complete and submit the Notice of Transfer form to Ecology, but are not required to submit a Notice of Termination form for this type of transaction.

GENERAL CONDITIONS

G1. DISCHARGE VIOLATIONS

All discharges and activities authorized by this general permit must be consistent with the terms and conditions of this general permit. Any discharge of any pollutant more frequent than or at a level in excess of that identified and authorized by the general permit must constitute a violation of the terms and conditions of this permit.

G2. SIGNATORY REQUIREMENTS

- A. All permit applications must bear a certification of correctness to be signed:
 - 1. In the case of corporations, by a responsible corporate officer.
 - 2. In the case of a partnership, by a general partner of a partnership.
 - 3. In the case of sole proprietorship, by the proprietor.
 - 4. In the case of a municipal, state, or other public facility, by either a principal executive officer or ranking elected official.
- B. All reports required by this permit and other information requested by Ecology (including NOIs, NOTs, and Transfer of Coverage forms) must be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - 1. The authorization is made in writing by a person described above and submitted to Ecology.
 - 2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.
- C. Changes to authorization. If an authorization under paragraph G2.B.2 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph G2.B.2 above must be submitted to Ecology prior to or together with any reports, information, or applications to be signed by an authorized representative.
- D. Certification. Any person signing a document under this section must make the following certification:

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

G3. RIGHT OF INSPECTION AND ENTRY

The Permittee must allow an authorized representative of Ecology, upon the presentation of credentials and such other documents as may be required by law:

- A.** To enter upon the premises where a discharge is located or where any records are kept under the terms and conditions of this permit.
- B.** To have access to and copy, at reasonable times and at reasonable cost, any records required to be kept under the terms and conditions of this permit.
- C.** To inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, methods, or operations regulated or required under this permit.
- D.** To sample or monitor, at reasonable times, any substances or parameters at any location for purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act.

G4. GENERAL PERMIT MODIFICATION AND REVOCATION

This permit may be modified, revoked and reissued, or terminated in accordance with the provisions of Chapter 173-226 WAC. Grounds for modification, revocation and reissuance, or termination include, but are not limited to, the following:

- A.** When a change occurs in the technology or practices for control or abatement of pollutants applicable to the category of dischargers covered under this permit.
- B.** When effluent limitation guidelines or standards are promulgated pursuant to the CWA or Chapter 90.48 RCW, for the category of dischargers covered under this permit.
- C.** When a water quality management plan containing requirements applicable to the category of dischargers covered under this permit is approved, or
- D.** When information is obtained that indicates cumulative effects on the environment from dischargers covered under this permit are unacceptable.

G5. REVOCATION OF COVERAGE UNDER THE PERMIT

Pursuant to Chapter 43.21B RCW and Chapter 173-226 WAC, the Director may terminate coverage for any discharger under this permit for cause. Cases where coverage may be terminated include, but are not limited to, the following:

- A.** Violation of any term or condition of this permit.
- B.** Obtaining coverage under this permit by misrepresentation or failure to disclose fully all relevant facts.
- C.** A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.
- D.** Failure or refusal of the Permittee to allow entry as required in RCW 90.48.090.
- E.** A determination that the permitted activity endangers human health or the environment, or contributes to water quality standards violations.
- F.** Nonpayment of permit fees or penalties assessed pursuant to RCW 90.48.465 and Chapter 173-224 WAC.

- G.** Failure of the Permittee to satisfy the public notice requirements of WAC 173-226-130(5), when applicable.

The Director may require any discharger under this permit to apply for and obtain coverage under an individual permit or another more specific general permit. Permittees who have their coverage revoked for cause according to WAC 173-226-240 may request temporary coverage under this permit during the time an individual permit is being developed, provided the request is made within ninety (90) days from the time of revocation and is submitted along with a complete individual permit application form.

G6. REPORTING A CAUSE FOR MODIFICATION

The Permittee must submit a new application, or a supplement to the previous application, whenever a material change to the construction activity or in the quantity or type of discharge is anticipated which is not specifically authorized by this permit. This application must be submitted at least sixty (60) days prior to any proposed changes. Filing a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not relieve the Permittee of the duty to comply with the existing permit until it is modified or reissued.

G7. COMPLIANCE WITH OTHER LAWS AND STATUTES

Nothing in this permit will be construed as excusing the Permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.

G8. DUTY TO REAPPLY

The Permittee must apply for permit renewal at least 180 days prior to the specified expiration date of this permit. The Permittee must reapply using the electronic application form (NOI) available on Ecology's website. Permittees unable to submit electronically (for example, those who do not have an internet connection) must contact Ecology to request a waiver and obtain instructions on how to obtain a paper NOI.

Department of Ecology
Water Quality Program - Construction Stormwater
PO Box 47696
Olympia, WA 98504-7696

G9. REMOVED SUBSTANCE

The Permittee must not re-suspend or reintroduce collected screenings, grit, solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of stormwater to the final effluent stream for discharge to state waters.

G10. DUTY TO PROVIDE INFORMATION

The Permittee must submit to Ecology, within a reasonable time, all information that Ecology may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee must also submit to Ecology, upon request, copies of records required to be kept by this permit [40 CFR 122.41(h)].

G11. OTHER REQUIREMENTS OF 40 CFR

All other requirements of 40 CFR 122.41 and 122.42 are incorporated in this permit by reference.

G12. ADDITIONAL MONITORING

Ecology may establish specific monitoring requirements in addition to those contained in this permit by administrative order or permit modification.

G13. PENALTIES FOR VIOLATING PERMIT CONDITIONS

Any person who is found guilty of willfully violating the terms and conditions of this permit shall be deemed guilty of a crime, and upon conviction thereof shall be punished by a fine of up to ten thousand dollars (\$10,000) and costs of prosecution, or by imprisonment at the discretion of the court. Each day upon which a willful violation occurs may be deemed a separate and additional violation.

Any person who violates the terms and conditions of a waste discharge permit shall incur, in addition to any other penalty as provided by law, a civil penalty in the amount of up to ten thousand dollars (\$10,000) for every such violation. Each and every such violation shall be a separate and distinct offense, and in case of a continuing violation, every day's continuance shall be deemed to be a separate and distinct violation.

G14. UPSET

Definition – "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of the following paragraph are met.

A Permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that: 1) an upset occurred and that the Permittee can identify the cause(s) of the upset; 2) the permitted facility was being properly operated at the time of the upset; 3) the Permittee submitted notice of the upset as required in Special Condition S5.F, and; 4) the Permittee complied with any remedial measures required under this permit.

In any enforcement proceeding, the Permittee seeking to establish the occurrence of an upset has the burden of proof.

G15. PROPERTY RIGHTS

This permit does not convey any property rights of any sort, or any exclusive privilege.

G16. DUTY TO COMPLY

The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

G17. TOXIC POLLUTANTS

The Permittee must comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if this permit has not yet been modified to incorporate the requirement.

G18. PENALTIES FOR TAMPERING

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two years per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this condition, punishment shall be a fine of not more than \$20,000 per day of violation, or imprisonment of not more than four (4) years, or both.

G19. REPORTING PLANNED CHANGES

The Permittee must, as soon as possible, give notice to Ecology of planned physical alterations, modifications or additions to the permitted construction activity. The Permittee should be aware that, depending on the nature and size of the changes to the original permit, a new public notice and other permit process requirements may be required. Changes in activities that require reporting to Ecology include those that will result in:

- A.** The permitted facility being determined to be a new source pursuant to 40 CFR 122.29(b).
- B.** A significant change in the nature or an increase in quantity of pollutants discharged, including but not limited to: a 20% or greater increase in acreage disturbed by construction activity.
- C.** A change in or addition of surface water(s) receiving stormwater or non-stormwater from the construction activity.
- D.** A change in the construction plans and/or activity that affects the Permittee's monitoring requirements in Special Condition S4.

Following such notice, permit coverage may be modified, or revoked and reissued pursuant to 40 CFR 122.62(a) to specify and limit any pollutants not previously limited. Until such modification is effective, any new or increased discharge in excess of permit limits or not specifically authorized by this permit constitutes a violation.

G20. REPORTING OTHER INFORMATION

Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to Ecology, it must promptly submit such facts or information.

G21. REPORTING ANTICIPATED NON-COMPLIANCE

The Permittee must give advance notice to Ecology by submission of a new application or supplement thereto at least forty-five (45) days prior to commencement of such discharges, of any facility expansions, production increases, or other planned changes, such as process modifications, in the permitted facility or activity which may result in noncompliance with permit limits or conditions. Any maintenance of facilities, which might necessitate unavoidable interruption of

operation and degradation of effluent quality, must be scheduled during non-critical water quality periods and carried out in a manner approved by Ecology.

G22. REQUESTS TO BE EXCLUDED FROM COVERAGE UNDER THE PERMIT

Any discharger authorized by this permit may request to be excluded from coverage under the general permit by applying for an individual permit. The discharger must submit to the Director an application as described in WAC 173-220-040 or WAC 173-216-070, whichever is applicable, with reasons supporting the request. These reasons will fully document how an individual permit will apply to the applicant in a way that the general permit cannot. Ecology may make specific requests for information to support the request. The Director will either issue an individual permit or deny the request with a statement explaining the reason for the denial. When an individual permit is issued to a discharger otherwise subject to the construction stormwater general permit, the applicability of the construction stormwater general permit to that Permittee is automatically terminated on the effective date of the individual permit.

G23. APPEALS

- A.** The terms and conditions of this general permit, as they apply to the appropriate class of dischargers, are subject to appeal by any person within 30 days of issuance of this general permit, in accordance with Chapter 43.21B RCW, and Chapter 173-226 WAC.
- B.** The terms and conditions of this general permit, as they apply to an individual discharger, are appealable in accordance with Chapter 43.21B RCW within 30 days of the effective date of coverage of that discharger. Consideration of an appeal of general permit coverage of an individual discharger is limited to the general permit's applicability or nonapplicability to that individual discharger.
- C.** The appeal of general permit coverage of an individual discharger does not affect any other dischargers covered under this general permit. If the terms and conditions of this general permit are found to be inapplicable to any individual discharger(s), the matter shall be remanded to Ecology for consideration of issuance of an individual permit or permits.

G24. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit, or application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

G25. BYPASS PROHIBITED

A. Bypass Procedures

Bypass, which is the intentional diversion of waste streams from any portion of a treatment facility, is prohibited for stormwater events below the design criteria for stormwater management. Ecology may take enforcement action against a Permittee for bypass unless one of the following circumstances (1, 2, 3 or 4) is applicable.

- 1. Bypass of stormwater is consistent with the design criteria and part of an approved management practice in the applicable stormwater management manual.
- 2. Bypass for essential maintenance without the potential to cause violation of permit limits or conditions.

Bypass is authorized if it is for essential maintenance and does not have the potential to cause violations of limitations or other conditions of this permit, or adversely impact public health.

3. Bypass of stormwater is unavoidable, unanticipated, and results in noncompliance of this permit.

This bypass is permitted only if:

- a. Bypass is unavoidable to prevent loss of life, personal injury, or severe property damage. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass.
 - b. There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, maintenance during normal periods of equipment downtime (but not if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance), or transport of untreated wastes to another treatment facility.
 - c. Ecology is properly notified of the bypass as required in Special Condition S5.F of this permit.
4. A planned action that would cause bypass of stormwater and has the potential to result in noncompliance of this permit during a storm event.

The Permittee must notify Ecology at least thirty (30) days before the planned date of bypass. The notice must contain:

- a. A description of the bypass and its cause
 - b. An analysis of all known alternatives which would eliminate, reduce, or mitigate the need for bypassing.
 - c. A cost-effectiveness analysis of alternatives including comparative resource damage assessment.
 - d. The minimum and maximum duration of bypass under each alternative.
 - e. A recommendation as to the preferred alternative for conducting the bypass.
 - f. The projected date of bypass initiation.
 - g. A statement of compliance with SEPA.
 - h. A request for modification of water quality standards as provided for in WAC 173-201A-110, if an exceedance of any water quality standard is anticipated.
 - i. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass.
5. For probable construction bypasses, the need to bypass is to be identified as early in the planning process as possible. The analysis required above must be considered during

preparation of the Stormwater Pollution Prevention Plan (SWPPP) and must be included to the extent practical. In cases where the probable need to bypass is determined early, continued analysis is necessary up to and including the construction period in an effort to minimize or eliminate the bypass.

Ecology will consider the following before issuing an administrative order for this type bypass:

- a. If the bypass is necessary to perform construction or maintenance-related activities essential to meet the requirements of this permit.
- b. If there are feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment down time, or transport of untreated wastes to another treatment facility.
- c. If the bypass is planned and scheduled to minimize adverse effects on the public and the environment.

After consideration of the above and the adverse effects of the proposed bypass and any other relevant factors, Ecology will approve, conditionally approve, or deny the request. The public must be notified and given an opportunity to comment on bypass incidents of significant duration, to the extent feasible. Approval of a request to bypass will be by administrative order issued by Ecology under RCW 90.48.120.

B. Duty to Mitigate

The Permittee is required to take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

APPENDIX A – DEFINITIONS

AKART is an acronym for “**All Known, Available, and Reasonable** methods of prevention, control, and Treatment.” AKART represents the most current methodology that can be reasonably required for preventing, controlling, or abating the pollutants and controlling pollution associated with a discharge.

Applicable TMDL means a TMDL for turbidity, fine sediment, high pH, or phosphorus, which was completed and approved by EPA before January 1, 2021, or before the date the operator’s complete permit application is received by Ecology, whichever is later. TMDLs completed after a complete permit application is received by Ecology become applicable to the Permittee only if they are imposed through an administrative order by Ecology, or through a modification of permit coverage.

Applicant means an *operator* seeking coverage under this permit.

Benchmark means a pollutant concentration used as a permit threshold, below which a pollutant is considered unlikely to cause a water quality violation, and above which it may. When pollutant concentrations exceed benchmarks, corrective action requirements take effect. Benchmark values are not water quality standards and are not numeric effluent limitations; they are indicator values.

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control stormwater associated with construction activity, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Buffer means an area designated by a local jurisdiction that is contiguous to and intended to protect a sensitive area.

Bypass means the intentional diversion of waste streams from any portion of a treatment facility.

Calendar Day A period of 24 consecutive hours starting at 12:00 midnight and ending the following 12:00 midnight.

Calendar Week (same as **Week**) means a period of seven consecutive days starting at 12:01 a.m. (0:01 hours) on Sunday.

Certified Erosion and Sediment Control Lead (CESCL) means a person who has current certification through an approved erosion and sediment control training program that meets the minimum training standards established by Ecology (See BMP C160 in the SWMM).

Chemical Treatment means the addition of chemicals to stormwater and/or authorized non-stormwater prior to filtration and discharge to surface waters.

Clean Water Act (CWA) means the Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, and 97-117; USC 1251 et seq.

Combined Sewer means a sewer which has been designed to serve as a sanitary sewer and a storm sewer, and into which inflow is allowed by local ordinance.

Common Plan of Development or Sale means a site where multiple separate and distinct construction activities may be taking place at different times on different schedules and/or by different contractors, but still under a single plan. Examples include: 1) phased projects and projects with multiple filings or lots, even if the separate phases or filings/lots will be constructed under separate contract or by separate owners (e.g., a development where lots are sold to separate builders); 2) a development plan that may be phased over multiple years, but is still under a consistent plan for long-term development; 3) projects in a contiguous area that may be unrelated but still under the same contract, such as construction of a building extension and a new parking lot at the same facility; and 4) linear projects such as roads, pipelines, or utilities. If the project is part of a common plan of development or sale, the disturbed area of the entire plan must be used in determining permit requirements.

Composite Sample means a mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite" (collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increases while maintaining a constant time interval between the aliquots).

Concrete Wastewater means any water used in the production, pouring and/or clean-up of concrete or concrete products, and any water used to cut, grind, wash, or otherwise modify concrete or concrete products. Examples include water used for or resulting from concrete truck/mixer/pumper/tool/chute rinsing or washing, concrete saw cutting and surfacing (sawing, coring, grinding, roughening, hydro-demolition, bridge and road surfacing). When stormwater comes in contact with concrete wastewater, the resulting water is considered concrete wastewater and must be managed to prevent discharge to waters of the State, including groundwater.

Construction Activity means land disturbing operations including clearing, grading or excavation which disturbs the surface of the land (including off-site disturbance acreage related to construction-support activity). Such activities may include road construction, construction of residential houses, office buildings, or industrial buildings, site preparation, soil compaction, movement and stockpiling of topsoils, and demolition activity.

Construction Support Activity means off-site acreage that will be disturbed as a direct result of the construction project and will discharge stormwater. For example, off-site equipment staging yards, material storage areas, borrow areas, and parking areas.

Contaminant means any hazardous substance that does not occur naturally or occurs at greater than natural background levels. See definition of "hazardous substance" and WAC 173-340-200.

Contaminated soil means soil which contains contaminants, pollutants, or hazardous substances that do not occur naturally or occur at levels greater than natural background.

Contaminated groundwater means groundwater which contains contaminants, pollutants, or hazardous substances that do not occur naturally or occur at levels greater than natural background.

Demonstrably Equivalent means that the technical basis for the selection of all stormwater BMPs is documented within a SWPPP, including:

1. The method and reasons for choosing the stormwater BMPs selected.
2. The pollutant removal performance expected from the BMPs selected.

3. The technical basis supporting the performance claims for the BMPs selected, including any available data concerning field performance of the BMPs selected.
4. An assessment of how the selected BMPs will comply with state water quality standards.
5. An assessment of how the selected BMPs will satisfy both applicable federal technology-based treatment requirements and state requirements to use all known, available, and reasonable methods of prevention, control, and treatment (AKART).

Department means the Washington State Department of Ecology.

Detention means the temporary storage of stormwater to improve quality and/or to reduce the mass flow rate of discharge.

Dewatering means the act of pumping groundwater or stormwater away from an active construction site.

Director means the Director of the Washington State Department of Ecology or his/her authorized representative.

Discharger means an owner or operator of any facility or activity subject to regulation under Chapter 90.48 RCW or the Federal Clean Water Act.

Domestic Wastewater means water carrying human wastes, including kitchen, bath, and laundry wastes from residences, buildings, industrial establishments, or other places, together with such groundwater infiltration or surface waters as may be present.

Ecology means the Washington State Department of Ecology.

Engineered Soils means the use of soil amendments including, but not limited, to Portland cement treated base (CTB), cement kiln dust (CKD), or fly ash to achieve certain desirable soil characteristics.

Equivalent BMPs means operational, source control, treatment, or innovative BMPs which result in equal or better quality of stormwater discharge to surface water or to groundwater than BMPs selected from the SWMM.

Erosion means the wearing away of the land surface by running water, wind, ice, or other geological agents, including such processes as gravitational creep.

Erosion and Sediment Control BMPs means BMPs intended to prevent erosion and sedimentation, such as preserving natural vegetation, seeding, mulching and matting, plastic covering, filter fences, sediment traps, and ponds. Erosion and sediment control BMPs are synonymous with stabilization and structural BMPs.

Federal Operator is an entity that meets the definition of "Operator" in this permit and is either any department, agency or instrumentality of the executive, legislative, and judicial branches of the Federal government of the United States, or another entity, such as a private contractor, performing construction activity for any such department, agency, or instrumentality.

Final Stabilization (same as **fully stabilized** or **full stabilization**) means the completion of all soil disturbing activities at the site and the establishment of permanent vegetative cover, or equivalent permanent stabilization measures (such as pavement, riprap, gabions, or geotextiles) which will prevent erosion. See the applicable Stormwater Management Manual for more information on vegetative cover expectations and equivalent permanent stabilization measures.

Groundwater means water in a saturated zone or stratum beneath the land surface or a surface waterbody.

Hazardous Substance means any dangerous or extremely hazardous waste as defined in RCW 70.105.010 (5) and (6), or any dangerous or extremely dangerous waste as designated by rule under chapter 70.105 RCW; any hazardous sub-stance as defined in RCW 70.105.010(14) or any hazardous substance as defined by rule under chapter 70.105 RCW; any substance that, on the effective date of this section, is a hazardous substance under section 101(14) of the federal cleanup law, 42U.S.C., Sec. 9601(14); petroleum or petroleum products; and any substance or category of substances, including solid waste decomposition products, determined by the director by rule to present a threat to human health or the environment if released into the environment. The term hazardous substance does not include any of the following when contained in an underground storage tank from which there is not a release: crude oil or any fraction thereof or petroleum, if the tank is in compliance with all applicable federal, state, and local law.

Injection Well means a well that is used for the subsurface emplacement of fluids. (See **Well**.)

Jurisdiction means a political unit such as a city, town or county; incorporated for local self-government.

National Pollutant Discharge Elimination System (NPDES) means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring, and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the Federal Clean Water Act, for the discharge of pollutants to surface waters of the State from point sources. These permits are referred to as NPDES permits and, in Washington State, are administered by the Washington State Department of Ecology.

Notice of Intent (NOI) means the application for, or a request for coverage under this general permit pursuant to WAC 173-226-200.

Notice of Termination (NOT) means a request for termination of coverage under this general permit as specified by Special Condition S10 of this permit.

Operator means any party associated with a construction project that meets either of the following two criteria:

- The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
- The party has day-to-day operational control of those activities at a project that are necessary to ensure compliance with a SWPPP for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions).

Permittee means individual or entity that receives notice of coverage under this general permit.

pH means a liquid's measure of acidity or alkalinity. A pH of 7 is defined as neutral. Large variations above or below this value are considered harmful to most aquatic life.

pH Monitoring Period means the time period in which the pH of stormwater runoff from a site must be tested a minimum of once every seven days to determine if stormwater pH is between 6.5 and 8.5.

Point Source means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, and container from which pollutants are or may be discharged to surface waters of the State. This term does not include return flows from irrigated agriculture. (See the Fact Sheet for further explanation)

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, domestic sewage sludge (biosolids), munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste. This term does not include sewage from vessels within the meaning of section 312 of the CWA, nor does it include dredged or fill material discharged in accordance with a permit issued under section 404 of the CWA.

Pollution means contamination or other alteration of the physical, chemical, or biological properties of waters of the State; including change in temperature, taste, color, turbidity, or odor of the waters; or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the State as will or is likely to create a nuisance or render such waters harmful, detrimental or injurious to the public health, safety or welfare; or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses; or to livestock, wild animals, birds, fish or other aquatic life.

Process Wastewater means any non-stormwater which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product. If stormwater commingles with process wastewater, the commingled water is considered process wastewater.

Receiving Water means the waterbody at the point of discharge. If the discharge is to a storm sewer system, either surface or subsurface, the receiving water is the waterbody to which the storm system discharges. Systems designed primarily for other purposes such as for groundwater drainage, redirecting stream natural flows, or for conveyance of irrigation water/return flows that coincidentally convey stormwater are considered the receiving water.

Representative means a stormwater or wastewater sample which represents the flow and characteristics of the discharge. Representative samples may be a grab sample, a time-proportionate *composite sample*, or a flow proportionate sample. Ecology's Construction Stormwater Monitoring Manual provides guidance on representative sampling.

Responsible Corporate Officer for the purpose of signatory authority means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

Sanitary Sewer means a sewer which is designed to convey domestic wastewater.

Sediment means the fragmented material that originates from the weathering and erosion of rocks or unconsolidated deposits, and is transported by, suspended in, or deposited by water.

Sedimentation means the depositing or formation of sediment.

Sensitive Area means a waterbody, wetland, stream, aquifer recharge area, or channel migration zone.

SEPA (State Environmental Policy Act) means the Washington State Law, RCW 43.21C.020, intended to prevent or eliminate damage to the environment.

Significant Amount means an amount of a pollutant in a discharge that is amenable to available and reasonable methods of prevention or treatment; or an amount of a pollutant that has a reasonable potential to cause a violation of surface or groundwater quality or sediment management standards.

Significant Concrete Work means greater than 1000 cubic yards placed or poured concrete or recycled concrete used over the life of a project.

Significant Contributor of Pollutants means a facility determined by Ecology to be a contributor of a significant amount(s) of a pollutant(s) to waters of the State of Washington.

Site means the land or water area where any "facility or activity" is physically located or conducted.

Source Control BMPs means physical, structural or mechanical devices or facilities that are intended to prevent pollutants from entering stormwater. A few examples of source control BMPs are erosion control practices, maintenance of stormwater facilities, constructing roofs over storage and working areas, and directing wash water and similar discharges to the sanitary sewer or a dead end sump.

Stabilization means the application of appropriate BMPs to prevent the erosion of soils, such as, temporary and permanent seeding, vegetative covers, mulching and matting, plastic covering and sodding. See also the definition of Erosion and Sediment Control BMPs.

Storm Drain means any drain which drains directly into a *storm sewer system*, usually found along roadways or in parking lots.

Storm Sewer System means a means a conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains designed or used for collecting or conveying stormwater. This does not include systems which are part of a *combined sewer* or Publicly Owned Treatment Works (POTW), as defined at 40 CFR 122.2.

Stormwater means that portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a stormwater drainage system into a defined surface waterbody, or a constructed infiltration facility.

Stormwater Management Manual (SWMM) or Manual means the technical Manual published by Ecology for use by local governments that contain descriptions of and design criteria for BMPs to prevent, control, or treat pollutants in stormwater.

Stormwater Pollution Prevention Plan (SWPPP) means a documented plan to implement measures to identify, prevent, and control the contamination of point source discharges of stormwater.

Surface Waters of the State includes lakes, rivers, ponds, streams, inland waters, salt waters, and all other surface waters and water courses within the jurisdiction of the state of Washington.

Temporary Stabilization means the exposed ground surface has been covered with appropriate materials to provide temporary stabilization of the surface from water or wind erosion. Materials include, but are not limited to, mulch, riprap, erosion control mats or blankets and temporary cover crops. Seeding alone is not considered stabilization. Temporary stabilization is not a substitute for the more permanent “final stabilization.”

Total Maximum Daily Load (TMDL) means a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet state water quality standards. Percentages of the total maximum daily load are allocated to the various pollutant sources. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. The TMDL calculations must include a "margin of safety" to ensure that the waterbody can be protected in case there are unforeseen events or unknown sources of the pollutant. The calculation must also account for seasonable variation in water quality.

Transfer of Coverage (TOC) means a request for transfer of coverage under this general permit as specified by Special Condition S2.A of this permit.

Treatment BMPs means BMPs that are intended to remove pollutants from stormwater. A few examples of treatment BMPs are detention ponds, oil/water separators, biofiltration, and constructed wetlands.

Transparency means a measurement of water clarity in centimeters (cm), using a 60 cm transparency tube. The transparency tube is used to estimate the relative clarity or transparency of water by noting the depth at which a black and white Secchi disc becomes visible when water is released from a value in the bottom of the tube. A transparency tube is sometimes referred to as a “turbidity tube.”

Turbidity means the clarity of water expressed as nephelometric turbidity units (NTUs) and measured with a calibrated turbidimeter.

Uncontaminated means free from any contaminant. See definition of “contaminant” and WAC 173-340-200.

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

Waste Load Allocation (WLA) means the portion of a receiving water’s loading capacity that is allocated to one of its existing or future point sources of pollution. WLAs constitute a type of water quality based effluent limitation (40 CFR 130.2[h]).

Water-Only Based Shaft Drilling is a shaft drilling process that uses water only and no additives are involved in the drilling of shafts for construction of building, road, or bridge foundations.

Water Quality means the chemical, physical, and biological characteristics of water, usually with respect to its suitability for a particular purpose.

Waters of the State includes those waters as defined as "waters of the United States" in 40 CFR Subpart 122.2 within the geographic boundaries of Washington State and "waters of the State" as defined in Chapter 90.48 RCW, which include lakes, rivers, ponds, streams, inland waters, underground waters, salt

waters, and all other surface waters and water courses within the jurisdiction of the state of Washington.

Well means a bored, drilled or driven shaft, or dug hole whose depth is greater than the largest surface dimension. (See **Injection Well**.)

Wheel Wash Wastewater means any water used in, or resulting from the operation of, a tire bath or wheel wash (BMP C106: Wheel Wash), or other structure or practice that uses water to physically remove mud and debris from vehicles leaving a construction site and prevent track-out onto roads. When stormwater comes in contact with wheel wash wastewater, the resulting water is considered wheel wash wastewater and must be managed according to Special Condition S9.D.9.

APPENDIX B – ACRONYMS

AKART	All Known, Available, and Reasonable Methods of Prevention, Control, and Treatment
BMP	Best Management Practice
CESCL	Certified Erosion and Sediment Control Lead
CFR	Code of Federal Regulations
CKD	Cement Kiln Dust
cm	Centimeters
CPD	Common Plan of Development
CTB	Cement-Treated Base
CWA	Clean Water Act
DMR	Discharge Monitoring Report
EPA	Environmental Protection Agency
ERTS	Environmental Report Tracking System
ESC	Erosion and Sediment Control
FR	Federal Register
LID	Low Impact Development
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Unit
RCW	Revised Code of Washington
SEPA	State Environmental Policy Act
SWMM	Stormwater Management Manual
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
UIC	Underground Injection Control
USC	United States Code
USEPA	United States Environmental Protection Agency
WAC	Washington Administrative Code
WQ	Water Quality
WWHM	Western Washington Hydrology Model



Instructions for Transfer of Coverage

Construction Stormwater General Permit

Instructions

This form is used to process two types of permit transfers: 1) Complete Transfer, or 2) Partial Transfer. Determine which type of transfer applies to your situation before filling out this form.

1. Complete Transfer: The original permittee has sold, or otherwise released control of the entire site to another party.

Required Paperwork for Complete Transfer:

- Either the current permittee, or the new permittee(s), must submit a complete and accurate Transfer of Coverage form to Ecology for each new party. The form must be signed by the current permittee **and** the new permittee.

2. Partial Transfer: The original permittee retains control over some portion of the site after selling or releasing control over a portion of the site.

Required Paperwork for Partial Transfer

- Either the current permittee or the new permittee(s) must submit a complete and accurate Transfer of Coverage Form for each new operator to Ecology. The form must be signed by the current permittee and the new permittee.
- For partial transfers, once all transfers are submitted, the original permittee should submit the Notice of Termination only if the portion(s) they still own or control have undergone final stabilization and meet the criteria for termination.

For Your Information

- When this form is 1) completed, 2) signed by the current and new permittee, and 3) submitted to Ecology, permit transfers are effective on the date specified at the top of page 1 (unless Ecology notifies the current permittee and new permittee of its intention to revoke coverage under the General Permit or if Ecology sends notice that the application is incomplete). If no date for the transfer of coverage is specified, Ecology will use the date of the last signature.
- The new permittee should keep a copy of the signed Transfer of Coverage form (which serves as proof of permit coverage) until Ecology sends documentation in the mail.
- Following the transfer, the new permittee must either: (1) use the Stormwater Pollution Prevention Plan (SWPPP) developed by the original operator, and modified as necessary, or (2) develop and use a new SWPPP that meets the requirements of the Construction Stormwater General Permit.
- For projects for which the original permittee has completed a Proposed New Discharge to an Impaired Waterbody Form (ECY 070-399), or for projects that are operating on sites with soil or groundwater contamination: Upon completion of the Transfer of Coverage form, the new permittee will adopt any special provisions made to protect water quality for sites that have existing contamination or that discharge to an impaired waterbody.

To request ADA accommodation including materials in a format for the visually impaired, call the Water Quality Program at 360-407-6600 or visit <https://ecology.wa.gov/accessibility>. People with impaired hearing may call Washington Relay Service at 711. People with speech disability may call 877-833-6341.

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Transfer of Coverage

Permit # WAR_____

Construction Stormwater General Permit

This form transfers permit coverage for all, or a portion of a site to one or more new operators.

Type of permit transfer (check one): ☐ Partial transfer (complete the Partial Transfer acreage below) ☐ Complete transfer

Specific date that permit responsibility, coverage, and liability is transferred to new operator: _____

**If no date is indicated Ecology will determine the date of transfer.*

Please see instructions for details on type of transfer.

For PARTIAL TRANSFERS indicate the acreage remaining under your operational control:

- List **total size of project/site** remaining under your operational control following the **partial transfer**: _____ acres.
- List **total area of soil disturbance** remaining under your operational control following the **partial transfer**: _____ acres.
- Submitting this form meets the requirement to submit an updated NOI (General Permit Condition G9)

Current Operator/Permittee Information

Current Operator/Permittee Name:		Company:		
Business Phone:	Ext:	Mailing Address:		
Cell Phone:	Fax (optional):			
Email:		City:	State:	Zip+4:
Signature* (see signatory requirements in Section VIII):		Title:		
		Date:		

New Operator/Permittee Information

(the remainder of this form applies to the **new** Operator/Permittee)

I. New Operator/Permittee (Party with operational control over plans and specifications or day-to-day operational control of activities which ensure compliance with Stormwater Pollution Prevention Plan (SWPPP) and permit conditions. Ecology will send correspondence and permit fee invoices to the permittee on record.)				
Name:		Company:		
Business Phone:	Ext:	Unified Business Identifier (UBI): (UBI is a nine-digit number used to identify a business entity. Write "none" if you do not have a UBI number.)		
Cell Phone (Optional):	Fax (Optional):	E-mail:		
Mailing Address:		City:	State:	Zip + 4:
II. Property Owner (The party listed on the County Assessor's records as owner and taxpayer of the parcel[s] for which permit coverage is requested. Ecology will not send correspondence and permit fee invoices to the Property Owner. The Property Owner information will be used for emergency contact purposes.)				
Name:		Company:		
Business Phone:	Ext:	Unified Business Identifier (UBI): (UBI is a nine-digit number used to identify a business entity. Write "none" if you do not have a UBI number.)		
Cell Phone (Optional):	Fax (Optional):	E-mail:		
Mailing Address:		City:	State:	Zip + 4:

III. On-Site Contact Person(s) (Typically the Certified Erosion and Sediment Control Lead or Operator/Permittee)				
Name:		Company:		
Business Phone:	Ext:	Mailing Address:		
Cell Phone:	Fax(Optional):	City:	State:	Zip+4:
Email:				
IV. Site/Project Information				
Site or Project Name		Site Acreage Total size of your site/project (that you own/control): _____ acres. (Note: 1 acre = 43,560 sq. ft.)		
Street Address or Location Description (If the site lacks a street address, list its specific location. For example, Intersection of Highway 61 and 34.) _____		Total area of soil disturbance for your site/project over the life of the project: _____ acres. Include grading, equipment staging, excavation, borrow pit, material storage areas, dump areas, haul roads, side-cast areas, off-site construction support areas, and all other soil disturbance acreage associated with the project. (Note: 1 acre = 43,560 sq. ft.)		
Parcel ID#: _____ (Optional)				
Type of Construction Activity (check all that apply): <input type="checkbox"/> Residential <input type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Highway or Road (city ,county, state) <input type="checkbox"/> Utilities (specify): _____ <input type="checkbox"/> Other (specify): _____				
City (or nearest city):	Zip Code:	Estimated project start-up date (mm/dd/yy):		
County:		Estimated project completion date (mm/dd/yy):		
Record the latitude and longitude of the <i>main entrance</i> to the site or the approximate center of site.				
Latitude: _____ °N		Longitude: _____ °W		
V. Existing Site Conditions				
1. Are you aware of contaminated soils present on the site? <input type="checkbox"/> Yes <input type="checkbox"/> No 2. Are you aware of groundwater contamination located within the site boundary? <input type="checkbox"/> Yes <input type="checkbox"/> No 3. If you answered yes to questions 1 or 2, will any contaminated soils be disturbed or will any contaminated groundwater be discharged due to the proposed construction activity? <input type="checkbox"/> Yes <input type="checkbox"/> No ("Contaminated" and "contamination" here mean containing any hazardous substance (as defined in WAC 173-340-200) that does not occur naturally or occurs at greater than natural background levels.) If you answered yes to Question 3, please provide detailed information with the NOI (as known and readily available) on the natures and extent of the contamination (concentrations, locations, and depth), as well as pollution prevention and/or treatment Best Management Practices (BMPs) proposed to control the discharge of soil and/or groundwater contaminants in stormwater. This should include information that would be included in related portions of the Stormwater Pollution Prevention Plan (SWPPP) that describe how contaminated and potentially contaminated construction stormwater and dewatering water will be managed.				

VI. WQWebDMR (Electronic Discharge Monitoring Reporting)

You must submit monthly discharge monitoring reports using Ecology's WQWebDMR system. To sign up for WQWebDMR, or to register a new site, go to <https://www.ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Water-quality-permits-guidance/WQWebPortal-guidance>. If you are unable to submit your DMRs electronically, you may contact Ecology to request a waiver. Ecology will generally only grant waiver requests to those permittees without internet access. Only a permittee or representative, designated in writing, may request access to or a waiver from WQWebDMR. To have the ability to use the system immediately, **you must submit the Electronic Signature Agreement with your transfer of coverage form**. If you have questions on this process, contact Ecology's WQWebDMR staff at WebDMRPortal@ecy.wa.gov or 800/633-6193 or 360-407-7097 (local). Note: DMRs are optional for permitted sites under 1 acre that do not discharge to impaired waterbodies.

VII. Discharge/Receiving Water Information

Indicate whether your site's stormwater and/or dewatering water could enter surface waters, **directly and/or indirectly**.

☐ Water will discharge directly or indirectly (through a storm drain system or roadside ditch) into one or more surface waterbodies (wetlands, creeks, lakes, and all other surface waters and water courses).

If your discharge is to a storm sewer system, provide the name of the operator of the storm sewer system:
(e.g., City of Tacoma): _____

☐ Water will discharge to ground with 100% infiltration, with no potential to reach surface waters under any conditions.

If your project includes dewatering, you **must** include dewatering plans and discharge locations in your site Stormwater Pollution Prevention Plan.

Location of Outfall into Surface Waterbody

Enter the outfall identifier code, waterbody name, and latitude/longitude of the point(s) where the site has the potential to discharge into a waterbody (the outfall). Enter all locations. **See illustration of Surface Waterbody Outfall locations at the end of this form.**

- Include the names and locations of both direct and indirect discharges to surface waterbodies, even if the risk of discharge is low or limited to periods of extreme weather. **Attach a separate list if necessary.**
- Give each point a unique 1-4 digit alpha numeric code. This code will be used for identifying these points in WQWebDMR.
- Some large construction projects (for example, subdivisions, roads, or pipelines) may discharge into several waterbodies.
- If the creek or tributary is unnamed, use a format such as "unnamed tributary to Deschutes River."
- If the site discharges to a stormwater conveyance system that in turn flows to a surface waterbody, include the surface waterbody name and location.

Outfall Identifier Code. These cannot be symbols. (Maximum of 4 characters).				Surface Waterbody Name at the Outfall	Latitude Decimal Degrees	Longitude Decimal Degrees
Example: 001A				Example: Puget Sound	47.5289247° N	-122.3123550° W
					° N	° W
					° N	° W
					° N	° W

If your site discharges to a waterbody that is on the impaired waterbodies list (e.g., 303[d] list) for turbidity, fine sediment, high pH, or phosphorus, Ecology will require additional documentation before issuing permit coverage and these sites will be subject to additional sampling and numeric effluent limits (per Permit Condition S8). Ecology will notify you if any additional sampling requirements apply. Information on impaired waterbodies is available online at: <https://www.ecology.wa.gov/Water-Shorelines/Water-quality/Water-improvement/Assessment-of-state-waters-303d>.

Before signing, please use the following checklist to ensure this form is complete:

- ☐ All spaces on this form have been completed. (Attach additional sheets if necessary)
- ☐ The transfer form has been signed by both the current permittee (see Page 1) **and** the new permittee (see Section VIII below).
- ☐ The date permit responsibility was transferred is specified. (See Page 1)
- ☐ New Operator/Permittee: Before you submit this form to Ecology, please retain a copy for your records – this will serve as proof of permit coverage until documentation arrives from Ecology.
- ☐ For partial transfers: If the original permittee no longer owns or controls any portions of the site that meet the criteria for termination, the original permittee must submit a Notice of Termination (NOT) to terminate permit coverage. See the CSWGP website for a link to the NOT form: www.ecology.wa.gov/constructionstormwaterpermit.
- ☐ For sites with contaminated soils/groundwater or a new discharger to an impaired waterbody: Any special provisions to protect water quality put in place at the time of initial coverage have been reviewed and adopted by the new permittee.

Administrative Order Docket No. _____

VIII. Certification of New Permittee

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Printed/Typed Name

Company (operator/permittee only)

Title

Signature of New Operator/Permittee

Date

Signature of Operator/Permittee requirements:

- A. For a corporation: By a responsible corporate officer.
- B. For a partnership or sole proprietorship: By a general partner or the proprietor, respectively.
- C. For a municipality, state, federal, or other public facility: By either a principal executive officer or ranking elected official.

Please sign and return this **ORIGINAL** document to the following address:

Department of Ecology – Construction Stormwater
PO Box 47696
Olympia, WA 98504-7696

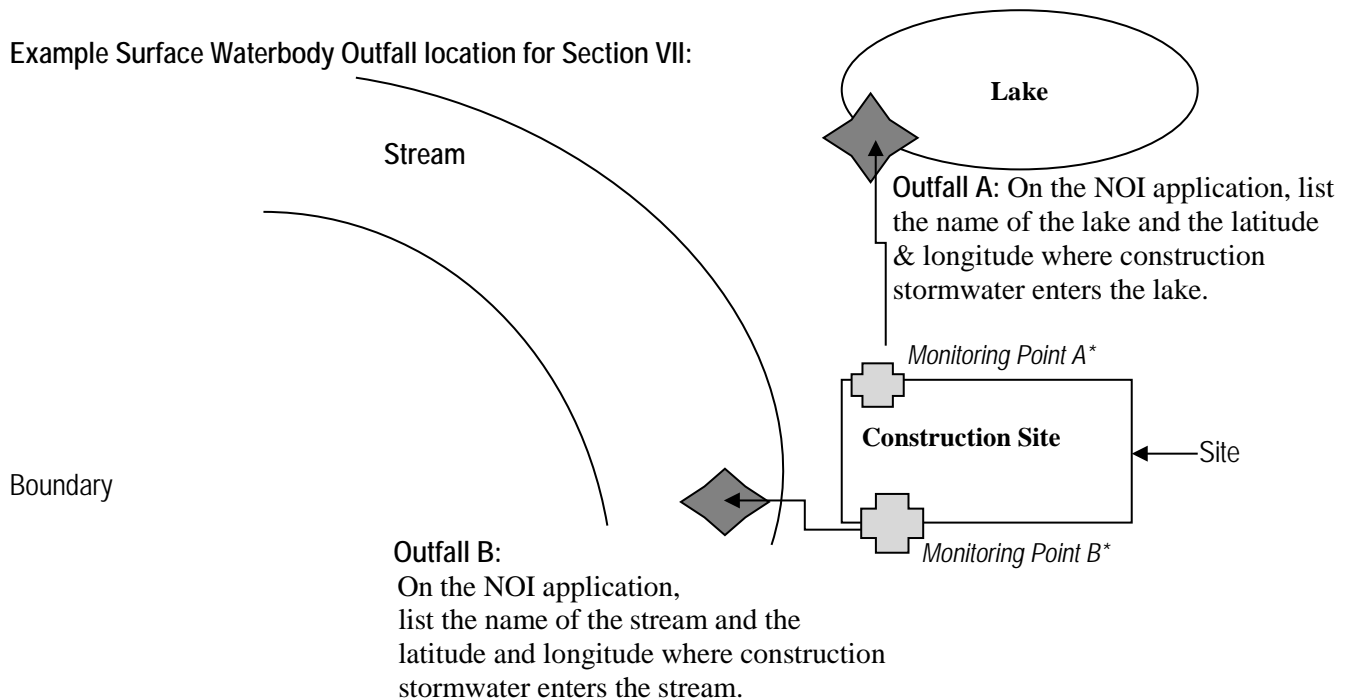
If you have questions about this form, contact the following Ecology staff:

Location	Contact Name	Phone	E-mail
City of Seattle, and Kitsap, Pierce, and Thurston counties	Josh Klimek	360-407-7451	josh.klimek@ecy.wa.gov
Island, King, and San Juan counties	RaChelle Stane	360-407-6556	rachelle.stane@ecy.wa.gov
Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Skagit, Snohomish, Spokane, Stevens, Walla, Whatcom, and Whitman counties.	Shawn Hopkins	360-407-6442	shawn.hopkins@ecy.wa.gov
Benton, Chelan, Clallam, Clark, Cowlitz, Douglas, Grays Harbor, Jefferson, Kittitas, Klickitat, Lewis, Mason, Okanogan, Pacific, Skamania, Wahkiakum, and Yakima counties.	Joyce Smith	360-407-6858	joyce.smith@ecy.wa.gov

You must submit monthly discharge monitoring reports using Ecology's WQWebDMR system. To sign up for WQWebDMR, or to register a new site, go to www.ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Water-quality-permits-guidance/WQWebPortal-guidance. If you are unable to submit your DMRs electronically, you may contact Ecology to request a waiver. Ecology will generally only grant waiver requests to those permittees without internet access. Only a permittee or representative, designated in writing, may request access to or a waiver from WQWebDMR. To have the ability to use the system immediately, **you must submit the Electronic Signature Agreement with your application.**

If you have questions on this process, contact Ecology's WQWebDMR staff at WQWebPortal@ecy.wa.gov or 800-633-6193 or 360-407-7097 (local).

Example Surface Waterbody Outfall location for Section VII:

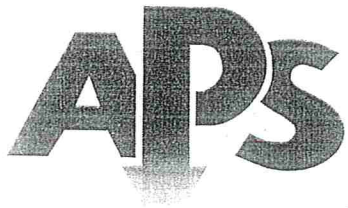


*Note: The monitoring points are for illustration only and are not required on this Notice of Intent application form. Monitoring point information will be entered on the monthly discharge monitoring report as required for active permits.

To request ADA accommodation including materials in a format for the visually impaired, call the Water Quality Program at 360-407-6600 or visit <https://ecology.wa.gov/accessibility>. People with impaired hearing may call Washington Relay Service at 711. People with speech disability may call TYY at 877-833-6341.

APPENDIX C

POTHOLE DATA



TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job # 6755

Lead: Christian

Overlay Thickness (in):

Asphalt (in):

Concrete (in):

Brick (in):

soil type: native

Pothole Number: 1

Date: 9/25/23

Notes:

Target Utility:

Utility Type: Gas

Size: 2

Top (in): 36

Bottom (in): 38

Width (in):

Thickness (in):

Pipe Direction: E-W

Material: steel w/br

Additional Utility:

Utility Type:

Size:

Top (in):

Bottom (in):

Width (in):

Thickness (in):

Pipe Direction:

Material:

Utility Config Facing: E

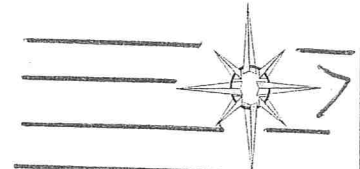
2

JANITA Drive NE

Bike
LANE

NE 120th St

water
○
○
○



Storm
Drain

18'

CB

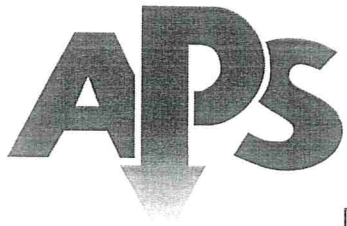
6'

10'

gas

com
box

to include: lane dividers, 3 offsets, street names, pothole location, north arrow



TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job # 6755

Lead: Chrom

Overlay Thickness (in):
Asphalt (in):
Concrete (in):
Brick (in):
soil type: Native

Pothole Number: 2

Date: 9/25/21

Notes:

Target Utility:
Utility Type: Com
Size: 1
Top (in): 32
Bottom (in): 34
Width (in):
Thickness (in):
Pipe Direction: E & W
Material: Cable

Additional Utility:

Utility Type:

Size:

Top (in):

Bottom (in):

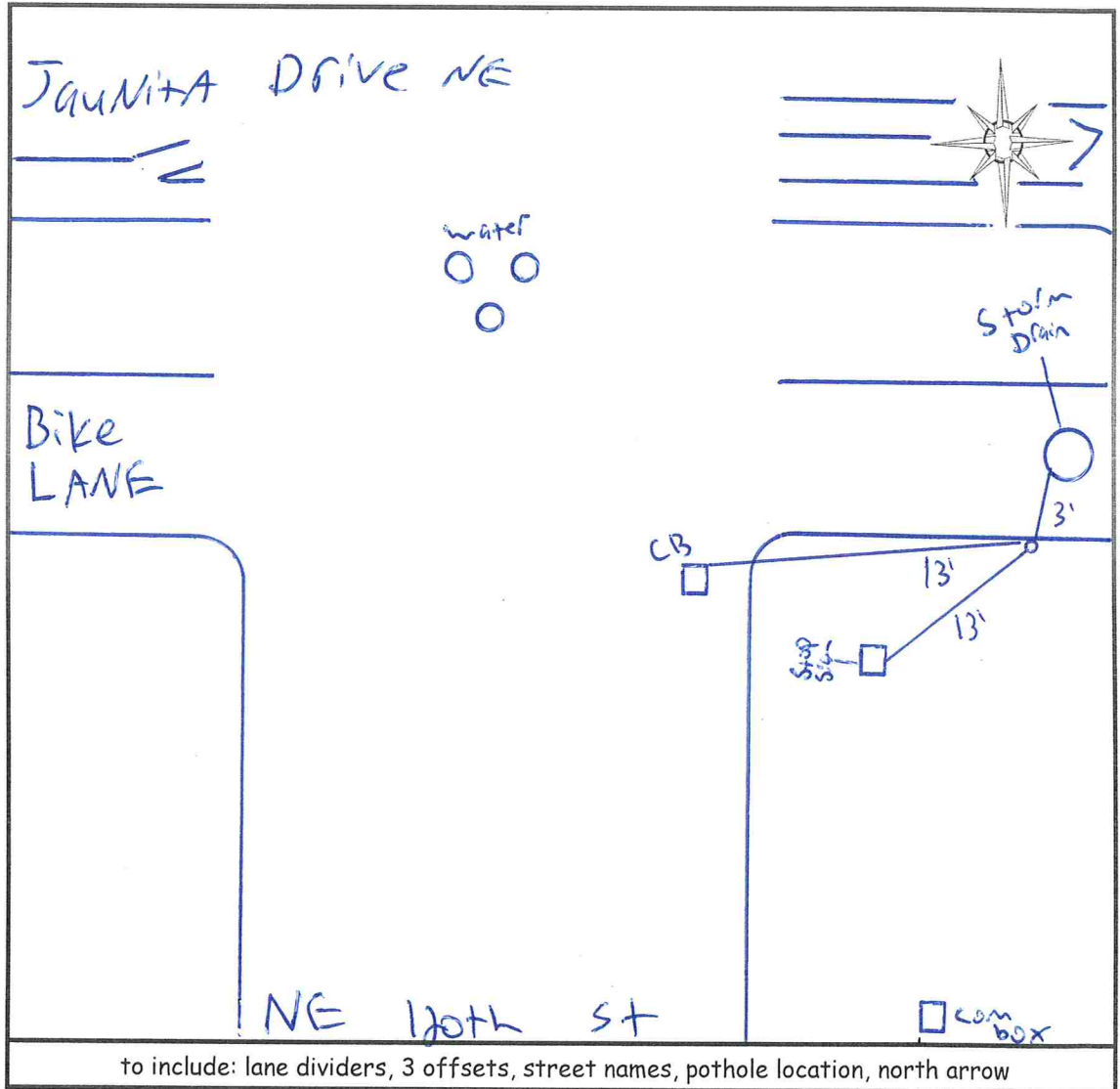
Width (in):

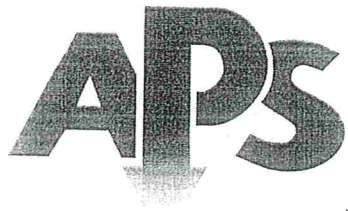
Thickness (in):

Pipe Direction:

Material:

Utility Config Facing: E





TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job # 6755

Lead: Christia

Overlay Thickness (in):

Asphalt (in):

Concrete (in):

Brick (in):

soil type: Natve

Pothole Number:

Date: 9/25/23

Notes:

Target Utility:

Utility Type: Gas

Size: 2

Top (in): 46

Bottom (in): 48

Width (in): 2

Thickness (in):

Pipe Direction: $E \rightarrow W$

Material: Steel wire

Additional Utility:

Utility Type:

Size:

Top (in):

Bottom (in):

Width (in):

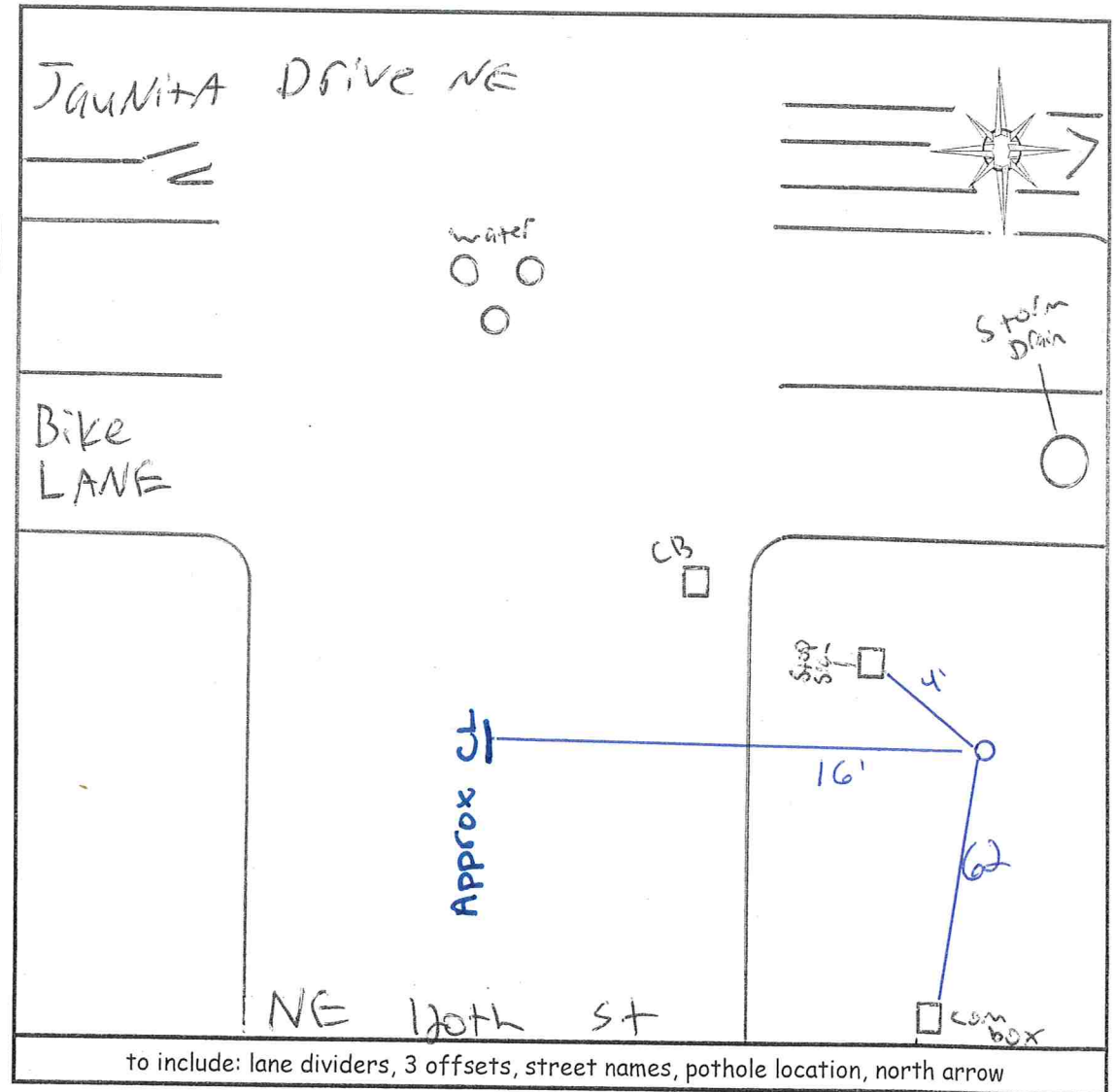
Thickness (in):

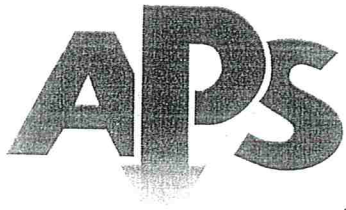
Pipe Direction:

Material:

Utility Config Facing: E & W

2





TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job # 6755

Lead: Christian

Overlay Thickness (in):

Asphalt (in):

Concrete (in):

Brick (in):

soil type: native

Pothole Number: 4

Date: 9/25/23

Notes:

Target Utility:

Utility Type: Com

Size: 1

Top (in): 16

Bottom (in): 17

Width (in): 1

Thickness (in):

Pipe Direction: E-W

Material: Cable

Additional Utility:

Utility Type:

Size:

Top (in):

Bottom (in):

Width (in):

Thickness (in):

Pipe Direction:

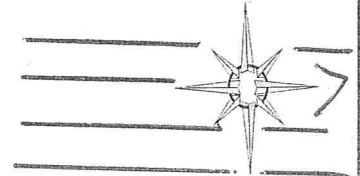
Material:

Utility Config Facing: E

JANITA Drive NE

Bike
LANE

water
○
○
○



Storm
Drain



CB
□

APPROX CL

8' 15"

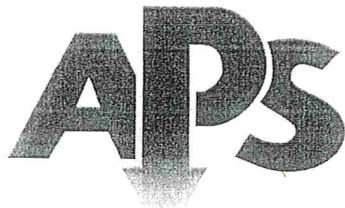
15'

62'

com box

NE 120th St

to include: lane dividers, 3 offsets, street names, pothole location, north arrow



TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job # 6755

Lead: CHRIS M

Overlay Thickness (in):

Asphalt (in):

Concrete (in):

Brick (in):

soil type: native

Pothole Number: 5

Date: 9/25/23

Notes:

Target Utility:

Utility Type: Gas

Size: 5/8

Top (in): 22

Bottom (in): 24

Width (in):

Thickness (in):

Pipe Direction: NE & SW

Material:

Additional Utility:

Utility Type:

Size:

Top (in):

Bottom (in):

Width (in):

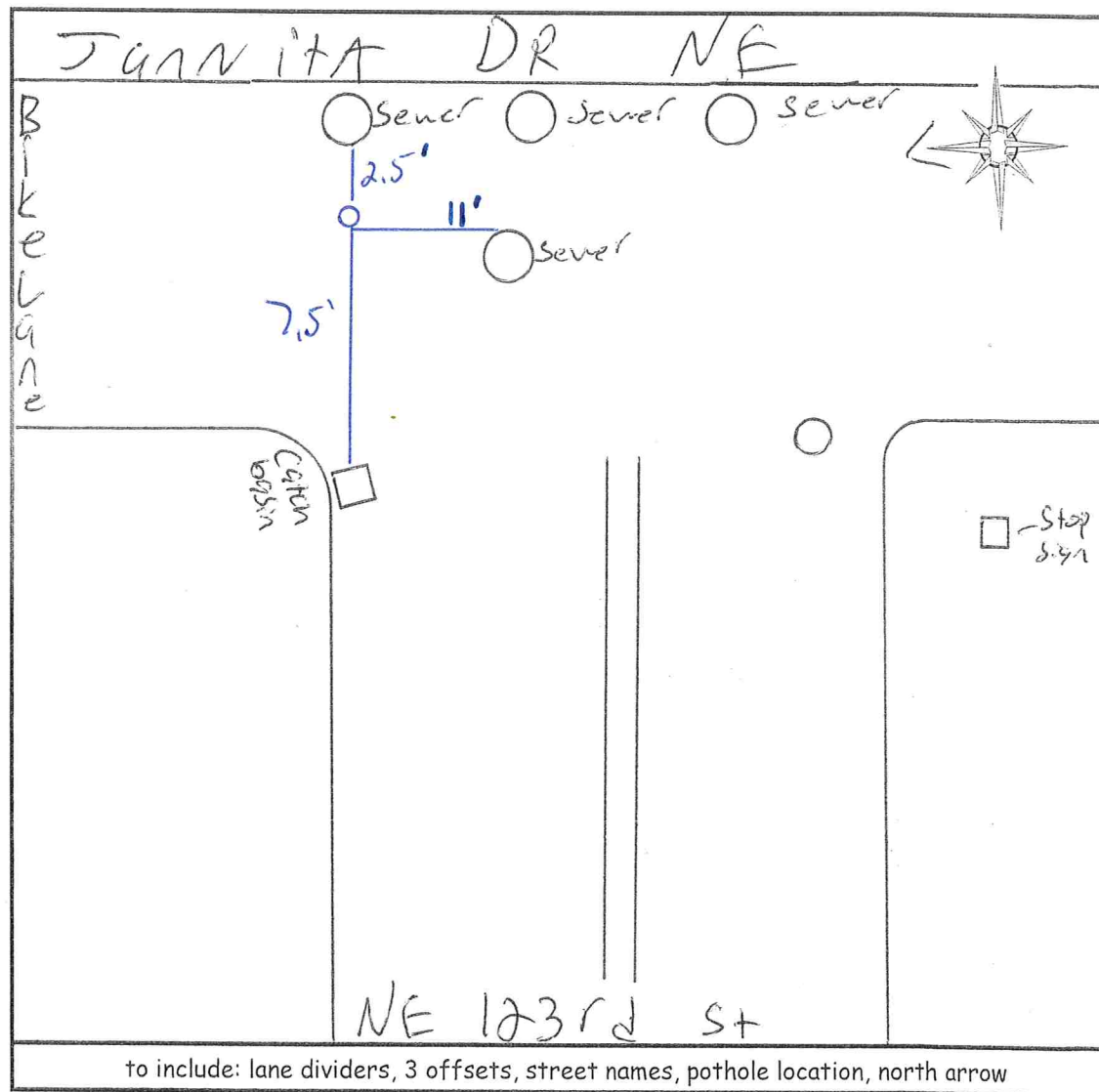
Thickness (in):

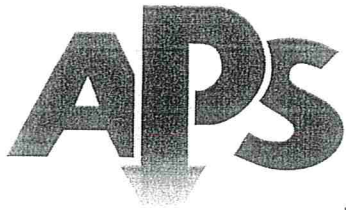
Pipe Direction:

Material:

Utility Config Facing: NE

(5/6)





TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job # 6755

Lead: Christian

Overlay Thickness (in):

Asphalt (in):

Concrete (in):

Brick (in):

soil type: NATIVE

Pothole Number: 6

Date: 9/25/23

Notes:

Target Utility:

Utility Type: water

Size: 8

Top (in): 35

Bottom (in): 43

Width (in):

Thickness (in):

Pipe Direction: EEW

Material: DI

Additional Utility:

Utility Type:

Size:

Top (in):

Bottom (in):

Width (in):

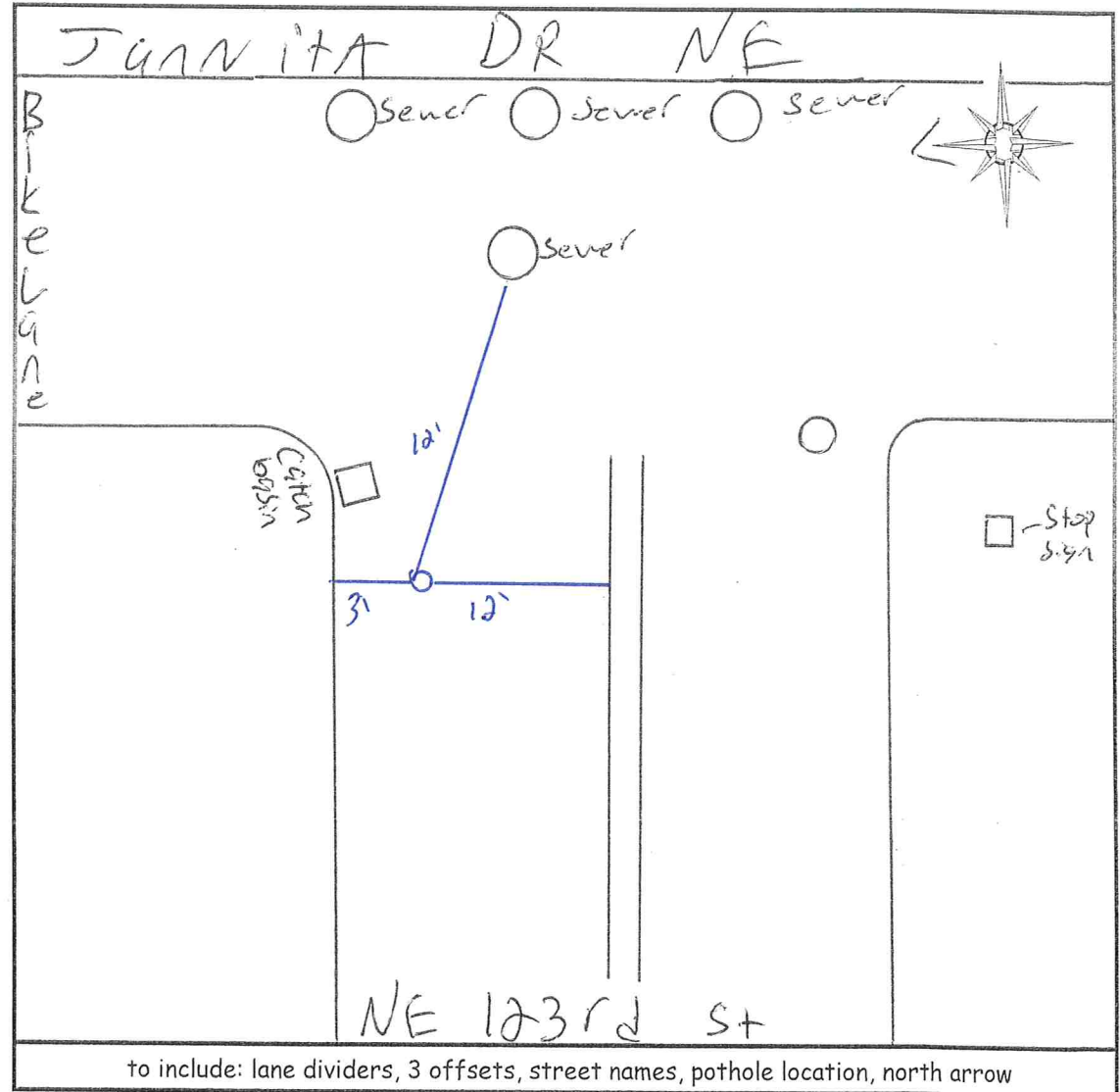
Thickness (in):

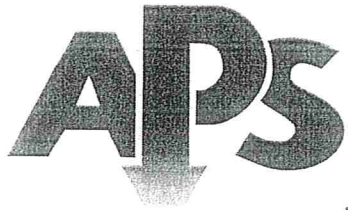
Pipe Direction:

Material:

Utility Config Facing: W

8"





TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job # 6755

Lead: Christa

Overlay Thickness (in):

Asphalt (in): 8

Concrete (in):

Brick (in):

soil type: Native

Pothole Number: 7

Date: 9/26/23

Notes:

Target Utility:

Utility Type: Gas

Size: 2

Top (in): 31

Bottom (in): 33

Width (in):

Thickness (in):

Pipe Direction: E & W

Material: Steel wrap

Additional Utility:

Utility Type:

Size:

Top (in):

Bottom (in):

Width (in):

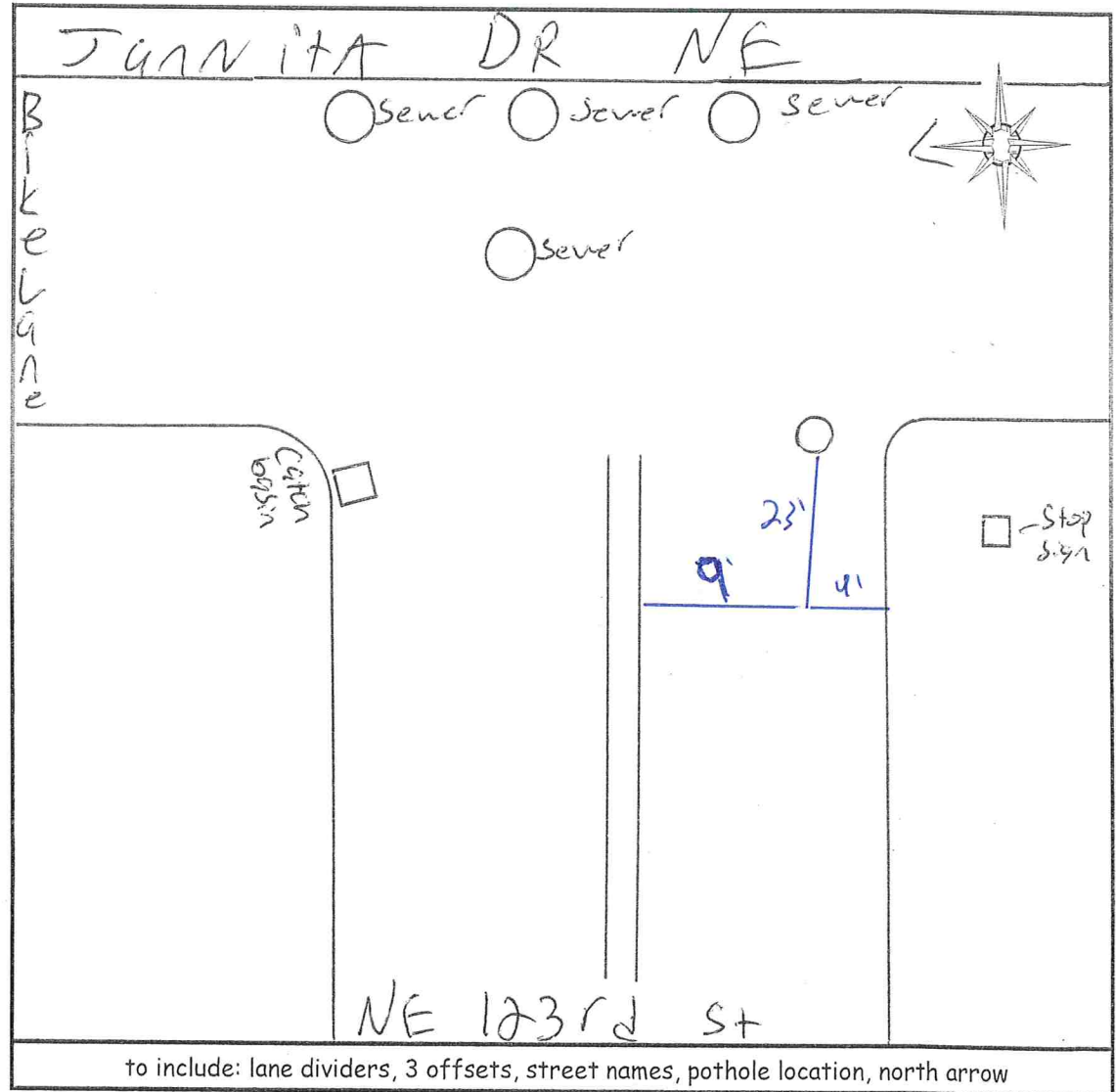
Thickness (in):

Pipe Direction:

Material:

Utility Config Facing: E

2"





TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job # 6755

Lead: Christian

Overlay Thickness (in):

Asphalt (in): 8

Concrete (in):

Brick (in):

soil type: Native

Pothole Number: 8

Date: 9/26/23

Notes:

Target Utility:

Utility Type: Gas

Size: 2

Top (in): 37

Bottom (in): 39

Width (in):

Thickness (in):

Pipe Direction: E-W

Material: Steel war

Additional Utility:

Utility Type:

Size:

Top (in):

Bottom (in):

Width (in):

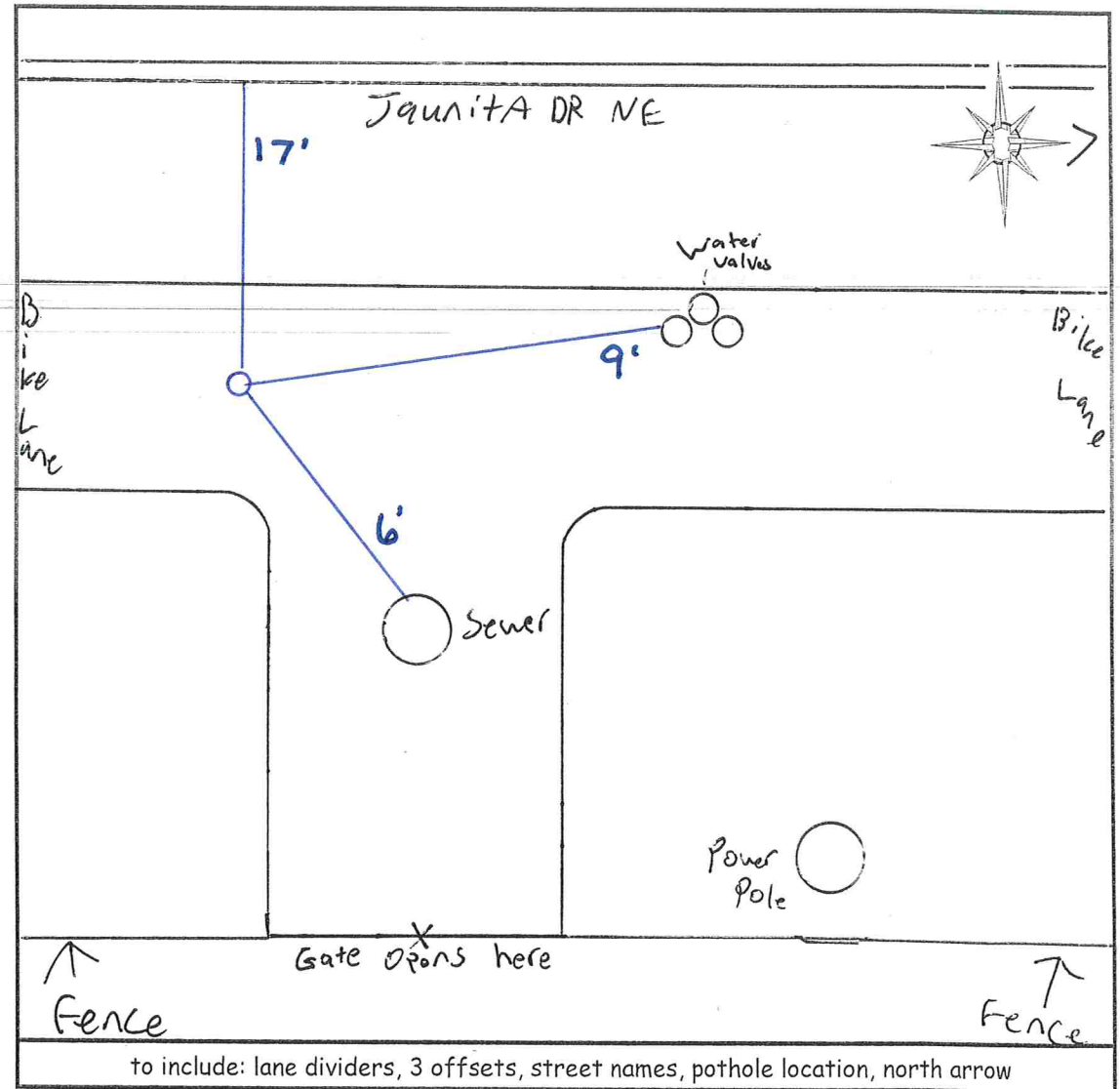
Thickness (in):

Pipe Direction:

Material:

Utility Config Facing: E

2"





TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job # 6755

Lead: Christian

Overlay Thickness (in):

Asphalt (in):

Concrete (in):

Brick (in):

soil type: Native

Pothole Number: 9

Date: 9/26/23

Notes:

right next to
creek to much
water flow
couldn't get a
good look

Target Utility:

Utility Type: water

Size:

Top (in): 33

Bottom (in):

Width (in):

Thickness (in):

Pipe Direction:

Material:

Additional Utility:

Utility Type:

Size:

Top (in):

Bottom (in):

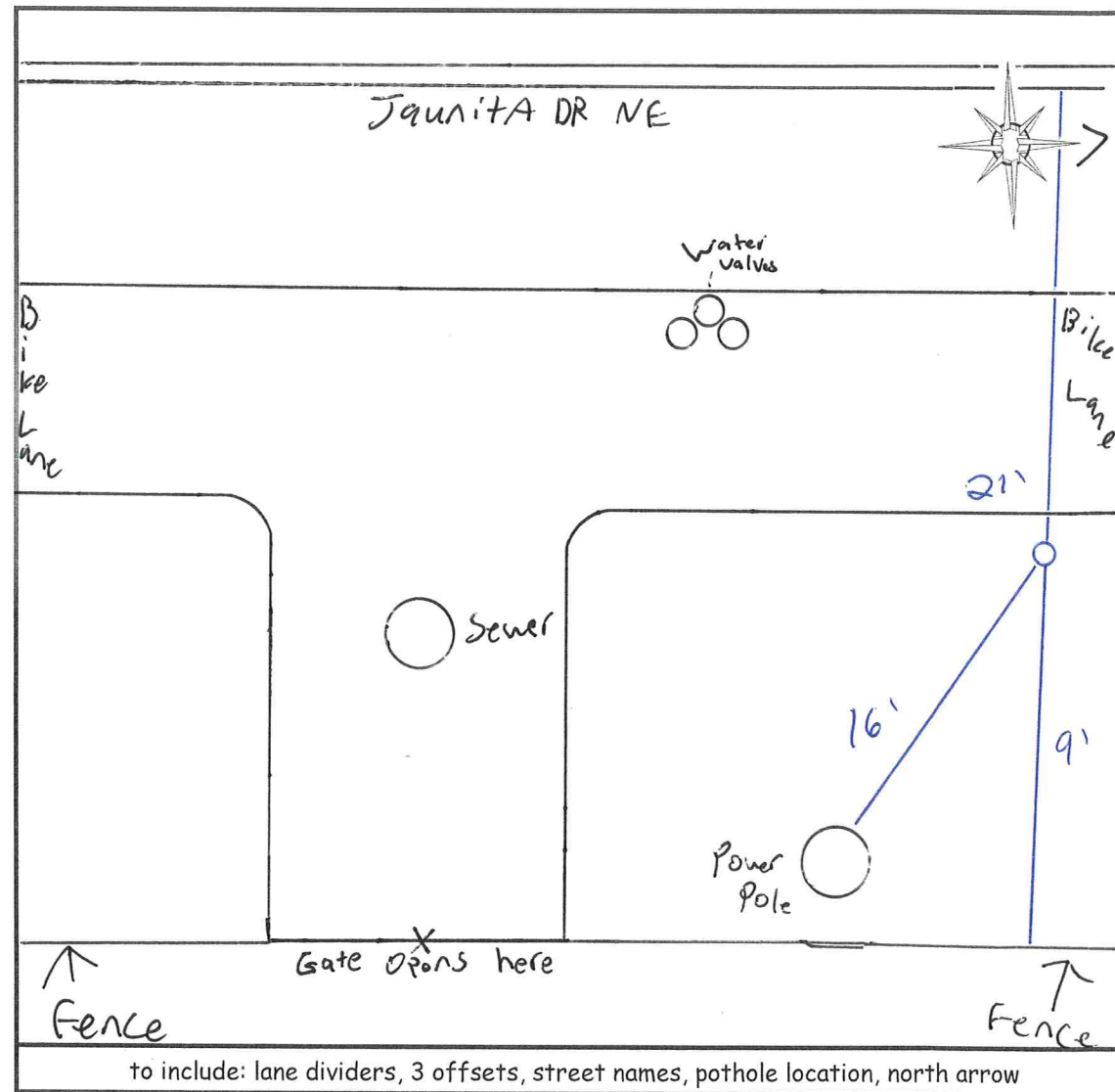
Width (in):

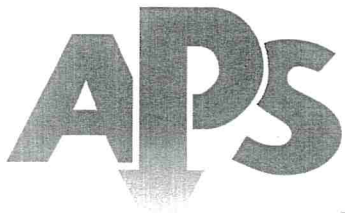
Thickness (in):

Pipe Direction:

Material:

Utility Config Facing:





TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job # 6755

Lead: CHRIS M

Overlay Thickness (in):
Asphalt (in): 8
Concrete (in):
Brick (in):
soil type: native

Pothole Number: 10

Date: 9/26/23

Notes:

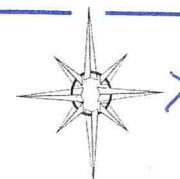
Target Utility:
Utility Type: Gas
Size: 1
Top (in): 36
Bottom (in): 37
Width (in):
Thickness (in):
Pipe Direction: E-W
Material: PE

Utility Config Facing: E

Additional Utility:
Utility Type:
Size:
Top (in):
Bottom (in):
Width (in):
Thickness (in):
Pipe Direction:
Material:



Juanita DR NE



Catch
basin

4'

2'

Gas
Valve

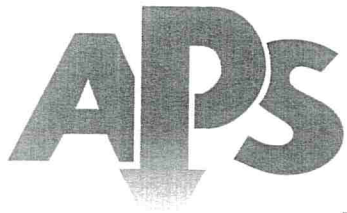
67'

mail
box

KA fence

Sewer

to include: lane dividers, 3 offsets, street names, pothole location, north arrow



TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job # 655
Lead: Chris M

Overlay Thickness (in):
Asphalt (in):
Concrete (in):
Brick (in):
soil type: Native

Pothole Number: 11

Date: 9/26/23

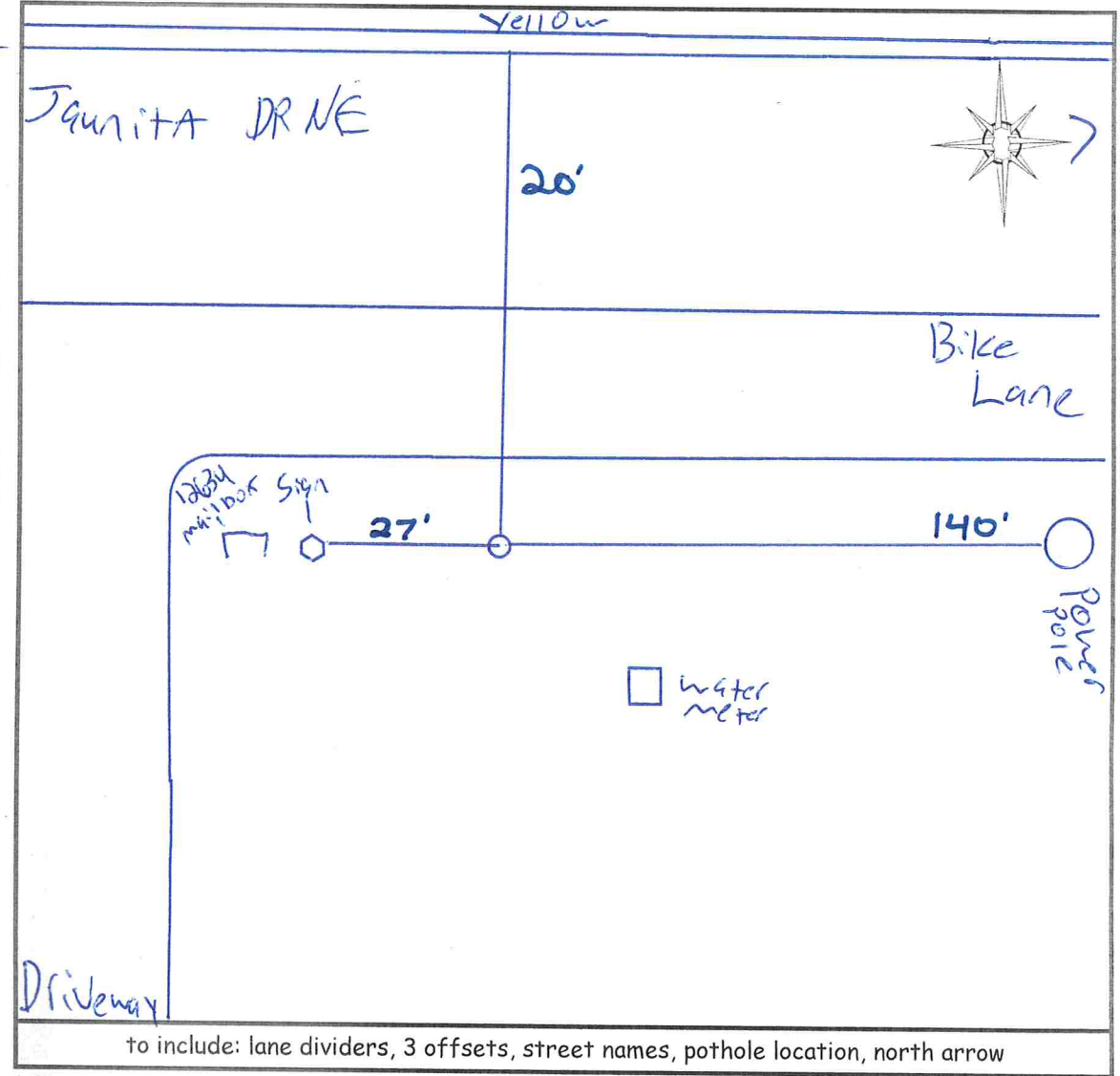
Notes:

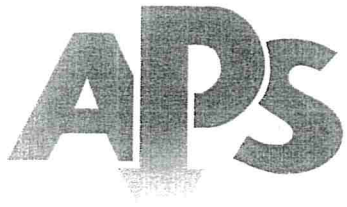
DNE Couldnt
Find no locate

Target Utility:
Utility Type:
Size:
Top (in):
Bottom (in):
Width (in):
Thickness (in):
Pipe Direction:
Material:

Additional Utility:
Utility Type:
Size:
Top (in):
Bottom (in):
Width (in):
Thickness (in):
Pipe Direction:
Material:

Utility Config Facing:





TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job # Chubian

Lead: 6755

Overlay Thickness (in):
Asphalt (in):
Concrete (in):
Brick (in):
soil type: Native

Pothole Number: 12

Date: 9/26/23

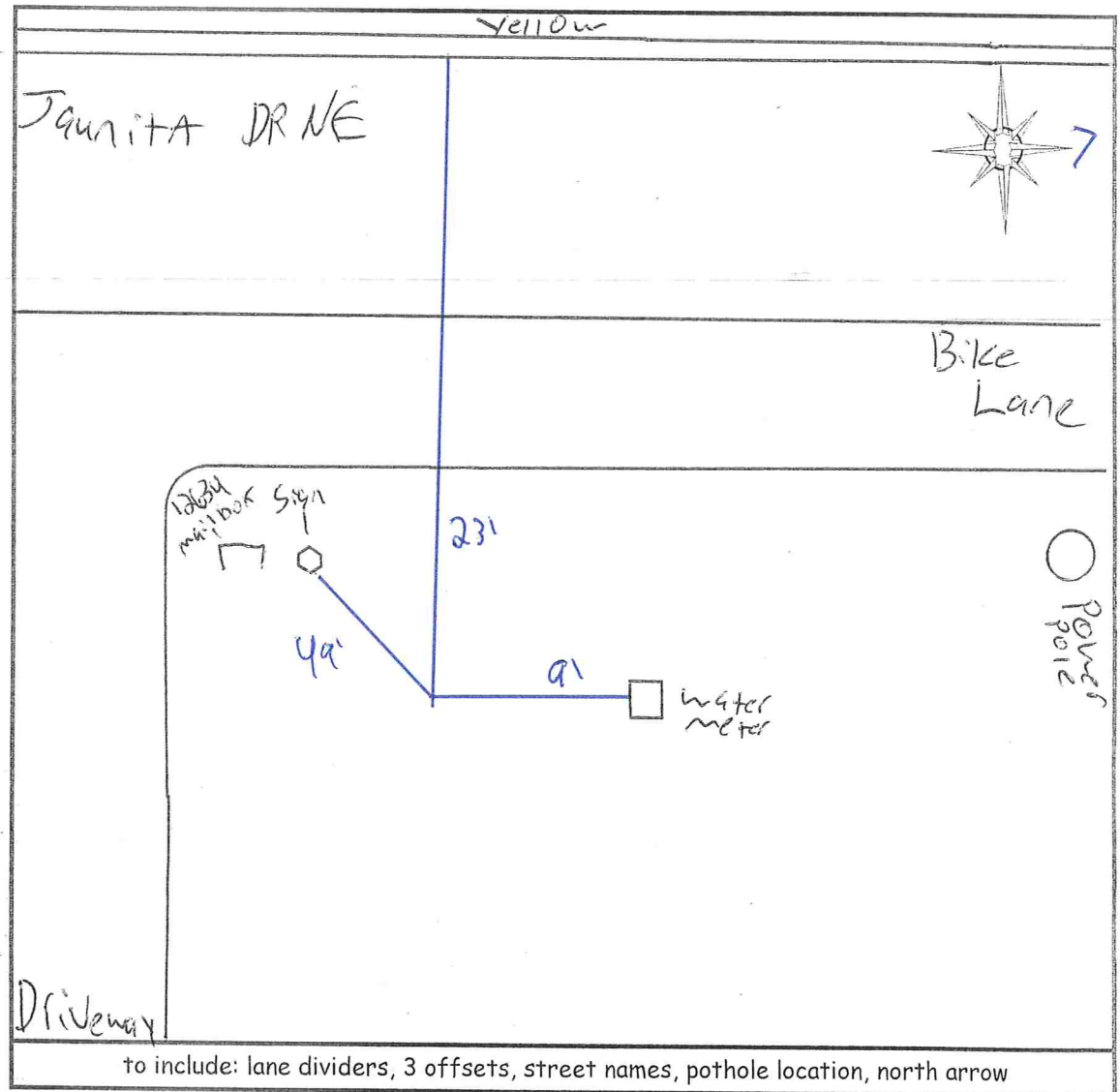
Notes:

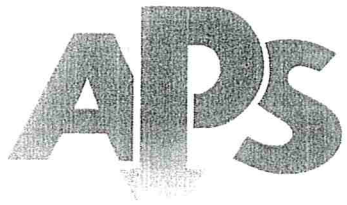
Target Utility:
Utility Type: Gas
Size: 5/8
Top (in): 37
Bottom (in): 38
Width (in):
Thickness (in):
Pipe Direction: E&W
Material: Steel

Utility Config Facing: E

Additional Utility:
Utility Type:
Size:
Top (in):
Bottom (in):
Width (in):
Thickness (in):
Pipe Direction:
Material:

5/8





TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job # 6765

Lead: Chris

Overlay Thickness (in):
Asphalt (in):
Concrete (in):
Brick (in):
soil type: Native

Pothole Number: 13

Date: 9/29/23

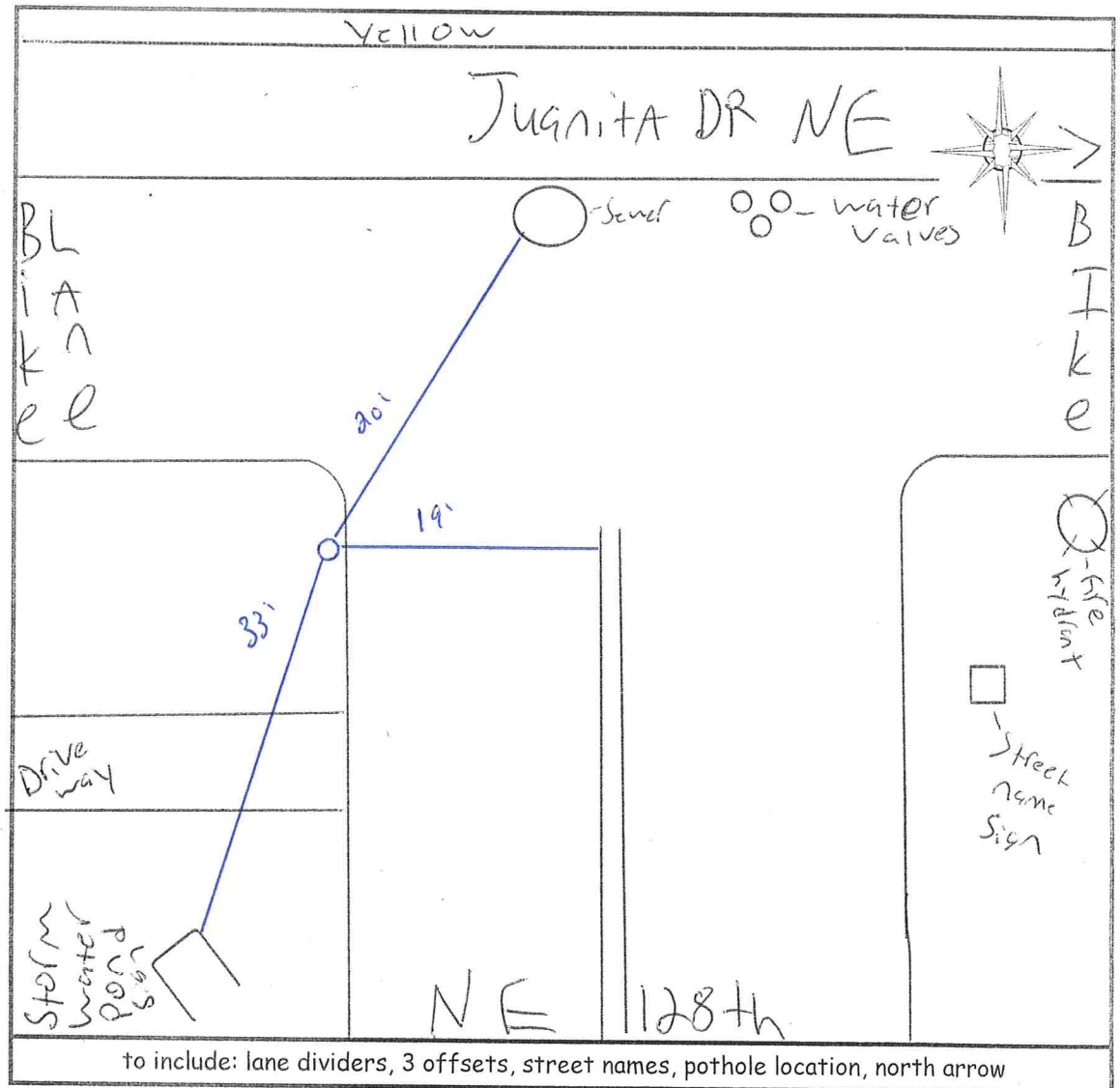
Notes:

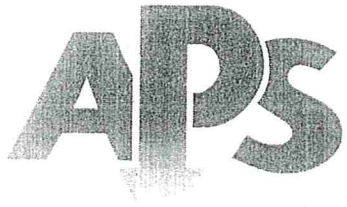
Target Utility:
Utility Type: Gas
Size: 2
Top (in): 36
Bottom (in): 38
Width (in):
Thickness (in):
Pipe Direction: E-W
Material: PE

Utility Config Facing: E

Additional Utility:

Utility Type:
Size:
Top (in):
Bottom (in):
Width (in):
Thickness (in):
Pipe Direction:
Material:





TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job #

6765

Lead:

CHRISTINA

Overlay Thickness (in):

Asphalt (in): 6

Concrete (in):

Brick (in):

soil type: Native

Pothole Number: 14

Date: 9/29/23

Notes:

Target Utility:

Utility Type: 1720

Size: 8

Top (in): 40

Bottom (in): 48

Width (in):

Thickness (in):

Pipe Direction: E-W

Material: Green PVC

Additional Utility:

Utility Type:

Size:

Top (in):

Bottom (in):

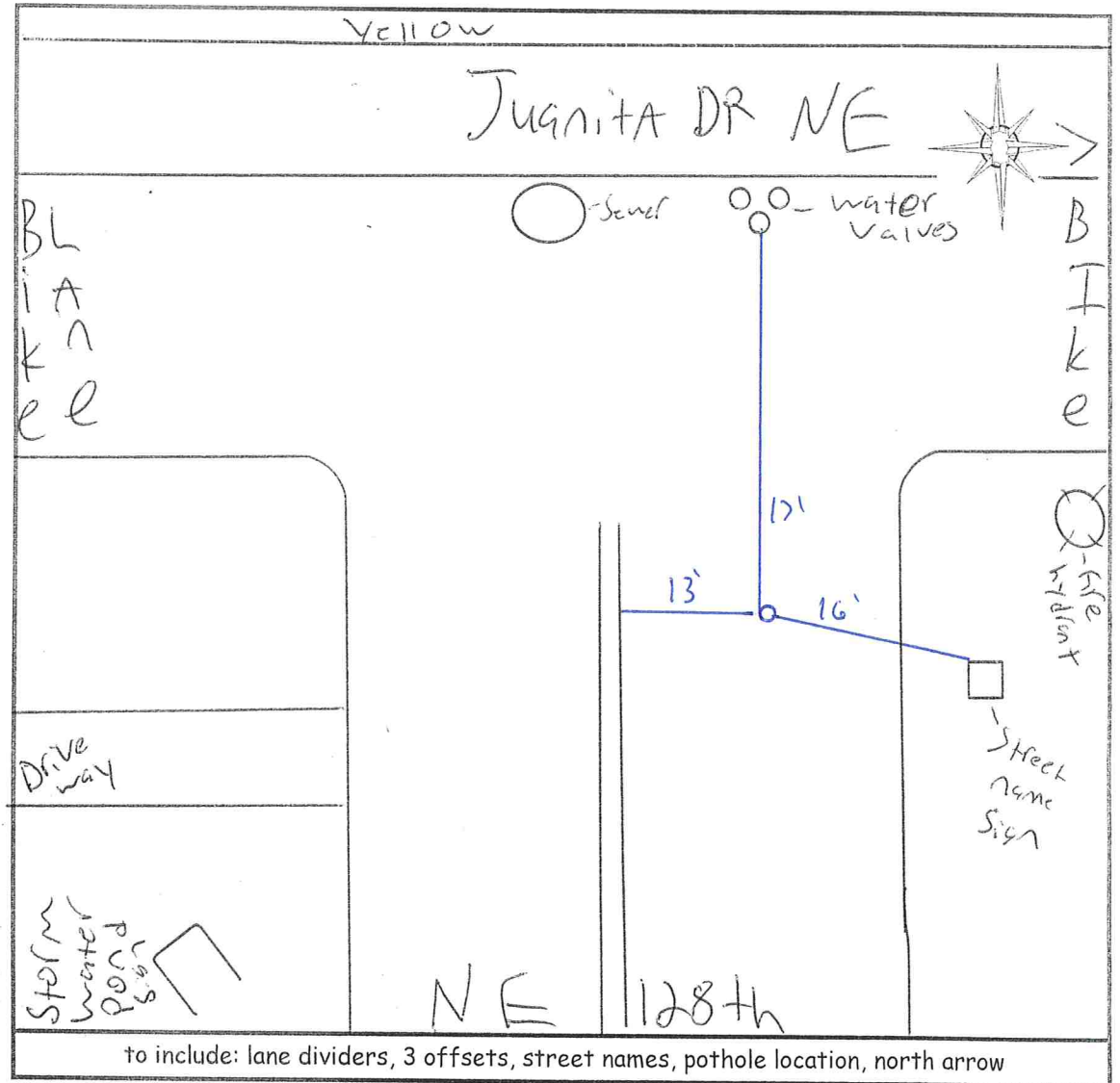
Width (in):

Thickness (in):

Pipe Direction:

Material:

Utility Config Facing: E





TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job # 6755

Lead: Chris

Overlay Thickness (in):

Asphalt (in):

Concrete (in):

Brick (in):

soil type:

Pothole Number: 15

Date: 9/29

Notes:

Did not dig
no Locates and
no Access to
Locate

Target Utility:

Utility Type:

Size:

Top (in):

Bottom (in):

Width (in):

Thickness (in):

Pipe Direction:

Material:

Additional Utility:

Utility Type:

Size:

Top (in):

Bottom (in):

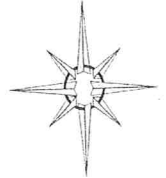
Width (in):

Thickness (in):

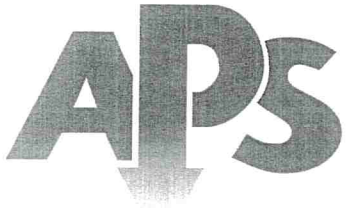
Pipe Direction:

Material:

Utility Config Facing:



to include: lane dividers, 3 offsets, street names, pothole location, north arrow



TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job # 6255

Lead: CHRIS

Overlay Thickness (in):

Asphalt (in):

Concrete (in):

Brick (in):

soil type:

Pothole Number: 16

Date: 9/29

Notes:

no access for
Locates dwd
no + dig

Target Utility:

Utility Type:

Size:

Top (in):

Bottom (in):

Width (in):

Thickness (in):

Pipe Direction:

Material:

Additional Utility:

Utility Type:

Size:

Top (in):

Bottom (in):

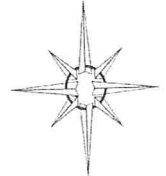
Width (in):

Thickness (in):

Pipe Direction:

Material:

Utility Config Facing:



to include: lane dividers, 3 offsets, street names, pothole location, north arrow



TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job #

6755

Lead:

Chandra

Overlay Thickness (in):

Asphalt (in):

Concrete (in):

Brick (in):

soil type: Native

Pothole Number:

17

Date:

9/29/23

Notes:

Target Utility:

Utility Type: power

Size:

3

Top (in): 60

Bottom (in): 63

Width (in):

Thickness (in):

Pipe Direction: E & W

Material: pvc

Additional Utility:

Utility Type:

Size:

Top (in):

Bottom (in):

Width (in):

Thickness (in):

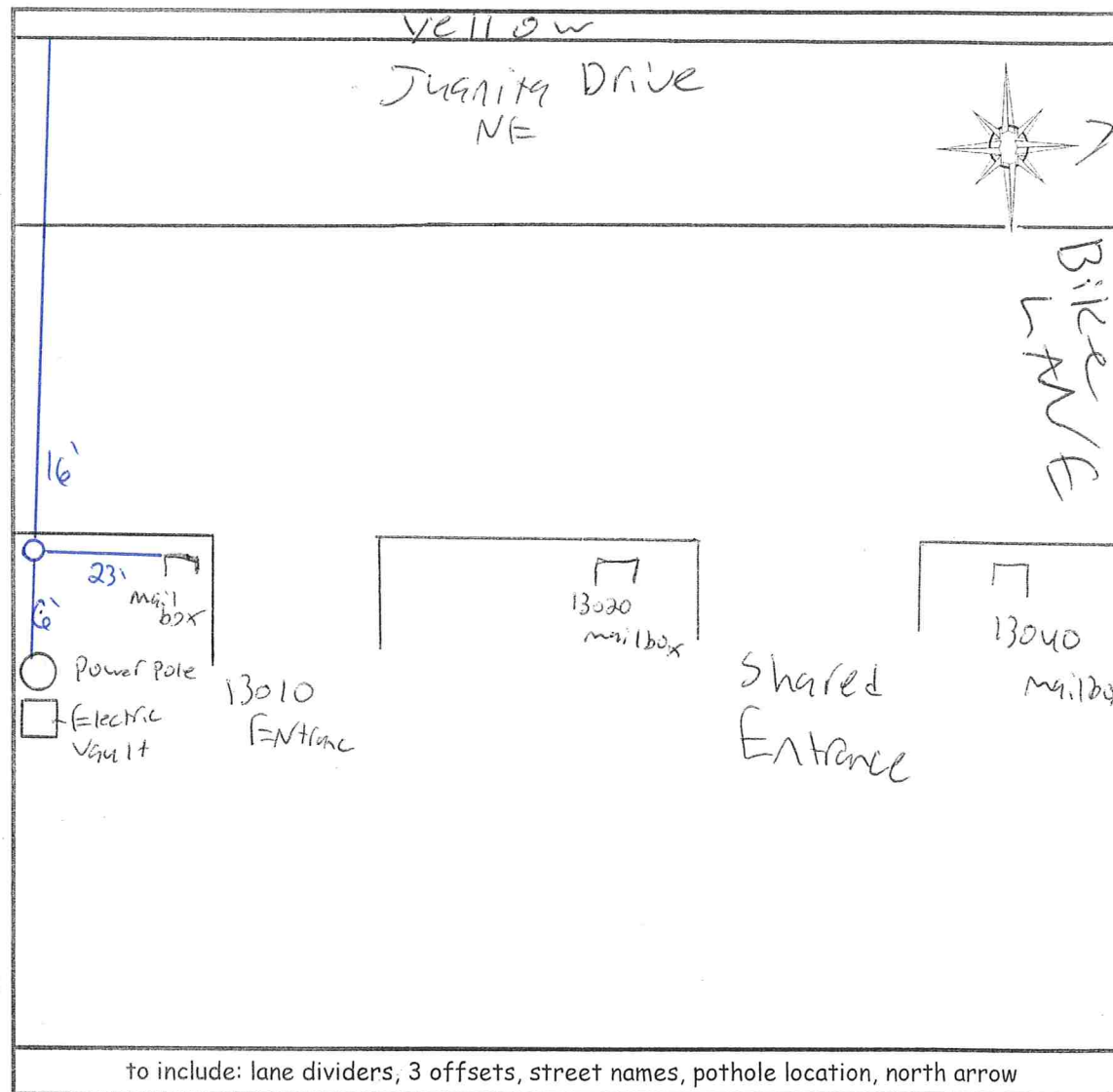
Pipe Direction:

Material:

Utility Config Facing:

E & W

3"






Lead: Christian

Pothole Number: 18

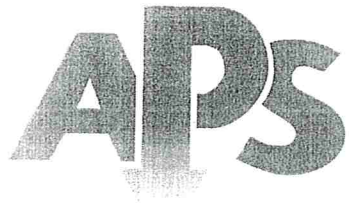
Date: 9/29/23

Notes:

Utility Config Facing: 

Material:

[illegible]



TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job # 6755

Lead: Christa

Overlay Thickness (in):
Asphalt (in):
Concrete (in):
Brick (in):
soil type: Native

Pothole Number: 19

Date: 9/29/23

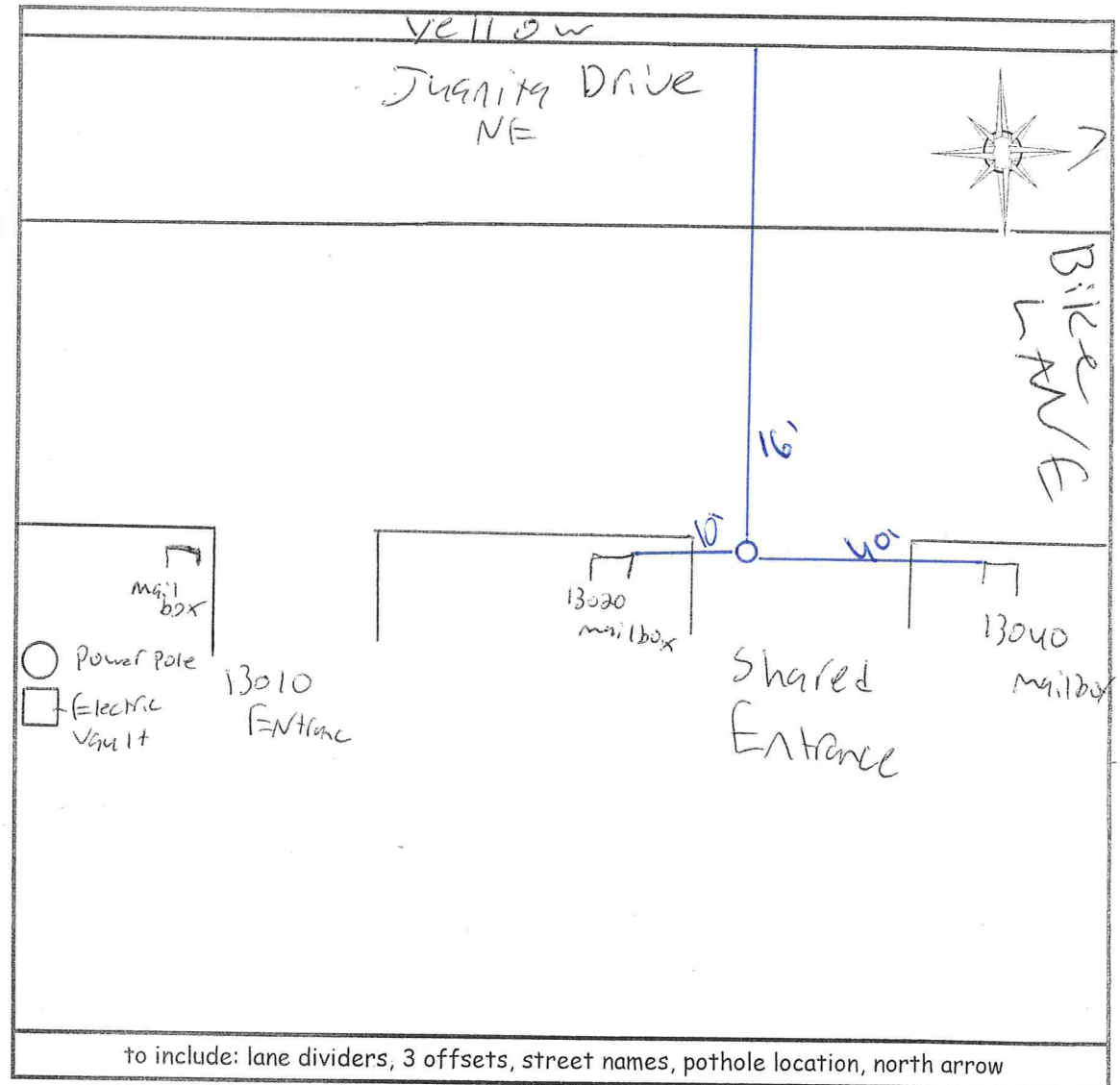
Notes:

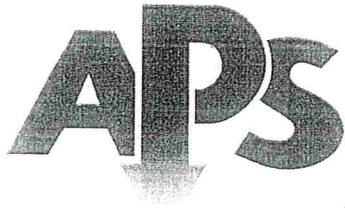
Target Utility:
Utility Type: Gas
Size: 5/8
Top (in): 34
Bottom (in): 35
Width (in):
Thickness (in):
Pipe Direction: EW
Material: PE

Utility Config Facing: E

Additional Utility:
Utility Type:
Size:
Top (in):
Bottom (in):
Width (in):
Thickness (in):
Pipe Direction:
Material:

(5/8")





TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job # 6255

Lead: Christian

Overlay Thickness (in):

Asphalt (in):

Concrete (in):

Brick (in):

soil type: NAVE

Pothole Number: 20

Date: 9/28/23

Notes:

Target Utility:

Utility Type: Gas

Size: 5/8

Top (in): 17

Bottom (in): 18

Width (in):

Thickness (in):

Pipe Direction: E-W

Material: PE

Additional Utility:

Utility Type:

Size:

Top (in):

Bottom (in):

Width (in):

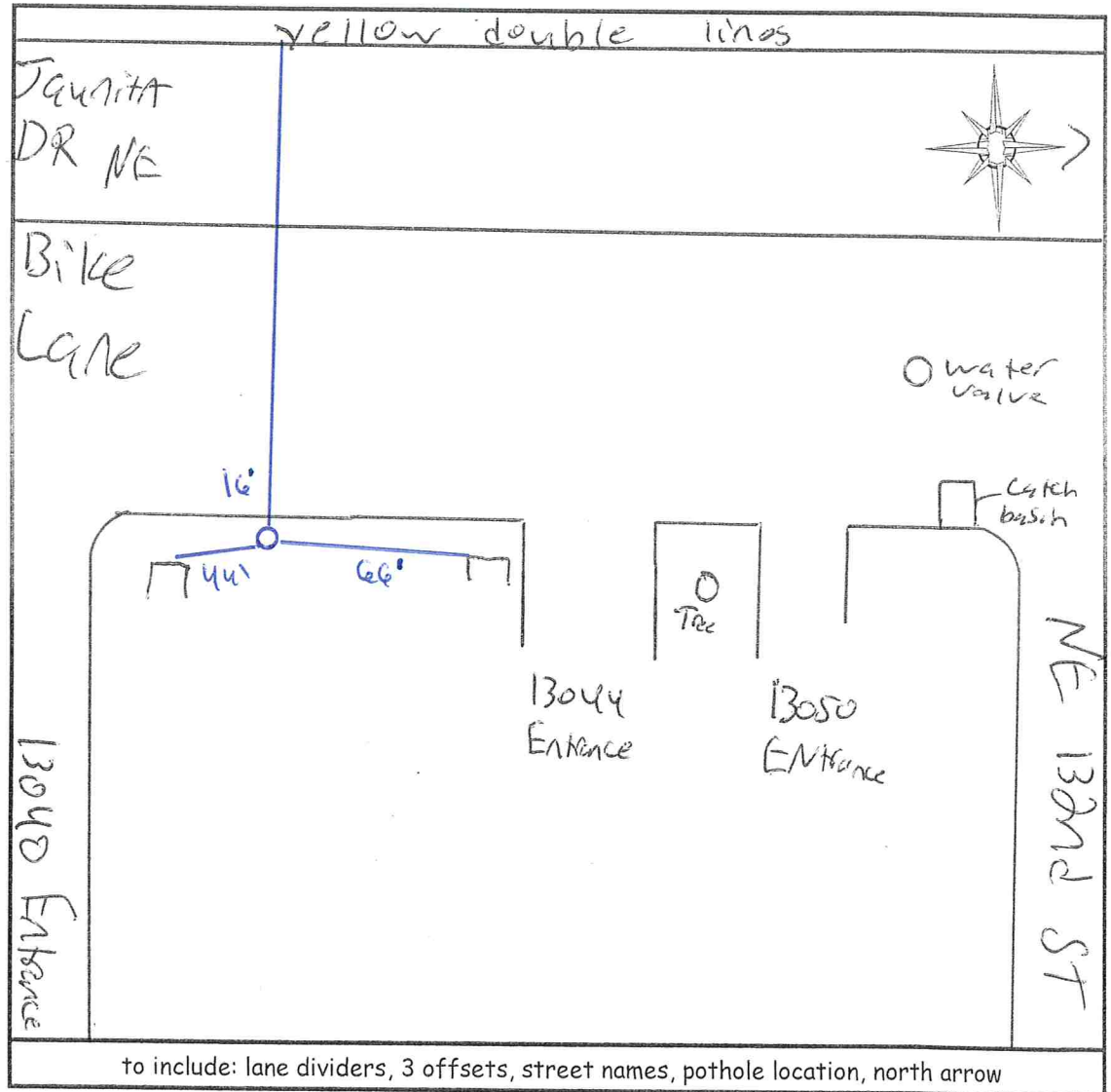
Thickness (in):

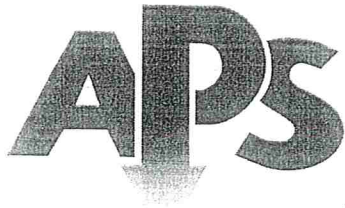
Pipe Direction:

Material:

Utility Config Facing: E

5/8





TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job # 6255

Lead: CHRISTIAN

Overlay Thickness (in):

Asphalt (in):

Concrete (in):

Brick (in):

soil type: NATIVE

Pothole Number: 21

Date: 9/28/23

Notes:

Target Utility:

Utility Type: Gas

Size: 5/8

Top (in): 29

Bottom (in): 30

Width (in):

Thickness (in):

Pipe Direction: E-W

Material: PE

Additional Utility:

Utility Type:

Size:

Top (in):

Bottom (in):

Width (in):

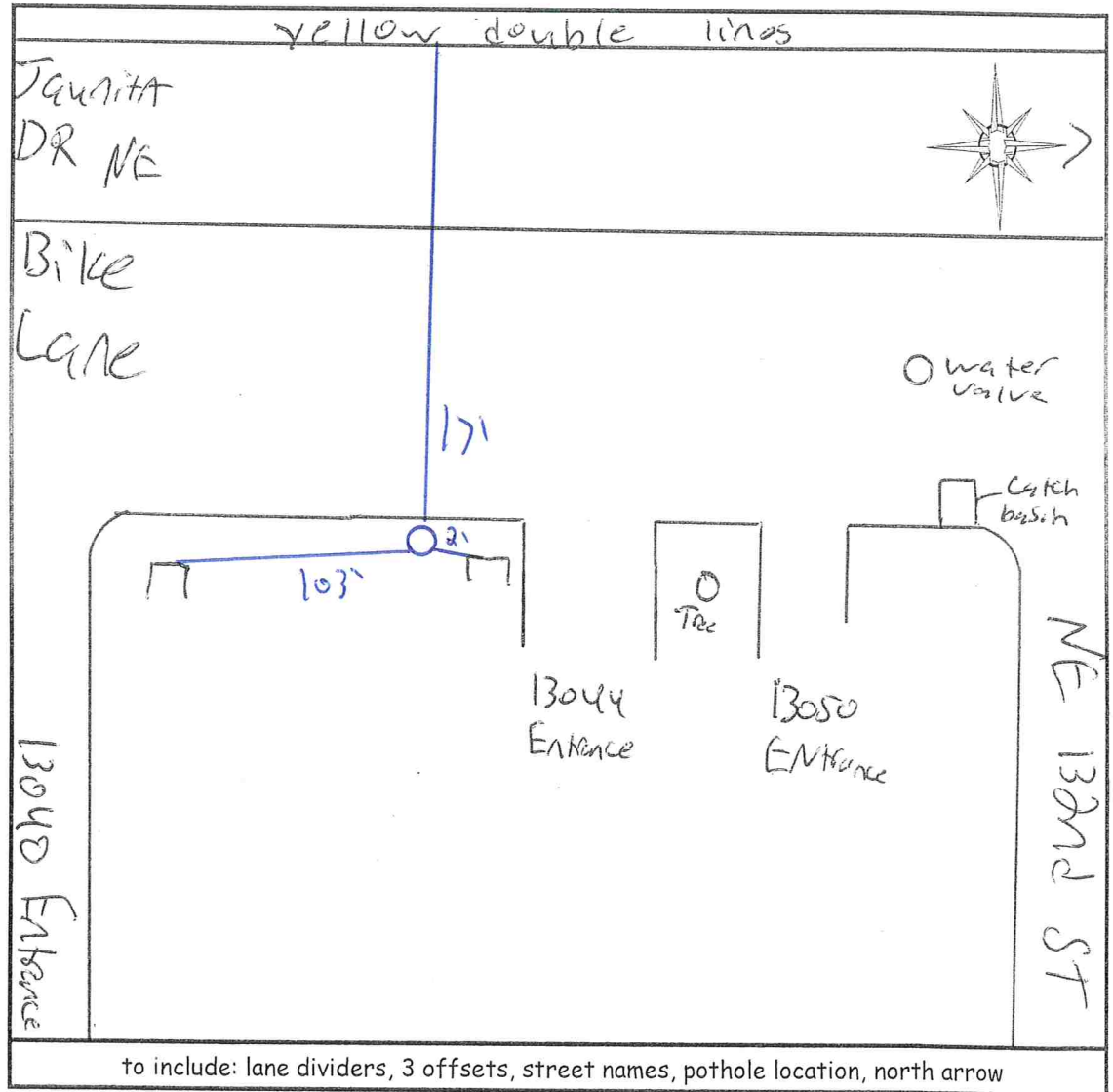
Thickness (in):

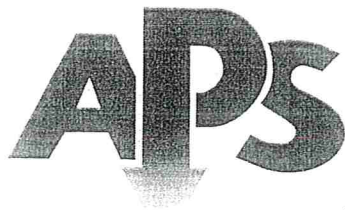
Pipe Direction:

Material:

Utility Config Facing: E

5/8





TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job # 6255

Lead: CHRISTEN

Overlay Thickness (in):

Asphalt (in):

Concrete (in):

Brick (in):

soil type:

Pothole Number: 22

Date: 9/28/23

Notes:

DUG ON
ONLY locate
no Luck
DNE

Target Utility:

Utility Type:

Size:

Top (in):

Bottom (in):

Width (in):

Thickness (in):

Pipe Direction:

Material:

Additional Utility:

Utility Type:

Size:

Top (in):

Bottom (in):

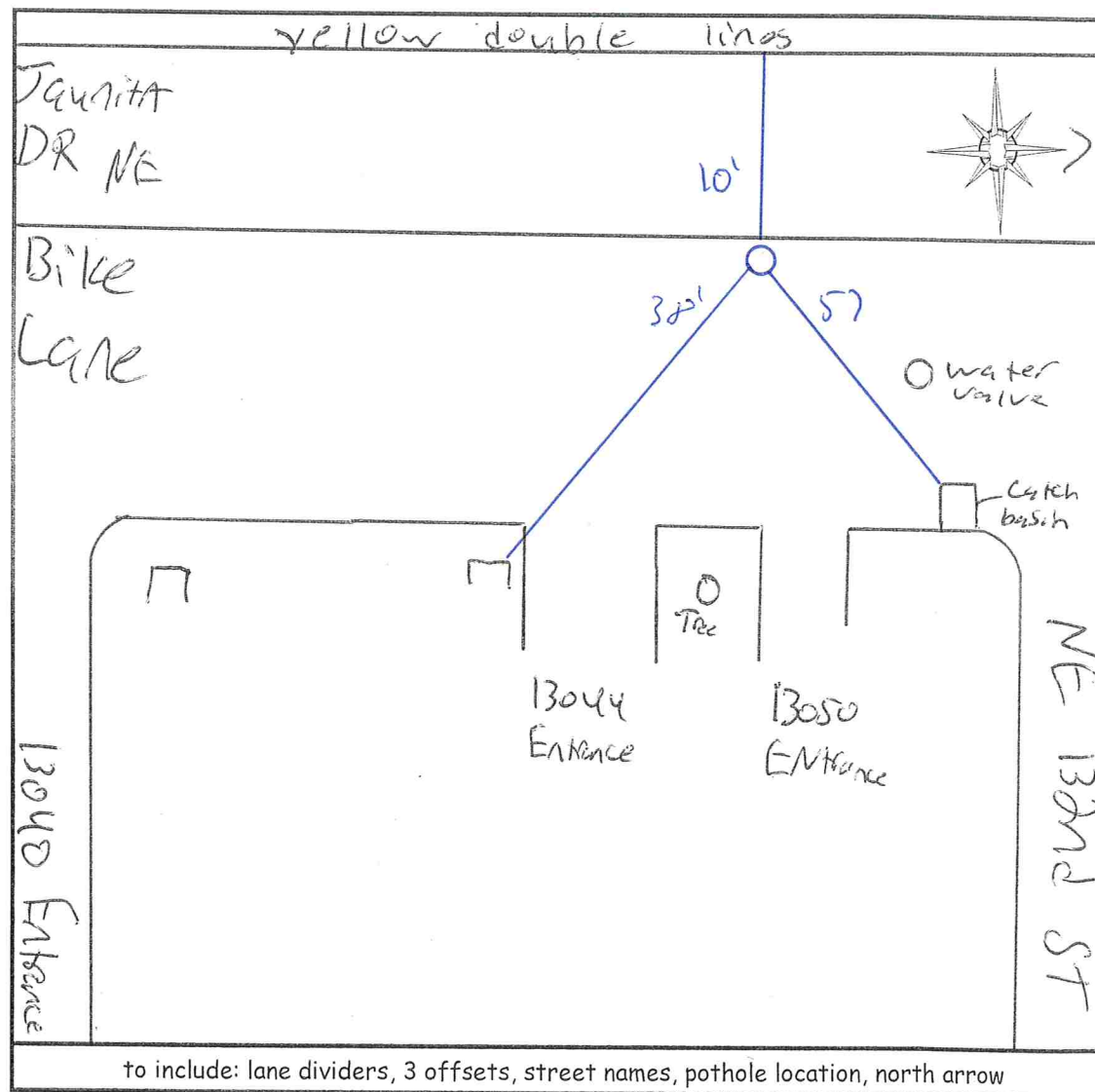
Width (in):

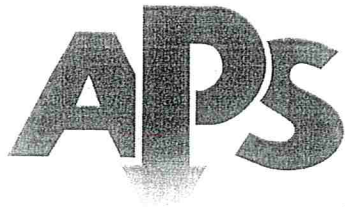
Thickness (in):

Pipe Direction:

Material:

Utility Config Facing:





TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job # 6255

Lead: CHRISTIAN

Overlay Thickness (in):

Asphalt (in): 6

Concrete (in):

Brick (in):

soil type: Native

Pothole Number: 23

Date: 9/28/23

Notes:

Target Utility:

Utility Type: Gas

Size: 5/8

Top (in): 32

Bottom (in): 34

Width (in):

Thickness (in):

Pipe Direction: E-W

Material: PE

Additional Utility:

Utility Type:

Size:

Top (in):

Bottom (in):

Width (in):

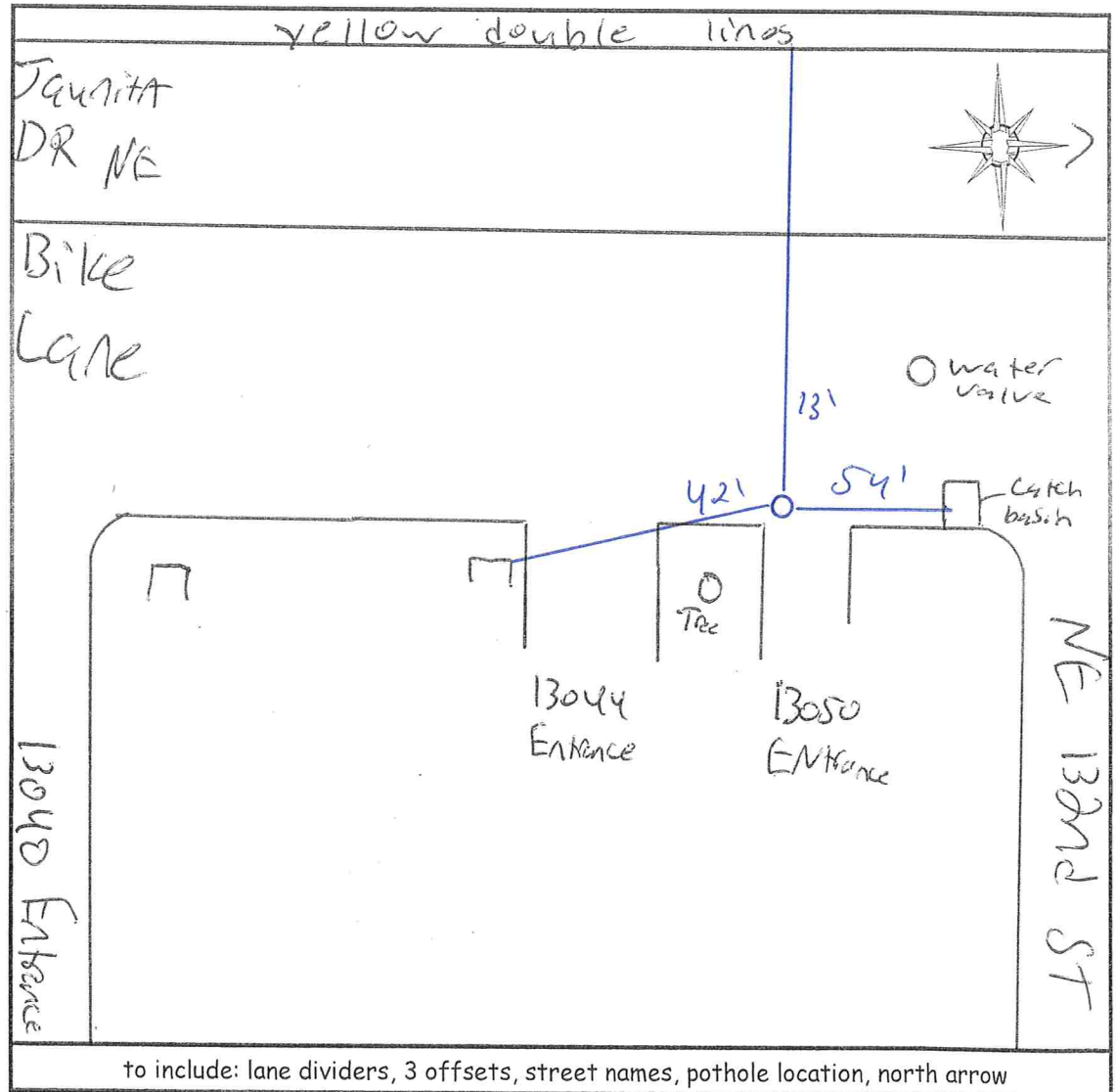
Thickness (in):

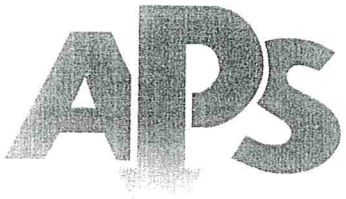
Pipe Direction:

Material:

Utility Config Facing: E

5/8





TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job # 6755

Lead: CHRISTIAN

Overlay Thickness (in):

Asphalt (in): 6

Concrete (in):

Brick (in):

soil type: varies

Pothole Number: 24

Date: 9/28/23

Notes:

pipe was wrapped

Target Utility:

Utility Type: water

Size: 12

Top (in): 36

Bottom (in): 48

Width (in):

Thickness (in):

Pipe Direction: EW

Material: FRP

Additional Utility:

Utility Type:

Size:

Top (in):

Bottom (in):

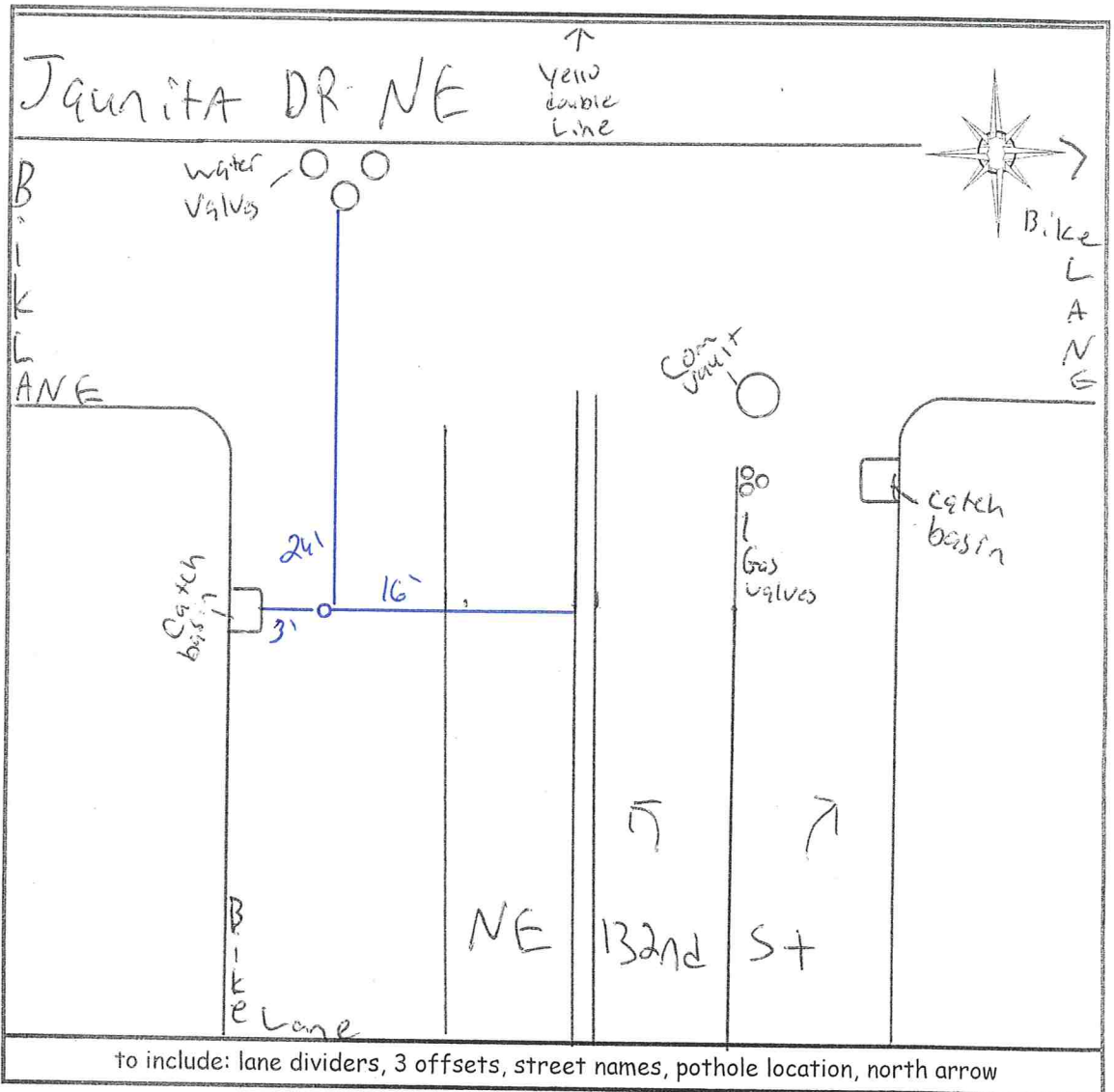
Width (in):

Thickness (in):

Pipe Direction:

Material:

Utility Config Facing: R





TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job # 6755

Lead: CHRISTIAN

Overlay Thickness (in):

Asphalt (in): 6

Concrete (in):

Brick (in):

soil type: native

Pothole Number: 25

Date: 9/28/23

Notes:

Target Utility:

Utility Type: com

Size:

Top (in): 43

Bottom (in): 53

Width (in):

Thickness (in):

Pipe Direction: NES

Material: CPE

Additional Utility:

Utility Type:

Size:

Top (in):

Bottom (in):

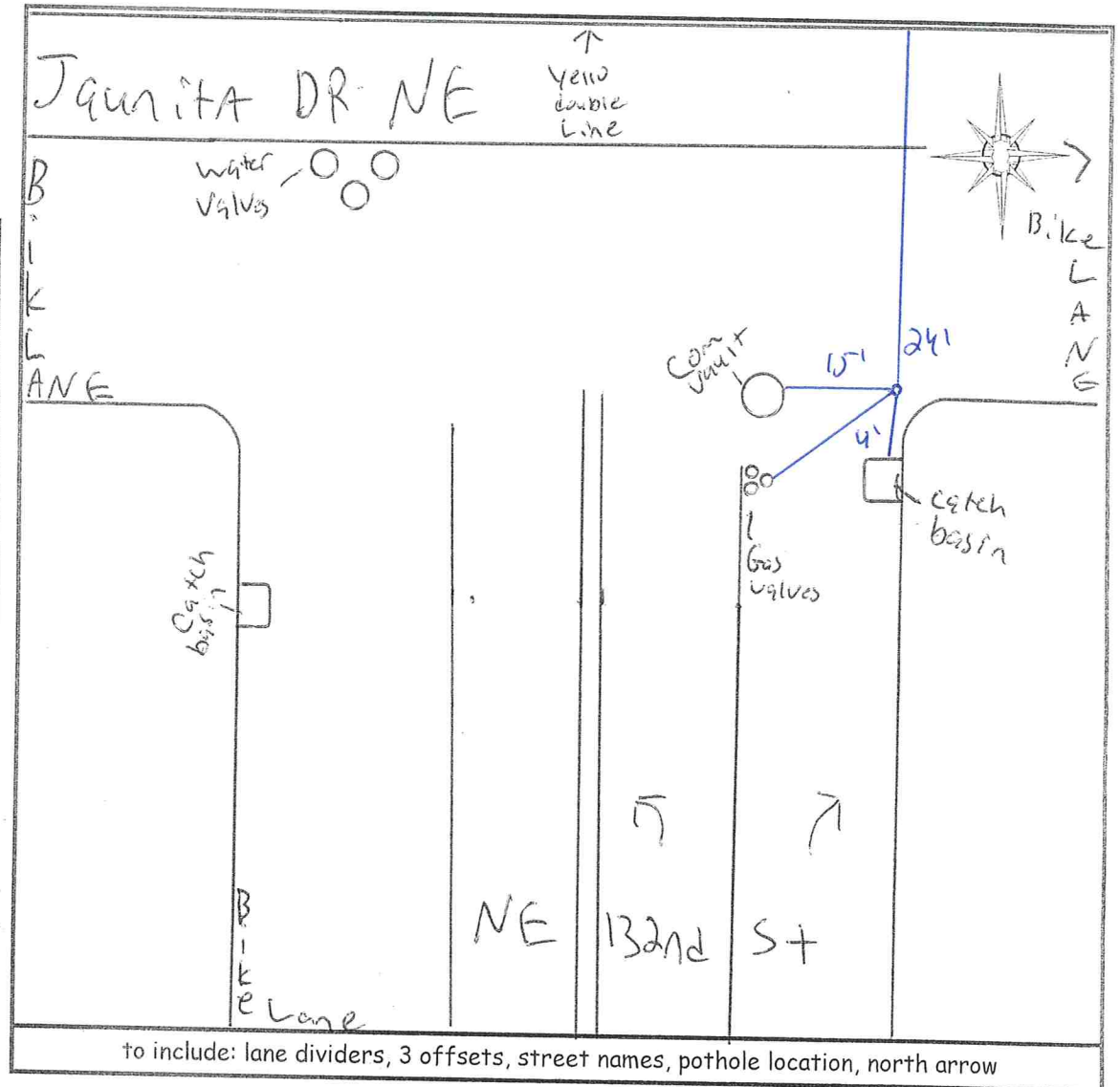
Width (in):

Thickness (in):

Pipe Direction:

Material:

Utility Config Facing: N





TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job # 6755

Lead: gabe

Overlay Thickness (in):
Asphalt (in):
Concrete (in):
Brick (in):
soil type: Native

Pothole Number: 26

Date: 10-5-23

Notes:

Target Utility:

Utility Type: H2O

Size: 8

Top (in): 48

Bottom (in): 56

Width (in): 8

Thickness (in): X

Pipe Direction: ew

Material: Di

Additional Utility:

Utility Type:

Size:

Top (in):

Bottom (in):

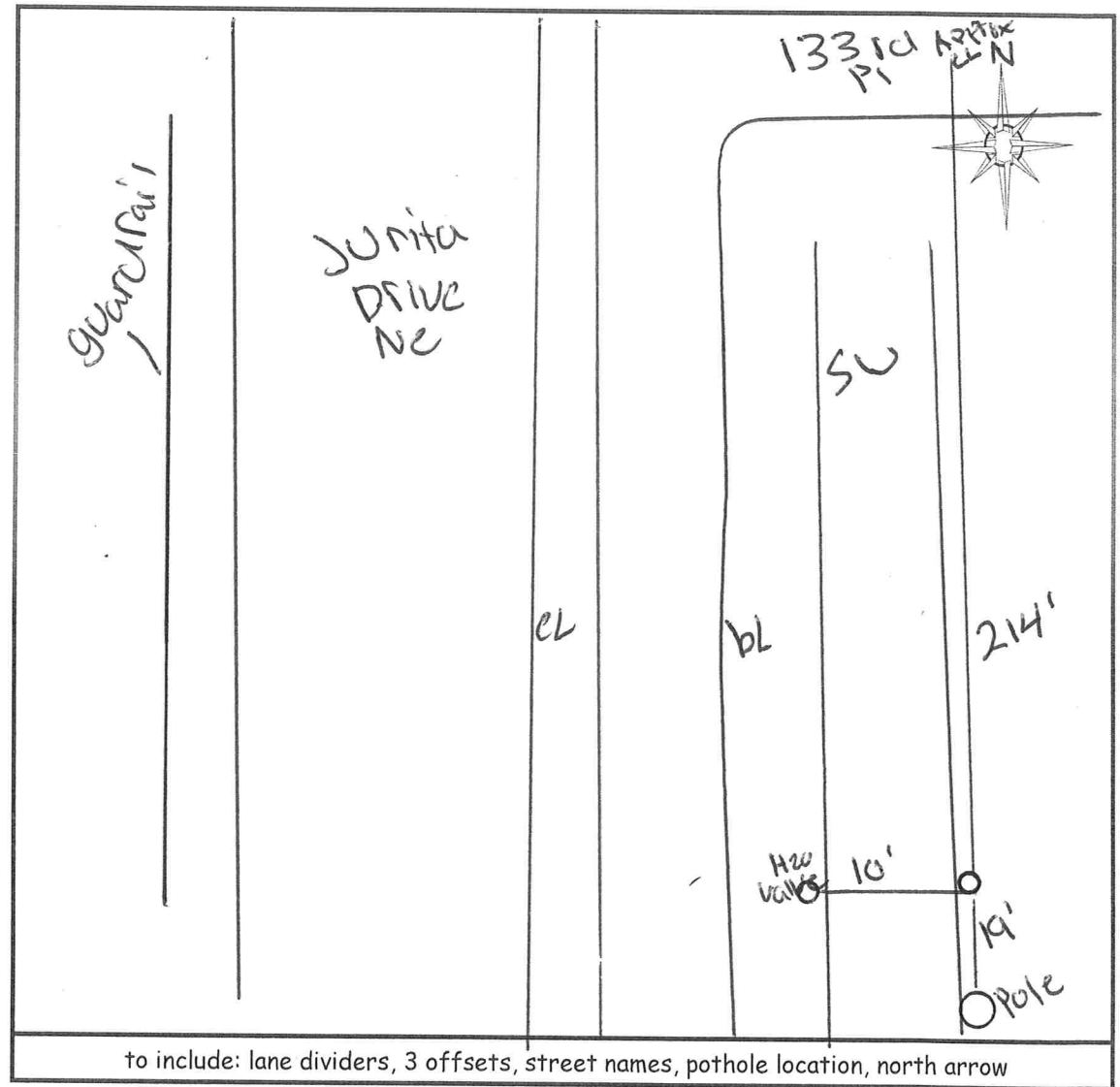
Width (in):

Thickness (in):

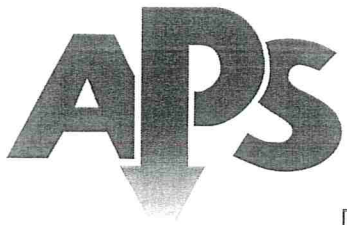
Pipe Direction:

Material:

Utility Config Facing: E



to include: lane dividers, 3 offsets, street names, pothole location, north arrow



TEST HOLE DATA SHEET

APPLIED PROFESSIONAL SERVICES INC.

Job #	6755
Lead:	Gabe

Overlay Thickness (in):
Asphalt (in): 10
Concrete (in):
Brick (in):
soil type: Native

Pothole Number:	27
-----------------	----

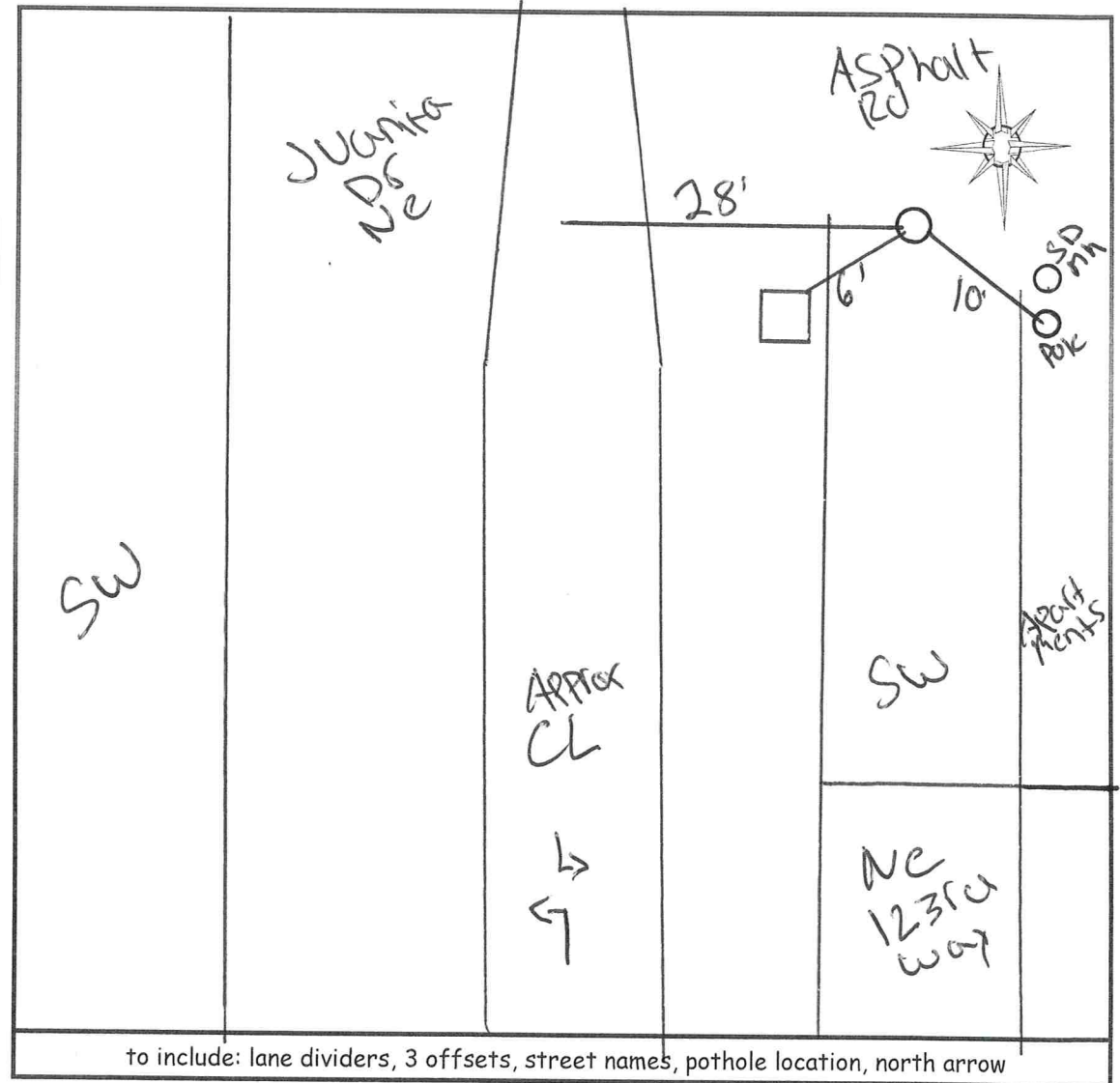
Date:	10-5-23
-------	---------

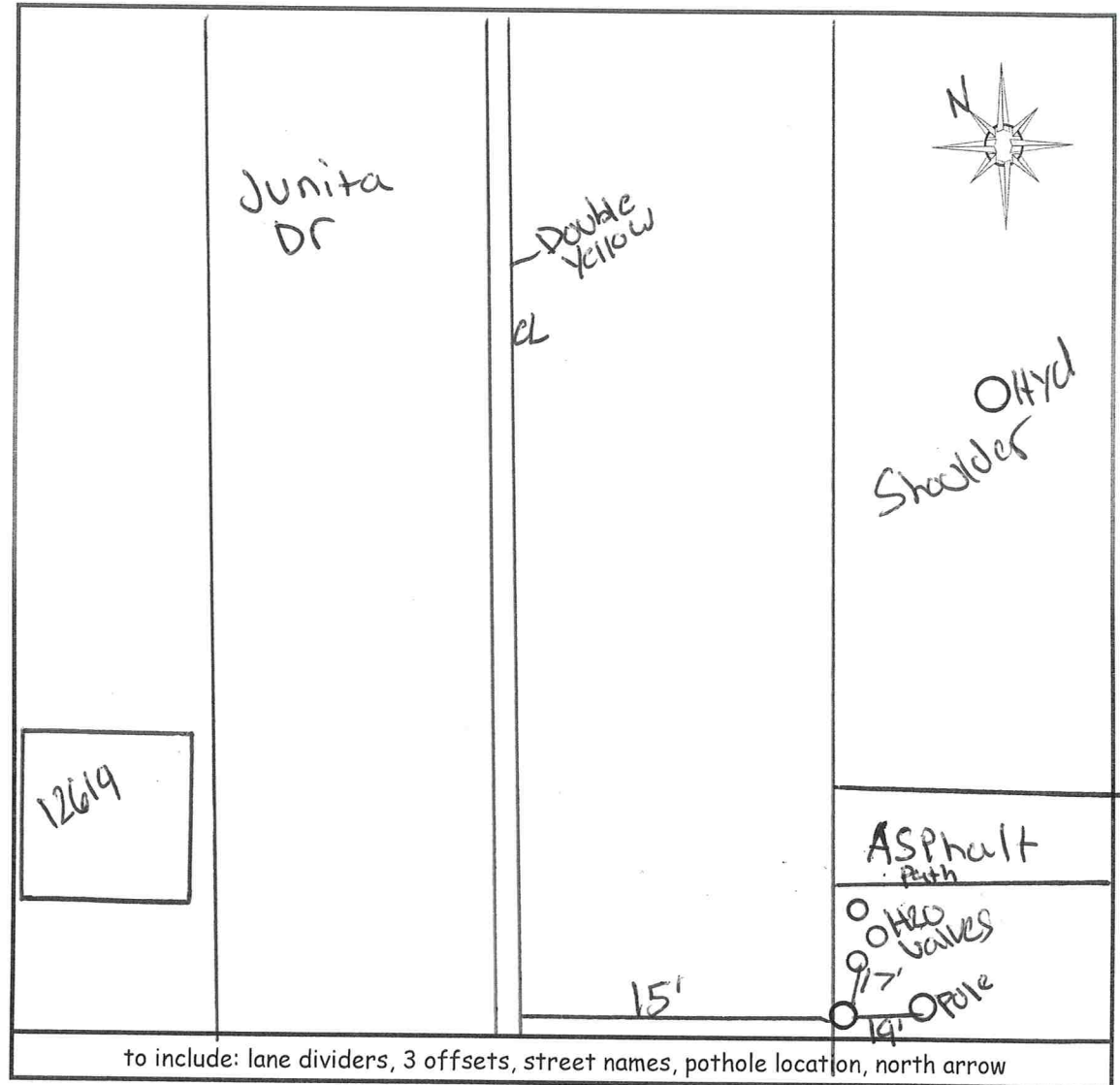
Target Utility:
Utility Type: PWR
Size: 4
Top (in): 36
Bottom (in): 40
Width (in): 8
Thickness (in): 4
Pipe Direction: N/S
Material: PVC

Notes:
Found 1-4" and 2-2" conduits

Additional Utility:
Utility Type:
Size:
Top (in):
Bottom (in):
Width (in):
Thickness (in):
Pipe Direction:
Material:

Utility Config Facing: N





Pothole Number	29
Create Date	2023-10-12
Overlay Thickness (in) Asphalt	8
Overlay Thickness (in) Concrete	NA
Overlay Thickness (in) Brick	NA
Utility Type	Water
Utility Size (in)	12
Utility Material	Ductile Iron
Pipe Direction	N & S
Soil Cond.	native
Top of Utility from Grade (in)	50
Bottom of Utility from Grade (in)	62
Pipe Condition	(3)Good-well defined/no pits
Width of Structure (in)	
CL Offset 1	14' e of approx cl of juanita dr
CL Offset 2	14' n of approx cl of ne 132 st
Notes 10/12/2023 christianh@apslocates.com pipe wrapped believe to be 10or12 inches	
GPS Uncertainty	0.64ft
Created By	christianh@apslocates.com
Created Date	2023-10-12 14:25
Edited By	christianh@apslocates.com
Edited Date	2023-10-12 14:26
GPS Latitude	47.7189600
GPS Longitude	-122.2370302
GPS Elevation	321.2ft
GPS Time	2023-10-12 14:25:55
GPS Data	provider: \$GPGGA quality: DIF satellites: 19 diffID: 0131 geoid separation: -18.322M hdop: 0.7 diffAge: 4.0sec Vertical Accuracy: 0.429m

APPENDIX D

ARBORIST REPORT

SUMMARY ARBORIST REPORT

To: Laura Drake, PE, Project Manager, City of Kirkland
CC: Erick Olson, Project Engineer, KPG Psomas
Site: Juanita Drive between: 80th & 112th; 120th & NE 133rd Pl
Re: Tree Inventory & Assessment
Date: August, 2023

Project Arborist: Tristan Fields, ISA Arborist #PN-8826A & Tree Risk Assessment Qualified
Landscape Architect: Coreen Schmidt, PLA, KPG Psomas
Project No: 19065
Attachments: Tree Retention Plan & Tree Protection Notes & Detail

SUMMARY

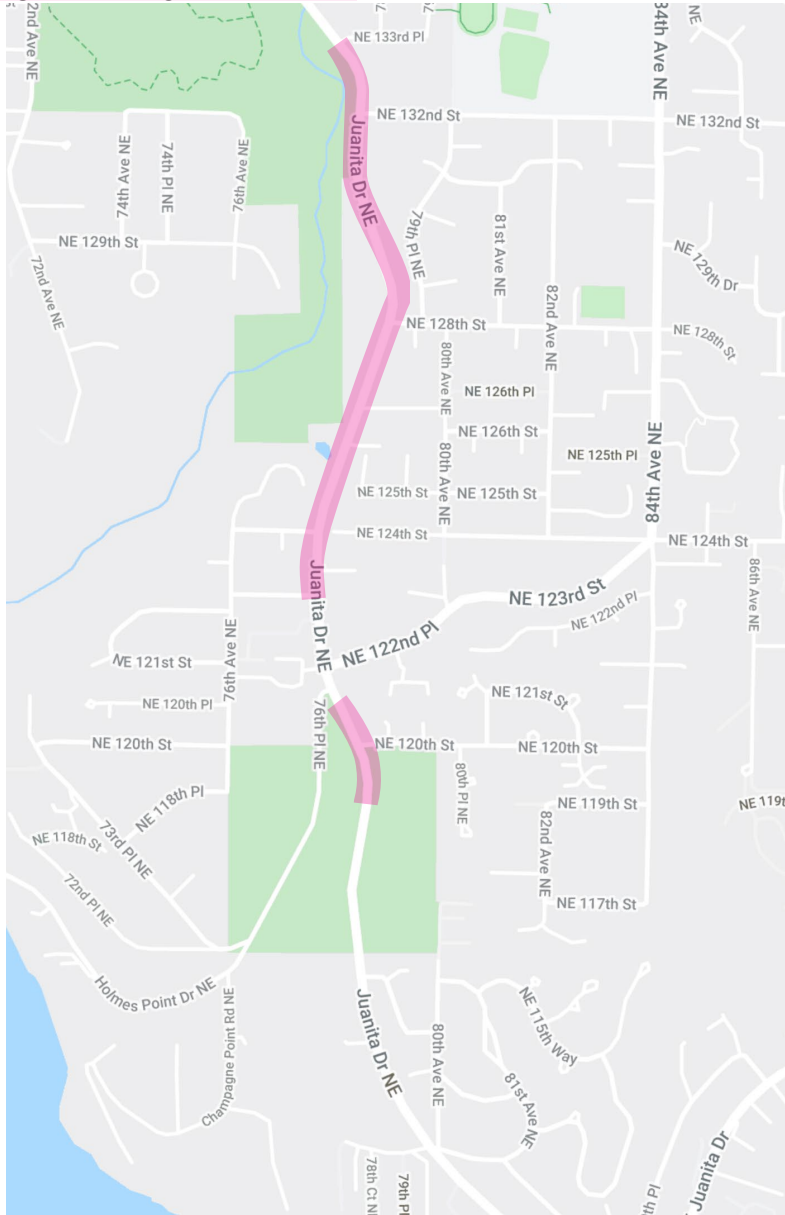
This report summarizes the tree inventory and assessments performed by Tristan Fields. KPG Psomas was asked to evaluate trees along the Juanita Drive project corridor. This report summarizes the trees within the Juanita Drive limits of construction improvements. This report assessed only significant trees (those with a diameter at breast height above 6") including right-of-way (ROW) trees, trees on adjacent private parcels (Private), and trees on Juanita Woodlands, King County Park property (Park). The trees are identified in the Tree Retention Plan and summarized in the Tree Inventory Table. The Tree Retention Plan shows an accurate survey and numbering system for each significant tree, the diameter at breast height (DBH), critical root zone (CRZ) of each tree, hazard trees, limits of disturbance, and recommended trees to be removed. KPG Psomas conducted the tree inventory throughout the Spring, Summer and Fall of 2021. As part of the inventory, KPG Psomas analyzed the City of Kirkland Zoning Code (KZC) tree retention policies and performed a level 2 tree risk assessment, evaluating each tree's general health, species tolerance to construction, the likelihood of failure, and degree of risk.

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<i>Tree Removals</i>	3		
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SUMMARY ARBORIST REPORT

PROJECT EXTENTS



DEFINITIONS

All definitions used are from *KZC Chapter 95.10*, except for the definition of landmark trees which is defined within the KZC amendments.

Critical Root Zone- the area surrounding a tree at a distance from the trunk, which is equal to one (1) foot for every inch of trunk diameter measured at 4.5 feet from grade (one (1) foot radius per one (1) inch DBH).

Grove- A group of three (3) or more significant trees with overlapping or touching crowns.

Hazard Tree- A tree that meets all the following criteria: a) a tree with a combination of structural defects and/or disease which makes it subject to a high probability of failure; is in proximity to moderate to high frequency targets (persons or property that can be damaged by tree failure); and the hazard condition of the tree cannot be lessened with reasonable and proper arboricultural practices nor can the target be removed.

Impact- A condition or activity that affects a part of a tree including the trunk, branches, and critical root zone.

Landmark Tree - A tree in good to excellent condition and a DBH of 26".

Limit of Disturbance- The boundary between the protected area around a tree and the allowable site disturbance as determined by a qualified professional measured in feet from the trunk.

Significant Tree- A tree that is at least six (6) inches in DBH.

Viable Tree - A significant tree that a qualified professional has determined to be in good health, with a low risk of failure due to structural defects, is windfirm if isolated or remains as part of a grove, and is a species that is suitable for its location.

Wildlife Snag - The remaining trunk of a tree that is intentionally reduced in height and usually stripped of its live branches.

Windfirm- A condition of a tree in which it withstands average peak local wind speeds and gusts.

SUMMARY ARBORIST REPORT

METHODOLOGY

In examining each tree, factors such as size, vigor, canopy and foliage condition, density of needles, injury, insect activity, root damage and root collar health, crown health, evidence of disease-causing bacteria, fungi or virus, dead wood and hanging limbs are all taken into consideration.

OBSERVATIONS & DISCUSSION**THE SITE**

The project includes various sections along Juanita Drive traveling north along the eastern edge of Juanita from NE 120th up to NE 133rd Pl. The assessed trees are predominantly Puget Sound native lowland species mixed with a few landscape trees planted by private parcel owners; refer to the Tree Inventory for specific species distribution.

DISCUSSION OF TREES

Throughout the project site there were 194 trees inventoried. The attached Tree Inventory Table (see page 5) includes the unique identification number for each tree, the DBH, the general health of the trees (refer to the vigor rating from Table 1, page 4), whether the tree should be retained or removed, and further comments as to why the trees should be retained or removed.

Refer to the Tree Inventory Table in conjunction with the Tree Retention Plan for information on specific trees.

TREE REMOVALS

There are 109 trees recommended for removal as part of this project and an additional (5) recommended for removal by adjacent property owners. Of the trees recommended for removal by the project, (18) occur on private parcels, and (91) are located within the right-of-way; (10) of these trees are Landmark Trees (see discussion, this page), the remaining (99) are significant trees (see discussion, page 4). Trees were marked for removal predominantly due to proposed roadway improvements. If it was evident that the trees were part of a grove, and a large extent of the grove trees were marked for removal, the removals were extended throughout the grove due to windfirmness concerns and to reduce danger to nearby high value targets. Some removals were designated to be cut as a wildlife snag.

TARGETS

The targets along the project include private homes and a high-volume street.

LANDMARK TREES

Twenty-two (22) trees within the project limits are considered Landmark Trees (good vigor rating and a DBH of 26" or more). Most of the Landmark Trees are native ingrown trees. Ten (10) of the Landmark Trees will be removed, eight (8) from the right-of-way and two (2) from private property; the remaining Landmark Trees shall be preserved.

Landmark tree removals will be mitigated at a three-to-one ratio with trees selected from the City of Kirkland's *Approved Landmark Tree Mitigation List*. There will be (30) replacement trees planted along the project corridor to mitigate for these removals; including (8) *Pinus contorta* 'Contorta' / *Shore Pine*, (15) *Thuja plicata* / *Western Red Cedar*, and (10) *Tsuga mertensiana* / *Mountain Hemlock*.

TREE K1: Of note is Landmark Tree K1 located on private parcel 384070-0249, address 13040 Juanita Dr NE. Tree K1 is a Bigleaf Maple that has a DBH of 55". Particular attention was paid to preserving this tree as it is growing flush to the ROW on a private parcel. The proposed improvements at this location occupy the entire ROW. The proposed design was modified to elevate the sidewalk over existing roots, preserving the roots and reducing the long-term impacts to the tree.

The eight (8) Landmark Trees to be removed from the Right-of-Way include:

- Tree G31, Douglas Fir, DBH 27"
- Tree G39, Douglas Fir, DBH 27"
- Tree H2, Bigleaf Maple, DBH 34"
- Tree H24, Willow, DBH 30"
- Tree H31, Bigleaf Maple, 35"
- Tree I2, Bigleaf Maple, DBH 37"
- Tree I5, Douglas Fir, DBH 36"
- Tree L7, Douglas Fir, DBH 31"

The two (2) Landmark Trees to be removed from private property include:

- Tree G21, Douglas Fir, DBH 28"
- Tree G34, Douglas Fir, DBH 28"



Tree K1 - showing proximity to the ROW, designated by the fence line to the left

SUMMARY ARBORIST REPORT

SIGNIFICANT REPLACEMENT TREES & REMOVAL COMPLIANCE

The 91 significant trees removed from ROW shall be replaced in compliance with *KZC 95.25 (Tree Removal - Not Associated with Development Activity)* at a one to one ratio per *Table 95.25.3 (Tree Replacement Standards)*.

There will be 25 replacement trees planted along the project corridor to mitigate for significant tree removals; an additional 66 significant tree removals will mitigated through fee-in lieu paid to the City Forestry Account, in compliance with *KZC 95.57*.

For the removals on private parcels, each parcel was evaluated for their compliance with *KZC 95.25, Table 95.25.1 (Regulated Tree Removal Allowances)*. The individual parcels and their compliance levels are discussed below, from south to north along the corridor:

1. **Tree Retention Plan, Sheet F, parcel 390023-0030, address 12515 78th LN NE**
Tree F2, is designated as a hazard tree. This tree is not recommended for removal due to construction impacts, but recommended to inform homeowners of the designation.
2. **Tree Retention Plan, Sheet G, parcel 384070-0720, address 12638 Juanita Dr NE**
There are three (3) recommended tree removals on this parcel. Aerial observations of this parcel show a number of significant trees on the property, meeting the requirement of the retention of two (2) significant trees.
3. **Tree Retention Plan, Sheet G & H, parcel 384070-0710, address 12708 Juanita Dr NE**
There are twenty-eight (28) recommended tree removals on this parcel. Aerial observations of this parcel show a number of remaining significant trees on the property, meeting the requirement of the retention of two (2) significant trees.

REMOVING TREES - BEST PRACTICES

The majority of the trees to be removed shall be removed entirely due to proposed roadway improvements. However, when possible it is recommended to flush cut the tree to grade, retaining the root mass. The higher the cut on the trunk, the better for the livelihood of the neighboring grove. Trees in groves survive in a symbiotic environment, relying on one another for wind protection, nutrient sharing, and shared structural support. When and where possible, create a wildlife snag; the snag not only serves as a long-term support to the neighboring trees, but provides important ecosystem function by serving as a nesting ground for insects, birds, and mycorrhizal production. Refer to the Tree Retention Plan for notes on recommended locations for use of tree removal best practices.

TABLE 1 - ASSESSMENT OF RELATIVE CONDITION OF TREES¹

Overall Vigor Rating	Canopy Density	Amount of Deadwood	History of Failure	Pests	Extent of Decay
Severe Decline	<2%	Large; Major Scaffold Branches	More than One Scaffold	Infested	Major-Conks and Cavities
Declining	20-60%	Twig & Branch Die back	Scaffold Branches	Infestation of Significant Pests	One to a Few Conks; Small Cavities
Low	60-90%	Small Twigs	Small Branches	Minor	Present at Pruning Wounds
Good	90-100%	Little or None	None	Minor	Present at Pruning Wounds
Excellent	100%	None	None	None, or Insignificant	Absent

¹Matheny, N.P. & Clark, J.R. Trees and Development: A Technical Guide to Preservation of Trees During Land Development. Bright Sparks, 1998

JUANITA DRIVE INTERSECTION & SAFETY IMPROVEMENTS

SUMMARY ARBORIST REPORT

User ID	Latin Name	Common Name	Land Use	DBH (in)	Retain/ Remove	Condition Rating	Removal Notes	Utility Conflict	Comments
B1	<i>Pseudotsuga menziesii</i>	Douglas fir	Park	27 in	Retain	Good			Recommend keeping if fill line remains
B2	<i>Alnus x fallacina</i>	Alder	Park	27 in	Retain	Good			Preserve tree of fill remains the same
B3	<i>Pseudotsuga menziesii</i>	Douglas fir	Park	25 in	Retain	Good			If the fill line remains the same this tree can be preserved
B4	<i>Pseudotsuga menziesii</i>	Douglas fir	Park	23 in	Retain	Good			Keep- far enough away from construction impacts . Primary leader regrowing.
					Remove (by others*)	Declining	Hazard Tree		No primary leader... high potential for failure in the future- make into habitat snag. *TREE OUTSIDE PROJECT LIMITS - NOTIFY OWNER. RECOMMEND REMOVAL OR HABITAT SNAG.
B5	<i>Pseudotsuga menziesii</i>	Douglas fir	Park	15 in	Remove (by others*)	Declining	Hazard Tree		RECOMMEND REMOVAL OR HABITAT SNAG.
B6	<i>Pseudotsuga menziesii</i>	Douglas fir	Park	23 in	Retain	Good	Nuisance Tree		Suggest keep
B7	<i>Prunus emarginata</i>	Bitter cherry	Park	6 in	Retain	Excellent			Small tree - could survive impacts
B8	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	30 in	Remove	Low			Removed for construction
B9	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	7 in	Retain	Excellent			Young maple can adjust to impacts
B10	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	20 in	Remove				
B11	<i>Pseudotsuga menziesii</i>	Douglas fir	Park	29 in	Retain	Excellent			Preserve tree and snag nearby
					Remove (by others*)				Snag - habitat - preserve *TREE OUTSIDE PROJECT LIMITS - NOTIFY OWNER. RECOMMEND HABITAT SNAG.
B12	<i>Pseudotsuga menziesii</i>	Douglas fir	Park	20 in	Remove (by others*)				Hazard tree - fell to 4' *TREE OUTSIDE PROJECT LIMITS - NOTIFY OWNER. RECOMMEND HABITAT SNAG.
B13	<i>Arbutus menziesii</i>	Pacific madrone	Park	15 in	Remove (by others*)		Hazard Tree		Dead tree being supported by b14
B14	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	19 in	Remove	Good			
B15	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	18 in	Remove	Low	Windfirm Danger		
B16	<i>Pseudotsuga menziesii</i>	Douglas fir	Park	27 in	Retain	Good	Windfirm Danger		
B17	<i>Pseudotsuga menziesii</i>	Douglas fir	Park	9 in	Retain	Low	Windfirm Danger		
B18	<i>Pseudotsuga menziesii</i>	Douglas fir	Park	21 in	Retain	Good	Windfirm Danger		
B19	<i>Pseudotsuga menziesii</i>	Douglas fir	Park	7 in	Retain	Good			Young tree no need to remove.
B21	<i>Arbutus menziesii</i>	Pacific madrone	Right-of-Way	21 in	Remove	Low	Hazard Tree		Significant madrone growing at a 20 degree angle into the roadway
B22	<i>Pseudotsuga menziesii</i>	Douglas fir	Park	23 in	Retain	Excellent	Windfirm Danger		
B23	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	19 in	Remove	Good	Windfirm Danger		White tape
B24	<i>Pseudotsuga menziesii</i>	Douglas fir	Park	22 in	Retain				Snag- habitat snag
B25	<i>Populus trichocarpa</i>	Black cottonwood	Right-of-Way	20 in	Retain	Excellent			Remove due to project impact
B26	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	22 in	Retain	Excellent	Windfirm Danger		Remove
B27	<i>Prunus emarginata</i>	Bitter cherry	Right-of-Way	8 in	Remove	Low	Hazard Tree		Leaning into the roadway
B28	<i>Pseudotsuga menziesii</i>	Douglas fir	Park	9 in	Retain	Good	Windfirm Danger		Small enough to withstand construction impacts, and may be far enough away to preserve. 13.5' from B29
B29	<i>Pseudotsuga menziesii</i>	Douglas fir	Park	23 in	Retain	Good	Windfirm Danger		B31 is leaning on it, but otherwise in excellent health
B30	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	10 in	Remove	Declining	Windfirm Danger		In poor shape
B31	<i>Arbutus menziesii</i>	Pacific madrone	Park	16 in	Retain	Declining	Windfirm Danger		Leaning heavily on B29
B32	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	17 in	Retain	Low			
B33	<i>Populus trichocarpa</i>	Black cottonwood	Private	17 in	Retain	Good			If fill line remains the same - keep tree
B34	<i>Populus trichocarpa</i>	Black cottonwood	Private	18 in	Retain	Good			If fill line remains the same - keep tree
B35	<i>Populus trichocarpa</i>	Black cottonwood	Private	20 in	Retain	Good			If fill line remains the same - keep tree
B36	<i>Pseudotsuga menziesii</i>	Douglas fir	Park	33 in	Retain	Good			Far away from the project but of significant size- may incur impacts
B37	<i>Populus trichocarpa</i>	Black cottonwood	Right-of-Way	16 in	Remove	Good			
D1	<i>Thuja</i>	red cedar spp	Right-of-Way	19 in	Retain	Good		Present and no potential conflict	Also of note small grand fir nearby planted and needs removal
D2	<i>Acer circinatum</i>	Vine maple	Right-of-Way	6, 6, 6, 6 in (12")	Retain	Low		Present and no potential conflict	Multi-stemmed vine maple , 4, 4, 3.5, 4, 3

JUANITA DRIVE INTERSECTION & SAFETY IMPROVEMENTS

SUMMARY ARBORIST REPORT

User ID	Latin Name	Common Name	Land Use	DBH (in)	Retain/ Remove	Condition Rating	Removal Notes	Utility Conflict	Comments
D3	<i>Betula papyrifera</i>	Paperbark Birch	Private	10, 8 in (13")	Remove (by others*)	Low			The 2 main central leaders are dead, recommend removal. *TREE OUTSIDE PROJECT LIMITS - NOTIFY OWNER. RECOMMEND REMOVAL.
D4	<i>Populus trichocarpa</i>	Black cottonwood	Right-of-Way	12 in	Remove	Good			Each of the trees in this grove is covered in ivy, however, they generally look healthy.
D5	<i>Populus trichocarpa</i>	Black cottonwood	Right-of-Way	16 in	Remove	Good			
D7	<i>Populus trichocarpa</i>	Black cottonwood	Private	16 in	Retain	Good			
D8	<i>Populus trichocarpa</i>	Black cottonwood	Private	18 in	Retain	Good			
D9	<i>Populus trichocarpa</i>	Black cottonwood	Private	10 in	Retain	Good			
D10	<i>Populus trichocarpa</i>	Black cottonwood	Private	14 in	Retain	Good			
D11	<i>Populus trichocarpa</i>	Black cottonwood	Right-of-Way	6 in	Remove	Good			
D12	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	8, 8, 4, 4 in (13")	Remove	Good			
D13	<i>Populus trichocarpa</i>	Black cottonwood	Private	10 in	Remove	Good			
D14	<i>Populus trichocarpa</i>	Black cottonwood	Private	10 in	Retain	Good			
D15	<i>Populus trichocarpa</i>	Black cottonwood	Right-of-Way	12 in	Remove	Good			
D18	<i>Populus trichocarpa</i>	Black cottonwood	Private	14 in	Retain	Good			
D19	<i>Populus trichocarpa</i>	Black cottonwood	Private	14 in	Retain	Good			
D20	<i>Populus trichocarpa</i>	Black cottonwood	Private	10 in	Retain	Good			
D21	<i>Populus trichocarpa</i>	Black cottonwood	Private	14 in	Retain	Good			
E1	<i>Prunus cerasifera</i> 'Thundercloud'	'Thundercloud' Purple-leaf plum	Right-of-Way	12 in	Retain	Low		Present and no potential conflict	Keep, but nearing end of life
E2	<i>Pinus</i>	pine spp	Private	22 in	Retain	Good		Present and no potential conflict	Keep
E3	<i>Pinus</i>	pine spp	Right-of-Way	8, 12 in (15")	Retain	Low			Keep
E6	<i>Ulmus americana</i>	American elm	Right-of-Way	16 in	Retain	Good			Keep and prune drooping branches- above sidewalks
E7	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	13 in	Retain	Good			Keep see E13 notes
E8	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	12 in	Retain	Good			Keep see E13 notes- piece of included in bark
E9	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	8 in	Retain	Good			Keep see E13 notes
E10	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	14 in	Retain	Good			Keep see E13 notes
E11	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	15 in	Retain	Good			Keep see E13 notes
E12	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	15 in	Retain	Good			Keep see E13 notes
E13	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	13 in	Retain	Low			Keep see E13 notes
E14	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	13 in	Retain	Low			Keep see E13 notes
E15	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	17 in	Retain	Good			Keep fill at existing ground level at trunk
F1	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	12 in	Retain	Good			No impacts to trees
F2	<i>Acer macrophyllum</i>	Bigleaf maple	Private	28 in	Remove (by others*)	Severe Decline	Windfirm Danger		Potential for failure - needs a more extensive assessment- in decline. *TREE OUTSIDE PROJECT LIMITS - NOTIFY OWNER. RECOMMEND REMOVAL.
F3	<i>Picea sitchensis</i>	Sitka spruce	Right-of-Way	10, 12 in (16")	Remove	Low			Major storm damage see photo- design does not align with grades... loss of major leader
F4	<i>Picea sitchensis</i>	Sitka spruce	Right-of-Way	9 in	Remove	Declining			Re look at design to determine impacts - neighboring tree lost leader
F5	<i>Picea sitchensis</i>	Sitka spruce	Right-of-Way	9 in	Remove				Also in bad shape potential loss of leader
F6	<i>Picea sitchensis</i>	Sitka spruce	Right-of-Way	12 in	Remove	Severe Decline	Nuisance Tree		Loss of main leader suggest cutting down to 8' to creat habitat snag
F7	<i>Picea sitchensis</i>	Sitka spruce	Right-of-Way	8 in	Remove				Snagged to 7'
F8	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	15 in	Retain	Good			Loss of main leader - replacement leader jogs to the right - if no impacts- which they look like impacts are significantly offset. Keep tree
G1	<i>Picea engelmannii</i>	Engelmann spruce	Private	18 in	Retain	Low			
G2	<i>Pseudotsuga menziesii</i>	Douglas fir	Private	25 in	Retain	Good			
G3	<i>Picea engelmannii</i>	Engelmann spruce	Private	29 in	Retain	Good			

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SUMMARY ARBORIST REPORT

User ID	Latin Name	Common Name	Land Use	DBH (in)	Retain/ Remove	Condition Rating	Removal Notes	Utility Conflict	Comments
G7	<i>Pseudotsuga menziesii</i>	Douglas fir	Private	20 in	Remove	Good			
G9	<i>Acer macrophyllum</i>	Bigleaf maple	Private	10 in	Remove	Good			
G13	<i>Pseudotsuga menziesii</i>	Douglas fir	Private	12 in	Remove	Low			
G14	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	9, 9 in (13")	Remove	Low			
G15	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	14 in	Remove				
G16	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	8 in	Remove				
G17	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	13 in	Remove	Low			
G20	<i>Acer macrophyllum</i>	Bigleaf maple	Private	10 in	Remove	Good			
G21	<i>Pseudotsuga menziesii</i>	Douglas fir	Private	28 in	Remove	Good			
G22	<i>Arbutus menziesii</i>	Pacific madrone	Right-of-Way	15 in	Remove	Low			
G23	<i>Pseudotsuga menziesii</i>	Douglas fir	Private	23 in	Remove	Low			
G24	<i>Pseudotsuga menziesii</i>	Douglas fir	Private	22 in	Remove	Good			
G25	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	7 in	Remove				
G26	<i>Acer macrophyllum</i>	Bigleaf maple	Private	15, 13 in (20")	Remove	Good			
G27	<i>Arbutus menziesii</i>	Pacific madrone	Private	15 in	Remove	Low			
G29	<i>Pseudotsuga menziesii</i>	Douglas fir	Private	20 in	Remove	Good	Windfirm Danger		
G30	<i>Arbutus menziesii</i>	Pacific madrone	Right-of-Way	19 in	Remove	Low			
G31	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	27 in	Remove	Good			
G32	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	11, 10, 13 in (20")	Remove	Good			
G33	<i>Pseudotsuga menziesii</i>	Douglas fir	Private	16 in	Remove	Good	Windfirm Danger		
G34	<i>Pseudotsuga menziesii</i>	Douglas fir	Private	28 in	Remove	Good	Windfirm Danger		
G35	<i>Arbutus menziesii</i>	Pacific madrone	Private	20 in	Remove	Low	Windfirm Danger		
G36	<i>Pseudotsuga menziesii</i>	Douglas fir	Private	15 in	Remove	Good	Windfirm Danger		
G37	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	16, 13 in (21")	Remove	Good			
G38	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	24 in	Remove	Good			
G39	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	27 in	Remove	Good			
G40	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	11, 14 in (18")	Remove	Good			
G42	<i>Arbutus menziesii</i>	Pacific madrone	Private	11 in	Remove	Low			Pest damage on trunk, dry rot at base of trunk
G43	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	17 in	Remove	Good			
G44	<i>Pseudotsuga menziesii</i>	Douglas fir	Private	21 in	Remove	Good			
G45	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	11 in	Remove	Low			Loss of main leader
G46	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	11 in	Remove	Low			Central leader is dead
G47	<i>Arbutus menziesii</i>	Pacific madrone	Private	10 in	Remove				
H1	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	16, 13 in (21")	Remove	Good			
H2	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	8, 12, 31 in (34")	Remove	Good			
H8	<i>Alnus rubra</i>	Red alder	Right-of-Way	14 in	Remove	Low			
H9	<i>Alnus rubra</i>	Red alder	Right-of-Way	9 in	Remove	Low			
H10	<i>Alnus rubra</i>	Red alder	Right-of-Way	9 in	Remove	Good			
H11	<i>Alnus rubra</i>	Red alder	Right-of-Way	11, 13, 8 in (19")	Remove	Low			
H13	<i>Pinus resinosa</i>	Red pine	Right-of-Way	17 in	Retain	Good			
H15	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	10, 9, 7, 6, 16 in (23")	Remove	Good			Remove due to design conflicts
H18	<i>Thuja</i>	red cedar spp	Right-of-Way	13 in	Remove	Good			Remove due to design conflicts
H19	<i>Thuja</i>	red cedar spp	Right-of-Way	14 in	Remove	Good			Remove due to design conflicts
H20	<i>Thuja</i>	red cedar spp	Right-of-Way	13 in	Remove	Good			Remove due to design conflicts
H21	<i>Thuja</i>	red cedar spp	Right-of-Way	11 in	Remove	Good			Remove due to design conflicts
H22	<i>Thuja</i>	red cedar spp	Right-of-Way	10 in	Remove	Good			Remove due to design conflicts
H23	<i>Thuja</i>	red cedar spp	Right-of-Way	11 in	Remove	Good			Remove due to design conflicts
H24	<i>Salix</i>	willow spp	Right-of-Way	15, 14, 15, 16 in (30")	Remove	Good			Remove due to design conflicts
H28	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	9, 7 in (12")	Remove	Declining			Remove due to design conflicts
H30	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	9 in	Remove	Low			Remove due to design conflicts - lost its central leader

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SUMMARY ARBORIST REPORT

User ID	Latin Name	Common Name	Land Use	DBH (in)	Retain/ Remove	Condition Rating	Removal Notes	Utility Conflict	Comments
H31	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	19, 13, 16, 13, 17 in (35")	Remove	Good			Consider retaining... suspect majority of roots are to the east
H32	<i>Pseudotsuga menziesii</i>	Douglas fir	Private	42 in	Retain	Good			Looked at for potential impacts
H33	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	11 in	Remove	Good			Remove not shown on plans - Remove due to design conflicts
H35	<i>Alnus rubra</i>	Red alder	Right-of-Way	12 in	Remove	Declining			Recommend for removal due to decline
H36	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	13 in	Remove	Declining			Remove due to design conflicts - lost its main leader and is in decline
H37	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	24 in	Remove	Good			Remove due to design conflicts
H38	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	16 in	Remove	Declining			Determine removal during construction
I2	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	14, 15, 20, 23 in (37")	Remove	Good			Remove due to design conflicts
I3	<i>Alnus rubra</i>	Red alder	Right-of-Way	12 in	Remove	Low	Windfirm Danger		Remove due to wind firmness danger
I4	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	13, 6, 6 in (16")	Remove	Low	Windfirm Danger		Remove due to wind firm danger
I5	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	36 in	Remove	Good			Remove due to design conflicts
I6	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	10, 12 in (16")	Remove	Low			
I7	<i>Salix</i>	willow spp	Right-of-Way	10 in	Remove	Good			
I11	<i>Prunus emarginata</i>	Bitter cherry	Right-of-Way	6 in	Remove	Low			Remove due to construction impacts
I12	<i>Arbutus menziesii</i>	Pacific madrone	Right-of-Way	15 in	Snag		Hazard Tree		
I13	<i>Arbutus menziesii</i>	Pacific madrone	Right-of-Way	15 in	Snag				
I14	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	12 in	Snag	Severe Decline			
I15	<i>Arbutus menziesii</i>	Pacific madrone	Right-of-Way	20 in	Snag		Hazard Tree		
I16	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	14 in	Snag	Severe Decline			
I17	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	12 in	Snag		Hazard Tree		
I18	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	16 in	Snag	Low			
I19	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	11 in	Snag	Severe Decline			
I20	<i>Arbutus menziesii</i>	Pacific madrone	Right-of-Way	18 in	Retain	Good			Large cavities at base
I21	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	14 in	Snag	Low			
I22	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	12 in	Snag	Low			
I23	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	14 in	Snag	Low			
I24	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	11 in	Remove	Low			
I25	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	24, 7 in (25")	Snag	Declining			Lean to the east with structures within fell distance
I27	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	30 in	Retain	Good			
I28	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	11 in	Retain				
I31	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	18, 7, 6 in (20")	Remove	Low			Remove due to design conflicts - showing stress and decline
I32	<i>Acer macrophyllum</i>	Bigleaf maple	Right-of-Way	48 in	Snag	Low			Covered in ivy - in decline.
I36	<i>Thuja plicata</i>	Western redcedar	Right-of-Way	44 in	Retain	Good			Showing heat stress
I37	<i>Thuja plicata</i>	Western redcedar	Private	38 in	Retain	Good			Heat stress
J1	<i>Robinia pseudoacacia</i>	Black locust	Private	21 in	Retain	Good			
J2	<i>Robinia pseudoacacia</i>	Black locust	Private	14 in	Retain	Good			
J5	<i>Robinia pseudoacacia</i>	Black locust	Private	40 in	Retain	Good			
J7	<i>Thuja plicata</i>	Western redcedar	Private	6 in	Retain	Good			
J8	<i>Picea pungens</i>	Blue spruce	Private	17 in	Retain	Excellent			
J23	<i>Tsuga heterophylla</i>	Western hemlock	Private	19 in	Retain	Good			
J24	<i>Tsuga heterophylla</i>	Western hemlock	Private	13 in	Retain	Good			
K1	<i>Acer macrophyllum</i>	Bigleaf maple	Private	55 in	Retain	Good			
K2	<i>Prunus emarginata</i>	Bitter cherry	Private	11, 10 in (15")	Retain	Low			
K5	<i>Prunus</i>	plum spp	Right-of-Way	7 in	Remove	Low			
K7	<i>Acer rubrum</i>	Red maple	Right-of-Way	24 in	Remove	Good			Fill at base
K12	<i>Acer platanoides</i>	Norway maple	Right-of-Way	12 in	Retain	Good			
K13	<i>Pinus sylvestris</i>	Scots pine	Private	14 in	Retain	Good			
K14	<i>Pinus</i>	pine spp	Private	16 in	Retain	Declining			
K15	<i>Quercus rubra</i>	Northern red oak	Right-of-Way	16 in	Remove	Good			

JUANITA DRIVE INTERSECTION & SAFETY IMPROVEMENTS

SUMMARY ARBORIST REPORT

User ID	Latin Name	Common Name	Land Use	DBH (in)	Retain/ Remove	Condition Rating	Removal Notes	Utility Conflict	Comments
K16	<i>Pinus resinosa</i>	Red pine	Private	16 in	Retain	Good			
K17	<i>Pinus resinosa</i>	Red pine	Private	14 in	Retain	Good			
K18	<i>Quercus rubra</i>	Northern red oak	Right-of-Way	14 in	Remove	Good			
K19	<i>Quercus rubra</i>	Northern red oak	Private	12 in	Retain	Good			
K20	<i>Quercus rubra</i>	Northern red oak	Private	16 in	Retain	Good			
K21	<i>Quercus rubra</i>	Northern red oak	Right-of-Way	11 in	Remove	Good			
K22	<i>Quercus rubra</i>	Northern red oak	Right-of-Way	18 in	Remove	Good			
K23	<i>Quercus rubra</i>	Northern red oak	Private	7, 7, 6 in (12")	Retain	Low			
L1	<i>Quercus rubra</i>	Northern red oak	Right-of-Way	15 in	Remove	Good			Remove due to construction impacts
L2	<i>Quercus rubra</i>	Northern red oak	Right-of-Way	11 in	Remove	Good			Remove due to construction impacts
L3	<i>Sequoia sempervirens</i>	Coast redwood	Right-of-Way	27, 34, 34, 30 in (55")	Remove	Declining		Present and conflicting	This tree will be removed due to design and construction impacts. Showing signs of heat stress and is in decline.
L4	<i>Pinus resinosa</i>	Red pine	Private	15 in	Retain	Good			Retain with others nearby
L5	<i>Pinus sylvestris</i>	Scots pine	Private	14 in	Retain	Good			Retain with others nearby
L6	<i>Pinus resinosa</i>	Red pine	Private	11 in	Retain	Good			Retain with others nearby
L7	<i>Pseudotsuga menziesii</i>	Douglas fir	Right-of-Way	31 in	Remove	Good			Remove due to construction impacts
L9	<i>Thuja</i>	red cedar spp	Right-of-Way	12 in	Remove	Good			Remove due to construction impacts
L10	<i>Thuja</i>	red cedar spp	Right-of-Way	12, 16 in (20")	Remove	Good			Remove due to construction impacts

SUMMARY ARBORIST REPORT

TREE PROTECTION SPECIFICATIONS

The Contractor shall notify the Engineer of any potential conflicts between existing tree limbs and equipment to avoid damage to existing tree canopies. Any pruning activity required to complete the Work as specified shall be performed at the direction of the Project Engineer and/or the City Arborist.

For work within the Critical Root Zone (CRZ) of existing trees to be retained, roots larger than 2 inches in diameter shall not be cut unless directed to do so by the City Arborist. The City Arborist may recommend root shaving or pruning prior to placement of backfill material and/or topsoil. Only sterilized and sharpened chainsaws, handsaws or pruners shall be used to perform these tasks and this work shall be performed under the supervision of the City Arborist. All work shall be performed to ensure significant tree roots are not damaged.

The Contractor shall ensure adequate soil moisture throughout the duration of the work to maintain tree health. Roots exposed by trenching or other construction activities shall be covered and kept moist to protect and prevent them from drying out, by wrapping with heavy, moist material, such as burlap or canvas. The material must be kept moist until the trench is backfilled. Trenches dug by machines adjacent to trees with roots less than 1½ inches in diameter shall have severed roots cleanly cut. Trenches with exposed tree roots shall be backfilled within 24 hours unless adequately protected by moist material as approved by the Engineer. All material and fastenings used to cover the roots shall be removed before backfilling.

Contractor shall protect all trees within the active Work Zone in accordance with KZC 95.34 Tree and Soil Protection during Development Activity.

Contractor shall coordinate directly with the City Construction Inspector to get approval prior to doing any vegetation removal or trimming.

All costs for protecting existing trees, coordinating with the City Arborist, and cutting and treating roots as specified herein or as directed by the City Arborist shall be considered incidental to the Work and will not be measured for payment.

(*****)

Supplement this section with the following:

Contractor shall be required to provide notice to the property owner a minimum seven (7) calendar days in advance of starting vegetation removal/relocation procedures.

ASSUMPTIONS & LIMITING CONDITIONS

Consultant assumes that the site and its use do not violate, and is in compliance with, all applicable codes, ordinances, statutes or regulations.

The consultant may provide a report or recommendation based on published municipal regulations. The consultant assumes that the municipal regulations published on the date of the report are current municipal regulations and assumes no obligation related to unpublished city regulation information.

Any report by the consultant and any values expressed therein represent the opinion of the consultant, and the consultant's fee is in no way contingent upon the reporting of a specific value, a stipulated result, the occurrence of a subsequent event, or upon any finding to be reported.

All photographs included in this report were taken by KPG Psomas, during the documented site visit, unless otherwise noted.

Unless otherwise agreed, (1) information contained in any report by consultant covers only the items examined and reflects the condition of those items at the time of inspection; and (2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, climbing, or coring.

These findings are based on the observations and opinions of the authoring arborist, and do not provide guarantees regarding the future performance, health, vigor, structural stability or safety of the plants described and assessed.

Measurements are subject to typical margins of error considering the oval or asymmetrical cross-section of most trunks and canopies.

KPG Psomas did not review any reports or perform any tests related to the soil located on the subject property unless outlined in the scope of services. KPG Psomas is not and do not claim to be soil experts. An independent inventory and evaluation of the site's soil should be obtained by a qualified professional if an additional understanding of the site's characteristics is needed to make an informed decision.

Our assessments are made in conformity with acceptable evaluation/ diagnostic reporting techniques and procedures, as recommended by the International Society of Arboriculture.

APPENDIX E

NORTHSHORE UTILITY DISTRICT SPECIFICATIONS



NORTHSHORE UTILITY DISTRICT
WATER AND SEWER SPECIFICATIONS



**Northshore Utility District
King County, Washington**

2023 ENGINEERING SPECIFICATIONS

MATERIALS OF CONSTRUCTION

January, 2023



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Section 9 – Engineering Specifications Materials of Construction

9.1 GENERAL

The type and class of materials to be used shall be as shown on the project plans. Where no specific reference is shown, the following specifications shall govern the materials used. All materials shall be new and undamaged of a known brand, with replacement parts readily available from the general Seattle area.

Prior to the installation of any of the facilities required on the project, all materials shall be approved by the District.

All reference specifications herein shall be of the latest revision.

9.2 SEWER PIPE AND FITTINGS

Sewer pipe material shall be of the following type unless otherwise specified or as indicated on the Plans:

Locations with less than four (4) feet or more than eighteen (18) feet of cover from finished grade	Class 52 Ductile Iron Pipe
Locations with between four (4) feet and eighteen (18) feet of cover from finished grade	PVC Pipe, ASTM 3034, SDR 35
As indicated on the Plans	High Density Polyethylene (HDPE) Pipe

(a) DUCTILE IRON SEWER PIPE AND FITTINGS

1. Ductile iron pipe shall be new, Class 52, cement-lined, conforming to AWWA C151.
2. Ductile iron pipe shall be push-on joint. Pipe shall be furnished with a single rubber ring gasket lubricated to effect the seal.
3. Restrained joint pipe shall be U.S. Pipe "TR Flex" or push-on joint pipe restrained with U.S. Pipe "Field Lok" gaskets, or equal. Each length of pipe shall be clearly marked with the manufacturer's identification, year, thickness, class of pipe and weight.
4. The Contractor shall furnish certification from the manufacturer of the pipe and gasket being supplied that the inspection and all of the



specified tests have been made and the results thereof comply with the requirements of this standard.

5. Ductile iron fittings shall be short body with a 350-psi pressure rating for mechanical joint fittings and 250-psi for flanged fittings. All fittings shall be cement lined and shall be in conformance with AWWA C153. All fittings shall be domestic and made in the United States of America.

(b) PVC SEWER PIPE AND FITTINGS (ASTM D3034)

All PVC pipe and fittings shall be integral wall bell and spigot, rubber gasket joint, unplasticized polyvinyl chloride (PVC) pipe in conformance with ASTM D3034 and shall have a maximum SDR of 35. PVC pipe shall have a minimum "pipe stiffness" of 46 psi at 5 percent deflection when tested in accordance with ASTM Designation D2412 and a minimum impact strength of 210 foot-pounds based upon ASTM D3034.

All pipes shall be clearly marked with the manufacturer's identification, year, and class of pipe.

All fittings and accessories shall be manufactured and furnished by the pipe supplier, or shall be District approved equal.

Pipe joints shall use flexible elastomeric gaskets conforming to ASTM D3212.

Connections for side sewer stubs shall be 6 inches inside diameter tee fittings. Wye branches shall be used where the sewer line size is less than 8-inch inside diameter.

(c) HIGH DENSITY POLYETHYLENE (HDPE) SEWER PIPE

High Density Polyethylene (HDPE) sewer pipe shall be PE 4710 high density conforming to ASTM D3350 cell classification PE445474C or higher, with a DR of 11 unless otherwise specified.

The workmanship shall be of the highest level compatible with current commercial practice. The PE pipe shall be homogeneous throughout and free of visible cracks, holes, foreign inclusions, or other injurious defects. It shall be uniform in color, opacity, density, and other physical properties.

Butt fusion of pipes and fittings shall be performed in accordance with the pipe manufacturer's recommendations as to equipment and technique. The pipe shall be fused by a certified installer who has a demonstrated ability to fuse polyethylene pipe in the manner recommended by the pipe supplier and/or the fusion manufacturer.

The pipe shall be Phillips 66 Driscopipe 8700 or District approved equal.



(d) FLEXIBLE COUPLING ADAPTERS

Flexible coupling adapters shall meet the specifications set forth in the AWWA Standard C219 coupling specification and be rated for working pressures up to 250 psi. Flexible coupling adapters shall be Romac XR501, or District approved equal.

(e) POLYETHYLENE PIPE ENCASEMENT

Ductile iron pipe shall be encased with polyethylene encasement (8 mil thickness). Material and installation shall be in accordance with AWWA C105. Installation shall be in accordance with AWWA C105, Method A or Method C.

In Method A, polyethylene encasement tubes are used and in Method C, polyethylene sheets are used. In Method A, one length of polyethylene encasement tube is used for each length of pipe. In Method C, every section of pipe is completely wrapped with a flat sheet of polyethylene encasement. In both Methods, the polyethylene is overlapped at the joints and taped.

During the sewer main installation and/or side sewer installation, repair all rips, tears, or other damage to the polyethylene encasement with adhesive tape (i.e. Christy's Pipe Wrap Tape), per the manufacturer's recommendation.

9.3 MANHOLES

Manholes shall be of the offset type, shall be precast concrete sections with a precast base, and shall be made from 3,000 psi structural concrete. All manhole joints shall be watertight and shall be confined O-ring type. They shall be constructed in full compliance with the Standard Details and as further specified herein.

Manhole materials and manufacturing shall be in accordance with ASTM C478.

Minimum standard manhole depth is eight (8) feet and maximum depth is eighteen (18) feet. Depths other than within this range shall require special design and approval by the District.

The base sections and risers of the manholes shall be arranged so no pipes pass through the manhole joints.

(a) Manhole Sections

Manhole sections shall be placed and aligned so as to provide plumb vertical sides and vertical alignment of the ladder steps. The completed manhole shall be rigid, true to dimension and be watertight. The ladder shall be rigidly attached to the side of the manhole.



Manhole grade rings shall be reinforced 3,000 psi structural concrete, 24 inches in diameter and 4 inches high. Grade rings shall be set in a full-width bed of cement grout. Provide grout between rings and between upper ring and casting. Inside rings shall be troweled smooth with 1/2-inch (minimum) of grout in order to provide a watertight surface.

In addition to the O-ring rubber gaskets, all new manhole joints shall be sealed with a flexible butyl joint sealant conforming to ASTM C990-96 and Federal Specification SS-S-210. The flexible butyl joint sealant shall be "Kent Seal #2" as manufactured by Hamilton-Kent Company or "Ram-Nek" as manufactured by K.T. Snyder Company.

Steel lifting loops or hooks for precast manhole components shall be removed to a minimum depth of one (1) inch below the surface and the remaining hole packed with grout. Precast sections with damaged joint surfaces or with cracks or other damage that may permit infiltration will not be allowed.

Reinforcement for precast manholes shall be in accordance with ASTM C 478-97.

(b) BASE LINERS

All new manholes shall be installed with a prefabricated manhole base liner made of polypropylene (PP) and/or fiberglass reinforced plastic (FRP). The base liner shall be integrally cast and adequately anchored inside new precast concrete manhole base sections during the concrete casting process at the manhole suppliers manufacturing facility. The base liner shall be cast integral with the precast concrete manhole base section in accordance with the liner manufacturer's specifications. The liner must be fully supported during the casting process and lifting devices shall not penetrate the base liner.

The manhole base liner shall be prefabricated from a one piece homogeneous composite and/or thermoplastic with a minimum thickness of 0.12-inch (3 mm) and shall be in lengths and nominal inside diameters corresponding to the precast concrete base section and be a non load-bearing component, which is resistant to the chemical environment normally found in wastewater collection systems. The outer surface of the liner shall be coated with aggregate and/or PP pellets bonded to the outer surface and have perforated PP I-beam "bonding bridge" anchors bonded to the outer surface in order to insure adequate anchoring to concrete base sections to pass vacuum testing with 10-inch of negative pressure.

The inside liner surfaces shall be free of bulges, dents and other defects that result in a variation of inside diameter of more than 1/4-inch (7 mm) for base liner flow channel and pipe connections. The precast concrete pipe penetration joint surfaces shall be free of excess concrete at external and



internal surfaces to insure a proper seal between the pipe connection and the liner.

The manhole base liner shall include full flow channels with sidewalls to the crown of the pipe. The inner surface of the bench shall be provided with an anti-skid pattern. Watertight gasketed pipe bell connections to suit specific pipe types, grade, and alignment, shall be monolithically attached to the base liners.

If PP base liner is utilized, a minimum slope of 0.06 foot is acceptable across the invert channel. The FRP base liner shall require the District standard minimum slope of 0.1 foot across the invert channel.

Base liner properties shall be in accordance with the following:

MATERIALS

Polypropylene (PP):

Minimum thickness:	100% Copolymer 3mm
Hardness:	75 Shore D
Density:	56.8 lb/ft ³ (0.91 g/cm ³)
Color:	Dull mustard/goldenrod

Fiberglass Reinforced Plastic (FRP): Polyurethane Hybrid Composite

Glass fiber:	Type E, min fiber length of 0.625-inch (16mm), 10 - 12% content by weight
Inert filler:	10 - 13% content by weight
Minimum thickness:	3mm
Hardness:	85 Shore D
Density:	73.0 lb/ft ³ (1.17 g/cm ³)
Color:	Dull mustard/goldenrod

Aggregate bonding medium:	Processed sand containing crushed & uncrushed dry and cleaned semi-round particles in the 0.08 - 0.12-inch (2 - 3mm) size range
Gaskets:	Polyisoprene, EPDM, or as approved
Hardness:	50 - 55 Shore A

PHYSICAL PROPERTIES

Percolation Test:	Water absorption of top surface - 0.032%
Thermal shock (CSA-B45-M93):	100 thermal cycles - no sign of surface defects

**Chemical Resistance (ASTM D1308):**

Selected Reagents	
Reagent	Result
Nitric Acid 69%	No surface Degradation - Surface Staining
Hydrochloric Acid 60%	No surface Degradation
Ammonia 28%	No surface Degradation
Sodium Hydroxide 5.25%	No surface Degradation
Sulfuric Acid 50%	No surface Degradation
Sulfuric Acid 70%	No surface Degradation
Sulfuric Acid 80%	No surface Degradation
Acetone	No surface Degradation
Unleaded Gasoline	No surface Degradation
Turpentine	No surface Degradation
Acetone Immersion (ASTM D2152)	No Attack

Base liners shall be manufactured and supplied by Geneva Pipe and Precast, a Northwest Pipe Company, of Orem, UT.

(c) MANHOLE STEPS

Manhole steps shall be made of 1/2-inch Grade 60 Steel reinforcing bars coated with copolymer polypropylene, equal to Lane International Manhole Step #P-14938.

The steps shall be installed at the manhole manufacturer's yard in conformance with the step manufacturer requirements. At a minimum, the step ends shall be coated with non-shrink epoxy grout and driven into pre-drilled holes with dimensions of 1-inch diameter and 3-1/2-inch depth. The pre-drilled holes shall not penetrate the exterior manhole wall.

(d) GRADE ADJUSTMENT

The depth of the 24-inch diameter manhole neck from the top of the frame to the top of the cone shall be from between 14-inch and 26-inch.

(e) CHANNELS

All new manholes shall be provided with fiberglass reinforced plastic base liners per Subsection 9.3.b of these specifications, unless otherwise indicated on the plans or approved by the District. Manholes approved for cement concrete channels shall conform to this subsection of the specifications.



Channels shall be made to conform accurately to the sewer grade and shall be brought together smoothly with well-rounded junctions, subject to approval by the District.

Channels shall consist of commercial grade concrete, minimum Class 3000 in accordance with Section 6-02 of the latest published Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation.

The channels shall be field poured after the inlet and outlet pipes have been laid and firmly grouted into place at the proper elevation. Allowances shall be made for a minimum of one-tenth foot (0.1 foot) drop in elevation across the manhole in the direction of flow. The maximum allowable drop in inlet elevation across the manhole in the direction of flow shall be 0.5 foot. Channel sides shall be carried up vertically from the invert to three-quarters of the diameter of the various pipes. The concrete bench shall be warped evenly and sloped two percent (2%) to drain. Rough, uneven surfaces will not be permitted. Channels shall be constructed to allow the installation and use of a mechanical plug of the appropriate size.

(f) PIPE CONNECTIONS

All pipe entering or leaving the manhole shall be placed on firmly compacted bedding. Special care shall be taken to see that the openings through which pipes enter the structure are completely and firmly filled with mortar from the outside to insure water tightness. All PVC pipe connections to manholes shall be made with GPK PVC Manhole Adapters (also known as "sand collars") with an external abrasive silica layer or Kor-N-Seal Connector manufactured by NPC. Inc.

All stubbed out sewer pipes placed through manhole walls for future connections shall be suitably plugged and blocked in a manner acceptable to the District.

(g) SHELF REPAIRS

Shelf repairs at connections to the existing manholes shall be class 3000 commercial grade cement in accordance with the Engineering Specifications.

(h) GROUT

Grout for all uses including, but not limited to, shelves, pick-holes, and adjusting rings, shall be cement based, nonshrink, noncorrosive, and nonmetallic grout conforming to ASTM C 1107. Grout shall be Dayton Superior 1107 Advantage Grout, Basalite Non-Shrink Grout - Fast Set, SpecChem SC Multipurpose Grout, or Quikrete Commercial Grade FastSet Non-Shrink Grout. The District may sample and test grout to determine conformance with the specifications.

**(i) DROP MANHOLES**

Drop manholes shall, in all respects, be constructed as a standard manhole with the exception of the drop connection as shown on the Standard Detail.

(j) LIFT HOLES

All lift holes shall be completely filled smooth with grout both inside and out in order to insure water-tightness.

(k) MANHOLE CERTIFICATION

The Contractor shall provide written certification from the manhole manufacturer that the manholes provided meet or exceed the specifications and that the materials used in the construction of the manhole are in accordance with the specifications. A Manufacturer's Certificate of Compliance shall be provided for each manhole delivered to the project and shall include the manufacturer's name and address, the District's manhole number, reference to the applicable project specifications being used, the design mix and 28-day strength of the cement concrete used, drawings indicating reinforcing steel details, such as size and location, results of materials testing conducted by the manufacturer and the signature of a responsible corporate official of the manufacturer.

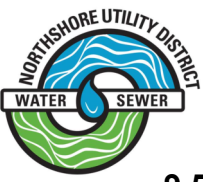
The District may test manholes and materials used at any time, including after installation, and any manhole not conforming to the specifications shall be rejected by the District and replaced with a conforming manhole provided and installed by the Contractor.

9.4 MANHOLE AND CLEANOUT FRAME AND COVERS

Frames and covers shall be cast iron and conform to the Standard Details and these specifications. Castings shall conform to the requirements of ASTM A-48, Class 30 and shall be free of porosity, shrink cavities, cold shuts or cracks, or any surface defects that would impair serviceability. Repair of defects by welding, or by the use of smooth-on or similar material, will not be permitted. Frames and covers shall be machine-finished or ground on seating surfaces so as to assure non-rocking fit in any position and interchangeability of covers.

All manhole frames and covers will be locking type. Manhole frame and cover shall be East Jordan Ergo Assembly, Part No. 001040105L01.

Cleanout frame and cover shall be locking type equal to Armorcast Polymer Concrete Box Assembly with Pentahead locking bolt style and "CO" imprinted on cover, part number A6001423TA (see NUD Standard Sewer Detail #9).



9.5 WATER MAIN PIPE AND APPURTENANCES

(a) DUCTILE IRON WATER PIPE

Ductile iron pipe shall be new, restrained joint, Class 52, cement-lined, conforming to AWWA C151.

Ductile iron pipe shall be U.S. Pipe "TR Flex" or push-on joint pipe restrained with U.S. Pipe "Field Lok" gaskets, or equal. Each length of pipe shall include temporary transportation pipe plugs and shall be clearly marked with the manufacturer's identification, year, thickness, class of pipe and weight.

The Contractor shall furnish certification from the manufacturer of the pipe and gasket being supplied that the inspection and all of the specified tests have been made and the results thereof comply with the requirements of this standard.

(b) GALVANIZED IRON WATER PIPE AND FITTINGS

Galvanized iron pipe where specified for use shall be Schedule 40 hot dipped, zinc-coated (galvanized) welded and seamless steel pipe for ordinary uses (ASTM A-120). Fittings shall be screwed malleable iron galvanized per USA Standard B16.3.

(c) CROSS-LINKED POLYETHYLENE (PEXa 3306) SERVICE PIPE

Service pipe shall be MUNICIPEX® from REHAU Construction, LLC. Pipe shall be crosslinked polyethylene (PEXa 3306), using the high-pressure peroxide extrusion method. The pipe shall meet or exceed the requirements of ASTM F876, CSA B137.5 and PPI TR-3, and is certified to NSF Standards 14 and 61, and AWWA C904. No substitutions will be allowed.

(d) POLYETHYLENE PIPE ENCASEMENT

Ductile iron pipe shall be encased with polyethylene encasement (8 mil thickness). Material and installation shall be in accordance with AWWA C105. Installation shall be in accordance with AWWA C105, Method A or Method C.

In Method A, polyethylene encasement tubes are used and in Method C, polyethylene sheets are used. In Method A, one length of polyethylene encasement tube is used for each length of pipe. In Method C, every section of pipe is completely wrapped with a flat sheet of polyethylene encasement. In both Methods, the polyethylene is overlapped at the joints and taped.

During the water main installation and/or water service installation, repair all rips, tears, or other damage to the polyethylene encasement with adhesive tape (i.e. Christy's Pipe Wrap Tape), per the manufacturer's recommendation.



(e) DUCTILE IRON FITTINGS

Ductile iron fittings shall be short body with a 350-psi pressure rating for mechanical joint fittings and 250-psi for flanged fittings. All fittings shall be cement lined and shall be in conformance with AWWA C153 for mechanical joint fittings and AWWA C110 for flanged fittings.

All mechanical joint fittings shall be restrained with EBAA Iron, Inc. "Mega-Lug" mechanical joint restraints, or equal.

Megalug fittings are prohibited for use on cast iron pipe. Restrained joint connections to existing cast iron water main shall be made with Romac Alpha Couplings and fittings only.

All deactivated water mains shall be capped with Romac EC501 End Cap Coupling or equal.

(f) FIRE HYDRANTS

Fire hydrants shall conform to AWWA Standard Specification C502 and be one of the following types:

- Mueller Super Centurion
- American Darling B-62-B
- Clow Medallion
- M&H 129 or 129S
- East Jordan Iron Works WaterMaster 5CD250

They shall be a rising stem compression-type which opens counterclockwise and closes with the pressure. The minimum main valve opening diameter shall be 5-1/4-inch unless otherwise specified. The hydrant seat and hydrant seat retaining ring shall be bronze. All external bolts, nuts and studs shall be cadmium plated in accordance with ASTM A165 Type HS or rust proofed by some other process approved by the District. Gaskets shall be of rubber composition.

Fire hydrants shall be equipped with one 4-inch pumper nozzle connection (Seattle Standard Thread) with Storz Adapter (integral or non-integral) as required by those jurisdictions shown on the Standard Details. The hydrant shall include two 2-1/2-inch NST hose ports. Pentagon nuts or caps and operating stem shall measure 1-1/4-inch point to flat and shall open by turning to the left. Nozzle shall be fitted with renewable bronze nipples locked in place.

Fire hydrants shall be set plumb and ports shall be oriented as directed by the Fire Protection District having jurisdiction over said area.



Fire hydrant piping from the main line valve to the hydrant base shall be restrained joint pipe or shall be restrained with stainless steel shackle rods and nuts.

The hydrants shall be coated with enamel paint in accordance with the Standard Details.

See the Standard Detail for additional requirements.

(g) GATE VALVES

Gate valves shall be ductile iron body valves with resilient wedge conforming to the latest revision of AWWA Standard C515 and shall be NSF 61 approved. Valves shall have epoxy coating fusion bonded to all internal and external surfaces of the valve body and bonnet in compliance with AWWA C550. The wedge shall be fully encapsulated in rubber. The valves shall be non-rising stem, open to the left, equipped with standard 2-inch square operating nuts and O-ring seals at all joints. Resilient wedge gate valves shall be American Flow Control Series 2500, Clow model 2638, Mueller 2360 series, Kennedy 7000 series, East Jordan FlowMaster or M&H Style 7000.

(h) BUTTERFLY VALVES

Butterfly valves shall be ductile iron body of the tight closing rubber seat type with rubber seat either bonded to the body or mechanically retained in the body with no fasteners or retaining hardware in the flow stream. The valves shall be epoxy coated inside and outside. The valves shall meet the full requirements of AWWA C504, class 150 B, except the valves shall be able to withstand 200 psi differential pressure without leakage. The valves shall be equal to Pratt "Groundhog" or Mueller Lineseal III.

Butterfly valves to be installed underground shall have sealed mechanical operators and 2-inch standard square operating nuts. Complete manufacturer's Specifications for the valves proposed for use shall be submitted to the District for approval.

(i) VALVE BOXES

Valve boxes shall be two-piece, cast iron, East Jordan Iron Works:

- Valve box cover, 06800209
- Valve box top, 85557016U
- Valve box bottom, 85556036U

**(j) FIRE HYDRANT GUARD POSTS**

Concrete fire hydrant guard posts, if required as directed by the District, shall be made of precast reinforced concrete, nine (9) inches in diameter, six (6) feet long, or 8-inch x 6-inch x 6 feet long. The guard posts shall be coated white with enamel paint in accordance with the Fire Hydrant Assembly Standard Detail.

(k) METER BOXES

The meter boxes shall be according to the Standard Details.

(l) SERVICE SADDLES

For ductile iron and cast iron water mains larger than 4-inch diameter, direct tapping of 1-inch standard corporation stop threaded tap will be required. Saddles will not be allowed on ductile iron and cast-iron pipe larger than 4-inch diameter for 1-inch water services.

Service taps for all other water main sizes and materials shall be as follows:

1. Service saddles for 1-inch, 1-1/2-inch, and 2-inch standard corporation stop threaded tap, shall be single strap and shall be equal to Mueller Company DR1S, Ford Meter Box Company FC101, or Romac Industries, Inc. 101NS.
2. Saddles for PVC pipe shall be stainless steel, double strap type and shall be equal to Mueller Company DR2S, Ford Meter Box Company FCD202, or Romac Industries, Inc. 202NS.

On existing water mains that are live and connected to the existing system; the Contractor shall furnish and install all parts of the water service and reconnection as required, except the tap. The District will provide all parts necessary to perform the tap (including but not limited to the corporation stop and saddle) and the Contractor shall repair the polyethylene encasement material per manufacturer's recommendations and per the District's Standard Detail.

On new water mains installed and not yet connected to the existing system; the Contractor shall provide all parts and equipment necessary to tap the new main and repair the polyethylene encasement material per manufacturer's recommendations and per the District's Standard Detail.

(m) SERVICE MATERIALS

Service materials including valves, pipe and fittings be as specified on the Standard Details. All brass appurtenances shall be "lead free" and conform to NSF/ANSI 372 and NSF/ANSI 61 standards. 2-inch ball valves shall be



furnished with a slotted operator, and with an adapting 2-inch-square operating nut (Ford Cat. QT-67) secured with a cotter pin.

(n) RESIDENTIAL DOMESTIC AND FIRE SPRINKLER SERVICES

Combination service for residential domestic and fire sprinkler systems shall be according to the Standard Detail.

(o) BLOW-OFFS AND AIR & VACUUM RELIEF VALVES

2-inch Blow-offs and 2-inch Air & Vacuum Relief Valves shall be installed for 12-inch diameter pipe and smaller in accordance with the standard detail. Blow-offs for pipe larger than 12-inch in diameter shall be as directed by the District.

(p) STAINLESS STEEL TAPPING SLEEVE

Tapping sleeve shall be constructed of stainless steel with ductile or carbon steel flange and removable, replaceable bolts and coated nuts to prevent galling. Gaskets shall provide a full circumferential seal. Tapping sleeve shall be Romac SST, JCM 462, or Ford FAST stainless steel tapping sleeve.

9.6 STEEL CASING

Steel casing pipe shall meet ASTM A-53, having a minimum tensile strength of 60,000 psi and a minimum yield strength of 35,000 psi. Wall thickness shall be sufficient to withstand jacking forces without deformation, with minimum wall thickness of 0.375-inches for casing pipe diameters up to 22-inches. For casing pipe diameters larger than 22-inches, please see the table at the end of this subsection. All joints shall be welded. All field-welded joints shall comply with AWS Code for procedures of manual shielded metal arc welding.

The carrier pipe shall be installed with casing spacers. Spacers shall be placed in accordance with the Methods of Construction and shall be at least 12-inches wide. Spacers shall be designed to provide a maximum space of 1-inch between the upper runners and the inside of the steel casing. The spacers shall prevent the pipe bells from touching the inside of the casing. Metal components of casing spacers shall be Type 304 (18-8) 14-gauge (minimum) stainless steel. The liner shall be neoprene rubber or PVC, and the runners shall be polyethylene with a low friction factor. Casing spacers shall be designed for center restraint. Casing spacers shall be Model CCS by Cascade Waterworks manufacturing, or District approved equal.

Where casing spacers must be custom designed to account for a specific grade of the carrier pipe inside the casing, submittals must be provided which include drawings and dimensions for each of the casing spacers and the respective location of each of the spacers relative to the casing and carrier pipe.



Casing end seals shall be 1/8-inch thick synthetic rubber with two stainless steel bands and clamps. The end seal shall be Model S by Pipeline Seal and Insulator, or APS Model AC, or approved equal.

Steel Casing Pipe Wall Thickness Table	
Diameter of Casing Pipe	Minimum Thickness
22 or Less	0.3750"
Over 22" – 28"	0.4375"
Over 28" – 34"	0.5000"
Over 34" – 42"	0.5625"
Over 42" – 48"	0.6250"
Over 48"	Review Required

9.7 FOUNDATION, BEDDING AND BACKFILL MATERIALS FOR TRENCHES

Recycled concrete will not be allowed as foundation gravel, pipe bedding, or trench backfill material for any Ductile Iron (DI water or sewer main installation).

(a) FOUNDATION MATERIALS

Foundation gravel shall consist of clean, granular material free from objectionable materials such as organic matter or other deleterious substances with at least 90 percent coarse material ranging from 1-inch in diameter to 3-inch in diameter and 100 percent 3-inch in diameter or less, unless otherwise specified or approved by the District.

(b) BEDDING MATERIALS

Water Main Pipe:

Bedding material shall consist of crushed surfacing top course, or controlled density fill as indicated on the plans or as directed by the District.

Water Service Pipe:

Bedding material shall consist of 100% clean sand. Native material will not be allowed by the District.

Sewer Main and Lateral Pipe:

Bedding material shall consist of clean, granular, manufactured pea gravel conforming to the following gradation:



U. S. Standard Sieve Size	% Passing by Weight
1/2-inch	100
3/8-inch	85 – 95
No. 4	5 – 15
No. 8	0 – 2

(c) TRENCH BACKFILL

Native material may be used for trench backfill if the material meets the requirements of Section 9-03.14(2) of the latest published Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation for Select Borrow. Native material shall be free from wood waste, organic waste, coal, charcoal, and other extraneous or objectionable materials and shall have no material larger than 2-inch in diameter. The material shall be non-plastic and shall not contain more than 3 percent organic material by weight.

Imported gravel backfill shall be a granular material conforming to Section 9-03.14(1) of the latest published Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation.

Where designated on the Contract Drawings, as required by the roadway permitting agency or as directed by the District, the trench backfill shall be controlled density fill (CDF), as manufactured by Cadman Inc., product #PFLO5, "Pro-Flow 5 Hour", or District approved equal. Fly ash admixture will not be allowed in the CDF.

9.8 REPLACING ROAD SURFACE

(a) CRUSHED SURFACING

Crushed surfacing material shall be 1-1/4-inch base course and 3/4-inch minus top course crushed gravel and shall be manufactured from ledge rock, talus or gravel in accordance with the provisions of Section 9-03.9(3) of the latest published Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation.

(b) GRAVEL BASE

All gravel base shall conform to the requirements of Section 9-03.10 of the latest published Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation.

**(c) HOT MIX ASPHALT SURFACING**

Hot mix asphalt surfacing or repair shall be as required by the roadway permitting agency, and shall conform to Section 5-04 of the latest published Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation and the Standard Specification Drawing for Typical Trench Section.

(d) CEMENT CONCRETE PAVEMENT

Cement concrete pavement shall be in accordance with Section 5-05 of the latest published Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation and shall be furnished only by manufacturers who are members of the Portland Cement Association. All reinforcing steel shall conform with and be placed in accordance with Section 5-05 of the latest published Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation and shall conform to the requirements of ASTM Designation A-15 and A-305, latest revisions.

(e) RIGID-TYPE PAVEMENTS RESURFACED WITH HOT MIX ASPHALT

Hot mix asphalt surface mat to be placed over Portland cement concrete base shall be as required by the roadway permitting agency; both the base and the surface mat shall be carefully prepared, placed and cured in full compliance with Section 5-04.3 of the latest published Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation.

9.9 GRASS SEEDING AND SOD**(a) TOPSOIL**

Topsoil shall be Type B or C in accordance with Section 9-14.2(2) or 9-14.2(3) of the latest published Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation. The Contractor shall provide a topsoil material submittal to the District for review and approval prior to construction.

(b) SEED

Seed material, storage and certification shall conform to Section 9-14.3 of the latest published Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation. Seed shall be "Certified" grade seed or better. The Contractor shall provide a seed



mix material submittal to the District for review and approval prior to construction.

(c) FERTILIZER

Fertilizer shall be commercial grade in conformance with Section 9-14.4 of the latest published Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation. The Contractor shall provide a fertilizer material submittal to the District for review and approval prior to construction.

(d) MULCH AND AMENDMENTS

Mulch shall be approved by the District and shall be certified grass hay or straw or wood cellulose fiber for hydroseeding. Wood cellulose fiber shall be in accordance with Section 9-14.5(2) of the latest published Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation.

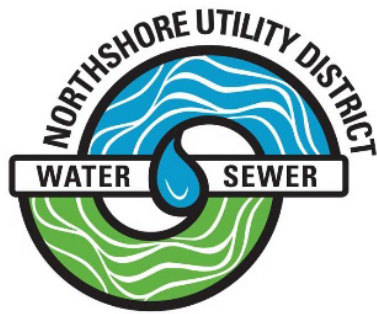
(e) SOD

The Contractor shall provide grass mixtures to the District for review and approval prior to construction.

Sod shall be field grown one year or older, have a well-developed root structure and be free of all weeds, disease, and insect damage.

Prior to cutting, the sod shall be green, in an active and vigorous state of growth and mowed to a height not exceeding 1-inch.

The sod shall be cut with a minimum of 1-inch of soil adhering.



**Northshore Utility District
King County, Washington**

2023 ENGINEERING SPECIFICATIONS

METHODS OF CONSTRUCTION

January, 2023



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Section 10 – Engineering Specifications Methods of Construction

10.1 GENERAL

A pre-construction conference will be held at the District office prior to the start of construction.

The Contractor shall notify the District a minimum of 5 days in advance of contemplated construction to allow for review of materials to be used on the job.

For construction staking on District Capital Improvement Program (CIP) Projects, the District will provide one set of construction stakes. Stakes removed or destroyed will be replaced by the District at the Contractor's request and expense. The Contractor shall coordinate with the District a minimum of 10 days in advance of the need for staking for any CIP project.

For Developer Extension (DE) Projects, the Contractor shall provide their own construction staking per the lines and grades shown on the approved DE Plans. Cutsheets for the staking shall be provided to the District for review prior to the start of any construction on the DE project.

Except as otherwise noted herein, all work shall be accomplished with adopted standards and specifications of Northshore Utility District and according to the recommendations of the manufacturer of the material or equipment used. The Contractor shall have a copy of the plans and specifications on the jobsite at all times.

10.2 CLEARING AND GRUBBING

Clearing and grubbing shall consist of the removal of all trees, stumps, brush, and debris and shall be confined within the limits of the easements obtained for the construction of this project and/or existing public rights-of-way. Removal of clearing and grubbing debris shall be subject to the approval of the District and shall, in no way, constitute a hazard to the continuous operation of any existing utilities. Any damage to the existing utilities shall be repaired by the respective utility company, at the expense of the Contractor.

Within the limits described, all growth and organic matter such as trees, shrubs, brush, logs, fences, upturned stumps and roots of down trees and other similar items, shall be removed and disposed. All trees shall be felled within the area to be cleared. Where the tree limb structure interferes with utility wires or where the trees to be felled are in close proximity to utility wires, the tree shall be taken down in sections to eliminate the possibility of damage to the utility. Any damage that does occur shall be the responsibility of the Contractor.



All fences adjoining any excavation or embankment that may be damaged or buried shall be carefully removed and temporarily erected on the adjoining property or stored for reinstallation as directed by the District.

No debris of any kind shall be deposited in any stream or body of water or in any street or alley.

Trees, shrubbery, and flower beds designated by the District shall be left in place and care shall be taken by the Contractor not to damage or injure such trees, shrubbery, or flower beds by any of its operations.

The refuse resulting from the clearing operation shall be hauled to an approved waste site secured by the Contractor and shall be disposed of in such a manner as to meet all requirements of State, County and municipal regulations regarding health, safety and public welfare.

NO burning is allowed.

In no case, shall any material be left on the project, shoved onto abutting private properties, or be buried in embankments or sewer trenches on the project.

Where trees exist in planting areas and are not to be removed, it shall be the Contractor's responsibility to trim low limbs which will interfere with the normal operation of its equipment and paint or seal pruned areas with an approved pruning tar or paint. The trimming shall be performed in a professional manner by competent personnel prior to its machine operations and in such a manner as the District and/or the property owner may direct.

The Contractor shall be responsible for all damages to existing improvements resulting from its operations.

10.3 DEWATERING AND CONTROL OF WATER

Groundwater in underground utility construction is a widely known, and not unusual, condition. The Contractor shall review the actual field conditions and any other available resources to determine the extent and volume of groundwater to be expected. The Contractor shall submit a dewatering plan to the District for review prior to dewatering activities. The dewatering plan shall show specific locations, in plan and section, where dewatering is expected as well as general discussion of methods should water be encountered in other locations. The plan should also indicate the location and methods for removing groundwater, proper sediment removal and disposal of groundwater.

Review by the District of the design, materials, method, installation, and operation and maintenance details submitted by the Contractor shall not in any way relieve the Contractor from responsibility for errors/omissions therein or from the entire responsibility for complete and adequate design, materials, inspection, operation, maintenance and performance of the dewatering system. The



Contractor shall bear sole responsibility for proper design, installation, operation, maintenance, and any failure of any component of the dewatering system.

The Contractor shall dewater and dispose of the water so as not to cause injury to public or private property or to cause a nuisance or a menace to the public and shall meet all regulatory agency requirements.

The control of groundwater shall be such that softening of the bottom of excavations or formation of "quick" conditions or "boils" shall be prevented. Dewatering systems shall be designed and operated so as to prevent the removal of the natural soils.

During excavating, installing, placing of trench backfill and the placing and setting of concrete, excavations shall be kept free of water. The static water level shall be drawn down below the bottom of the excavation so as to maintain the undisturbed state of the natural soils and allow the placement of backfill to the required density. The dewatering system shall be installed and operated so that the ground water level outside the excavation is not reduced to the extent that would damage or endanger adjacent structures or property.

The release of groundwater to its static level shall be performed in such a manner as to maintain the undisturbed state of the natural foundation soils, prevent disturbance of compacted backfill and prevent flotation or movement of structures and pipelines.

In carrying out the work within the limits of streams or an area that will drain into a stream, the Contractor is required to comply with the regulations of the appropriate local, State and Federal agencies.

The Contractor shall contact the above referenced departments and secure such permits as may be necessary to cover its proposed method of operation within the areas described above. If no permit is necessary and, if requested by the District, the Contractor shall provide written approval from the appropriate agency.

10.4 TEMPORARY EROSION & SEDIMENTATION CONTROL (TESC)

The Contractor shall comply with all applicable permit conditions and recommendations of the geotechnical report, if available.

The detrimental effects of erosion and sedimentation are to be minimized in conformance with the following general principles:

- Leaving soil exposed for the shortest possible time.
- Reducing the velocity and controlling the flow of runoff.
- Detaining runoff in an approved on-site temporary sedimentation control facility to trap sediment.
- Releasing runoff safely to downstream areas.



- Installing temporary filter fabric fence.
- Protecting existing catch basins.

In applying these principles, the Contractor shall provide for erosion control by conducting work in workable units; minimizing the disturbance to cover crop material, providing mulch and/or temporary cover crops, sedimentation basins, and/or diversions in critical areas during construction; properly controlling and conveying runoff; and establishing permanent vegetation and installing erosion control structures as soon as possible.

(a) TEMPORARY EROSION & SEDIMENTATION CONTROL (TESC)

The Contractor shall provide, install, and maintain TESC facilities to protect the existing surface waters, drainage systems and adjacent properties.

The TESC facilities must be constructed prior to the start of construction to ensure that the transport of sediment to surface waters, drainage systems and adjacent properties is minimized.

The TESC facilities shown on the plan are the minimum requirements for anticipated site conditions. During the construction periods, these TESC facilities shall be upgraded as needed for unexpected storm events and modified to account for changing site conditions (e.g., additional sump pumps, relocation of ditches and silt fences, etc.).

The TESC facilities shall be inspected daily by the contractor/TESC supervisor and maintained to ensure proper functioning. Written records shall be kept of weekly reviews of the TESC facilities during the wet season (Oct. 1 to March 31) and of monthly reviews during the dry season (April 1 to Sept. 30).

Any areas of exposed soils, including roadway embankments, that will not be disturbed for two days during the wet season or seven days during the dry season shall be immediately stabilized with the approved TESC methods (e.g., seeding, mulching, plastic covering, etc.).

The TESC facilities shall be inspected and maintained within 24 hours following a storm event.

At no time shall more than one (1) foot of sediment be allowed to accumulate within a catch basin. All catch basins and conveyance lines shall be cleaned prior to paving. The cleaning operation shall not flush sediment-laden water into the downstream system.



(b) TRENCH MULCHING

Where, in the opinion of the District, there is danger of backfill material being washed away due to steepness of the slope along the direction of the trench, material shall be held in place by covering the disturbed area with straw and holding it in place with a covering of jute matting or wire mesh anchored down with wooden stakes, or as directed by the District.

(c) COVER CROP SEEDING

A cover crop shall be in place in all areas excavated or disturbed during construction that were not paved, landscaped, and/or covered prior to construction. Areas landscaped prior to construction shall be restored to their prior condition. The Contractor shall be responsible for protecting all areas from erosion until the cover in place affords such protection.

Cover-crop seeding shall follow backfilling operations.

The Contractor shall be responsible for protecting all areas from erosion until the cover crop affords such protection. The cover crop shall be reseeded, if required, and additional measures taken to provide protection from erosion until the cover crop is capable of providing protection.

During winter months, the Contractor may postpone seeding at the direction of the District, if conditions are such that the seed will not germinate and grow. The Contractor will not, however, be relieved of the responsibility of protecting all areas until the cover crop has been sown and affords protection from erosion.

Submittals shall be provided for cover crop seed, mulch and fertilizer as specified herein.

10.5 SEWER PIPE INSTALLATION

Unless specified otherwise, a 10-foot horizontal separation and an 18-inch vertical separation must be maintained between all sanitary sewer mains and water mains in accordance with the Department of Ecology criteria. Maximum distance between manholes shall not exceed 400', or as approved by District

Where it is necessary to cross an existing asbestos-cement water line, the District may require that the asbestos-cement pipe be removed and replaced with ductile iron pipe in accordance with the Standard Detail on a case-by-case basis. All other non-metallic water main crossings shall be backfilled with CDF per NUD Standard Sewer Details.



(a) CONNECT TO EXISTING SYSTEM

Connections to existing manholes shall be made by core-drilling. Invert of manhole shall be rechannelized as necessary to accommodate flow directions and provide a minimum of 0.10 foot drop from the inlet to the outlet. Connections shall be watertight. If connection is made to an existing manhole with a fiberglass reinforced plastic baseliner, the disturbed channel must be re-glassed by a District approved contractor.

(b) PLUG(S) FOR EXISTING SYSTEM

The Contractor shall furnish and install a plug at the time the project is connected to the District's sewer system. The plug(s) must remain in position to prevent debris and water from entering the existing sewer system until such time as the sewer system within the project has been accepted by the District for maintenance and operation. A \$2,000.00 fine will be levied against the Contractor when a sewer mainline plug is removed at any time during the work. The Contractor will also be accountable for all expenses incurred to clean and flush sanitary sewer mainlines as a result of said plug removal.

(c) PIPE LAYING

The sewer pipe, unless otherwise approved by the District, shall be installed upgrade from point of connection on the existing sewer or from a designated starting point to line and grade per approved plans. The sewer pipe shall be installed with the bell end forward or upgrade. When pipe laying is not in progress, the forward end of the pipe shall be kept tightly closed with an approved temporary plug.

3-inch wide, green metallic sewer detector tape shall be laid 24-inch above the pipe bedding, for the entire length of the sewer main between manholes. Identification on the tape shall include the words "Sanitary Sewer".

(d) PIPE JOINTING

All extensions, additions, and revisions to the sewer system, unless otherwise indicated, shall be made with sewer pipe joined by means of a flexible gasket which shall be fabricated and installed in accordance with these specifications.

All joints shall be made up in strict compliance with the manufacturer's directions and all sewer pipe manufacturing and handling shall meet or exceed the current revisions of the ASTM recommended specifications.

Pipe handling after the gasket has been affixed shall be carefully controlled to avoid disturbing the gasket and knocking it out of position or loading it with dirt or other foreign material. Any gaskets so disturbed shall be removed,



cleaned, re-lubricated, if required, and replaced before the re-joining is attempted.

Care shall be taken to properly align the pipe before joints are entirely forced home. During insertion of the tongue or spigot, the pipe shall be partially supported by hand, sling, or crane to minimize unequal lateral pressure on the gasket and to maintain concentricity until the gasket is properly positioned.

Sufficient pressure shall be applied in making the joint to assure that it is home, as described in the installation instructions provided by the pipe manufacturer.

10.6 SIDE SEWER STUBS

A side sewer stub is considered to be that portion of a sewer line that will be constructed between a main sewer line and a property line or easement limit.

All applicable specifications given herein for sewer construction shall be held to apply to side sewer stubs.

3-inch wide, green metallic side sewer detector tape shall be laid 24-inch above the pipe bedding, for the entire length of the side sewer which is 8 feet deep or less continuing up the side sewer 2-inch x 4-inch marker post. Identification on the tape shall include the words "Sanitary Sewer".

Side sewers shall be single and installed according to the Standard Details. In no case may the specified side sewers be changed without the approval of the District.

Side sewers shall be connected to the tee provided in the sewer main where such is available utilizing approved fittings or adapters. The side sewer slope shall be a maximum of 100 percent (45°) and a minimum of 2 percent.

The maximum bend permissible at any one fitting shall not exceed 45°. Bends exceeding 45° with any combination of two fittings shall have a straight pipe of not less than two (2) feet in length installed between such adjacent fittings, unless one of such fittings be a wye branch with a cleanout provided on the straight leg. The maximum length of 6-inch sewer stub shall be 100 feet; minimum length shall be 5 feet unless otherwise approved by the District.

Where there are no basements, the minimum side sewer depth shall be six (6) feet below final grade at the property line. The Contractor shall provide for each 6-inch stub a 2-inch x 4-inch wooden post that extends from the invert of the 6-inch stub to a point 18 inches (minimum) and 2 feet (maximum) above the existing ground. The exposed area of this post shall be painted white and shall have marked thereon the letters S/S. The elevations of the side sewer



connections shall be of sufficient depth to serve all existing and possible future structures.

Where no tee is provided or available at the sewer main, connection shall be made by machine-made tap and suitable saddle, or otherwise as approved by the District Engineer.

10.7 TESTING GRAVITY SEWERS

Before sewer lines are accepted and/or connected to the existing system for use, all lines shall be inspected for line and grade, air tightness, deflection, and television inspection. Any corrections required shall be made at the expense of the Contractor.

The first section of pipe not less than 300 feet in length installed by each crew shall be tested, in order to qualify the crew and/or the material. A successful installation of this first section shall be a prerequisite to further pipe installation by the crew. At the Contractor's option, crew and/or material qualification testing may be performed at any time during the construction process after at least three feet of backfill has been placed over the pipe.

(a) PREPARATION FOR TESTING

Prior to testing the Contractor shall clean and flush all sewer lines.

The Contractor shall conduct preliminary tests to confirm that the section to be tested is in an acceptable condition before requesting the District to witness the test. The manner and time of testing shall be subject to approval of the District.

(b) LINE AND GRADE

Variance from established line and grade shall not be greater than one thirty-second ($1/32$) of an inch per inch of pipe diameter and not to exceed one-half ($1/2$) inch, provided that such variation does not result in a level or reverse sloping invert; provided, also, that variation in the invert elevation between adjoining ends of pipe, due to non-concentricity of joining surface and pipe interior surfaces, does not exceed one sixty-fourth ($1/64$) of an inch per inch of pipe diameter, or one-half ($1/2$) inch maximum.

(c) LOW PRESSURE AIR TEST

Gravity sewers shall be tested with low pressure air, by the pressure drop method in accordance with Section 7-17.3(2)F, *Low Pressure Air Test for Sanitary Sewers Constructed of Non Air-Permeable Materials*, of the latest published Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation. The Contractor shall furnish all facilities and personnel for conducting the air test



under the supervision of the District. The Contractor may desire to make an air test prior to backfilling for its own purposes. However, the acceptance air test shall be made after backfilling has been completed and compacted.

All wyes, tees or the end of the side sewer stubs shall be plugged with flexible joint caps, or acceptable alternative, securely fastened to withstand the internal test pressures. Such plugs or caps shall be readily removable and their removal shall provide a socket suitable for making a flexible, jointed lateral connection or extension. No double plugs shall be allowed.

Immediately following the pipe cleaning, the pipe installation shall be tested with low pressure air. A maximum reach to be tested shall be the reach between two consecutive manholes. Air shall be slowly supplied to the plugged pipe installation until the internal air pressure reaches 4.0 pounds per square inch greater than the average back pressure of any groundwater above the center of the pipe being tested. At least two minutes shall be allowed for temperature stabilization before proceeding further.

The requirements of this specification shall be considered satisfied if the time required in seconds for the pressure to decrease from 3.5 to 2.5 lbs. per square inch greater than the average back pressure of any groundwater that may submerge the pipe is not less than the listed values shown in the following table:

Allowable Time for Pressure Drop Method

Diameter (inches)	Minimum Test Times for Length of Main (seconds)							
	50'	100'	150'	200'	250'	300'	350'	400'
8	144	286	428	570	712	854	908	908
10	222	444	666	888	1110	1134	1134	1134
12	320	640	960	1280	1360	1360	1360	1462
15	500	1000	1500	1700	1700	1714	1998	2284
18	720	1440	2040	2040	2056	2468	2878	3290
24	1280	2558	2720	2924	3654	4386	5116	5846

According to the following:

$$T = 4 * K, \text{ for } C < 1$$

$$T = 4 * (K/C), \text{ for } 1 \leq C < 1.75$$

$$T = 4 * (K/1.75), \text{ for } C \geq 1.75$$

$$\text{Where: } C = 0.0003918 * d * L$$

$$K = 0.0111 * d^2 * L$$



- d = Pipe diameter (inches)
 L = Pipe length (feet)
 T = Minimum test time (seconds)

Note: All test times in the above table are rounded up to the nearest even number.

The use of air pressure for testing sewer lines creates hazards that must be recognized. The Contractor shall be certain that all plugs are securely blocked to prevent blowouts. The air testing apparatus shall be equipped with a pressure release device such as a rupture disc or a pressure relief valve designed to relieve pressure in the pipe under test at greater than 6 lbs. per square inch.

Precautions shall be taken to prevent any damage caused by testing. Any damage resulting shall be repaired by the Contractor at its own expense.

All visible leaks showing flowing water in pipelines or manholes shall be stopped even if the test results fall within the allowable leakage.

(d) DEFLECTION TESTING

If required by the District, all PVC sewer pipes shall be tested for deflection not less than 30 days after the trench has been backfilled and compaction has been completed. The testing shall be conducted by pulling a properly sized mandrel through the pipe in accordance with Section 7-17.3(2)G of the latest published Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation.

(e) TELEVISION INSPECTION

All sanitary sewers shall be inspected by the use of a Closed-Circuit Television (CCTV) camera. The CCTV footage and corresponding inspection file database (media, mdf, ldf files) shall be exported and provided to the District on a USB flash storage device (thumb drive) or uploaded to a OneDrive folder provided to the Contractor by the District. CCTV files shall be provided to the District before final acceptance of the project. No VHS tapes or DVD-R Discs will be accepted. All inspections shall be conducted in accordance with NASSCO PACP methods, done in Granite Net Version 2.7.2.24 or older, and coded in CUES Basic format with uploadable capability to the District's Granite Net database.

At the beginning of each sewer main inspection, the following information shall be electronically generated and displayed on the CCTV footage:

1. Date of inspection
2. Contractor Company Name



3. Operator Name
4. Upstream Manhole number to downstream manhole number
5. Direction of inspection (upstream or downstream)
6. Pipe material and size

During inspections, the following information shall be electronically generated, automatically updated, and displayed on the CCTV footage:

1. Inspection location in the sewer line in feet from adjusted zero
2. Manhole number to manhole number (with direction of travel US/DS)
3. Date of inspection
4. Elapsed time of inspection

Each individual sewer main inspection, from manhole-to-manhole, shall be recorded on one digital file. If a pipe reach cannot be recorded to a single digital file due to extreme pipe length or obstructions in the pipe, multiple digital files for a single pipe are acceptable. On the other hand, multiple sewer main inspections recorded on a single digital file shall not be accepted.

For all projects (District or private development), CCTV inspections shall be furnished by the Contractor. Contractor shall utilize 1-inch target or ball and sewer inspection dye during CCTV recording. Contractor shall use the pipe ID number as shown on the Plans when conducting post-construction CCTV as referenced in the requirements above.

This CCTV inspection will be performed prior to final restoration of the street or easement. The Contractor shall inform the District ahead of time when and which lines are ready to be inspected.

The Contractor shall bear all costs incurred in correcting any deficiencies found during the CCTV inspection including the cost of any additional CCTV inspection that may be required by the District to verify the correction of said deficiency.

The project will not be accepted by the District until the CCTV inspection has been performed.

10.8 TESTING SANITARY SEWER FORCE MAINS

(a) TEST SPECIFICATIONS

Before sewer forcemains are accepted and/or connected to the existing system for use, all lines shall be inspected for line and grade and air tightness. Any corrections required shall be made at the expense of the Contractor.

The pressure tests shall be performed in the following manner:



Water shall be pumped into the main, bringing the pressure in the main equal to, or greater than, 1.5 times the design operating pressure. After a period of thirty minutes, water shall again be pumped into the main to bring the pressure up to the required test pressure and the quantity of water used during the test shall be accurately measured through a standard water service meter with a sweep unit hand that registers one gallon per revolution. The meter shall be approved by the District prior to testing. The allowable water consumption shall not exceed the quantities given by the following formula:

$$L = \frac{N \times D \times P}{1,850}$$

Where:

L	= allowable leakage in gallons per hour
N	= number of pipe joints
D	= pipe diameter in inches
P	= test pressure in pounds per square inch

A positive displacement type pump shall be furnished by the Contractor for the testing. Feed for the pump shall be from a container wherein the actual amount of "make-up" water can be measured.

Any leakage caused by defective workmanship or materials shall be repaired and the line shall again be tested to full compliance at the Contractor's expense. Concrete thrust blocking for fittings shall be in place and the concrete strength is sufficiently to withstand the test pressure before starting the test. Where permanent blocking is not required, the Contractor shall furnish and install temporary blocking and remove it after testing. The test pressure shall be applied at the low end of the section of pipe being tested. Air in the pipe shall be vented at all high points.

All field equipment for testing as above described shall be furnished and operated by the Contractor, subject to approval by the District.

The Contractor shall conduct preliminary tests and assure itself that the section to be tested is in an acceptable condition before requesting the District Engineer to witness the test.

(b) FORCE MAIN THRUST BLOCKS

All fittings, such as bends, shall be blocked with concrete in order to prevent movement and separation of pipe joints in accordance with the Water Standard Details for concrete thrust blocking. Sufficient time shall be allowed for the concrete to attain sufficient strength before commencement of pressure tests.



10.9 MANHOLE VACUUM TESTING

Before sewer manholes are accepted and/or connected to the existing system for use, all manholes shall be inspected for air tightness. Any corrections required shall be made at the expense of the Contractor.

All manholes shall be vacuum tested in accordance with ASTM C1244-05 to verify water tightness. All manhole penetrations shall be blocked or sealed and braced prior to the testing in order to prevent pipes, boots, gaskets, or any other materials from being drawn into the manhole. A vacuum of ten (10) inches of Hg shall be drawn on the manhole and the vacuum pump shut off. The time for the vacuum on the manhole to drop from ten (10) inches of Hg to nine (9) shall be measured and the manhole shall have passed the vacuum test if the time measured is greater than shown in the following table:

Minimum Test Times for MH Vacuum Testing

MH Diameter (inches)	Depth (feet)									
	8 or less	10	12	14	16	18	20	22	24	26
	Time (seconds)									
48	20	25	30	35	40	45	50	55	59	64
54	23	29	35	41	46	52	53	64	64	75

If the time required for the pressure to drop from 10 inches of Hg to 9 inches of Hg is less than the value indicated in the table, the manhole shall be rejected by the District and shall be repaired or replaced and re-tested by the Contractor.

10.10 LAYING DUCTILE IRON WATER MAIN

All pipes shall be installed in accordance with these specifications and the instructions of the manufacturer subject to the approval of the District.

Unless otherwise indicated on the plans, minimum cover shall be 3 feet for 8-inch diameter pipe and smaller, and 4 feet for pipe that is larger than 8-inch in diameter.

Potholing for all existing utilities crossing proposed alignment shall be performed a minimum of 200 feet in advance of water main installation. Additional cost in association with any adjustments to alignment and depth of cover due to insufficient potholing will be performed at the expense of the Contractor.

All pipe ends shall be square with the longitudinal axis of the pipe and any damage to the ends shall be cut off before installation, if approved by the District. Where necessary to cut the pipe, the pipe shall be cut with approved cutting tools.



The pipe shall be laid in a straight grade through localized breaks in grade, the excavation shall be deepened gradually at changes in the street grades so that there are no abrupt changes in pipeline grade. To maintain the required alignment, use short lengths and deflect the joints or use necessary bends.

Each pipe section shall be carefully lowered into place in the ditch after inspecting it for defects and removing any gravel or dirt, etc., from the interior of the pipe.

Where it is necessary to cross sanitary sewer or storm sewer trenches, all trench backfill shall be removed and replaced with mechanically compacted pit run material or CDF in order to provide a uniform support for the full length of the pipe.

A 10-foot horizontal separation must be maintained between all sanitary sewer lines and water lines, unless otherwise approved. A 3-foot minimum horizontal separation shall be maintained between other underground utilities, unless otherwise approved.

All pipe shall be kept free of gravel, dirt, and other contaminants. Temporary pipe plugs must be installed at all exposed pipe ends at the end of each working day. The pipe plug must be a watertight, mechanical device, and shall be cleaned thoroughly prior to installation.

10.11 GALVANIZED IRON PIPE

Galvanized iron pipe and fittings shall be threaded. Joints shall be made up in accordance with good plumbing practice. All threads shall be coated with pipe thread sealer before connecting.

10.12 CONCRETE BLOCKING

Concrete blocking shall be 2500 psi minimum strength, cast in place and have a minimum of 1/2 square foot bearing against the fitting. Blocking shall bear against fittings only and shall be clear of joints so as to permit taking up or dismantling joint. The Contractor shall install blocking which is adequate to withstand full test pressure as well as to continuously stand operating pressures under all conditions of service. For concrete blocking based upon a 250-psi test pressure, see the Standard Details.

10.13 FIRE HYDRANT INSTALLATION

Correct bury depth shall be determined by contractor, fire hydrant shall be set as shown in the Standard Detail. Fire hydrant extensions will not be allowed on new fire hydrant installations. Mega-lugs or stainless-steel tie rods shall be used to restrain the ductile iron pipe between the hydrant foot and the 6-inch hydrant valve.



The location of the fire hydrant shall be shown on the plans to determine length of hydrant run required. The hydrant shall be set on a solid concrete block 4-inch x 8-inch x 16-inch and a minimum of 6 cubic feet of 1-1/2" washed rock shall be placed around the base of the hydrant for a drain pocket.

Fire hydrants shall be set plumb and with the ports oriented as directed by the Fire Protection District having jurisdiction over said area.

In some instances, it may be necessary to make a cut or provide a fill to set a hydrant. Where this occurs, the area for at least a three (3) foot radius around the hydrant shall be graded and leveled, and the cut slopes or fill slopes shall be neatly graded by hand, unless otherwise approved by the District and the Fire Chief.

No tool other than an approved hydrant-operating wrench shall be used when operating hydrants.

Fire hydrants shall be prime-coated and finish coated in accordance with the Standard Detail.

10.14 GUARD POST INSTALLATION

Fire hydrant guard posts shall be installed if indicated on the plans or specified by the District. Guard posts shall be set with the top of the guard posts level with the bonnet flange of the fire hydrant. They shall be plumb, and where two posts are used at a hydrant; they shall be set with their tops at the same elevation. The posts shall be coated in the same manner and with the same color as the fire hydrants.

10.15 GATE VALVE AND BUTTERFLY VALVE INSTALLATION

Gate and butterfly valves shall be set in the ground vertically and shall be opened and shut under pressure to check operation and, at the same time, show no leakage. Valves 8-inches and larger that are not flanged to other fittings shall be blocked in accordance with the Standard Blocking Details.

10.16 VALVE BOX INSTALLATION

Valve boxes shall be set flush to the adjacent finished grade.

For valves located outside of paved areas, a cement or asphalt pad for the valve box shall be constructed according to the Standard Detail. The cement or asphalt pad shall be provided for all valves, unless otherwise directed.

10.17 AIR AND VACUUM RELIEF VALVE INSTALLATION

Air and vacuum relief valve assembly shall be installed as shown on the Standard Detail.



Location of the air release valves shall be at the high points of the line. Water line must be constructed so that the air release valve may be installed in a convenient location.

10.18 2-INCH BLOW-OFF INSTALLATION

2-inch Blow-offs shall be installed for 12-inch diameter pipe and smaller in accordance with the Standard Detail.

10.19 TRACER WIRE

All water mains and water services installed shall have blue 14-gauge solid copper wire with polyethylene insulation. Wire shall be placed in the trench on top of the water main and the ends brought into the valve boxes, per the Standard Detail. Tracer wire shall also be wrapped around the water service line and brought up into the meter box. All connections or splicing shall be made with District approved split-bolt wire connectors.

10.20 WATER SERVICE INSTALLATION

All service installations shall be according to the Standard Details.

For ductile iron and cast iron water mains larger than 4-inch diameter, direct tapping of 1-inch standard corporation stop threaded tap will be required, saddles will not be allowed on ductile iron and cast iron pipe larger than 4-inch diameter for 1-inch water services.

Where an existing water service is being replaced with a new water service, the Contractor shall pothole the private, customer side of the existing meter box prior to any water service disruption in order to determine the fittings required for the reconnection and to determine the final location of the new meter box.

If an existing pressure reducing valve (PRV) is found on a water service to be replaced, contractor shall install PRV on the private property side of the meter box as shown on NUD Standard Water Detail #21.

On existing water mains that are live and connected to the existing system, the contractor shall furnish and install all parts of the water service and reconnection required, except the tap. The Contractor shall coordinate with Northshore Utility District Maintenance & Operations Department to have them perform the tap on the water main. The District will provide all parts necessary to perform the tap and the Contractor shall repair the polyethylene encasement material per manufacturer's recommendations and per the District's Standard Detail.

On new water mains installed and not yet connected to the existing system, the Contractor shall provide all parts and equipment necessary to tap the new main and repair the polyethylene encasement material per manufacturer's recommendations and per the District's Standard Detail.



On new ductile iron water mains, multiple, adjacent direct taps shall be installed with a minimum 18" horizontal separation between services. Direct taps shall be made a minimum of 18" from pipe ends (bell or spigot).

Hand drills with hole saws, or other tools or methods, for the installation of service saddles will be allowed for all other water main sizes and materials. Additionally, for larger diameter water services (1-1/2-inch and 2-inch), saddles will be required regardless of water main size or type. See the Standard Details and Material Specifications for additional information.

10.21 HYDROSTATIC TESTS

After backfilling the water main with sufficient material to prevent movement of the pipeline and allowing sufficient time for the concrete blocking to set, the water main shall be pressure tested in convenient lengths as directed by the District. In general, large sections of untested main will not be permitted to accumulate. Sections to be tested are limited to approximately 1,500 feet or less, or as approved by the District. Testing against a closed valve is not permitted.

The Contractor shall make arrangements with the District for the necessary filling of the newly installed water main and appurtenances, a minimum of 48 hours notice to the District will be required. The pipeline shall be filled by the District with water slowly and air expelled from the pipeline prior to starting the test. All pipelines shall be tested at a hydrostatic pressure of 250 psi at high point. All necessary pump, valves, meter gauges, piping, 2-inch blow-offs, hose and labor required shall be furnished by the Contractor.

The pressure tests shall be performed in the following manner:

Water shall be pumped into the main, bringing the pressure in the main up to the required test pressure. The 250 psi test pressure must be held for 15 minutes with no drop in pressure in order for a passing hydrostatic test.

All visible leakage shall be corrected, and all new valves installed under these specifications shall be tight. Whenever repairs or corrections are necessary, the pressure test shall be repeated to provide acceptability.

Procedures for testing firelines shall be as described above for hydrostatic tests and per Section 10.22 for bacteriological tests. The testing limits of the portion of the fireline owned and maintained by the District, shall end at a temporary blow-off installed on the fireline, inside the Double Check Detector Assembly (DCDA) vault.

Testing of the private fire line between the DCDA vault and the building shall be per the Fire Marshall's requirements.



10.22 STERILIZATION AND FLUSHING OF WATER MAIN

Upon successful completion of the hydrostatic test, all new water mains, and repaired portions of, or extension to, mains shall be flushed and sampled for purity per AWWA C651-14. The District will collect two consecutive samples for testing taken 24 hours apart and will forward the bacteriological test results to the Contractor. Upon receipt of two satisfactory bacteriological reports, the contractor shall have two weeks to make final connections to the existing main. If the connections are not completed within the two week timeframe, a repeat of the bacteriological testing will be required.

Water supply for filling, testing, and flushing of the new mains will be available from the existing distribution system. The Contractor shall make arrangements with the District for the necessary flushing of the pipeline. The water main shall be flushed a minimum of 24 hours or a maximum of 48 hours from the initial time of the pipeline fill. Opening of valves and use of water from the District's system will be done by the District and water for flushing will be provided by the District.

Taps required by the Contractor for temporary or permanent release of air, chlorination or flushing purposes shall be provided by the Contractor as a part of the construction of water mains. See NUD Standard Water Detail #17 for more information.

(a) DECHLORINATION AND DISPOSAL OF TREATED WATER

Unless otherwise specified, for District Capital Improvement Program (CIP) Projects, the District shall be responsible for disposal of treated water flushed from mains and shall neutralize the wastewater for protection of aquatic life in the receiving water before disposal into any natural drainage channel.

For Developer Extension (DE) Projects, the Contractor shall develop a plan for the disposal of the treated water and submit it to the District for review. The plan shall show specific locations where, or methods by which, the treated water can be discharged. If the plan designates discharge to sanitary sewer, storm sewer or surface water facilities, the Contractor shall contact the jurisdiction(s) having authority and secure such permits as may be necessary to cover the proposed method of disposal. If no permit is necessary and, if requested by the District, the Contractor shall provide written approval from the appropriate agency.

The actual flushing and disposal of the treated water will be performed by the District.

(b) REQUIREMENT OF CHLORINE

Before being placed into service, all new mains and repaired portions of, or extensions to, existing mains shall be chlorinated by the Contractor so that a



chlorine residual of not less than 10 ppm remains in the water after standing 24 hours in the pipe.

The initial chlorine content of the water shall be not less than 50 ppm (note that ppm = mg/L).

(c) FORM AND METHOD OF APPLIED CHLORINE

Chlorine shall be applied by one of the following methods, to give a dosage of not less than 50 ppm of available chlorine:

1. DRY CALCIUM HYPOCHLORITE

As each length of pipe is laid, sufficient high test calcium hypochlorite (65-70% chlorine) shall be placed in the pipe to yield a dosage of not less than 50 ppm available chlorine, calculated on the volume of the water which the pipe and appurtenances will contain.

The number of ounces of 65% test calcium hypochlorite required for a 20-foot length of pipe equals $0.008431D^2$, in which "D" is the diameter in inches.

2. LIQUID CHLORINE

A chlorine gas-water mixture shall be applied by means of a solution-feed chlorinating device, or the dry gas may be fed directly through proper devices for regulating the rate of flow and providing effective diffusion of the gas into the water within the pipe being treated.

Chlorinating devices for feeding solution of the chlorine gas, or the gas itself, must provide means for preventing the backflow of water into the chlorine.

3. CHLORINE-BEARING COMPOUNDS IN WATER

A mixture of water and high-test calcium hypochlorite (65-70% Cl) may be substituted for the chlorine gas-water mixture. The dry powder shall first be mixed as a paste and then thinned to a 1 per cent chlorine solution by adding water to give a total quantity of 7.5 gallons of water per pound of dry powder. This solution shall be injected in one end of the section of main to be disinfected while filling the main with water (continuous-feed method, see below).

4. SODIUM HYPOCHLORITE

Sodium hypochlorite, commercial grade (15% Cl) or in the form of liquid household bleach (5% Cl) may be substituted for the chlorine gas-water mixture.



This liquid chlorine compound may be used full strength or diluted with water and injected into the main in correct proportion to the fill water so that dosage applied to the water will be at least 50 ppm.

The following methods and tables as outlined in AWWA C651-14 are included for reference. Note that ppm = mg/L.

- The continuous-feed method consists of completely filling the main with potable water, removing air pockets, then flushing the main at a minimum of 3.0 ft/sec to remove particulates, and refilling the main with potable water that has been chlorinated to 25 ppm. After a 24-hr holding period in the main there shall be a free chlorine residual of not less than 10 ppm. Please see the table below and AWWA C651-14 for more information.

Table 4 Chlorine required to produce an initial 25-mg/L concentration in 100 ft (30.5 m) of pipe by diameter

Pipe Diameter		100% Chlorine		1% Chlorine Solution	
<i>in.</i>	<i>(mm)</i>	<i>lb</i>	<i>(g)</i>	<i>gal</i>	<i>(L)</i>
4	(100)	0.013	(5.9)	0.16	(0.6)
6	(150)	0.030	(13.6)	0.36	(1.4)
8	(200)	0.054	(24.5)	0.65	(2.5)
10	(250)	0.085	(38.6)	1.02	(3.9)
12	(300)	0.120	(54.4)	1.44	(5.4)
16	(400)	0.217	(98.4)	2.60	(9.8)

- The slug method consists of completely filling the main to eliminate air pockets, flushing the main at a minimum of 3.0 ft/sec to remove particulates, then slowly flowing a slug of water dosed with chlorine to a concentration of 100 ppm through the main. The slow rate of flow ensures that all parts of the main and its appurtenances will be exposed to the highly chlorinated water for a period of not less than 3 hours. Please see AWWA C651-14 for more information.

The table below from Appendix B of AWWA C651-14 provides the amount of chemical required to produce a chlorine concentration of 200 ppm. In order to obtain the 100 ppm as outlined in the slug method, divide the amount of chemical required in the table (gallons or pounds) in half.



Table B.2 Amounts of chemicals required to produce chlorine concentration of 200 mg/L in various volumes of water*

										Calcium Hypochlorite Required	
Volume of Water		Liquid Chlorine Required		Sodium Hypochlorite Required							
				5% Available Chlorine		10% Available Chlorine		15% Available Chlorine		65% Available Chlorine	
gal	L	lb	(g)	gal	(L)	gal	(L)	gal	(L)	lb	(g)
10	(37.9)	0.02	(9.1)	0.04	(0.15)	0.02	(0.08)	0.02	(0.08)	0.03	(13.6)
50	(189.3)	0.10	(45.4)	0.20	(0.76)	0.10	(0.38)	0.07	(0.26)	0.15	(68.0)
100	(378.5)	0.20	(90.7)	0.40	(1.51)	0.20	(0.76)	0.15	(0.57)	0.30	(136.1)
200	(757.1)	0.40	(181.4)	0.80	(3.03)	0.40	(1.51)	0.30	(1.14)	0.60	(272.2)

*Amounts of sodium hypochlorite are based on concentrations of available chlorine by volume. For either sodium hypochlorite or calcium hypochlorite, extended or improper storage of chemicals may have caused a loss of available chlorine.

(d) PREVENTING REVERSE FLOW

During flushing, filling, and testing, the District shall make the connections to the existing distribution system and the new water pipelines and shall utilize a backflow prevention device approved by the State Department of Health.

(e) RETENTION PERIOD

Treated water shall be retained in the pipe for a minimum of 24 hours and a maximum of 48 hours. After this period, the chlorine residual at pipe extremities and at other representative points shall be at least 10 parts per million.

(f) CHLORINATING VALVES AND HYDRANTS

In the process of chlorinating newly-laid pipe, all hydrant valves and other appurtenances shall be opened while the pipeline is filled with the chlorinating agent and under normal operating pressure.

(g) CHLORINATING FINAL CONNECTIONS TO EXISTING WATER MAINS AND SERVICE CONNECTIONS

The chlorinating procedure to be followed shall be as specified by AWWA. All closure fittings shall be swabbed with a 50-ppm minimum chlorine solution.

(h) FINAL FLUSHING AND TESTING

Before placing the lines into service, two (2) consecutive satisfactory bacteriological test reports shall be received.

(i) REPETITION OF FLUSHING AND TESTING

If the initial round of bacteriological testing, two consecutive tests as outlined in 10.22 (h) above, result in an unsatisfactory outcome, any repeat flushing and testing that is completed by the District shall be paid for by the contractor.



If the second round of bacteriological tests result in an unsatisfactory outcome, rechlorination of the installed water main will be required either by the continuous-feed method or slug method as outlined in AWWA C651-14 and Section 10.22 (c). The costs for subsequent disinfection and testing shall also be the responsibility of the Contractor.

10.23 CONNECTION TO EXISTING WATER MAIN

The Contractor shall not operate any gate valves on the water system. Connections to the existing main shall not occur until satisfactory purity tests have been obtained and without approval of the District.

The Contractor shall make the necessary arrangements with the District for the connection to the existing water main.

Pre-digging and steel plating the connection location(s) shall be performed a minimum of one day prior to the date of connection. Pre-digging shall include potholing the existing water main at the point of connection, excavating between the temporary blow-off and the existing main to provide adequate access to each pipe, and verifying the necessary pipe and fittings to perform connection.

Water service outages shall be limited to the hours of 8:00 AM to 3:30 PM in order to minimize inconvenience to water users and maintain fire protection for the area. Once work is started on a connection, it shall proceed continuously without interruption and as rapidly as possible until completed. The Contractor shall provide a minimum of 72 hours notice to the District prior to the required shutdown. The District will alert affected property owners of the proposed service interruptions.

Existing mains shall be kept in operation until the new main has been constructed, satisfactorily tested and disinfected and is ready for operation. Connections to the existing system shall then be made.

The total length of pipe including fittings, and valve(s) required for the connection shall be in accordance with ANSI/AWWA C651-14, Sec. 4.10 and in no case shall exceed 20 feet.

All material used for the connection shall be thoroughly sterilized by swabbing the interior with a chlorine solution of 50 ppm.

10.24 WATER SERVICE TRANSFERS ON PARALLEL LIVE MAINS

After the new water main is connected to the existing water system, creating parallel live mains, the Contractor shall proceed immediately with all water service and meter transfers from the existing system to the new water main. The Contractor shall also proceed with all other work necessary to permanently abandon the existing water system; including but not limited to, removal and



disposal of valve boxes, meter boxes and setters, miscellaneous fittings and pipe, and appurtenances.

Service transfers and the abandonment of the existing water system shall take place prior to the contractor proceeding with the installation of additional water main pipe per the Contract.

10.25 STEEL CASING

Steel casing shall be in accordance with the Materials of Construction and the Standard Details.

Sizing and wall thickness of casing shall be approved by the District.

Jacking and boring of casing pipe shall be accomplished in such a manner that there will be no damage to the existing improvements. Boring shall be accomplished by mechanical augering or drilling of the soil. The casing shall be jacked close enough behind the boring operation so there is no caving of soil from above. Removal of the material from the bored hole by washing or sluicing will not be permitted.

If excess voids are created around the casing, holes shall be drilled through the casing and the voids shall be pumped full of cement grout. All excess excavated material shall be disposed of in a manner acceptable to the District and permitting agencies.

The carrier pipe shall be supported on casing spacers at 10 foot maximum spacing and shall be installed with restrained joints. See the Engineering Specifications, Materials of Construction, and the Standard Detail for additional information.

10.26 EXCAVATION AND BACKFILL FOR UTILITY CONSTRUCTION

(a) TEMPORARY TRAFFIC CONTROL

The Contractor shall make suitable, safe, and adequate provision for necessary traffic around, over, or across the work in progress and shall schedule pavement patching to follow after backfill is completed as directed by regulatory agency.

The contractor shall submit a traffic control plan for review and approval by the District and the permitting agency prior to beginning work. Traffic control shall conform to Section 1-10 of the latest published Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation.



(b) EXCAVATING IN PAVED AREAS

Prior to excavating in paved areas, the existing road surface shall be cut a minimum of 1 foot back from the outer edge of the excavation with approved cutting equipment. The cuts are to be made in clean, straight lines to insure a minimum of damage to the existing pavements. All cuts in existing concrete pavement are to be made with a concrete saw, except that where the concrete has been overlaid with asphalt, the pavement may be drilled on three (3) inch centers 1 foot (minimum) from the outer edge of the excavation on each side of the trench section. If the Contractor fails to adequately protect the cut edges during construction, it will be required, at its own expense, to re-cut the edges a minimum of 1 foot back from the edge of excavation prior to repairing the pavement.

(c) TRENCH SAFETY AND EXCAVATION

Contractor shall provide and install trench safety systems such as shoring or trench boxes or shall employ construction techniques such back sloping that meet the applicable State and Federal safety regulations.

Use and removal of trench safety systems shall be accomplished in such a manner that there will be no damage to the work or to the other properties.

Maximum and minimum trench widths shall be in accordance with the dimensions shown on the Standard Details.

In all cases, trenches must be of sufficient width to permit proper joining of the pipe and backfilling of material along the sides of the pipe. Trench width at the surface of the ground shall be kept to the minimum amount necessary for proper installation of the work in a safe manner.

Trenches wider than the maximum specified may result in a greater load on the pipe and, consequently, if the maximum trench width is exceeded by the Contractor, the Contractor shall, at its own expense, provide pipe of higher strength classification or provide a higher class of bedding where necessary to assure that the pipe will not be overloaded.

The maximum length of open trench permissible on any line, in advance of pipe laying, will be 100 feet for sewer pipe and 250 feet for water mains, except at the end of each day's operations, there shall be no trench in which pipe laying, embedment and backfill have not been completed.

Upon completion of work each day, all open trenches shall be completely backfilled, leveled and temporarily patched, graveled, fenced, or sheeted as required by the regulatory agency and the District.



Excavation for manholes, valves, structures, and other appurtenances shall be sufficient to provide enough room for compaction equipment between the outside surfaces and the sides of the excavation.

All material excavated from trenches and stored adjacent to trench or in a roadway or public thoroughfare shall be maintained in such manner that will cause a minimum of inconvenience to public travel. Provision shall be made for traffic where such is necessary. Free access shall be provided to all fire hydrants, water valves, and meters and clearance shall be left to enable the free flow of storm water in all gutters, conduits, and natural water courses. Where the trench bottom is a material which is unsuitable for providing an adequate foundation or material which will make it difficult to obtain uniform bearing for the pipe such material shall be removed and replaced with "foundation gravel", as previously defined.

(d) PIPE BEDDING AND TRENCH BACKFILL

Recycled concrete will not be allowed as foundation gravel, pipe bedding, or trench backfill material for any Ductile Iron (DI water or sewer main installation).

The placement and compaction of the pipe bedding and trench backfill shall be in accordance with the requirements of the various applicable sections of these specifications and as shown on Standard Details.

Where excavated material is not approved for backfill or bedding, imported backfill gravel conforming to the Materials of Construction shall be provided

Where governmental agencies other than the District have jurisdiction over roadways, the backfill shall be in accordance with the agency's requirements.

Bedding material shall be carefully placed and firmly compacted to provide a firm, uniform cradle for the pipe. The minimum thickness of the layer of bedding material required shall be 4-inches under the bell for all pipe sizes of 27 inches diameter and smaller, 6-inches for all pipe sizes 30 inches diameter and larger and 6-inches under the bell of the pipe for all diameter pipes where rock is excavated. The Contractor shall provide firm, continuous support for the pipe.

After the pipe laying operation, additional bedding material shall be placed and compacted by hand tools for the full width of the trench to a height of 6" above the top of the pipe.

In backfilling the trench, the Contractor shall take all necessary precautions to protect the pipe and protective coating from any damage or shifting of the pipe.



No timber bracing, lagging, sheathing or other lumber shall be left in any excavation.

At all roadway and driveway crossings and within existing paved rights-of-way and in such additional locations as may be directed by the District, the trench shall be immediately backfilled after the pipe is installed and inspected and shall be immediately provided with a temporarily graveled surface and continually maintained on a daily basis until replaced with permanent repair as required.

The Contractor shall be responsible for restoring to a condition equal to the prior condition of any and all existing utilities, culverts, ditches, drains, landscaping, or other facilities which are damaged as a result of the Contractor's operation.

10.27 COMPACTION OF TRENCH BACKFILL

Recycled concrete will not be allowed as foundation gravel, pipe bedding, or trench backfill material for any Ductile Iron (DI water or sewer main installation).

The moisture content of all soils used shall be within 2% of optimum. All densities shall be determined by the ASTM D-1557 (Modified Proctor) test procedure. The District will conduct on-site materials sampling and in-place density testing for all District projects. For private development projects, all testing is to be provided and paid for by the developer; compaction reports shall be provided to the District. The Contractor shall coordinate the testing with the District and shall provide convenient and safe access to the site and the trench for sampling and testing.

(a) TRENCHING PARALLEL TO ROAD ALIGNMENT

All trench backfill under roadway shall be mechanically compacted to 95% of maximum dry density.

In any trench in which 95% density cannot be achieved with existing backfill, the existing backfill shall be replaced with imported gravel backfill as specified in the Engineering Specifications. The imported gravel backfill shall be mechanically compacted to 95% of maximum dry density for the full depth of the trench.

All backfill material shall be compacted in 24-inch maximum lifts using heavy machinery or 12-inch maximum lifts using hand equipment.

(b) TRENCHING TRANSVERSE TO ROAD ALIGNMENT

For transverse trenching locations, such as side sewers and intersections, the entire trench shall be backfilled with 1-1/4-inch minus crushed rock per



the Engineering Specifications and placed in the maximum lifts listed above in Section 10.26 (a) and compacted to 95% of maximum dry density.

10.28 REPLACING ROAD SURFACE

The Contractor shall restore all roadway and driveway surfaces and features excavated or disturbed to a condition acceptable to the District and the governmental agency having control of the road.

All work in County right-of-way shall be subject to the approval of the King County. All work in the City street right-of-way shall be subject to approval of the City.

Paving restoration consists of two steps. The first step is installation of a temporary cold mix patch to be maintained until all work and other restoration is complete or up to 30 days. The second step is installation and sealing of the permanent pavement trench patch.

This work shall consist of the preparation, placing and compaction of subgrade and the patching of various types of pavement cuts to the complete resurfacing of roadways, the performance of which shall be in accordance with the requirements outlined herein. Roadway surface restoration and patching shall be in accordance with the latest published Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation, unless specifically directed otherwise by the District.

Before patching material is placed, all pavement cuts shall be trued so that marginal lines of the patch will form a rectangle with straight edges and vertical faces a minimum of one (1) foot back from the maximum trench width.

The Contractor shall maintain proper signs, barricades, lights, and other warning devices in accordance with the traffic control plan.

(a) GRAVEL BASE

Gravel base for road restoration shall conform to the Materials of Construction specifications and shall be placed and compacted in conformance with Sections 2 and 9 of the latest published Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation. Gravel base shall be placed and compacted before succeeding course material is placed.

Gravel base shall be used as shown on the plans or as directed by the District.



(b) HOT MIX ASPHALT SURFACING

Hot mix asphalt surfacing or repair shall conform to the Materials of Construction and shall be placed in accordance with Section 5-04 the latest published Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation and the Standard Specification Drawing for Typical Trench Section . All lifts shall be free from ridges, ruts, humps, depressions, objectionable marks, and irregularities and shall conform to the line, grade, and cross-section shown in the plans. Each lift shall be subject to compaction testing. All edges and joints of hot mix asphalt pavement repair shall be sealed with asphalt cement. After pavement is in place, all joints shall be sealed with CSS-1, or equal.

(c) CEMENT CONCRETE PAVEMENT

Concrete shall be as specified in the Materials of Construction and shall be placed in accordance with Section 5-05 of the latest published Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation. Concrete cylinder samples will be taken by the District for the purpose of testing the compressive strength of the concrete to meet the standards as defined by the regulatory agency. Subgrades shall be prepared as shown on the plans and in compliance with the latest published Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation.

All reinforcing steel shall conform with and be placed in accordance with Section 5-05 of the latest published Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation and shall conform to the requirements of ASTM Designation A-15 and A-305, latest revisions.

(d) RIGID-TYPE PAVEMENTS RESURFACED WITH ASPHALT

Those areas that now have a Portland cement concrete base and are surfaced with the hot mix asphalt mat shall be replaced in kind. The surface of the cement concrete portion of the patch shall be left low enough to accommodate the asphalt portion of the patch. Brush finishing will not be required. Joints shall be placed as directed by the District. The hot mix asphalt surface mat and the Portland cement concrete base shall be as specified in the Materials of Construction. Both the base and the surface mat shall be carefully prepared, placed and cured in full compliance with Section 5-04.3 of the latest published Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation.

Hot mix asphalt or bituminous plant mix shall not be placed until the day after the cement concrete has been placed unless otherwise permitted by the



District. The edges of the existing asphalt pavements and castings shall be painted with hot asphalt cement or asphalt emulsion immediately before placing the asphalt patching material. The hot mix asphalt pavement shall then be placed, leveled, and compacted to conform to the adjacent paved surface. Immediately thereafter, all joints between the new and original asphalt pavement shall be painted with hot asphalt or asphalt emulsion and be covered with dry paving sand before the asphalt solidifies.

(e) SHOULDER, GRAVEL SURFACES

Shoulders, gravel driveways, and all other gravel surfaced areas disturbed by construction shall be repaired with a minimum 2-inch lift of 3/4-inch minus crushed rock (top course crushed surfacing). Immediately prior to placement of the gravel, the drainage ditch, shoulders and/or driveways shall be graded to the original smooth contours existing prior to construction. The gravel shall then be placed and compacted in accordance with the applicable Washington State Department of Transportation Specifications.

Crushed surfacing shall be in accordance with Materials of Construction.

Final crushed surfacing shall be placed within 30 days after construction disturbance unless otherwise specified or directed by the District.

10.29 ADJUSTMENT OF NEW AND EXISTING UTILITY STRUCTURES TO GRADE

This work consists of constructing and/or adjusting all new and existing utility structures encountered on the project to finished grade.

For asphalt overlay areas called for to be planed, all existing utility covers shall be lowered below the proposed planing depth prior to planing.

The castings shall not be adjusted to final grade until the pavement is completed, at which time the center of each casting shall be relocated from references previously established by the Contractor. The pavement shall be cut as further described and base material removed to permit removal of the casting. The casting shall then be brought to proper grade.

Prior to commencing manhole adjustments, a plywood and visqueen cover, as approved by the District, shall be placed over the manhole base and channel to protect them from debris.

The hot mix asphalt pavement shall be cut and removed to a neat circle, the diameter of which shall not exceed 6-inch from the outside diameter of the casting frame. The casting frame shall be brought up to desired grade, which shall conform to surrounding road surface. For manholes, adjustment to desired grade shall be made with the use of concrete adjustment rings or bricks. No iron adjustment rings will be allowed. An approved class of mortar (one-part cement



to two-parts of plaster sand) shall be placed between adjustment rings or bricks and casting frame to completely fill all voids and to provide a watertight seal. No rough or uneven surfaces will be permitted inside or out. Adjustment rings or brick shall be placed and aligned so as to provide vertical sides and vertical alignment of ladder steps (if steps are necessary).

Check manhole specifications and the Standard Details for minimum and maximum manhole adjustment and step requirements. Special care shall be exercised in all operations in order not to damage the manhole, frames and lids or other existing facilities.

The annular space between the casting and the pavement shall be filled with crushed rock and compacted with hand tamper to within 6-inch of the top of the frame. Asphalt concrete patching shall not be carried out during wet ground conditions or when air temperature is below 50° F. Hot mix asphalt must be at the temperature as specified by the regulatory agency when placed. Before making the hot mix asphalt repair, the edges of the existing hot mix asphalt pavement and the outer edge of the casting shall be tack coated with hot asphalt cement. The remaining 6-inch shall then be filled with Hot Mix Asphalt Class 1/2-inch and compacted with hand tampers and a patching roller.

The completed patch shall match the existing paved surface for texture, density, and uniformity of grade. The joint between the patch and the existing pavement shall then be carefully painted with hot asphalt cement or asphalt emulsion and shall be immediately covered with dry paving sand before asphalt cement solidifies. Before acceptance of a job, castings shall be cleaned of all debris and foreign material. All ladders must be cleaned free of grout. Any damage occurring to the existing facilities due to the Contractor's operations shall be repaired at its own expense.

10.30 HAZARD OF ASBESTOS CEMENT PIPE REMOVAL

To remove existing asbestos cement pipe from the trench, permitting as determined by regulatory agencies is required.

10.31 RIGHT-OF-WAY MONUMENTS AND LOT MARKERS

Capital Improvement Program (CIP) Projects

For monuments identified to be removed or destroyed as shown on the CIP Plans, the District will schedule a Professional Land Surveyor (PLS) to file the required permit forms with the Department of Natural Resources (DNR), as required by RCW 58.09.130 and WAC 332-120. The District's PLS will set tie-out reference points for the monument(s) identified on the CIP Plans to be removed or destroyed. The contractor shall protect these reference points until the monument(s) have been reset. No construction work affecting monumentation shall commence until DNR has approved the permit. Upon completion of work affecting monumentation, the form "Completion Report for



Monument Removal or Destruction” shall be signed by the District’s PLS and submitted to DNR.

During construction, the Contractor shall take all necessary precautions to locate and protect existing markers, property corners, monuments and other reference points not identified on the CIP Plans to be removed or destroyed. Under no circumstances shall work be performed which would remove, adjust, or destroy any such markers without the DNR permit, as required by RCW 58.09.130 and WAC 332-120. In the event that the Contractor disturbs or destroys any existing marker, property corner, monument or other reference point not identified to be removed or destroyed on the CIP Plans, the Contractor shall bear any and all costs for permitting, survey, resetting, legal claims and filing of State forms as required by RCW 58.09.130 and WAC 332-120.

Developer Extension Projects

Under no circumstances shall work be performed which would remove, adjust, destroy, or otherwise make a survey point or monument no longer visible or readily accessible without the DNR survey monument permit. The Developer’s Contractor shall not remove or destruct any monument until the monument has been tied out and the Developer has provided the District with a copy the Department of Natural Resources (DNR) permit authorizing the removal or destruction of the monument in accordance with WAC 332-120.

The Developer’s Contractor shall protect all monument tie-out reference points and witness monuments until the monument has been reset and the Developer has completed the DNRs report form, provided the District a copy, and forwarded it to the DNR in accordance with WAC 332-120.

10.32 RE-DESIGN OF LINES

Should interferences or obstructions create construction difficulties that the District determines shall require redesign or relocation of the lines, the District will require the necessary revised drawings.

10.33 GRASS SEEDING AND SOD

Areas of existing grass and all areas disturbed by construction which do not receive a specific type of restoration, such as paving, rock, or bark, shall be reseeded, or restored with sod as specified.

The Contractor shall be responsible for providing a finished grass area, which meets the approval of the property owner and the District.

The Contractor shall maintain the grass, including furnishing water and mowing, until project approval, unless otherwise specified.



(a) TOPSOIL

All areas to be seeded, reseeded, or sodded shall be provided with 4-inch minimum depth of topsoil. Topsoil used shall be imported and shall be subject to approval by the District. Prior to providing topsoil, all areas shall be raked smooth and all debris removed and disposed. The topsoil shall be tilled to a depth sufficient to key into the subsoil, raked to a smooth and even grade without low areas to trap water and compacted.

The Contractor shall notify the engineer not less than 24 hours in advance of any seeding or sodding operation and shall not begin seeding or sodding until areas prepared or designated have been approved by the District.

(b) SEEDING AND FERTILIZING

Prior to beginning seeding operations, the contractor shall submit seed mix and rate of application to the District for approval.

Seeding shall not be done during windy weather or when the ground is frozen, excessively wet, or otherwise untillable.

Seed and fertilizer may be sown by one of the following methods:

1. An approved hydroseeder in accordance with the latest published Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation.
2. Hand methods where allowed by the District in areas that are impossible to hydroseed. Seed shall be applied after the fertilizer and shall be raked into the top one (1) inch of the fertilized topsoil. Immediately following the raking of the seed into the soil, the total area shall be covered with District approved mulch and shall be rolled with a water-filled roller.

The seed shall have a tracer added to visibly aid uniform application. The tracer shall not be harmful to plant and animal life. If wood cellulose fiber is used as a tracer the application rate shall not exceed 250 lbs. per acre.

Fertilizer shall be provided and applied in accordance with the manufacturer's recommendations. The Contractor shall submit for approval a guaranteed fertilizer analysis label for the specified product.

Unless otherwise specified, seeding, fertilizing, and mulching shall be completed between April 15 to June 1 and August 15 to October 15.



(c) GRASS SOD

Sod shall be provided at all locations of established lawn disturbed by construction activities and at other locations as indicated on the plans.

Sod strips shall be placed within 48 hours of being cut. Placement shall be without voids and the end joints shall be staggered. The sod shall be rolled with a smooth roller following placement.

10.34 FINISHING AND CLEANUP

Before acceptance of the project, all pipes, manholes, catch basins, and other appurtenances shall be cleaned of all debris and foreign material. After all other work on the project is completed and before final acceptance, the entire roadway, including the roadbed, planting, sidewalk areas, shoulders, driveways, alley and side street approaches, slopes, ditches, utility trenches, and construction areas shall be neatly finished to the lines, grades and cross-sections shown on the plans and as hereinafter specified.

In undeveloped areas, the entire area which has been disturbed by the construction shall be shaped so that, upon completion, the area will present a uniform appearance, blending into the contour of the adjacent properties. All other requirements outlined previously shall be met. Slopes, sidewalk areas, planting areas and roadway shall be smoothed and finished to the required cross-section and grade.

Upon completion of the cleaning and dressing, the project shall appear uniform in all respects. All graded areas shall be true to line and grade as shown on the typical sections and as required by the District.

All rocks in excess of one (1) inch diameter shall be removed from the entire construction area and shall be disposed of the same as required for other waste material. In no instance, shall the rock be thrown onto private property. Overhang on slopes shall be removed and slopes dressed neatly so as to present a uniform, well sloped surface.

All excavated material at the outer lateral limits of the project shall be removed entirely. All debris resulting from clearing and grubbing or grading operations shall be removed and disposed.

Drainage facilities, such as inlets, catch basins, culverts, and open ditches, shall be cleaned of all debris resulting from the Contractor's operations.

All pavements and oil mat surfaces, whether new or old, shall be thoroughly cleaned. Existing improvements, such as Portland cement concrete curbs, curb and gutters, walls, sidewalks, and other facilities which have been sprayed by the asphalt cement shall be cleaned to the satisfaction of the District.



Castings for manholes, monuments, water valves, lamp poles, vaults, and other similar installations which have been covered with the asphalt material shall be cleaned to the satisfaction of the District.

DETAIL SPECIFICATIONS

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Section 1 – Detail Specifications

1.0 GENERAL

This specification covers the furnishing of all labor, materials, tools and equipment necessary and incidental for the installation of water and sewer mains, and PRV rehabilitation or abandonment, together with all appurtenances and all restoration.

Facilities shall be constructed as shown on the Construction Plans and in accordance with these specifications and pertinent sections of the "Engineering Specifications" except as amended or changed in the Detail Specifications. Manufacturer's equipment shall be installed in compliance with the specifications of the manufacturer, except where a higher quality of workmanship is required by the Contract Plans and Specifications. All material and work shall be in strict accordance with any applicable regulations of State and local authorities. The Contractor shall arrange for such inspection by these agencies as may be required and shall submit evidence of their approval, if requested by the Engineer.

The Contractor shall cut existing asphalt to a neat line prior to excavation. No debris will be piled or dumped in the proximity of the project. Surface waters shall be confined to the site so that dirt and debris is not washed into existing storm drains, ditches or creeks.

All existing utilities disturbed shall be re-routed, reconnected and kept in service at all times. The Contractor shall request location marking of all utilities prior to start of excavation.

After the new utilities have been installed, the Contractor shall restore the existing surface, paved or pervious, to an existing or better condition, as shown on the Plans and per the requirements of the permitting agency right-of-way permits.

1.1 EXISTING FACILITIES

There now exist along the construction route, and within the boundaries thereof, above-ground and underground improvements. A portion of these, where known, is shown on the Plans. However, whether they are shown on the Plans or later marked in the field, responsibility for damage and repair shall be determined in accordance with RCW Chapter 19.122, Underground Utilities.

The Contractor shall inform each property owner in ample time so that the property owner and the Contractor may take any precautions necessary to facilitate construction in the vicinity and thereby protect existing property and any underground water lines, drain lines, and/or power lines or other utility lines.

Where the Contractor is allowed to use private property adjacent to the work, the property so used shall be returned to its original or superior condition.

Wherever existing drainage channels, culverts or structures are disturbed, the Contractor shall provide suitable means for diverting and maintaining all flows during construction in that area at his expense. After the construction has been completed, all channels, culverts, or structures shall be returned to a condition that is equal to or better than existed prior to construction.

The Contractor shall adequately protect and preserve from damage, destruction, and interference with the use of all property or its appurtenances on or in the vicinity of the work, which is not ordered or provided for removal or destruction under this contract. This applies to all items occupying the right-of-way, trees, monuments, pipes, conduits, water mains and blocking, underground structures, culverts, bridges, fences, rockeries, docks, bulkheads, and property of all descriptions. Wherever such property is damaged, destroyed or the use thereof is interfered with due to the operation of the Contractor, it shall be immediately restored to its former condition by the Contractor, at the Contractor's expense.

No separate payment will be made for the protection and/or repairing of existing facilities and any cost and expense incurred in protection and/or repairing these facilities shall be included in the price bid for the several items as indicated in the proposal.

1.2 PROJECT PHASING

The proposed work for this project includes pressure zone modifications. **The sequence of construction listed below is required** for District operational purposes to maintain service for their customers.

The contractor must submit a phasing plan to the District, prior to issuance of Notice to Proceed, for approval. Phasing must be included in the Contractors overall project schedule. After completion of each site, the contractor must receive written approval from the District prior to moving to a subsequent site.

- PRV 57 main line valve cut in and subsequent PRV rehabilitation
- Juanita/79th water main and PRV 58 abandonment, in either order
- PRV 56 abandonment

The water main replacements between NE 123rd St and NE 133rd PI in Juanita Drive do not modify pressure zones. The contractor may select the phasing for this work.

1.3 TRAFFIC MAINTENANCE AND PROTECTION

The work for Traffic Control to perform water and sewer system work shall be covered in the Contract documents for the Juanita Drive Multimodal, Intersection and Safety Improvements Project and meet Manual of Uniform Traffic Control Devices (MUTCD) Standards and the permitting agency's requirements. All traffic control work for the project will be included under the Lump Sum bid item "Project Temporary Traffic Control" in Schedule A of the bid proposal.

1.4 TRENCH BACKFILL

All trenches shall be backfilled with full-depth imported crushed surfacing top course backfill material conforming to Section 9.7 (c) of the Materials of Construction.

1.5 DEWATERING PLAN

The Contractor shall review the actual field conditions and any other available resources to determine the extent and volume of groundwater to be expected. The Contractor shall submit a dewatering plan to the Contracting Agency for review prior to dewatering activities. The dewatering plan shall show specific locations, in plan and section, where dewatering is expected as well as general discussion of methods should water be encountered in other locations. The plan should also indicate the location and methods for removing groundwater, proper sediment removal and disposal of groundwater.

Review by the Contracting Agency of the design, materials, method, installation, and operation and maintenance details submitted by the Contractor shall not in any way relieve the Contractor from responsibility for errors/omissions therein or from the entire responsibility for complete and adequate design, materials, inspection, operation, maintenance and performance of the dewatering system. The Contractor shall bear sole responsibility for proper design, installation, operation, maintenance, and any failure of any component of the dewatering system for the duration of this Contract.

1.6 ABANDON EXISTING WATER SERVICE

The Contractor shall abandon the existing water services that are replaced, as identified in the drawings. The Contractor shall locate and cap the existing water service line watertight near the existing meter disconnection location. Some existing water services may require additional work to close the corporation stop on the existing water main. See Plans for additional information.

1.7 DEACTIVATING THE EXISTING WATER MAIN

The existing water main shall remain the property of the District and shall be protected from damage during construction. The Contractor shall open and close valves as indicated on the Plans. The existing valve boxes must be removed as soon as the existing water main is decommissioned, and the new water main is in service. In addition, the Contractor shall provide a water tight seal at locations where the existing main is to be capped.

The existing pipe shall be capped watertight with a Romac Industries model EC501 cap, or approved equal, unless otherwise shown on the Plans. The pipe end shall be cut square and cleaned prior to capping.

1.8 REMOVAL OF THE EXISTING WATER MAIN TO INSTALL CITY IMPROVEMENTS

The existing water main is in direct conflict with the proposed City Improvements at various locations along the project alignment. Where possible, the water main shall be abandoned in-place. At locations of direct conflict with the proposed City Improvements, the water main shall be removed as needed and disposed of in conjunction with the proposed improvements. Any valves that remain and are abandoned in-place, shall be closed and the valve boxes removed.

1.9 INSTALL NEW WATER SERVICE

Contractor shall notify customer seven (7) calendar days in advance of water service disruption.

Prior to disrupting water service, Contractor shall pothole each service on the customer side of the meter pit to determine the exact location, size and type of fittings and materials that will be required to reconnect.

Prior to abandoning the existing water service, the Contractor shall coordinate with Northshore Utility District.

Any water service may have an individual PRV which may be within a meter box, buried, or within the customer's building. No records are available regarding existing individual PRV installation locations. The contractor shall provide a calibrated pressure gauge and confirm house water pressure at the hose bib prior to disconnecting existing water service. After the water service is transferred to the new line (installation of the new water service, transfer of water meter to the new setter, and the private water service is reconnected), the contractor shall use a calibrated pressure gauge and re-confirm house pressure at the hose bib. If the pressure differs by more than 5 psi, provide an individual PRV behind the new water meter on the private service line. The

contractor shall maintain a log book with measured pressures for each customer, and shall provide to the Owner for review upon request.

- On existing water mains that are live and connected to the existing system, contractor shall furnish and install all parts of the water service and reconnection as outlined herein, except the tap. Contractor shall coordinate with Northshore Utility District Maintenance & Operations Department to have them perform the tap on the water main. The District will provide all parts necessary to perform the tap (including but not limited to the corporation stop and saddle) and the Contractor shall repair the polyethylene encasement material per manufacturer's recommendations and per the District's Standard Detail.
- On new water mains installed as part of this contract and not yet connected to the existing system, the contractor shall provide all parts and equipment necessary to tap the new main and repair the polyethylene encasement material per manufacturer's recommendations and per the District's Standard Detail.

The Contractor shall then provide a complete, new water service as identified on the Plans and in accordance with the Engineering Specifications and the Standard Water Details excluding the water main direct tap performed by NUD.

The existing water meter is to be salvaged to the District and shall be reset by the Contractor in the new meter setter installed by the Contractor. The existing meter box, U-Branch, angle stops and miscellaneous pipe and fittings, including a re-setter, if a re-setter exists, shall be removed and properly disposed of by the Contractor.

Upon completion of the new water service and reconnection to the existing private service line, the Contractor shall backfill and restore all disturbed areas to existing or better condition with crushed rock, sod, or other restoration to match existing conditions.

1.10 CONNECTIONS TO EXISTING CAST IRON WATER MAIN

Megalug fittings are prohibited for use on cast iron pipe. Restrained joint connections to existing cast iron water main shall be made with appropriate Romac Couplings and fittings only.

1.11 GENERAL RESTORATION

Restoration of affected areas within public right-of-way, resultant from water or sewer construction, not paid for under other items of the contract shall be

considered general restoration and incidental to the water and sewer construction items included in the Project. This restoration includes rockery, fences, lawn areas, planter areas, maintenance of existing trees and shrubs and replanting or replacement of trees and shrubs as allowed under the contract. Grassy areas, including road prism areas in the right-of-way, shall be restored with sod as directed by the Contracting Agency. Surface treatments must be replaced in kind unless other restorative treatment is allowed by the Contracting Agency. Restoration of affected areas on private property, resultant from water or sewer construction, not paid for under other items of the contract shall be considered "Property Restoration" and will be paid under force account. Surface treatments and above surface features will be restored in kind unless other restorative treatment is allowed by the Property Owner.

Areas damaged by the Contractor which are not specifically allowed for under the Contract shall be repaired or replaced by the Contractor at the Contractor's expense. Contractor shall provide the Contracting Agency a written release from the owner for any private property damaged by the Contractor.

1.12 RESTORATION SCHEDULING

In order to avoid having large areas awaiting restoration and, in an effort to finish the work in a timely manner, all restoration shall immediately follow pipeline installation and testing. Once started, restoration shall be vigorously pursued until completed. All work pertaining to individual schedules of work, including restoration, must be completed to the satisfaction of the Contracting Agency before commencing work on the next schedule of work.

1.13 WORKING WITH ASBESTOS CEMENT PIPE

When working with asbestos cement pipe, the Contractor is required to maintain workers' exposure to asbestos material at or below the exposure limit to asbestos material as prescribed in WAC 296-62-07705 State/Federal Guidelines and Certification. All requirements regarding asbestos cement pipe handling by OSHA, WISHA and PSAPCO must be followed. Power tools shall not be used in the cutting of any asbestos cement pipe.

1.14 REPLACE EXISTING SIDE SEWER TO PROPERTY LINE

Where shown on the Plans, the Contractor shall replace existing side sewers from the sanitary sewer main to the property line with 6" DI, CI. 52 pipe. Any new side sewers crossing under new walls shall be sleeved as shown on the Plans.

Prior to abandoning the existing side sewer, the Contractor shall provide a complete, new side sewer as identified on the Plans and in accordance with

the Engineering Specifications and Details in the Plans. The Contractor shall provide a temporary sewer service/bypass during construction of the side sewer.

1.15 PRESSURE REDUCING VALVE VAULT AND APPURTENANCES

A. Vault Appurtenances

Gratings shall be hot-dipped galvanized.

The safety posts shall be Bilco, Ladder-up Safety Post.

The hose rack shall be aluminum and shall be manufactured by Atwood Fabricating, Mill Creek, Washington, phone number 425-481-5388.

B. Vault Lid

Vault lid shall be EJIW Ergo XL Assembly, part #41421026L01.

C. Wall Penetration Seals

For cored openings, the annular space between the vault wall opening and pipe shall be sealed with modular rubber links. The links shall be mechanical type, consisting of inter-locking synthetic rubber links shaped to continuously fill the annular space between the pipe and the wall opening. The elastomeric element shall be sized and sealed per manufacturer's recommendations and have the following properties as designed by ASTM. Coloration shall be throughout elastomere for positive field inspection. Each link shall have a permanent identification of the size and manufacturer's name molded into it.

All links and fasteners shall be sized according to the latest manufacturer's technical data. Bolts and flange hex nuts shall be 316 Stainless Steel per ASTM F593-95, with an 85,000 psi average tensile strength.

Seals shall be Link-Seal Modular Seal Rubber Links, as manufactured by PSI-Thunderline/Link-Seal, Model C -40 to +250 degrees fahrenheit, EPDM = ASTM D2000 M3 BA510 Color = Black.

E. Internal Ductile Iron Pipe and Fittings

Ductile iron pipe shall be in conformance with AWWA 151, cement-lined and shall be minimum Class 53 thickness with a minimum working pressure of 150 psi.

Ductile iron fittings shall be short body with a 350 psi pressure rating for mechanical joint fittings and 250 psi for flanged fittings with ANSI 150# flange pattern. All fittings shall be cement lined and shall be in conformance with AWWA C153.

F. Water Pipe Saddle

Water pipe saddles shall be stainless steel single strap with stainless steel hardware and epoxy-coated ductile iron casting with CC threads unless noted otherwise. Water pipe saddles shall be Romac 101NS, or approved equal.

G. Gate Valves

Gate valves shall be ductile iron body valves with resilient wedge, rated to 250 psi, conforming to the latest revision of AWWA Standard C515 and shall be NSF 61 approved. Valves shall be epoxy coating fusion bonded to all internal and external surfaces of the valve body and bonnet in compliance with AWWA C550. The wedge shall be fully encapsulated in rubber. The valves shall be non-rising stem, open to the left, provided with O-ring seals at all joints, and a hand wheel. 6-Inch gate valves shall be Mueller 2360, or approved equal.

H. Ball Valves

Ball valves shall be full port, forged brass body, teflon seat, chrome plated brass ball with steel hand lever. Ball valves shall be Matco-Norca model 754, or approved equal. Where installed vertically, ball valves shall have their handle down to indicate an open position.

I. Pressure Relief Valve

The pressure relief valve shall be Cla-Val 50G-13ABKC, globe style, ductile iron body with stainless trim, threaded, and 20-200 psi adjustment range.

J. Pressure Gauge

Water pressure gauges furnished shall be 4-1/2-Inch diameter face, 0 to 200 psi range, Ashcroft Duragauge Pressure Gauge Type 1279 with 316 stainless steel Bourdon System and the Plus Performance option, or approved equal.

K. Pipe Supports

Pipe supports shall be adjustable, Standon Models S92 Saddle Support and S89 Flange Support, or approved equal.

L. 1-Inch and Smaller Pipe and Fittings

1-Inch and $\frac{3}{4}$ -Inch pipe and fittings shall be brass; $\frac{1}{4}$ -Inch pipe and fittings shall be 316 stainless steel, with the exception of the pressure reducing valve trim, which shall be bronze.

M. Excavation Backfill

Backfill for excavations, including but not limited to PRV vaults shall be full-depth, 1-1/4-Inch crushed rock compacted to 95% minimum dry density per the Specifications.

1.16 EXISTING PRESSURE REDUCING VALVE VAULT ABANDONMENT

The Contractor shall remove all existing PRV vault piping, valves, sump pump and piping, electrical hardware and equipment, blow-off piping and appurtenances, ladder, safety post, fittings, gauges, miscellaneous appurtenances, and hardware and materials. The Contractor shall salvage materials for reinstallation where noted in the Plans.

Existing valve vault top section and top four feet of walls shall be removed and waste hauled and the floor shall be crushed. Inlet and outlet water piping shall be plugged with two pipe diameters of controlled density fill or grout. Vault shall be filled with crushed rock.

1.17 PAINTING

Painting of the pipe and fittings shall be performed in accordance with the paint manufacturer's recommendations. No painting shall be done until the prepared surfaces are approved by the Owner or Engineer. No paint shall be applied in fog, snow, and rain, or to wet or damp surfaces, or when air temperatures are below 40 degrees F and surface temperatures are below 35 degrees F, or when relative humidity exceeds 85 percent.

A. Internal Piping, Valves, and Fittings

With the exception of brass pipe and fittings and control valve pilotry, all internal piping, valves, fittings, and supports shall be coated to match, including ductile iron pipe and fittings, gate valves, strainer, pressure reducing valves, couplings, and pipe supports.

All ductile iron piping shall receive a commercial blast cleaning, SSPC-SP6, and the primer coat and finish coat applied at the manufacturer's or supplier's facility prior to delivery to the site.

All other valves and fittings, including pressure reducing valves, gate valves, and couplings shall be provided with a primer coat applied at the manufacturer's or supplier's facility prior to delivery to the site.

Primer Coat: Tnemec Series 1 Omnithane, 2.5 to 3.5 mils DFT.

Finish Coat: Tnemec Series 1095 EnduraShield, 3 to 5 mils DFT.

Finish Coat Color shall be Safety Blue.

B. Interior Cement Concrete Vault Wall and Ceiling

Surface preparation: High-pressure power wash, 3,000 psi, 3 gallons per minute with a 0 degree oscillating tip. Include a non-sudsing detergent SP1 Solvent Clean (solution of Simple Green to degrease) to remove all grease and contaminants. Rinse and remove all water and contaminants. Abrade all surfaces with remaining existing coating with an abrasive sponge such as a Scotchbrite pad.

The District shall inspect and approve the surface preparation prior to application of proposed coatings.

Prime Coat: Tnemec Series 115, 2 - 4 mils DFT (250 square feet/gallon).

Finish Coat: Tnemec Series 1029, 2-3 mils DFT (250 square feet/gallon).

Finish Coat Color shall be white.

C. Interior Cement Concrete Vault Floor

Where grout is applied for floor slope modification as required on the plans, provide a broom finish.

1.18 TESTING AND MANUFACTURER'S SERVICES

Field tests shall be conducted to determine the performance of the pressure reducing valves, air/vacuum valve, and appurtenances when operating under field conditions and to establish the acceptance of the valves furnished and installed. The pressure reducing valve manufacturer shall provide the services of qualified technical representative with a minimum of five years' experience in valve installations to inspect the installation and to assist with the required testing. It shall also be the pressure reducing valve manufacturer's responsibility to confirm that the test procedures are performed in an acceptable manner and to certify that the guarantee is in full effect with no qualifications or reservations.

The manufacturer's representative shall be present for the minimum time listed for the services described below, travel time excluded:

- One-half day for installation assistance, inspection, functional testing, and certification of the installation.
- One-half day return visits for operational adjustments and further training, at a time selected by the Owner during the first year of operation.

1.19 OPERATION AND MAINTENANCE MANUAL

The Contractor shall furnish one (1) electronic copy in PDF format and two hard copies of the Operations and Maintenance (O&M) Manuals to the District, including revisions or additions as directed. The PDF copy shall utilize electronic bookmarks to delineate the sections listed below. Each hard copy manual (one or more volumes as necessary) shall be appropriately titled and bound in a standard size, 3-ring, looseleaf, vinyl plastic hard cover binder not exceeding 2.5 inches. Each manual shall include a table of contents and shall include the following sections and information:

Section 1. – Equipment Summary

A summary table shall indicate the equipment name, number, and area of installation.

Section 2. – Operational Procedures

Manufacturer's procedures including installation, adjustment, startup, location of controls, special tools, equipment required or related instrumentation needed for operation, operation procedure including a description of how the equipment reacts to external events such as man/machine interaction, calibration, shutdown, troubleshooting, disassembly and re-assembly, realignment, and testing.

Section 3. – Preventative Maintenance Procedures

Manufacturer recommended procedures to be performed on a periodic basis, including type and frequency of maintenance and replacement schedule.

Section 4. – Parts List

A complete parts list including manufacturer's identification numbers, cross-sectional or exploded view drawings of parts and addresses and phone numbers of the nearest suppliers of the parts.

Section 5. – Spare Parts List

A list of spare parts recommended by each manufacturer to be maintained as inventory by the District including current price and name, address and telephone number of the nearest supplier of spare parts.

Section 6. – Shop Drawings

Shop and fabrication drawings including dimensions.

Section 7. – Safety

Safety procedures to be taken when operating and maintaining the equipment.

Section 8. – Documentation

Warranties and certifications required.

MEASUREMENT AND PAYMENT

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Section 2 - Measurement and Payment

Bid Item Introduction

It is the intent of these Specifications that the performance of all work under the bid items shall result in the complete construction, in proper operating condition, of the facilities described. It is understood that any additional material or work required to place the facilities in operating condition shall be provided by the Contractor as work covered by the listed bid items and shall be considered incidental thereto.

Submittals, shop drawings, coordination with the District, coordination for main shut-offs, coordination with property owners for main shut-offs, calculations, start-up, testing, training, warranties, and operation and maintenance manuals as required shall be considered incidental to the various items of work and no additional compensation will be allowed.

Trench Safety System

The lump sum price bid for trench excavation protection shall constitute full compensation for all labor, materials, tools and equipment necessary and incidental to providing a safe trench excavation. This item shall include, but not be limited to, the following:

1. Design, installation, proper use and removal of all sheeting, shoring, cribbing, boxes or other trench protection methods.
2. Excavation, backfill, compaction and other work required if extra excavation is used in lieu of trench box, shoring, cribbing or other trench protection. If imported backfill gravel is required for backfilling within the limits of the sewer or water line excavation, it shall also be required as backfill material for the extra excavation and shall be provided at the Contractor's expense.
3. All barricades, warning lights, signs, flaggers or other devices needed to warn and protect the public.

The Contractor shall be solely responsible for the safety of his crew and public, and the District assumes no responsibility. The District will not be responsible for determining the adequacy of any system used by the Contractor and payment for protection systems will not imply District's approval of adequacy.

Additional Potholing, If Required

Potholing is incidental to all other bid items. However, when located utilities are not found within the standard locating limits (2' on either side of the locate mark) or there are other utilities located that are not shown on the contract plans, the additional potholing shall be paid for under this bid item. The unit price bid for each Additional Potholing, If Required, shall constitute full compensation for all labor, materials, tools and equipment necessary and incidental to pothole and record depths of the underground existing utilities in these circumstances.

Existing Pressure Reducing Valve Station 56 Abandonment

The lump sum price bid for the Existing Pressure Reducing Valve Station 56 Abandonment shall constitute full compensation for all labor, materials, tools and equipment necessary and incidental to demolish and abandon the existing PRV vault as shown on the Plans and as specified herein. This item shall include, but not be limited to, the following:

1. Clearing, grubbing and disposal of cleared materials, where required.
2. Potholing existing pipe prior to commencing any installation of the new utility. Potholing includes, but is not limited to, sawcutting, excavation, measuring and recording the depths of the existing utility, backfilling and temporary hot-mix asphalt patching as necessary.
3. Excavation of all materials of whatever nature encountered, including solid rock.
4. Excavation and grading to reshape finished grade where shown on the plans and as required by field conditions.
5. Dewatering and proper disposal of water as required.
6. Hauling away and disposing of any excess material, including securing approved disposal site.
7. Handling, hauling, placing and mechanical compaction of foundation gravel, trench backfill and all other crushed rock or gravel material, native or imported, or sand.
8. Removal of existing PRV vault piping, valves, sump pump and piping, electrical, hardware and equipment, blow-off piping and appurtenances, ladder, safety post, fittings, gauges, and miscellaneous appurtenances, hardware and materials; plugging pipes; removal and disposal of vault top section; breaking of existing vault walls to 4' minimum below finished grade; and filling the existing vault with crushed rock.

9. Salvage and delivery of the existing pressure reducing valves to the District's yard.
10. Temporary or miscellaneous pipe plugging, capping, and cutting, including installation of concrete blocking in native soil at the capped ends of the existing waterline.
11. Temporary trench patch, placed immediately after trench backfill and subsequent removal.
12. Sawcut, removal, and proper disposal of asphalt or cement concrete pavement.

Crushed rock material used for filling the abandoned structure shall be paid for as part of the "Crushed Surfacing Top Course" bid item in this Schedule.

Existing Pressure Reducing Valve Station 57 Rehabilitation

The lump sum price bid for rehabilitating PRV Station 57 shall constitute full compensation for all labor, materials, tools and equipment necessary and incidental to rehabilitating PRV Station 57. This item shall include, but not be limited to, the following:

1. Clearing, grubbing and disposal of cleared materials, where required.
2. Potholing existing pipe and utilities and recording the depth of all underground existing utilities with unknown depth that will cross the proposed utility. The potholing shall occur prior to commencing any installation of the new utility. Potholing includes, but is not limited to, sawcutting, excavation, measuring and recording the depths of the existing utility, backfilling and temporary hot-mix asphalt patching as necessary.
3. Excavation of all materials of whatever nature encountered, including solid rock.
4. Excavation and grading to reshape finished grade where shown on the plans and as required by field conditions.
5. Dewatering and proper disposal of water as required.
6. Hauling away and disposing of any excess material, including securing approved disposal site.
7. Handling, hauling, placing and mechanical compaction of foundation gravel, trench backfill and all other crushed rock or gravel material, native or imported, or sand.

8. Removal of existing PRV vault piping and appurtenances and vault lid per plan.
9. Removing, servicing with general rebuild as required including replacement of all rubber parts, and reinstalling existing pressure reducing valves.
10. Installation of the proposed piping.
11. Furnishing and installing manhole frame, cover, and grade rings as necessary.
12. Furnishing and installing vent, relief, discharge, sump and water main pipe and fittings inside vault and discharging from vault as shown on the plans, including coring all proposed penetrations. Proposed ductile iron water main piping including and beyond the nearest upstream and downstream fitting shall be paid for as part of the 8" CI 52 DI Water Main bid item.
13. Coating the vault interior and piping inside the vault.
14. Furnishing and installing 14 gauge solid copper locating wire.
15. Maintenance and restoration of construction area and of other utilities affected by construction in accordance with the Plans and Specifications.
16. Temporary trench patch, placed immediately after trench backfill and subsequent removal.
17. Sawcut, removal, and proper disposal of asphalt concrete pavement to any depth encountered, including control of water slurry used in the cutting operation.
18. Mortarless, Interlocking stone wall, Rockery, or Hillside Barrier, if required by field conditions or as directed by the District.

Existing Pressure Reducing Valve Station 58 Abandonment

The lump sum price bid for the Existing Pressure Reducing Valve Station 58 Abandonment shall constitute full compensation for all labor, materials, tools and equipment necessary and incidental to demolish and abandon the existing PRV vault as shown on the Plans and as specified herein. This item shall include, but not be limited to, the following:

1. Clearing, grubbing and disposal of cleared materials, where required.

2. Potholing existing pipe prior to commencing any installation of the new utility. Potholing includes, but is not limited to, sawcutting, excavation, measuring and recording the depths of the existing utility, backfilling and temporary hot-mix asphalt patching as necessary.
3. Excavation of all materials of whatever nature encountered, including solid rock.
4. Excavation and grading to reshape finished grade where shown on the plans and as required by field conditions.
5. Dewatering and proper disposal of water as required.
6. Hauling away and disposing of any excess material, including securing approved disposal site.
7. Handling, hauling, placing and mechanical compaction of foundation gravel, trench backfill and all other crushed rock or gravel material, native or imported, or sand.
8. Removal of existing PRV vault piping, valves, sump pump and piping, electrical, hardware and equipment, blow-off piping and appurtenances, ladder, safety post, fittings, gauges, and miscellaneous appurtenances, hardware and materials; plugging pipes; removal and disposal of vault top section; breaking of existing vault walls to 4' minimum below finished grade; and filling the existing vault with crushed rock.
9. Salvage and delivery of the existing pressure reducing valves to the District's yard.
10. Temporary or miscellaneous pipe plugging, capping, and cutting, including installation of concrete blocking in native soil at the capped ends of the existing waterline.
11. Temporary trench patch, placed immediately after trench backfill and subsequent removal.

Crushed rock material used for filling the abandoned structure shall be paid for as part of the "Crushed Surfacing Top Course" bid item in this Schedule.

12" CI 52 DI RJ Water Main

8" CI 52 DI RJ Water Main

The unit price per lineal foot for ductile iron water pipe, CI 52, shall be full compensation for all labor, material, tools and equipment necessary and incidental to furnishing, excavating and laying, disinfecting, testing and placing in proper operating condition, all water pipe. Payment shall be made according to the lineal feet of pipe installed from centerline to centerline of fittings. Items of work include, but are not limited to, the following items:

1. Clearing, grubbing and disposal of cleared materials, where required, including trees, stumps, and large rocks.
2. Potholing existing utilities and recording the depths of all underground existing utilities that will cross the proposed utility. The potholing shall occur prior to commencing any installation of the proposed utility. Potholing includes, but is not limited to, sawcutting, excavation, measuring and recording the depths of the existing utility, backfilling and temporary hot-mix asphalt patching. If the existing utility is not found within the standard locating limits (2' on either side of locate mark) or if additional potholing is directed by the District to locate the existing utility, payment for additional potholing will be made under the bid item for "Additional Potholing, If Required".
3. Excavation of all materials of whatever nature encountered, including solid rock.
4. Excavation and grading to reshape finished grade where shown on the plans and as required by field conditions.
5. Tree fencing and any other tree protection measures as identified on the plans.
6. Dewatering and proper disposal of water as required.
7. Hauling away and disposing of any excess material, including securing approved disposal site.
8. Furnishing and placing pipe bedding gravel to the limits shown on the Standard Water Details and called for in the Specifications.
9. Handling, hauling, placing and mechanical compaction of foundation gravel, trench backfill and all other crushed rock or gravel material, native or imported.

10. Furnishing and installing all water pipe, fittings, bends, restrained joints, and concrete blocking where shown on the plans and including testing, disinfecting, and flushing.
11. Polyethylene encasing and 14 gauge solid copper locating wire.
12. Abandoning the existing water main including water tight seals and removal and disposal of valve boxes, pipe and appurtenances as required. The existing valve boxes must be removed as soon as the existing water main is decommissioned and the new water main is in service.
13. Maintenance and restoration of construction area and of other utilities affected by construction in accordance with the Plans and Specifications, including locating the existing water main, or other utilities, by potholing or by the use of other approved methods, prior to constructing the proposed water main improvements and appurtenances.
14. Maintaining, and if necessary repairing existing water services or coordinating temporary water service with the District for individual homes, during water line construction.
15. Temporary cold mix patch, asphalt treated base, or trench patch as required, placed immediately after trench backfill and subsequent removal.
16. Sawcut, removal, and proper disposal of asphalt concrete pavement and cement concrete pavement to any depth encountered, including control of water slurry used in the cutting operation.
17. Furnishing and installing all casings as shown on the Plans.

Removal of Existing Water Main

The unit price per lineal foot for Removal of Existing Water Main, shall be full compensation for all labor, material, tools and equipment necessary and incidental for removal of existing water main in direct conflict with proposed City Improvements. This work will be performed in conjunction with the proposed City Improvements. Payment shall be made according to the lineal feet of pipe removed from centerline to centerline of fittings. Items of work include, but are not limited to, the following items:

1. Excavation of all materials of whatever nature encountered, including solid rock.

2. Dewatering and proper disposal of water as required.
3. Hauling away and disposing of existing water main, valves, valve boxes and appurtenances, and any excess material, including securing approved disposal site.

Gate Valve Assembly – 8” and 12”

The unit price bid per each valve assembly shall constitute full compensation for all labor, materials, tools and equipment necessary and incidental to furnishing, installing, testing and placing the valve in proper operating condition. This item shall include, but not be limited to, the following:

1. Clearing, grubbing and disposal of cleared materials, where required.
2. Potholing existing utilities and recording the depths of all underground existing utilities that will cross the proposed utility. The potholing shall occur prior to commencing any installation of the proposed utility. Potholing includes, but is not limited to, sawcutting, excavation, measuring and recording the depths of the existing utility, backfilling and temporary hot-mix asphalt patching. If the existing utility is not found within the standard locating limits (2' on either side of locate mark) or if additional potholing is directed by the District to locate the existing utility, payment for additional potholing will be made under the bid item for Additional Potholing, If Required.
3. Excavation of all materials of whatever nature encountered, including solid rock.
4. Excavation and grading to reshape finished grade where shown on the plans and as required by field conditions.
5. Dewatering and proper disposal of water as required.
6. Hauling away and disposing of any excess material, including securing approved disposal site.
7. Furnishing and placing pipe bedding gravel to the limits shown on the Standard Water Details and called for in the Specifications.
8. Handling, hauling, placing and mechanical compaction of foundation gravel, trench backfill and all other crushed rock or gravel material, native or imported.

9. Maintenance and restoration of construction area and of other utilities affected by construction in accordance with the Plans and Specifications, including locating the existing water main, or other utilities, by potholing or by the use of other approved methods, prior to constructing the proposed water main improvements and appurtenances.
10. Furnishing and installing all valves, bolts, gaskets, restrained joints, polyethylene encasing, and all hardware for proper jointing and operation including testing and disinfecting.
11. Concrete blocking in accordance with the Standard Water Details.
12. Cast iron valve box, cover, valve operation nut extension, and asphalt or concrete protective pad in accordance with the Standard Water Details.
13. Mortarless, Interlocking stone wall, Rockery, or Hillside Barrier, if required by field conditions or as directed by the District.
14. Sawcut, removal, and proper disposal of asphalt concrete pavement and cement concrete pavement to any depth encountered, including control of water slurry used in the cutting operation.

Payment shall be made based on actual number of valves installed.

Fire Hydrant Assembly

The unit price bid per each for fire hydrant assembly shall constitute full compensation for all labor, materials, tools and equipment necessary and incidental to furnishing and placing a correctly operating fire hydrant into operation in accordance with the specifications and Standard Water Details. This item shall include, but not be limited to, the following:

1. Clearing, grubbing and disposal of cleared materials, where required.
2. Potholing existing utilities and recording the depths of all underground existing utilities that will cross the proposed utility. The potholing shall occur prior to commencing any installation of the proposed utility. Potholing includes, but is not limited to, sawcutting, excavation, measuring and recording the depths of the existing utility, backfilling and temporary hot-mix asphalt patching. If the existing utility is not found within the standard locating limits (2' on either side of locate mark) or if additional potholing is directed by the District to locate the existing utility, payment for additional potholing will be made under the bid item for Additional Potholing, If Required.

3. Excavation of all materials of whatever nature encountered, including solid rock.
4. Excavation and grading to reshape finished grade where shown on the plans and as required by field conditions.
5. Dewatering and proper disposal of water as required.
6. Hauling away and disposing of any excess material, including securing approved disposal site.
7. Furnishing and placing pipe bedding gravel to the limits shown on the Standard Water Details and called for in the Specifications.
8. Handling, hauling, placing and mechanical compaction of foundation gravel, trench backfill and all other crushed rock or gravel material, native or imported.
9. Maintenance and restoration of construction area and of other utilities affected by construction in accordance with the Plans and Specifications, including locating the existing water main, or other utilities, by potholing or by the use of other approved methods, prior to constructing the proposed water main improvements and appurtenances.
10. Furnishing and installing hydrant assembly, gate valve, valve box, restrained joint ductile iron pipe from the mainline to the hydrant (or stainless steel tie rods in lieu of restrained joints), polyethylene encasing, testing and disinfecting.
11. Concrete blocking, gravel, visqueen and other miscellaneous items and hardware required for proper installation and operation.
12. Concrete slab (3' x 3' x 6" min depth) at base of fire hydrant.
13. Mortarless, Interlocking stone wall, Rockery, or Hillside Barrier, if required by field conditions or as directed by the District.
14. Concrete guard posts, if required by field conditions or as directed by the District.
15. Culvert crossing, if required by field conditions or as directed by the District.

16. Sawcut, removal, and proper disposal of asphalt concrete pavement and cement concrete pavement to any depth encountered, including control of water slurry used in the cutting operation.

Payment will be made based on actual number of approved hydrant assemblies installed. Existing fire hydrants identified on the plans to be removed shall be salvaged, cleaned, and delivered to the District Maintenance yard as soon as the existing water main is decommissioned and the new water main is in service. Payment for removal of existing fire hydrant assembly shall be considered incidental to other bid items and no separate payment shall be made. Payment for the tapping or DI Tee at the water main will be made under the bid item for the water main and no additional compensation will be allowed.

Air & Vacuum Relief Valve – 2”

The unit price bid per each for Air & Vacuum Relief Valve Assembly shall constitute full compensation for all labor, materials, tools and equipment necessary and incidental to furnishing and placing the assembly into operation in accordance with the specifications and Standard Water Details. This item shall include, but not be limited to, the following:

1. Clearing, grubbing and disposal of cleared materials, where required, including trees, stumps, and large rocks.
2. Potholing existing utilities and recording the depths of all underground existing utilities that will cross the proposed utility. The potholing shall occur prior to commencing any installation of the proposed utility. Potholing includes, but is not limited to, sawcutting, excavation, measuring and recording the depths of the existing utility, backfilling and temporary hot-mix asphalt patching. If the existing utility is not found within the standard locating limits (2' on either side of locate mark) or if additional potholing is directed by the District to locate the existing utility, payment for additional potholing will be made under the bid item for Additional Potholing, If Required.
3. Excavation of all materials of whatever nature encountered, including solid rock.
4. Excavation and grading to reshape finished grade where shown on the plans and as required by field conditions.
5. Dewatering and proper disposal of water as required.
6. Hauling away and disposing of any excess material, including securing approved disposal site.

7. Handling, hauling, placing and mechanical compaction of foundation gravel, trench backfill, pipe bedding material and all other crushed rock or gravel material, native or imported.
8. Furnishing and installing all fixtures and pipe bedding material as indicated in the Standard Water Details, necessary to install the Air & Vacuum Relief Valve Assembly.
9. Polyethylene encasing and 14 gauge solid copper locating wire.
10. Concrete blocking, washed gravel, visqueen and other miscellaneous items and hardware required for proper installation and operation.
11. Maintenance and restoration of construction area and of other utilities affected by construction in accordance with the Plans and Specifications, including locating the existing water main, or other utilities, by potholing or by the use of other approved methods, prior to constructing the proposed water main improvements and appurtenances.
12. Temporary cold mix patch, asphalt treated base, or trench patch as required, placed immediately after trench backfill and subsequent removal.
13. Mortarless, Interlocking stone wall, Rockery, or Hillside Barrier, if required by field conditions or as directed by the District.
14. Sawcut, removal, and proper disposal of asphalt or cement concrete pavement up to, and including, 6" in thickness. In the event the Contractor encounters pavement exceeding 6" in thickness, the Contractor will be compensated for the saw cutting, removal and disposal of the excess pavement according to the schedule as outlined in the Proposal section.

Payment for removal of existing airvac assembly shall be considered incidental to other bid items and no separate payment shall be made. The existing airvac assembly(ies) must be removed as soon as the existing water main is decommissioned and the new water main is in service. Payment will be made based on actual number of approved Air & Vacuum Relief Valve Assemblies installed.

2" Blow-Off Assembly

The unit price bid per each for 2" Blow-Off Assembly shall constitute full compensation for all labor, materials, tools and equipment necessary and incidental to furnishing and placing a 2" blow-off assembly into operation in accordance with the specifications and Standard Water Details. This item shall include, but not be limited to, the following:

1. Clearing, grubbing and disposal of cleared materials, where required, including trees, stumps, and large rocks.
2. Potholing existing utilities and recording the depths of all underground existing utilities that will cross the proposed utility. The potholing shall occur prior to commencing any installation of the proposed utility. Potholing includes, but is not limited to, sawcutting, excavation, measuring and recording the depths of the existing utility, backfilling and temporary hot-mix asphalt patching. If the existing utility is not found within the standard locating limits (2' on either side of locate mark) or if additional potholing is directed by the District to locate the existing utility, payment for additional potholing will be made under the bid item for Additional Potholing, If Required.
3. Excavation of all materials of whatever nature encountered, including solid rock.
4. Excavation and grading to reshape finished grade where shown on the plans and as required by field conditions.
5. Dewatering and proper disposal of water as required.
6. Hauling away and disposing of any excess material, including securing approved disposal site.
7. Handling, hauling, placing and mechanical compaction of foundation gravel, trench backfill, pipe bedding material and all other crushed rock or gravel material, native or imported.
8. Furnishing and installing all fixtures and pipe bedding material as indicated in the Standard Water Details, necessary to install the Blow-Off Assembly.
9. Polyethylene encasing and 14 gauge solid copper locating wire.
10. Concrete blocking, washed gravel, visqueen and other miscellaneous items and hardware required for proper installation and operation.

11. Maintenance and restoration of construction area and of other utilities affected by construction in accordance with the Plans and Specifications, including locating the existing water main, or other utilities, by potholing or by the use of other approved methods, prior to constructing the proposed water main improvements and appurtenances.
12. Temporary cold mix patch, asphalt treated base, or trench patch as required, placed immediately after trench backfill and subsequent removal.
13. Mortarless, Interlocking stone wall, Rockery, or Hillside Barrier, if required by field conditions or as directed by the District.
14. Sawcut, removal, and proper disposal of asphalt concrete pavement and cement concrete pavement to any depth encountered, including control of water slurry used in the cutting operation.

Payment for removal of existing blow-off assembly shall be considered incidental to other bid items and no separate payment shall be made. The existing blow-off assembly(ies) must be removed as soon as the existing water main is decommissioned and the new water main is in service. Payment for the Tee at the water main will be made under the bid item for the water main and no additional compensation will be allowed.

Connect to Existing Water System

The unit price bid per each for connection to the existing water system shall constitute full compensation for all labor, materials, tools and equipment necessary and incidental to connecting to the District's existing water system as shown on the Plans. This shall include traffic control measures, sawcutting, pre-digging the connection location a minimum of one day prior to the scheduled connection in order to verify the connection configuration, steel plates, potholing and locating the existing water main or other utilities, excavation, cutting and removing existing tees, valves, valve boxes and other fittings, cutting carrier pipe and furnishing and installing casing end seals, coupling adapters, plugs/caps, gaskets, bolts and other hardware, flanges, temporary blow-off assemblies, concrete blocking, disinfection and testing, removal of existing plugs, ductile iron reducers and ductile sleeves and plugging and abandonment of existing pipes.

The cut-in and connection to the existing water main at each location shown on the Plans shall be considered one (1) Connect to Existing Water System. All work associated with each tee or cross connection shall be considered one (1) Connect to Existing Water System, including all branch or mainline connections. Connections to sections of new water main installed previously in other phases of

the Contract will not be paid for under the Connect to Existing Water System bid item, but shall be considered incidental to the bid item for water main installation.

Additional DI Fittings (if required)

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

1. Excavation of all materials of whatever nature encountered, including solid rock.
2. Potholing existing utilities and recording the depths of all underground existing utilities that will cross the proposed utility. The potholing shall occur prior to commencing any installation of the proposed utility. Potholing includes, but is not limited to, sawcutting, excavation, measuring and recording the depths of the existing utility, backfilling and temporary hot-mix asphalt patching. If the existing utility is not found within the standard locating limits (2' on either side of locate mark) or if additional potholing is directed by the District to locate the existing utility, payment for additional potholing will be made under the bid item for Additional Potholing, If Required.
3. Dewatering and proper disposal of water as required.
4. Furnishing and installing all DI fittings, bolts, gaskets, restrained joints, polyethylene encasing, and all hardware for proper jointing and operation including testing and disinfecting.
5. Concrete blocking in accordance with the Standard Water Details.
6. Maintenance and restoration of construction area and of other utilities affected by construction in accordance with the Plans and Specifications, including locating the existing water main, or other utilities, by potholing or by the use of other approved methods, prior to constructing the proposed water main improvements and appurtenances.

Payment will be made based on the weight of the fittings and restrained joints only, and will not include the weight of gaskets.

1" Water Service and Reconnection

The unit price bid per each Water Service and Reconnection shall constitute full compensation for all labor, material, tools and equipment necessary and incidental to replacing the existing water service with a new service at the location shown on the Plans in accordance with the Standard Water Detail and typical detail shown on the Plans. This item includes, but is not limited to, the following:

1. Clearing, grubbing and disposal of cleared materials, where required, including trees, stumps, and large rocks.
2. Potholing existing utilities and recording the depths of all underground existing utilities that will cross the proposed utility. The potholing shall occur prior to commencing any installation of the proposed utility. Potholing includes, but is not limited to, sawcutting, excavation, measuring and recording the depths of the existing utility, backfilling and temporary hot-mix asphalt patching. If the existing utility is not found within the standard locating limits (2' on either side of locate mark) or if additional potholing is directed by the District to locate the existing utility, payment for additional potholing will be made under the bid item for Additional Potholing, If Required.
3. Excavation of all materials of whatever nature encountered, including solid rock.
4. Boring of service lines in lieu of trenching, including bore pits and any ancillary work to accommodate boring installation method.
5. Excavation and grading to reshape finished grade where shown on the plans and as required by field conditions.
6. Dewatering and proper disposal of water as required.
7. Hauling away and disposing of any excess material, including securing approved disposal site.
8. Handling, hauling, placing and mechanical compaction of foundation gravel, trench backfill, pipe bedding material and all other crushed rock or gravel material, native or imported.
9. Tapping the water main:
 - On existing water mains that are live and connected to the existing system, contractor shall furnish and install all parts of the

water service and reconnection as outlined herein, except the tap. Contractor shall coordinate with Northshore Utility District Maintenance & Operations Department to have them perform the tap on the water main. The District will provide all parts necessary to perform the tap (including but not limited to the corporation stop and saddle) and the Contractor shall repair the polyethylene encasement material per manufacturer's recommendations and per the District's Standard Detail.

- On new water mains installed as part of this contract and not yet connected to the existing system, the contractor shall provide all parts and equipment necessary to tap the new main and repair the polyethylene encasement material per manufacturer's recommendations and per the District's Standard Detail.
10. New PEXa service pipe, length as required from the main to the new meter box, including pipe bedding material and pressure and purity testing.
 11. New water meter box, cover and lid, copper setter and fittings per the Standard Water Detail and typical detail. Salvage the existing meter to be re-installed by the Contractor in coordination with the District.
 12. Locate private water service at the point of connection.
 13. New private service pipe, fittings and bedding as required to connect the existing private service to the backside of the new copper setter.
 14. Abandoning existing water service, including removal and disposal of existing meter setter, removal of meter box and miscellaneous fittings and pipe, and capping the existing service line watertight near the existing meter. For water services abandoned on a water main that will remain live, abandonment of the water service will additionally include locating and closing the corporation stop on the existing water main. The removal and disposal of these appurtenances must be completed as soon as the existing water main is decommissioned, and the new water main is in service.
 15. Adjustment and reconnection of irrigation control and backflow prevention devices and boxes, including backflow assembly testing and recertification, as required.
 16. Sawcut, removal, and proper disposal of asphalt concrete pavement and cement concrete pavement to any depth encountered, including control of water slurry used in the cutting operation.

17. Maintenance and restoration of construction area and of other utilities affected by construction in accordance with the Plans and Specifications, including locating the existing water main, or other utilities, by potholing or by the use of other approved methods, prior to constructing the proposed water main improvements and appurtenances.
18. Temporary cold mix patch, or asphalt treated base as required, placed immediately after trench backfill and subsequent removal.
19. Adjusting or altering the connection or meter box location as necessary in order to avoid existing utilities or structures and obstructions, such as telephone or electrical junction boxes or pedestals.
20. Furnishing and installing 14 gauge solid copper locating wire, continuous from the main line locating wire to the meter setter.
21. Mortarless, Interlocking stone wall, Rockery, or Hillside Barrier, if required by field conditions or as directed by the District.
22. Furnishing and installing all casings as shown on the Plans.

1" Private PRV (if required)

The unit price bid per each Private PRV (if required) shall constitute full compensation for all labor, material, tools and equipment necessary and incidental to installing a private PRV on the customer service line where required or as directed by the District in accordance with the Standard Water Detail and typical detail shown on the Plans. This item includes, but is not limited to, the following:

1. Clearing, grubbing and disposal of cleared materials, where required, including trees, stumps, and large rocks.
2. Potholing existing utilities and recording the depths of all underground existing utilities that will cross the proposed utility. The potholing shall occur prior to commencing any installation of the proposed utility. Potholing includes, but is not limited to, sawcutting, excavation, measuring and recording the depths of the existing utility, backfilling and temporary hot-mix asphalt patching. If the existing utility is not found within the standard locating limits (2' on either side of locate mark) or if additional potholing is directed by the District to locate the existing utility, payment for additional potholing will be made under the bid item for Additional Potholing, If Required.

3. Excavation of all materials of whatever nature encountered, including solid rock.
4. Boring of service lines in lieu of trenching, including bore pits and any ancillary work to accommodate boring installation method.
5. Excavation and grading to reshape finished grade where shown on the plans and as required by field conditions.
6. Dewatering and proper disposal of water as required.
7. Hauling away and disposing of any excess material, including securing approved disposal site.
8. Handling, hauling, placing and mechanical compaction of foundation gravel, trench backfill, pipe bedding material and all other crushed rock or gravel material, native or imported.
9. New PEXa service pipe, length as required from the meter box to the private PRV, including pipe bedding material.
10. New box and cover, private PRV device and fittings per the typical detail.
11. Locate private water service at the point of connection.
12. Check existing line pressure at the building with a pressure gauge prior to and after the completion of work to ensure consistent readings. If pressure readings differ by more than 5 psi, the Contractor shall locate and correct the issue at no additional cost to the District.
13. Removal and disposal of private PRV devices and boxes, if found.
14. New private service pipe, fittings and bedding as required to connect the existing private service to the backside of the new private PRV.
15. Adjustment and reconnection of irrigation control and backflow prevention devices and boxes, including backflow assembly testing and recertification, as required.
16. Sawcut, removal, and proper disposal of asphalt concrete pavement and cement concrete pavement to any depth encountered, including control of water slurry used in the cutting operation.

17. Maintenance and restoration of construction area and of other utilities affected by construction in accordance with the Plans and Specifications, including locating the existing water main, or other utilities, by potholing or by the use of other approved methods, prior to constructing the proposed water main improvements and appurtenances.
18. Temporary cold mix patch, or asphalt treated base as required, placed immediately after trench backfill and subsequent removal.
19. Adjusting or altering the connection or box location as necessary in order to avoid existing utilities or structures and obstructions, such as telephone or electrical junction boxes or pedestals.
20. Furnishing and installing 14 gauge solid copper locating wire, continuous from the main line locating wire to the private PRV.
21. Mortarless, Interlocking stone wall, Rockery, or Hillside Barrier, if required by field conditions or as directed by the District.

48" Sewer Saddle Manhole

The unit price bid per each for 48" Saddle Manhole shall constitute full compensation for all labor, materials, tools and equipment necessary and incidental to construction of the manholes as shown on the Standard Sewer Details and in accordance with the Engineering Specifications. Items of work include, but are not limited to, the following items:

1. Clearing, grubbing and disposal of cleared materials, where required, including trees, stumps, and large rocks.
2. Potholing existing utilities and recording the depths of all underground existing utilities that will cross the proposed utility. The potholing shall occur prior to commencing any installation of the proposed utility. Potholing includes, but is not limited to, sawcutting, excavation, measuring and recording the depths of the existing utility, backfilling and temporary hot-mix asphalt patching. If the existing utility is not found within the standard locating limits (2' on either side of locate mark) or if additional potholing is directed by the District to locate the existing utility, payment for additional potholing will be made under the bid item for Additional Potholing, If Required.
3. Excavation of all materials of whatever nature encountered, including solid rock.
4. Dewatering and proper disposal of water as required.

5. Hauling away and disposing of any excess material, including securing approved disposal site.
6. Furnishing and installing FRP GU Baseline and precast sections, including adjustment of frame and cover to final grade, vacuum testing, replacement, repair and re-testing, if required or as directed by the District.
7. Handling, hauling, placing and mechanical compaction of foundation gravel, trench backfill and all other crushed rock or gravel material, native or imported.
8. Maintenance and restoration of construction area and of other utilities affected by construction in accordance with the Plans and Specifications, including locating the existing sewer main, or other utilities, by potholing or by the use of other approved methods, prior to constructing the proposed sewer main improvements and appurtenances.
9. Temporary cold mix patch, asphalt treated base, or trench patch as required, placed immediately after trench backfill and subsequent removal.
10. Sawcut, removal, and proper disposal of asphalt concrete pavement and cement concrete pavement to any depth encountered, including control of water slurry used in the cutting operation
11. Traffic Control Measures including all signs, barricades, steel plates, temporary patching, flaggers, uniformed police officer and police vehicle, and setup and maintenance of the Traffic Control Measures.

Payment will be based on the number of manholes actually installed.

48" Sewer Manhole – Additional Depth

The unit price bid per vertical foot for 48" Sewer Manhole – Additional Depth shall constitute full compensation for all labor, materials, tools and equipment necessary and incidental to providing and installing additional sections for manhole depths over 8 feet as measured from the invert of the manhole outlet to the top of manhole rim.

Remove and Replace Manhole Frame and Cover

The unit price bid per each for Remove and Replace Manhole Frame and Cover shall constitute full compensation for all labor, material, tools and equipment necessary and incidental to remove the existing manhole frame and cover and adjustment material, such as bricks or concrete rings, down to the top of the pre-cast structure and to install new concrete adjustment rings and new frame and cover and adjust to final grade. Included in this bid item shall be the disposal of all removed materials. This bid item applies to existing manholes that are not modified under other bid items.

Replace Side Sewer to Property Line

The unit price per lineal foot for Replace Side Sewer to Property Line shall be full compensation for all labor, material, tools and equipment necessary and incidental to furnishing, excavating and laying, testing and placing in proper operating condition, all sewer pipe. Payment shall be made according to the lineal feet of pipe installed from centerline of sewer main to the connection point with the existing side sewer on private property. Items of work include, but are not limited to, the following items:

1. Clearing, grubbing, and disposal of cleared materials, where required, including trees, stumps, and large rocks.
2. Potholing existing utilities and recording the depths of all underground existing utilities that will cross the proposed utility. The potholing shall occur prior to commencing any installation of the proposed utility. Potholing includes, but is not limited to, sawcutting, excavation, measuring and recording the depths of the existing utility, backfilling and temporary hot-mix asphalt patching. If the existing utility is not found within the standard locating limits (2' on either side of locate mark) or if additional potholing is directed by the District to locate the existing utility, payment for additional potholing will be made under the bid item for Additional Potholing, If Required.
3. Excavation of all materials of whatever nature encountered, including solid rock.
4. Excavation and grading to reshape finished grade where shown on the plans and as required by field conditions.
5. Tree fencing and any other tree protection measures as identified on the plans.
6. Dewatering and proper disposal of water as required.

7. Hauling away and disposing of any excess material, including securing approved disposal site.
8. Furnishing and placing pipe bedding gravel to the limits shown on the Standard Sewer Details and called for in the Specifications.
9. Furnishing and installing all sewer pipe, fittings, bends and plugs, including anchor blocks and flushing and testing.
10. Handling, hauling, placing and mechanical compaction of foundation gravel, trench backfill and all other crushed rock or gravel material, native or imported.
11. Maintenance and restoration of construction area and of other utilities affected by construction in accordance with the Plans and Specifications, including locating the existing sewer main, or other utilities, by potholing or by the use of other approved methods, prior to constructing the proposed sewer main improvements and appurtenances.
12. Maintaining, and if necessary, repairing existing water services or coordinating temporary water service with the District for individual homes, during sewer line construction.
13. Maintaining, and if necessary, providing temporary sewer bypass and sewer service for individual homes during sewer line construction.
14. Furnishing and installing all required fittings and materials for side sewer services, including tees, bends, plugs, cleanouts, locator tape and marker posts.
15. Furnishing and installing all casings on side sewers as shown on the Plans.
16. Furnishing and installing all required fittings and materials to locate and connect to the existing sewer main and side sewer line.
17. Temporary cold mix patch, asphalt treated base, or trench patch as required, placed immediately after trench backfill and subsequent removal.
18. Restoration of private property fences and retaining walls which may be disturbed by side sewer construction.

19. Sawcut, removal, and proper disposal of asphalt concrete pavement and cement concrete pavement to any depth encountered, including control of water slurry used in the cutting operation.

20. Abandoning existing side sewer and capping at main.

Side Sewer Cleanout

The unit price bid per each for Side Sewer Cleanout shall constitute full compensation for all labor, material, tools and equipment necessary and incidental to furnishing and installing the Side Sewer Cleanout. Items of work include, but are not limited to, the following items:

1. Clearing, grubbing, and disposal of cleared materials, where required, including trees, stumps, and large rocks.
2. Potholing existing utilities and recording the depths of all underground existing utilities that will cross the proposed utility. The potholing shall occur prior to commencing any installation of the proposed utility. Potholing includes, but is not limited to, sawcutting, excavation, measuring and recording the depths of the existing utility, backfilling and temporary hot-mix asphalt patching. If the existing utility is not found within the standard locating limits (2' on either side of locate mark) or if additional potholing is directed by the District to locate the existing utility, payment for additional potholing will be made under the bid item for Additional Potholing, If Required.
3. Excavation of all materials of whatever nature encountered, including solid rock.
4. Excavation and grading to reshape finished grade where shown on the plans and as required by field conditions.
5. Dewatering and proper disposal of water as required.
6. Tree fencing and any other tree protection measures identified on the Plans.
7. Hauling away and disposing of any excess material, including securing approved disposal site.
8. Furnishing and installing the fittings, double sweep tee, all Sewer pipe, mechanical plug, pipe plug, bend, cleanout box and cover.
9. Maintaining, and if necessary, providing temporary sewer bypass and sewer service for individual homes during sewer line construction.

10. Restoration of private property fences and retaining walls which may be disturbed by side sewer construction.

Connection to Existing Sewer System

The unit price bid per each for connection to existing sewer system shall constitute full compensation for all labor, materials, tools and equipment necessary and incidental to providing a watertight connection to the District's existing sewer system as shown on the Plans, including but not limited to the following items, as necessary: sawcutting, potholing and locating the existing sewer main or other utilities, excavation, core drilling, Kor-N-Seal boot, removal and replacement of existing concrete channel or modifying and repairing existing FRP manhole base, and maintenance of existing sewer service including by-pass pumping.

Imported Foundation Gravel (If Required)

Imported Backfill Gravel – Crushed Surfacing Top Course

The unit price bid per ton for imported foundation gravel (if required) and imported CSTC backfill gravel shall constitute full compensation for all labor, material, tools and equipment necessary and incidental to furnishing the materials in the trench, or elsewhere as required or as directed by the District, and proper disposal of excavated materials. These items shall include, but not be limited to, the following:

1. Over-excavation or extra depth excavation as may be required by the District, or field conditions, which dictate such excavation, as approved by the District.
2. Grading, preparation and compaction of existing subgrade.
3. Proper disposal of excavated materials.

Payment for gravel and rock materials will be made based on the actual number of tons of material furnished and placed. Quantities shall be based on certified weight tickets signed by the driver and collected by the inspector at the time and place of delivery. Loads of material for which a certified weight ticket has not been given to the inspector shall not be paid for.

Gravel and rock materials will be paid for by the ton as substantiated by certified scale tickets, up to the maximum quantity calculated for the volume within the neat lines of the trench as specified in the specifications and standard details. A conversion factor of 1.85 Tons/CY will be used to convert cubic yards of material to tons.

It will be the Contractor's responsibility to see that a ticket is given to the Inspector for each truckload of material delivered. Duplicate tally tickets shall be prepared

to accompany each truckload of material delivered on the project. The tickets shall bear at least the following information:

1. Truck number.
2. Quantity delivered in cubic yards and tons.
3. Driver's name and date.
4. Location of delivery - by job name and stationing on each job.
5. Place for receipting by the inspector.

Replace Valve Box

The unit price bid per each valve box that is removed and replaced with a new valve box shall constitute full compensation for all labor, materials, tools and equipment necessary and incidental to furnishing, installing, testing and placing the valve box in proper operating condition. This item shall include, but not be limited to, the following:

1. Clearing, grubbing, and disposal of cleared materials, where required, including trees, stumps, and large rocks.
2. Excavation of all materials of whatever nature encountered, including solid rock.
3. Excavation and grading to reshape finished grade where shown on the plans and as required by field conditions.
4. Dewatering and proper disposal of water as required.
5. Hauling away and disposing of any excess material, including securing approved disposal site.
6. Handling, hauling, placing and mechanical compaction of foundation gravel, trench backfill and all other crushed rock or gravel material, native or imported.
7. Maintenance and restoration of construction area and of other utilities affected by construction in accordance with the Plans and Specifications, including locating the existing water main, or other utilities, by potholing or by the use of other approved methods, prior to constructing the proposed water main improvements and appurtenances.

8. Furnishing and installing the valve box and all hardware for proper jointing and operation including testing and disinfecting.
9. Sawcut, removal, and proper disposal of asphalt concrete pavement and cement concrete pavement to any depth encountered, including control of water slurry used in the cutting operation.

Payment shall be made based on actual number of valve boxes replaced.

Manhole Section and Cone

The unit price bid per each for Manhole Section and Cone shall constitute full compensation for all labor, materials, tools and equipment necessary and incidental to construction of the manhole section and cone as shown on the Standard Sewer Details, the Project Plans, and in accordance with the Engineering Specifications. Items of work include, but are not limited to, the following items:

1. Clearing, grubbing, and disposal of cleared materials, where required, including trees, stumps, and large rocks.
2. Excavation of all materials of whatever nature encountered, including solid rock.
3. Dewatering and proper disposal of water as required.
4. Hauling away and disposing of any excess material, including securing approved disposal site.
5. Modifications to existing manhole including removal and disposal of existing cone and 1-foot or 2-foot barrel sections, as noted in the Plans.
6. Furnishing and installing new 1-foot manhole sections and cones, or reinstalling top slab where noted in the Plans, including vacuum testing, replacement, repair and re-testing, if required.
7. Handling, hauling, placing and mechanical compaction of foundation gravel, trench backfill and all other crushed rock or gravel material, native or imported.
8. Maintenance and restoration of construction area and of other utilities affected by construction in accordance with the Plans and Specifications, including locating the existing sewer main, or other utilities, by potholing or by the use of other approved methods, prior to constructing the proposed sewer main improvements and appurtenances.

9. Temporary cold mix patch, asphalt treated base, or trench patch as required, placed immediately after trench backfill and subsequent removal.
10. Sawcut, removal, and proper disposal of asphalt concrete pavement and cement concrete pavement to any depth encountered, including control of water slurry used in the cutting operation.

Payment will be based on the number of existing manholes that have cones and sections actually replaced.

Replacement of manhole frame and cover and adjustment to finished grade shall be paid for as part of the "Remove and Replace Manhole Frame and Cover" bid item in this schedule.

APPENDIX F

HPA PERMIT



HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

Issued Date: October 21, 2023
Project End Date: October 20, 2028

Permit Number: 2023-4-604+01
FPA/Public Notice Number: N/A
Application ID: 32458

PERMITTEE	AUTHORIZED AGENT OR CONTRACTOR
City of Kirkland Public Works Department ATTENTION: Laura Drake 123 5th Avenue Kirkland, WA 98033	KPG Psomas ATTENTION: Peter Lawson 3131 Elliott Avenue, Suite 400 Seattle, WA 98121

Project Name: City of Kirkland Juanita Drive Intersection and Safety Improvements Project

Project Description: The purpose of the Juanita Drive Intersection and Safety Improvements Project is to improve vehicle access and pedestrian and bicycle safety along Juanita Drive NE from NE 120th Street to NE 132nd Street and the Juanita Drive NE and NE 112th Street intersection. The project plans to design and construct several roadway improvements, including: left turn pockets, pedestrian walkways with Rectangular Rapid Flash Beacon (RRFB) crossings, buffered bike lanes, and an intersection realignment. There are six components to the proposed project which are described in detail below.

The proposed project will re-channelized NE 112th Street intersection as a four-legged intersection along with crosswalks across Juanita Drive NE. It also includes widening from NE 120th Street to NE 122nd Lane to include a center turn lane, bike lanes, and walkways. The NE 124th Street intersection is planned to include a flashing crosswalk and the alignment from NE 124th Street to NE 132nd Street widening to include buffered bike lanes and walkways. The plan proposes widening at the NE 128th Street intersection to accommodate a left turn lane and flashing crosswalk. Finally, widening is proposed from the NE 132nd Street intersection to NE 133rd Place to include a left turn lane, walkway, and crosswalk. In addition, upgrades to the existing stormwater system will occur at two intersections: 1) 80th Avenue NE and NE 122nd Place and 2) 79th Way NE and Juanita Drive NE.

PROVISIONS

1. This STANDARD Hydraulic Project Approval (HPA) is issued for

- A) Work conducted to an existing approximate 100-foot piped section of Champaign Creek.
 - i. Abandon and fill one (1) existing stormwater connection with concrete.
 - ii. Installation of one (1) new stormwater connection through the existing catch basin.

Note: This project occurs within Champaign Creek within the City of Kirkland. Watercourse which has the potential to support fish life, including coho, steelhead, sea-run cutthroat trout, and resident trout.



HYDRAULIC PROJECT APPROVAL

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2. TIMING - PLANS - INVASIVE SPECIES CONTROL

3. **TIMING LIMITATION:** You may begin the project immediately and you must complete the project by October 20, 2028, provided, all work below the ordinary high-water line may only be completed between July 1 through September 30 of a given year. Work outside of the ordinary high water line may be conducted year round provided measures to prevent turbidity and sedimentation within the creek are in place and functioning properly.

4. **APPROVED PLANS:** You must accomplish the work per plans and specifications submitted with the application and approved by the Washington Department of Fish and Wildlife, entitled, "Exhibit 2-120TH STORM IMPROVEMENTS.pdf", received August 17, 2023, and all supporting documents and communications uploaded to the Aquatic Protection Permitting System (APPS) project file; except as modified by this HPA. You must have a copy of these plans available on-site during all phases of the project.

5. **INVASIVE SPECIES CONTROL:** Follow Level 1 Decontamination protocol for low risk locations. Thoroughly remove visible dirt and organic debris from all equipment and gear (including drive mechanisms, wheels, tires, tracks, buckets and undercarriage) before arriving and leaving the job site to prevent the transport and introduction of invasive species. Properly dispose of any water and chemicals used to clean gear and equipment. For contaminated or high risk sites please refer to the Level 2 Decontamination protocol. You can find this and additional information in the Washington Department of Fish and Wildlife's Invasive Species Management Protocols (November 2012), available online at <http://wdfw.wa.gov/publications/01490/wdfw01490.pdf>.

6. NOTIFICATION REQUIREMENTS

7. **PRE- AND POST-CONSTRUCTION NOTIFICATION:** You, your agent, or contractor must contact the Washington Department of Fish and Wildlife by e-mail at HPAapplications@dfw.wa.gov; mail to Post Office Box 43234, Olympia, Washington 98504-3234; or fax to (360) 902-2946 at least three business days before starting work, and again within seven days after completing the work. The notification must include the permittee's name, project location, starting date for work or date the work was completed, and the permit number. The Washington Department of Fish and Wildlife may conduct inspections during and after construction; however, the Washington Department of Fish and Wildlife will notify you or your agent before conducting the inspection.

8. **PHOTOGRAPHS:** You, your agent, or contractor must take photographs of the job site before the work begins and after the work is completed. You must upload the photographs to the post-permit requirement page in the Aquatic Protection Permitting System (APPS) or mail them to Washington Department of Fish and Wildlife at Post Office Box 43234, Olympia, Washington 98504-3234 within 30-days after the work is completed.

9. **FISH KILL/ WATER QUALITY PROBLEM NOTIFICATION:** If a fish kill occurs or fish are observed in distress at the job site, immediately stop all activities causing harm. Immediately notify the Washington Department of Fish and Wildlife of the problem. If the likely cause of the fish kill or fish distress is related to water quality, also notify the Washington Military Department Emergency Management Division at 1-800-258-5990. Activities related to the fish kill or fish distress must not resume until the Washington Department of Fish and Wildlife gives approval. The Washington Department of Fish and Wildlife may require additional measures to mitigate impacts.

10. STAGING, JOB SITE ACCESS, AND EQUIPMENT

11. Establish staging areas (used for equipment storage, vehicle storage, fueling, servicing, and hazardous material storage) in a location and manner that will prevent contaminants such as petroleum products, hydraulic fluid, fresh concrete, sediments, sediment-laden water, chemicals, or any other toxic or harmful materials from entering waters of the state.

12. Clearly mark boundaries to establish the limit of work associated with site access and construction.

13. If wet or muddy conditions exist, in or near a riparian zone or wetland area, use equipment or techniques that reduce ground pressure.

14. Check equipment daily for leaks and complete any required repairs in an upland location before using the equipment in or near the water.



HYDRAULIC PROJECT APPROVAL

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15. Use environmentally acceptable lubricants composed of biodegradable base oils such as vegetable oils, synthetic esters, and polyalkylene glycols in equipment operated in or near the water.

16. CONSTRUCTION-RELATED SEDIMENT, EROSION AND POLLUTION CONTAINMENT

17. Stop all hydraulic project activities except those needed to control erosion and siltation, if flow conditions arise that will result in erosion or siltation of waters of the state.

18. Protect all disturbed areas from erosion. Maintain erosion and sediment control until all work and cleanup of the job site is complete. All erosion control materials that will remain onsite must be composed of 100% biodegradable materials.

19. Prevent project contaminants, such as petroleum products, hydraulic fluid, fresh concrete, sediments, sediment-laden water, chemicals, or any other toxic or harmful materials, from entering or leaching into waters of the state.

20. All erosion control materials that will remain onsite must be composed of 100% biodegradable materials.

21. Straw used for erosion and sediment control must be certified free of noxious weeds and their seeds.

22. Route construction water (wastewater) from the project to an upland area above the limits of anticipated floodwater. Remove fine sediment and other contaminants before discharging the construction water to waters of the state.

23. Deposit waste material from the project, such as construction debris, silt, excess dirt, or overburden, in an upland area above the limits of anticipated floodwater unless the material is approved by the Washington Department of Fish and Wildlife for reuse in the project.

24. CONSTRUCTION MATERIALS

25. Store all construction and deconstruction material in a location and manner that will prevent contaminants such as petroleum products, hydraulic fluid, fresh cement, sediments, sediment-laden water, chemicals, or any other toxic or harmful materials from entering waters of the state.

26. Use only clean, suitable material as fill material (no trash, debris, car bodies, tires, or asphalt).

27. Do not stockpile construction material waterward of the ordinary high water line.

28. OUTFALLS

29. This approval is for the abandonment and replacement of one existing outfall structure only and does not authorize the expansion of the structure.

30. Abandonment and creation of stormwater outfalls constructed during the dry or in isolation from the river flow area.

31. Ensure all catch basins, culverts, energy dissipation devices, and pipeline outfalls are free of obstructions for the life of the project to ensure proper functioning of the stormwater management system.

32. The stormwater outfall must be configured to minimize both erosion of bed materials and adverse impacts to the stream habitat.

33. Use the maximum diameter pipe connection to limit increases in outfall discharge velocities.

34. DEMOBILIZATION AND CLEAN-UP

35. Remove all materials and equipment from the site and dispose of all excess spoils and waste materials in an upland area above the limits of anticipated floodwater.

36. Remove any temporary erosion and sediment control methods after job site is stabilized or within three months of project completion, whichever is sooner.

LOCATION #1:	Site Name: Juanita Drive NE , Kirkland, WA
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HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

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WORK START: October 21, 2023		WORK END: October 20, 2028				
<u>WRIA</u>		<u>Waterbody:</u>			<u>Tributary to:</u>	
08 - Cedar - Sammamish		Other			Other	
<u>1/4 SEC:</u>	<u>Section:</u>	<u>Township:</u>	<u>Range:</u>	<u>Latitude:</u>	<u>Longitude:</u>	<u>County:</u>
	25	26 N	04 E	47.71308411179606	- 122.23753402604986	King
<u>Location #1 Driving Directions</u>						
From Interstate 5, take take WA-520 East for 6.4 miles. Take I-405 North for 5.2 miles to NE 116th St in Kirkland (exit 20A). Turn left (west) onto NE 116th St and proceed for 1.4 miles where road name changes to NE Juanita Drive. Proceed on NE Juanita Driver for 2.3 miles to approximate middle of project alignment.						

APPLY TO ALL HYDRAULIC PROJECT APPROVALS

This Hydraulic Project Approval pertains only to those requirements of the Washington State Hydraulic Code, specifically Chapter 77.55 RCW. Additional authorization from other public agencies may be necessary for this project. The person(s) to whom this Hydraulic Project Approval is issued is responsible for applying for and obtaining any additional authorization from other public agencies (local, state and/or federal) that may be necessary for this project.

This Hydraulic Project Approval shall be available on the job site at all times and all its provisions followed by the person (s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work.

This Hydraulic Project Approval does not authorize trespass.

The person(s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work may be held liable for any loss or damage to fish life or fish habitat that results from failure to comply with the provisions of this Hydraulic Project Approval.

Failure to comply with the provisions of this Hydraulic Project Approval could result in civil action against you, including, but not limited to, a stop work order or notice to comply, and/or a gross misdemeanor criminal charge, possibly punishable by fine and/or imprisonment.

All Hydraulic Project Approvals issued under RCW 77.55.021 are subject to additional restrictions, conditions, or revocation if the Department of Fish and Wildlife determines that changed conditions require such action. The person(s) to whom this Hydraulic Project Approval is issued has the right to appeal those decisions. Procedures for filing appeals are listed below.



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MINOR MODIFICATIONS TO THIS HPA: You may request approval of minor modifications to the required work timing or to the plans and specifications approved in this HPA unless this is a General HPA. If this is a General HPA you must use the Major Modification process described below. Any approved minor modification will require issuance of a letter documenting the approval. A minor modification to the required work timing means any change to the work start or end dates of the current work season to enable project or work phase completion. Minor modifications will be approved only if spawning or incubating fish are not present within the vicinity of the project. You may request subsequent minor modifications to the required work timing. A minor modification of the plans and specifications means any changes in the materials, characteristics or construction of your project that does not alter the project's impact to fish life or habitat and does not require a change in the provisions of the HPA to mitigate the impacts of the modification. If you originally applied for your HPA through the online Aquatic Protection Permitting System (APPS), you may request a minor modification through APPS. A link to APPS is at <http://wdfw.wa.gov/licensing/hpa/>. If you did not use APPS you must submit a written request that clearly indicates you are seeking a minor modification to an existing HPA. Written requests must include the name of the applicant, the name of the authorized agent if one is acting for the applicant, the APP ID number of the HPA, the date issued, the permitting biologist, the requested changes to the HPA, the reason for the requested change, the date of the request, and the requestor's signature. Send by mail to: Washington Department of Fish and Wildlife, PO Box 43234, Olympia, Washington 98504-3234, or by email to HPAapplications@dfw.wa.gov. You should allow up to 45 days for the department to process your request.

MAJOR MODIFICATIONS TO THIS HPA: You may request approval of major modifications to any aspect of your HPA. Any approved change other than a minor modification to your HPA will require issuance of a new HPA. If you originally applied for your HPA through the online Aquatic Protection Permitting System (APPS), you may request a major modification through APPS. A link to APPS is at <http://wdfw.wa.gov/licensing/hpa/>. If you did not use APPS you must submit a written request that clearly indicates you are requesting a major modification to an existing HPA. Written requests must include the name of the applicant, the name of the authorized agent if one is acting for the applicant, the APP ID number of the HPA, the date issued, the permitting biologist, the requested changes to the HPA, the reason for the requested change, the date of the request, and the requestor's signature. Send your written request by mail to: Washington Department of Fish and Wildlife, PO Box 43234, Olympia, Washington 98504-3234. You may email your request for a major modification to HPAapplications@dfw.wa.gov. You should allow up to 45 days for the department to process your request.

APPEALS INFORMATION

If you wish to appeal the issuance, denial, conditioning, or modification of a Hydraulic Project Approval (HPA), Washington Department of Fish and Wildlife (WDFW) recommends that you first contact the department employee who issued or denied the HPA to discuss your concerns. Such a discussion may resolve your concerns without the need for further appeal action. If you proceed with an appeal, you may request an informal or formal appeal. WDFW encourages you to take advantage of the informal appeal process before initiating a formal appeal. The informal appeal process includes a review by department management of the HPA or denial and often resolves issues faster and with less legal complexity than the formal appeal process. If the informal appeal process does not resolve your concerns, you may advance your appeal to the formal process. You may contact the HPA Appeals Coordinator at (360) 902-2534 for more information.

A. INFORMAL APPEALS: WAC 220-660-460 is the rule describing how to request an informal appeal of WDFW actions taken under Chapter 77.55 RCW. Please refer to that rule for complete informal appeal procedures. The following information summarizes that rule.



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A person who is aggrieved by the issuance, denial, conditioning, or modification of an HPA may request an informal appeal of that action. You must send your request to WDFW by mail to the HPA Appeals Coordinator, Department of Fish and Wildlife, Habitat Program, PO Box 43234, Olympia, Washington 98504-3234; e-mail to HPAapplications@dfw.wa.gov; fax to (360) 902-2946; or hand-delivery to the Natural Resources Building, 1111 Washington St SE, Habitat Program, Fifth floor. WDFW must receive your request within 30 days from the date you receive notice of the decision. If you agree, and you applied for the HPA, resolution of the appeal may be facilitated through an informal conference with the WDFW employee responsible for the decision and a supervisor. If a resolution is not reached through the informal conference, or you are not the person who applied for the HPA, the HPA Appeals Coordinator or designee may conduct an informal hearing or review and recommend a decision to the Director or designee. If you are not satisfied with the results of the informal appeal, you may file a request for a formal appeal.

B. FORMAL APPEALS: WAC 220-660-470 is the rule describing how to request a formal appeal of WDFW actions taken under Chapter 77.55 RCW. Please refer to that rule for complete formal appeal procedures. The following information summarizes that rule.

A person who is aggrieved by the issuance, denial, conditioning, or modification of an HPA may request a formal appeal of that action. You must send your request for a formal appeal to the clerk of the Pollution Control Hearings Boards and serve a copy on WDFW within 30 days from the date you receive notice of the decision. You may serve WDFW by mail to the HPA Appeals Coordinator, Department of Fish and Wildlife, Habitat Program, PO Box 43234, Olympia, Washington 98504-3234; e-mail to HPAapplications@dfw.wa.gov; fax to (360) 902-2946; or hand-delivery to the Natural Resources Building, 1111 Washington St SE, Habitat Program, Fifth floor. The time period for requesting a formal appeal is suspended during consideration of a timely informal appeal. If there has been an informal appeal, you may request a formal appeal within 30 days from the date you receive the Director's or designee's written decision in response to the informal appeal.

C. FAILURE TO APPEAL WITHIN THE REQUIRED TIME PERIODS: If there is no timely request for an appeal, the WDFW action shall be final and unappealable.

Habitat Biologist Jesse.dykstra@dfw.wa.gov
Jesse Dykstra 564-200-3689

for Director
WDFW