

Contract Provisions

For Construction of:

Zackuse Creek Fish Passage and Stream Restoration Project

May, 2018

CITY OF SAMMAMISH
PUBLIC WORKS DEPARTMENT
801 228TH AVENUE SE
SAMMAMISH, WA 98075

Prepared by:

Otak, Inc.
11241 Willows Road NE, Suite 200
Redmond, WA 98052
Otak Project No. 32794





CONTRACT PROVISIONS
for
Zackuse Creek
Fish Passage and Stream Restoration Project

City of Sammamish
King County, Washington
Public Works Department
801 228th Avenue SE
Sammamish, WA 98075
(425) 295-0500
FAX (425) 295-0600

Approved for Construction:

Andrew Zagars, P.E.
City Engineer**

Date

Tawni Dalziel, P.E.
Project Manager

Date

****The signature of the City Engineer on these Contract Provisions shall serve as written approval for all variations to the Public Works Standards contained within this project as required by PWS. 10.170.**

**CITY OF SAMMAMISH
PUBLIC WORKS DEPARTMENT**

**Zackuse Creek Fish Passage
and Stream Restoration Project**

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.

Gregory S. Laird, P.E.
(Schedules A1, A2, and A3)

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PART 1

PROPOSAL INTRODUCTION

**NOTICE TO CONTRACTORS
CITY OF SAMMAMISH
Zackuse Creek Fish Passage and Stream Restoration Project**

Sealed proposals will be received by the City of Sammamish up to 2:00 p.m. (local time) on May 3, 2018, for furnishing the necessary labor, materials, equipment, tools, and guarantees thereof to construct the *Zackuse Creek Fish Passage and Stream Restoration Project*. Bids received after the time and date listed above will not be considered. Sealed proposals should be addressed to the following:

City of Sammamish
801 228th Avenue SE
Sammamish, WA 98075
Attn: City Clerk

The work provides for the construction of approximately 400 linear feet of stream restoration and one fish passable 12 foot span by 6 foot rise by 49.25 foot long concrete box culvert under East Lake Sammamish Parkway (ELSP) within the lower Zackuse Creek channel. Two additional concrete box culverts may be included as additives under separate bid schedules. Five bid schedules include:

Schedule A1 – Stream Restoration (Base Bid):

Schedule A1 includes clearing and grubbing, grading and excavation of approximately 400 linear feet of constructed stream channel with large woody debris stabilization and grade control structures, habitat enhancement planting preparation, demolition of existing building structures, installation of access road, preparation and implementation of storm water pollution prevention plan, installation of temporary staging area, and restoration.

Schedule A2 – ELSP Culvert Replacement (Base Bid):

Schedule A2 includes demolition and replacement of the existing 30-inch concrete pipe culvert under East Lake Sammamish Parkway (ELSP). This culvert will be replaced with a fish passable 12 foot span by 6 foot rise by 49.25 foot long concrete box structure under ELSP. The work also includes temporary stream bypass, preparation and implementation of storm water pollution prevention plan, temporary traffic control, installation of guardrail, paving with HMA, and landscape restoration.

Schedule A3 – Water and Sanitary Sewer Work (Base Bid):

Schedule A3 includes temporary and permanent utility bypass work for water and sanitary sewer.

Schedule B – ELSRT Culvert Replacement (Additive):

Schedule B includes demolition and replacement of the existing 36-inch culvert under the East Lake Sammamish Regional Trail (ELSRT). This culvert will be replaced with a fish passable 12 foot span by 8 foot rise by 19 foot long concrete box structure. The work also includes associated stream and wetland restoration within the East Lake Sammamish Regional Trail right-of-way, temporary stream bypass, trail restoration, preparation and implementation of storm water pollution prevention plan, habitat enhancement planting

preparation, temporary traffic control plan which includes trail improvements for temporary traffic control access, and trail restoration.

Schedule C – Shore Lane NE Culvert Replacement (Additive):

Schedule C includes demolition and replacement of the existing 2 foot span by 3.5 foot rise box culvert under a private road, East Lake Sammamish Shore Lane NE. This culvert will be replaced with a fish passable 12 foot span by 5 foot rise by 14 foot long concrete box structure. The work also includes associated temporary stream bypass, utility bypass and restoration, preparation and implementation of storm water pollution prevention plan, habitat enhancement plantings preparation, temporary traffic control, and roadway restoration.

All bidders are invited to an optional Pre-Bid Field Meeting to observe staging and stream restoration area existing conditions on private property. Information is as follows:

Date: April 19, 2018

Time: 10:00 am (PST)

Location: East Lake Sammamish Parkway (ELSP) 200-ft south of the intersection of ELSP and Louis Thompson Road.

Parking: ELSP roadway shoulder

The work shall be completed within 65 working days regardless of the acceptance of Schedule B and/or Schedule C additives after the commencement date stated in the Notice to Proceed. All bidding and construction shall be performed in compliance with the Contract Documents for this project and any addenda issued thereto which are on file at the office of the City Clerk, City Hall, Sammamish, Washington.

At the time and date stated above, the proposals will be publicly opened and read aloud. Proposals are to be submitted only on the form provided with the Specifications. All Proposals must be accompanied by a certified check, cashier's check, money order, or bid bond payable to the "City of Sammamish" of value not less than five percent (5%) of the total amount bid.

Plans, Specifications, addenda, Bidders list, and plan holders list for this Project are available through the City of Sammamish's on-line plan room at www.bxwa.com. Click on "Posted Projects," "Public Works," "City of Sammamish," and "Projects Bidding." Bidders are required to register in order to receive automatic e-mail notification of future addenda and to be placed on the Bidders List. Contact Builders Exchange of Washington at 425-258-1303 should you require assistance.

Financing of Schedules A1, A2, and A3 for this Project will be provided by the City of Sammamish. The City of Sammamish expressly reserves the right to reject any or all bids and to waive minor irregularities or informalities and to further make award of the Project to the lowest responsive, responsible bidder as it best serves the interest of the City.

Financing of Schedules B and C for this Project will be provided by King County. King County expressly reserves the right to reject any or all bids and to waive minor irregularities or informalities and to further make award of the Project to the lowest responsive, responsible bidder as it best serves the interest of the King County.

Melonie Anderson
City Clerk

Dates of Publication: *Daily Journal of Commerce: April 5, 2018 and April 12, 2018*
Seattle Times: April 5, 2018 and April 12, 2018

BIDDER'S CHECKLIST

REQUIRED FORMS

The Bidder shall submit the following forms as part of the proposal. The forms must be executed in full and submitted with the Proposal.

- _____ **Proposal**
- _____ **Schedule of Prices**
- _____ **Bid Security Form**
- _____ **Acknowledgement of Receipt of Addenda**
- _____ **Bidder Information and Signature**
- _____ **Non-Collusion and Debarment Affidavit**
- _____ **Minimum Wage Affidavit Form**

The two lowest bidders shall submit the following forms within 48 hours after the bid opening. Failure to submit these forms may result in the Contracting Agency refusal to accept the Bid.

- _____ **Statement of Bidder's Qualifications**
- _____ **Responsible Bidder Criteria**

AGREEMENT FORMS

The following forms (a., b., and c.) are to be executed and the following Certificates of Insurance (d. and e.) are to be provided after the Contract is awarded and prior to Notice to Proceed.

- Agreement
- Performance Bond
- Labor and Material Payment Bond
- Certificate of Insurance
- Certificate of Builder's Risk "All Risk" Insurance

PART 2
PROPOSAL

PROPOSAL

Honorable Mayor and Council
City of Sammamish
801 228th Avenue NE
Sammamish, WA 98075

The Contract provides for the construction of a one fish passable concrete box culverts and stream channel improvements within the Zackuse Creek corridor. Three bid schedules include:

Schedule A1 – Stream Restoration (Base Bid):

Schedule A1 includes clearing and grubbing, grading and excavation of approximately 400 linear feet of constructed stream channel with large woody debris stabilization and grade control structures, habitat enhancement planting preparation, demolition of existing building structures, installation of access road, preparation and implementation of storm water pollution prevention plan, installation of temporary staging area, and restoration.

Schedule A2 – ELSP Culvert Replacement (Base Bid):

Schedule A2 includes demolition and replacement of the existing 30-inch concrete pipe culvert under East Lake Sammamish Parkway (ELSP). This culvert will be replaced with a fish passable 12 foot span by 6 foot rise by 49.25 foot long concrete box structure under ELSP. The work also includes temporary stream bypass, preparation and implementation of storm water pollution prevention plan, temporary traffic control, installation of guardrail, paving with HMA, and landscape restoration.

Schedule A3 – Water and Sanitary Sewer Work (Base Bid):

Schedule A3 includes temporary and permanent utility bypass work for water and sanitary sewer.

All bidding and construction shall be performed in compliance with the Notice to Contractors, Bid Proposal, Plans, Specifications, and Contract for this project and any addenda issued thereto which are on file at the office of the City Clerk, City Hall, City of Sammamish, Washington.

It is understood herein that after the date and hour set for the opening of bids, no Bidder may withdraw its Proposal, unless the award of the Contract is delayed for a period exceeding sixty (60) consecutive calendar days.

The undersigned has examined the site(s), local conditions, Addenda, Contract Provisions, Plans, and all applicable laws and ordinances covering the Work contemplated. In accordance with the terms, provisions, and requirements of the foregoing, all of their respective terms and conditions are incorporated herein by this reference and the following unit and lump sum prices are tendered as an offer to perform the Work and furnish the equipment, materials, appurtenances, and guarantees, complete in place, in good working order.

PROPOSAL – Continued

Print Contractor Name

The undersigned freely states that it is familiar with the provisions of the competitive bidding statutes of the State of Washington, and specifically the provisions of RCW Chapter 9.18, and certifies that with respect to this Proposal, there has been no collusion or understanding with any other person, persons, or corporation, to prevent or eliminate full and unrestricted competition among Bidders on this Project.

The undersigned agrees that in the event of contract award, it shall employ only Contractor and Subcontractors duly licensed by the State of Washington.

The undersigned agrees that the Owner reserves the right to reject any or all bids and to waive any minor informalities.

The undersigned hereby agrees that the Owner reserves the right to award the contract to the lowest responsible, responsive bidder whose Proposal is in the best interest of the Owner. The Owner will determine at the time of award of the Project which additives, if any, will be included in the Contract.

The undersigned agrees that the Owner is authorized to obtain reports from all references included herein.

I, the undersigned, 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 this project's bid solicitation date.

Very Truly Yours,

Print Company Name

By (Print Name)

By (Signature)

Title

Date

SCHEDULE OF PRICES

NOTE:

Unit prices for all items, all extensions, and the total amount bid must be shown.

The project must be in its entirety, including all bid items and any bid additive bid items as specifically listed in the Proposal, in order to be considered a responsive bid.

Where conflict occurs between the unit price and the total amount named for any item the unit price shall prevail, and totals shall be corrected to conform thereto.

All entries must be typed or printed and entered in ink. Award of the Contract shall be based on the lowest, responsive bid.

(Standard Specifications and Special Provision references shown are provided for information only to assist bidders in the preparation of their proposal. Bidders shall not rely on this information and must thoroughly examine the contract requirements during the preparation of their proposal.)

PROPOSAL – Continued

Print Contractor Name

Schedule A1 – Stream Restoration
City of Sammamish

Item No.	Spec Section	Description	Unit	Quantity	Unit Price	Total Amount
DIVISION 1 – GENERAL REQUIREMENTS						
A1-01	1-04	Unexpected Site Changes	EST	1	\$25,000	
A1-02	1-05	Record Drawings (Minimum Bid \$2,500)	LS	1		
A1-03	1-05	Roadway Surveying	LS	1		
A1-04	1-07	Spill Prevention, Control and Countermeasures (SPCC) Plan	LS	1		
A1-05	1-07	Archaeological and Historical Salvage	EST	1	\$5,000	
A1-06	1-08	Type B Progress Schedule (Minimum Bid \$2,500)	LS	1		
A1-07	1-09	Field Office Building	LS	0.5		
A1-08	1-09	Mobilization	LS	1		
A1-09	1-10	Project Temporary Traffic Control	LS	1		
A1-10	1-10	Flaggers	HR	240		
A1-11	1-10	Traffic Control Supervisor	LS	1		
DIVISION 2 – EARTHWORK						
A1-12	2-01	Clearing and Grubbing	LS	1		
A1-13	2-01	Tree Removal	EA	8		
A1-14	2-02	Removing of Existing Structure – Building	LS	1		
A1-15	2-03	Roadway Excavation Incl. Haul	CY	200		
A1-16	2-03	Channel Excavation Incl. Haul	CY	1400		
A1-17	2-03	Gravel Borrow Incl. Haul	TN	200		
A1-18	2-11	Trimming and Cleanup	LS	1		
A1-19	2-12	Construction Geotextile for Soil Stabilization	SY	1910		
DIVISION 8 – MISCELLANEOUS CONSTRUCTION						
A1-20	8-01	Stormwater Pollution Prevention Plan (SWPPP) and Implementation	LS	1		
A1-21	8-01	ESC Lead	DAY	25		

PROPOSAL – Continued

Print Contractor Name

Item No.	Spec Section	Description	Unit	Quantity	Unit Price	Total Amount
A1-22	8-01	Stabilized Construction Entrance	SY	100		
A1-23	8-01	High Visibility Silt Fence	LF	600		
A1-23A	8-01	High Visibility Fence	LF	1100		
A1-24	8-01	Compost Sock	LF	420		
A1-25	8-01	Wattle	LF	760		
A1-26	8-01	Seeding, Fertilizing and Mulching by Hand (Wetland)	SY	1150		
A1-27	8-02	PSIPE - Cornus sericea / red twig dogwood (1 gal.)	EA	145	NA	NA
A1-28	8-02	PSIPE - Lonicera involucrata / twinberry (1 gal.)	EA	120	NA	NA
A1-29	8-02	PSIPE - Malus fusca / oregon crab apple (2 gal.)	EA	10	NA	NA
A1-30	8-02	PSIPE - Physocarpus capitatus / pacific ninebark (1 gal.)	EA	50	NA	NA
A1-31	8-02	PSIPE - Picea sitchensis / sitka spruce (5 gal.)	EA	4	NA	NA
A1-32	8-02	PSIPE - Populus balsamifera trichocarpa / black cottonwood (1 gal.)	EA	95	NA	NA
A1-33	8-02	PSIPE - Rosa pisocarpa / clustered wild rose (1 gal.)	EA	145	NA	NA
A1-34	8-02	PSIPE - Rubus spectabilis / salmonberry (1 gal.)	EA	70	NA	NA
A1-35	8-02	PSIPE - Salix lasiandra / pacific willow (1 gal.)	EA	85	NA	NA
A1-36	8-02	PSIPE - Thuja plicata / western red cedar (5 gal.)	EA	7	NA	NA
A1-37	8-03	PSIPE - Salix hookeriana / hooker's willow (1 gal.)	EA	25	NA	NA
A1-38	8-04	PSIPE - Symphoricarpos albus / common white snowberry (1 gal.)	EA	35	NA	NA
A1-39	8-02	Arborist Wood Chip Mulch	CY	100		
A1-40	8-02	Medium Compost	CY	100		
A1-41	8-02	Fine Compost	CY	35		
A1-42	8-21	Project Sign	LS	1		
A1-43	8-24	Ecology Block	EA	84		
A1-44	8-29	Wood Structure Type 1	EA	4		
A1-45	8-29	Wood Structure Type 2	EA	3		

PROPOSAL – Continued

Print Contractor Name

Item No.	Spec Section	Description	Unit	Quantity	Unit Price	Total Amount
A1-46	8-29	Wood Structure Type 3	EA	5		
A1-47	8-29	Wood Structure Type 4A	EA	2		
A1-48	8-29	Wood Structure Type 4B	EA	3		
A1-49	8-30	Streambed Gravel	TN	480		
A1-50	8-31	Boulder Band	EA	13		
Subtotal Schedule A1						
Washington State Sales Tax (10%)						
Total Schedule A1						

****Note: Contractor is advised to be familiar with Washington State Revenue Rule 170. See Special Provisions 1-07.2***

PROPOSAL – Continued

Print Contractor Name

Schedule A2 – ELSP Culvert Replacement
City of Sammamish

Item No.	Spec Section	Description	Unit	Quantity	Unit Price	Total Amount
DIVISION 1 – GENERAL REQUIREMENTS						
A2-01	1-04	Unexpected Site Changes	EST	1	\$25,000	
A2-02	1-05	Record Drawings (Minimum Bid \$2,500)	LS	1		
A2-03	1-05	Roadway Surveying	LS	1		
A2-04	1-07	Spill Prevention, Control and Countermeasures (SPCC) Plan	LS	1		
A2-05	1-07	Archaeological and Historical Salvage	EST	1	\$5,000	
A2-06	1-08	Type B Progress Schedule (Minimum Bid \$2,500)	LS	1		
A2-07	1-09	Field Office Building	LS	0.5		
A2-08	1-09	Mobilization	LS	1		
A2-09	1-10	Project Temporary Traffic Control	LS	1		
A2-10	1-10	Flaggers	HR	320		
A2-11	1-10	Traffic Control Supervisor	LS	1		
A2-12	1-10	Portable Changeable Message Sign	EA	4		
DIVISION 2 – EARTHWORK						
A2-13	2-01	Clearing and Grubbing	LS	1		
A2-14	2-02	Removal of Structure and Obstruction	LS	1		
A2-15	2-03	Roadway Excavation Incl. Haul	CY	100		
A2-16	2-03	Gravel Borrow Incl. Haul	TN	400		
A2-17	2-03	Unsuitable Foundation Excavation Incl. Haul	CY	140		
A2-18	2-09	Shoring or Extra Excavation Class A	LS	1		
A2-19	2-11	Trimming and Cleanup	LS	1		
A2-20	2-12	Construction Geotextile for Soil Stabilization	SY	1510		
A2-21	2-12	Construction Geotextile for Underground Drainage	SY	320		
A2-22	2-12	Construction Geotextile for Ditch Lining	SY	490		

PROPOSAL – Continued

Print Contractor Name

Item No.	Spec Section	Description	Unit	Quantity	Unit Price	Total Amount
DIVISION 4 – BASES						
A2-23	4-04	Crushed Surfacing Base Course	TN	260		
DIVISION 5 – SURFACE TREATMENTS AND PAVEMENTS						
A2-24	5-04	HMA Cl. 1/2" PG 64-22 (Commercial)	TN	200		
A2-25	5-04	Planing Bituminous Pavement	SY	460		
DIVISION 7 – DRAINAGE STRUCTURES, STORM SEWERS, SANITARY SEWERS, WATER MAINS, AND CONDUITS						
A2-26	7-01	Underdrain Pipe 4 In. Diam.	LF	190		
A2-27	7-02	Precast Reinf. Conc. Box Culvert (12'-0" Span x 6'-0" Rise x 49'-4" Long)	LS	1		
A2-28	7-02	48 In. Diam. Culvert Access	LS	1		
DIVISION 8 – MISCELLANEOUS CONSTRUCTION						
A2-29	8-01	Stormwater Pollution Prevention Plan (SWPPP) and Implementation	LS	1		
A2-30	8-01	ESC Lead	DAY	25		
A2-31	8-01	Stabilized Construction Entrance	SY	110		
A2-32	8-01	High Visibility Silt Fence	LF	700		
A2-33	8-01	Biodegradable Erosion Control Blanket	SY	230		
A2-34	8-01	Wattle	LF	210		
A2-35	8-01	Seeding, Fertilizing and Mulching by Hand (Roadway)	SY	1550		
A2-36	8-02	Topsoil Type A	CY	185		
A2-37	8-11	Culvert Rail	LF	20		
A2-38	8-11	Guardrail Transition Section	EA	4		
A2-39	8-11	Beam Guardrail Type 31	LF	465		
A2-40	8-11	Beam Guardrail Type 31 Non-flared Terminal	EA	2		
A2-41	8-11	Removing Guardrail	LF	85		
A2-42	8-15	Quarry Spalls	CY	420		
A2-43		Project Sign	LS	1		
A2-44	8-22	Pavement Marking	LS	1		

PROPOSAL – Continued

Print Contractor Name

Item No.	Spec Section	Description	Unit	Quantity	Unit Price	Total Amount
A2-45	8-24	Rock Wall	SF	690		
A2-46	8-27	Temporary Stream Bypass System	LS	1		
A2-47	8-30	Streambed Gravel	TN	180		
A2-48	8-31	Culvert Roughness Element	EA	3		
Subtotal Schedule A2						
Total Schedule A2						

**Note: Contractor is advised to be familiar with Washington State Revenue Rule 171 as no separate, distinct sales tax monies will be reimbursed to the Contractor. See Special Provisions 1-07.2*

PROPOSAL – Continued

Print Contractor Name

Schedule A3 – Water and Sanitary Sewer Work
City of Sammamish

Item No.	Spec Section	Description	Unit	Quantity	Unit Price	Total Amount
DIVISION 1 – GENERAL REQUIREMENTS						
A3-01	1-04	Unexpected Site Changes	EST	1	\$2,500	
A3-02	1-05	Record Drawings (Minimum Bid \$2,500)	LS	1		
A3-03	1-05	Roadway Surveying	LS	1		
A3-04	1-09	Mobilization	LS	1		
A3-05	1-10	Flaggers	HR	40		
DIVISION 2 – EARTHWORK						
A3-06	2-02	Removal of Existing AC Water Main	LF	20		
A3-07	2-09	Shoring or Extra Excavation Class B	SF	550		
A3-07A	2-09	Controlled Density Fill	CY	30		
DIVISION 7 – DRAINAGE STRUCTURES, STORM SEWERS, SANITARY SEWERS, WATER MAINS, AND CONDUITS						
A3-08	7-05	Manhole 60" Diam. Type 1 (Saddle)	EA	1		
A3-09	7-09	Temporary Water Main Bypass	LS	1		
A3-10	7-09	Ductile Iron (CL 52) Pipe for Water Main 8-In. Diam.	LF	45		
A3-11	7-12	Gate Valve 8-In.	EA	2		
A3-12	7-17	PVC Sanitary Sewer Pipe 15-In. Diam.	LF	55		
A3-13	7-17	Temporary Sanitary Sewer Bypass	LS	1		
DIVISION 8 – MISCELLANEOUS CONSTRUCTION						
A3-14	8-24	Ecology Block	EA	8		
Subtotal Schedule A3						
Washington State Sales Tax (10%)						
Total Schedule A3						

**Note: Contractor is advised to be familiar with Washington State Revenue Rule 171 as no separate, distinct sales tax monies will be reimbursed to the Contractor. See Special Provisions 1-07.2*

SCHEDULE OF PRICES SUMMARY

Zackuse Creek Fish Passage and Stream Restoration Project

Summary by Schedule	Total Amount
Total Amount of Bid Schedule A1 (Base Bid – From City)	\$
Total Amount of Bid Schedule A2 (Base Bid – From City)	\$
Total Amount of Bid Schedule A3 (Base Bid – From City)	\$
Total Bid	\$

BID SECURITY FORM

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

Sign here _____

Know All Men by These Presents:

That we, _____, as Principal, and _____ as Surety, are held and firmly bound unto the City of Sammamish, 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 _____ 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 the 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

Received return of deposit in the sum of \$_____

PROPOSAL – Continued

Print Contractor Name

ACKNOWLEDGEMENT OF RECEIPT OF ADDENDA

By signing below, Bidder acknowledges receipt and understanding of the following Addenda to the Contract Documents:

Addendum No.	Date of Receipt	Signature
1		
2		
3		
4		
5		
6		

NOTE:

Failure to acknowledge receipt of Addenda may be considered as an irregularity in the Bid Proposal and the City reserves the right to determine whether the Bid will be disqualified.

BIDDER INFORMATION AND SIGNATURE

The Bidder proposes to accept as full payment for the Work proposed herein, the amount computed under the provisions of the Contract Provisions. The undersigned Bids for the following described Project:

Zackuse Creek Fish Passage and Stream Restoration Project

The party by whom this Bid is submitted and by whom the Contract will be entered into, in the event the award is made to this party, is:

Contractor (Firm Name)

Signature

Address

Name (Print) & Title

Phone Number

Date of Signing

Contractor's Washington State License Number

(Indicate whether contractor is partnership, joint venture, corporation, or sole proprietorship)*

*If Bidder is a corporation, write State of Incorporation under signature. If partnership, give full names of all partners.

The name of the President, Treasurer, and/or Manager of the Bidding corporation, or the names of all persons and parties interested in this Bid as partners or principals, are as follows:

Name	Address

PROPOSAL – Continued

Print Contractor Name

IF SOLE PROPRIETOR OR PARTNERSHIP

IN WITNESS hereto, the undersigned has set his (its) hand this _____ day of _____, 20____.

Signature of Bidder

Title

IF CORPORATION

IN WITNESS WHEREOF, the undersigned corporation has caused this instrument to be executed by its duly authorized officers this _____ day of _____, 20____.

Attest:

Name of Corporation

by _____

Secretary

Title

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

Notary Public in and for the State of Washington Residing at

NOTES:

If the Bidder is a co-partnership, give firm name under which business is transacted; Proposal must be executed by a partner. If the Bidder is a corporation, Proposal must be executed in the corporate name by the president or vice-president (or any other corporate officer accompanied by evidence of authority to sign).

PROPOSAL – Continued

Print Contractor Name

NON-COLLUSION AND DEBARMENT AFFIDAVIT

* STATE OF WASHINGTON)
)
** COUNTY OF _____)

I, the undersigned, an authorized representative of *** _____, being first duly sworn on oath do hereby certify that said person(s), firm, association or corporation has (have) not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the project for which this proposal is submitted.

I further certify that, except as noted below, the firm, association or corporation or any person in a controlling capacity associated therewith or any position involving the administration of federal funds; is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any federal agency; has not been suspended, debarred, voluntarily excluded or determined ineligible by any federal agency within the past 3 years; does not have a proposed debarment pending; and has not been indicted, convicted, or had a civil judgment rendered against said person, firm, association or corporation by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

I further acknowledge that by signing the signature page of the proposal, I am deemed to have signed and have agreed to the provisions of this affidavit.

Name of Project

Name of Bidder's Firm

Signature of Authorized Representative of Bidder

Printed Name of Authorized Representative of Bidder

Date

I certify that I know or have satisfactory evidence that _____ is the person who appeared before me, and said person acknowledged that (he/she) signed this instrument and acknowledged it to be (his/her) free and voluntary act for the uses and purposes mentioned in the instrument.

Dated _____

Notary Public in and for the State
of Washington residing at _____
Notary (print): _____
My appointment expires: _____

NOTE:

Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. For any exception noted, indicate above to whom it applies, initiating agency, and dates of action. Providing false information may result in criminal prosecution or administrative sanctions.

- * A suspending or debarred official may grant an exception permitting a debarred, suspended, or excluded person to participate in a particular transaction upon a written determination by such official stating the reason(s) for deviating from the Presidential policy established by Executive order 12549. (49 CFR Part 29 Section 29.215).
- * If notarization of proposal takes place outside of Washington State, DELETE WASHINGTON, and enter appropriate State.
- ** Fill in county where notarization of proposal takes place.

MINIMUM WAGE AFFIDAVIT FORM

STATE OF WASHINGTON)
)
COUNTY OF KING) SS

I, the undersigned, having been duly sworn, deposed, say and certify that in connection with the performance of the work of this project, I will pay each classification of laborer, workman, or mechanic employed in the performance of such work; not less than the prevailing rate of wage or not less than the minimum rate of wages as specified in the principal contract; that I have read the above and foregoing statement and certificate, know the contents thereof and the substance as set forth therein is true to my knowledge and belief.

Name of Project

Name of Bidder's Firm

Signature of Authorized Representative of Bidder

Printed Name of Authorized Representative of Bidder

Date

I certify that I know or have satisfactory evidence that _____ is the person who appeared before me, and said person acknowledged that (he/she) signed this instrument and acknowledged it to be (his/her) free and voluntary act for the uses and purposes mentioned in the instrument.

Dated _____

Notary Public in and for the State
of Washington residing at _____
Notary (print): _____
My appointment expires: _____

STATEMENT OF BIDDER’S QUALIFICATIONS

Name of Firm: _____

Address: _____

Telephone No.: _____

Contact Person for this Project: _____

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

Gross dollar amount of work currently under contract: _____

Gross dollar amount of contracts currently not completed: _____

General character of work performed by the firm: _____

List all of the projects over one-hundred thousand dollars total of a similar nature which have been completed by the Contractor within the last five (5) years and the gross dollar amount of each project, together with the Owner’s name and phone number, and the Engineer’s name.

Project Name	Amount	Owner	Phone	Engineer’s Name

PROPOSAL – Continued

 Print Contractor Name

List five major pieces of equipment which are anticipated to be used on this project by the Contractor and note which items are owned by the Contractor and which are to be leased or rented from others:

1. _____
2. _____
3. _____
4. _____
5. _____

Bank Reference: _____

How many general superintendents or other responsible employees in a supervisory position do you have at this time, and how long have they been with the firm?

Identify who will be the general superintendent or project superintendent on this Project and list the number of years with the firm.

Have you changed bonding company within the last three (3) years? _____

If so, why? _____

Have you ever been sued or engaged in arbitration by the Owner or have you ever sued or demanded arbitration from an Owner on any public works contract for a special utility district, private utility company, municipality, county or state

government? _____ For what reason? _____

Disposition of case, if settled: _____

Do you have any outstanding payments due to the Department of Revenue?

If yes, explain: _____

Bidder agrees that the Owner shall retain the right to obtain any and all credit reports.

Yes: _____ No _____

RESPONSIBLE BIDDER CRITERIA

In accordance with RCW 39.04, before award of a Public Works Contract, a Bidder must meet the following responsibility criteria to be considered a responsible Bidder and qualified to be awarded a Public Works Project. The Bidder must:

1. At the time of Bid submittal, have a certificate of registration in compliance with chapter 18.27 RCW
2. Have a current state unified business identifier (UBI) number
3. If applicable, have industrial insurance coverage for the Bidder’s employees working Washington as required in Title 51 RCW
4. If applicable, have an employment security department number as required in Title 50 RCW
5. If applicable, have a state excise tax registration number as required in Title 82 RCW
6. Not be disqualified from Bidding on any Public Works Contract under RCW 39.06.010 or 39.12.065(3)

In accordance with RCW 39.06, a Public Works Contractor must verify responsibility criteria for each first tier Subcontractor, and a Subcontractor of any tier that hires other Subcontractors must verify responsibility criteria for each of its Subcontractors, Verification shall include that each Subcontractor, at the time of Subcontract execution, meets the responsibility criteria and possesses an electrical contractor license, if required by RCW 19.28, or an elevator contractor license, if required by RCW 70.87. This verification requirement, as well as the responsibility criteria, must include every Public Works Contract and subcontract of every tier.

Providing the following information is **MANDATORY** in order to meet “Responsible Bidder” requirements. Failure to provide this information may disqualify your Bid as being “**Non-Responsive.**” *If your business is not required to have one of the following numbers, provide an explanation.*

1. State of Washington Contractor Registration No. _____
2. State of Washington Unified Business Identifier No. _____
3. Employment Security Department No. _____
4. State Excise Tax Registration No. _____
5. Is the payment of Worker’s Compensation (Industrial Insurance) Premiums current?
If your business does not have a Worker’s Comp account with the WA State Dept. of Labor & Industry please explain why.
 Yes
 No (If No, you are not eligible to bid on this project)
 No Account – Explain why:

6. Are you disqualified from Bidding on Public Works Projects in the State of Washington?
 Yes (If Yes, you are not eligible to Bid on this Project)
 No

PART 3

CONTRACT DOCUMENT FORMS

CONTRACT AGREEMENT

THIS AGREEMENT, made and entered into this _____ day of _____, 20____, by and between THE CITY OF SAMMAMISH, Washington, a municipal corporation of the State of Washington, hereinafter referred to as "CITY" and _____, hereinafter referred to as "CONTRACTOR."

WITNESSETH:

- 1) The Contractor shall within the time stipulated, (to-wit: within 65 working days from date of commencement hereof as required by the Contract, of which this agreement is a component part) perform all the work and services required to be performed, and provide and furnish all of the labor, materials, appliances, machines, tools, equipment, utility and transportation services necessary to perform the Contract, and shall complete the construction and installation work in a workmanlike manner, in connection with the City's Project:

Zackuse Creek Fish Passage and Stream Restoration Project

for the construction of fish passable and stream channel improvements in the City of Sammamish, King County, in the Zackuse Creek corridor, and other work noted in these documents, all in accordance with the attached Contract Plans, Special Provisions, and Standard Specifications.

All the foregoing shall be timely performed, furnished, constructed, installed and completed in strict conformity with the plans and specifications, including any and all addenda issued by the City and all other documents hereinafter enumerated, and in full compliance with all applicable codes, ordinances and regulations of the City of Sammamish and any other governmental authority having jurisdiction there over. It is further agreed and stipulated that all of said labor, materials, appliances, machines, tools, equipment and services shall be furnished and the construction installation performed and completed to the satisfaction and the approval of the City's Public Works Director as being in such conformity with the plans, specifications and all requirements of or arising under the Contract.

- 2) The aforesaid Contract, entered into by the acceptance of the Contractor's bid and signing of this agreement, consists of the following documents, all of which are component parts of said Contract and as fully a part thereof as if herein set out in full, and if not attached, as if hereto attached.
 - a) This Agreement
 - b) Instruction to Bidders
 - c) Project Proposal
 - d) Specifications
 - e) Maps and Plans
 - f) Bid
 - g) Advertisement for Bids
 - h) Special Provisions, if any
 - i) Addenda, if any, and all modifications or changes issued pursuant to the Contract Documents.

- 3) If the Contractor refuses or fails to prosecute the work or any part thereof, with such diligence as will insure its completion within the time specified in this Contract, or any extension in writing thereof, or fails to complete said work with such time, or if the Contractor shall be adjudged a bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver shall be appointed on account of the Contractor's insolvency, or if he or any of his subcontractors should violate any of the provisions of this Contract, the City may then serve written notice upon him and his surety of its intention to terminate the Contract, and unless within ten (10) days after the serving of such violation or non-compliance of any provision of the Contract shall cease and satisfactory arrangement for the correction thereof be made, this Contract, shall, upon the expiration of said ten (10) day period, cease and terminate in every respect. In the event of any such termination, the City shall immediately serve written notice thereof upon the surety and the Contractor and the surety shall have the right to take over and perform the Contract, provided, however, that if the surety within fifteen (15) days after the serving upon it of such notice of termination does not perform the Contract or does not commence performance thereof within 15 days from the date of serving such notice, the City itself may take over the work under the Contract and prosecute the same to completion by Contract or by any other method it may deem advisable, for the account and at the expense of the Contractor, and his surety shall be liable to the City for any excess cost or other damages occasioned the City thereby. In such event, the City, if it so elects, may, without liability for so doing, take possession of and utilize in completing said Contract such materials, machinery, appliances, equipment, plants and other properties belonging to the Contractor as may be on site of the project and useful therein.
- 4) The foregoing provisions are in addition to and not in limitation of any other rights or remedies available to the City.
- 5) Contractor agrees and covenants to hold and save the City, its officers, agents, representatives and employees harmless and to promptly indemnify same from and against any and all claims, actions, damages, liability of every type and nature including all costs and legal expenses incurred by reason of any work arising under or in connection with the Contract to be performed hereunder, including loss of life, personal injury and/or damage to property arising from or out of any occurrence, omission or activity upon, on or about the premises worked upon or in any way relating to this Contract. This hold harmless and indemnification provision shall likewise apply for or on account of any patented or unpatented invention, process, article or appliance manufactured for use in the performance of the Contract, including its use by the City, unless otherwise specifically provided for in this Contract.

In the event the City shall, without fault on its part, be made a party to any litigation commenced by or against Contractor, then Contractor shall proceed and hold the City harmless and he shall pay all costs, expenses and reasonable attorney's fees incurred or paid by the City in connection with such litigation. Furthermore, Contractor agrees to pay all costs, expenses and reasonable attorney's fees that may be incurred or paid by City in the enforcement of any of the covenants, provisions and agreements hereunder.

- 6) Any notice from one party to the other party under the Contract shall be in writing and shall be dated and signed by the party giving such notice or by its duly authorized representative of such party. Any such notice as heretofore specified shall be given by

personal delivery thereof or by depositing same in the United States mail, postage prepaid, certified or registered mail.

- 7) The Contractor shall commence performance of the Contract no later than 10 calendar days after Contract final execution, and shall complete the full performance of the Contract not later than 65 working days from the date of commencement. For each and every working day of delay after the established day of completion, it is hereby stipulated and agreed that the damages to the City occasioned by said delay shall be a sum calculated and imposed in compliance with 2016 WSDOT Standard Specifications, Section 1-08.9, Liquidated Damages (and not as a penalty) for each such day, which shall be paid by the Contractor to the City.
- 8) Neither the final certificate of payment nor any provision in the Contract nor partial or entire use of any installation provided for by this Contract shall relieve the Contractor of liability in respect to any warranties or responsibility for faulty materials or workmanship. The Contractor shall be under the duty to remedy any defects in the work and pay for any damage to other work resulting therefrom which shall appear within the period of one (1) year from the date of final acceptance. However, all manufacturer's warranties or guarantees on electrical and mechanical equipment, consistent with those provided as customary trade practice, shall be assigned to the City at the time of project acceptance. The City will give notice of observed defects as heretofore specified with reasonable promptness after discovery thereof, and Contractor shall be obligated to take immediate steps to correct and remedy any such defect, fault or breach at the sole cost and expense of Contractor.
- 9) The Contractor and each subcontractor, if any, shall submit to the City such schedules of quantities and costs, progress schedules, payrolls, reports, estimates, records and miscellaneous data pertaining to the Contract as may be requested by the City from time to time.
- 10) The Contractor shall furnish a surety bond or bonds as security for the faithful performance of the Contract, including the payment of all persons and firms performing labor on the construction project under this Contract or furnishing materials in connection with this Contract; said bond to be in the full amount of the Contract price as specified in Paragraph 11. The surety or sureties on such bond or bonds must be duly licensed as a surety in the State of Washington.
- 11) The total amount of this contract is the sum of _____

numbers

written words

which includes any required Washington State Sales Tax. Payments will be made to Contractor as specified in the "Standard Specifications" of this Contract.

IN WITNESS WHEREOF, the City has caused these presents to be signed by its City Manager and attested by its City Attorney and the Contractor has hereunto set his hand and seal the day and year first above-written.

CONTRACTOR

CITY OF SAMMAMISH

President/Partner/Owner

City Manager

ATTEST

Secretary

City Attorney

dba

Firm Name

check one

Individual

Partnership

Corporation Incorporated in _____

Attention:

If business is a CORPORATION, name of the corporation should be listed in full and both President and Secretary must sign the contract, OR if one signature is permitted by corporation by-laws, a copy of the by-laws shall be furnished to the City and made a part of the contract document.

If business is a PARTNERSHIP, full name of each partner should be listed followed by d/b/a (doing business as) and firm or trade name; any one partner may sign the contract.

If business is an INDIVIDUAL PROPRIETORSHIP, the name of the owner should appear followed by d/b/a and name of the company.

CONTRACTOR'S RETAINAGE AGREEMENT

IDENTIFICATION AND DESCRIPTION

Project Title: **Zackuse Creek Fish Passage and Stream Restoration Project**

Contractor: _____

Representative: _____

Bid Date: _____ City Clerk: _____

City Council Award Date: _____

CONTRACTOR'S INSTRUCTIONS

Pursuant to R.C.W. 60.28.01 0 I hereby notify the City of Sammamish of my instructions to invest not to invest the retainage withheld under the terms of this contract.

Type of Investment: _____

RETAINAGE FORMULA

In accordance with applicable State Statutes, the following provisions will be made for the disposition of the retainage held for investment:

1. All investments selected are subject to City approval.
2. Retainage under this agreement will be held in escrow by the _____, the terms of which are specified by separate escrow agreement. The cost of the investment program is to be borne entirely by the contractor.
3. The final disposition of the contract retainage will be made in accordance with applicable statutes.

Contractor: _____ Date: _____
Firm Name

By: _____ Title _____
Signature

Address: _____

Phone: _____ Federal ID # _____

Estimated Completion Date: _____

CITY APPROVAL

Approval of Investment Program and Retainage Agreement

Finance Department

Date

LABOR AND MATERIAL PAYMENT BOND

We _____ as Principal, and _____ as Surety, jointly and severally bind ourselves, our heirs, successors and assigns as set forth herein to CITY OF SAMMAMISH (hereinafter called the Owner) for payment of the penal sum of _____ Dollars (\$ _____), lawful money of the United States in connection with the owner’s award to the Contractor of the contract for construction (“Contract”) of the following project:

Zackuse Creek Fish Passage and Stream Restoration Project

THE CONDITION OF THIS OBLIGATION IS SUCH that if the Contractor shall in all respects faithfully perform all obligations and provisions in the said Contract, and pay all laborers, mechanics, and subcontractors and material men, taxing authorizes and all persons who supply such person or persons or subcontractors with material, equipment and supplies for the carrying on of such work, this obligation shall become null and void; otherwise, it shall remain in full force and effect, and Surety shall defend and indemnify Owner against any loss or damage due to the failure of the Principal to strictly perform all obligations of the Contract.

This bond shall be in force until completion of the Project and acceptance by the Owner, and also for such period thereafter during which the law allows claims to be filed and sued upon.

This bond is provided pursuant to and in compliance with R.C.W. Chapter 39.08, the terms and requirements of which statute are incorporated herein as though fully set forth herein.

Surety agrees that no change, extension of time, modifications or addition to the terms of the Contract, or the work to be performed thereunder, or to the specifications shall in any way affect its obligation on this bond, and it hereby waives notice thereof.

The Contractor and Surety agree that if the Owner is required to engage the services of an attorney in connection with the enforcement of this bond, each shall pay the Owner reasonable attorney’s fees incurred, with or without suit, in addition to the penal sum.

Surety certifies that it is an authorized surety bond issuer, properly authorized to transact surety business in Washington. Surety agrees to be bound by the laws of the State of Washington and subject itself to the jurisdiction of the courts of the State of Washington.

Executed in four original counterparts on _____, 20_____

CONTRACTOR

By _____

(Title)

(Attach acknowledgment of authorized representative of Contractor).

_____ (Name and Address of Surety)

_____ (Name and Address of Surety's agent for service of process in Washington if different from above)

_____ (Telephone No. of Surety's Washington agent)

(Attach acknowledgment)

_____ Surety

By _____

Its Attorney-in-fact

Notice: Sureties must be authorized to conduct surety business in Washington and have an agent for service of process in Washington. Certified copy of Power of Attorney must be attached.

PERFORMANCE BOND TO THE CITY OF SAMMAMISH

We, the undersigned _____ as principal, and _____ corporation organized and existing under the laws of the State of _____ as a surety corporation, and qualified under the laws of the State of Washington to become surety upon bonds of contractors with municipal corporations, as surety are jointly and severally held and firmly bound to the City of Sammamish in the penal sum of \$_____ for the payment of which sum on demand we bind ourselves and our successors, heirs, administrators or person representatives, as the case may be.

This obligation is entered into in pursuance of the statutes of the State of Washington, the Ordinance of the City of Sammamish.

Dated at _____, Washington, this _____ day of _____, 20__.

Nevertheless, the conditions of the above obligation are such that:

WHEREAS, under and pursuant to Public Works Construction Contract _____ providing for construction of **Zackuse Creek Fish Passage and Stream Restoration Project** the principal is required to furnish a bond for the faithful performance of the contract; and

WHEREAS, the principal has accepted, or is about to accept, the contract, and undertake to perform the work therein provided for in the manner and within the time set forth;

NOW, THEREFORE, if the said _____ shall faithfully perform all of the provisions of said contract in the manner and within the time therein set forth, or within such extensions of time as may be granted under said contract, and shall pay all laborers, mechanics, subcontractors and material-men, and all persons who shall supply said principal or subcontractors with provisions and supplies for the carrying on of said work, and shall hold said City of Sammamish harmless from any loss or damage occasioned to any person or property by reason of any carelessness or negligence on the part of said principal, or any subcontractor in the performance of said work, and shall indemnify and hold the City of Sammamish harmless from any damage or expense by reason of failure of performance as specified in said contract or from defects appearing or developing in the operation of any mechanical or electrical equipment and related components provided under such contract within a period of (2) two years a after its acceptance thereof by the City of Sammamish, then his obligation shall become null and void, otherwise it shall be and remain in full force. Customary trade warranties or guarantees on electrical and mechanical equipment shall be assigned to the City of Sammamish.

Principal

Surety

Signature

Signature

Title

Title

PART 4

**AMENDMENTS TO THE 2018
STANDARD SPECIFICATIONS BOOK
Revised: 04/02/18**

1 **INTRO.AP1**
2 **INTRODUCTION**

3 The following Amendments and Special Provisions shall be used in conjunction with the
4 2018 Standard Specifications for Road, Bridge, and Municipal Construction.

5
6 **AMENDMENTS TO THE STANDARD SPECIFICATIONS**
7

8 The following Amendments to the Standard Specifications are made a part of this
9 contract and supersede any conflicting provisions of the Standard Specifications. For
10 informational purposes, the date following each Amendment title indicates the
11 implementation date of the Amendment or the latest date of revision.

12
13 Each Amendment contains all current revisions to the applicable section of the Standard
14 Specifications and may include references which do not apply to this particular project.

15
16 1-02.AP1
17 **Section 1-02, Bid Procedures and Conditions**
18 **April 2, 2018**

19 **1-02.4(1) GENERAL**

20 This section is supplemented with the following:

21
22 Prospective Bidders are advised that the Contracting Agency may include a partially
23 completed Washington State Department of Ecology (Ecology) Transfer of
24 Coverage (Ecology Form ECY 020-87a) for the Construction Stormwater General
25 Permit (CSWGP) as part of the Bid Documents. When the Contracting Agency
26 requires the transfer of coverage of the CSWGP to the Contractor, an informational
27 copy of the Transfer of Coverage and the associated CSWGP will be included in the
28 appendices. As a condition of Section 1-03.3, the Contractor is required to complete
29 sections I, III, and VIII of the Transfer of Coverage and return the form to the
30 Contracting Agency.

31
32 The Contracting Agency is responsible for compliance with the CSWGP until the
33 end of day that the Contract is executed. Beginning on the day after the Contract is
34 executed, the Contractor shall assume complete legal responsibility for compliance
35 with the CSWGP and full implementation of all conditions of the CSWGP as they
36 apply to the Contract Work.

37
38 **1-02.5 PROPOSAL FORMS**

39 The first sentence of the first paragraph is revised to read:

40
41 At the request of a Bidder, the Contracting Agency will provide a physical Proposal
42 Form for any project on which the Bidder is eligible to Bid.

43
44 **1-02.6 PREPARATION OF PROPOSAL**

45 Item number 1 of the second paragraph is revised to read:

- 46
47 1. A unit price for each item (omitting digits more than two places to the right of
48 the decimal point),
49

1 In the third sentence of the fourth paragraph, "WSDOT Form 422-031" is revised to read
2 "WSDOT Form 422-031U."

3
4 The following is inserted after the third sentence of the fourth paragraph:

5
6 Bidders shall submit a UDBE Broker Agreement documenting the fees or
7 commissions charged by the Broker for any Broker listed on the UDBE Utilization
8 Certification in accordance with the Special Provisions. Bidders shall submit a
9 completed UDBE Trucking Credit Form for each UDBE Trucking firm listed on the
10 UDBE Utilization Certification in accordance with the Special Provisions. WSDOT
11 Form 272-058 is available for this purpose.

12
13 The following new paragraph is inserted before the last paragraph:

14
15 The Bidder shall submit with their Bid a completed Contractor Certification Wage
16 Law Compliance form (WSDOT Form 272-009). Failure to return this certification as
17 part of the Bid Proposal package will make this Bid Nonresponsive and ineligible for
18 Award. A Contractor Certification of Wage Law Compliance form is included in the
19 Proposal Forms.

20 21 **1-02.13 IRREGULAR PROPOSALS**

22 Item 1(h) is revised to read:

23
24 h. The Bidder fails to submit Underutilized Disadvantaged Business Enterprise
25 Good Faith Effort documentation, if applicable, as required in Section 1-02.6, or
26 if the documentation that is submitted fails to demonstrate that a Good Faith
27 Effort to meet the Condition of Award was made;

28
29 Item 1(i) is revised to read the following three items:

- 30
31 i. The Bidder fails to submit an Underutilized Disadvantaged Business Enterprise
32 Trucking Credit Form, if applicable, as required in Section 1-02.6, or if the Form
33 that is submitted fails to meet the requirements of the Special Provisions;
34
35 j. The Bidder fails to submit an Underutilized Disadvantaged Business Enterprise
36 Broker Agreement, if applicable, as required in Section 1-02.6, or if the
37 documentation that is submitted fails to demonstrate that the fee/commission is
38 reasonable as determined by the Contracting Agency; or
39
40 k. The Bid Proposal does not constitute a definite and unqualified offer to meet
41 the material terms of the Bid invitation.

42
43 1-03.AP1

44 **Section 1-03, Award and Execution of Contract** 45 **January 2, 2018**

46 **1-03.3 EXECUTION OF CONTRACT**

47 The first paragraph is revised to read:
48

1 Within 20 calendar days after the Award date, the successful Bidder shall return the
2 signed Contracting Agency-prepared Contract, an insurance certification as required
3 by Section 1-07.18, a satisfactory bond as required by law and Section 1-03.4, the
4 Transfer of Coverage form for the Construction Stormwater General Permit with
5 sections I, III, and VIII completed when provided, and shall be registered as a
6 contractor in the state of Washington.
7

8 **1-03.5 FAILURE TO EXECUTE CONTRACT**

9 The first sentence is revised to read:

10
11 Failure to return the insurance certification and bond with the signed Contract as
12 required in Section 1-03.3, or failure to provide Disadvantaged, Minority or Women's
13 Business Enterprise information if required in the Contract, or failure or refusal to
14 sign the Contract, or failure to register as a contractor in the state of Washington, or
15 failure to return the completed Transfer of Coverage for the Construction
16 Stormwater General Permit to the Contracting Agency when provided shall result in
17 forfeiture of the proposal bond or deposit of this Bidder.
18

19 1-05.AP1

20 **Section 1-05, Control of Work**

21 **April 2, 2018**

22 **1-05.9 EQUIPMENT**

23 The following new paragraph is inserted before the first paragraph:

24
25 Prior to mobilizing equipment on site, the Contractor shall thoroughly remove all
26 loose dirt and vegetative debris from drive mechanisms, wheels, tires, tracks,
27 buckets and undercarriage. The Engineer will reject equipment from the site until it
28 returns clean.
29

30 This section is supplemented with the following:

31
32 Upon completion of the Work, the Contractor shall completely remove all loose dirt
33 and vegetative debris from equipment before removing it from the job site.
34

35 1-06.AP1

36 **Section 1-06, Control of Material**

37 **January 2, 2018**

38 **1-06.1(3) AGGREGATE SOURCE APPROVAL (ASA) DATABASE**

39 This section is supplemented with the following:

40
41 Regardless of status of the source, whether listed or not listed in the ASA database
42 the source owner may be asked to provide testing results for toxicity in accordance
43 with Section 9-03.21(1).
44

45 **1-06.2(2)D QUALITY LEVEL ANALYSIS**

46 This section is supplemented with the following new subsection:
47

1 **1-06.2(2)D5 Quality Level Calculation – HMA Compaction**

2 The procedures for determining the quality level and pay factor for HMA compaction
3 are as follows:

- 4
5 1. Determine the arithmetic mean, X_m , for compaction of the lot:
6

7
$$X_m = \frac{\sum x}{n}$$

8
9 Where:

10 x = individual compaction test values for each subplot in the lot.

11 $\sum x$ = summation of individual compaction test values

12 n = total number test values
13

- 14 2. Compute the sample standard deviation, “S,” for each constituent:
15

16
$$S = \left[\frac{n\sum x^2 - (\sum x)^2}{n(n-1)} \right]^{\frac{1}{2}}$$

17
18 Where:

19 $\sum x^2$ = summation of the squares of individual compaction test values

20 $(\sum x)^2$ = summation of the individual compaction test values squared
21

- 22 3. Compute the lower quality index (Q_L):
23

24
$$Q_L = \frac{X_m - LSL}{S}$$

25
26 Where:

27 $LSL = 91.5$
28

- 29 4. Determine P_L (the percent within the lower Specification limit which
30 corresponds to a given Q_L) from Table 1. For negative values of Q_L , P_L is
31 equal to 100 minus the table P_L . If the value of Q_L does not correspond
32 exactly to a figure in the table, use the next higher value.
33

- 34 5. Determine the quality level (the total percent within Specification limits):
35

36 Quality Level = P_L
37

- 38 6. Using the quality level from step 5, determine the composite pay factor
39 (CPF) from Table 2.
40

- 41 7. If the CPF determined from step 6 is 1.00 or greater: use that CPF for the
42 compaction lot; however, the maximum HMA compaction CPF using an
43 $LSL = 91.5$ shall be 1.05.
44

- 1 8. If the CPF from step 6 is not 1.00 or greater: repeat steps 3 through 6
2 using an LSL = 91.0. The value thus determined shall be the HMA
3 compaction CPF for that lot; however, the maximum HMA compaction CPF
4 using an LSL = 91.00 shall be 1.00.
5

6 **1-06.2(2)D4 QUALITY LEVEL CALCULATION**

7 The first paragraph (excluding the numbered list) is revised to read:
8

9 The procedures for determining the quality level and pay factors for a material, other
10 than HMA compaction, are as follows:
11

12 1-07.AP1

13 **Section 1-07, Legal Relations and Responsibilities to the Public**

14 **April 2, 2018**

15 **1-07.5 ENVIRONMENTAL REGULATIONS**

16 This section is supplemented with the following new subsections:
17

18 **1-07.5(5) U.S. Army Corps of Engineers**

19 When temporary fills are permitted, the Contractor shall remove fills in their entirety
20 and the affected areas returned to pre-construction elevations.
21

22 If a U.S. Army Corps of Engineers permit is noted in Section 1-07.6 of the Special
23 Provisions, the Contractor shall retain a copy of the permit or the verification letter
24 (in the case of a Nationwide Permit) on the worksite for the life of the Contract. The
25 Contractor shall provide copies of the permit or verification letter to all
26 subcontractors involved with the authorized work prior to their commencement of
27 any work in waters of the U.S.
28

29 **1-07.5(6) U.S. Fish/Wildlife Services and National Marine Fisheries**
30 **Service**

31 The Contracting Agency will provide fish exclusion and handling services if the Work
32 dictates. However, if the Contractor discovers any fish stranded by the project and a
33 Contracting Agency biologist is not available, they shall immediately release the fish
34 into a flowing stream or open water.
35

36 **1-07.5(1) GENERAL**

37 The first sentence is deleted and replaced with the following:
38

39 No Work shall occur within areas under the jurisdiction of resource agencies unless
40 authorized in the Contract.
41

42 The third paragraph is deleted.
43

44 **1-07.5(2) STATE DEPARTMENT OF FISH AND WILDLIFE**

45 This section is revised to read:
46

47 In doing the Work, the Contractor shall:
48

- 49 1. Not degrade water in a way that would harm fish, wildlife, or their habitat.

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2. Not place materials below or remove them from the ordinary high water line except as may be specified in the Contract.
3. Not allow equipment to enter waters of the State except as specified in the Contract.
4. Revegetate in accordance with the Plans, unless the Special Provisions permit otherwise.
5. Prevent any fish-threatening silt buildup on the bed or bottom of any body of water.
6. Ensure continuous stream flow downstream of the Work area.
7. Dispose of any project debris by removal, burning, or placement above high-water flows.
8. Immediately notify the Engineer and stop all work causing impacts, if at any time, as a result of project activities, fish are observed in distress or a fish kill occurs.

If the Work in (1) through (3) above differs little from what the Contract requires, the Contracting Agency will measure and pay for it at unit Contract prices. But if Contract items do not cover those areas, the Contracting Agency will pay pursuant to Section 1-09.4. Work in (4) through (8) above shall be incidental to Contract pay items.

1-07.5(3) STATE DEPARTMENT OF ECOLOGY

This section is revised to read:

In doing the Work, the Contractor shall:

1. Comply with Washington State Water Quality Standards.
2. Perform Work in such a manner that all materials and substances not specifically identified in the Contract documents to be placed in the water do not enter waters of the State, including wetlands. These include, but are not limited to, petroleum products, hydraulic fluid, fresh concrete, concrete wastewater, process wastewater, slurry materials and waste from shaft drilling, sediments, sediment-laden water, chemicals, paint, solvents, or other toxic or deleterious materials.
3. Use equipment that is free of external petroleum-based products.
4. Remove accumulations of soil and debris from drive mechanisms (wheels, tracks, tires) and undercarriage of equipment prior to using equipment below the ordinary high water line.

- 1 5. Clean loose dirt and debris from all materials placed below the ordinary
2 high water line. No materials shall be placed below the ordinary high water
3 line without the Engineer's concurrence.
- 4
- 5 6. When a violation of the Construction Stormwater General Permit (CSWGP)
6 occurs, immediately notify the Engineer and fill out WSDOT Form 422-011,
7 Contractor ECAP Report, and submit the form to the Engineer within 48
8 hours of the violation.
- 9
- 10 7. Once Physical Completion has been given, prepare a Notice of
11 Termination (Ecology Form ECY 020-87) and submit the Notice of
12 Termination electronically to the Engineer in a PDF format a minimum of 7
13 calendar days prior to submitting the Notice of Termination to Ecology.
- 14
- 15 8. Transfer the CSWGP coverage to the Contracting Agency when Physical
16 Completion has been given and the Engineer has determined that the
17 project site is not stabilized from erosion.
- 18
- 19 9. Submit copies of all correspondence with Ecology electronically to the
20 Engineer in a PDF format within four calendar days.
- 21

22 **1-07.5(4) AIR QUALITY**

23 This section is revised to read:

24
25 The Contractor shall comply with all regional clean air authority and/or State
26 Department of Ecology rules and regulations.

27
28 The air quality permit process may include additional State Environment Policy Act
29 (SEPA) requirements. Contractors shall contact the appropriate regional air pollution
30 control authority well in advance of beginning Work.

31
32 When the Work includes demolition or renovation of any existing facility or structure
33 that contains Asbestos Containing Material (ACM) and/or Presumed Asbestos-
34 Containing Material (PACM), the Contractor shall comply with the National Emission
35 Standards for Hazardous Air Pollutants (NESHAP).

36
37 Any requirements included in Federal and State regulations regarding air quality that
38 applies to the "owner or operator" shall be the responsibility of the Contractor.

39 40 **1-07.7(1) GENERAL**

41 The first sentence of the third paragraph is revised to read:

42
43 When the Contractor moves equipment or materials on or over Structures, culverts
44 or pipes, the Contractor may operate equipment with only the load-limit restrictions
45 in Section 1-07.7(2).

46
47 The first sentence of the last paragraph is revised to read:

48
49 Unit prices shall cover all costs for operating over Structures, culverts and pipes.

50

1 **1-07.9(2) POSTING NOTICES**

2 The second sentence of the first paragraph (up until the colon) is revised to read:

3
4 The Contractor shall ensure the most current edition of the following are posted:

5
6 In items 1 through 10, the revision dates are deleted.

7
8 **1-07.11(2) CONTRACTUAL REQUIREMENTS**

9 In this section, "creed" is revised to read "religion."

10
11 Item numbers 1 through 9 are revised to read 2 through 10, respectively.

12
13 After the preceding Amendment is applied, the following new item number 1 is inserted:

- 14
15 1. The Contractor shall maintain a Work site that is free of harassment,
- 16 humiliation, fear, hostility and intimidation at all times. Behaviors that violate this
- 17 requirement include but are not limited to:
- 18
 - 19 a. Persistent conduct that is offensive and unwelcome.
 - 20
 - 21 b. Conduct that is considered to be hazing.
 - 22
 - 23 c. Jokes about race, gender, or sexuality that are offensive.
 - 24
 - 25 d. Unwelcome, unwanted, rude or offensive conduct or advances of a sexual
 - 26 nature which interferes with a person's ability to perform their job or
 - 27 creates an intimidating, hostile, or offensive work environment.
 - 28
 - 29 e. Language or conduct that is offensive, threatening, intimidating or hostile
 - 30 based on race, gender, or sexual orientation.
 - 31
 - 32 f. Repeating rumors about individuals in the Work Site that are considered to
 - 33 be harassing or harmful to the individual's reputation.
 - 34

35 **1-07.11(5) SANCTIONS**

36 This section is supplemented with the following:

37
38 Immediately upon the Engineer's request, the Contractor shall remove from the

39 Work site any employee engaging in behaviors that promote harassment,

40 humiliation, fear or intimidation including but not limited to those described in these

41 specifications.

42
43 **1-07.11(6) INCORPORATION OF PROVISIONS**

44 The first sentence is revised to read:

45
46 The Contractor shall include the provisions of Section 1-07.11(2) Contractual

47 Requirements (1) through (5) and the Section 1-07.11(5) Sanctions in every

48 subcontract including procurement of materials and leases of equipment.

49

1 **1-07.18 PUBLIC LIABILITY AND PROPERTY DAMAGE INSURANCE**

2 Item number 1 is supplemented with the following new sentence:

3
4 This policy shall be kept in force from the execution date of the Contract until the
5 Physical Completion Date.

6
7 1-08.AP1

8 **Section 1-08, Prosecution and Progress**
9 **January 2, 2018**

10 **1-08.5 TIME FOR COMPLETION**

11 Item number 2 of the sixth paragraph is supplemented with the following:

- 12
13 f. A copy of the Notice of Termination sent to the Washington State Department of
14 Ecology (Ecology); the elapse of 30 calendar days from the date of receipt of
15 the Notice of Termination by Ecology; and no rejection of the Notice of
16 Termination by Ecology. This requirement will not apply if the Construction
17 Stormwater General Permit is transferred back to the Contracting Agency in
18 accordance with Section 8-01.3(16).

19
20 **1-08.7 MAINTENANCE DURING SUSPENSION**

21 The fifth paragraph is revised to read:

22
23 The Contractor shall protect and maintain all other Work in areas not used by traffic.
24 All costs associated with protecting and maintaining such Work shall be the
25 responsibility of the Contractor.

26
27 1-09.AP1

28 **Section 1-09, Measurement and Payment**
29 **April 2, 2018**

30 **1-09.2(2) SPECIFIC REQUIREMENTS FOR BATCHING SCALES**

31 The last sentence of the first paragraph is revised to read:

32
33 Batching scales used for concrete or hot mix asphalt shall not be used for batching
34 other materials.

35
36 2-02.AP2

37 **Section 2-02, Removal of Structures and Obstructions**
38 **April 2, 2018**

39 **2-02.3(3) REMOVAL OF PAVEMENT, SIDEWALKS, CURBS, AND GUTTERS**

40 In item number 3 of the first paragraph, the second sentence is revised to read:

41
42 For concrete pavement removal, a second vertical full depth relief saw cut offset 12
43 to 18 inches from and parallel to the initial saw cut is also required, unless the
44 Engineer allows otherwise.

45

1 2-09.AP2
2 **Section 2-09, Structure Excavation**
3 **April 2, 2018**

4 **2-09.2 MATERIALS**

5 In the first paragraph, the references to “Portland Cement” and “Aggregates for Portland
6 Cement Concrete” are revised to read:

7
8 Cement 9-01
9 Fine Aggregate for Concrete 9-03.1(2)

10
11 **2-09.3(3)D SHORING AND COFFERDAMS**

12 The first sentence of the sixth paragraph is revised to read:

13
14 Structural shoring and cofferdams shall be designed for conditions stated in this
15 Section using methods shown in Division I Section 5 of the AASHTO *Standard*
16 *Specifications for Highway Bridges* Seventeenth Edition – 2002 for allowable stress
17 design, or the AASHTO *LRFD Bridge Design Specifications* for load and resistance
18 factor design.

19
20 3-01.AP3
21 **Section 3-01, Production from Quarry and Pit Sites**
22 **April 2, 2018**

23 **3-01.1 DESCRIPTION**

24 The first paragraph is revised to read:

25
26 This Work shall consist of manufacturing and producing crushed and screened
27 aggregates including pit run aggregates of the kind, quality, and grading specified
28 for use in the construction of concrete, hot mix asphalt, crushed surfacing,
29 maintenance rock, ballast, gravel base, gravel backfill, gravel borrow, riprap, and
30 bituminous surface treatments of all descriptions.

31
32 4-04.AP4
33 **Section 4-04, Ballast and Crushed Surfacing**
34 **April 2, 2018**

35 **4-04.3(5) SHAPING AND COMPACTION**

36 This section is supplemented with the following new paragraph:

37
38 When using 100% Recycled Concrete Aggregate, the Contractor may submit a
39 written request to use a test point evaluation for compaction acceptance testing in
40 lieu of compacting to 95% of the standard density as determined by the
41 requirements of Section 2-03.3(14)D. The test point evaluation shall be performed in
42 accordance with SOP 738.

43
44 5-01.AP5
45 **Section 5-01, Cement Concrete Pavement Rehabilitation**
46 **April 2, 2018**

1 **5-01.3(4) REPLACE CEMENT CONCRETE PANEL**

2 The last sentence of the fourth to last paragraph is revised to read:

3
4 If the replacement panel is located in an area that will be ground as part of concrete
5 pavement grinding in accordance with Section 5-01.3(9), the surface smoothness
6 shall be measured, by the Contractor, in conjunction with the smoothness
7 measurement done in accordance with Section 5-01.3(10).

8
9 5-04.AP5

10 **Section 5-04, Hot Mix Asphalt**

11 **April 2, 2018**

12 **5-04.1 DESCRIPTION**

13 The last sentence of the first paragraph is revised to read:

14
15 The manufacture of HMA may include additives or processes that reduce the
16 optimum mixing temperature (Warm Mix Asphalt) or serve as a compaction aid in
17 accordance with these Specifications.

18
19 **5-04.2 MATERIALS**

20 The reference to "Warm Mix Asphalt Additive" is revised to read "HMA Additive."

21
22 **5-04.2(1) HOW TO GET AN HMA MIX DESIGN ON THE QPL**

23 The last bullet in the first paragraph is revised to read:

- 24
25 • Do not include HMA additives that reduce the optimum mixing temperature or
26 serve as a compaction aid when developing a mix design or submitting a mix
27 design for QPL evaluation. The use of HMA additives is not part of the process
28 for obtaining approval for listing a mix design on the QPL. Refer to Section 5-
29 04.2(2)B.

30
31 In the table, "WSDOT Standard Practice QC-8" is revised to read "WSDOT Standard
32 Practice QC-8 located in the WSDOT Materials Manual M 46-01."

33
34 **5-04.2(1)C MIX DESIGN RESUBMITTAL FOR QPL APPROVAL**

35 Item number 3 of the first paragraph is revised to read:

- 36
37 3. Changes in modifiers used in the asphalt binder.

38
39 **5-04.2(2)B USING WARM MIX ASPHALT PROCESSES**

40 This section, including title, is revised to read:

41
42 **5-04.2(2)B Using HMA Additives**

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

- Do not use additives that reduce the mixing temperature in accordance with Section 5-04.3(6) in the production of High RAP/Any RAS mixtures.
- Before using additives, obtain the Engineer’s approval using WSDOT Form 350-076 to describe the proposed additive and process.

5-04.3(3)A MIXING PLANT

In item number 5 of the first paragraph, “WSDOT T 168” is revised to read “FOP for AASHTO T 168.”

5-04.3(4) PREPARATION OF EXISTING PAVED SURFACES

The first sentence of the fourth paragraph is revised to read:

Unless otherwise allowed by the Engineer, use cationic emulsified asphalt CSS-1, CSS-1h, or Performance Graded (PG) asphalt for tack coat.

5-04.3(6) MIXING

The first paragraph is revised to read:

The asphalt supplier shall introduce recycling agent and anti-stripping additive, in the amount designated on the QPL for the mix design, into the asphalt binder prior to shipment to the asphalt mixing plant.

The seventh paragraph is revised to read:

Upon discharge from the mixer, ensure that the temperature of the HMA does not exceed the optimum mixing temperature shown on the accepted Mix Design Report by more than 25°F, or as allowed by the Engineer. When an additive is included in the manufacture of HMA, do not heat the additive (at any stage of production including in binder storage tanks) to a temperature higher than the maximum recommended by the manufacturer of the additive.

5-04.3(7) SPREADING AND FINISHING

The last row of the table is revised to read:

$\frac{3}{8}$ inch	0.25 feet	0.30 feet
--------------------	-----------	-----------

5-04.3(8) AGGREGATE ACCEPTANCE PRIOR TO INCORPORATION IN HMA

The following new paragraph is inserted after the first paragraph:

The Contracting Agency’s combined aggregate bulk specific gravity (Gsb) blend as shown on the HMA Mix Design will be used for VMA calculations until the Contractor submits a written request for a Gsb test. The new Gsb will be used in the VMA calculations for HMA from the date the Engineer receives the written request for a Gsb retest. The Contractor may request aggregate specific gravity (Gsb) testing be performed by the Contracting Agency twice per project. The Gsb blend of the combined stockpiles will be used to calculate voids in mineral aggregate (VMA) of any HMA produced after the new Gsb is determined.

1
2 **5-04.3(9)A1 TEST SECTION – WHEN REQUIRED, WHEN TO STOP**

3 The following new row is inserted after the second row in Table 9:

4

VMA	Minimum PF _i of 0.95 based on the criteria in Section 5-04.3(9)B4 ²	None ⁴
-----	---	-------------------

5
6 **5-04.3(9)A2 TEST SECTION – EVALUATING THE HMA MIXTURE IN A TEST SECTION**

7
8 In Table 9a, the test property “Gradation, Asphalt Binder, and V_a” is revised to read
9 “Gradation, Asphalt Binder, VMA, and V_a”

10
11 **5-04.3(9)B3 MIXTURE STATISTICAL EVALUATION – ACCEPTANCE TESTING**

12
13 In Table 11, “V_a” is revised to read “VMA and V_a”

14
15 **5-04.3(9)B5 MIXTURE STATISTICAL EVALUATION – COMPOSITE PAY FACTORS (CPF)**

16
17 The following new row is inserted above the last row in Table 12:

18

Voids in Mineral Aggregate (VMA)	2
----------------------------------	---

19
20 **5-04.3(9)B7 MIXTURE STATISTICAL EVALUATION – RETESTS**

21 The second to last sentence is revised to read:

22
23 The sample will be tested for a complete gradation analysis, asphalt binder content,
24 VMA and V_a, and the results of the retest will be used for the acceptance of the HMA
25 mixture in place of the original mixture subplot sample test results.

26
27 **5-04.3(10)C1 HMA COMPACTION STATISTICAL EVALUATION – LOTS AND SUBLOTS**

28
29 The bulleted item in the fourth paragraph is revised to read:

- 30
31
- 32 • For a compaction lot in progress with a compaction CPF less than 0.75 using
33 an LSL = 91.0, a new compaction lot will begin at the Contractor’s request after
34 the Engineer is satisfied that material conforming to the Specifications can be
35 produced. See also Section 5-04.3(11)F.

36
37 **5-04.3(10)C2 HMA COMPACTION STATISTICAL EVALUATION – ACCEPTANCE TESTING**

38 In the table, “WSDOT FOP for AASHTO T 355” is revised to read “FOP for AASHTO T
39 355.”

40
41 **5-04.3(10)C3 HMA STATISTICAL COMPACTION – PRICE ADJUSTMENTS**

42 In the first paragraph, “WSDOT FOP for AASHTO T 355” is revised to read “FOP for
43 AASHTO T 355.”

44
45 The first sentence in the second paragraph is revised to read:

1
2 For each HMA compaction lot (that is accepted by Statistical Evaluation) which does
3 not meet the criteria in the preceding paragraph, the compaction lot shall be
4 evaluated in accordance with Section 1-06.2(2)D5 to determine the appropriate
5 Composite Pay Factor (CPF).
6

7 The last two paragraphs are revised to read:

8
9 Determine the Compaction Price Adjustment (CPA) from the table below, selecting
10 the equation for CPA that corresponds to the value of CPF determined above.
11

Calculating HMA Compaction Price Adjustment (CPA)	
Value of CPF	Equation for Calculating CPA
When CPF > 1.00	$CPA = [0.80 \times (CPF - 1.00)] \times Q \times UP$
When CPF = 1.00	CPA = \$0
When CPF < 1.0	$CPA = [0.40 \times (CPF - 1.00)] \times Q \times UP$

12
13 Where

14 CPA = Compaction Price Adjustment for the compaction lot (\$)

15 CPF = Composite Pay Factor for the compaction lot (maximum is 1.05)

16 Q = Quantity in the compaction lot (tons)

17 UP = Unit price of the HMA in the compaction lot (\$/ton)
18

19 **5-04.3(13) SURFACE SMOOTHNESS**

20 The second to last paragraph is revised to read:

21
22 When concrete pavement is to be placed on HMA, the surface tolerance of the HMA
23 shall be such that no surface elevation lies above the Plan grade minus the
24 specified Plan depth of concrete pavement. Prior to placing the concrete pavement,
25 bring any such irregularities to the required tolerance by grinding or other means
26 allowed by the Engineer.
27

28 **5-04.5 PAYMENT**

29 The paragraph following the Bid item "Crack Sealing-LF," per linear foot is revised to
30 read:

31
32 The unit Contract price per linear foot for "Crack Sealing-LF" shall be full payment
33 for all costs incurred to perform the Work described in Section 5-04.3(4)A.
34

35 5-05.AP5

36 **Section 5-05, Cement Concrete Pavement**

37 **April 2, 2018**

38 **5-05.1 DESCRIPTION**

39 In the first paragraph, "portland cement concrete" is revised to read "cement concrete."
40

41 **5-05.2 MATERIALS**

42 In the first paragraph, the reference to "Portland Cement" is revised to read:
43

44 Cement 9-01

1
2 **5-05.3(1) CONCRETE MIX DESIGN FOR PAVING**

3 The table title in item number 4 is revised to read **Concrete Batch Weights.**

4
5 In item 4a, "Portland Cement" is revised to read "Cement."

6
7 **5-05.3(4) MEASURING AND BATCHING MATERIALS**

8 Item number 2 is revised to read:

- 9
10 2. **Batching Materials** – On all projects requiring more than 2,500 cubic yards of
11 concrete for paving, the batching plant shall be equipped to proportion
12 aggregates and cement by weight by means of automatic and interlocked
13 proportioning devices of accepted type.

14
15 **5-05.3(4)A ACCEPTANCE OF PORTLAND CEMENT CONCRETE**
16 **PAVEMENT**

17
18 This section's title is revised to read:

19
20 **Acceptance of Portland Cement or Blended Hydraulic Cement Concrete**
21 **Pavement**

22
23 The first sentence is revised to read:

24
25 Acceptance of portland cement or blended hydraulic cement concrete pavement
26 shall be as provided under statistical or nonstatistical acceptance.

27
28 **5-05.4 MEASUREMENT**

29 The last paragraph is revised to read:

30
31 The calculation for cement concrete compliance adjustment is the volume of
32 concrete represented by the CPF and the Thickness deficiency adjustment.

33
34 **5-05.5 PAYMENT**

35 The bid item "Portland Cement Concrete Compliance Adjustment," by calculation, and
36 the paragraph following this bid item are revised to read:

37
38 "Cement Concrete Compliance Adjustment," by calculation.

39
40 Payment for "Cement Concrete Compliance Adjustment" will be calculated by
41 multiplying the unit Contract price for the cement concrete pavement, times the
42 volume for adjustment, times the percent of adjustment determined from the
43 calculated CPF and the Deficiency Adjustment listed in Section 5-05.5(1)A.

44
45 6-01.AP6

46 **Section 6-01, General Requirements for Structures**
47 **January 2, 2018**

1 **6-01.10 UTILITIES SUPPORTED BY OR ATTACHED TO BRIDGES**

2 In the third paragraph, "Federal Standard 595" is revised to read "SAE AMS Standard
3 595."
4

5 **6-01.12 FINAL CLEANUP**

6 The second paragraph is deleted.
7

8 6-02.AP6

9 **Section 6-02, Concrete Structures**

10 **April 2, 2018**

11 **6-02.1 DESCRIPTION**

12 The first sentence is revised to read:

13
14 This Work consists of the construction of all Structures (and their parts) made of
15 portland cement or blended hydraulic cement concrete with or without
16 reinforcement, including bridge approach slabs.
17

18 **6-02.2 MATERIALS**

19 In the first paragraph, the references to "Portland Cement" and "Aggregates for Portland
20 Cement Concrete" are revised to read:

21
22 Cement 9-01
23 Aggregates for Concrete 9-03.1
24

25 **6-02.3(2) PROPORTIONING MATERIALS**

26 The second paragraph is revised to read:

27
28 Unless otherwise specified, the Contractor shall use Type I or II portland cement or
29 blended hydraulic cement in all concrete as defined in Section 9-01.2(1).
30

31 **6-02.3(2)A CONTRACTOR MIX DESIGN**

32 The last sentence of the last paragraph is revised to read:

33
34 For all other concrete, air content shall be a minimum of 4.5 percent and a
35 maximum of 7.5 percent for all concrete placed above the finished ground line
36 unless noted otherwise.
37

38 **6-02.3(2)A1 CONTRACTOR MIX DESIGN FOR CONCRETE CLASS 4000D**

39 Item number 5 of the first paragraph is deleted.
40

41 Item number 6 of the first paragraph (after the preceding Amendment is applied) is
42 renumbered to 5.
43

44 **6-02.3(2)B COMMERCIAL CONCRETE**

45 The second paragraph is revised to read:

46
47 Where concrete Class 3000 is specified for items such as, culvert headwalls,
48 plugging culverts, concrete pipe collars, pipe anchors, monument cases, Type PPB,
49 PS, I, FB and RM signal standards, pedestals, cabinet bases, guardrail anchors,

1 fence post footings, sidewalks, concrete curbs, curbs and gutters, and gutters, the
2 Contractor may use commercial concrete. If commercial concrete is used for
3 sidewalks, concrete curbs, curbs and gutters, and gutters, it shall have a minimum
4 cementitious material content of 564 pounds per cubic yard of concrete, shall be air
5 entrained, and the tolerances of Section 6-02.3(5)C shall apply.
6

7 **6-02.3(4)D TEMPERATURE AND TIME FOR PLACEMENT**

8 The following is inserted after the first sentence of the first paragraph:
9

10 The upper temperature limit for placement for Class 4000D concrete may be
11 increased to a maximum of 80°F if allowed by the Engineer.
12

13 **6-02.3(5)C CONFORMANCE TO MIX DESIGN**

14 Item number 1 of the second paragraph is revised to read:
15

- 16 1. Cement weight plus 5 percent or minus 1 percent of that specified in the
17 mix design.
18

19 **6-02.3(6)A1 HOT WEATHER PROTECTION**

20 The first paragraph is revised to read:
21

22 The Contractor shall provide concrete within the specified temperature limits.
23 Cooling of the coarse aggregate piles by sprinkling with water is permitted provided
24 the moisture content is monitored, the mixing water is adjusted for the free water in
25 the aggregate and the coarse aggregate is removed from at least 1 foot above the
26 bottom of the pile. Sprinkling of fine aggregate piles with water is not allowed.
27 Refrigerating mixing water or replacing all or part of the mixing water with crushed
28 ice is permitted, provided the ice is completely melted by placing time.
29

30 The second sentence of the second paragraph is revised to read:
31

32 These surfaces include forms, reinforcing steel, steel beam flanges, and any others
33 that touch the concrete.
34

35 **6-02.3(10)D4 MONITORING BRIDGE DECK CONCRETE TEMPERATURE** 36 **AFTER PLACEMENT**

37 This section, including title, is revised to read:
38

39 **6-02.3(10)D4 Vacant**

41 **6-02.3(10)D5 BRIDGE DECK CONCRETE FINISHING AND TEXTURING**

42 In the third subparagraph of the first paragraph, the last sentence is revised to read:
43

44 The Contractor shall texture the bridge deck surface to within 3-inches minimum
45 and 24-inches maximum of the edge of concrete at expansion joints, within 1-foot
46 minimum and 2-feet maximum of the curb line, and within 3-inches minimum and 9-
47 inches maximum of the perimeter of bridge drain assemblies.
48

49 **6-02.3(10)F BRIDGE APPROACH SLAB ORIENTATION AND ANCHORS**

50 The last paragraph is deleted.

1
2 **6-02.3(13)A STRIP SEAL EXPANSION JOINT SYSTEM**

3 In item number 3 of the third paragraph, "Federal Standard 595" is revised to read "SAE
4 AMS Standard 595."
5

6 **6-02.3(23) OPENING TO TRAFFIC**

7 This section is supplemented with the following new paragraph:
8

9 After curing bridge approach slabs in accordance with Section 6-02.3(11), the bridge
10 approach slabs may be opened to traffic when a minimum compressive strength of
11 2,500 psi is achieved.
12

13 **6-02.3(24)C PLACING AND FASTENING**

14 The fourth sentence of the second paragraph is revised to read:
15

16 All epoxy-coated bars in the top mat of the bridge deck shall be tied at all
17 intersections, however they may be tied at alternate intersections when spacing is
18 less than 1 foot in each direction and they are supported by continuous supports
19 meeting all other requirements of supports for epoxy-coated bars.
20

21 The sixth paragraph (excluding the numbered list) is revised to read:
22

23 Precast concrete supports (or other accepted devices) shall be used to maintain the
24 concrete coverage required by the Plans. The precast concrete supports shall:
25

26 Item number 2 of the sixth paragraph is revised to read:
27

- 28 2. Have a compressive strength equal to or greater than that of the concrete in
29 which they are embedded.
30

31 The first sentence of the seventh paragraph is revised to read:
32

33 In slabs, each precast concrete support shall have either: (1) a grooved top that will
34 hold the reinforcing bar in place, or (2) an embedded wire that protrudes and is tied
35 to the reinforcing steel.
36

37 The eighth paragraph is revised to read:
38

39 Precast concrete supports may be accepted based on a Manufacturer's Certificate
40 of Compliance.
41

42 The ninth paragraph (excluding the numbered list) is revised to read:
43

44 In lieu of precast concrete supports, the Contractor may use metal or all-plastic
45 supports to hold uncoated bars. Any surface of a metal support that will not be
46 covered by at least ½ inch of concrete shall be one of the following:
47

48 The tenth paragraph is revised to read:
49

1 In lieu of precast concrete supports, epoxy-coated reinforcing bars may be
2 supported by one of the following:

- 3
- 4 1. Metal supports coated entirely with a dielectric material such as epoxy or
5 plastic,
- 6
- 7 2. Other epoxy-coated reinforcing bars, or
- 8
- 9 3. All-plastic supports.

10
11 The following new paragraph is inserted after the tenth paragraph:

12
13 Damaged coatings on metal bar supports shall be repaired prior to placing concrete.

14
15 The twelfth paragraph (after the preceding Amendment is applied) is revised to read:

16
17 All-plastic supports shall be lightweight, non-porous, and chemically inert in
18 concrete. All-plastic supports shall have rounded seatings, shall not deform under
19 load during normal temperatures, and shall not shatter or crack under impact
20 loading in cold weather. All-plastic supports shall be placed at spacings greater than
21 1 foot along the bar and shall have at least 25 percent of their gross place area
22 perforated to compensate for the difference in the coefficient of thermal expansion
23 between plastic and concrete. The shape and configuration of all-plastic supports
24 shall permit complete concrete consolidation in and around the support.

25
26 The thirteenth paragraph (after the preceding Amendment is applied) is revised to read:

27
28 A “mat” is two adjacent and perpendicular layers of reinforcing steel. In bridge
29 decks, top and bottom mats shall be supported adequately enough to hold both in
30 their proper positions. If bar supports directly support, or are directly supported on
31 No. 4 bars, they shall be spaced at not more than 3-foot intervals (or not more than
32 4-foot intervals for bars No. 5 and larger). Wire ties to girder stirrups shall not be
33 considered as supports. To provide a rigid mat, the Contractor shall add other
34 supports and tie wires to the top mat as needed.

35
36 **6-02.3(27) CONCRETE FOR PRECAST UNITS**

37 The last sentence of the first paragraph is revised to read:

38
39 Type III portland cement or blended hydraulic cement is permitted to be used in
40 precast concrete units.

41
42 **6-02.3(28)B CURING**

43 In the second paragraph, the reference to Section 6-02.3(25)B is revised to read Section
44 6-02.3(25)C.

45
46 **6-02.3(28)D CONTRACTORS CONTROL STRENGTH**

47 In the first paragraph, “WSDOT FOP for AASHTO T 23” is revised to read “FOP for
48 AASHTO T 23.”
49

1 6-05.AP6

2 **Section 6-05, Piling**
3 **January 2, 2018**

4 **6-05.3(9)A PILE DRIVING EQUIPMENT APPROVAL**

5 The fourth sentence of the second paragraph is revised to read:

6

7 For prestressed concrete piles, the allowable driving stress in kips per square inch

8 shall be $0.095 \cdot \sqrt{f'_c}$ plus prestress in tension, and $0.85f'_c$ minus prestress in
9 compression, where f'_c is the concrete compressive strength in kips per square inch.

10

11 6-07.AP6

12 **Section 6-07, Painting**
13 **January 2, 2018**

14 **6-07.3(6)A PAINT CONTAINERS**

15 In item number 2 of the first paragraph, "Federal Standard 595" is revised to read "SAE
16 AMS Standard 595."

17

18 6-08.AP6

19 **Section 6-08, Bituminous Surfacing on Structure Decks**
20 **January 2, 2018**

21 **6-08.3(7)A CONCRETE DECK PREPARATION**

22 The first sentence of the first paragraph is revised to read:

23

24 The Contractor, with the Engineer, shall inspect the exposed concrete deck to
25 establish the extent of bridge deck repair in accordance with Section 6-09.3(6).

26

27 6-09.AP6

28 **Section 6-09, Modified Concrete Overlays**
29 **January 2, 2018**

30 **6-09.3 CONSTRUCTION REQUIREMENTS**

31 This section is supplemented with the following new subsection:

32

33 **6-09.3(15) Sealing and Texturing Concrete Overlay**

34 After the requirements for checking for bond have been met, all joints and visible
35 cracks shall be filled and sealed with a high molecular weight methacrylate resin
36 (HMWM). The Contractor may use compressed air to accelerate drying of the deck
37 surface for crack identification and sealing. Cracks 1/16 inch and greater in width
38 shall receive two applications of HMWM. Immediately following the application of
39 HMWM, the wetted surface shall be coated with sand for abrasive finish.

40

41 After all cracks have been filled and sealed and the HMWM resin has cured, the
42 concrete overlay surface shall receive a longitudinally sawn texture in accordance
43 with Section 6-02.3(10)D5.

44

1 Traffic shall not be permitted on the finished concrete until it has reached a
2 minimum compressive strength of 3,000 psi as verified by rebound number
3 determined in accordance with ASTM C805 and the longitudinally sawn texture is
4 completed.

5
6 **6-09.3(1)B ROTARY MILLING MACHINES**

7 This section is revised to read:

8
9 Rotary milling machines used to remove an upper layer of existing concrete overlay,
10 when present, shall have a maximum operating weight of 50,000 pounds and
11 conform to Section 6-08.3(5)B.

12
13 **6-09.3(1)C HYDRO-DEMOLITION MACHINES**

14 The first sentence of this section is revised to read:

15
16 Hydro-demolition machines shall consist of filtering and pumping units operating in
17 conjunction with a remote-controlled robotic device, using high-velocity water jets to
18 remove sound concrete to the nominal scarification depth shown in the Plans with a
19 single pass of the machine, and with the simultaneous removal of deteriorated
20 concrete.

21
22 **6-09.3(1)D SHOT BLASTING MACHINES**

23 This section, including title, is revised to read:

24
25 **6-09.3(1)D Vacant**

26
27 **6-09.3(2) SUBMITTALS**

28 Item number 1 and 2 are revised to read:

- 29
30 1. A Type 1 Working Drawing consisting of catalog cuts and operating parameters
31 of the hydro-demolition machine selected by the Contractor for use in this
32 project to scarify concrete surfaces.
33
34 2. A Type 1 Working Drawing consisting of catalog cuts, operating parameters,
35 axle loads, and axle spacing of the rotary milling machine (if used to remove an
36 upper layer of existing concrete overlay when present).
37

38 The first sentence of item number 3 is revised to read:

39
40 A Type 2 Working Drawing of the Runoff Water Disposal Plan.

41
42 **6-09.3(5)A GENERAL**

43 The first sentence of the fourth paragraph is revised to read:

44
45 All areas of the deck that are inaccessible to the selected scarifying machine shall
46 be scarified to remove the concrete surface matrix to a maximum nominal
47 scarification depth shown in the Plans by a method acceptable to the Engineer.

48
49 This section is supplemented with the following:
50

1 Concrete process water generated by scarifying concrete surface and removing
2 existing concrete overlay operations shall be contained, collected, and disposed of
3 in accordance with Section 5-01.3(11) and Section 6-09.3(5)C, and the Section 6-
4 09.3(2) Runoff Water Disposal Plan.

5
6 **6-09.3(5)B TESTING OF HYDRO-DEMOLITION AND SHOT BLASTING**
7 **MACHINES**

8 This section's title is revised to read:

9
10 **Testing of Hydro-Demolition Machines**

11
12 The second paragraph is revised to read:

13
14 In the "sound" area of concrete, the equipment shall be programmed to remove
15 concrete to the nominal scarification depth shown in the Plans with a single pass of
16 the machine.

17
18 **6-09.3(5)D SHOT BLASTING**

19 This section, including title, is revised to read:

20
21 **6-09.3(5)D Vacant**

22
23 **6-09.3(5)E ROTOMILLING**

24 This section, including title, is revised to read:

25
26 **6-09.3(5)E Removing Existing Concrete Overlay Layer by Rotomilling**

27 When the Contractor elects to remove the upper layer of existing concrete overlay,
28 when present, by rotomilling prior to final scarifying, the entire concrete surface of
29 the bridge deck shall be milled to remove the surface matrix to the depth specified in
30 the Plans with a tolerance as specified in Section 6-08.3(5)B. The operating
31 parameters of the rotary milling machine shall be monitored in order to prevent the
32 unnecessary removal of concrete below the specified removal depth.

33
34 **6-09.3(6) FURTHER DECK PREPARATION**

35 The first paragraph is revised to read::

36
37 Once the lane or strip being overlaid has been cleaned of debris from scarifying, the
38 Contractor, with the Engineer, shall perform a visual inspection of the scarified
39 surface. The Contractor shall mark those areas of the existing bridge deck that are
40 authorized by the Engineer for further deck preparation by the Contractor.

41
42 Item number 4 of the second paragraph is deleted.

43
44 The first sentence of the third paragraph is deleted.

45
46 **6-09.3(6)A EQUIPMENT FOR FURTHER DECK PREPARATION**

47 This section is revised to read:

1 Further deck preparation shall be performed using either power driven hand tools
2 conforming to Section 6-09.3(1)A, or hydro-demolition machines conforming to
3 Section 6-09.3(1)C.
4

5 **6-09.3(6)B DECK REPAIR PREPARATION**

6 The second paragraph is deleted.
7

8 The last sentence of the second paragraph (after the preceding Amendment is applied)
9 is revised to read:

10
11 In no case shall the depth of a sawn vertical cut exceed $\frac{3}{4}$ inch or to the top of the
12 top steel reinforcing bars, whichever is less.
13

14 The first sentence of the third to last paragraph is revised to read:

15
16 Where existing steel reinforcing bars inside deck repair areas show deterioration
17 greater than 20-percent section loss, the Contractor shall furnish and place steel
18 reinforcing bars alongside the deteriorated bars in accordance with the details
19 shown in the Standard Plans.
20

21 The last paragraph is deleted.
22

23 **6-09.3(7) SURFACE PREPARATION FOR CONCRETE OVERLAY**

24 The first seven paragraphs are deleted and replaced with the following:
25

26 Following the completion of any required further deck preparation the entire lane or
27 strip being overlaid shall be cleaned to be free from oil and grease, rust and other
28 foreign material that may still be present. These materials shall be removed by
29 detergent-cleaning or other method accepted by the Engineer followed by
30 sandblasting.
31

32 After detergent cleaning and sandblasting is completed, the entire lane or strip
33 being overlaid shall be swept clean in final preparation for placing concrete using
34 either compressed air or vacuum machines.
35

36 Hand tool chipping, sandblasting and cleaning in areas adjacent to a lane or strip
37 being cleaned in final preparation for placing concrete shall be discontinued when
38 final preparation is begun. Scarifying and hand tool chipping shall remain
39 suspended until the concrete has been placed and the requirement for curing time
40 has been satisfied. Sandblasting and cleaning shall remain suspended for the first
41 24 hours of curing time after the completion of concrete placing.
42

43 Scarification, and removal of the upper layer of concrete overlay when present, may
44 proceed during the final cleaning and overlay placement phases of the Work on
45 adjacent portions of the Structure so long as the scarification and concrete overlay
46 removal operations are confined to areas which are a minimum of 100 feet away
47 from the defined limits of the final cleaning or overlay placement in progress. If the
48 scarification and concrete overlay removal impedes or interferes in any way with the
49 final cleaning or overlay placement as determined by the Engineer, the scarification
50 and concrete overlay removal Work shall be terminated immediately and the
51 scarification and concrete overlay removal equipment removed sufficiently away

1 from the area being prepared or overlaid to eliminate the conflict. If the grade is
2 such that water and contaminants from the scarification and concrete overlay
3 removal operation will flow into the area being prepared or overlaid, the scarification
4 and concrete overlay removal operation shall be terminated and shall remain
5 suspended for the first 24 hours of curing time after the completion of concrete
6 placement.

7
8 **6-09.3(12) FINISHING CONCRETE OVERLAY**

9 The third paragraph is deleted.

10
11 The last paragraph is deleted.

12
13 **6-09.3(13) CURING CONCRETE OVERLAY**

14 The first sentence of the first paragraph is revised to read:

15
16 As the finishing operation progresses, the concrete shall be immediately covered
17 with a single layer of clean, new or used, wet burlap.

18
19 The last sentence of the second paragraph is deleted.

20
21 The following two new paragraphs are inserted after the second paragraph:

22
23 As an alternative to the application of burlap and fog spraying described above, the
24 Contractor may propose a curing system using proprietary curing blankets
25 specifically manufactured for bridge deck curing. The Contractor shall submit a Type
26 2 Working Drawing consisting of details of the proprietary curing blanket system,
27 including product literature and details of how the system is to be installed and
28 maintained.

29
30 The wet curing regimen as described shall remain in place for a minimum of 42-
31 hours.

32
33 The last paragraph is deleted.

34
35 **6-09.3(14) CHECKING FOR BOND**

36 The first sentence of the first paragraph is revised to read:

37
38 After the requirements for curing have been met, the entire overlaid surface shall be
39 sounded by the Contractor, in a manner accepted by and in the presence of the
40 Engineer, to ensure total bond of the concrete to the bridge deck.

41
42 The last sentence of the first paragraph is deleted.

43
44 The second paragraph is deleted.

45
46 6-10.AP6

47 **Section 6-10, Concrete Barrier**

48 **April 2, 2018**

1 **6-10.2 MATERIALS**

2 In the first paragraph, the reference to “Portland Cement” is revised to read:

3
4 Cement 9-01

5
6 6-11.AP6

7 **Section 6-11, Reinforced Concrete Walls**
8 **April 2, 2018**

9 **6-11.2 MATERIALS**

10 In the first paragraph, the reference to “Aggregates for Portland Cement Concrete” is
11 revised to read:

12
13 Aggregates for Concrete 9-03.1

14
15 6-12.AP6

16 **Section 6-12, Noise Barrier Walls**
17 **April 2, 2018**

18 **6-12.2 MATERIALS**

19 In the first paragraph, the reference to “Aggregates for Portland Cement Concrete” is
20 revised to read:

21
22 Aggregates for Concrete 9-03.1

23
24 6-13.AP6

25 **Section 6-13, Structural Earth Walls**
26 **April 2, 2018**

27 **6-13.2 MATERIALS**

28 In the first paragraph, the reference to “Aggregates for Portland Cement Concrete” is
29 revised to read:

30
31 Aggregates for Concrete 9-03.1

32
33 6-14.AP6

34 **Section 6-14, Geosynthetic Retaining Walls**
35 **April 2, 2018**

36 **6-14.2 MATERIALS**

37 In the first paragraph, the references to “Portland Cement” and “Aggregates for Portland
38 Cement Concrete” are revised to read:

39
40 Cement 9-01
41 Aggregates for Concrete 9-03.1

42
43 6-16.AP6

44 **Section 6-16, Soldier Pile and Soldier Pile Tieback Walls**
45 **April 2, 2018**

1 **6-16.2 MATERIALS**

2 In the first paragraph, the reference to “Aggregates for Portland Cement Concrete” is
3 revised to read:

4
5 Aggregates for Concrete 9-03.1

6
7 6-18.AP6

8 **Section 6-18, Shotcrete Facing**
9 **January 2, 2018**

10 **6-18.3(3) TESTING**

11 In the last sentence of the first paragraph, “AASHTO T 24” is revised to read “ASTM
12 C1604.”

13
14 **6-18.3(3)B PRODUCTION TESTING**

15 In the last sentence, “AASHTO T 24” is revised to read “ASTM C1604.”

16
17 **6-18.3(4) QUALIFICATIONS OF CONTRACTOR’S PERSONNEL**

18 In the last sentence of the second paragraph, “AASHTO T 24” is revised to read “ASTM
19 C1604.”

20
21 6-19.AP6

22 **Section 6-19, Shafts**
23 **April 2, 2018**

24 **6-19.2 MATERIALS**

25 In the first paragraph, the references to “Portland Cement” and “Aggregates for Portland
26 Cement Concrete” are revised to read:

27
28 Cement 9-01
29 Aggregates for Concrete 9-03.1

30
31 **6-19.3(3)C CONDUCT OF SHAFT CASING INSTALLATION AND REMOVAL**
32 **AND SHAFT**
33 **EXCAVATION OPERATIONS**

34 The first paragraph is supplemented with the following:

35
36 In no case shall shaft excavation and casing placement extend below the bottom of
37 shaft excavation as shown in the Plans.

38
39 **6-19.3(6)E THERMAL WIRE AND THERMAL ACCESS POINT (TAPS)**

40 The third sentence of the third paragraph is revised to read:

41
42 The thermal wire shall extend from the bottom of the reinforcement cage to the top
43 of the shaft, with a minimum of 5-feet of slack wire provided above the top of shaft.

44
45 The following new sentence is inserted after the third sentence of the third paragraph:

46
47 All thermal wires in a shaft shall be equal lengths.

1 7-02.AP7
2 **Section 7-02, Culverts**
3 **April 2, 2018**

4 **7-02.2 MATERIALS**

5 In the first paragraph, the references to “Portland Cement” and “Aggregates for Portland
6 Cement Concrete” are revised to read:

7
8 Cement 9-01
9 Aggregates for Concrete 9-03.1

10
11 **7-02.3(6)A4 EXCAVATION AND BEDDING PREPARATION**

12 The first sentence of the third paragraph is revised to read:

13
14 The bedding course shall be a 6-inch minimum thickness layer of culvert bedding
15 material, defined as granular material either conforming to Section 9-03.12(3) or to
16 AASHTO Grading No. 57 as specified in Section 9-03.1(4)C.

17
18 7-08.AP7
19 **Section 7-08, General Pipe Installation Requirements**
20 **April 2, 2018**

21 **7-08.3(3) BACKFILLING**

22 The fifth sentence of the fourth paragraph is revised to read:

23
24 All compaction shall be in accordance with the Compaction Control Test of Section
25 2-03.3(14)D except in the case that 100% Recycled Concrete Aggregate is used.

26
27 The following new sentences are inserted after the fifth sentence of the fourth paragraph:

28
29 When 100% Recycled Concrete Aggregate is used, the Contractor may submit a
30 written request to use a test point evaluation for compaction acceptance. Test Point
31 evaluation shall be performed in accordance with SOP 738.

32
33 8-01.AP8
34 **Section 8-01, Erosion Control and Water Pollution Control**
35 **April 2, 2018**

36 **8-01.1 DESCRIPTION**

37 This section is revised to read:

38
39 This Work consists of furnishing, installing, maintaining, removing and disposing of
40 best management practices (BMPs), as defined in the Washington Administrative
41 Code (WAC) 173-201A, to manage erosion and water quality in accordance with
42 these Specifications and as shown in the Plans or as designated by the Engineer.

43
44 The Contracting Agency may have a National Pollution Discharge Elimination
45 System Construction Stormwater General Permit (CSWGP) as identified in the
46 Contract Special Provisions. The Contracting Agency may or may not transfer
47 coverage of the CSWGP to the Contractor when a CSWGP has been obtained. The

1 Contracting Agency may not have a CSWGP for the project but may have another
2 water quality related permit as identified in the Contract Special Provisions or the
3 Contracting Agency may not have water quality related permits but the project is
4 subject to applicable laws for the Work. Section 8-01 covers all of these conditions.

6 **8-01.2 MATERIALS**

7 The first paragraph is revised to read:

8
9 Materials shall meet the requirements of the following sections:

11	Corrugated Polyethylene Drain Pipe	9-05.1(6)
12	Quarry Spalls	9-13
13	Erosion Control and Roadside Planting	9-14
14	Construction Geotextile	9-33

16 **8-01.3(1) GENERAL**

17 This section is revised to read:

18
19 Adaptive management shall be employed throughout the duration of the project for
20 the implementation of erosion and water pollution control permit requirements for
21 the current condition of the project site. The adaptive management includes the
22 selection and utilization of BMPs, scheduling of activities, prohibiting unacceptable
23 practices, implementing maintenance procedures, and other managerial practices
24 that when used singularly or in combination, prevent or reduce the release of
25 pollutants to waters of the State. The adaptive management shall use the means
26 and methods identified in this section and means and methods identified in the
27 Washington State Department of Transportation's Temporary Erosion and Sediment
28 Control Manual or the Washington State Department of Ecology's Stormwater
29 Management Manuals for construction stormwater.

30
31 The Contractor shall install a high visibility fence along the site preservation lines
32 shown in the Plans or as instructed by the Engineer.

33
34 Throughout the life of the project, the Contractor shall preserve and protect the
35 delineated preservation area, acting immediately to repair or restore any fencing
36 damaged or removed.

37
38 All discharges to surface waters shall comply with surface water quality standards
39 as defined in Washington Administrative Code (WAC) Chapter 173-201A. All
40 discharges to the ground shall comply with groundwater quality standards WAC
41 Chapter 173-200.

42
43 The Contractor shall comply with the CSWGP when the project is covered by the
44 CSWGP. Temporary Work, at a minimum, shall include the implementation of:

- 45
46 1. Sediment control measures prior to ground disturbing activities to ensure
47 all discharges from construction areas receive treatment prior to
48 discharging from the site.
- 49
50 2. Flow control measures to prevent erosive flows from developing.

3. Water management strategies and pollution prevention measures to prevent contamination of waters that will be discharged to surface waters or the ground.
4. Erosion control measures to stabilize erodible earth not being worked.
5. Maintenance of BMPs to ensure continued compliant performance.
6. Immediate corrective action if evidence suggests construction activity is not in compliance. Evidence includes sampling data, olfactory or visual evidence such as the presence of suspended sediment, turbidity, discoloration, or oil sheen in discharges.

To the degree possible, the Contractor shall coordinate this temporary Work with permanent drainage and erosion control Work the Contract requires.

Clearing, grubbing, excavation, borrow, or fill within the Right of Way shall never expose more erodible earth than as listed below:

Western Washington (West of the Cascade Mountain Crest)		Eastern Washington (East of the Cascade Mountain Crest)	
May 1 through September 30	17 Acres	April 1 through October 31	17 Acres
October 1 through April 30	5 Acres	November 1 through March 31	5 Acres

The Engineer may increase or decrease the limits based on project conditions.

Erodible earth is defined as any surface where soils, grindings, or other materials may be capable of being displaced and transported by rain, wind, or surface water runoff.

Erodible earth not being worked, whether at final grade or not, shall be covered within the specified time period (see the table below), using BMPs for erosion control.

Western Washington (West of the Cascade Mountain Crest)		Eastern Washington (East of the Cascade Mountain Crest)	
October 1 through April 30	2 days maximum	October 1 through June 30	5 days maximum
May 1 to September 30	7 days maximum	November 1 through March 31	10 days maximum

When applicable, the Contractor shall be responsible for all Work required for compliance with the CSWGP including annual permit fees.

If the Engineer, under Section 1-08.6, orders the Work suspended, the Contractor shall continue to comply with this division during the suspension.

1
2 Nothing in this Section shall relieve the Contractor from complying with other
3 Contract requirements.

4
5 **8-01.3(1)A SUBMITTALS**

6 This section's content is deleted.

7
8 This section is supplemented with the following new subsection:

9
10 **8-01.3(1)A1 Temporary Erosion and Sediment Control**

11 A Temporary Erosion and Sediment Control (TESC) plan consists of a narrative
12 section and plan sheets that meets the Washington State Department of Ecology's
13 Stormwater Pollution Prevention Plan (SWPPP) requirement in the CSWGP.
14 Abbreviated TESC plans are not required to include plan sheets and are used on
15 small projects that disturb soil and have the potential to discharge but are not
16 covered by the CSWGP. The contract uses the term "TESC plan" to describe both
17 TESC plans and abbreviated TESC plans. When the Contracting Agency has
18 developed a TESC plan for a Contract, the narrative is included in the appendix to
19 the Special Provisions and the TESC plan sheets, when required, are included in
20 the Contract Plans. The Contracting Agency TESC plan will not include off-site
21 areas used to directly support construction activity.

22
23 The Contractor shall either adopt the TESC Plan in the Contract or develop a new
24 TESC Plan. If the Contractor adopts the Contracting Agency TESC Plan, the
25 Contractor shall modify the TESC Plan to meet the Contractor's schedule, method
26 of construction, and to include off-site areas that will be used to directly support
27 construction activity such as equipment staging yards, material storage areas, or
28 borrow areas. Contractor TESC Plans shall include all high visibility fence
29 delineation shown on the Contracting Agency Contract Plans. All TESC Plans shall
30 meet the requirements of the current edition of the WSDOT Temporary Erosion and
31 Sediment Control Manual M 3109 and be adaptively managed as needed
32 throughout construction based on site inspections and discharge samples to
33 maintain compliance with the CSWGP. The Contractor shall develop a schedule for
34 implementation of the TESC work and incorporate it into the Contractor's progress
35 schedule.

36
37 The Contractor shall submit their TESC Plan (either the adopted plan or new plan)
38 and implementation schedule as Type 2 Working Drawings. At the request of the
39 Engineer, updated TESC Plans shall be submitted as Type 1 Working Drawings.

40
41 **8-01.3(1)B EROSION AND SEDIMENT CONTROL (ESC) LEAD**

42 This section is revised to read:

43
44 The Contractor shall identify the ESC Lead at the preconstruction discussions and
45 in the TESC Plan. The ESC Lead shall have, for the life of the Contract, a current
46 Certificate of Training in Construction Site Erosion and Sediment Control from a
47 course approved by the Washington State Department of Ecology. The ESC Lead
48 must be onsite or on call at all times throughout construction. The ESC Lead shall
49 be listed on the Emergency Contact List required under Section 1-05.13(1).
50

1 The ESC Lead shall implement the TESC Plan. Implementation shall include, but is
2 not limited to:

- 3
- 4 1. Installing, adaptively managing, and maintaining temporary erosion and
5 sediment control BMPs to assure continued performance of their intended
6 function. Damaged or inadequate BMPs shall be corrected immediately.
7
- 8 2. Updating the TESC Plan to reflect current field conditions.
9
- 10 3. Discharge sampling and submitting Discharge Monitoring Reports (DMRs)
11 to the Washington State Department of Ecology in accordance with the
12 CSWGP.
13
- 14 4. Develop and maintain the Site Log Book as defined in the CSWGP. When
15 the Site Log Book or portion thereof is electronically developed, the
16 electronic documentation must be accessible onsite. As a part of the Site
17 Log Book, the Contractor shall develop and maintain a tracking table to
18 show that identified TESC compliance issues are fully resolved within 10
19 calendar days. The table shall include the date an issue was identified, a
20 description of how it was resolved, and the date the issue was fully
21 resolved.
22

23 The ESC Lead shall also inspect all areas disturbed by construction activities, all
24 on-site erosion and sediment control BMPs, and all stormwater discharge points at
25 least once every calendar week and within 24-hours of runoff events in which
26 stormwater discharges from the site. Inspections of temporarily stabilized, inactive
27 sites may be reduced to once every calendar month. The Washington State
28 Department of Ecology's Erosion and Sediment Control Site Inspection Form,
29 located at [https://ecology.wa.gov/Regulations-Permits/Permits-](https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Construction-stormwater-permit)
30 [certifications/Stormwater-general-permits/Construction-stormwater-permit](https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Construction-stormwater-permit), shall be
31 completed for each inspection and a copy shall be submitted to the Engineer no
32 later than the end of the next working day following the inspection.
33

34 **8-01.3(1)C WATER MANAGEMENT**

35 This section is supplemented with the following new subsections:
36

37 **8-01.3(1)C5 Water Management for In-Water Work Below Ordinary High** 38 **Water Mark (OHWM)**

39 Work over surface waters of the state (defined in WAC 173-201A-010) or below the
40 OHWM (defined in RCW 90.58.030) must comply with water quality standards for
41 surface waters of the state of Washington.
42

43 **8-01.3(1)C6 Environmentally Acceptable Hydraulic Fluid**

44 All equipment containing hydraulic fluid that extends from a bridge deck over
45 surface waters of the state or below the OHWM, shall be equipped with an
46 environmentally acceptable hydraulic fluid. The fluid shall meet specific
47 requirements for biodegradability, aquatic toxicity, and bioaccumulation in
48 accordance with the United States Environmental Protection Agency (EPA)
49 publication EPA800-R-11-002. Acceptance shall be in accordance with Section 1-
50 06.3, Manufacturer's Certification of Compliance.

1
2 The designation of environmentally acceptable hydraulic fluid does not mean fluid
3 spills are acceptable. The Contractor shall respond to spills to land or water in
4 accordance with the Contract.

5
6 **8-01.3(1)C7 Turbidity Curtain**

7 All Work for the turbidity curtain shall be in accordance with the manufacturer's
8 recommendations for the site conditions. Removal procedures shall be developed
9 and used to minimize silt release and disturbance of silt. The Contractor shall
10 submit a Type 2 Working Drawing, detailing product information, installation and
11 removal procedures, equipment and workforce needs, maintenance plans, and
12 emergency repair/replacement plans.

13
14 Turbidity curtain materials, installation, and maintenance shall be sufficient to
15 comply with water quality standards.

16
17 The Contractor shall notify the Engineer 10 days in advance of removing the
18 turbidity curtain. All components of the turbidity curtain shall be removed from the
19 project.

20
21 **8-01.3(1)C1 DISPOSAL OF DEWATERING WATER**

22 This section is revised to read:

23
24 When uncontaminated groundwater is encountered in an excavation on a project it
25 may be infiltrated within vegetated areas of the right of way not designated as
26 Sensitive Areas or incorporated into an existing stormwater conveyance system at a
27 rate that will not cause erosion or flooding in any receiving surface water.

28
29 Alternatively, the Contractor may pursue independent disposal and treatment
30 alternatives that do not use the stormwater conveyance system provided it is in
31 compliance with the applicable WACs and permits.

32
33 **8-01.3(1)C2 PROCESS WASTEWATER**

34 This section is revised to read:

35
36 Wastewater generated on-site as a byproduct of a construction process shall not be
37 discharged to surface waters of the State. Some sources of process wastewater
38 may be infiltrated in accordance with the CSWGP with concurrence from the
39 Engineer. Some sources of process wastewater may be disposed via independent
40 disposal and treatment alternatives in compliance with the applicable WACs and
41 permits.

42
43 **8-01.3(1)C3 SHAFT DRILLING SLURRY WASTEWATER**

44 This section is revised to read:

45
46 Wastewater generated on-site during shaft drilling activity shall be managed and
47 disposed of in accordance with the requirements below. No shaft drilling slurry
48 wastewater shall be discharged to surface waters of the State. Neither the sediment
49 nor liquid portions of the shaft drilling slurry wastewater shall be contaminated, as
50 detectable by visible or olfactory indication (e.g., chemical sheen or smell).

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1. Water-only shaft drilling slurry or water slurry with accepted flocculants may be infiltrated on-site. Flocculants used shall meet the requirements of Section 9-14.5(1) or shall be chitosan products listed as General Use Level Designation (GULD) on the Washington State Department of Ecology’s stormwater treatment technologies webpage for construction treatment. Infiltration is permitted if the following requirements are met:
 - a. Wastewater shall have a pH of 6.5 – 8.5 prior to discharge.
 - b. The amount of flocculant added to the slurry shall be kept to the minimum needed to adequately settle out solids. The flocculant shall be thoroughly mixed into the slurry.
 - c. The slurry removed from the shaft shall be contained in a leak proof cell or tank for a minimum of 3 hours.
 - d. The infiltration rate shall be reduced if needed to prevent wastewater from leaving the infiltration location. The infiltration site shall be monitored regularly during infiltration activity. All wastewater discharged to the ground shall fully infiltrate and discharges shall stop before the end of each work day.
 - e. Drilling spoils and settled sediments remaining in the containment cell or tank shall be disposed of in accordance with Section 6-19.3(4)F.
 - f. Infiltration locations shall be in upland areas at least 150 feet away from surface waters, wells, on-site sewage systems, aquifer sensitive recharge areas, sole source aquifers, well head protection areas, and shall be marked on the plan sheets before the infiltration activity begins.
 - g. Prior to infiltration, the Contractor shall submit a Shaft Drilling Slurry Wastewater Management and Infiltration Plan as a Type 2 Working Drawing. This Plan shall be kept on-site, adapted if needed to meet the construction requirements, and updated to reflect what is being done in the field. The Working Drawing shall include, at a minimum, the following information:
 - i. Plan sheet showing the proposed infiltration location and all surface waters, wells, on-site sewage systems, aquifer-sensitive recharge areas, sole source aquifers, and well-head protection areas within 150 feet.
 - ii. The proposed elevation of soil surface receiving the wastewater for infiltration and the anticipated phreatic surface (i.e., saturated soil).
 - iii. The source of the water used to produce the slurry.
 - iv. The estimated total volume of wastewater to be infiltrated.

- v. The accepted flocculant to be used (if any).
 - vi. The controls or methods used to prevent surface wastewater runoff from leaving the infiltration location.
 - vii. The strategy for removing slurry wastewater from the shaft and containing the slurry wastewater once it has been removed from the shaft.
 - viii. The strategy for monitoring infiltration activity and adapting methods to ensure compliance.
 - ix. A contingency plan that can be implemented immediately if it becomes evident that the controls in place or methods being used are not adequate.
 - x. The strategy for cleaning up the infiltration location after the infiltration activity is done. Cleanup shall include stabilizing any loose sediment on the surface within the infiltration area generated as a byproduct of suspended solids in the infiltrated wastewater or soil disturbance associated with BMP placement and removal.
2. Shaft drilling mineral slurry, synthetic slurry, or slurry with polymer additives not allowed for infiltration shall be contained and disposed of by the Contractor at an accepted disposal facility in accordance with Section 2-03.3(7)C. Spoils that have come into contact with mineral slurry shall be disposed of in accordance with Section 6-19.3(4)F.

8-01.3(1)C4 MANAGEMENT OF OFF-SITE WATER

This section is revised to read:

Prior to clearing and grubbing, the Contractor shall intercept all sources of off-site surface water and overland flow that will run-on to the project. Off-site surface water run-on shall be diverted through or around the project in a way that does not introduce construction related pollution. It shall be diverted to its preconstruction discharge location in a manner that does not increase preconstruction flow rate and velocity and protects contiguous properties and waterways from erosion. The Contractor shall submit a Type 2 Working Drawing consisting of the method for performing this Work.

8-01.3(1)E DETENTION/RETENTION POND CONSTRUCTION

This section is revised to read:

Whether permanent or temporary, ponds shall be constructed before beginning other grading and excavation Work in the area that drains into that pond. Detention/retention ponds may be constructed concurrently with grading and excavation when allowed by the Engineer. Temporary conveyances shall be installed concurrently with grading in accordance with the TESC Plan so that newly graded areas drain to the pond as they are exposed.

1
2 **8-01.3(2)F DATES FOR APPLICATION OF FINAL SEED, FERTILIZER,**
3 **AND MULCH**

4 In the table, the second column heading is revised to read:

5
6 **Eastern Washington¹**
7 **(East of the Cascade Mountain Crest)**
8

9 Footnote 1 in the table is revised to read:

10
11 Seeding may be allowed outside these dates when allowed or directed by the
12 Engineer.
13

14 **8-01.3(5) PLASTIC COVERING**

15 The first sentence of the first paragraph is revised to read:
16

17 **Erosion Control** – Plastic coverings used to temporarily cover stockpiled materials,
18 slopes or bare soils shall be installed and maintained in a way that prevents water
19 from intruding under the plastic and prevents the plastic cover from being damaged
20 by wind.
21

22 **8-01.3(7) STABILIZED CONSTRUCTION ENTRANCE**

23 The first paragraph is revised to read:
24

25 Temporary stabilized construction entrance shall be constructed in accordance with
26 the *Standard Plans*, prior to construction vehicles entering the roadway from
27 locations that generate sediment track out on the roadway. Material used for
28 stabilized construction entrance shall be free of extraneous materials that may
29 cause or contribute to track out.
30

31 **8-01.3(8) STREET CLEANING**

32 This section is revised to read:
33

34 Self-propelled pickup street sweepers shall be used to remove and collect dirt and
35 other debris from the Roadway. The street sweeper shall effectively collect these
36 materials and prevent them from being washed or blown off the Roadway or into
37 waters of the State. Street sweepers shall not generate fugitive dust and shall be
38 designed and operated in compliance with applicable air quality standards. Material
39 collected by the street sweeper shall be disposed of in accordance with Section 2-
40 03.3(7)C.
41

42 When allowed by the Engineer, power broom sweepers may be used in non-
43 environmentally sensitive areas. The broom sweeper shall sweep dirt and other
44 debris from the roadway into the work area. The swept material shall be prevented
45 from entering or washing into waters of the State.
46

47 Street washing with water will require the concurrence of the Engineer.
48

1 **8-01.3(12) COMPOST SOCKS**

2 The first two sentences of the first paragraph are revised to read:

3
4 Compost socks are used to disperse flow and sediment. Compost socks shall be
5 installed as soon as construction will allow but before flow conditions create erosive
6 flows or discharges from the site. Compost socks shall be installed prior to any
7 mulching or compost placement.
8

9 **8-01.3(13) TEMPORARY CURB**

10 The second to last sentence of the second paragraph is revised to read:

11
12 Temporary curbs shall be a minimum of 4 inches in height.
13

14 **8-01.3(14) TEMPORARY PIPE SLOPE DRAIN**

15 The third and fourth paragraphs are revised to read:

16
17 The pipe fittings shall be water tight and the pipe secured to the slope with metal
18 posts, wood stakes, sand bags, or as allowed by the Engineer.
19

20 The water shall be discharged to a stabilized conveyance, sediment trap,
21 stormwater pond, rock splash pad, or vegetated strip, in a manner to prevent
22 erosion and maintain water quality compliance.
23

24 The last paragraph is deleted.
25

26 **8-01.3(15) MAINTENANCE**

27 This section is revised to read:

28
29 Erosion and sediment control BMPs shall be maintained or adaptively managed as
30 required by the CSWGP until the Engineer determines they are no longer needed.
31 When deficiencies in functional performance are identified, the deficiencies shall be
32 rectified immediately.
33

34 The BMPs shall be inspected on the schedule outlined in Section 8-01.3(1)B for
35 damage and sediment deposits. Damage to or undercutting of BMPs shall be
36 repaired immediately.
37

38 In areas where the Contractor's activities have compromised the erosion control
39 functions of the existing grasses, the Contractor shall overseed at no additional cost
40 to the Contracting Agency.
41

42 The quarry spalls of construction entrances shall be refreshed, replaced, or
43 screened to maintain voids between the spalls for collecting mud and dirt.
44

45 Unless otherwise specified, when the depth of accumulated sediment and
46 debris reaches approximately 1/3 the height of the BMP the deposits shall be
47 removed. Debris or contaminated sediment shall be disposed of in accordance with
48 Section 2-03.3(7)C. Clean sediments may be stabilized on-site using BMPs as
49 allowed by the Engineer.
50

1 **8-01.3(16) REMOVAL**

2 This section is revised to read:

3
4 The Contractor shall remove all temporary BMPs, all associated hardware and
5 associated accumulated sediment deposition from the project limits prior to Physical
6 Completion unless otherwise allowed by the Engineer. When the temporary BMP
7 materials are made of natural plant fibers unaltered by synthetic materials the
8 Engineer may allow leaving the BMP in place.

9
10 The Contractor shall remove BMPs and associated hardware in a way that
11 minimizes soil disturbance. The Contractor shall permanently stabilize all bare and
12 disturbed soil after removal of BMPs. If the installation and use of the erosion
13 control BMPs have compacted or otherwise rendered the soil inhospitable to plant
14 growth, such as construction entrances, the Contractor shall take measures to
15 rehabilitate the soil to facilitate plant growth. This may include, but is not limited to,
16 ripping the soil, incorporating soil amendments, or seeding with the specified seed.

17
18 At the request of the Contractor and at the sole discretion of the Engineer the
19 CSWGP may be transferred back to the Contracting Agency. Approval of the
20 Transfer of Coverage request will require the following:

- 21
22 1. All other Work required for Contract Completion has been completed.
23
24 2. All Work required for compliance with the CSWGP has been completed to
25 the maximum extent possible. This includes removal of BMPs that are no
26 longer needed and the site has undergone all Stabilization identified for
27 meeting the requirements of Final Stabilization in the CSWGP.
28
29 3. An Equitable Adjustment change order for the cost of Work that has not
30 been completed by the Contractor.
31
32 4. Submittal of the Washington State Department of Ecology Transfer of
33 Coverage form (Ecology form ECY 020-87a) to the Engineer.
34

35 If the Engineer approves the transfer of coverage back to the Contracting Agency,
36 the requirement in Section 1-07.5(3) for the Contractor’s submittal of the Notice of
37 Termination form to the Washington State Department of Ecology will not apply.
38

39 **8-01.4 MEASUREMENT**

40 This section’s content is deleted and replaced with the following new subsections:

41
42 **8-01.4(1) Lump Sum Bid for Project (No Unit Items)**

43 When the Bid Proposal contains the item “Erosion Control and Water Pollution
44 Prevention” there will be no measurement of unit or force account items for Work
45 defined in Section 8-01 except as described in Sections 8-01.4(3) and 8-01.4(4).
46 Also, except as described in Section 8-01.4(3), all of Sections 8-01.4(2) and 8-
47 01.5(2) are deleted.
48

1 **8-01.4(2) Item Bids**

2 When the Proposal does not contain the items “Erosion Control and Water Pollution
3 Prevention,” Section 8-01.4(1) and 8-01.5(1) are deleted and the Bid Proposal will
4 contain some or all of the following items measured as noted.
5

6 ESC lead will be measured per day for each day that an inspection is made
7 and a report is filed.
8

9 Biodegradable erosion control blanket and plastic covering will be measured by
10 the square yard along the ground slope line of surface area covered and
11 accepted.
12

13 Turbidity curtains will be measured by the linear foot along the ground line of
14 the installed curtain.
15

16 Check dams will be measured per linear foot one time only along the ground
17 line of the completed check dam. No additional measurement will be made for
18 check dams that are required to be rehabilitated or replaced due to wear.
19

20 Stabilized construction entrances will be measured by the square yard by
21 ground slope measurement for each entrance constructed.
22

23 Tire wash facilities will be measured per each for each tire wash installed.
24

25 Street cleaning will be measured by the hour for the actual time spent cleaning
26 pavement, refilling with water, dumping and transport to and from cleaning
27 locations within the project limits, as authorized by the Engineer. Time to
28 mobilize the equipment to or from the project limits on which street cleaning is
29 required will not be measured.
30

31 Inlet protections will be measured per each for each initial installation at a
32 drainage structure.
33

34 Silt fence, gravel filter, compost berms, and wood chip berms will be measured
35 by the linear foot along the ground line of the completed barrier.
36

37 Wattles and compost socks will be measured by the linear foot.
38

39 Temporary curbs will be measured by the linear foot along the ground line of
40 the completed installation.
41

42 Temporary pipe slope drains will be measured by the linear foot along the flow
43 line of the pipe.
44

45 Coir logs will be measured by the linear foot along the ground line of the
46 completed installation.
47

48 Outlet protections will be measured per each initial installation at an outlet
49 location.
50

51 Tackifiers will be measure by the acre by ground slope measurement.

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8-01.4(3) Reinstating Unit Items with Lump Sum Erosion Control and Water Pollution Prevention

The Contract Provisions may establish the project as lump sum, in accordance with Section 8-01.4(1) and also include one or more of the items included above in Section 8-01.4(2). When that occurs, the corresponding measurement provision in Section 8-01.4(2) is not deleted and the Work under that item will be measured as specified.

8-01.4(4) Items not included with Lump Sum Erosion Control and Water Pollution Prevention

Compost blanket will be measured by the square yard by ground slope surface area covered and accepted.

Mulching will be measured by the acre by ground slope surface area covered and accepted.

Seeding, fertilizing, liming, mulching, and mowing, will be measured by the acre by ground slope measurement.

Seeding and fertilizing by hand will be measured by the square yard by ground slope measurement. No adjustment in area size will be made for the vegetation free zone around each plant.

Fencing will be measured by the linear foot along the ground line of the completed fence.

8-01.5 PAYMENT

This section’s content is deleted and replaced with the following new subsections:

8-01.5(1) Lump Sum Bid for Project (No Unit Items)

Payment will be made for the following Bid item when it is included in the Proposal:

“Erosion Control and Water Pollution Prevention,” lump sum.

The lump sum Contract price for “Erosion Control and Water Pollution Prevention” shall be full pay to perform the Work as described in Section 8-01 except for costs compensated by Bid Proposal items inserted through Contract Provisions as described in Section 8-01.4(2). Progress payments for the lump sum item “Erosion Control and Water Pollution Prevention” will be made as follows:

- 1. The Contracting Agency will pay 15 percent of the bid amount for the initial set up for the item. Initial set up includes the following:
 - a. Acceptance of the TESC Plan provided by the Contracting Agency or submittal of a new TESC Plan,
 - b. Submittal of a schedule for the installation of the BMPs, and

- 1 c. Identifying water quality sampling locations.
2
3 2. 70 percent of the bid amount will be paid in accordance with Section
4 1-09.9.
5
6 3. Once the project is physically complete and copies of the all reports
7 submitted to the Washington State Department of Ecology have been
8 submitted to the Engineer, and, if applicable, transference of the
9 CSWGP back to the Contracting Agency is complete, the remaining
10 15 percent of the bid amount shall be paid in accordance with Section
11 1-09.9.
12

13 **8-01.5(2) Item Bids**

14 "ESC Lead," per day.

15
16 "Turbidity Curtain," per linear foot.

17
18 "Biodegradable Erosion Control Blanket," per square yard.

19
20 "Plastic Covering," per square yard.

21
22 "Check Dam," per linear foot.

23
24 "Inlet Protection," per each.

25
26 "Gravel Filter Berm," per linear foot.

27
28 "Stabilized Construction Entrance," per square yard.

29
30 "Street Cleaning," per hour.

31
32 "Silt Fence," per linear foot.

33
34 "Wood Chip Berm," per linear foot.

35
36 "Compost Berm," per linear foot.

37
38 "Wattle," per linear foot.

39
40 "Compost Sock," per linear foot.

41
42 "Coir Log," per linear foot.

43
44 "Temporary Curb," per linear foot.

45
46 "Temporary Pipe Slope Drain," per linear foot.

47
48 "Temporary Seeding," per acre.

49
50 "Outlet Protection," per each.
51

1 "Tackifier," per acre.

2

3 "Erosion/Water Pollution Control," by force account as provided in Section 1-09.6.

4

5 Maintenance and removal of erosion and water pollution control devices including
6 removal and disposal of sediment, stabilization and rehabilitation of soil disturbed
7 by these activities, and any additional Work deemed necessary by the Engineer to
8 control erosion and water pollution will be paid by force account in accordance with
9 Section 1-09.6.

10

11 To provide a common Proposal for all Bidders, the Contracting Agency has entered
12 an amount in the Proposal to become a part of the Contractor's total Bid.

13

14 **8-01.5(3) Reinstating Unit Items with Lump Sum Erosion Control and**
15 **Water Pollution Prevention**

16

17 The Contract may establish the project as lump sum, in accordance with Section 8-
18 01.4(1) and also reinstate the measurement of one or more of the items described
19 in Section 8-01.4(2), except for Erosion/Water Pollution Control, by force account.
20 When that occurs, the corresponding payment provision in Section 8-01.5(2) is not
21 deleted and the Work under that item will be paid as specified.

22

22 **8-01.5(4) Items not included with Lump Sum Erosion Control and Water**
23 **Pollution Prevention**

24

24 Payment will be made for each of the following Bid items when they are included in
25 the Proposal:

26

27 "Compost Blanket," per square yard.

28

29 "Mulching," per acre

30

31 "Mulching with PAM," per acre

32

33 "Mulching with Short-Term Mulch," per acre.

34

35 "Mulching with Moderate-Term Mulch," per acre.

36

37 "Mulching with Long-Term Mulch," per acre.

38

39 "Seeding, Fertilizing and Mulching," per acre.

40

41 "Seeding and Fertilizing," per acre.

42

43 "Seeding and Fertilizing by Hand," per square yard.

44

45 "Second Application of Fertilizer," per acre.

46

47 "Liming," per acre.

48

49 "Mowing," per acre.

50

1 "Seeding and Mulching," per acre.
2
3 "High Visibility Fence," per linear foot.
4

5 8-02.AP8

6 **Section 8-02, Roadside Restoration**

7 **January 2, 2018**

8 **8-02.2 MATERIALS**

9 The reference to the material "Soil" is revised to read "Topsoil."
10

11 **8-02.5 PAYMENT**

12 The following new paragraph is inserted following the Bid item "Plant Selection ____, " per
13 each:

14
15 The unit Contract price for "Plant Selection ____, " per each shall be full pay for all
16 Work to perform the work as specified within the planting area prior to planting for
17 weed control, planting area preparation and installation of plants with initial
18 watering.
19

20 The paragraph following the Bid item "PSIPE ____, " per each is revised to read:

21
22 The unit Contract price for "PSIPE ____, " per each, shall be full pay for all Work to
23 perform the work as specified within the planting area for weed control and planting
24 area preparation, planting, cleanup, and water necessary to complete planting
25 operations as specified to the end of first year plant establishment.
26

27 8-04.AP8

28 **Section 8-04, Curbs, Gutters, and Spillways**

29 **April 2, 2018**

30 **8-04.2 MATERIALS**

31 In the first paragraph, the reference to "Portland Cement" is revised to read:

32
33 Cement 9-01
34

35 **8-04.3(1) CEMENT CONCRETE CURBS, GUTTERS, AND SPILLWAYS**

36 The first paragraph is supplemented with the following:

37
38 Roundabout truck apron cement concrete curb and gutter shall be constructed with
39 air entrained concrete Class 4000 conforming to the requirements of Section 6-02.
40

41 8-06.AP8

42 **Section 8-06, Cement Concrete Driveway Entrances**

43 **April 2, 2018**

44 **8-06.2 MATERIALS**

45 In the first paragraph, the reference to "Portland Cement" is revised to read:

46
47 Cement 9-01

1
2 **8-06.3 CONSTRUCTION REQUIREMENTS**

3 The first paragraph is revised to read:

4
5 Cement concrete driveway approaches shall be constructed with air entrained
6 concrete Class 4000 conforming to the requirements of Section 6-02 or Portland
7 Cement or Blended Hydraulic Cement Concrete Pavement conforming to the
8 requirements of Section 5-05.
9

10 8-07.AP8

11 **Section 8-07, Curbs, Gutters, and Spillways**
12 **April 2, 2018**

13 **8-07.3(1) INSTALLING CURBS**

14 The first sentence of the first paragraph is revised to read:

15
16 The curb shall be firmly bedded for its entire length and breadth on a mortar bed
17 conforming to Section 9-20.4(3) composed of one part Portland cement or blended
18 hydraulic cement and two parts sand.
19

20 The fourth paragraph is revised to read:

21
22 All joints between adjacent pieces of curb except joints for expansion and/or
23 drainage as designated by the Engineer shall be filled with mortar composed of one
24 part Portland cement or blended hydraulic cement and two parts sand.
25

26 8-11.AP8

27 **Section 8-11, Guardrail**
28 **April 2, 2018**

29 **8-11.3(1)C TERMINAL AND ANCHOR INSTALLATION**

30 The first sentence of the second to last paragraph is revised to read:

31
32 Assembly and installation of Beam Guardrail Non-flared Terminals for Type 31
33 guardrail shall be supervised at all times by a manufacturer's representative, or an
34 installer who has been trained and certified by the manufacturer.
35

36 The last paragraph is revised to read:

37
38 Beam Guardrail Non-flared Terminals for Type 31 guardrail shall meet the crash test
39 and evaluation criteria in the Manual for Assessing Safety Hardware (MASH).
40

41 **8-11.4 MEASUREMENT**

42 The third paragraph is revised to read:

43
44 Measurement of beam guardrail _____ terminal will be per each for the
45 completed terminal.
46

47 The fourth paragraph is revised to read:
48

1 Measurement of beam guardrail Type 31 buried terminal Type 2 will be per linear
2 foot for the completed terminal.

3

4 **8-11.5 PAYMENT**

5 The Bid item "Beam Guardrail Buried Terminal Type 1," per each is deleted from this
6 section.

7

8 The Bid item "Beam Guardrail Buried Terminal Type 2," per linear foot and the following
9 paragraph are revised to read:

10

11 "Beam Guardrail Type 31 Buried Terminal Type 2," per linear foot.

12

13 The unit Contract price per linear foot for "Beam Guardrail Type 31 Buried Terminal
14 Type 2" shall be full payment for all costs to obtain and provide materials and
15 perform the Work as described in Section 8-11.3(1)C.

16

17 8-14.AP8

18 **Section 8-14, Cement Concrete Sidewalks**

19 **April 2, 2018**

20 **8-14.2 MATERIALS**

21 In the first paragraph, the reference to "Portland Cement" is revised to read:

22

23 Cement 9-01

24

25 In the second paragraph, each reference to "Federal Standard 595" is revised to read
26 "SAE AMS Standard 595."

27

28 8-16.AP8

29 **Section 8-16, Concrete Slope Protection**

30 **April 2, 2018**

31 **8-16.2 MATERIALS**

32 In the first paragraph, the last two material references are revised to read:

33

34 Poured Portland Cement or Blended Hydraulic Cement
35 Concrete Slope Protection 9-13.5(2)

36

37 Pneumatically Placed Portland Cement or Blended
38 Hydraulic Cement Concrete Slope Protection 9-13.5(3)

38

39 8-20.AP8

40 **Section 8-20, Illumination, Traffic Signal Systems, Intelligent Transportation**

41 **Systems, and Electrical**

42 **April 2, 2018**

43 **8-20.1(1) REGULATIONS AND CODE**

44 The last paragraph is revised to read:

45

1 Persons performing electrical Work shall be certified in accordance with and
2 supervised as required by RCW 19.28.161. Proof of certification shall be worn at all
3 times in accordance with WAC 296-46B-942. Persons failing to meet these
4 certification requirements may not perform any electrical work, and shall stop any
5 active electrical work, until their certification is provided and worn in accordance with
6 this Section.

7

8 **8-20.2(2) EQUIPMENT LIST AND DRAWINGS**

9 This section is renumbered:

10

11 **8-20.2(1) Equipment List and Drawings**

12

13 **8-20.3(4) FOUNDATIONS**

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

15

16 Concrete for Type II, III, IV, V, and CCTV signal standards and light standard
17 foundations shall be Class 4000P and does not require air entrainment.

18

19 **8-20.3(5)A GENERAL**

20 The last two sentences of the last paragraph are deleted.

21

22 This section is supplemented with the following:

23

24 All conduits shall include a pull tape with the equipment grounding conductor. The
25 pull tape shall be attached to the conduit near the end bell or grounded end
26 bushing, or to duct plugs or caps if present, at both ends of the conduit.

27

28 **8-20.3(8) WIRING**

29 The seventeenth paragraph is supplemented with the following:

30

31 Pulling tape shall meet the requirements of Section 9-29.1(10). Pull string may not
32 be used.

33

34 8-21.AP8

35 **Section 8-21, Permanent Signing**

36 **January 2, 2018**

37 **8-21.3(9)F FOUNDATIONS**

38 Item number 3 of the twelfth paragraph is supplemented with the following new
39 sentence:

40

41 Class 4000P concrete for roadside sign structures does not require air entrainment.

42

43 9-02.AP9

44 **Section 9-02, Bituminous Materials**

45 **April 2, 2018**

46 **9-02.1 ASPHALT MATERIAL, GENERAL**

47 The second paragraph is revised to read:

48

The Asphalt Supplier of Performance Graded (PG) asphalt binder and emulsified asphalt shall have a Quality Control Plan (QCP) in accordance with WSDOT QC 2 “Standard Practice for Asphalt Suppliers That Certify Performance Graded and Emulsified Asphalts.” The Asphalt Supplier’s QCP shall be submitted and receive the acceptance of the WSDOT State Materials Laboratory. Once accepted, any change to the QCP will require a new QCP to be submitted for acceptance. The Asphalt Supplier of PG asphalt binder and emulsified asphalt shall certify through the Bill of Lading that the PG asphalt binder or emulsified asphalt meets the Specification requirements of the Contract.

9-02.1(4) PERFORMANCE GRADED ASPHALT BINDER (PGAB)

This section’s title is revised to read:

Performance Graded (PG) Asphalt Binder

The first paragraph is revised to read:

PG asphalt binder meeting the requirements of AASHTO M 332 Table 1 of the grades specified in the Contract shall be used in the production of HMA. For HMA with greater than 20 percent RAP by total weight of HMA, or any amount of RAS, the new asphalt binder, recycling agent and recovered asphalt (RAP and/or RAS) when blended in the proportions of the mix design shall meet the PG asphalt binder requirements of AASHTO M 332 Table 1 for the grade of asphalt binder specified by the Contract.

The second paragraph, including the table, is revised to read:

In addition to AASHTO M 332 Table 1 specification requirements, PG asphalt binders shall meet the following requirements:

		Additional Requirements by Performance Grade (PG) Asphalt Binders					
Property	Test Method	PG58S-22	PG58H-22	PG58V-22	PG64S-28	PG64H-28	PG64V-28
RTFO Residue: Average Percent Recovery @ 3.2 kPa	AASHTO T 350 ¹			30% Min.	20% Min.	25% Min.	30% Min.
¹ Specimen conditioned in accordance with AASHTO T 240 – RTFO.							

The third paragraph is revised to read:

The RTFO $J_{nr\text{diff}}$ and the PAV direct tension specifications of AASHTO M 332 are not required.

This section is supplemented with the following:

1 If the asphalt binder verification sample test results fail to meet AASHTO Test
2 Method T 350 “Standard Method of Test for Multiple Stress Creep Recovery (MSCR)
3 Test of Asphalt Binder Using a Dynamic Shear Rheometer (DSR)” for average
4 percent recovery @ 3.2 kPa for the applicable grades of binder in accordance with
5 Section 9-02.1(4), the Contracting Agency may elect to test the sample using
6 AASHTO Test Method T 301 “Standard Method of Test for Elastic Recovery Test of
7 Asphalt Materials by Means of a Ductilometer.”

8
9 When AASHTO T 301 is used, a minimum of 65% elastic recovery (ER) will be
10 required when tested at 25°C ± 0.5°C.

11 12 **9-02.1(6) CATIONIC EMULSIFIED ASPHALT**

13 This section is revised to read:

14
15 Cationic Emulsified Asphalt meeting the requirements of AASHTO M 208 Table 1 of
16 the grades specified in the Contract shall be used.

17 18 **9-02.5 WARM MIX ASPHALT (WMA) ADDITIVE**

19 This section, including title, is revised to read:

20 21 **9-02.5 HMA Additive**

22 Additives for HMA shall be accepted by the Engineer.

23
24 9-03.AP9

25 **Section 9-03, Aggregates**

26 **April 2, 2018**

27 **9-03.1 AGGREGATES FOR PORTLAND CEMENT CONCRETE**

28 This section’s title is revised to read:

29 30 **Aggregates for Concrete**

31 32 **9-03.1(1) GENERAL REQUIREMENTS**

33 The first two sentences of the first paragraph are revised to read:

34
35 Concrete aggregates shall be manufactured from ledge rock, talus, or sand and
36 gravel in accordance with the provisions of Section 3-01. Reclaimed aggregate may
37 be used if it complies with the specifications for concrete.

38
39 The second paragraph (up until the colon) is revised to read:

40
41 Aggregates for concrete shall meet the following test requirements:

42
43 The second sentence of the second to last paragraph is revised to read:

44
45 The Contractor shall submit test results according to ASTM C1567 through the
46 Engineer to the State Materials Laboratory that demonstrate that the proposed fly
47 ash when used with the proposed aggregates and cement will control the potential
48 expansion to 0.20 percent or less before the fly ash and aggregate sources may be
49 used in concrete.

1
2 **9-03.1(2) FINE AGGREGATE FOR PORTLAND CEMENT CONCRETE**

3 This section's title is revised to read:

4
5 **Fine Aggregate for Concrete**

6
7 **9-03.1(4) COARSE AGGREGATE FOR PORTLAND CEMENT CONCRETE**

8 This section's title is revised to read:

9
10 **Coarse Aggregate for Concrete**

11
12 **9-03.1(4)C GRADING**

13 The first paragraph (up until the colon) is revised to read:

14
15 Coarse aggregate for concrete when separated by means of laboratory sieves shall
16 conform to one or more of the following gradings as called for elsewhere in these
17 Specifications, Special Provisions, or in the Plans:

18
19 **9-03.1(5) COMBINED AGGREGATE GRADATION FOR PORTLAND CEMENT**
20 **CONCRETE**

21 This section's title is revised to read:

22
23 **Combined Aggregate Gradation for Concrete**

24
25 **9-03.1(5)B GRADING**

26 In the last paragraph, "WSDOT FOP for WAQTC/AASHTO T 27/T 11" is revised to read
27 "FOP for WAQTC/AASHTO T 27/T 11."

28
29 **9-03.2 AGGREGATE FOR JOB-MIXED PORTLAND CEMENT MORTAR**

30 This section's title is revised to read:

31
32 **Aggregate for Job-Mixed Portland Cement or Blended Hydraulic**
33 **Cement Mortar**

34
35 The first sentence of the first paragraph is revised to read:

36
37 Fine aggregate for portland cement or blended hydraulic cement mortar shall
38 consist of sand or other inert materials, or combinations thereof, accepted by the
39 Engineer, having hard, strong, durable particles free from adherent coating.

40
41 **9-03.4(1) GENERAL REQUIREMENTS**

42 The first paragraph (up until the colon) is revised to read:

43
44 Aggregate for bituminous surface treatment shall be manufactured from ledge rock,
45 talus, or gravel, in accordance with Section 3-01. Aggregates for Bituminous
46 Surface Treatment shall meet the following test requirements:

47
48 **9-03.8(1) GENERAL REQUIREMENTS**

49 The first paragraph (up until the colon) is revised to read:

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Aggregates for Hot Mix Asphalt shall meet the following test requirements:

9-03.8(7) HMA TOLERANCES AND ADJUSTMENTS

In the table in item number 1, the fifth row is revised to read:

Asphalt binder	-0.4% to 0.5%		±0.7%
----------------	---------------	--	-------

In the table in item number 1, the following new row is inserted before the last row:

Voids in Mineral Aggregate, VMA	-1.5%		
---------------------------------	-------	--	--

9-03.9(1) BALLAST

The second paragraph (up until the colon) is revised to read:

Aggregates for ballast shall meet the following test requirements:

9-03.14(4) GRAVEL BORROW FOR STRUCTURAL EARTH WALL

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

The material shall be substantially free of shale or other soft, poor durability particles, and shall not contain recycled materials, such as glass, shredded tires, concrete rubble, or asphaltic concrete rubble.

9-03.21(1)E TABLE ON MAXIMUM ALLOWABLE PERCENT (BY WEIGHT) OF RECYCLED MATERIAL

“Portland Cement” is deleted from the first two rows in the table.

9-04.AP9

**Section 9-04, Joint and Crack Sealing Materials
April 2, 2018**

9-04.1(2) PREMOLDED JOINT FILLER FOR EXPANSION JOINTS

In this section, each reference to “AASHTO T 42” is revised to read “ASTM D 545.”

9-04.2(1)A1 HOT POURED SEALANT FOR CEMENT CONCRETE PAVEMENT

This section is supplemented with the following:

Hot poured sealant for cement concrete pavement is acceptable for installations in joints where cement concrete pavement abuts a bituminous pavement.

9-04.2(1)A2 HOT POURED SEALANT FOR BITUMINOUS PAVEMENT

This section is supplemented with the following:

Hot poured sealant for bituminous pavement is acceptable for installations in joints where cement concrete pavement abuts a bituminous pavement.

1 **9-04.2(1)B SAND SLURRY FOR BITUMINOUS PAVEMENT**

2 Item number 2 of the first paragraph is revised to read:

- 3
4 2. Two percent portland cement or blended hydraulic cement, and

5
6 **9-04.3 JOINT MORTAR**

7 The first paragraph is revised to read:

8
9 Mortar for hand mortared joints shall conform to Section 9-20.4(3) and consist of
10 one part portland cement or blended hydraulic cement, three parts fine sand, and
11 sufficient water to allow proper workability.

12
13 9-05.AP9

14 **Section 9-05, Drainage Structures and Culverts**
15 **April 2, 2018**

16 **9-05.3(1)C AGE AT SHIPMENT**

17 The last sentence of the first paragraph is revised to read:

18
19 Unless it is tested and accepted at an earlier age, it shall not be considered ready
20 for shipment sooner than 28 days after manufacture when made with Type II
21 portland cement or blended hydraulic cement, nor sooner than 7 days when made
22 with Type III portland cement.

23
24 9-06.AP9

25 **Section 9-06, Structural Steel and Related Materials**
26 **January 2, 2018**

27 **9-06.5 BOLTS**

28 This section's title is revised to read:

29
30 **Bolts and Rods**

31
32 **9-06.5(4) ANCHOR BOLTS**

33 This section, including title, is revised to read:

34
35 **9-06.5(4) Anchor Bolts and Anchor Rods**

36 Anchor bolts and anchor rods shall meet the requirements of ASTM F1554 and,
37 unless otherwise specified, shall be Grade 105 and shall conform to Supplemental
38 Requirements S2, S3, and S4.

39
40 Nuts for ASTM F1554 Grade 105 black anchor bolts and anchor rods shall conform
41 to ASTM A563, Grade D or DH. Nuts for ASTM F1554 Grade 105 galvanized anchor
42 bolts and anchor rods shall conform to either ASTM A563, Grade DH, or AASHTO
43 M292, Grade 2H, and shall conform to the overtapping, lubrication, and rotational
44 testing requirements in Section 9-06.5(3). Nuts for ASTM F1554 Grade 36 or 55
45 black or galvanized anchor bolts and anchor rods shall conform to ASTM A563,
46 Grade A or DH. Washers shall conform to ASTM F436.

1 The bolts and rods shall be tested by the manufacturer in accordance with the
2 requirements of the pertinent Specification and as specified in these Specifications.
3 Anchor bolts, anchor rods, nuts, and washers shall be inspected prior to shipping to
4 the project site. The Contractor shall submit to the Engineer for acceptance a
5 Manufacturer's Certificate of Compliance for the anchor bolts, anchor rods, nuts,
6 and washers, as defined in Section 1-06.3. If the Engineer deems it appropriate, the
7 Contractor shall provide a sample of the anchor bolt, anchor rod, nut, and washer
8 for testing.

9
10 All bolts, rods, nuts, and washers shall be marked and identified as required in the
11 pertinent Specification.

12 13 **9-06.18 METAL BRIDGE RAILING**

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

15
16 Steel used for metal railings, when galvanized after fabrication in accordance with
17 AASHTO M111, shall have a controlled silicon content of either 0.00 to 0.06 percent
18 or 0.15 to 0.25 percent.

19
20 9-07.AP9

21 **Section 9-07, Reinforcing Steel** 22 **April 2, 2018**

23 **9-07.5(2) CORROSION RESISTANT DOWEL BARS (FOR CEMENT** 24 **CONCRETE PAVEMENT AND CEMENT CONCRETE PAVEMENT** 25 **REHABILITATION)**

26 The first paragraph (up until the colon) is revised to read:

27
28 Corrosion resistant dowel bars shall be 1½ inch outside diameter plain round steel
29 bars or tubular bars 18 inches in length and meet the requirements of one of the
30 following:

31
32 Item number 4 and 5 of the first paragraph are revised to read:

- 33
34 4. Corrosion-resistant, low-carbon, chromium plain steel bars for concrete
35 reinforcement meeting all the requirements of ASTM A 1035 Alloy Type CS
36 Grade 100 or Alloy Type CS Grade 120.
37
38 5. Zinc Clad dowel bars shall be 1½ inch solid bars or tubular bars with 1.695 inch
39 outside diameter by 0.120 inch wall and shall have a minimum 0.035 inch A710
40 Zinc alloy clad to a plain steel inner bar meeting the chemical and physical
41 properties of AASHTO M 31, Grade 60, or AASHTO M 255, Grade 60. A710
42 Zinc shall be composed of: zinc: 99.5 percent, by weight, minimum; copper:
43 0.1-0.25 percent, by weight; and iron: 0.0020 percent, by weight, maximum.
44 Each end of tubular bars shall be plugged using a snug-fitting insert to prohibit
45 any intrusion of concrete or other materials.

46
47 9-08.AP9

48 **Section 9-08, Paints and Related Materials** 49 **January 2, 2018**

1 **9-08.1(2)K ORANGE EQUIPMENT ENAMEL**

2 In the second sentence of the first paragraph, the reference to “Federal Standard 595” is
3 revised to read “SAE AMS Standard 595.”

4
5 **9-08.1(8) STANDARD COLORS**

6 In the first paragraph, the reference to “Federal Standard 595” is revised to read “SAE
7 AMS Standard 595.”

8
9 9-13.AP9

10 **Section 9-13, Riprap, Quarry Spalls, Slope Protection, and Rock for Erosion**
11 **and Scour Protection and Rock Walls**

12 **April 2, 2018**

13 **9-13.1(1) GENERAL**

14 The last paragraph is revised to read:

15
16 Riprap and quarry spalls shall be free from segregation, seams, cracks, and other
17 defects tending to destroy its resistance to weather and shall meet the following test
18 requirements:

19
20 **9-13.5 CONCRETE SLOPE PROTECTION**

21 This section is revised to read:

22
23 Concrete slope protection shall consist of reinforced portland cement or blended
24 hydraulic cement concrete poured or pneumatically placed upon the slope with a
25 rustication joint pattern or semi-open concrete masonry units placed upon the slope
26 closely adjoining each other.

27
28 **9-13.5(2) POURED PORTLAND CEMENT CONCRETE SLOPE PROTECTION**

29 This section’s title is revised to read:

30
31 **Poured Portland Cement or Blended Hydraulic Cement Concrete Slope**
32 **Protection**

33
34 **9-13.5(3) PNEUMATICALLY PLACED PORTLAND CEMENT CONCRETE**
35 **SLOPE PROTECTION**

36 This section’s title is revised to read:

37
38 **Pneumatically Placed Portland Cement or Blended Hydraulic Cement**
39 **Concrete Slope Protection**

40
41 The first paragraph is revised to read:

42
43 **Cement** – This material shall be portland cement or blended hydraulic cement as
44 specified in Section 9-01.

45
46 **9-13.7(1) ROCK FOR ROCK WALLS AND CHINKING MATERIAL**

47 The first paragraph (up until the colon) is revised to read:

1 Rock for rock walls and chinking material shall be hard, sound and durable material,
2 free from seams, cracks, and other defects tending to destroy its resistance to
3 weather, and shall meet the following test requirements:
4

5 9-14.AP9

6 **Section 9-14, Erosion Control and Roadside Planting**
7 **January 2, 2018**

8 **9-14.4(2) HYDRAULICALLY APPLIED EROSION CONTROL PRODUCTS**
9 **(HECPS)**

10 In the second column of Table 1, "ASTM D 586" is revised to read "AASHTO T 267."
11

12 In Table 1, the second to last row is deleted.
13

14 9-16.AP9

15 **Section 9-16, Fence and Guardrail**
16 **April 2, 2018**

17 **9-16.3(5) ANCHORS**

18 The last paragraph is revised to read:
19

20 Cement grout shall conform to Section 9-20.3(4) and consist of one part portland
21 cement or blended hydraulic cement and two parts sand.
22

23 9-18.AP9

24 **Section 9-18, Precast Traffic Curb**
25 **April 2, 2018**

26 **9-18.1(1) AGGREGATES AND PROPORIONING**

27 Item number 1 of the first paragraph is revised to read:
28

- 29 1. Portland cement or blended hydraulic cement shall conform to the
30 requirements of Section 9-01 except that it may be Type I portland cement
31 conforming to AASHTO M 85.
32

33 9-20.AP9

34 **Section 9-20, Concrete Patching Material, Grout, and Mortar**
35 **January 2, 2018**

36 **9-20.5 BRIDGE DECK REPAIR MATERIAL**

37 Item number 3 of the first paragraph is revised to read:
38

- 39 3. Permeability of less than 2,000 coulombs at 28-days or more in accordance
40 with AASHTO T 277.
41

42 9-21.AP9

43 **Section 9-21, Raised Pavement Markers (RPM)**
44 **January 2, 2018**

1 **9-21.2 RAISED PAVEMENT MARKERS TYPE 2**

2 This section's content is deleted.

3
4 **9-21.2(1) PHYSICAL PROPERTIES**

5 This section, including title, is revised to read:

6
7 **9-21.2(1) Standard Raised Pavement Markers Type 2**

8 The marker housing shall contain reflective faces as shown in the Plans to reflect
9 incident light from either a single or opposite directions and meet the requirements
10 of ASTM D 4280 including Flexural strength requirements.

11
12 **9-21.2(2) OPTICAL REQUIREMENTS**

13 This section, including title, is revised to read:

14
15 **9-21.2(2) Abrasion Resistant Raised Markers Type 2**

16 Abrasion Resistant Raised Markers Type 2 shall comply with Section 9-21.2(1) and
17 meet the requirements of ASTM D 4280 with the following additional requirement:
18 The coefficient of luminous intensity of the markers shall be measured after
19 subjecting the entire lens surface to the test described in ASTM D 4280 Section 9.5
20 using a sand drop apparatus. After the exposure described above, retroreflected
21 values shall not be less than 0.5 times a nominal unblemished sample.

22
23 **9-21.2(3) STRENGTH REQUIREMENTS**

24 This section is deleted in its entirety.

25
26 9-26.AP9

27 **Section 9-26, Epoxy Resins**

28 **April 2, 2018**

29 **9-26.1(2) PACKAGING AND MARKING**

30 The second paragraph is revised to read:

31
32 Containers shall be identified as "Component A" (contains the Epoxy Resin) and
33 "Component B" (Contains the Curing Agent) and shall show the type, grade, class,
34 and mixing directions as defined by these Specifications. Each container shall be
35 marked by permanent marking with the name of the formulator, the lot or batch
36 number, the date of packaging, expiration date and the quantity contained in pounds
37 or gallons. If the two containers are furnished in a single cartridge, that cartridge
38 shall be marked by permanent marking to the cartridge with the name of the
39 formulator and the lots or batch numbers for both Component A and Component B,
40 the date of packaging, expiration date, and the quantity contained in ounces or
41 milliliters.

42
43 9-28.AP9

44 **Section 9-28, Signing Materials and Fabrication**

45 **April 2, 2018**

46 **9-28.10 VACANT**

47 This section, including title, is revised to read:

1 **9-28.10 Digital Printing**

2 Transparent and opaque durable inks used in digital printed sign messages shall be
3 as recommended by the manufacturer. When properly applied, digital printed colors
4 shall have a warranty life of the base retroreflective sign sheeting. Digital applied
5 colors shall present a smooth surface, free from foreign material, and all messages
6 and borders shall be clear and sharp. Digital printed signs shall conform to 70% of
7 the retroreflective minimum values established for its type and color. Digitally printed
8 signs shall meet the daytime color and luminance, and nighttime color requirements
9 of ASTM D 4956. No variations in color or overlapping of colors will be permitted.
10 Digital printed permanent traffic signs shall have an integrated engineered match
11 component clear protective overlay recommended by the sheeting manufacturer
12 applied to the entire face of the sign. On Temporary construction/maintenance signs
13 printed with black ink only, the protective overlay film is optional, as long as the
14 finished sign has a warranty of a minimum of three years from sign sheeting
15 manufacturer.

16
17 All digital printed traffic control signs shall be an integrated engineered match
18 component system. The integrated engineered match component system shall
19 consist of retroreflective sheeting, durable ink(s), and clear overlay film all from the
20 same manufacturer applied to aluminum substrate conforming to Section 9-28.8.

21
22 The sign fabricator shall use an approved integrated engineered match component
23 system as listed on the Qualified Products List (QPL). Each approved digital printer
24 shall only use the compatible retroreflective sign sheeting manufacturer's
25 engineered match component system products.

26
27 Each retroreflective sign sheeting manufacturer/integrated engineered match
28 component system listed on the QPL shall certify a department approved sign
29 fabricator is approved to operate their compatible digital printer. The sign fabricator
30 shall re-certify annually with the retroreflective sign manufacturer to ensure their
31 digital printer is still meeting manufacturer's specifications for traffic control signs.
32 Documentation of each re-certification shall be submitted to the QPL Engineer
33 annually.

34
35 **9-28.11 HARDWARE**

36 The last paragraph is revised to read:

37
38 All steel parts shall be galvanized in accordance with AASHTO M111. Steel bolts
39 and related connecting hardware shall be galvanized in accordance with ASTM F
40 2329.

41
42 **9-28.14(2) STEEL STRUCTURES AND POSTS**

43 The first sentence of the third paragraph is revised to read:

44
45 Anchor rods for sign bridge and cantilever sign structure foundations shall conform
46 to Section 9-06.5(4), including Supplemental Requirement S4 tested at -20°F.

47
48 In the second sentence of the fourth paragraph, "AASHTO M232" is revised to read
49 "ASTM F 2329."

50

1 The first sentence of the fifth paragraph is revised to read:

2
3 Except as otherwise noted, steel used for sign structures and posts shall have a
4 controlled silicon content of either 0.00 to 0.06 percent or 0.15 to 0.25 percent.

5
6 The last sentence of the last paragraph is revised to read:

7
8 If such modifications are contemplated, the Contractor shall submit a Type 2
9 Working Drawing of the proposed modifications.

10
11 9-29.AP9

12 **Section 9-29, Illumination, Signal, Electrical**

13 **April 2, 2018**

14 **9-29.1 CONDUIT, INNERDUCT, AND OUTERDUCT**

15 This section is supplemented with the following new subsection:

16
17 **9-29.1(10) Pull Tape**

18 Pull tape shall be pre-lubricated polyester pulling tape. The pull tape shall have a
19 minimum width of ½-inch and a minimum tensile strength of 500 pounds. Pull tape
20 may have measurement marks.

21
22 **9-29.2(1) JUNCTION BOXES**

23 The first paragraph is revised to read:

24
25 For the purposes of this Specification concrete is defined as portland cement or
26 blended hydraulic cement concrete and non-concrete is all others.

27
28 **9-29.2(1)A2 NON-CONCRETE JUNCTION BOXES**

29 The first paragraph is revised to read:

30
31 Material for the non-concrete junction boxes shall be of a quality that will provide for
32 a similar life expectancy as portland cement or blended hydraulic cement concrete
33 in a direct burial application.

34
35 **9-29.2(2)A STANDARD DUTY CABLE VAULTS AND PULL BOXES**

36 In the table in the last paragraph, the fourth, fifth and sixth rows are revised to read:

37

Slip Resistant Lid	ASTM A36 steel
Frame	ASTM A36 steel
Slip Resistant Frame	ASTM A36 steel

38
39 **9-29.6 LIGHT AND SIGNAL STANDARDS**

40 In the first sentence of the third paragraph, "AASHTO M232" is revised to read "ASTM F
41 2329."

42
43 Item number 2 of the last paragraph is revised to read:

- 1 2. The steel light and signal standard fabricator’s shop drawing submittal,
2 including supporting design calculations, submitted as a Type 2E Working
3 Drawing in accordance with Section 8-20.2(1) and the Special Provisions.
4

5 **9-29.6(1) STEEL LIGHT AND SIGNAL STANDARDS**

6 In the second paragraph, “AASHTO M232” is revised to read “ASTM F 2329.”
7

8 The first sentence of the last paragraph is revised to read:
9

10 Steel used for light and signal standards shall have a controlled silicon content of
11 either 0.00 to 0.06 percent or 0.15 to 0.25 percent.
12

13 **9-29.6(5) FOUNDATION HARDWARE**

14 In the last paragraph, “AASHTO M232” is revised to read “ASTM F 2329.”
15

16 **9-29.10(1) CONVENTIONAL ROADWAY LUMINAIRES**

17 This section is revised to read:
18

19 All conventional roadway luminaires shall meet 3G vibration requirements as
20 described in ANSI C136.31.
21

22 All luminaires shall have housings fabricated from aluminum. The housing shall be
23 painted flat gray, SAE AMS Standard 595 color chip No. 26280, unless otherwise
24 specified in the Contract. Painted housings shall withstand a 1,000 hour salt spray
25 test as specified in ASTM B117.
26

27 Each housing shall include a four bolt slip-fitter mount capable of accepting a
28 nominal 2” tenon and adjustable within +/- 5 degrees of the axis of the tenon. The
29 clamping bracket(s) and the cap screws shall not bottom out on the housing bosses
30 when adjusted within the +/- 5 degree range. No part of the slipfitter mounting
31 brackets on the luminaires shall develop a permanent set in excess of 0.2 inch
32 when the cap screws used for mounting are tightened to a torque of 32 foot-pounds.
33 Each luminaire shall include leveling reference points for both transverse and
34 longitudinal adjustment.
35

36 All luminaires shall include shorting caps when shipped. The caps shall be removed
37 and provided to the Contracting Agency when an alternate control device is required
38 to be installed in the photocell socket. House side shields shall be included when
39 required by the Contract. Order codes shall be modified to the minimum extent
40 necessary to include the option for house side shields.
41

42 This section is supplemented with the following new subsections:
43

44 **9-29.10(1)A High Pressure Sodium (HPS) Conventional Roadway**
45 **Luminaires**

46 HPS conventional roadway luminaires shall meet the following requirements:
47

- 48 1. General shape shall be “cobrahead” style, with flat glass lens and full cutoff
49 optics.
50

2. Light pattern distribution shall be IES Type III.
3. The reflector of all luminaires shall be of a snap-in design or secured with screws. The reflector shall be polished aluminum or prismatic borosilicate glass.
4. Flat lenses shall be formed from heat resistant, high-impact, molded borosilicate or tempered glass.
5. The lens shall be mounted in a doorframe assembly, which shall be hinged to the luminaire and secured in the closed position to the luminaire by means of an automatic latch. The lens and doorframe assembly, when closed, shall exert pressure against a gasket seat. The lens shall not allow any light output above 90 degrees nadir. Gaskets shall be composed of material capable of withstanding the temperatures involved and shall be securely held in place.
6. The ballast shall be mounted on a separate exterior door, which shall be hinged to the luminaire and secured in the closed position to the luminaire housing by means of an automatic type of latch (a combination hex/slot stainless steel screw fastener may supplement the automatic-type latch).
7. Each luminaire shall be capable of accepting a 150, 200, 250, 310, or 400 watt lamp complete and associated ballast. Lamps shall mount horizontally.

9-29.10(1)B Light Emitting Diode (LED) Conventional Roadway Luminaires

LED Conventional Roadway Luminaires are divided into classes based on their equivalent High Pressure Sodium (HPS) luminaires. Current classes are 200W, 250W, 310W, and 400W. LED luminaires are required to be pre-approved in order to verify their photometric output. To be considered for pre-approval, LED luminaires must meet the requirements of this section.

LED luminaires shall include a removable access door, with tool-less entry, for access to electronic components and the terminal block. The access door shall be removable, but include positive retention such that it can hang freely without disconnecting from the luminaire housing. LED drivers may be mounted either to the interior of the luminaire housing or to the removable door itself.

LED drivers shall be removable for user replacement. All internal modular components shall be connected by means of mechanical plug and socket type quick disconnects. Wire nuts may not be used for any purpose. All external electrical connections to the luminaire shall be made through the terminal block.

LED luminaires shall include a 7-pin NEMA photocell receptacle. The LED driver(s) shall be dimmable from ten volts to zero volts. LED output shall have a Correlated Color Temperature (CCT) of 4000K nominal (4000-4300K) and a Color Rendering Index (CRI) of 70 or greater. LED output shall be a minimum of 85% at 75,000 hours at 25 degrees Celsius.

1 LED luminaires shall be available for 120V, 240V, and 480V supply voltages.
2 Voltages refer to the supply voltages to the luminaires present in the field. LED
3 power usage shall not exceed the following maximum values for the applicable
4 wattage class:
5

Class	Max. Wattage
200W	110W
250W	165W
310W	210W
400W	275W

6
7 Only one brand of LED conventional roadway luminaire may be used on a Contract.
8 They do not necessarily have to be the same brand as any high-mast, underdeck,
9 or wall-mount luminaires when those types of luminaires are specified in the
10 Contract. LED luminaires shall include a standard 10 year manufacturer warranty.
11

12 The list of pre-approved LED Conventional Roadway Luminaires is available at
13 <http://www.wsdot.wa.gov/Design/Traffic/ledluminaires.htm>.
14

15 **9-29.10(2) DECORATIVE LUMINAIRES**

16 This section, including title, is revised to read:
17

18 **9-29.10(2) Vacant**

20 **9-29.12 ELECTRICAL SPLICE MATERIALS**

21 This section is supplemented with the following new subsections:
22

23 **9-29.12(3) Splice Enclosures**

24 **9-29.12(3)A Heat Shrink Splice Enclosure**

25 Heat shrink splice enclosures shall be medium or heavy wall cross-linked
26 polyolefin, meeting the requirements of AMS-DTL-23053/15, with thermoplastic
27 adhesive sealant. Heat shrink splices used for “wye” connections require
28 rubber electrical mastic tape.
29

30 **9-29.12(3)B Molded Splice Enclosure**

31 Molded splice enclosures shall use epoxy resin in a clear rigid plastic mold. The
32 material used shall be compatible with the insulation material of the insulated
33 conductor or cable. The component materials of the resin insulation shall be
34 packaged ready for convenient mixing without removing from the package.
35

36 **9-29.12(4) Re-Enterable Splice Enclosure**

37 Re-enterable splice enclosures shall use either dielectric grease or a flexible resin
38 contained in a two-piece plastic mold. The mold shall either snap together or use
39 stainless steel hose clamps.
40

41 **9-29.12(5) Vinyl Electrical Tape for Splices**

42 Vinyl electrical tape in splicing applications shall meet the requirements of MIL-I-
43 24391C.
44

1 **9-29.12(1) ILLUMINATION CIRCUIT SPLICES**

2 This section is revised to read:

3
4 Underground illumination circuit splices shall be solderless crimped connections
5 capable of securely joining the wires, both mechanically and electrically, as defined
6 in Section 8-20.3(8). Aerial illumination splices shall be solderless crimp connectors
7 or split bolt vice-type connectors.
8

9 **9-29.12(1)A HEAT SHRINK SPLICE ENCLOSURE**

10 This section is deleted in its entirety.

11
12 **9-29.12(1)B MOLDED SPLICE ENCLOSURE**

13 This section is deleted in its entirety.

14
15 **9-29.12(2) TRAFFIC SIGNAL SPLICE MATERIAL**

16 This section is revised to read:

17
18 Induction loop splices and magnetometer splices shall use an uninsulated barrel-
19 type crimped connector capable of being soldered.
20

21 **9-29.16(2)E PAINTING SIGNAL HEADS**

22 In the first sentence, "Federal Standard 595" is revised to read "SAE AMS Standard
23 595."
24

25 **9-29.17 SIGNAL HEAD MOUNTING BRACKETS AND FITTINGS**

26 In the first paragraph, item number 2 under **Stainless Steel** is revised to read:

- 27
28 2. Bands or cables for Type N mount.
29

30 **9-29.20 PEDESTRIAN SIGNALS**

31 In item 2C of the second paragraph, "Federal Standard 595" is revised to read "SAE
32 AMS Standard 595."
33

34 9-34.AP9

35 **Section 9-34, Pavement Marking Material**
36 **January 2, 2018**

37 **9-34.2(2) COLOR**

38 Each reference to "Federal Standard 595" is revised to read "SAE AMS Standard 595."
39

40 **9-34.2(5) LOW VOC WATERBORNE PAINT**

41 The heading "Standard Waterborne Paint" is supplemented with "Type 1 and 2."
42

43 The heading "High-Build Waterborne Paint" is supplemented with "Type 4."
44

45 The heading "Cold Weather Waterborne Paint" is supplemented with "Type 5."
46

47 In the row beginning with "° @90°F," each minimum value is revised to read "60."
48

1 In the row beginning with “Fineness of Grind, (Hegman Scale),” each minimum value is
 2 revised to read “3.”

3

4 The last four rows are replaced with the following:

5

Vehicle Composition	ASTM D 2621	100% acrylic emulsion	100% cross-linking acrylic ⁴	100% acrylic emulsion
Freeze-Thaw Stability, KU	ASTM D 2243 and D 562	@ 5 cycles show no coagulation or change in viscosity greater than ± 10 KU	@ 5 cycles show no coagulation or change in viscosity greater than ± 10 KU	@ 3 cycles show no coagulation or change in viscosity greater than ± 10 KU
Heat Stability	ASTM D 562 ²	± 10 KU from the initial viscosity	± 10 KU from the initial viscosity	± 10 KU from the initial Viscosity
Low Temperature Film Formation	ASTM D 2805 ³	No Cracks*		No Cracks
Cold Flexibility ⁵	ASTM D522	Pass at 0.5 in mandrel*		
Test Deck Durability ⁶	ASTM D913	$\geq 70\%$ paint retention in wheel track*		
Mud Cracking	(See note 7)	No Cracks	No Cracks	

6

7 After the preceding Amendments are applied, the following new column is inserted after
 8 the “Standard Waterborne Paint Type 1 and 2” column:

9

1

Semi-Durable Waterborne Paint Type 3			
White		Yellow	
Min.	Max.	Min.	Max.
Within ± 0.3 of qualification sample			
80	95	80	95
60		60	
77		77	
	65		65
43		43	
	1.25		1.25
3		3	
0.98		0.96	
88		50	
100°		100°	
9.5		9.5	
	10		10
100% acrylic emulsion			
@ 5 cycles show no coagulation or change in viscosity greater than ± 10 KU			
± 10 KU from the initial viscosity			
No Cracks			
Pass at 0.25 in mandrel			
≥70% paint retention in wheel track			
No Cracks			

2
3
4
5
6
7

The footnotes are supplemented with the following:

⁴Cross-linking acrylic shall meet the requirements of federal specification TT-P-1952F Section 3.1.1.

1 ⁵Cold Flexibility: The paint shall be applied to an aluminum panel at a wet film
2 thickness of 15 mils and allowed to dry under ambient conditions (50±10% RH and
3 72±5 °F) for 24 hours. A cylindrical mandrel apparatus (in accordance with ASTM
4 D522 method B) shall be put in a 40°F refrigerator when the paint is drawn down.
5 After 24 hours, the aluminum panel with dry paint shall be put in the 40°F
6 refrigerator with the mandrel apparatus for 2 hours. After 2 hours, the panel and test
7 apparatus shall be removed and immediately tested to according to ASTM D522 to
8 evaluate cold flexibility. Paint must show no evidence of cracking, chipping or flaking
9 when bent 180 degrees over a mandrel bar of specified diameter.

10
11 ⁶NTPEP test deck, or a test deck conforming to ASTM D713, shall be conducted for
12 a minimum of six months with the following additional requirements: it shall be
13 applied at 15 wet mils to a test deck that is located at 40N latitude or higher with at
14 least 10,000 ADT and which was applied during the months of September through
15 November.

16
17 ⁷Paint is applied to an approximately 4" x 12" aluminum panel using a drawdown bar
18 with a 50 mil gap. The coated panel is allowed to dry under ambient conditions
19 (50±10% RH and 72±5 °F) for 24 hours. Visual evaluation of the dry film shall reveal
20 no cracks.

21 22 **9-34.3 PLASTIC**

23 In the first sentence of the last paragraph, "Federal Standard 595" is revised to read
24 "SAE AMS Standard 595."

25 26 **9-34.3(2) TYPE B – PRE-FORMED FUSED THERMOPLASTIC**

27 In the last two paragraphs, each reference to "Federal Standard 595" is revised to read
28 "SAE AMS Standard 595."

29 30 **9-34.7(1) REQUIREMENTS**

31 The first paragraph is revised to read:

32
33 Field performance evaluation is required for low VOC solvent-based paint per
34 Section 9-34.2(4), Type A – liquid hot applied thermoplastic per Section 9-34.3(1),
35 Type B – preformed fused thermoplastic per Section 9-34.3(2), Type C – cold
36 applied preformed tape per Section 9-34.3(3), and Type D – liquid applied methyl
37 methacrylate per Section 9-34.3(4).

38
39 The last paragraph is deleted.

40 41 **9-34.7(1)C AUTO NO-TRACK TIME**

42 The first paragraph is revised to read:

43
44 Auto No-Track Time will only be required for low VOC solvent-based paint in
45 accordance with Section 9-34.2(4).

46
47 The second and third sentences of the second paragraph are deleted.

PART 5

SPECIAL PROVISIONS **(FOR SCHEDULES A1, A2, AND A3)**

PART 5

SPECIAL PROVISIONS

(SCHEDULES A1, A2, AND A3)

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INTRODUCTION TO THE SPECIAL PROVISIONS

(August 14, 2013 APWA GSP)

The work on this project shall be accomplished in accordance with the *Standard Specifications for Road, Bridge and Municipal Construction*, 2016 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 the Amendments to the Standard Specifications and these Special Provisions, all of which are made a part of the Contract Documents, shall govern all of the Work.

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 either 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 project-specific Special Provisions are not labeled as such. The GSPs are labeled under the headers of each GSP, with the effective date of the GSP and its source. For example:

(March 8, 2013 APWA GSP)
(April 1, 2013 WSDOT GSP)
(June 2016 City of Sammamish)
*(***** Project Specific Special Provisions)*

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 Sammamish Public Works Standards (CSPWS) - 2016*
- *King County Department of Transportation Road Services Division Design and Construction Standards (KCRS) - 2016*
- *Sammamish Plateau Water and Sewer District Standards (SPWSD) - 2017*

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 Zackuse Creek Fish Passage and Stream Restoration Project in the City of Sammamish, King County. The project includes clearing and grubbing, grading and excavation of 400 ft of constructed stream channel and habitat enhancement plantings (Schedule A1). The project also includes demolition and replacement of the existing 30-inch concrete pipe culvert under East Lake Sammamish Parkway (Schedule A2) with temporary and permanent utility bypass (Schedule A3), a 36-inch culvert under the Lake Sammamish Trail (Schedule B) and a 2 ft x 3.5 ft box culvert under East Lake Sammamish Shore Lane NE (Schedule C) with fish passable structures, temporary stream bypass, temporary access road and traffic control, erosion/water pollution control, roadway and landscape restoration, and all other works noted in these documents all in accordance with the attached Contract Plans, these Special Provisions, and the Standard Specifications.

The City of Sammamish is the owner of Schedules A1, A2, and A3.
King County is the owner of Schedules B and C.

SECTION 1-01, DEFINITIONS AND TERMS

1-01.3 Definitions

(January 4, 2016 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, Amendments, 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.

SECTION 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.

1-02.2 Plans and Specifications

(June 27, 2011 APWA GSP)

Delete this section and replace it with the following:

Information as to where Bid Documents can be obtained or reviewed can be found in the Call for Bids (Advertisement 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")	2	Furnished automatically upon award.
Contract Provisions	2	Furnished automatically upon award.
Large plans (e.g., 22" x 34")	1	Furnished only upon request.

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

1-02.4 Examination of Plans, Specifications and Site Work

1-02.4(1) General

(August 15, 2016 APWA GSP Option B)

The first sentence of the last paragraph is revised to read:

Any prospective Bidder desiring an explanation or interpretation of the Bid Documents, shall request the explanation or interpretation in writing by close of business three (3) business days preceding the bid opening to allow a written reply to reach all prospective Bidders before the submission of their Bids.

1-02.4(2) Subsurface Information

(March 8, 2013 APWA GSP)

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

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

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

(June 20, 2017 APWA GSP)

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 fourth paragraph and replace it with the following:

The Bidder shall submit with the Bid a completed Underutilized Disadvantaged Business Enterprise (UDBE) Utilization Certification, when required by the Special Provisions. For each and every UDBE firm listed on the Bidder's completed Underutilized Disadvantaged Business Enterprise Utilization Certification, the Bidder shall submit written confirmation from that UDBE firm that the UDBE is in agreement with the UDBE participation commitment that the Bidder has made in the Bidder's completed Underutilized Disadvantaged Business Enterprise Utilization Certification. WSDOT Form 422-031U (Underutilized Disadvantaged Business Enterprise Written Confirmation Document) is to be used for this purpose. Bidder must submit good faith effort documentation with the Underutilized Disadvantaged Business Enterprise Utilization Certification only in the event the bidder's efforts to solicit sufficient UDBE participation have been unsuccessful. Directions for delivery of the Underutilized Disadvantaged Business Enterprise Written Confirmation Documents and Underutilized Disadvantaged Business Enterprise Good Faith Effort documentation are included in Sections 1-02.9

Delete the last paragraph, and replace it with the following:

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.

1-02.9 Delivery of Proposal

(July 31, 2017 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.

If the project has FHWA funding and requires UDBE Written Confirmation Document(s) or Good Faith Effort (GFE) Documentation, then to be considered responsive, the Bidder shall submit Written Confirmation Documentation from each UDBE firm listed on the Bidder's completed UDBE Utilization Certification, form 272-056U, as required by Section 1-02.6. The UDBE 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 document(s) shall be received **no later than 24 hours** (not including Saturdays, Sundays and Holidays) after the time for delivery of the Bid Proposal.

The Bidder shall submit to the Contracting Agency a signed "Certification of Compliance with Wage Payment Statutes" document where the Bidder under penalty of perjury verifies that the Bidder is in compliance with responsible bidder criteria in

RCW 39.04.350 subsection (1) (g), as required per Section 1-02.14. The “Certification of Compliance with Wage Payment Statutes” document shall be received either with the Bid Proposal or **no later than 24 hours** (not including Saturdays, Sundays and Holidays) after the time for delivery of the Bid Proposal.

If submitted after the Bid Proposal is due, the document(s) must be submitted in a sealed envelope labeled the same as for the Proposal, with “Supplemental Information” added. All other information required to be submitted with the Bid Proposal must be submitted with the Bid Proposal itself, at the time stated in the Call for Bids.

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” (UDBE confirmations, GFE documentation, or Certification of Compliance with Wage Payment Statutes) that is received after the time specified above, or received in a location other than that specified in the Call for Bids.

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

(June 20, 2017 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, if applicable, as required in Section 1-02.6;
 - h. The Bidder fails to submit or properly complete an Underutilized Disadvantaged Business Enterprise Certification, if applicable, as required in Section 1-02.6;
 - i. The Bidder fails to submit written confirmation from each UDBE firm listed on the Bidder's completed UDBE Utilization Certification that they are in agreement with the bidder's UDBE 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 UDBE 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 Bid Proposal does not constitute a definite and unqualified offer to meet the material terms of the Bid invitation; or
 - l. 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

(July 31, 2017 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.

In addition, the Bidder shall submit to the Contracting Agency a signed "Certification of Compliance with Wage Payment Statutes" document where the Bidder under penalty of perjury verifies that the Bidder is in compliance with responsible bidder criteria in RCW 39.04.350 subsection (1)(g). A form appropriate for "Certification of Compliance with Wage Payment Statutes" will be provided by the Contracting Agency in the Bid Documents. The form provided in the Bid Documents shall be submitted with the Bid as stated in Section 1-02.9.

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 shall not be listed on the Washington State Department of Revenue's "Delinquent Taxpayer List" website: <http://dor.wa.gov/content/fileandpaytaxes/latefiling/dtlwest.aspx> , or if they are so listed, they 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 Supplemental Criteria 3-7 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 supplemental criteria 3-7 together with supporting documentation (sufficient in the sole judgment of the Contracting Agency) demonstrating compliance with Supplemental Criteria 3-7. 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

(August 14, 2013 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.

SECTION 1-03, AWARD AND EXECUTION OF CONTRACT

1-03.1 Consideration of Bids

(January 23, 2006 APWA GSP)

Revise the first paragraph to read:

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

1-03.3 Execution of Contract

(October 1, 2005 APWA GSP)

Revise this section to read:

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

Within ten (10) calendar days after the award date, the successful bidder shall return the signed Contracting Agency-prepared contract, an insurance certification as required by Section 1-07.18, and a satisfactory bond as required by law and Section 1-03.4. Before execution of the contract by the Contracting Agency, the successful bidder shall provide any pre-award information the Contracting Agency may require under Section 1-02.15.

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

If the bidder experiences circumstances beyond their control that prevents return of the contract documents within the calendar days after the award date stated above, the Contracting Agency may grant up to a maximum of five (5) additional calendar days for return of the documents, provided the Contracting Agency deems the circumstances warrant it.

1-03.4 Contract Bond

(July 23, 2015 APWA GSP)

Delete the first paragraph and replace it with the following:

The successful bidder shall provide executed payment and performance bond(s) for the full contract amount. The bond may be a combined payment and performance bond; or be separate payment and performance bonds. In the case of separate payment and performance bonds, 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,
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
(July 23, 2015 APWA GSP)

Revise this section to read:

Any decision made by the Contracting Agency regarding the Award and execution of the Contract or Bid rejection shall be conclusive subject to the scope of judicial review permitted under Washington Law. Such review, if any, shall be timely filed in the Superior Court of the county where the Contracting Agency headquarters is located, provided that where an action is asserted against a county, RCW 36.01.05 shall control venue and jurisdiction.

SECTION 1-04, SCOPE OF THE WORK

1-04.2 Coordination of Contract Documents, Plans, Special Provisions, Specifications, and Addenda
(March 13, 2012 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. Amendments to the Standard Specifications,
6. Standard Specifications,
7. Contracting Agency's Standard Plans or Details (if any), and
8. WSDOT Standard Plans for Road, Bridge, and Municipal Construction

1-04.4(1) Minor Changes
(*****)

Section 1-04.4(1), including title, is revised to read as follows:

1-04.4(1) Unexpected Site Changes

Payments or credits for changes amounting to \$25,000 or less may be made under the Bid item “Unexpected Site Changes.” At the discretion of the Engineer, this procedure for Unexpected Site Changes may be used in lieu of the more formal procedure as outlined in Section 1-04.4, Changes.

The Contractor will be provided a copy of the completed order for Unexpected Site Changes. The agreement for the Unexpected Site Changes will be documented by signature of the Contractor, or notation of verbal agreement. If the Contractor is in disagreement with anything required by the order for Unexpected Site Changes, the Contractor may protest the order as provided in Section 1-04.5.

Payments may be determined in accordance with Section 1-09.6 or negotiated prior to completing the work. For the purpose of providing a common Proposal for all Bidders, the Contracting Agency has entered an amount for “Unexpected Site Changes” in the Proposal to become a part of the total Bid by the Contractor. Credits will be determined in accordance with Section 1-09.4.

Unexpected Site Changes	Estimate
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To provide a common basis for all bidders, the City has established in the proposal a dollar value for all items to be paid by “Unexpected Site Changes.” All such items are to become a part of the Contractor’s total bid. However, the City 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.

1-04.6 Variation in Estimated Quantities

(May 25, 2006 APWA GSP; may not be used on FHWA-funded projects)

Supplement this section with the following:

The quantities for “Removal of Existing AC Water Main,” “Unsuitable Foundation Excavation Incl. Haul,” “Quarry Spalls,” “Construction Geotextile for Soil Stabilization,” “Construction Geotextile for Ditch Lining,” and “Controlled Density Fill” have been entered into the Proposal only to provide a common proposal for bidders. Actual quantities will be determined in the field as the work progresses, and will be paid at the original bid price, regardless of final quantity. These bid items shall not be subject to the provisions of 1-04.6 of the Standard Specifications.

SECTION 1-05, CONTROL OF WORK

1-05.4 Conformity With and Deviations from Plans and Stakes

(*****)

Section 1-05.4 is supplemented with the following:

The Contracting Agency will provide survey reference datum for construction of the project. The Contractor shall protect and preserve datum for reference during the duration of the project. The Contractor shall be permitted one re-staking of the above datum during the life of the contract, free of charge. Contracting Agency reserves the right to deduct additional re-staking costs from funds due the Contractor. Additional surveying may be performed by the Contracting Agency to ensure compliance with the Contract Documents and permits. This surveying inspection shall be subject to the provisions of Section 1-05.3, entitled "Inspection of Work and Materials," of this contract.

All other survey and construction layout needs for this project shall be provided by the Contractor at the Contractor's expense and shall be performed by experienced individuals under the general supervision of a Washington State Licensed Surveyor. Layout shall be performed with sufficient lead-time, in advance of the critical project work, to allow for resolution of any potential survey conflicts. Any survey conflicts identified during the project shall be immediately forwarded to the Engineer's representative for resolution.

If or when survey conflicts occur, the Contractor shall continue the construction process on other aspects of the project. Any change to the operation necessary to work around the conflicts shall be incidental to the various bid items of the contract. All costs and expenses incurred by the Contractor or its subcontractors to work around the survey conflicts shall be borne exclusively the Contractor. Unless otherwise agreed to by the Contracting Agency in writing, no additional compensation shall be paid by the Contracting Agency to the Contractor to resolve survey conflicts.

(August 7, 2017 WSDOT GSP)

Contractor Surveying – Roadway

Copies of the Contracting Agency provided primary survey control data are available for the bidder's inspection at the office of the Engineer.

The Contractor shall be responsible for setting, maintaining, and resetting all alignment stakes, slope stakes, and grades necessary for the construction of the roadbed, drainage, surfacing, paving, channelization and pavement marking, illumination and signals, guardrails and barriers, and signing. Except for the survey control data to be furnished by the Contracting Agency, calculations, surveying, and measuring required for setting and maintaining the necessary lines and grades shall be the Contractor's responsibility.

The Contractor shall inform the Engineer when monuments are discovered that were not identified in the Plans and construction activity may disturb or damage the monuments. All monuments noted in the plans "DO NOT DISTURB" shall be protected throughout the length of the project or be replaced at the Contractors expense.

Detailed survey records shall be maintained, including a description of the work performed on each shift, the methods utilized, and the control points used. The record shall be adequate to allow the survey to be reproduced. A copy of each day's record shall be provided to the Engineer within three working days after the end of the shift.

The meaning of words and terms used in this provision shall be as listed in "Definitions of Surveying and Associated Terms" current edition, published by the American Congress on Surveying and Mapping and the American Society of Civil Engineers.

The survey work shall include but not be limited to the following:

1. Verify the primary horizontal and vertical control furnished by the Contracting Agency, and expand into secondary control by adding stakes and hubs as well as additional survey control needed for the project. Provide descriptions of secondary control to the Contracting Agency. The description shall include coordinates and elevations of all secondary control points.
2. Establish the centerlines of all alignments, by placing hubs, stakes, or marks on centerline or on offsets to centerline at all curve points (PCs, PTs, and PIs) and at points on the alignments spaced no further than 50 feet.
3. Establish clearing limits, placing stakes at all angle points and at intermediate points not more than 50 feet apart. The clearing and grubbing limits shall be 5 feet beyond the toe of a fill and 10 feet beyond the top of a cut unless otherwise shown in the Plans.
4. Establish grading limits, placing slope stakes at centerline increments not more than 50 feet apart. Establish offset reference to all slope stakes. If Global Positioning Satellite (GPS) Machine Controls are used to provide grade control, then slope stakes may be omitted at the discretion of the Contractor.
5. Establish the horizontal and vertical location of all drainage features, placing offset stakes to all drainage structures and to pipes at a horizontal interval not greater than 25 feet.
6. Establish roadbed and surfacing elevations by placing stakes at the top of subgrade and at the top of each course of surfacing. Subgrade and surfacing stakes shall be set at horizontal intervals not greater than 50 feet in tangent sections, 25 feet in curve sections with a radius less than 300 feet, and at 10-foot intervals in intersection radii with a radius less than 10 feet. Transversely, stakes shall be placed at all locations where the roadway slope changes and at additional points such that the transverse spacing of stakes is not more than 12 feet. If GPS Machine Controls are used to provide grade control, then roadbed and surfacing stakes may be omitted at the discretion of the Contractor.

7. Establish intermediate elevation benchmarks as needed to check work throughout the project.
8. Provide references for paving pins at 25-foot intervals or provide simultaneous surveying to establish location and elevation of paving pins as they are being placed.
9. For all other types of construction included in this provision, (including but not limited to channelization and pavement marking, illumination and signals, guardrails and barriers, and signing) provide staking and layout as necessary to adequately locate, construct, and check the specific construction activity.
10. Contractor shall determine if changes are needed to the profiles or roadway sections shown in the Contract Plans in order to achieve proper smoothness and drainage where matching into existing features, such as a smooth transition from new pavement to existing pavement. The Contractor shall submit these changes to the Engineer for review and approval 10 days prior to the beginning of work.

The Contractor shall provide the Contracting Agency copies of any calculations and staking data when requested by the Engineer.

To facilitate the establishment of these lines and elevations, the Contracting Agency will provide the Contractor with primary survey control information consisting of descriptions of two primary control points used for the horizontal and vertical control, and descriptions of two additional primary control points for every additional three miles of project length. Primary control points will be described by reference to the project alignment and the coordinate system and elevation datum utilized by the project. In addition, the Contracting Agency will supply horizontal coordinates for the beginning and ending points and for each Point of Intersection (PI) on each alignment included in the project.

The Contractor shall ensure a surveying accuracy within the following tolerances:

	Vertical	Horizontal
Slope stakes	±0.10 feet	±0.10 feet
Subgrade grade stakes set 0.04 feet below grade	±0.01 feet	±0.5 feet (parallel to alignment) ±0.1 feet (normal to alignment)
Stationing on roadway	N/A	±0.1 feet
Alignment on roadway	N/A	±0.04 feet
Surfacing grade stakes	±0.01 feet	±0.5 feet (parallel to alignment) ±0.1 feet (normal to alignment)
Roadway paving pins for surfacing or paving	±0.01 feet	±0.2 feet (parallel to alignment)

±0.1 feet
(normal to alignment)

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

When staking roadway alignment and stationing, the Contractor shall perform independent checks from different secondary control to ensure that the points staked are within the specified survey accuracy tolerances.

The Contractor shall calculate coordinates for the alignment. The Contracting Agency will verify these coordinates prior to issuing approval to the Contractor for commencing with the work. The Contracting Agency will require up to seven calendar days from the date the data is received.

Contract work to be performed using contractor-provided stakes shall not begin until the stakes are approved by the Contracting Agency. Such approval shall not relieve the Contractor of responsibility for the accuracy of the stakes.

Stakes shall be marked in accordance with Standard Plan A10.10. When stakes are needed that are not described in the Plans, then those stakes shall be marked, at no additional cost to the Contracting Agency as ordered by the Engineer.

Payment

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

Roadway Surveying	Per Lump Sum
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The lump sum contract price for "Roadway 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.

1-05.11 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, may not be used on FHWA funded projects)

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.

1-05.15 Method of Serving Notices

(March 25, 2009 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
(October 1, 2005 APWA GSP)

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
(March 8, 2013 APWA GSP)

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

The Contractor shall provide record drawings to the Sammamish Plateau Water and Sewer District to include a surveyed point plot map in AutoCAD 2008 format with surveyed locations of all new water and sewer facilities including horizontal and vertical locations of valves, bends, fittings, manhole invert elevations. The as-built file needs to be assigned the local projection of Washington State Plane North, NAD 1983 (HARN), US Feet.

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

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

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

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

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

When the Contract calls for the Contractor to do the surveying/staking, the applicable tolerance limits include, but are not limited to the following:

	Vertical	Horizontal
As-built sanitary & storm invert and grate elevations	± 0.01 foot	± 0.01 foot
As-built monumentation	± 0.001 foot	± 0.001 foot
As-built waterlines, inverts, valves, hydrants	± 0.10 foot	± 0.10 foot
As-built stream low flow channel, channel bottom and boulder drops elevations	± 0.10 foot	± 0.10 foot
As-built buildings (fin. Floor elev.)	± 0.01 foot	± 0.10 foot
As-built gas lines, power, TV, Tel, Com	± 0.10 foot	± 0.10 foot
As-built signs, signals, etc.	N/A	± 0.10 foot

Making Entries on the Record Drawings:

- Use erasable colored pencil (not ink) for all markings on the Record Drawings, conforming to the following color code:
 - Additions - Red
 - Deletions - Green
 - Comments - Blue
 - Dimensions - Graphite
- Provide the applicable reference for all entries, such as the change order number, the request for information (RFI) number, or the approved shop drawing number.
- Date all entries.
- Clearly identify all items in the entry with notes similar to those in the Contract Drawings (such as pipe symbols, centerline elevations, materials, pipe joint abbreviations, etc.).

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

Payment will be made for the following bid item:

Record Drawings (Minimum Bid \$2,500)	Per Lump Sum
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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.

SECTION 1-06, CONTROL OF MATERIAL

1-06.1 Approval of Materials Prior to Use

(June 2006 City of Sammamish)

Section 1-06.1 is supplemented with the following:

1. Within these Contract Documents, certain items are specified by brand, style, trade name, or manufacturer in order to set forth a standard of quality, and/or preference by the Contracting Agency. It is not the intent of these Specifications to exclude other processes or materials of a type and quality equal to those designated.
2. Whenever a manufacturer's name, brand, or item designation is given, it shall be understood that the words "or equal" follow such name or designation whether in fact they do so or not.
3. The phrase "or equal" is not to be construed to mean that material or equipment will be necessarily approved as equal by the Engineer; any such approval shall only be effective when the item has been specifically approved in advance and in writing by the Engineer.
4. No additional compensation or extension of time will be allowed the Contractor for any changes required to adopt substituted materials or equipment.

1-06.1(4) Fabrication Inspection Expense

(June 27, 2011 APWA GSP)

Delete this section in its entirety.

1-06.4 Handling and Storing Materials

1-06.4(1) On-Site Storage (New Section)

(June 2006 City of Sammamish)

Section 1-06.4(1) is added as follows:

The Contractor shall store all equipment and materials in a safe and suitable place in accordance with the Manufacturer's recommendations. Materials shall be covered or wrapped to protect them from moisture, dust and deterioration as required. All on-site storage areas shall be approved in advance by the Engineer.

1-06.4(2) Off-Site Storage (New Section)

(June 2006 City of Sammamish)

Section 1-06.4(2) is added as follows:

The Contractor may be required to provide off-site storage of equipment and materials to enable construction to occur at the construction site. The Contractor has full responsibility to secure all off-site storage areas, if needed, and shall include the costs for providing such storage areas in the Contract Bid Proposal for the individual equipment and material items requiring offsite storage. All off-site storage areas shall be fenced, secure and have access restricted or withheld from the General Public.

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 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.

SECTION 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.

1-07.2 State Taxes

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

1-07.2 State Sales Tax

(June 27, 2011 APWA GSP)

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

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

The Contracting Agency will pay the retained percentage (or release the Contract Bond if a FHWA-funded Project) only if the Contractor has obtained from the Washington State Department of Revenue a certificate showing that all contract-

related taxes have been paid (RCW 60.28.051). The Contracting Agency may deduct from its payments to the Contractor any amount the Contractor may owe the Washington State Department of Revenue, whether the amount owed relates to this contract or not. Any amount so deducted will be paid into the proper State fund.

1-07.2(1) State Sales Tax — Rule 171

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

1-07.2(2) State Sales Tax — Rule 170

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

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

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

1-07.2(3) Services

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

1-07.5 Environmental Regulations

1-07.5(1) General

(June 2006 City of Sammamish)

Supplement this Section with the following:

The Contractor's attention is directed to Section 1-07.5 in its entirety, in addition to the following. The Contractor shall provide for the flow of all watercourses, including streams, ditches, drains, and sewers intercepted during the progress of the Work and shall completely restore the same in as good condition as found or shall make such final provisions for restoration as the Contracting Agency may require. The Contractor shall not obstruct the flow of water but shall use all proper measures to provide for the free passage of surface water.

The Contractor shall make provisions to take care of all surplus water, mud, silt, slickings, or other runoff pumped from excavations or resulting from sluicing or other operations and shall be responsible for any damage of whatever nature resulting from failure to provide for the adequate control of runoff.

No direct payment shall be allowed for the above Work. Payment for the cost thereof shall be included in the prices Bid for the various items which comprise the Contract Work.

Section 1-07.5(3) State Department of Ecology

Supplement this Section with the following:

Work on this project is governed by the requirements of the City of Sammamish Phase II National Pollution Discharge Elimination System (NPDES) which requires the implementation of a Stormwater Pollution Prevention Plan (SWPPP), consisting of the narrative, the Erosion Control Plan, and associated details. SWPPP requirements are documented in the narrative portion of the SWPPP. The full text of this document is provided in Appendix "E."

Implementation of the SWPPP is shown on the Temporary Water Pollution and Erosion Control Plan and described in the narrative which has also been included in Appendix "E." As a first order of work, the Contractor shall be responsible for including information that completes the SWPPP, including, but not limited to:

- The name and phone number of the Environmental Compliance Lead (ECL): the person or company responsible for the erosion control of this project;
- The identification of project phasing and schedule;
- Any proposed changes to Best Management Practices (BMPs) listed in narrative and/or shown in the Erosion Control Plan; and
- A site specific inspection and monitoring plan, including proposed record-keeping methods.

The second order of work includes implementing the SWPPP and for fulfilling the objectives stated in the NPDES Permit.

All changes to the temporary and/or permanent erosion and sedimentation Control features included in the Plan shall be approved prior to implementation. The changes

must be approved by the Engineer and must hereafter be reflected on the SWPPP, used for compliance on site.

Stormwater, dewatering water, or other authorized non-stormwater discharges that has come into contact with pH modifying substances such as concrete rubble, concrete pours or amended soils, need to be maintained between 6.5 – 8.5 standard units (su). If pH exceeds 8.5 su, the Contractor shall immediately discontinue work and initiate treatment to prevent discharges outside the acceptable range from occurring. All neutralization methods used shall be in accordance with the permit. Work may resume once treatment has been implemented and pH of the stormwater or authorized non-stormwater discharge is between 6.5 - 8.5 su or it can be demonstrated that high pH waters will not discharge to surface waters.

Stormwater, dewatering water, and other authorized non-stormwater discharges are monitored weekly for compliance with the turbidity benchmark (25 nephelometric turbidity units (ntu)) and the phone reporting trigger value (250 ntu) by the City. When the turbidity benchmark is breached, the best management practices (BMPs) installed on-site are not working adequately and need to be adapted, maintained or more BMPs shall be installed. When the turbidity phone reporting trigger value is breached, immediate action is required in order to lower the turbidity to <25 ntu or to eliminate the discharge. Daily follow-up discharge samples will be collected at all locations where a discharge of 250 ntu or higher was collected unless the discharge was stopped or eliminated.

Heavy equipment working in wetlands or mudflats must be placed on mats or other measures taken to minimize soil disturbance as approved by the Engineer.

Environmental Commitments

Section 1-07.5 is supplemented with the following:

The following Provisions list requirements, in addition to those required elsewhere in the Contract, imposed upon the Contracting Agency by the various documents referenced in the Special Provision Permits and Licenses. Throughout the work, the Contractor shall comply with the following requirements:

Invasive Species Management

All worker's gear, boots, waders, etc. and hand tools shall follow the "Level 2 Decontamination Protocol" procedures in the Washington Department of Fish and Wildlife "Invasive Species Management Protocols – Version 2 dated November 2012 (or the latest version of this document) located at the following website: <http://wdfw.wa.gov/publications/01490/wdfw01490.pdf>. The freezing method is not allowed.

Payment

All costs to comply with this special provision for the environmental commitments and requirements are incidental to the contract and are the responsibility of the Contractor. The Contractor shall include all related costs in the associated bid prices of the contract.

Permits and Licenses

Section 1-07.6 is supplemented with the following:

An updated copy of the SWPPP shall be kept by the Contractor at the construction site, available for inspection by the Engineer at all times.

The Contractor shall submit changes to the SWPPP to the Engineer for approval. The Contractor shall implement only those changes which have been approved by the Engineer. The Engineer may also order changes to the SWPPP. The Contractor shall implement these changes without delay.

The Contractor is hereby notified that substantial penalties exist for failure to implement the provision of the NPDES Permit. Fines up to \$10,000.00 per day can be levied for infractions. Any such fines or penalties incurred by the County as permittee which are due to the actions or lack thereof by the Contractor, shall be deducted from the Contract payments.

Payment

Payment for the work necessary to implement the SWPPP shall be at applicable unit prices for items of work covered in the Contract.

All costs involved in updating the SWPPP shall be included in the bid item "Stormwater Pollution Prevention Plan (SWPPP) and Implementation."

Section 1-07.6 is supplemented with the following:

Corps of Engineers Permit

The Contracting Agency has obtained a Corps of Engineers permit for this project (Permit Number NWS2017-529). All contacts with the Corps of Engineers concerning this permit shall be through the Contracting Agency. A copy of the permit is located in Appendix "F." The Contractor shall, at no expense to the City, comply with all requirements of the Corp of Engineers in the construction of this project and shall secure additional permits as are necessary.

Washington 401 Water Quality Certification Permit

The Contracting Agency has obtained a State of Washington 401 Water Quality Certification Permit for this project (Permit Number *****\$STO BE ISSUED WITH USACE PERMIT\$\$*****). All contacts with the State of Washington concerning this permit shall be through the Contracting Agency. A copy of the permit is located in Appendix "F." The Contractor shall, at no expense to the Contracting Agency, comply with all requirements of the State of Washington in the construction of this project and shall secure additional permits as are necessary.

Hydraulic Project Approval (HPA)

The Contracting Agency has obtained a Hydraulic Project Approval (HPA) for this project. All contacts with the Department of Fish And Wildlife concerning this approval shall be through the Contracting Agency. A copy of the permit is included in Appendix "F." The Contractor shall, at no expense to the Contracting Agency, comply with all requirements of the State of Washington in the construction of this project and shall secure additional permits as are necessary.

State Environmental Policy Act (SEPA)

The Contracting Agency has obtained a State Environmental Policy Act (SEPA)

for this project. All contacts with the City of Sammamish Department of Planning and Development concerning this approval shall be through the Contracting Agency. A copy of the permit is included in Appendix "F." The Contractor shall, at no expense to the Contracting Agency, comply with all requirements of the permit in the construction of this project and shall secure additional permits as are necessary.

Public Agency Utility Exception (PAUE)

The Contracting Agency has obtained a Public Agency Utility Exception (PAUE) for this project. All contacts with the City of Sammamish Department of Planning and Development concerning this approval shall be through the Contracting Agency. A copy of the permit is included in Appendix "F." The Contractor shall, at no expense to the Contracting Agency, comply with all requirements of the permit in the construction of this project and shall secure additional permits as are necessary.

Other Permits

Contractor shall obtain all required permits necessary to complete the work.

1-07.7 Load Limits

Section 1-07.7 is supplemented with the following:

(March 13, 1995)

If the sources of materials provided by the Contractor necessitate 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.

1-07.11 Requirements for Nondiscrimination

(July 18, 2016 APWA GSP, Option C)

Supplement this section with the following:

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

General Statement

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

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

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

Non-Discrimination

Contractors shall not create barriers to open and fair opportunities for all

businesses, including MSVWBEs, to participate in the Work on this Contract. This includes the opportunity to compete for subcontracts as sources of supplies, equipment, construction or services.

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

Voluntary MSVWBE Participation Goals

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

The Contracting Agency has established the following voluntary goals:

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

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

Definitions

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

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

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

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

MSVWBE Inclusion Plan

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

MSVWBE Reporting

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

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

MSVWBE Payment

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

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

(*****)

Section 1-07.15(1) is supplemented with the following:

Payment will be made for the following bid item:

SPCC Plan	Lump Sum
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The unit contract bid price for the above, including all incidental work, shall be full compensation for labor, material, tools, and equipment necessary to prepare and implement the plan as described in the Standard Specifications and these Special Provisions.

1-07.16 Protection and Restoration of Property

1-07.16(1) Private/Public Property

(June 2006 City of Sammamish)

Section 1-07.16(1) shall be supplemented with the following:

Only equipment with rubber tires or smooth tracks will be allowed on the finished roads or road surfaces which are not to be reconstructed as a part of this project. Tracks with cleats or other devices which damage the road surfacing will not be allowed. All outriggers shall be equipped with street pads.

Along the street to be improved, there are privately owned improvements on the properties abutting the right-of-way. Even though all reasonable precaution is to be taken by the Contractor, these improvements may in some instances be damaged. In the event such occurs, and claims for damages are filed by the individuals, the Contracting Agency will request that the Contractor give evidence that he has requested his insurance company to make personal contact with the claimant. Any settlement for insurance claims shall be strictly an act restricted to the claimant, the Contractor and his insurance company.

Any additional costs due to delays or restrictions due to the construction within

the Right-of-Way and furnishing access to adjacent property owners shall be considered incidental to the project, and shall also be merged in the respective unit and lump sum prices Bid.

1-07.16(3) Fences, Mailboxes, Incidentals

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

The Contractor shall coordinate construction activities with the affected local branch of the United States Post Office, including relocation of mailboxes. Contact information is as follows:

Zip Code 98074 Deliveries
Attn: Rich Miele
Phone: (425) 885-0207
Email: rich.miele@usps.gov

Lock Boxes/Growth Management
Attn: John Snyder
Phone: (425) 885-0252
Email: john.snyder@usps.gov

1-07.16(4) Archaeological and Historical Objects

Section 1-07.16(4) is supplemented with the following:

(December 6, 2004 WSDOT GSP)

The project area potentially contains archaeological or historical objects that may have significance from a historical or scientific standpoint. To protect these objects from damage or destruction, the Contracting Agency, at its discretion and expense, may monitor the Contractor's operations, conduct various site testing and perform recovery and removal of such objects when necessary.

The Contractor may be required to conduct its operations in a manner that will accommodate such activities, including the reserving of portions of the work area for site testing, exploratory operations and recovery and removal of such objects as directed by the Engineer. If such activities are performed by consultants retained by the Contracting Agency, the Contractor shall provide them adequate access to the project site.

Added work necessary to uncover, fence, dewater, or otherwise protect or assist in such testing, exploratory operations, and salvaging of the objects as ordered by the Engineer shall be paid by force account as provided in Section 1-09.6. If the discovery and salvaging activities require the Engineer to suspend the Contractor's work, any adjustment in time will be determined by the Engineer pursuant to Section 1-08.8.

To provide a common basis for all bidders, the Contracting Agency has entered an amount for the item "Archaeological and Historical Salvage" in the Proposal to become a part of the total bid by the Contractor.

Archaeological and Historical Salvage	Estimate
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1-07.17 Utilities and Similar Facilities

(*****)

Utilities and Similar Facilities

Section 1-07.17 is supplemented with the following:

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

Public and private utilities, or their Contractors, will furnish all Work necessary to adjust, relocate, replace, or construct their facilities unless otherwise provided for in the Plans or these Special Provisions. Such adjustment, relocation, replacement, or construction will be done during the prosecution of the Work for this project.

The Contractor shall attend a mandatory utility preconstruction meeting with the Engineer, all affected subcontractors, and all utility owners and their Contractors prior to beginning onsite Work.

The following addresses and telephone numbers of utility companies or their Contractors that will be adjusting, relocating, replacing or constructing utilities within the project limits are supplied for the Contractor's use:

Puget Sound Energy (Gas)
Jeanne Coleman
13230 SE 32nd Street
Bellevue, WA 98005
425-449-7410 desk
425-463-6550 cell

Puget Sound Energy (Electric)
Josh Grenner FAC-02
13230 SE 32nd Street
Bellevue, WA 98005
425-457-4542

Frontier Communications (Telecommunications)
Thomas Dacy
1800 41st Street
M/C: WA0104OS
Everett, WA 98201
425-261-6342 office
425-210-2870 cell

Comcast (Telecommunications)
Jeff Burns, Construction Specialist
1525 75th Street SW #200
Everett, WA 98203
425-263-5353

Comcast (Telecommunications)
Ray Pinkerton, Relocation
1525 75th Street SW #200
Everett, WA 98203
425-263-5332

Sammamish Plateau Water
Jackson Dove
1510 228th Avenue SE
Sammamish, WA 98074
425-392-4931

Century Link (Telecommunications)
Peter Stockton, Design Engineer II
1550 Newport Way NW
Issaquah, WA 98027
206-261-1402

The Contractor shall give forty-eight (48)-hours notice to all utility companies/agencies 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 utility companies/agencies serving the area.

Locate Existing Utilities

A reasonable attempt has been made to locate existing utilities; however, the exact location and/or depth are unknown in most instances. It is the responsibility of the Contractor to locate the existing utilities and their respective depths.

1-07.17(3) Utility Service (New Section)

(June 2006 City of Sammamish)

Section 1-07.17(3) is added as follows:

The Contractor shall maintain the operational service of all existing utilities, to include water, storm, power, telephone, cable TV, sanitary, and gas except where this Contract requires specifically for its temporary interruption. Where services are to be temporarily interrupted, affected parties shall be notified in writing at least 48 hours and not more than 72 hours in advance of the time and period of shut-down. Language, format, etc. of written notices shall be reviewed and approved by the Contracting Agency prior to distribution by the Contractor. The Contractor shall make every effort to keep scheduled shut downs to periods of anticipated minimum usage and for the least period of time.

No utility service shall be shut down or "out of service" for more than four (4) hours per day.

Should a non-scheduled shutdown of any utility be required for a period in excess of four hours, the Contractor shall take necessary measures to provide temporary service. The method of all temporary utility services shall first be approved by the Contracting Agency.

1-07.18 Public Liability and Property Damage Insurance

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

1-07.18 Insurance

(January 4, 2016 APWA GSP)

1-07.18(1) General Requirements

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

insurance and pay any and all premiums in connection therewith, with any sums so expended to be repaid to the Contracting Agency on demand, or at the sole discretion of the Contracting Agency, offset against funds due the Contractor from the Contracting Agency.

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

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
- King County
- Otak, Inc.
- Parametrix
- Sammamish Plateau Water

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

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

1-07.18(3) Subcontractors

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

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

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

1-07.18(4) Verification of Coverage

The Contractor shall deliver to the Contracting Agency a Certificate(s) of Insurance and endorsements for each policy of insurance meeting the requirements set forth

herein when the Contractor delivers the signed Contract for the work. Failure of Contracting Agency to demand such verification of coverage with these insurance requirements or failure of Contracting Agency to identify a deficiency from the insurance documentation provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

Verification of coverage shall include:

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

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

1-07.18(5) Coverages and Limits

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

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

1-07.18(5)A Commercial General Liability

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

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

Contractor shall maintain Commercial General Liability Insurance arising out of the

Contractor's completed operations for at least three years following Substantial Completion of the Work.

Such policy must provide the following minimum limits:

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

1-07.18(5)B Automobile Liability

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

Such policy must provide the following minimum limit:

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

1-07.18(5)C Workers' Compensation

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

1-07.18(5)D Excess or Umbrella Liability

(January 4, 2016 APWA GSP)

The Contractor shall provide Excess or Umbrella Liability insurance with limits of not less than one (1) million each occurrence and annual aggregate. This excess or umbrella liability coverage shall be excess over and as least as broad in coverage as the Contractor's Commercial General and Auto Liability insurance

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

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

1-07.18(5)E LHWCA Insurance

(January 4, 2016 APWA GSP)

If this Contract involves work on or adjacent to Navigable Waters of the United States, the Contractor shall procure and maintain insurance coverage in compliance with the statutory requirements of the U.S. Longshore and Harbor Workers' Compensation Act (LHWCA).

Such policy must provide the following minimum limits:

- \$1,000,000 Bodily Injury by Accident – each accident
- \$1,000,000 Bodily Injury by Disease – each employee

\$1,000,000 Bodily Injury by Disease – policy limits

1-07.18(5)J Pollution Liability

(January 4, 2016 APWA GSP)

The Contractor shall provide a Contractors Pollution Liability policy, providing coverage for claims involving bodily injury, property damage (including loss of use of tangible property that has not been physically injured), cleanup costs, remediation, disposal or other handling of pollutants, including costs and expenses incurred in the investigation, defense, or settlement of claims, arising out of any one or more of the following:

1. Contractor’s operations related to this project.
2. Remediation, abatement, repair, maintenance or other work with lead-based paint or materials containing asbestos.
3. Transportation of hazardous materials away from any site related to this project.

All entities listed under 1-07.18(2) of these Special Provisions shall be named by endorsement as additional insureds on the Contractors Pollution Liability insurance policy.

Such Pollution Liability policy shall provide the following minimum limits:

One (1) million Each loss and annual aggregate

1-07.18(5)K Professional Liability

(January 4, 2016 APWA GSP)

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

Such policy shall provide the following minimum limits:

\$1,000,000 Per claim and annual aggregate

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

If insurance is on a claims made form, its retroactive date, and that of all subsequent renewals, shall be no later than the effective date of this Contract.

1-07.23 Public Convenience and Safety

*(*****)*

Section 1-07.23 is supplemented with the following:

The Contractor shall notify all property owners and tenants of street and alley closures, or other restrictions which may interfere with their access. Notification shall be at least forty-eight (48) hours in advance of such restrictions. When an existing

access is to be eliminated and replaced under the Contract by other access, the existing access shall not be closed until the replacement access is available.

All unattended excavations shall be properly covered, barricaded, or fenced. Any asphalt concrete pavement, crushed surfacing, gravel base, or water, required for maintaining traffic during the project, shall be placed by the Contractor immediately upon request by the Contracting Agency. Steel plates will be allowed if approved by Engineer, and must be secured and supported properly, pinned, shimmed, welded, and cold mix asphalt transitions added to prevent movement and provide smooth transitions.

Contractor shall be responsible for controlling dust and mud within the project limits, and for cleaning all surfaced roadways affected by the Work. Contractor shall clean up on a daily basis all refuse, rubbish, scrap material and debris caused by the work, to the end that, at all times, the site of the work shall present a neat, orderly and workmanlike appearance. Flushing shall not be used. The costs for such dust and mud control and cleaning shall be incidental to the Contract, and no separate payment will be made. In the event Contractor fails to conform to these requirements, Owner shall have the right to have the work done by others and the cost shall be deducted from moneys otherwise due to Contractor.

1-07.23(1) Construction Under Traffic

(June 2006 City of Sammamish)

Supplement this section with the following:

The Contractor shall be responsible for proper notification to and coordination with all school districts, police and fire departments, U.S. mail, and all other persons or agencies which provide public service types of business (refuse, etc.) which will be affected by this project, and written notification shall be given at least one (1) week in advance of construction. It shall be the Contractor's responsibility to keep the school district and fire departments and others fully advised of his construction progress, any required detours, and also the time of completion of the project.

1-07.24 Rights of Way

(July 23, 2015 APWA GSP)

Delete this section and replace it with the following:

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

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

Whenever any of the work is accomplished on or through property other than public Right of Way, the Contractor shall meet and fulfill all covenants and stipulations of any easement agreement obtained by the Contracting Agency from the owner of the

private property. Copies of the easement agreements may be included in the Contract Provisions or made available to the Contractor as soon as practical after they have been obtained by the Engineer.

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

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

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

SECTION 1-08, PROSECUTION AND PROGRESS

Add the following new section:

1-08.0 Preliminary Matters

(May 25, 2006 APWA GSP)

Add the following new Section:

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.

Add the following new section:

1-08.0(2) Hours of Work
(December 8, 2014 APWA GSP)

Except in the case of emergency or unless otherwise approved by the Engineer, the normal working hours for the Contract shall be any consecutive 8-hour period between 7:00 a.m. and 6:00 p.m. Monday through Friday, exclusive of a lunch break. If the Contractor desires different than the normal working hours stated above, the request must be submitted in writing prior to the preconstruction conference, subject to the provisions below. The working hours for the Contract shall be established at or prior to the preconstruction conference.

All working hours and days are also subject to local permit and ordinance conditions (such as noise ordinances).

If the Contractor wishes to deviate from the established working hours, the Contractor shall submit a written request to the Engineer for consideration. This request shall state what hours are being requested, and why. Requests shall be submitted for review no later than 48 hours prior to the day(s) the Contractor is requesting to change the hours.

If the Contracting Agency approves such a deviation, such approval may be subject to certain other conditions, which will be detailed in writing. For example:

1. On non-Federal aid projects, requiring the Contractor to reimburse the Contracting Agency for the costs in excess of straight-time costs for Contracting Agency representatives who worked during such times. (The Engineer may require designated representatives to be present during the work. Representatives who may be deemed necessary by the Engineer include, but are not limited to: survey crews; personnel from the Contracting Agency's material testing lab; inspectors; and other Contracting Agency employees or third party consultants when, in the opinion of the Engineer,

- such work necessitates their presence.)
2. Considering the work performed on Saturdays, Sundays, and holidays as working days with regard to the contract time.
 3. Considering multiple work shifts as multiple working days with respect to contract time even though the multiple shifts occur in a single 24-hour period.
 4. If a 4-10 work schedule is requested and approved the non-working day for the week will be charged as a working day.
 5. If Davis Bacon wage rates apply to this Contract, all requirements must be met and recorded properly on certified payroll

Add the following new section:

1-08.0(3) Reimbursement for Overtime Work of Contracting Agency Employees

(May 25, 2006 APWA GSP; may not be used on FHWA-funded projects)

Where the Contractor elects to work on a Saturday, Sunday, or holiday, or longer than an 8-hour work shift on a regular working day, as defined in the Standard Specifications, such work shall be considered as overtime work. On all such overtime work an inspector will be present, and a survey crew may be required at the discretion of the Engineer. In such case, the Contracting Agency may deduct from amounts due or to become due to the Contractor for the costs in excess of the straight-time costs for employees of the Contracting Agency required to work overtime hours.

The Contractor by these specifications does hereby authorize the Engineer to deduct such costs from the amount due or to become due to the Contractor.

1-08.3(2)B Type B Progress Schedule

(March 13, 2012 APWA GSP)

Revise the first paragraph to read:

The Contractor shall submit a preliminary Type B Progress Schedule at or prior to the preconstruction conference. The preliminary Type B Progress Schedule shall comply with all of these requirements and the requirements of Section 1-08.3(1), except that it may be limited to only those activities occurring within the first 60-working days of the project.

Revise the first sentence of the second paragraph to read:

The Contractor shall submit four (4) copies of a Type B Progress Schedule depicting the entire project no later than 21-calendar days after the preconstruction conference.

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Section 1-08.3(2)B is supplemented with the following:

Payment will be made for the following bid item:

Type B Progress Schedule (Minimum Bid \$2,500)	Lump Sum
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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.

Section 1-08.04 is supplemented with the following:

The City may issue a Notice to Proceed as early as June 5th, 2018.

1-08.4(1) Order of Work

The Contractor shall order their work such that Schedule A1 is completed no later than September 30, 2018.

1-08.5 Time for Completion

(September 12, 2016 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. Within 10 calendar days after the date of each statement, the Contractor shall file a written protest of any alleged discrepancies in it. To be considered by the Engineer, the protest shall be in sufficient detail to enable the Engineer to ascertain the basis and amount of time disputed. By not filing such detailed protest in that period, the Contractor shall be deemed as having accepted the statement as correct. If the Contractor is approved to work 10 hours a day and 4 days a week (a 4-10 schedule) and the fifth day of the week in which a 4-10 shift is worked would ordinarily be charged as a working day then the fifth day of that week will be charged as a working day whether or not the Contractor works on that day.

Revise the sixth paragraph to read:

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

1. The physical work on the project must be complete; and
2. The Contractor must furnish all documentation required by the contract and required by law, to allow the Contracting Agency to process final acceptance of the contract. The following documents must be received by the Project Engineer prior to establishing a completion date:
 - a. Certified Payrolls (per Section 1-07.9(5)).
 - b. Material Acceptance Certification Documents
 - c. Monthly Reports of Amounts Credited as DBE Participation, as required by the Contract Provisions.
 - d. Final Contract Voucher Certification
 - e. Copies of the approved "Affidavit of Prevailing Wages Paid" for the Contractor and all Subcontractors
 - f. Property owner releases per Section 1-07.24

1-08.9 Liquidated Damages

(August 14, 2013 APWA GSP)

Revise the fourth paragraph to read:

When the Contract Work has progressed to Substantial Completion as defined in the Contract, the Engineer may determine that the work is Substantially Complete. The Engineer will notify the Contractor in writing of the Substantial Completion Date. For overruns in Contract time occurring after the date so established, the formula for liquidated damages shown above will not apply. For overruns in Contract time occurring after the Substantial Completion Date, liquidated damages shall be assessed on the basis of direct engineering and related costs assignable to the project until the actual Physical Completion Date of all the Contract Work. The Contractor shall complete the remaining Work as promptly as possible. Upon request by the Project Engineer, the Contractor shall furnish a written schedule for

completing the physical Work on the Contract.

1-08.10 Termination of Contract

1-08.10(2) Termination for Public Convenience

(June 2006 City of Sammamish)

Section 1-08.10(2) is deleted and replaced with the following:

The Contracting Agency may by written notice terminate this Contract at any time in whole or in part, without cause, and except where termination is due to Contractor's default, the Contracting Agency shall pay the Contractor that portion of the Contract price corresponding to the work completed to the Contracting Agency's satisfaction, together with reasonable costs, as determined in the sole discretion of the Engineer, necessarily incurred by the Contractor in terminating the remaining portion of work, less any payments made before termination. In no event shall the Contracting Agency be required to pay the Contractor any amounts aggregating in excess of the Contract Price, nor shall Contracting Agency be required to pay Contractor any amount for lost anticipated profits on work which is not performed as a result of termination.

1-08.10(3) Termination for Public Convenience Payment Request

(June 2006 City of Sammamish)

Section 1-08.10(3) is deleted.

1-08.10(4) Payment for Termination for Public Convenience

(June 2006 City of Sammamish)

Section 1-08.10(4) is deleted.

SECTION 1-09, MEASUREMENT AND PAYMENT

1-09.2 Weighing Equipment

1-09.2(1) General Requirements for Weighing Equipment

(July 23, 2015 APWA GSP, Option 2)

Revise item 4 of the fifth paragraph to read:

4. 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.

1-09.3 Scope of Payment

(June 2006 City of Sammamish)

Section 1-09.3 is supplemented with the following:

The Contractor shall, whenever so requested, give the Contracting Agency and/or the Engineer access to all invoices, bills of lading and other records relating to the Work, and shall, without charge therefore, provide measures and scales with adequate capacity for and assistance for measuring or weighing any of the materials.

1-09.6 Force Account

(October 10, 2008 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 Engineer.

(June 2006 City of Sammamish)

Prior to performing force account work, the Contractor shall submit to the Engineer an Equipment List containing pertinent information as to the type of equipment to be used, i.e., make, model, year, horse-power, serial numbers, optional attachments, capacity, etc., and the current equipment rental rates for such equipment. No force account payment will be made until the Engineer has received the completed Equipment List.

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.

1-09.7 Mobilization

*(*****)*

Section 1-09.7 is supplemented with the following:

Photographs

The Contractor shall be required to provide preconstruction photographs of all of the construction corridors. The photographs shall provide complete coverage of all features along the routes, and, in no event, shall be more than 50 feet apart.

Before construction may start in any section photographs in 8-inch x 10-inch color glossy prints format, together with the negative, shall be delivered to the Engineer. Photographs taken on the roadways where work is to be done in or along the roadway shall have been given special attention to depict existing pavement condition, edge of pavement, and shoulders, private property frontages and landscaping or other features to be preserved. The photographs shall be of a commercial quality, and shall indicate on the front of each glossy print; the date, contract number, name of work, and the location where the photograph was taken.

Digital photographs delivered on a USB Digital Storage Device may be an acceptable substitute if they are of sufficient detail to show the features described above and are labeled with the exact location of each photo image.

The cost of providing preconstruction photographs shall be considered as incidental to Project Mobilization.

Field Office Building

This work shall consist of furnishing and setting-up a temporary office building for the sole use of the Contracting Agency.

The building shall be set-up, at the location to be approved by the Engineer, within the first five (5) working days from the Notice to Proceed Date.

The building shall be weather-tight, installed plumb and level, and provided with the following as a minimum:

1. 800 square feet of floor space
2. Above ground floor
3. Heat and Air Conditioning
4. Electric lights
5. Adequate windows with heavy security screens on metal frames
6. 4 shelving units with 5 shelves each
7. Plan table: 3 feet 6 inches deep by 6 feet wide by 3 feet 3 inches high
8. Drafting stool
9. Conference table: 4 foot by 8 foot
10. Seven office chairs
11. Cylinder door lock and six keys
12. Sanitary facilities (unless existing facilities are available)
13. Water service with hot and cold water taps
14. A copier/scanner capable of printing and scanning 11 x 17 sheets in color, compatible with all other computer and networking equipment, 6-foot minimum length power cord, and replacement toner cartridges as needed.
15. Three office work desks
16. Four-drawer legal size steel file cabinets with folders, hanging folders, and frame in each drawer to hold folders [2 units]
17. White board 2-1/2 feet by 4-1/2 feet minimum with eight (8) dry erase markers, one (1) dry board eraser, and sixteen (16) ounces of dry board cleaner [1 unit(s)]
18. Electric power of sufficient capacity to operate the electric heater, air conditioner, internet access, all computers with monitors, calculators, and lights. Field office shall be provided with a minimum of ten (10) duplex convenience electrical outlets. The office shall be illuminated at the tables and desks. An outdoor light fixture with a 150-watt bulb or approved equal shall be installed to effectively light the area around the office facility.

The building shall remain the property of the Contractor and be removed from the site upon physical completion of the contract, or when designated by the Engineer.

The contractor shall supply garbage and recycling receptacles in the field office and shall provide weekly pickup service for garbage and recycle.

The building shall have fully functional high speed internet service, with a 4 port Wi-Fi router. When available the internet service provider shall be a cable internet service. If cable internet service is not available, the highest speed DSL service available will be acceptable. Minimum acceptable internet speeds shall be 25Mb/s download, and 8Mbps upload. Only if those speeds are not available, will lesser speeds be acceptable, and in this case, the service shall be the highest speed available.

Payment will be made for the following bid item in accordance with the Standard Specifications:

Mobilization	Per Lump Sum
Field Office Building	Per Lump Sum

The lump sum contract price for “Field Office Building” shall be full pay for furnishing, installing, maintaining, and removing the facility, including all costs associated with all required utility hook-ups and disconnects, and monthly utility charges for all utilities including high speed internet service.

The lump sum payment for “Field Office Building” will be reduced in the prorated amount for one day of the total amount of working days stated in the bid proposal, for each day after the first working day that field office is not “working.” To be considered “working” the field office must have all of the elements listed above under “construction requirements” subject to the satisfaction of the Engineer. Of particular note is the high speed internet service. Under no circumstance shall the Contractor receive payment for “Field Office Building” for any day that the high speed internet is not in service. Reduction of the Lump Sum price for “Field Office Building” to be prorated based on the number of working days that the high speed internet is in service, from the total working days stated in the Bid Documents.

1-09.9 Payments

(March 13, 2012 APWA GSP)

Supplement this section with the following:

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

1-09.9 Payments

(March 13, 2012 APWA GSP)

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

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

The Contractor shall submit a breakdown of the cost of lump sum bid items at the

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

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

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

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

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

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

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

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

1-09.11(3) Time Limitation and Jurisdiction *(July 23, 2015 APWA GSP)*

Revise this section to read:

For the convenience of the parties to the Contract it is mutually agreed by the parties that any claims or causes of action which the Contractor has against the

Contracting Agency arising from the Contract shall be brought within 180 calendar days from the date of final acceptance (Section 1-05.12) of the Contract by the Contracting Agency; and it is further agreed that any such claims or causes of action shall be brought only in the Superior Court of the county where the Contracting Agency headquarters is located, provided that where an action is asserted against a county, RCW 36.01.05 shall control venue and jurisdiction. The parties understand and agree that the Contractor's failure to bring suit within the time period provided, shall be a complete bar to any such claims or causes of action. It is further mutually agreed by the parties that when any claims or causes of action which the Contractor asserts against the Contracting Agency arising from the Contract are filed with the Contracting Agency or initiated in court, the Contractor shall permit the Contracting Agency to have timely access to any records deemed necessary by the Contracting Agency to assist in evaluating the claims or action.

1-09.13 Claims Resolution

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

(October 1, 2005 APWA GSP)

Delete this Section and replace it with the following:

The Contractor and the Contracting Agency mutually agree that those claims that total \$250,000 or less, submitted in accordance with Section 1-09.11 and not resolved by nonbinding ADR processes, shall be resolved through litigation unless the parties mutually agree in writing to resolve the claim through binding arbitration.

1-09.13(3)A Administration of Arbitration

(July 23, 2015 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 36.01.05 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.

SECTION 1-10, TEMPORARY TRAFFIC CONTROL

1-10.1 General

(June 2006 City of Sammamish)

Section 1-10.1 is supplemented with the following:

The Contractor shall conduct its operations so as to offer the least possible obstruction and inconvenience to the public, and the Contractor shall have under construction no greater length or amount of Work than the Contractor can prosecute properly with due regards to the rights of the public. The Contractor shall not open up sections of the Work and leave them unfinished, but rather, the Work shall be finished as it proceeds, insofar as practicable. The Contractor shall further note that daily cleanup, waste haul, pavement restoration requirements, etc., are also important and are required as further noted herein.

All public traffic shall be permitted to pass through the Work with as little inconvenience and delay as possible. The Contracting Agency will not furnish flagmen or any devices for the control of traffic.

Full Road Closure of East Lake Sammamish Parkway

The Contractor shall be allowed up to two (2) consecutive calendar weeks to close East Lake Sammamish Parkway between July 5, 2018 and August 30, 2018. A construction schedule and traffic control plan shall be submitted to the City for approval prior to the Notice to Proceed. Portable Changeable Message Signs shall be installed minimum of two (2) weeks prior to full road closure. Contractor shall obtain right-of-way use permit within the City of Issaquah as necessary for installation of Portable Changeable Message Signs at the roundabout on East Lake Sammamish Parkway.

Partial Road Closures of East Lake Sammamish Parkway

East Lake Sammamish Parkway shall only be reduced to a single lane of traffic from 9:30 AM to 3:00 PM Monday through Friday. Maximum traffic queue time shall be ten (10) minutes.

Bicycle Route

A non-motorized bicycle route shall be maintained through either East Lake Sammamish Parkway or the East Lake Sammamish Regional Trail during construction.

The Contractor shall keep all existing roads, temporary detour roadway, and streets adjacent to or within the limits of the project open and maintained in a good and safe condition for traffic at all times unless otherwise specified herein or approved by the Contracting Agency. The Contractor shall promptly remove any deposits or debris and shall repair any damage resulting from its operations. Trenches shall be completely backfilled and capped with approved asphalt mix or be steel plated (suitable for HS-20 loading) at the end of each day. Temporary patching of pavement cuts with an approved asphalt concrete mix shall be completed prior to opening to traffic. Temporary patches shall be maintained in a "smooth" condition by the Contractor at all times and checked on a daily basis. Temporary striping shall be provided.

Construction shall also be conducted so as to cause as little inconvenience as possible to abutting property owners. Convenient and clearly marked access to driveways, houses and buildings along the line of Work shall be maintained and temporary approaches to crossing or intersecting streets shall be provided and kept

in good and smooth condition. When the abutting owners' access across the Rights-of-Way line is to be replaced under the Contract by other access, the existing access shall not be closed until the replacement access facility is available. Adjacent property owner's driveways must be left open and accessible at all times during the course of the project unless otherwise specified herein or approved by the Contracting Agency.

Upon completion of trench backfilling and compaction and prior to opening to vehicular traffic, all trenches shall be brought to a smooth, even condition free of bumps and depressions, satisfactory for the use of public traffic with steel plates, controlled density fill, or approved temporary asphalt mix, as required per these Special Provisions.

Roadways, streets and driveways, including sidewalks, shall be swept clean at the conclusion of each day's operations and at such other times to insure the safety of the traveling public and to prevent inconvenience to the public and owners of private property adjacent to the project.

The Contracting Agency reserves the right to restrict the Contractor to various streets and times of construction during the entire project; all costs of which shall be included in other pay items involved on the project.

The Contractor shall be responsible for constructing, furnishing, placing, and maintaining all barricades, warning lights, and related traffic control signs, and for the furnishing of all flag persons, equipment for flag persons, pilot cars, and labor for traffic control as necessary and in accordance with the traffic control plan(s), modified traffic control plan(s), or temporary access plan(s) approved by the Engineer. If a modification to traffic control is deemed necessary by the Engineer, the Contractor shall immediately implement any requested modification(s). The need for flashing warning lights shall be as determined by the Engineer.

The Contractor shall patrol the traffic control area at the beginning of the work day, twice during the work day, at the end of the work day, and more often if necessitated to reset all disturbed or missing signs and traffic control devices or immediately re-furnish such items if they have been stolen or permanently damaged. All control signs necessary for nighttime traffic control shall be effective and have flashing lights installed to enhance visibility.

A non-motorized access route through the work area shall be maintained by the Contractor at all time during construction.

Upon failure of the Contractor to provide immediately such flagmen and provide, erect, maintain, and remove such signs when ordered to do so by the Contracting Agency, the Contracting Agency shall be at liberty, without further notice to the Contractor or its Surety, to provide the necessary flagmen, and labor to erect, maintain, install and/or remove barricades and lights and to erect, maintain and remove additional signs and deduct all of the costs thereof from any payments due or coming due the Contractor.

1-10.2 Traffic Control Management

1-10.2(1) General

(December 1, 2008)

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

Only training with WSDOT TCS card and WSDOT training curriculum is recognized in the State of Washington. The Traffic Control Supervisor shall be certified by one of the following:

The Northwest Laborers–Employers Training Trust
27055 Ohio Avenue
Kingston, WA 98346
(360) 297-3035

Evergreen Safety Council
401 Pontius Avenue N
Seattle, WA 98109
1-800-521-0778 or
(206) 382-4090

The American Traffic Safety Services Association
Training Department
15 Riverside Parkway, Suite 100
Fredericksburg, VA 22406-1022
(877) 642-4637 (Toll Free)
(540) 368-1701

1-10.2(2) Traffic Control Plans

(June 2006 City of Sammamish)

The first paragraph is revised to read:

The Contractor shall prepare a Traffic Control Plan showing a method of handling traffic through the work areas conforming to the Contractor's method of construction sequencing. This plan shall be prepared in accordance with the latest issue of the MUTCD, WSDOT Standard Plans and these Specifications. All construction signs, flaggers, spotters, and other traffic control devices are to be shown on the traffic control plan. This plan shall be provided to the Engineer for approval at least 10-calendar days in advance of the time the signs and other traffic control devices are scheduled to be installed and utilized.

Section 1-10.2(2) is supplemented with the following:

The Contractor shall be responsible for traffic control in the vicinity of the Work being performed to include furnishing, supplying and maintaining proper barricading, flagmen and signing. It is the intent of the Contracting Agency to have Roadways "open" during construction. The Contractor shall allow access by local traffic and emergency vehicles at all times during construction. Temporary closures, detours, or restricted use may be approved by the

Contracting Agency due to special construction situations or concerns; however, the Contractor shall Bid the project to leave the Roadway open during construction activities and to provide adequate traffic control.

On streets where parking is normally allowed, the Contractor shall furnish and place at least three "No Parking" signs on each side of each block of the street where parking is to be prohibited. The signs shall be highly visible to motorists from all approaches to the area where parking is to be restricted. The signs shall be posted at least two full working days in advance of any construction activity and shall state the date and times when parking will be prohibited.

The minimum lane widths through traffic control zones shall be ten feet with a minimum shy distance of one foot to any pavement edge, shoulder obstruction, or traffic control device.

(*****)

Section 1-10.2(2) is supplemented with the following:

General traffic control plans have been provided in the Plans for the Contractor's reference for the control of vehicles and the control of non-motorized users of the City roadways, trails and paths that are within the project limits. The Contractor shall provide traffic control plans to the City for review and approval a minimum of ten (10) working days prior to implementation. These plans shall provide for safe vehicular and non-motorized users based on the Contractor's schedule and order of work.

1-10.4 Measurement

1-10.4(2) Item Bids with Lump Sum for Incidentals

(*****)

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

Portable Changeable Message Sign will be measured per each.

1-10.4(3) Reinstating Unit Items with Lump Sum Traffic Control

Section 1-10.4(3) is supplemented with the following:

(August 2, 2004 WSDOT GSP)

The bid proposal contains the item "Project Temporary Traffic Control," lump sum and the additional temporary traffic control items listed below. The provisions of Section 1-10.4(1), Section 1-10.4(3), and Section 1-10.5(3) shall apply.

"Traffic Control Supervisor," lump sum

"Flaggers," per hour

"Portable Changeable Message Sign," per each

1-10.5 Payment

(*****)

Section 1-10.5 is supplemented with the following:

Payment will be made in accordance with Section 1-04.1 for the following bid items:

Project Temporary Traffic Control	Per Lump Sum
--	---------------------

The lump sum price for “Project Temporary Traffic Control” shall be full compensation for all costs incurred by the Contractor in performing the contract work defined in Section 1-10 except for costs compensated by Bid Proposal items inserted through Contract Provisions as described in Section 1-10.4(3).

Flaggers	Per Hour
Traffic Control Supervisor	Per Lump Sum
Portable Changeable Message Sign	Per Each

The unit contract price for the above items when applied to the number of units measured for these item in accordance with Section 1-10.4(2), shall be full compensation for all costs incurred by the Contractor in performing the Contract Work defined in Section 1-10.3(1)A of these Special Provisions.

END OF DIVISION 1

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DIVISION 2 EARTHWORK

2-01 CLEARING, GRUBBING, AND ROADSIDE CLEANUP

2-01.1 Description

This section is supplemented with the following:

Clearing and grubbing shall be to the limits established by the Plans, staked by the Contractor, and approved by the Engineer.

Do not remove trees, shrubs, and other vegetation indicated to remain.

Existing landscaping outside the limits shall be protected from damage by the Contractor's operations. All damaged landscaping due to the Contractor's operations outside the limits shall be replaced in coordination with the property owner at the Contractor's expense.

Prune minor roots and branches of trees indicated to remain in a manner that will not compromise the survivability of the trees, where such roots and branches obstruct installation of new construction, under the field direction of the Engineer.

Any roots cut or broken shall be cut smoothly and any roots over two (2) inches in diameter covered with wet fabric until backfill can be placed.

Tree removal shall include the removal and disposal of the entire tree including roots, stump, and all associated debris. If it is determined by the Engineer that the removal of the entire trunk is NOT feasible, the Contractor shall cut the trunk flush with ground level and provide stump treatment. The tree stump shall be treated to prevent resprouting with an approved herbicide according to label instructions.

Use only hand methods for grubbing within drip line of remaining trees.

Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated. Place fill material in horizontal layers not exceeding eight (8) inches in loose depth, and compact each layer to a density equal to adjacent original ground.

Douglas fir and red alder trees designated to for removal shall be retained and used as wood structure. The Contractor shall remove and dispose of all tree trunks and debris not used for wood structure from the site.

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

This section is supplemented with the following:

A waste site has not been provided by the City for the disposal of excess materials and debris. All materials removed by clearing and grubbing operations shall be disposed of at a legal disposal site obtained by the Contractor.

There is limited access and limited available space for the Contractor for installation of the proposed improvements. The Contractor will be required to haul from the site all the stock piled debris from that day's construction activities. Any material or debris which hinders traffic safety or creates an obstruction shall be removed immediately.

2-01.4 Measurement

This section is supplemented with the following:

Measurement for tree removal will be per each.

2-01.5 Payment

This section is supplemented with the following:

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

Clearing and Grubbing	Per Lump Sum
Tree Removal	Per Each

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

Tree wrap protection; pruning of tree canopy, shrub and hedge shall be considered incidental to and included in the unit contract price for "Clearing and Grubbing" and no separate payment will be made.

Payment for high visibility fence used for tree protection will be made under the "High Visibility Fence" bid item.

The removal of all standing trees, less than eight (8) inches diameter within the clearing limits shall be considered incidental to and included in the unit contract price for "Clearing and Grubbing."

Payment for removing tree size eight (8) inch or greater diameter will be made under the "Tree Removal" bid item. Tree size shall be established by measuring the minimum diameter at a height of 4.5 feet above the average ground level surrounding the tree.

2-02 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

2-02.1 Description

This section is supplemented with the following:

For the purpose of bid preparation, the removal of structure and obstruction work is described herein. Whether included herein, or shown on the plans, any removal of structure and obstruction work required to complete the project work not covered

under other removal items shall be included in this bid item in accordance with Section 1-04.1.

Removal of Structure and Obstruction shall include, but not be limited to:

- Storm Pipe or Culvert
- Asphalt Concrete and/or Cement Concrete Pavement
- Fence or Barrier
- Abandon Utility Lines
- Miscellaneous Items on site as required

The Work may also include removal and disposal of existing asbestos cement (AC) pipe where encountered for required excavation.

The Work shall also include demolition, abatement, and waste management of existing buildings.

2-02.3 Construction Requirements

This section is supplemented with the following:

Asbestos Handling and Disposal

Prior to performance of any Work handling asbestos cement (AC) pipe, the Contractor shall obtain all permits from, and provide notification to, the Washington State Department of Labor and Industries, the United States Environmental Protection Agency (USEPA), the local air pollution control agency, and other permitting and regulatory agencies with jurisdiction over the work involving asbestos as required in WAC Chapter 296-65, "Asbestos removal and encapsulation."

All work involved in the removal or disposal of AC pipe shall be the responsibility of the Contractor. The Contractor shall ensure the safety of all workers, visitors to the site, and general public in accordance with all applicable laws, rules, and regulations.

All contractors working with AC pipe must be state-certified. The Contractor shall designate a Washington State Certified Asbestos Supervisor (CAS) to personally supervise the asbestos removal and to ensure that the handling and removal of asbestos is accomplished by certified asbestos workers, pursuant to Washington State Department of Labor and Industries Standards. The Contractor shall ensure that the removal and disposal of asbestos meets the requirements of USEPA Regulation 40 CFR Part 61, local health department regulations, and all other applicable regulations.

The Contractor shall provide protective clothing and equipment (coveralls, gloves, boots, head covering, goggles, respirators, etc.) to crews working with asbestos cement pipe in order to ensure the worker's exposure to asbestos material is at or below the limits prescribed in WAC 296-62-07705.

Asbestos Cement Pipe Cutting and Tapping

When existing asbestos cement pipe is encountered, all cutting, tapping, removal and disposal of said pipe shall be in conformance with the current Policies and Procedures of the King County Health Department, the Puget Sound Air Pollution

Control Agency, and other public offices with jurisdiction in this matter. At this time the policy is that:

- a. Pipe shall be “snapped off” rather than being cut with an abrasive saw.
- b. Abandoned pipe shall be left in the trench or disposed of in an approved method.

Structure (Building) Demolition

Prior to beginning work activities, the Contractor shall perform the following:

1. Test building materials for lead, asbestos, and other hazardous substances.
2. Secure all permits and licenses, including but not limited to those listed in Section 1-07.6 of the Special Provisions.
3. Verify that all utility services to the buildings to be demolished are disconnected and inactive.

The Contractor shall take the necessary steps to implement the following:

1. Control dust during demolition and removal.
2. Prevent track-out of mud onto public streets.
3. Cover debris piles when practical. Burning of demolition debris is not permitted.
4. To the extent practical, minimize work during periods of high winds.

Sawcutting

The Contractor shall be responsible for ensuring that special precautions are undertaken in accordance with Department of Ecology guidelines. No concrete (asphalt or cement) or concrete by-products are to be discharged into any storm drain or surface water. Cutting operations will increase the pH of water, therefore filtering is not acceptable.

Thoroughly clean saw cuts where necessary by the use of high pressure water (1,400 psi or greater). All wastewater shall be collected using vacuuming and/or pumped into containers for disposal. Disposal may be to soil or other porous surface away from storm drains.

Impervious surfaces contaminated from cutting operations shall be cleaned by sweepers to prevent contaminants from entering storm systems.

Collecting and disposal of wasted water shall be considered incidental to and included in the various bid items involved with the operation.

2-02.3(2) Removal of Bridges, Box Culverts, and other Drainage Structures

This section is supplemented with the following:

Removal of Drainage Piping and Structures

The Contractor shall remove drainage piping and structures as called for on the plans. The removal shall be coordinated with the construction of the new drainage facilities to minimize disruption to storm water conveyance and vehicle traffic. The Contractor shall provide temporary storm water conveyance at all times and in a manner which protects water quality.

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

This section is supplemented with the following:

Existing pavement shall be removed at the locations shown on the Plans or as designated by the Engineer. Removal shall be accomplished by making a neat longitudinal vertical cut along the boundaries of the area to be removed. Care shall be taken during removal so as not to damage any of the existing pavement to remain in place. All remaining pavement damaged due to the Contractor's operations shall be replaced by the Contractor, to the satisfaction of the Engineer, at the Contractor's expense.

The Contractor is advised that there may be old roadway concrete panel under the asphalt concrete pavement. Where encountered, the concrete panel shall be removed and legally disposed of.

Contractor shall place and maintain crushed surfacing top course material adjacent to all existing driveway/sidewalk edges to provide a temporary gradual surface transition until final pavement is placed.

2-02.4 Measurement

This section is supplemented with the following:

Measurement for "Removal of Existing AC Water Main," will be per linear foot.

2-02.5 Payment

This section is supplemented with the following:

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

Removal of Structure and Obstruction	Per Lump Sum
---	---------------------

The unit Contract price per lump sum for "Removal of Structure and Obstruction" including all incidental work shall be full compensation for all labor, material, tools, and equipment, including but not limited to sawcutting, removing of pavement, removing of old roadway concrete panel, removing of fence or barrier, removing of drainage pipe and structure, and removal of miscellaneous debris as necessary to satisfactorily complete the work as defined in the Standard Specifications and these Special Provisions.

If pavements, sidewalks, curbs, or gutters line within an excavation area, their removal will be paid for as part of the quantity removed in excavation.

Removal of Existing AC Water Main	Per Linear Foot
--	------------------------

The unit Contract price per linear foot for "Removal of Existing AC Water Main" shall be full pay for all labor, material, and equipment needed for removal, salvage, or disposal of AC pipe, including but not limited to, draining existing water main, cutting (snapped off), removal and legally disposal of said pipe, and acquiring all permits.

A quantity has been entered in the Proposal, for bidding purposes only, for “Removal of Existing AC Water Main.” This item is not subject to the provisions of Section 1-04.6 of the Standard Specifications.

Removing of Existing Structure - Building	Per Lump Sum
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The unit Contract price per lump sum for “Removing of Existing Structure - Building” including all incidental work shall be full compensation for all labor, material, tools, and equipment, including but not limited to abatement process, demolition, waste management, backfill, and all incidental works as necessary to satisfactorily complete the work as defined in the Standard Specifications and these Special Provisions.

Capping and abandoning of existing utility services shall be considered incidental to and included in the unit contract prices for associated bid items, and no separate payment will be made.

2-03 ROADWAY EXCAVATION AND EMBANKMENT

2-03.1 Description

This section is supplemented with the following:

Roadway excavation shall include excavation for, but not limited to, pavement, pavement base, shoulder, access road, staging areas, ditches, and swales, regardless of the nature or type of materials encountered.

Excavation for stream and wetland mitigation site (excavation within stream and wetland mitigation site) shall be included in “Channel Excavation Including Haul.”

Any excavation beyond the limits identified on the Plans, unless approved by the Engineer, shall be replaced at the Contractor’s expense.

Select Grading for the stream and wetland channels may be required. This work includes field directed grading in the Stream Channel, Wetland Floodplain Channel, and Overflow Channel. This work may also include final adjustments to installed log structures.

2-03.3 Construction Requirements

2-03.3(14) Excavation of Channel and Ditches

This section is supplemented with the following:

The wetland and stream channel shall be excavated to the require grades as shown in the Plans. Before excavating channels, the Contractor shall clear and grub the area in accordance with Section 2-01. On-site native material shall be used as fill to achieve proposed grades, unless material is deemed unsuitable by the Engineer. Where necessary to supplement on-site material, or when required by the Engineer,

the Contractor shall use "Gravel Borrow" as fill with payment made under the applicable bid item.

The Contractor is advised that the proposed stream/wetland site is situated within existing wetlands. The Contractor should expect areas of highly saturate soils and ground water seepage. The Contractor shall be responsible for controlling surface/subsurface drainage to achieve the proposed grades and embankment placement and compaction requirements as specified and in a manor acceptable to the engineer.

The Contractor shall submit an Excavation Work Plan per Section 1-05.3, Type 2, showing the equipment, sequence of excavation, schedule, stockpiling, grading, temporary fills, dewatering and water control, temporary fish screens, erosion control and pollution prevention, environmental protection measures to be used during construction, channel excavations, backfill and compaction.

The Contractor shall:

- A. Excavate to the lines, grades, and elevations only as required to install the streambed materials, boulder bands, and wood structures shown on the Plans. No additional compensation will be made for excess excavation beyond that which is required unless approved by the Engineer.
- B. Repair unauthorized excavations, at no additional cost to the City.
- C. Shape the surface of the excavation, grading, and fill areas to uniform slopes and cross-sections and eliminate all ruts. Cut out soft spots, fill low spots and trim high spots to comply with the required surface tolerances.
- D. Scarify, and then compact all fill areas using compaction method A in accordance with Section 2-03.3(14)C.
- E. Do not construct embankment during periods where the fill material may freeze while being placed. Do not place fill material on frozen soil.

Temporary fills necessary to assist construction sequence and protect equipment shall be approved by the Engineer. Temporary fills are the sole responsibility and for the benefit of the Contractor and are provided at no additional cost to the City. Temporary fills or stockpiles are included as part of the excavation including haul quantities. No additional payment will be made for stockpiling, double or re-handling of excavated materials.

2-03.3(7)B Haul

This section is modified as follows:

All costs in connection with hauling and disposal of surplus materials will be considered incidental to the various bid items of the project and no additional compensation will be made.

2-03.3(7)C Contractor-Provided Disposal Site

First paragraph of Section 2-03.3(7)C is revised as follows:

A waste site has not been provided by the Contracting Agency for the disposal of material and debris. The Contractor shall make all arrangements, at Contractor's

expense, for the disposal of waste materials and shall protect the Contracting Agency from any and all damages arising there from.

2-03.5 Payment

This section is supplemented with the following:

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

Roadway Excavation Incl. Haul	Per Cubic Yard
Channel Excavation Incl. Haul	Per Cubic Yard
Gravel Borrow Incl. Haul	Per Ton
Unsuitable Foundation Excavation Incl. Haul	Per Cubic Yard

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

The unit contact price per cubic yard for “Roadway Excavation Incl. Haul” and “Channel Excavation Incl. Haul” shall be full compensation for all labor, material, tools, and equipment, including but not limited to: excavating, loading, hauling, stockpiling, separating of material, placing, compacting, disposal of excess and unsuitable materials, and other work necessary to satisfactorily complete the work as defined in the Standard Specifications and these Special Provisions.

Access road, staging area, and ditch excavation shall be considered incidental to and included in “Roadway Excavation Incl. Haul” bid item, and no further compensation will be made.

Placement and compaction of Native, Common Borrow, and Gravel Borrow materials shall be considered incidental to and included in the contract price of applicable bid item.

All costs associated with hauling and disposal of the excavated material shall be considered incidental to and included in the contract unit price for associated bid items.

Unsuitable Foundation Excavation Incl. Haul shall only be completed if required and only at the direction of the Engineer. A quantity has been entered in the Proposal, for bidding purposes only, for “Unsuitable Foundation Excavation Incl. Haul.” This item is not subject to the provisions of Section 1-04.6 of the Standard Specifications.

All costs associated with hauling and disposal of the excavated material shall be considered incidental to and included in the contract unit price for associated bid items.

2-04 HAUL

2-04.5 Payment

This section is modified as follows:

Hauling shall be considered incidental to and included in the various bid items in the contract, unless otherwise specified in the proposal.

2-07 WATERING

2-07.5 Payment

This section is modified as follows:

Payment for watering shall be considered incidental to and included in the unit contract price for associated bid items that require watering.

2-09 STRUCTURE EXCAVATION

2-09.2 Materials

This section is supplemented with the following:

Gravel Backfill for wall shall meet the requirements of Section 9-03.12(2)

2-09.3 Construction Requirements

This section is supplemented with the following:

Controlled Density Fill shall be used for pipe bedding when directed by the Engineer.

2-09.5 Payment

This section is supplemented with the following:

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

Shoring or Extra Excavation Class A	Per Lump Sum
Shoring or Extra Excavation Class B	Per Square Foot
Gravel Backfill for Wall	Per Ton
Controlled Density Fill (CDF)	Per Cubic Yard

The unit bid price(s) for the above including all incidental work shall be full compensation for all labor, material, tools, and equipment, including but not limited to: furnishing and installing shoring system, excavating, loading, hauling, stockpiling, separating of material, placing, compacting, disposal of excess and unsuitable materials, and other work necessary to satisfactorily complete the work as defined in the Standard Specifications and these Special Provisions.

The contract price for “Shoring or Extra Excavation Class A” and “Shoring or Extra Excavation Class B” shall also include all excavation, backfill, compaction, and other work required when extra excavation is used in lieu of constructing shoring. If select backfill material is required for backfilling within the limits of the structure excavation, it shall also be required as backfill material for the extra excavation at the Contractor’s expense.

A quantity has been entered in the Proposal, for bidding purposes only, for “Controlled Density Fill.” This item is not subject to the provisions of Section 1-04.6 of the Standard Specifications.

2-11 TRIMMING AND CLEANUP

2-11.1 Description

This section is supplemented with the following:

This Work consists of clean-up, dressing and trimming along the entire project limits.

2-11.3 Construction Requirements

This section is supplemented with the following:

The Contractor shall:

1. Trim shoulders and ditches along trail corridor to produce smooth surfaces and uniform cross-sections that conform to the grades set by the Engineer.
2. Clean all channels, ditches, and gutters to ensure proper drainage.
3. Dress the back slope of ditch. Round off top of the back slope and distribute the material evenly along its base.
4. Remove and dispose of all weeds, brush, refuse, and miscellaneous debris that lie within the improvement corridor.
5. Remove from paved trail and roadway all loose rocks and gravel.
6. Touch-up paint and clean site amenities.

2-11.5 Payment

This section is supplemented with the following:

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

Trimming and Cleanup	Per Lump Sum
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The unit bid price(s) for the above including all incidental work shall be full compensation for all labor, material, tools, and equipment necessary to satisfactorily complete the work as defined in the Standard Specifications and these Special Provisions.

2-12 CONSTRUCTION GEOSYNTHETIC

2-12.5 Payment

This section is supplemented with the following:

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

Construction Geotextile for Soil Stabilization	Per Square Yard
Construction Geotextile for Underground Drainage	Per Square Yard
Construction Geotextile for Ditch Lining	Per Square Yard

The unit bid price(s) for the above including all incidental work shall be full compensation for all labor, material, tools, and equipment, including but not limited to: furnishing and installing, repairing, and other work necessary to satisfactorily complete the work as defined in the Standard Specifications and these Special Provisions.

A quantity has been entered in the Proposal, for bidding purposes only, for "Construction Geotextile for Soil Stabilization," "Construction Geotextile for Underground Drainage" and "Construction Geotextile for Ditch Lining." These items are not subject to the provisions of Section 1-04.6 of the Standard Specifications.

END OF DIVISION 2

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**DIVISION 4
BASES**

4-04 BALLAST AND CRUSHED SURFACING

4-04.1 Description

This section is supplemented with the following:

All crushed surfacing material included in this contract is to be used only as designated by the Engineer and is not for the convenience of the Contractor. The Contractor shall place the material where indicated on the Plans or as directed by the Engineer.

4-04.5 Payment

This section is supplemented with the following:

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

Crushed Surfacing Base Course	Per Ton
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The unit bid price(s) for the above including all incidental work shall be full compensation for all labor, material, tools, and equipment, including but not limited to: hauling, placing, compacting, and other work necessary to satisfactorily complete the work as defined in the Standard Specifications and these Special Provisions.

END OF DIVISION 4

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DIVISION 5 SURFACE TREATMENTS AND PAVEMENTS

5-04 HOT MIX ASPHALT

(June 19, 2017 APWA GSP)

Delete WSDOT Amended Section 5-04, Hot Mix Asphalt, and replace it with Section 5-04, Hot Mix Asphalt as printed in the Standard Specifications for Road, Bridge and Municipal Construction, 2016 edition.

5-04.3 Construction Requirements

Utility adjustments within paved surfaces shall be adjusted to finished grade after the final placement of asphalt pavement or cement concrete.

5-04.3(7)A2 Statistical or Nonstatistical Evaluation

Delete this section and replace it with the following:

5-04.3(7)A2 Nonstatistical Evaluation

(January 16, 2014 APWA GSP)

Mix designs for HMA accepted by Nonstatistical or Commercial evaluation shall;

- Be submitted to the Project Engineer on WSDOT Form 350-042
- 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) and 9-03.8(6).
- Have anti-strip requirements, if any, for the proposed mix design determined in accordance with WSDOT Test Method T 718 or based on historic anti-strip and aggregate source compatibility from WSDOT lab testing. Anti-strip evaluation of HMA mix designs utilized that include RAP will be completed without the inclusion of the RAP.

At or prior to the preconstruction meeting, the contractor shall provide one of the following mix design verification certifications for Contracting Agency review;

- The proposed mix design indicated on a WSDOT mix design/anti-strip report that is within one year of the approval date
- The proposed HMA mix design submittal (Form 350-042) with the seal and certification (stamp and signature) of a valid licensed Washington State Professional Engineer.
- The proposed mix design by a qualified City or County laboratory mix design report that is within one year of the approval date.

The mix design will 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 Material Reference Laboratory (AMRL) program.

At the discretion of the Engineer, agencies may accept mix designs verified beyond the one year verification period with a certification from the Contractor that the materials and sources are the same as those shown on the original mix design.

5-04.3(8)A Acceptance Sampling and Testing – HMA Mixture

5-04.3(8)A1 General

(January 16, 2014 APWA GSP)

Delete this section and replace it with the following:

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

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

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 Project Engineer and must be made in accordance with Section 9-03.8(7).

Commercial evaluation may 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. Commercial HMA can be accepted by a contractor certificate of compliance letter stating the material meets the HMA requirements defined in the contract.

5-04.3(8)A4 Definition of Sampling Lot and Sublot

(January 16, 2014 APWA GSP)

Section 5-04.3(8)A4 is supplemented with the following:

For HMA in a structural application, sampling and testing for total project quantities 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:

- i. If test results are found to be within specification requirements, additional testing will be at the engineer's discretion.
- ii. If test results are found not to be within specification requirements, additional testing as needed to determine a CPF shall be performed.

5-04.3(8)A5 Test Results

(January 16, 2014 APWA GSP)

The first paragraph of this section is deleted.

5-04.3(8)A6 Test Methods

(January 16, 2014 APWA GSP)

Delete this section and replace it with the following:

Testing of HMA for compliance of Va will be at the option of the Contracting Agency. If tested, compliance of Va will be use WSDOT Standard Operating Procedure 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 WAQTC FOP for AASHTO T 27/T 11.

5-04.5 Payment

This section is supplemented with the following:

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

HMA Cl. 1/2" PG 64-22 (Commercial)	Per Ton
Planing Bituminous Pavement	Per Square Yard

The unit bid price(s) for the above including all incidental work shall be full compensation for all labor, material, tools, and equipment, including but not limited to: hauling, placing, compacting, anti-stripping additive, water, installing and removing temporary pavement marking, and other work necessary to satisfactorily complete the work as defined in the Standard Specifications and these Special Provisions.

Adjusting of utility covers to finished grade shall be considered incidental to and included in the various related bid items and no separate payment will be made.

END OF DIVISION 5

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**DIVISION 6
STRUCTURES**

6-07.3(11)B Powder Coating of Galvanized Surfaces

Special Provision Section 6-07.3(11)B is supplemented with the following:

The Powder Coating Surfaces color will be orange red, such as RAL 2005. The contractor shall submit a color sample for approval by the City prior to fabrication. The contractor shall furnish two (2) additional replacement sections to be delivered to Sammamish Maintenance and Operations Center or as agreed to by the City.

END OF DIVISION 5

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

7-01 DRAINS

7-01.5 Payment

This section is supplemented with the following:

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

Underdrain Pipe 4 In. Diam.	Per Linear Foot
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7-02 CULVERTS

7-02.1 Description

This section supplemented with the following:

This Work includes installing precast reinforced concrete box culverts (PRCBC), precast wing walls, precast head walls, and manhole access to the PRCBC. Some of the materials are supplied by the Owner and are provided in the Appendix G for information.

7-02.2 Materials

This section is supplemented with the following:

The following materials are part of the PRCBC, wing walls, head walls, risers, access manhole frame and lid.

Materials for PRCBC, wing walls, head walls and risers shall meet the requirements of 6-02.2.

Concrete shall be Class 4000 in accordance with Section 6-02.3(1).

The manhole lid provided by the Owner will be as show in Appendix G.

The Contractor shall supply the 48 inch diameter manhole frame and lid which shall be manufactured by Pamrex or by an approved equal and shall conform to the following:

- Cover and lid shall be manufactured from Ductile Iron in accordance with ISO 1083.
- Lid shall be one-man operable using standard tools and shall be capable of withstanding an average load of 120,000 lbs.
- Lid to be hinged and incorporate a 90° blocking system to prevent accidental closure
- Frames shall be circular and shall incorporate a seating gasket
- Frames shall be complete with dual wiper infiltration resistant hinge plugs

- The flanges shall incorporate bedding slots and bolt holes
- All components shall be black coated
- Product shall be manufactured in ISO 9000 certified manufacturing plants

Ladders shall be made of galvanized steel. The Contractor shall supply a ladder in accordance with the approved shop drawings for the ladder provided by the Owner.

7-02.3 Construction Requirements

This section is supplemented with the following:

Precast concrete culvert; wing walls; head walls; and one manhole for access through the top of culvert, including risers, ladders, frame and lid, will be provided by the Owner. The Contractor is responsible for providing one manhole access through the top of culvert, including risers, ladder, frame and lid; and unloading, storing as necessary, grouting, installing, and adjusting to final grade the Owner provided items. Precast risers shall be grouted at the seams inside and outside. PRCBC sections and weld plates will be provided by the Owner. The culvert shall be constructed as shown in the approved shop drawings.

The Owner has contracted with the following supplier for fabrication and delivery of the PCRBC and risers:

Granite Precasting & Concrete
 4010 Bakerview Spur
 Bellingham, WA 98226
 Phone: (360) 671-2251
 Fax: (360) 671-0780

The Contractor shall coordinate with the precast fabricator for delivery of the precast risers and PRCBC sections. The Contractor will have one hour to unload each delivery truck. Delivery times shall be during normal operating hours for the fabricator.

A quote for the PRCBC and risers as ordered by the Owner is provided in Appendix G for information only.

7-02.3(6)A2 Submittals

This section is supplemented with the following:

Working Drawings of the precast concrete culvert will be provided by the Owner. It is anticipated that Working Drawings will include the following:

- Plan and elevation views showing all horizontal and vertical control information necessary to locate, layout and construct the culvert; and total assembled dimensions of the culvert.
- Details of joints, connections, reinforcing layout and dimensions of all precast pieces.
- Notes providing material requirements, design criteria and loading information.

Supporting calculations for design of the precast concrete culvert will be provided by the Owner. It is anticipated that the calculations will include the following:

- Materials, including grade, strength and specification (e.g. ASTM, AASHTO) requirements
- Loads
- Geometry of evaluated members
- Shear and moment strength of members and connections including all input values, load and resistance factors and equations used.
- Code references for values, equations and assumptions used in all of the above.

The Contractor shall review the provided Working Drawings and supporting calculations and develop and submit to the Engineer for review a construction sequencing and installation procedure. This shall include sequencing and installation of all relevant construction activities including, but not limited to, excavation; shoring; dewatering; traffic control; erosion and sediment control; culvert, head wall, wing wall and access riser placement; and streambed gravel construction.

7-02.3(6)A3 Casting

This section is supplemented with the following:

Concrete shall be a minimum of Class 4000 in accordance with Section 6-02.3(1).

7-02.4 Measurement

This section is supplemented with the following:

No specific unit of measure will apply to the lump sum bid items Precast Reinf. Conc. Box Culvert (12'-0" Span x 6'-0" Rise x 49'-4" Long) or 48 In. Diam Culvert Access.

7-02.5 Payment

This section is supplemented with the following:

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

Precast Reinf. Conc. Box Culvert (12'-0" Span x 6'-0" Rise x 49'-4" Long)	Per Lump Sum
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The lump sum contract price for "Precast Reinf. Conc. Box Culvert (12'-0" Span x 6'-0" Rise x 49'-4" Long)" shall be full compensation for labor, materials, tools, and equipment to coordinate a time and location for delivery, storing as necessary, unloading and installing Owner supplied items; including excavation; dewatering; hauling and disposing of debris and unused materials; furnishing, placing, compacting, and testing backfill material; and cleanup. Unless listed as a separate pay item, all materials, labor, equipment and incidentals necessary to install the culvert and all Owner supplied materials shall be considered incidental to and included in this bid item.

Additional time beyond one hour for unloading each truck and delivery outside of the fabricator's normal operating hours may incur additional costs to the Contractor and shall be included in the Contractor's lump sum bid price.

48 In. Diam. Culvert Access	Lump Sum
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The lump sum contract price for "48 In. Diam. Culvert Access" shall be full compensation for all labor, materials, tools and equipment for furnishing and installing the 48 inch diameter access to the Owner supplied culvert, including but not limited to risers, frame, lid, ladders and coordination with the precast culvert manufacturer for size and location of blockouts in the culvert.

Shoring or Extra Excavation Class A, Quarry Spalls, Crushed Surfacing, Construction Geotextile, and Streambed Gravel will be paid separately under their respective bid items.

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

7-05.2 Materials

This section is supplemented with the following:

Metal Castings for sanitary sewer manhole shall meet the requirements of SPWSD Specifications Section 02532.

Steps and Ladders for sanitary sewer manhole shall meet the requirements of SPWSD Specifications Section 02532.

7-05.3 Construction Requirements

This section is supplemented with the following:

Plugged and sealed openings after the temporary bypass pipe is removed.

Manhole shall be installed in accordance with SPWSD Specifications Section 02532.

7-05.4 Measurement

This section is supplemented with the following:

Manhole (either standard or saddle) will be measured per each, regardless of depth.

7-05.5 Payment

This section is supplemented with the following:

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

Manhole 60 In. Diam. Type 1 (Saddle)	Per Each
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The unit contract price above shall be full compensation for all labor, material, tools, and equipment including but not limited to: excavation, hauling and disposal of excavated materials; shoring; dewatering; furnishing and placing of structures (standard and/or saddle manholes) and accessories, such as rings, covers, steps and other miscellaneous items; cutting of existing sewer pipe; grouting the pipe connection; manhole channeling and plugging; furnishing, placing compacting and testing of backfill materials; adjusting to pavement grade, testing and cleanup; and all incidentals necessary to satisfactorily complete the work of the above bid item(s) as defined in the Plans, Standard Specifications, and Special Provisions.

Drop manhole connection, connection to existing structure or existing pipe, including but not be limited to: coring the existing manhole, cutting the existing pipe, plugging holes, repairs needed to restore the pipe to use, and sealing the new connections shall be considered incidental to and included in the various bid item and no separate payment will be made.

7-08 GENERAL PIPE INSTALLATION REQUIREMENTS

7-08.2 Materials

This section is supplemented with the following:

Gravel materials for pipe bedding and backfill for water and sanitary sewer mains shall meet the requirements of SPWSD Specifications Section 02700.

7-08.3 Construction Requirements

This section is supplemented with the following:

Trenching, backfilling and compaction for water and sanitary sewer pipelines shall be in conformance with SPWSD Specifications Section 02315.

7-09 WATER MAINS

7-09-1 Description

This section is supplemented with the following:

The Work shall also consist of installing and removing of temporary water main bypass connection as shown on the Plans.

7-09-2 Materials

This section is supplemented with the following:

Ductile Iron pipe and fittings shall meet the requirements of SPWSD Specifications Section 02510.

High Density Polyethylene (HDPE) pipe shall meet the requirements of SPWSD Specifications Section 02530.

7-09-3 Construction Requirements

This section is supplemented with the following:

Temporary Water Main Bypass

The Contractor shall submit a temporary bypass and sequencing plan to SPWSD for review and approval prior to proceed of work. Temporary water main disruption shall be approved in writing by SPWSD. All work shall be performed in accordance with the Plans, Standard Specifications, and these Special Provisions.

Water Main Installation

Water main installation, testing, and sterilization and flushing shall be in accordance with SPWSD Standard Specifications Section 02511.

Trenching, Backfilling and Compaction for Pipelines shall be in accordance with SPWSD Standard Specifications Section 02315.

Utility Clearances

An Ethafoam pad is required for installations where other utilities are closer than 12-inches to provide additional protection between the adjacent utilities. The size of the pad shall be based on the outside diameter (O.D.) of the larger crossing pipe. The pad shall be O.D. long by O.D. wide by 2.5 inches thick minimum or as required to protect the pipes. The pad shall be a strong, resilient, medium-density, closed-cell, polyethylene foam plank (Dow Ethafoam 220, or accepted equivalent.)

7-09-4 Measurement

This section is supplemented with the following:

No specific unit of measurement will apply to the lump sum item of "Temporary Water Main Bypass."

7-09.5 Payment

This section is supplemented with the following:

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

Temporary Water Main Bypass	Per Lump Sum
Ductile Iron (Cl. 52) Pipe for Water Main 8 In. Diam.	Per Linear Foot

The unit contract price above shall be full compensation for all labor, material, tools, and equipment including but not limited to: excavation, hauling and disposal of debris and unsuitable materials; shoring; dewatering; furnishing, laying, restraining, and cleaning of pipe, fittings and appurtenances; furnishing and placing foam pads and other methods employed when laying pipe in close proximity to existing utilities; furnishing, placing, compacting and testing of pipe bedding and backfill materials; making connections; testing and disinfecting; protecting and supporting pipe; and all incidentals necessary to satisfactorily complete the work of the above bid item as defined in the Plans, Standard Specifications, and Special Provisions.

Unless listed as a separate pay item, all materials, labor, equipment, and incidentals necessary to install the water main shall be included in these pay items.

7-12 VALVES FOR WATER MAIN

7-12-2 Materials

This section is supplemented with the following:

Valves shall meet the requirements of SPWSD Specifications Section 02512.

7-12-3 Construction Requirements

This section is supplemented with the following:

Valves installation shall be in accordance with SPWSD Standard Specifications Section 02512.

7-12.5 Payment

This section is supplemented with the following:

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

Gate Valve 8-In.	Per Each
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The unit contract price above shall be full compensation for all labor, material, tools, and equipment including but not limited to: excavation, hauling and disposal of debris and unsuitable materials; shoring; dewatering; furnishing and installing of valves, valve boxes, fittings and appurtenances; furnishing, placing, compacting and testing of backfill materials; adjusting to final pavement grade; testing and disinfecting; protecting and supporting of water system; and all incidentals necessary to satisfactorily complete the work of the above bid item as defined in the Plans, Standard Specifications, and Special Provisions.

7-17 SANITARY SEWERS

7-17-2 Materials

This section is supplemented with the following:

Polyvinyl Chloride (PVC) pipe shall meet the requirements of SPWSD Specifications Section 02530.

High Density Polyethylene (HDPE) pipe shall meet the requirements of SPWSD Specifications Section 02530.

Tracer or locate wire shall meet the requirements of SPWSD Specifications Section 02530.

7-17-3 Construction Requirements

This section is supplemented with the following:

Sanitary sewer main installation and testing shall be in accordance with SPWSD Standard Specifications Section 02531.

Trenching, Backfilling and Compaction for Pipelines shall be in accordance with SPWSD Standard Specifications Section 02315.

Temporary Sanitary Sewer Bypass

The Contractor shall submit a temporary bypass and sequencing plan to SPWSD and the Engineer for review and approval prior to proceed of work. The temporary bypass system shall be placed and supported to keep the pipe stable and protected while providing a consistent pipe slope between manholes, as required to convey a minimum of 2,500 gallon per minute (GPM) flow.

Connections to existing sanitary sewer shall be coordinated with SPWSD.

7-17.5 Payment

This section is supplemented with the following:

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

PVC Sanitary Sewer Pipe 15-In. Diam.	Per Linear Foot
Temporary Sanitary Sewer Bypass	Per Lump Sum

The unit contract price above shall be full compensation for all labor, material, tools, and equipment including but not limited to: excavation, hauling and disposal of debris and unsuitable materials; shoring; dewatering; furnishing, laying, restraining, and cleaning of pipe, fittings and appurtenances; furnishing and placing foam pads and other methods employed when laying pipe in close proximity to existing utilities; furnishing, placing, compacting and testing of pipe bedding and backfill materials; making connections; testing and television inspecting; protecting and supporting pipe; and all incidentals necessary to satisfactorily complete the work of the above bid item as defined in the Plans, Standard Specifications, and Special Provisions.

Maintaining and monitoring the temporary bypass; removal and disposal of the temporary bypass and support system; and repairing, plugging and rechannelizing manholes shall be considered incidental to and included in the associated bid item(s) and no separate payment will be made.

Unless listed as a separate pay item, all materials, labor, equipment, and incidentals necessary to install the sewer main shall be considered incidental to and included in the associated bid item(s).

END OF DIVISION 7

DIVISION 8 MISCELLANEOUS CONSTRUCTION

8-01 EROSION CONTROL AND WATER POLLUTION CONTROL

8-01.1 Description

Work shall include installation of temporary erosion control devices including, but not limited to, filter fabric fence, inlet protection, wattle, high visibility fence, construction entrance, plastic covering, and providing for street cleaning to prevent the transport of sediment and other debris from leaving the site.

All disturbed areas shall be planted, seeded or mulched as described in Section 8-01.3(2)B. The Contractor shall submit the proposed plan for seeding or mulching to the Engineer for approval five days prior to application.

Water

The Contractor shall make, at the Contractor's expense, whatever arrangements may be necessary to ensure an adequate supply of water required for erosion control, plant establishment, and recommended watering by Engineer to maintain health of procured plants on site, installed, and in decline.

The Contractor shall also furnish all necessary hose, equipment, attachments and accessories for the adequate irrigation of planted areas as may be required to complete the work as specified. All costs shall be considered **incidental** to and included in the bid items involved and no additional compensation shall be made.

8-01.3 Construction Requirements

8-01.3(1) General

This section is supplemented with the following:

A draft Stormwater Pollution Prevention Plan (SWPPP) is provided in Appendix G. The Contractor shall update the SWPPP in accordance with his operation, schedule, and site conditions. The Contractor shall coordinate with the Contracting Agency in updating the SWPPP. The SWPPP is to remain onsite throughout the duration of construction.

8-01.3(1)B Erosion and Sediment Control (ESC) Lead

Section 8-01.3(1)B is supplemented by the following:

3. The ESC Lead shall be responsible for the monitoring, reporting and recordkeeping requirements as specified in the Construction Stormwater General Permit.

8-01.3(2) Erosion Control Seeding, Fertilizing, and Mulching

8-01.3(2)B Seeding and Fertilizing

This section is supplemented with the following:

Seeding

For work associated with Schedule A-1, Stream Restoration, the Contractor shall apply seed only during the dates beginning April 1 and ending October 1. If the planting schedule falls between October 2 and March 31 then a three to four inch depth layer of arborist mulch shall be applied in lieu of seeding in all planting areas as indicated on planting plans.

8-01.3(5) Placing Plastic Covering

This section is supplemented with the following:

Clear Plastic Covering

Clear plastic covering shall be placed on slopes and disturbed areas that cannot be prepared and seeded during the specific seeding periods in accordance with Section 8-02.3(8) of the Standard Specifications. Clear plastic covering may be required on slopes and disturbed areas that are prepared and seeded just prior to fall rains or other potential erosive conditions. The determination of coverage and the extent of coverage is the decision of the Engineer. When the clear plastic covering is used on unseeded slopes it shall be left in place until the next seeding period.

Removing Plastic Covering

Clear plastic covering shall be removed when directed by the Engineer. On unseeded areas it shall be removed outside a specified seeding period.

8-01.3(8) Street Cleaning

The second paragraph is revised as follows:

“Street washing with water will not be allowed.”

8-01.4 Measurement

This section is supplemented with the following:

No specific unit of measurement shall apply to the lump sum bid item of “Stormwater Pollution Prevention Plan (SWPPP) & Implementation.”

8-01.5 Payment

This section is supplemented with the following:

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

Stormwater Pollution Prevention Plan (SWPPP) & Implementation	Per Lump Sum
ESC Lead	Per Day

Biodegradable Erosion Control Blanket	Per Square Yard
Stabilized Construction Entrance	Per Square Yard
High Visibility Silt Fence	Per Linear Foot
High Visibility Fence	Per Linear Foot
Wattle	Per Linear Foot
Compost Sock	Per Linear Foot
Seeding, Fertilizing and Mulching by Hand (Roadway)	Per Square Yard
Seeding, Fertilizing and Mulching by Hand (Wetland)	Per Square Yard

The unit Contract bid price(s) above, including all incidental work, shall be full compensation for all labor, materials, tools and equipment necessary to satisfactorily complete the work as defined in the Standard Specifications, these Special Provisions, and the Plans.

Inspecting, maintaining, cleaning, replacing and removing of erosion/water pollution control BMPs shall be considered incidental to and included in the various items.

The lump sum contract price for “Stormwater Pollution Prevention Plan (SWPPP) & Implementation” shall be full compensation for all associated costs, including but not limited to: preparing, submitting, maintaining, and updating SWPPP; complying with the Construction Stormwater General Permit; providing stormwater monitoring and reporting; providing and maintaining on site standby equipment and materials to comply with General Permit; implementing BMPs; and other specified SWPPP requirements.

8-02 ROADSIDE RESTORATION

8-02.2 Materials

This section is supplemented with the following:

Materials shall meet the requirements of the following sections:

Erosion Control Seed Mix 9-14.2 (as modified by these Special Provisions)

Compost shall meet the requirements for Fine Compost and Medium Compost in Section 9-14.4(8).

8-02.3 Construction Requirements

This section is supplemented with the following:

Planting and seeding of access road not required.

Final Planting will be performed by others.

8-02.3(1) Responsibility During Construction

This section is supplemented with the following:

Throughout planting operations, the Contractor shall keep the premises clean, free of excess soils, plants, and other materials, including refuse and debris, resulting from his work. As pedestrians will be allowed continuous access the Contractor shall not stockpile materials or park equipment in any manner that may create a hazard and/or obstacles to pedestrians.

At the end of each work day, 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 without approval of the Engineer. At the conclusion of work, the Contractor shall remove surplus soils, materials, and debris from the construction site and shall leave project in a clean condition.

Landscape construction is anticipated to begin after all grading, trail work, curbs, sidewalks, major utilities 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 in force, planting landscape materials may be delayed.

The Contractor shall locate all underground utilities (both new and existing) prior to starting work and shall not disturb or damage them. Promptly notify the Engineer of any conflict between the proposed work and any obstructions. The Contractor shall be responsible for making any and all repairs for damage caused by his or her activities.

8-02.5 Payment

This section is supplemented with the following:

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

Arborist Wood Chip Mulch	Per Cubic Yard
Fine Compost	Per Cubic Yard
Medium Compost	Per Cubic Yard
Topsoil Type A	Per Cubic Yard

The unit contract price for the item(s) listed above shall be full compensation for all materials, labor, tools, equipment, and supplies necessary to fine grade, hydroseed, cleanup for the particular items called for in the Plans.

8-09 RAISED PAVEMENT MARKERS

8-08.5 Payment

This section is revised as follows:

Raised pavement markers shall be considered incidental to and included in the lump sum item "Pavement Marking" and no separate payment will be made.

8-11 GUARDRAIL

8-11.2 Materials

This section is supplemented with the following:

Materials for weathering steel guardrail and terminals shown on the Plans shall take precedence over the materials listed in the Standard Specifications.

8-11.3 Construction Requirements

This section is supplemented with the following:

Item Culvert Rail will be powder coated in accordance with section 6-07.

8-11.3(1)G Plans

This section is supplemented with the following:

Type 2 Working Drawings shall include but not be limited to layout, including post spacing, total length of runs, station and offset locations of posts and distance between posts on each side of the culvert and the culvert centerline; member sizes; connection details; material grade, strength and specification (e.g. ASTM, AASHTO) and all other information necessary to verify guardrail and terminal fabrication and erection are in conformance with the Plans.

8-11.4 Measurement

The section is supplemented with the following:

Measurement of Culvert Rail will be linear foot for measured along the line of the completed guardrail.

8-11.5 Payment

This section is supplemented with the following:

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

Culvert Rail	Per Linear Foot
Beam Guardrail Type 31	Per Linear Foot
Beam Guardrail Type 31 Non-flared Terminal	Per Each
Guardrail Transition Section	Per Each
Removing Guardrail	Per Linear Foot

The unit Contract bid price(s) above, including all incidental work, shall be full compensation for all labor, materials, tools and equipment to furnish and install guardrail posts (regardless of post length), rails, terminals and all associated connections; removal and disposal of existing guardrail, posts, and blocks, and backfilling and compacting the void created by post removal, and all necessary to satisfactorily complete the work as defined in the Standard Specifications, these Special Provisions, and the Plans.

Potholing for utilities as shown on Plans shall be included in the price for Beam Guardrail Type 31.

Unless listed as a separate pay item, all materials, labor, equipment and incidentals necessary to furnish and install the guardrails and terminals shall be considered incidental to and included in this bid item.

8-15 RIPRAP

8-15.5 Payment

This section is supplemented with the following:

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

Quarry Spalls	Per Cubic Yard
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The unit contract bid price(s) above, including all incidental work, shall be full compensation for all labor, materials, tools and equipment necessary to satisfactorily complete the work as defined in the Standard Specifications and these Special Provisions.

Quarry Spalls shall only be provided and placed if required and only at the direction of the Engineer. A quantity has been entered in the Proposal, for bidding purposes only, for "Quarry Spalls." This item is not subject to the provisions of Section 1-04.6 of the Standard Specifications.

8-21 PERMANENT SIGNING

8-21.1 Description

This section is supplemented with the following:

This Work shall also include installing one Project Sign at the location as directed by the City, in accordance with the details included in Appendix B.

8-21.3 Construction Requirements

This section is supplemented with the following:

The Contractor shall be responsible for providing and installing two Project signs, providing and installing sign posts, maintaining, and disposing of the sign at the completion of the project.

The Project signs shall be installed within two (2) weeks of the notice to proceed.

At completion of the project or when directed by the Engineer, the Contractor shall remove each Project sign and restore the area where the sign was installed to its original or better condition.

8-21.4 Measurement

This section is supplemented with the following:

No specific unit of measurement shall apply to the lump sum bid item of "Project Sign."

8-21.5 Payment

This section is supplemented with the following:

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

Project Sign	Per Lump Sum
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The unit Contract bid price above, including all incidental work, shall be full compensation for all labor, materials, tools and equipment to furnish and install signs, and all necessary to satisfactorily complete the work as defined in the Standard Specifications, these Special Provisions, and the Plans.

8-22 PAVEMENT MARKING

8-22.3 Construction Requirements

This section is supplemented with the following:

All contaminants within the areas to receive pavement markings shall be removed. Large areas of tar, grease, paint, or foreign materials may require steam cleaning, or power brooming to accomplish complete removal.

Prior to installing pavement marking the Contractor shall pre-mark the layout of all channelization and received approval from the Traffic Engineer a minimum of one (1) week of placement.

Markings shall be installed in accordance with manufacturer's recommendations and specifications.

8-22.4 Measurement

This section is supplemented with the following:

No specific unit of measurement shall apply to the lump sum bid item of "Pavement Marking."

8-22.5 Payment

This section is supplemented with the following:

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

Pavement Marking	Per Lump Sum
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The unit contract bid price(s) above, including all incidental work, shall be full compensation for all labor, materials, tools and equipment necessary to satisfactorily complete the work as defined in the Standard Specifications and these Special Provisions.

Removal of existing raised pavement marking, paint, and thermoplastic markings shall be considered incidental to the contract.

Raised pavement markers shall be considered incidental to and included in the lump sum item "Pavement Marking" and no separate payment will be made.

8-24 ROCK AND GRAVITY BLOCK WALL AND GABION CRIBBING

8-24.4 Measurement

This section is supplemented with the following:

Rock wall will be measured by the square foot of completed wall in place. The top and bottom limits for vertical measurement will be as shown in the Plans. The horizontal limits for measurement are from the end of the wall to the end of the wall.

Ecology block will be measured per each provided and installed.

8-24.5 Payment

This section is supplemented with the following:

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

Rock Wall	Per Square Foot
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The unit Contract price per square foot for "Rock Wall" shall be full payment for all costs to perform the Work in connection with constructing rock walls, including overbuilding and excavation.

Quarry Spalls, Underdrain Pipe and Construction Geotextile will be paid separately under their respective bid items.

Ecology Block	Per Each
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The unit Contract price per each for "Ecology Block" shall be full payment for all costs to perform the Work in connection with providing and installing the blocks as shown on the Plans or as directed by the Engineer, including overbuilding and excavation.

The following section is added:

8-27 TEMPORARY STREAM BYPASS SYSTEM

8-27.1 Description

This work shall consist of installation, maintenance and removal of the temporary stream bypass system as required during construction to safely bypass stream flows around the in water work areas. This work shall also include fish removal from the isolated area and installation and maintenance of temporary fish screens, sediment mat and filter bags.

8-27.2 Materials

Materials shall meet the requirements of the following sections:

Streambed Gravel	Special Provisions 9-03.11(5)
Corrugated Polyethylene Storm Sewer Pipe	9-05.20
Plastic Covering	9-14.5(3)
Biodegradable Erosion Control Blanket	9-14.5(2)D

Gravel Bags

Gravel bags shall be 17" x 27" Polypropylene bags filled with washed pea gravel or as directed by the Engineer.

Fish Screens

Material for fish screens shall be 6-14 or 6-16 (six squares per inch, 14 or 16 gauge) woven wire mesh.

8-27.3 Construction Requirements

The Contractor shall provide, install, and maintain the temporary stream bypass system as shown on the plans to ensure that all stream and stormwater flows bypass the construction site area safely without damage to surrounding property or downstream systems and to ensure that the work area is free from standing water or other saturated condition that impedes or interrupts the work.

Sediment must not be conveyed downstream during the construction period. The bypass pipe shall meet the size and material requirements shown on the plans. The bypass system and any dewatering measures required must be in operation prior to any work done within the stream channel. The bypass pipe shall outlet to a sediment mat to avoid erosion of the streambed. The Contractor shall be responsible for removal of the temporary stream bypass system upon project completion.

The Contractor may submit an alternative bypass for approval by the Engineer.

Standard Operating Procedures

The stream bypass system is sized to pass base flows through the average annual flood. This size is provided for the Contractors convenience, it is the Contractors responsibility to verify all pipes and pumps, where applicable, are appropriately sized to ensure the stream flows will be sufficiently bypassed. The Contractor shall maintain base flows in the downstream reach at all times. If the Contractor finds that the bypass pipe or pump(s) is undersized, the Contractor shall notify the Engineer immediately. The Contractor shall monitor the weather reports and if precipitation in excess of the capacity of the bypass system is forecasted within 24 hours, the Contractor shall initiate the Emergency Operating Procedures described below.

Any pumps that are used as part of the standard operation shall be continuously monitored at night and during non-working hours.

See the Hydraulic Project Approval (HPA) included in the Appendix for additional information on the temporary stream bypass requirements.

Fish Removal

The Contractor shall provide for and coordinate with an experienced, local fisheries Biologist for fish removal of the stream reach being isolated by the temporary stream bypass system. The fisheries Biologist, in accordance with any permits, shall perform the following tasks:

1. Fish shall be removed from the stream reach to be diverted by first installing fish screens upstream and downstream of the in-water work area. The fish screens shall remain in place for the duration of the construction activities. Once the fish screens are in place, a beach seine net should be dragged downstream while guiding all fish to the downstream net and collecting the fish at this end.
2. During dewatering of the reach, fish stranded in remaining pools shall be removed with dip nets and if necessary, by conducting four-pass electrofishing. If Chinook are found during the fish removal activities, electrofishing should cease immediately. Electrofishing must be conducted according to the NMFS (2000) Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act.
3. Upon removal, fish should be transported in clean buckets half-filled with stream water and immediately reintroduced into the stream downstream of the project site. Fish transportation equipment should be ready and on the job site in advance.

The temporary stream bypass system shall be relocated as required to allow installation of the culvert, grading of the stream channel, to vegetate disturbed areas, and for landscape installation and restoration. See the construction drawings for recommended stream bypass alignment.

See the Hydraulic Project Approval (HPA) included in the Appendix of this specification for additional information on the temporary stream bypass requirements.

Temporary Stream Bypass Berm

The Temporary Stream Bypass berm shall consist of gravel bags and plastic sheeting and be constructed so that the initial row of gravel bags are keyed into the ground and makes tight contact with the ground for the length of the berm. Sand bags shall be placed to ensure there are no gaps. Ecology blocks may be used with the approval of the Engineer. Clear plastic covering shall be placed under the keyed-in gravel bags and cover the entire upstream face of the gravel bag berm.

Emergency Procedures

The Contractor shall provide pumps, generators, hoses, and personnel as backup to the bypass piping in the event the piping becomes non-operational and cannot adequately bypass flows around the project site. Pumps shall be continuously monitored at night and during non-working hours in the event of a power failure.

Emergency bypass pump intake shall be screened in order to protect juvenile fish. The area of the screen shall be a minimum of seven (7) square feet and be fully submerged. Screen types shall be of the following:

Perforated Plate

0.0938 inch maximum opening diameter or maximum slot width.

Profile Bar

0.069 inch maximum width opening.

Woven Wire

0.087 inch maximum in the narrowest direction.

The Contractor shall inspect and remove any debris accumulated on the face of the screen.

Modifications to Temporary Stream Bypass Plan

The Contractor may submit modifications to the temporary stream bypass plan to the engineer for approval prior to starting construction. The plan must include all elements for isolating the stream banks during in-channel grading and excavation. The modified temporary stream bypass plan must be prepared and stamped by a licensed engineer.

Final Temporary Stream Bypass Removal

The final removal of the temporary stream shall be staged such that flow is metered into the constructed stream channel. Metering shall be performed such that one-quarter of the existing flow is released into the stream channel for 24-hours. Subsequent metering in one-quarter of total flow increments over 24-hour periods shall be performed up to full channel flow (in total it will require 96 hours to achieve full flow). The Engineer may approve a faster schedule if there is evidence of approaching weather that may overwhelm the stream bypass system.

8-27.4 Measurement

No specific unit of measurement will apply to the lump sum unit price for "Temporary Stream Bypass System."

8-27.5 Payment

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

Temporary Stream Bypass System	Per Lump Sum
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The initial 20% of the lump sum item will be paid upon approval of the stream bypass plan (Contractor may elect to use the bypass plan provided in the Plans). Payment will be increased to 90% incrementally through the period that the bypass is in use. The final 10% of the lump sum item will be paid when all stream bypass equipment is removed from the site and has been treated for Invasive Species per the requirements of Section 8-26.

The lump sum contract price above shall include all materials, tools, labor and equipment necessary to install, maintain, and remove the temporary stream bypass as described in the Plans and herein including but not limited to the gravel bag berms, gravity bypass pipe, any required pumping costs, filter bags, fish isolation (including costs for Fisheries Biologist(s) needed for fish removal) and removal and any erosion control measures needed to safely bypass surface flows around the project site.

The following section is added:

8-29 WOOD STRUCTURES TYPES 1-4 (NEW SECTION)

8-29.1 Description

This Work consists of providing and constructing wood structures as shown on the Plans and as directed by the Engineer. The work shall also include excavation for trenches, backfill and compaction.

8-29.2 Materials

Logs

The Contractor shall notify the Engineer a minimum of two (2) weeks prior to clearing and grubbing work to have trees marked from the project site to be salvaged for wood structures as indicated on the plans. The source(s) for additional logs required to complete the installation of the wood structures, shall be approved by the Engineer prior to delivery to the site.

Logs and piles used to construct wood structures shall be of a conifer species, sound and free of rot, insect damage, or any preservative such as creosote. Logs shall not be encrusted with silt and fines.

Log and pile diameter at breast height (D.B.H.) shall be measured 4.5 feet from the base end of the log. Log size shall be categorized into five separate DBH sizes with variations of lengths, logs with branches, logs with root wads and plain logs as shown on the Plans. Logs with root wads shall have a minimum root wad diameter of three (3) feet, as measured at the shortest spread between root ends.

8-29.3 Construction Requirements

Log Sorting

The Contractor shall identify a log stockpile area and a log staging area that are outside of the log structure construction area. Prior to any structure installation, the Contractor shall sort all logs salvaged from the site. Logs and piles shall be grouped by DBH. The Engineer will identify significant logs to be brought to the staging area and used in specific log structures.

Wood Structures

Logs shall be handled in such a way as to minimize damage to root wads and limbs during hauling, stockpiling, and placement. Logs with and without root wads shall have the cut ends broken to disguise saw cuts.

The Contractor shall notify the Engineer two (2) weeks in advance of log installation. The Contractor shall construct Wood Structures of the type and at locations as indicated on the Plans or as directed by the Engineer. Log placement shall be approved by the Engineer prior to and during installation. During placement of Wood Structures, the Engineer may require the Contractor to adjust the placement to fit the field conditions.

Minimize trench widths associated with log installation to the Log diameter plus two (2) feet. Field adjustments may be directed by the Engineer to improve contact between logs within a complex or revetment to achieve desired stability of the logs. Vertical locations are subject to a 0.5 feet tolerance based on actual log geometry. Logs shall be tamped and/or pressed against soil so they are in solid contact and resting in a secure position.

Backfill and compact any open trenches for wood structure installation as required to meet compaction requirements for excavated material to return the site to the design grade. Materials excavated from on-site may be used as backfill, when approved by the Engineer.

8-29.4 Measurement

Wood Structure will be measured per each, for each of wood structure installed.

8-29.5 Payment

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

Wood Structure Type 1	Per Each
Wood Structure Type 2	Per Each
Wood Structure Type 3	Per Each
Wood Structure Type 4A	Per Each
Wood Structure Type 4B	Per Each

The contract unit price(s) for the above, including all incidental work, shall be full compensation for all labor, materials, tools and equipment including but not limited to: salvaging and furnishing of logs; hauling, sorting and stockpiling of logs; trenching and excavation required to place the log structures; placing and securing log structures;

furnishing and placing backfill; compaction required to secure log structures in place; furnishing and installing miscellaneous items and accessories that comprise the log structures; and any final field adjustment of log structures as directed in the field by the Engineer, and all incidentals necessary to satisfactorily complete the work of the above bid item as defined in the Plans, and these Special Provisions.

The following section is added:

8-30 STREAMBED GRAVEL (NEW SECTION)

8-30.1 Description

This Work shall consist of placing streambed gravel along the new Zackuse Creek channel and within the new Zackuse Creek culvert in conformity with the locations, lines, and dimensions shown on the Plans.

8-30.2 Materials

Materials shall meet the requirements of the following sections:

Streambed Cobbles	9-03.11(2)	4" Cobbles
Fine Aggregate for Portland Cement Concrete	9-03.1(2)B	Class 1

Streambed Gravel shall be a combination of products as follows:

Material Type	Percentage by Weight
Streambed Cobbles (4" Cobbles)	90
Fine Aggregate for Portland Cement Concrete (Class 1)	10

8-30.3 Construction Requirements

Before placing streambed gravel, the Contractor shall notify the Engineer so that s/he can visually confirm the channel excavation meets the lines, grades, and dimensions shown on the Plans.

Streambed gravels shall be placed in the prepared channel and box culvert to the lines and grades shown on the Plans. Streambed gravel final installation shall provide a well graded mix of the Fine Aggregate and Streambed Cobbles.

Placement of streambed gravels shall be constructed to ensure that low stream flows are conveyed above the finished channel. During and after placement, the Contractor shall apply water to facilitate filling the interstitial voids of the streambed cobbles with the fine aggregate. At no time shall water be applied at a rate that causes the streambed gravel to erode. The voids are satisfactorily filled with fine aggregate when water equivalent to the flow rate of the stream does not go subsurface. If water is not present in the stream, the Contractor shall apply water to the stream channel for visual acceptance by the Engineer.

The placement of streambed gravels will be completed as two phases. The first phase will be the installation of the streambed gravel to the lines, grades and dimensions shown on the Plans. The second phase will be the addition of 1-inch minimum layer of the Fine Aggregate across the entire channel. The Contractor shall apply water to facilitate the filling of any remaining voids in the streambed gravels.

8-30.4 Measurement

Streambed gravel will be measured by the ton of material placed.

8-30.5 Payment

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

Streambed Gravel	Per Ton
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The unit contract bid price(s) above, including all incidental work, shall be full compensation for all labor, materials, tools and equipment necessary to satisfactorily complete the work as defined in the Plans and these Special Provisions.

Excavation for the streambed gravel will be paid under the bid item “Channel Excavation, Incl. Haul.”

The following section is added:

8-31 BOULDER BANDS AND CULVERT ROUGHNESS ELEMENT (NEW SECTION)

8-31.1 Description

This work shall consist of placing boulder bands along the new Zackuse Creek channel in conformity with the locations, lines, and dimensions shown on the Plans.

8-31.2 Materials

Materials shall meet the requirements of the following sections:

Streambed Cobbles	9-03.11(2) 12" Cobbles
Streambed Gravel	Special Provisions 9-03.11(5)
Boulder Band	Special Provisions 9-03.11(6)

8-31.3 Construction Requirements

Before placing boulder bands and culvert roughness elements, the Contractor shall notify the Engineer so that s/he can visually confirm the channel excavation meets the lines, grades, and dimensions shown on the Plans.

Boulder bands and culvert roughness elements shall be placed in the prepared channel to the lines and grades shown on the Plans. Boulder band and culvert roughness element final installation shall provide a well graded mix of the streambed cobbles and streambed gravels.

Placement of boulder band and culvert roughness element shall be constructed to ensure that low stream flows are conveyed above the finished channel. During and after placement, the Contractor shall apply water to facilitate filling the interstitial voids of the Streambed Cobbles with the streambed gravels. At no time shall water be applied at a rate that causes the boulder bands and culvert roughness elements to erode. The voids are satisfactorily filled with streambed gravels when water equivalent to the flow rate of the stream does not go subsurface. If water is not present in the stream, the Contractor shall apply water to the stream channel for visual acceptance by the Engineer.

8-31.4 Measurement

Boulder band and culvert roughness element will be measured per each in placed.

8-31.5 Payment

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

Boulder Band	Per Each
Culvert Roughness Element	Per Each

The unit contract bid price(s) above, including all incidental work, shall be full compensation for all labor, materials, tools and equipment necessary to satisfactorily complete the work as defined in the Plans and these Special Provisions.

END OF DIVISION 8

**DIVISION 9
MATERIALS**

9-03 AGGREGATES

9-03.8(7) HMA Tolerances and Adjustments

This section is supplemented with the following:
(May 25, 2006 APWA GSP)

Item 1 is deleted and replaced with:

1. **Job Mix Formula Tolerances.** After the JMF is determined as required in 5-04.3(7)A, the constituents of the mixture at the time of acceptance shall conform to the following tolerances:

	Nonstatistical Evaluation	Commercial Evaluation
Aggregate, percent passing		
1", ¾", ½", and 3/8" sieves	±6%	±8%
U.S. No. 4 sieve	±6%	±8%
U.S. No. 8 sieve	±6%	±8%
U.S. No. 200 sieve	±2.0%	±3.0%
Asphalt Binder	±0.5%	±0.7%

These tolerance limits constitute the allowable limits as described in Section 1-06.2. The tolerance limit for aggregate shall not exceed the limits of the control points section, except the tolerance limits for sieves designated as 100% passing will be 99-100. The tolerance limits on sieves shall only apply to sieves with control points.

9-03.11(5)

The following section is added:

STREAMBED GRAVEL

Streambed gravel shall be clean, naturally occurring water rounded gravel material. Streambed gravel shall have a well-graded distribution consisting of a mix of cobble sizes conforming to the gradation for 4" Cobbles Section 9-03.11(2) and of fine aggregate conforming to the gradation of fine aggregate for Portland Cement Concrete Class 1 Section 9-03.1(2)B. The streambed gravel shall consist of approximately 90-percent of 4" cobbles and 10-percent fine aggregate (by weight) premixed prior to placement.

The grading of the streambed gravels shall be determined by the Engineer by visual inspection of the load before it is dumped into place, or, if so ordered by the Engineer, by dumping individual loads on a flat surface and sorting and measuring the individual rocks contained in the load.

9-03.11(6)

The following section is added:

BOULDER BAND

Boulder band shall be clean, naturally occurring water rounded gravel material. Boulder band shall have a well-graded distribution consisting of a mix of cobble sizes conforming to the gradation for 12" Cobbles Section 9-03.11(2) and of streambed gravel conforming to Section 9-03.11(5). The boulder band shall consist of approximately 90-percent of 12" cobbles and 10-percent streambed gravel (by weight) premixed prior to placement.

The grading of the boulder bands shall be determined by the Engineer by visual inspection of the load before it is dumped into place, or, if so ordered by the Engineer, by dumping individual loads on a flat surface and sorting and measuring the individual rocks contained in the load.

9-14 EROSION CONTROL AND ROADSIDE PLANTING

9-14.2 Topsoil Type A

This section is supplemented with the following:

Topsoil Type A shall be Cedar Grove Three-Way Mix or approved equal.

9-14.2 Seed

This section is supplemented with the following:

Erosion Control Seed Mix

<u>Scientific Name</u> <u>Weight</u>	<u>Common Name</u>	<u>% of Mix by</u>
Elymus glaucus	Blue Wildrye	40%
Festuca rubra	Native Red Fescue	35%
Bromus carinatus	Tufted Hairgrass	10%
Deschampsia cespitosa	NW Mannagrass	10%
Beckmannia syzigachne (Steud.) Fernald	American Sloughgrass	05%

Application rate: 1 lbs/1000 sf, 43 PLS lbs. per acre

Purity: Not less than 98 percent

Germination: Not less than 90 percent

Maximum weed content: 0 percent

9-14.4 Mulch and Amendments

9-14.4(3) Bark or Wood Chip Mulch

This section is supplemented with the following:

Arborist Wood Chip Mulch

Arborist Wood Chip Mulch shall be coarse ground wood chips (approximately ½" to 6" along the longest dimension) derived from the mechanical grinding or shredding of the above-ground portions of trees. It may contain wood, wood fiber, bark, branches, and leaves; but may not contain visible amounts of soil. It shall be free of weeds and weed seeds including but not limited to plants on the Island County Noxious Weed list available at: <http://extension.wsu.edu/island/nrs/noxious/weed-list/>, and shall be free of invasive plant portions capable of re-sprouting, including but not limited to horsetail, ivy, clematis, knotweed, etc. It may not contain more than 1/2% by weight of manufactured inert material (plastic, concrete, ceramics, metal, etc.).

9-14.6(2) Quality

This section is supplemented with the following:

Cold storage plants will not be permitted.

Potted and container stock shall be well rooted and vigorous enough to ensure survival and healthy growth.

Container plants shall have grown therein a minimum of six months and a maximum of two years, with roots filling the containers but not showing evidence of being or having been root bound.

All grafts or budding on trees shall be at ground level except the Engineer may approve higher grafts or budding with compatible trunk and branch growth characteristics.

Trees: Provided untapped, straight, single leader trees except for multiple stem (clump) trees. Trees shall have full crowns and balanced branching.

Plant material shall be free from disfiguring knots, swollen grafts, sunscale injuries, bark abrasions, evidence of improper pruning and other objectionable disfigurement.

Trees and shrubs shall have well developed branch systems; shrubs full foliated, not leggy.

The Engineer will reject thin, weak and leggy plants.

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.

Names on the Plans and Specifications conform to the standardized names of the American Joint Committee on Horticulture, latest edition.

9-14.6(3) Handling and Shipping

This section is supplemented 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 material along ground without proper protection of roots and branches

9-14.6(4) Tagging

This section is supplemented with the following:

All plant material except ground cover shall be legibly tagged. Tagging may be by species or variety with minimum of one tag per ten trees or shrubs.

9-14.6(5) Inspection

This section is supplemented with the following:

See also Section 8-02.3(7) **Layout of Planting** herein for additional inspection requirements.

9-14.6(7) Temporary Storage

This section is supplemented with the following:

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 as necessary until planted. Do not heel in plants for more than one (1) week.

9-14.8 Planting Restrictions

This section is added as follows:

Do not plant when ground is frozen or excessively wet. Timing of grass seed application is designated in section 8-01.3(2).

END OF DIVISION 9

PART 6

SPECIAL PROVISIONS (FOR SCHEDULES B AND C)

deleted in its entirety per addendum 1

PART 7

**SAMMAMISH PLATEAU
WATER AND SEWER DISTRICT
STANDARD SPECIFICATIONS**

PART 7

**SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
STANDARD SPECIFICATIONS**

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**SECTION 02315
TRENCHING, BACKFILLING AND COMPACTION FOR PIPELINES**

PART 1 - GENERAL

1.01 DESCRIPTION

This Section includes materials and methods to be used to perform all trenching, shoring, foundation preparation, backfilling and compaction required to accomplish pipeline construction as shown on the Drawings or required by these Specifications.

1.02 SUBMITTALS

- A. Soil Tests. Submit as Product Information 4 copies of the following for imported backfill and other crushed material:
1. Gradation and moisture density compaction curve test results.
 2. Manufacturer or supplier's certification of compliance with referenced standards.

1.03 RELATED WORK SPECIFIED ELSEWHERE

<u>Section</u>	<u>Item</u>
2700	Gravel Materials

PART 2 - PRODUCTS

2.01 PIPE BEDDING MATERIAL

Pipe bedding material shall be as specified in Section 02700 – Gravel Materials.

2.02 TRENCH BACKFILL MATERIAL AND SELECT IMPORTED BACKFILL MATERIAL

The Contractor shall furnish and install trench backfill material and select imported backfill material as specified in Section 02700, Gravel Materials.

2.03 CONTROLLED DENSITY FILL (CDF)

The Contractor shall furnish and install controlled density fill as shown on the Plans and as directed by the District in the field. Material shall be as specified in Section 02700, Gravel Materials.

2.04 UNSUITABLE MATERIAL

Unsuitable Materials include the materials listed below:

- A. Soils which, when classified under ASTM D 2487 - Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System), fall in the classifications of Pt (Peat), OH (organic clays of medium to high plasticity, organic silts), CH (inorganic clays of high plasticity, fat clays), MH (inorganic silts, micaceous or diatomaceous

fine sandy or silty soils, elastic silts), or OL (organic silts and organic silty clays of low plasticity). OH, CH, MH with liquid limits of greater than 50 and OL liquid limit less than 50.

- B. Soils which cannot be compacted sufficiently to achieve the density specified for the intended use or as determined by the District. Soil additives for drying or stabilization will not be allowed, including but not limited to fly ash, portland cement, or kiln dust.
- C. Materials that contain organic material, hazardous or designated waste materials including petroleum hydrocarbons, pesticides, heavy metals, and any material which may be classified as hazardous or toxic according to applicable regulations.
- D. Soils that contain greater concentrations of chloride or sulfate ions, or have a soil resistivity or pH less than the existing on-site soils.

PART 3- EXECUTION

3.01 TRENCHING

- A. Cut open trenches to the lines and grades shown on the Drawings and as specified herein. Trench excavation will be in compliance with OSHA and WISHA regulations and requirements. Trenches shall be excavated to the line and depth designated by the Engineer to provide a minimum of thirty-six (36) inches of cover over the pipe, unless otherwise shown on the contract drawings.
- B. Pile material excavated from trenches adjacent to the trench or in an adjacent public right-of-way or easement. Maintain pile of excavated material so that the toe of the slope is at least 2-feet from the edge of the trench. Pile in such a manner as to cause a minimum of inconvenience to public travel, and provide for merging traffic where necessary. Provide free access to all fire hydrants, water valves and meters, and leave clearance to enable the free flow of storm water in all gutters, conduits and natural watercourses. All buried utilities shall be adequately supported and protected.
- C. Except for unusual circumstances where approved by the District, the trench sides shall be excavated vertically and the trench width shall be excavated only to such widths as are necessary for adequate working space. The maximum trench width at the top of the pipe shall normally be the outside diameter of the pipe barrel plus sixteen (16) inches. The trench shall be kept free from water until jointing is complete. Surface water shall be diverted so as not to enter the trench. The Contractor shall maintain sufficient pumping equipment on the job to insure that these provisions are carried out. Gravel required in the bottom of the trench due to action of weather or workmen shall be furnished by the Contractor. Boulders, rocks, logs, roots and other obstructions shall be entirely removed or cut out to the width of the trench and to a depth six (6) inches below water main grade. Where material is removed from below water main grade, the trench shall be backfilled to grade with material, which

meets the District's standards for foundation gravel, and thoroughly compacted. Trenching operations shall not proceed more than 500 feet in advance of pipe laying, except with written approval of the District.

- D. When trenching operations cut through concrete or asphalt pavement, the pavement shall be removed to width of eighteen (18) inches greater than the top of the trench. The concrete shall be cut on a straight line. Asphalt paving shall be cut ahead of the trenching equipment to prevent excessive tearing up on the surfacing and to eliminate ragged edges.
- E. Where the soil encountered in the bottom of the trench is unstable and/or unsuitable as a base for pipe, such soil shall be removed to a depth specified by the District to provide uniform and stable bedding for the pipe.

3.02 SHORING AND MOVABLE SHIELDS

- A. Safety. Use in accordance with Federal, State, and local safety requirements.
- B. Cribbing and Sheeting
 - 1. Provide cribbing and sheeting needed to protect the work, adjacent property and improvements, utilities, pavement, and to provide safe working conditions in the trench.
 - 2. Remove cribbing and sheeting from the trench in such a manner as to prevent any damage to the work or to adjacent property and improvements.
 - 3. No bracing will be allowed below the top of the pipe.
- C. Movable Shields
 - 1. Shield width:
 - a. If movable trench shields or boxes are used, provide the following minimum dimensions:

Nominal Pipe Diameter	Box Inside Width
Inches	Inches
12 and under	48
 - b. Shield widths less than those specified in (a) herein may be used provided that the inside shield width is not less than the OD of the pipe plus 28 inches and that bedding material is installed to the top of the pipe or higher if so indicated on the Drawings.
 - 2. Place bedding material to the depth shown on the Drawings over the full inside width of the movable trench shield or box used.
 - 3. Movable trench shields or boxes may extend below the top of the pipe, if a suitable means of reconsolidating the bedding or side support material disturbed by moving the box can be demonstrated.
- D. Removing Shield From Trench. Shore excavations to protect adjacent utilities.

3.03 TIMBERING AND SHEETING

The Contractor shall provide and install timbering and sheeting as necessary to protect workmen, the work, and existing buildings, utilities and other properties. All timbering and sheeting above the pipe shall be removed prior to backfilling. All sheeting below the top of the pipe shall be cut off and left in place. Removal of timbering shall be accomplished in such a manner that there will be no damage to the work or to other properties. All timbering and sheeting shall be to the Contractor's design and shall meet all requirements as specified by OSHA and WISHA.

3.04 FOUNDATIONS

- A. General. Where the trench bottom is in a material unsuitable for foundation, remove such material as directed by the District and provide stable foundation. The Contractor shall backfill the excavated void with foundation gravel.
- B. Preparation. Where required by the District, prepare and place Foundation Material before installing Bedding Material and pipe.

3.05 BEDDING

- A. Where bedding material is required, it shall be placed from a minimum of six (6) inches below the pipe barrel to six (6) inches over the top of the pipe. Bedding material shall be placed before the pipe is installed and shall be spread smoothly so that the pipe is uniformly supported along the barrel. Subsequent lifts of not more than six (6) inch thickness shall be placed to six (6) inches over the crown on the pipe and individually compacted to 90% of maximum density.
- B. Removal of shoring or moveable trench shields or boxes shall be accomplished so that the bedding material placement is not disturbed.
- C. In solid rock excavation, all ledge rock, boulders or stones shall be removed to provide a minimum clearance of eight (8) inches under the pipe. All material thus removed shall be replaced with bedding material.

3.06 BACKFILLING

- A. Selected backfill material shall be placed and compacted around and under the pipe by hand tools, unless otherwise approved by the District, to a height of six (6) inches above the top of the pipe. The remaining backfill shall be placed and compacted in layers not more than twelve (12) inches thick, except that under roadways all backfill material shall be placed in layers not more than six (6) inches thick and mechanically compacted as specified in Section 3.08 herein, unless state or county requirements are more stringent. If suitable backfill material, as determined by the District, is not available from trenching operations, the District may approve the placing of select import backfill material around the pipe and in backfilling the trench.
- B. Regardless of the approval of the District as to manner of compaction, testing, acceptance by the District or otherwise, the Contractor shall repair

any settlement of trenches and excavations that may occur within one year after completion and acceptance of the work by the District.

3.07 COMPACTION

- A. General. Measurements of density shall be by the modified AASHTO method. Mechanical compaction is to be used, where materials are suitable for obtaining specified compaction. Remove and recompact material that does not meet specified requirements.
- B. Minimum Densities. Achieve the following minimum densities per modified Proctor ASTM D1557 within the trench area:

Area	Trench Depth	Trench Zone	Density %
Improved R/W or Easement (pavement, driveway, etc.)	All	1) Top 4 ft.	95%
Improved R/W or Easement (pavement, driveway, etc.)	All	2) Below 4 ft.	95%
Unimproved R/W or Easement	All	All	95%

- C. The maximum dry density and optimum moisture content of each soil type use shall be determined using ASTM D1557 at all locations.
- D. Testing. The District will employ an independent laboratory or King County Laboratory to perform in-place density tests as proof of compaction, which meets these Specifications. Compaction testing will be done by the District, further defined under Quality Control, Section 01400, on a random basis at various locations and depths. The Contractor shall tailor his operations to allow for unrestricted access for purposes of testing for compaction by the District.

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**SECTION 02510
DUCTILE IRON PIPE**

PART 1 – GENERAL

1.01 DESCRIPTION

This Section covers ductile iron pipe (DIP) to be used for water main and sanitary sewer line on this project. Ductile iron pipe shall have push-on joints unless otherwise shown on the Drawings or specified herein.

1.02 RELATED WORK SPECIFIED ELSEWHERE

<u>Section</u>	<u>Item</u>
02315	Trenching, Backfilling and Compaction for Pipelines
02511	Water Main Installation
02531	Sanitary Sewer Installation
02700	Gravel Materials

1.03 QUALITY ASSURANCE

The pipe manufacturer shall furnish as Product Information appropriate certification, based on manufacturer's routine quality control tests, that the construction of the pipe meets the requirements of the specified standards, and that the cured lining is without holidays.

PART 2 – PRODUCTS

2.01 PIPE AND FITTINGS

- A. Provide lined ductile iron pipe and lined ductile iron fittings conforming to the following.
- B. Pipe. Provide pipe conforming to AWWA C151. (Class 52)
- C. Joints. Joints shall be as shown on the Drawings and specified herein.
 - 1. Joints shall be Push-on or mechanical joints shall conform to the requirements AWWA C111.
 - 2. Flanged joints shall conform to ASA Standard B-16.1, Class 125.
 - 3. Bolts shall be of the same type and quality of the pipe or fittings as supplied by the manufacturer, Bolts shall be in conformance with AWWA Standard C110.
- D. Joint Restraint. Restrained joints shall be as shown on the Drawings and as specified herein.
 - 1. Nominal Pipe Size - 3 to 20 inch
 - a. Pipe: Joint restraint for push-on joint pipe and fittings shall be completely integral to the gasket, requiring only standard push-on joint assembly techniques. The

restraining system for ductile iron shall be pressure rated to 350 psi in sizes up to and including 16" and pressure rated to 250 psi for sizes 18"-20". The restraining system shall be rated in accordance with the performance requirements of ANSI/AWWA C111/A21.11 Rubber Gasket Joints for Ductile-Iron Pressure Pipe and Fittings. Gaskets shall be one of the following:

- U.S. Pipe Field Lok 350
- American Fast-Grip
- or approved equal.

b. Fittings: Joint restraint for mechanical joints shall consist of multiple gripping wedges with torque limiting twist-off nuts, incorporated into a follower, and have a minimum working pressure of 250-psi. The restraint shall be Megalug Series 1100 as manufactured by EBAA Iron, Inc., or approved equal.

2. Nominal Pipe Size - 20 to 36 inch

a. Pipe: Joint restraint for push-on joint pipe shall be one of the following proprietary boltless restraint system with a minimum working pressure of 250-psi.

- TR Flex by U.S. Pipe
- Thrust-Lock by Pacific States Pipe (PSCIPCO)
- or approved equal.

b. Fittings: Joint restraint for mechanical joint fittings shall consist of multiple gripping wedges with torque limiting twist-off nuts, incorporated into a follower, and have a minimum working pressure of 250-psi. The restraint shall be Megalug Series 1100 as manufactured by EBAA Iron, Inc., or approved equal.

E. Lining.

1. Water main pipe and fittings shall have cement mortar lining conforming to AWWA C104.

2. Sanitary Sewer Pipe and Fitting shall be Protecto 401 ceramic epoxy lined (Ivory or white in color).

F. Coating. The exterior of ductile iron pipe shall be coated with a layer of arc-sprayed zinc per ISO 8179. The mass of the zinc applied shall be 200g/m². A finishing layer topcoat shall be applied to the zinc. The mean dry film thickness of the finishing layer shall not be less than 3 mils with a local minimum not less than 2 mils. The coating system shall conform in every respect to ISO 8179-1 Ductile iron pipes – External zinc-based coating – Part 1: Metallic zinc with finishing layer. Second edition 2004-06-01

G. Fittings. Provide fittings conforming to the requirements of AWWA C110 or AWWA C153, rated for not less than 250 psi working pressure.

H. Plastic Wrap.

1. All pipe shall be polywrapped in accordance with AWWA C105.
 2. In addition, polyethylene encasement for use with ductile iron pipe systems shall consist of three layers of co-extruded linear low density polyethylene (LLDPE). Fused into a single thickness of not less than eight mils.
 3. The inside surface of the polyethylene wrap to be in contact with the pipe exterior shall be infused with a blend of anti-microbial biocide to mitigate microbiologically influenced corrosion and a volatile corrosion inhibitor to control galvanic corrosion.
- I. Flanged Gaskets. Flange gaskets shall be Ring-type cloth insert rubber gaskets 1/16 of an inch thick equal to Rainbow or Durable Garlock.
 - J. End Caps. All water main pipe not furnished by the District shall be shipped from the manufacturer with end caps installed. End caps shall only be removed immediately prior to installation of the section of pipe. All removed end caps shall be properly disposed of off site.

PART 3 – EXECUTION

3.01 LINING

Lining shall be factory applied to the ductile iron pipe and fittings. Surface preparation and product application shall be in strict accordance with the lining material manufacturer's instructions.

3.02 LINING REPAIR

Repair field cuts, taps and field damaged areas of the lining in accordance with the manufacturer's recommendations.

3.03 INSTALLATION

Install in accordance with the pipe manufacturer's recommendations, and as shown on the Drawings.

3.04 HYDROSTATIC PRESSURE TESTING

- A. Hydrostatic pressure testing shall be performed on all ductile iron pipe used for water mains, pressure sanitary sewer, or any other pressured pipe.
- B. Hydrostatic pressure testing shall be made with all services saddles, corporation stops, services lines, air and vacuum relief valves, blow-off assemblies, and fire hydrants installed.
- C. All valves shall be open unless otherwise approved or directed by the District. The Contactor shall protect all valves from damage during all pressure testing operations.
- D. Location of the test pump shall be approved by the District.

- E. The maximum length of pressure main that can be tested at one time shall not exceed 1,500-linear feet.
- F. The Contractor shall provide all materials, equipment and labor necessary to perform all work associated with the tests.
- G. Where, in the option of the Owner, there is a possibility of contaminating the existing water system, purity testing shall be required prior to and following the required pressure testing. The requirements of sub-section 3.11, Sterilization and Flushing of Water Mains, shall be met prior the testing of new construction.
- H. Ductile Iron Pipe with a nominal pipe size less than 20 inches
 - 1. Unless otherwise approved or directed by the District, all Ductile Iron Pipe with a pipe diameter less than 20-inches shall be pressure tested as follows.
 - 2. The water main work shall be subjected to a hydrostatic pressure test of 250 PSI for a minimum of 15 minutes, before leakage measurement starts. The work shall then be held at this pressure, without pumping, and any leaks or imperfections developing under said pressure shall be remedied by the Contractor before final acceptance of the work.
 - 3. Leakage shall be measured by District approved means in the presence of the District.
 - 4. Allowable leakage in gallons per fifteen minutes per 1,000 feet of pipe:

Nominal Pipe Size (inches)	Allowable Leakage in gallons	Allowable Leakage in ounces
2"	0.06-gal	7.68-oz
4"	0.12-gal	15.36-oz
6"	0.18-gal	23.04-oz
8"	0.24-gal	30.72-oz
12"	0.36-gal	46.08-oz
16"	0.47-gal	60.16-oz

- I. Ductile Iron Pipe with a nominal pipe size of 20 to 36 inches
 - 1. Unless otherwise approved by the District, all Ductile Iron Pipe with a pipe diameter greater than 20-inches shall be pressure tested as follows, or as directed by the Contract Drawings.
 - 2. The water main work shall be subjected to a hydrostatic pressure test of 1.5 times the operating pressure or the lowest rated component in the system for 15 minutes, before leakage measurement starts. The work shall then be held at this pressure, without pumping, and any leaks or imperfections developing under said pressure shall be remedied by the Contractor before final acceptance of the work.

3. Leakage shall be measured by District approved means in the presence of the District.
4. Allowable leakage per fifteen minutes per 1,000 feet of pipe:

Nominal Pipe Size (inches)	Allowable Leakage in gallons	Allowable Leakage in ounces
20"	0.59-gal	75.52-oz
24"	0.71-gal	90.88-oz
30"	0.89-gal	113.92-oz
36"	1.07-gal	136.96-oz

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**SECTION 02511
WATER MAIN INSTALLATION**

PART 1 – GENERAL

1.01 DESCRIPTION

This Section describes the installation and testing of water mains. Install as shown on the Drawings unless directed otherwise in the field.

1.02 RELATED WORK SPECIFIED ELSEWHERE

<u>Section</u>	<u>Item</u>
02315	Trenching, Backfilling and Compaction for Pipelines
02505	Directional Drilling
02510	Ductile Iron Pipe
02512	Valves
02530	Plastic Pipe
02700	Gravel Materials

1.03 SUBMITTALS

Submit catalog cuts and shop drawings to demonstrate that the pipe and appurtenances conform to the Specification requirements.

PART 2 – PRODUCTS

Refer to appropriate Sections listed above or the District's Standard Notes and Details.

PART 3 – EXECUTION

3.01 PIPE TYPES

- A. Ductile Iron unless noted otherwise on the Contract Drawings.
- B. 3-inch to 30-inch High Density Polyethylene (HDPE) pipe where called for on the Contract Drawings.
- C. 2" and smaller – HDPE pipe for water services unless noted otherwise on the Drawings.
- D. All small diameter piping on Air and Vacuum Relief Valve Assemblies and Blow-off Assemblies shall be brass where it is normally under pressure, as shown in the District Standards.

3.02 ALIGNMENT

Unless otherwise specified, the location of the water mains, fittings and appurtenances will be staked out by a licensed surveyor supplied by the Contractor.

3.03 PIPE LAYING

- A. Ductile Iron pipe installation shall, in general, conform to AWWA Standard C600 and the manufacturer's recommendations unless specifically contradicted by these Specifications.
- B. Special care shall be taken in handling pipe to avoid damaging ends, coatings and linings. Pipe shall be carried in slings and shall not be rolled or dragged. The pipe shall be examined for defects and damage while suspended before lowering into trench. Any damage shall be repaired before pipe is lowered into trench.
- C. The pipe shall be cleaned of all foreign material before lowering it into the trench.
- D. While laying the water main, an approved plug shall be installed before the pipe is lowered into the ditch.
- E. All pipe shall be poly-wrapped in accordance with AWWA C600.
- F. All pipe shall be bedded in Sand Bedding Material. It shall be placed from a minimum of six (6) inches below the barrel to six (6) inches over the top of the pipe.

3.04 FIRE HYDRANT INSTALLATION

- A. Fire Hydrant materials and installation shall conform to the detail for Fire Hydrant Assembly included in the Districts Standard Details.
- B. Concrete guard posts as shown on the Standard Detail shall be installed where required by the District.
- C. Shackle rods shall be galvanized.
- D. A permanent anodized storz hydrant adapter and anodized storz blind flange shall be installed on the pumper port. Pumper nozzle shall face the road after installation is completed, unless otherwise specified.
- E. Where a fire hydrant is installed behind a ditch, the Contractor shall install a minimum 12-inch corrugated polyethylene storm pipe in accordance with the local jurisdictions road standards, to provide access to the fire hydrant.

Hydrants shall be covered with a sack until operational.

3.05 GATE VALVE INSTALLATION

Before installation, valves shall be cleaned of all foreign material as herein before specified for installation of pipe. Blocking shall be installed as required by the Contract Documents or as required by the District during construction.

3.06 VALVE BOX INSTALLATION

The valve box shall be set plumb with the valve box centered on the valve. Valve boxes shall be set flush in pavement. In gravel roads the valve box shall be set in a three (3) foot diameter pad of two (2) inch minimum thick asphalt, flush with the gravel surface. Where the existing asphalt pavement is going to be overlaid or replaced, valve boxes shall be paved over and raised after asphaltting in accordance with the Valve Box Pavement Patch Detail.

3.07 VALVE MARKER POSTS

Valve marker posts shall be set where required by the District for all valves except auxiliary valves for hydrants. The marker shall be set on a line through the valve. The marker shall generally be set on the property line unless the District decides another location is safer or more conspicuous.

3.08 CONCRETE BLOCKING

Concrete blocking with specified material shall be cast in place and have a minimum of 1/4 square foot bearing against the fitting and bearing area against undisturbed soil as shown on the District's Standard Details. Additional bearing area may be required by the District. Blocking shall bear against fittings only and shall be clear of joints so as to permit taking up or dismantling joints. All hydrants, bends, tees and valves shall be blocked. 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.

3.09 HYDROSTATIC TESTING

- A. Hydrostatic pressure testing of ductile iron pipe shall be in accordance with Section 02510, Ductile Iron Pipe.
- B. Hydrostatic pressure testing of PVC or HDPE pipe shall be in accordance with Section 02530, Plastic Pipe.

3.10 STERILIZATION AND FLUSHING OF WATER MAINS

- A. Flushing of the water mains is to clean and sterilize the mains. The Contractor shall be responsible for the treatment and disposal of all water used for flushing as part of this project. Where sanitary sewers are available, and with the approval of the District and the owner of such sewer system, water used for flushing can be disposed of in the sanitary sewer system. The Contractor shall coordinate all flushing operations with the District prior to flushing of water mains.
- B. Sterilization of water mains shall be accomplished by the Contractor in accordance with the requirements of the State Department of Health (DOH) and in a manner satisfactory to the District. During pipe installation the Contractor shall install chlorine granules per manufacturers' specifications to achieve a chlorine concentration of not less than 50 PPM. When a chlorine concentration of not less than 50 PPM has been established throughout the line, the valves shall be closed and the line left undisturbed for 24 hours. The line shall then be thoroughly flushed and

water samples taken by the District for approval by the local health agency.

If the main fails to pass purity tests the following procedure shall be followed. The section to be sterilized shall be thoroughly flushed at maximum flow prior to chlorination. Flushing shall be done in the presence of the District. Sections will ordinarily be sterilized between adjacent gate valves unless, in the opinion of the District, a longer section may be satisfactorily handled. Chlorine shall be applied by solution feed at one end of the section with a valve or hydrant at the opposite end opened sufficiently to permit a flow through during chlorine application. The chlorine solution shall be fed into the pipeline already mixed by an automatically proportioning applicator so as to provide a steady application rate of not less than 60-PPM chlorine. Hydrants along the chlorinated section shall be opened during application until the presence of chlorine has definitely been detected. When a chlorine concentration of not less than 50 PPM has been established throughout the line, the valves shall be closed and the line left undisturbed for 24 hours. The line shall then be thoroughly flushed and water samples taken by the District for approval by the local health agency. Chlorination shall be repeated until water samples test satisfactory. The Contractor shall exercise special care in flushing to avoid damage to surrounding property.

- C. The Contractor shall be responsible for disposal of treated water flushed from mains. The intent is for the Contractor to dispose of flushing water into the sewer system. For any discharge not to the sewer system, the Contractor shall neutralize the wastewater for protection of aquatic life in the receiving water before disposal into any natural drainage channel.
- D. Should the Contractor elect to dispose of chlorinated flushing water to an existing sanitary sewer manhole the Contractor shall coordinate said disposal with the District. Disposal of flushing water to any sanitary sewer manhole shall be limited to 200 GPM and flushing time limited between 10 AM and 2:00 PM.

3.11 SERVICE LINE CONNECTIONS

- A. The water service line shall be connections to the water main utilizing stainless steel, double strap pipe saddles.
- B. Installation shall be as shown in the District Standard Details. Splices or couplings in service lines will not be acceptable.

3.12 METER BOX INSTALLATIONS

- A. Installation shall be as shown in the District Standard Details. Meter boxes shall be set flush with the ground and centered over the meter setter(s).
- B. Where there is potential for vehicles to drive or be parked on the meter box, a traffic bearing box shall be used.
- C. When the meter box is installed in concrete paving, a 3/4 inch expansion joint shall be provided around the box with a twelve (12) inch gap between the expansion joint and meter box on all sides.

- D. The final location of meter boxes may differ from the locations identified on the Drawings. The contractor shall locate the existing building supply lines to determine the placement of meter box locations. Final locations may be set as directed by the District based on the physical location of the existing building supply lines to existing buildings. The contractor shall connect the newly installed service to the existing building supply line.

3.13 BACKFLOW PREVENTION DEVICES (CROSS CONNECTION CONTROL)

Where the possibility of contamination of the water supply exists during construction, the Contractor shall provide a backflow prevention device that is approved by Washington State Department of Health. The determination as to the need of a permanent backflow prevention device to provide protection after completion of the project, shall be solely determined by the Owner.

3.14 CONNECTIONS TO EXISTING PIPE LINES

- A. Connections to the end of an existing main line shall be made with a main line valve, sized the same as the main line size, and new main construction connected to the new valve. Exceptions shall be considered where there is an existing valve in close proximity to the new connection or as directed on the plans.
- B. Tapping of existing pipes where required by the District, shall be made under pressure with tapping sleeve and valve assembly. Joints shall be tested using normal test pressure prior to start of tapping existing main. District shall determine where tapping under pressure is required. Epoxy coated tapping sleeves shall be required.
- C. Where cut-ins are to be made in existing pipes, the work shall be conducted at a time specified by District and in such a manner as to minimize the interruption of service. Necessary pipe, fittings and gate valves shall be assembled at the site ready for installation prior to the shutting off of water in the existing main. Once the water has been cut off, the work shall be prosecuted vigorously and shall not be halted until the line is restored to service.
- D. Unless specifically provided for elsewhere in these Specifications, the Contractor shall have the responsibility of giving at least five (5) days notice to the District of intention to disrupt service. The District shall inform the affected water users.
- E. Contractor shall not operate any valves, including fire hydrant valves, in any part of the District's water system, except in the presence of the District.
- F. The Contractor shall be fined for tampering with the District's water system if valves are operated without the District being present. Contractor shall notify the District 72 hours in advance of need to operate system.

3.15 AIR AND VACUUM RELEASE VALVE INSTALLATION

Location of the air release valves as shown on the Plans is approximate. The installation shall be set at the high point of the water line.

3.16 PAINTING

- A. The following above-ground exposed appurtenances shall be painted with two coats of quick set enamel, or equal. The color shall be Safety Yellow:
 - 1. Fire hydrants
 - 2. Hydrant posts
 - 3. Type I blow-off assemblies
 - 4. Air and vacuum relief valve assemblies
 - 5. Valve markers.
- B. Meter Box Location stripes shall be painted with two coats of quick set enamel or equal. The color shall be Safety Yellow.

3.17 PROTECTION OF EXISTING WATER MAINS

Care shall be taken in working in the vicinity of existing water main so that damage does not occur to the existing mains. Existing water mains and appurtenances that are damaged by the Contractor due to his operations shall be repaired by the Contractor under direct observation by the District. The Contractor shall be responsible for all costs associated with effecting repair.

SECTION 02512 VALVES

PART 1 – GENERAL

1.01 DESCRIPTION

The work specified in this section describes valves and accessories as shown on the Plans, described in these Specifications, and as required to completely interconnect all equipment with piping for complete operable systems.

1.02 RELATED WORK SPECIFIED ELSEWHERE

Section	Item
02315	Trenching, Backfilling and Compaction for Pipelines
02510	Ductile Iron Pipe
02511	Water Main Installation
02532	Utility Structures
02700	Gravel Materials

1.03 SUBMITTALS

- A. Submit catalog cuts and shop drawings to demonstrate that the valves and appurtenances conform to the Specifications requirements.
- B. The Contractor shall furnish manufacturer's installation and operation manuals, bulletins, and spare parts lists for all valves.

1.04 QUALITY ASSURANCE

All materials and equipment furnished under this Section shall be by the manufacturer specified.

PART 2 – PRODUCTS

2.01 GENERAL

- A. All material shall comply with the District Standard Details.
- B. All valves shall be suitable for direct burial.
- C. Unless otherwise specified, all valves shall be provided with a standard 2-inch operating nut, have non-rising stems, open counter-clockwise, and be equipped with an O ring stuffing box.
- D. Unless otherwise specified, all valves shall have a minimum working pressure of 150-psi.

2.02 GATE VALVES

- A. Gate valves shall conform to AWWA C515, be epoxy coated and resilient seated.

- B. Unless otherwise specified, gate valves shall be used for all water mains less than 12-inches in diameter. Gate valves are allowed for wet taps.
- C. Where called for on the Plans, gate valves shall be used for sewers four (4) inches and larger.
- D. Gate valves shall be one of the types listed in Part 2, Material Standards, of the District's Standard Details and Notes.
- E. Special valves and fittings shall be as specified on the Plans.

2.03 BUTTERFLY VALVES

- A. Butterfly valves shall conform to AWWA C-504, be rubber seated, epoxy coated, and have stainless steel bolts.
- B. Unless otherwise specified, butterfly valves shall be used for all water mains 12-inches in diameter and greater.
- C. Valve operators shall be of the traveling nut or worm gear type, sealed, gasketed, and permanently lubricated for underground service. Valve operator shall be constructed to the standard of the valve manufacturer to withstand all anticipated operating torques and designed to resist submergence in ground water.
- D. Butterfly valves shall be one of the types listed in Part 2, Material Standards, of the District's Standard Details and Notes.
- E. Special valves and fittings shall be as specified on the Plans.

2.04 AIR AND VACUUM RELIEF VALVE

- A. Air and Vacuum Relief Valves shall be designed to operate with potable water under pressure to permit discharging a surge of air from an empty line when filling and relieve the vacuum when draining the system. The valves shall also release an accumulation of air when the system is under pressure. This shall be accomplished in a single valve body designed to withstand 300-psi.
- B. The body and cover shall be cast or ductile iron. Floats shall be stainless steel. Seats shall be Buna N rubber. Internal parts shall be stainless steel or bronze.
- C. Air and vacuum relief valves shall be one of the types listed in Part 2, Material Standards, of the District's Standard Details and Notes.
- D. All valves shall be equipped with a brass plug on the top service port.

2.05 VALVE BOXES

- A. Valve boxes shall be Cast Iron, 2 pieces, suitable for the required installation, with lids that fit snugly in the casting.
- B. Valve Boxes for water facilities shall be equal to Olympic Foundry Company/APWA Valve Box VB045 and the lids marked "WATER."
- C. Valve Boxes for sewer facilities shall be Olympic Foundry 940 and marked "SEWER."

2.06 VALVE MARKER POSTS

- A. Valve marker posts shall be reinforced concrete posts, 4" x 4" on one end and 6" x 6" on the other end, and 42-inches long.
- B. 1-1/2 inch Cole numbers shall be furnished and installed by the Contractor indicating the distance in feet to the valve.

2.07 INSERTION VALVE

- A. The Insertion Valve assembly that consists of a Tapping Sleeve and a Valve Assembly. The entire assembly is installed on an existing water main while the main is under water pressure and without any interruption of water service. The valve will provide a full unobstructed full flow waterway after installation.
- B. The Tapping Sleeve shall be:
 - 1. Fabricated a 360-degree seal around the pipe under working pressures up to 150 psi and a test pressure of 225 psi.
 - 2. It shall be designed to accommodate the equipment and fixtures necessary to drill and ream the pipe and install the Valve Assembly without any interruption in water service.
 - 3. The sleeve is to be made of ASTM A-36 steel with a fusion bonded epoxy coating (10-12 mils) meeting the requirements of AWWA-C213, and include heavy gauge type 304 stainless steel armor plates.
 - 4. The bolts shall be type 304 stainless steel with SDC nuts.
 - 5. All gaskets are to be made of Styrene Butadiene Rubber (SBR) compounded for potable water service. The gaskets shall provide a positive 360-degree seal on the pipe to assure a tight, durable, and resilient seal at the pipe sleeve-valve insert junction.
- C. The Valve Assembly shall be:
 - 1. The insert shall be a ductile iron casting coated with SBR rubber compounded for water service with a durometer of 55 Shore A. The insert shall seal on the inside diameter of the sleeve neck and the lower half of the water main.
 - 2. The stem and nut assembly shall be in accordance with AWWA C-500-80, section 3.12. The stem shall be non-rising, have a 2-inch operating nut, and a counter-clockwise opening rotation.
 - 3. The valve flange gasket shall be made of SBR rubber, compounded for potable water service, and acts as the sealing interface between the valve flange and the sleeve flange.
 - 4. The bolts, nuts and washers shall be type 304 stainless steel.
- D. The Insertion Valve shall be a Romac/Transmate QuikValve, or approved equal.

PART 3– EXECUTION

3.01 GENERAL

- A. All valves and accessories shall be installed in a manner and location as shown on the Plans or as required for the application and in accordance with manufacturer's instructions. Valve size is fully equal to line piping in which the valve is installed unless otherwise noted on the Drawings.
- B. The Contractor shall provide all accessories necessary for proper valve operation as specified or required for the application. Valves shall be installed with square operating nuts and adjustable cast iron valve boxes with covers. Valve boxes shall be set such that the slots in the boxes are in line with the run of pipe the valves are in.

3.02 INSTALLATION

- A. All underground valves 2-inches and larger shall be installed with valve boxes, valve extensions, valve marker posts and HMA apron or collar.
- B. The valve box shall be set centered on the valve operating nut.
- C. The valve box shall be set flush in the pavement.

3.03 VALVE MARKER POST

- A. Valve marker posts shall be set where for all valves except auxiliary valves for hydrants and Type I blow-offs, or as required by the District. The marker shall be set on a line through the valve. The marker shall generally be set on the property line unless the District decides another location is safer or more conspicuous.
- B. The distance to the valves, to the nearest foot, shall be marked with raised 1-1/2 inch Cole numbers furnished and installed by the Contractor, on the valve marker, blow-off stem, air vacuum assembly stem, or Hydrant. Apply numbers with waterproof Liquid Nail.

3.04 HMA APRON OR COLLAR

In gravel roads the valve box shall be set in a three (3) foot diameter circular pad of two (2) inch thick HMA, flush with the gravel surface.

3.05 VALVE OPERATING NUT EXTENSION

- A. Extensions shall be installed on the valve operating nut when the valve nut is more that 36-inches below finished grade.
- B. The extension shall be within 18 to 24 inches of the finished grade.
- C. Extensions shall be a minimum of one (1) foot long.
- D. Only one extension shall be allowed per valve.
- E. The extension shall meet the requirements as shown in the Valve operating Nut Extension Detail in the District Standards.

**SECTION 02530
PLASTIC PIPE**

PART 1 – GENERAL

1.01 DESCRIPTION

This Section describes plastic and polyethylene pipe to be used for water, sewer and storm pipe.

1.02 DESIGN CRITERIA

Use a soil unit weight of 150 pounds per cubic feet. Use AASHTO H20 live loading.

1.03 RELATED WORK SPECIFIED ELSEWHERE

<u>Section</u>	<u>Item</u>
02505	Directional Drilling
02510	Ductile Iron Pipe
02512	Valves
02315	Trenching, Backfill and Compaction for Pipelines
02531	Sanitary Sewer Installation
02700	Gravel Materials

1.04 QUALITY ASSURANCE

The pipe manufacturer shall test the pipe as required by these Specifications and the Standards referenced.

1.05 STORAGE AND HANDLING

Store at manufacturer's and at the job site under opaque covers which do not transmit ultraviolet light.

PART 2 – PRODUCTS

2.01 POLYVINYL CHLORIDE (PVC) PIPE

- A. Non-pressure Gravity Sewer Pipe and Fittings
 - 1. Provide PVC pipe and fittings meeting the following requirements:
 - a. ASTM D3034 – SDR 35 (6-inch to 15-inch pipe).
 - b. AWWA C900 - Class 150 (6-inches to 14-inch pipe)
 - c. AWWA C905 – Class 150 (14-inches and larger)
 - 2. Provide only PVC factory made fittings. Side Sewer Tees shall have side outlets for 6-inch pipe unless otherwise shown on the Drawings.
 - 3. Materials.

- a. Provide pipe and fittings homogeneous throughout and free from cracks, holes, foreign inclusions, or other injurious defects.
- b. Pipe shall have a cell classification of 12454-B or 12454-C or 13364-B (with a minimum tensile modulus of 500,000 psi) as defined in ASTM D1784.
- c. Fittings shall have a cell classification of 12454-C or 13343-C as defined in ASTM D1784.
- d. Gaskets. Sewage and grease resistant elastomeric ring gasket per ASTM F477.

B. Pressure Sewer Pipe and Fittings

- 1. Provide PVC pipe and fittings meeting the following requirements:
 - a. AWWA C900 – Class 150 (4-inches to 14-inches).
 - b. AWWA C905 – Class 150 (14-inches and larger).
- 2. Provide PVC fittings a class equal to or greater than the class of the pressure sewer pipe.

C. Pressure Water Main

- 1. PVC pipe for water main service shall only be used where crossing a gas pipeline easement unless otherwise directed by the Owner or the Project Drawings.
- 2. PVC Pipe. Provide pipe and fittings meeting the following requirements:
 - a. AWWA C900 - Class 150 (4-inches and larger).
 - b. WASHDOT/APWA 9-30.1(5)

2.02 HIGH DENSITY POLYETHYLENE (HDPE) PIPE

A. Low Pressure Grinder Pump Force Mains and Grinder Pump Side Sewers

- 1. Unless otherwise called for, low-pressure grinder pump force mains and side sewer pipe shall be high-density polyethylene plastic pipe (HDPE SDR 11) conforming to the following specifications.
 - a. Base Resin: Conform to all requirements of ASTM D48, Type III, Class C, Category 5, Grade P34, with a PPI rating of PE 3408.
 - b. Melt Index: Less than 0.25 grams/10 min. as determined by ASTM D1238, Condition E.
 - c. Environmental Stress Check Resistance: No cracks after 192 hours at 100 C as determined by ASTM D1693, Condition C.

- d. Rating: Long-term hydrostatic strength of 1450 psi and hydrostatic design stress of 730 psi as determined by ASTM D2837.
 - e. Working Pressure Rating: 145 psi.
 - f. Laboratory Test Requirements: Withstand without failure a minimum burst pressure of 560 psi when applied in 60 to 70 seconds with water at 730 F. Test in accordance with ASTM D1599. Test one percent but not more than three lengths.
- 2. All HDPE pipe and fittings shall be DR 11 with electro-fusion welded socket joints, or flanged.
 - 3. Butt welding shall only be allowed when joining two segments of pipe during the installation of the 1-1/4 inch discharge line
 - 4. Connection of HDPE pipe to any threaded fitting as shown in the District's Standard Details will be with a full bore HDPE x 316 stainless steel transition fitting, 6-inches in length. Compression couplings are only allowed where shown in the Grinder Pump Cleanout and Collection Valve Box details.
 - 5. The Contractor that performs all HDPE joints shall be certified in electro-fusion socket-welding techniques by the pipe manufacturer.
 - 6. Joints, in pipes with a diameter of 2-inch or less, shall be made only at pump basins, valves, fittings and changes in pipe diameter.
 - 7. All flanges and fittings shall be electro-fusion welded to the pipe.
- B. Water and Sewer Pressure Main, 1/2-inch through 3-inch (IPS)
- 1. Pipe under this subsection shall be DriscoPlex 5100 Series Ultraline pipe when used for:
 - a. Water mains.
 - b. Water Service Lines.
 - c. Pressure sewer mains (excluding low pressure grinder pump systems)
 - 2. Pipe shall be manufactured from a high density, extra high molecular weight pipe resin polyethylene defined by ASTM D3350 having a cell classification of 345564C as polyethylene type III, grade PE34, (PE3408).
 - 3. Pipe used for water mains or pressure sewer mains shall be supplied with a dimension ratio (DR) as required by the Contract Drawings. Water pipe shall have a minimum DR of 9 and a pressure class of 250 psi.
 - 4. Water Service Lines shall have an iron pipe size (IPS), ID ASTM D2239, with a DR 7 and have a pressure class of 250 psi.

5. Pipe or tubing shall be marked in accordance with ASTM D2239 for IPS pipe sizes and ASTM D2737 for CTS tubing sizes and carry the National Sanitation Foundation (NFS) seal of approval.
- C. Water and Sewer Force Mains, 4-inch and larger (DIPS)
1. Pipe under this subsection shall conform to AWWA C906 and ASTM F714 specifications when used for
 - a. Water mains.
 - b. Pressure sewer mains (excluding low pressure grinder pump systems)
 2. Pipe shall have a ductile iron pipe size (DIPS) and shall be equivalent to DRISCOPEX 4000 piping.
 3. Pipe shall be manufactured from a high density, extra high molecular weight pipe resin polyethylene defined by ASTM D3350 having a cell classification of 345464C as polyethylene type III, grade PE34, (PE3408)
 4. Pipe shall be supplied with a dimension ratio (DR) as required by the Contract Drawings. Water pipe shall have at a minimum DR of 9 and a pressure service rating of 200-psi.
 5. Pipe shall be joined using butt welding.
 6. Fittings shall be the same as pipe and joined to the pipe using electrofusion fittings conforming to ASTM F-1055.
 7. Where flanged joints are required, electrofusion flanged adapters shall be furnished, and shall be supplied and installed with stainless steel back up rings. The pressure class shall be equal to or greater than pipe pressure class.
 8. Flange gaskets shall be rated for water service, 1/8-inch thick, cloth-inserted rubber conforming to ANSI B16.21 and AWWA C207, corrosive acid and alkali free for potable water service.
 9. Bolting shall be stainless steel, ASTM A193/A193M Grade B8M studs and ASTM A193/A194M Grade 8M hex head nuts. Washers shall be the same material as bolts.

2.03 CORRUGATED POLYETHYLENE STORM PIPE

Pipe shall be Advanced Drainage System (ADS), Inc., N-12 Drainage Pipe and shall conform to WSDOT/APWA 9-05.20.

2.04 TRACER OR LOCATE WIRE

Tracer or locate wire shall be single conductor solid core 12-gauge copper wire with a low density high molecular weight Polyethylene installation.

PART 3– EXECUTION

3.01 INSTALLATION

Install in accordance with the pipe manufacturer's instructions, and as shown on the Drawings.

3.02 PIPE HANDLING

- A. Care shall be taken during transportation of the pipe such that it will not be cut, kinked, abraded, scratched or otherwise damaged.
- B. Pipes shall be stored on level ground, preferably sand, free of sharp objects which could damage the pipe or fittings. Stacking of the pipe shall be limited to a height that will not cause excessive deformation of the bottom layers of pipes under anticipated temperature conditions. Stacking of pipe shall comply with the manufacturers published recommendations. Where necessary due to ground conditions the pipe shall be stored on wooden sleepers, spaced suitably and of such width not to allow deformation of the pipe at the point of contact with the sleeper or between supports.
- C. The handling of the joined pipe line shall be such as to prevent the pipe from being dragged over sharp or other objects that may cut or otherwise damage the pipe. Slings for handling the pipeline shall not be positioned at butt fused joints to prevent stressing the fused joints. Sections of pipe with a penetration of more than ten percent (10%) of the wall thickness shall have a section of pipe one foot on either side of the damaged section cut out and removed.

3.03 PIPE LAYING

- A. No connection or joint shall be made where joint surfaces and joint materials have been soiled by earth or some other unsuitable substance during handling until such surfaces are thoroughly cleaned in a manner approved by the vendor of the pipe material.
- B. Butt-fusion of pipes, and electrofusion of fittings, shall be performed in accordance with the pipe manufacturer's and fusion equipment manufacturer's published installation guidelines with regard to the required equipment, fusion temperature, interface pressure and cooling temperature.
- C. Depending on the site conditions, the fusion joining process may or may not be performed outside of the excavation.
- D. Care shall be exercised when lowering the assembled pipe into the trench to prevent damage or twisting to the pipe.
- E. The interior of the pipe shall be kept clean. After each segment of pipe has been laid, it shall be carefully inspected and all soil, trash, rags and other foreign matter shall be removed immediately from the interior of the pipe.
- F. Immediately after the pipe is placed and inspected, the trench backfilling operations shall commence

3.04 GRAVEL BACKFILL FOR PIPE BEDDING

Bedding material for PVC pipe, or HDPE pipe where required by the Contract Documents, shall be Pea Gravel. Material that is slightly smaller than pea gravel may be used in its place.

3.05 TRACER OR LOCATION WIRE

- A. All PVC water pipe and pressure sewer pipe shall be installed with locate or tracer wire.
- B. All HDPE pipe shall be installed with locate or tracer wire.
- C. Force Main Tracer Wire Location Stations shall be installed at 500 foot intervals and at all bends and in accordance with the District's Standards. Associated valve box top section shall be installed as discussed in Section 02512, Valves.

3.06 CULVERT INSTALLATIONS

- A. Installation of all culverts shall be in accordance with the latest edition of the King County Road Design and Construction Standards.
- B. A minimum of 12-inch corrugated polyethylene storm pipe shall be installed to provide access to all fire hydrants that are installed behind a storm drainage ditch.
- C. All culverts shall be installed with the pipe ends beveled at a 3:1 slope.

3.07 TESTING OF NON-PRESSURE (GRAVITY) SANITARY SEWER PIPE

Testing of non-pressure (gravity) sanitary sewer pipe shall be in accordance with Section 02531, Sanitary Sewer Installation.

3.08 HYDROSTATIC PRESSURE TESTING

- A. Water Service Lines installed as part of a DI water main shall be tested as part of the water main in accordance with the DI testing requirements.
- B. All valves shall be open unless otherwise approved or directed by the District. The Contactor shall protect all valves from damage during all pressure testing operations.
- C. Location of the test pump shall be approved by the District.
- D. The maximum length of pressure main that can be tested at one time shall not exceed 1,500-linear feet.
- E. The Contractor shall provide all materials, equipment and labor necessary to perform all work associated with the tests.
- F. Where, in the option of the Owner, there is a possibility of contaminating the existing water system, purity testing shall be required prior to and following the required pressure testing. The requirements of sub-section 3.11, Sterilization and Flushing of Water Mains, shall be met prior the testing of new construction.

- G. The Contractor shall furnish and install any and all necessary thrust blocks needed to protect the Work.
- H. PVC pipe used for water mains shall be tested in accordance with Hydrostatic Pressure Testing requirement listed in Section 02510, Ductile Iron Pipe, unless otherwise directed by the District.
- I. PVC pipe used for sanitary force mains shall be tested in accordance with Hydrostatic Pressure Testing requirement listed in Section 02510, Ductile Iron Pipe.
- J. All HDPE water pipe and pressure sewer pipe shall be pressure tested as follows, or as required by the Contract Drawings otherwise approved by the District.
 - 1. The water main work shall be subjected to a hydrostatic pressure test of 1.5 times the rated operating pressure of the pipe.
 - 2. To establish equilibrium, the pipe shall be raised to the test pressure and allowed to stand without makeup pressure for 2 to 3 hours to allow for expansion of the pipe, unless otherwise approved or directed by the District.
 - 3. After equilibrium is established, the test section shall be pressurized to 1.5 times the rated operating pressure of the pipe. The pump shall **be** turned off and the final test pressure shall be held for 1, 2 or 3 hours as determined by the District at the time of testing.
 - 4. The amount of “make up” water shall be measured in the presence of the Project Inspector, utilizing a District approved method.

5. The allowable amounts of makeup water for expansion during the leak test are as listed below (US Gallons / 100-feet of Pipe):

Nominal Pipe Size (inches)	1-Hour Test	2-Hour Test	3-Hour Test
3	0.10	0.15	0.25
4	0.13	0.25	0.40
6	0.30	0.60	0.90
8	0.50	1.0	1.50
10	0.75	1.30	2.10
11	1.0	2.0	3.00
12	1.10	2.30	3.40
14	1.40	2.80	3.20
16	1.70	3.30	5.0
18	2.20	4.30	6.50
20	2.80	5.50	8.0
22	3.50	7.0	10.50
24	4.50	8.80	13.30
28	5.50	11.10	16.80
32	7.0	14.30	21.50
36	9.0	18.0	27.0
40	11.0	22.0	33.0
48	15.0	27.0	43.0

6. Under no circumstances shall the total time under the test exceed eight (8) hours at 1.5 times the pressure rating.
- K. If the test is not completed due to leakage, equipment failure, etc., the test section shall be all to “relax” for eight (8) hours prior to the next test.

**SECTION 02531
SANITARY SEWER INSTALLATION**

PART 1 – GENERAL

1.01 DESCRIPTION

This Section describes the installation and testing of sanitary sewers. Install sewers to the line and grade shown on the Drawings unless directed otherwise in the field.

1.02 RELATED WORK SPECIFIED ELSEWHERE

Refer to the following Sections for related work:

<u>Section</u>	<u>Item</u>
02315	Trenching, Backfilling and Compaction for Pipelines
02510	Ductile Iron Pipe
02530	Plastic Pipe
02532	Utility Structures

PART 2 – PRODUCTS

2.01 STANDARD MATERIALS

Refer to appropriate Sections listed above or the District's Standard Notes and Details.

2.02 PIPE LOCATING MATERIAL

All non-metallic pipe shall be installed with continuous tracer tape installed six (6) inches above the crown of the pipe. The locating tape shall be plastic, non-biodegradable, metal core or backing that can be detected by a standard metal detector. The tape shall be marked "gravity sewer main" and shall be Terra Tape "D" or approved equal.

PART 3 – EXECUTION

3.01 GENERAL

The pipe shall be cleaned of all foreign material before lowering into the trench. Whenever pipe laying is not in process, the last section of pipe shall be tightly capped or plugged.

3.02 BEDDING

- A. General. Provide bedding consistent with the type of pipe being laid or as shown on the Drawings for all sanitary sewer including side sewers. Prepare foundation, place foundation material where required, and place bedding material preceding the installation of all sewer pipe.

- B. Pipe Bedding. Place bedding so that the entire length of pipe will have full bearing on the bedding. No blocking of any kind shall be used to adjust the pipe grade. Dig bell holes to assure uniform support along the pipe barrel.
- C. Excess Excavation. Provide, place, and compact bedding material to the proper grade elevation at no additional cost to the District for unauthorized excavation below the established grade.
- D. Grade
Lay pipe to the line and grade shown on the Drawings within the following limits:
 1. Allowable variance shall in no way result in a level or reverse sloping invert.
 2. Variance from established line and grade shall not be greater than one-thirty-second of an inch (1/32") per inch of pipe diameter, not to exceed one-half inch (1/2").
 3. Variation in the invert elevation between adjoining ends of pipe, due to non-concentricity of joining surface and pipe interior surfaces, shall not exceed one-sixty-fourth of an inch (1/64") per inch of pipe diameter, one-half inch (1/2") maximum.

3.03 PIPE JOINING

- A. General. Join sewer pipe in accordance with manufacturer's requirements. All pipe joints within a casing (e.g. trenchless installation) shall be restrained joints.
- B. Protection of Gaskets. Avoid disturbing the gasket after it has been affixed and do not load it with dirt or other foreign material. Remove, clean and re-lubricate any gaskets that are disturbed before the jointing is attempted.

3.04 SIDE SEWERS

- A. General. The side sewer locations shown on the Drawings show general location only. The District will stake in the field the exact side sewer locations for each parcel. Locate a "tee" in the main line opposite each state and construct a side sewer to terminate as shown on the Drawings, or as otherwise directed by the District.
- B. Standard Details. Construct side sewers in accordance with the standard details shown on the Drawings or as specified herein.
- C. Construction Sequence. Construct side sewers concurrent with construction of the main line. Without written authorization from the District, excavation for the main line will not be permitted more than 500 feet ahead of the completion of side sewer construction.

Side Sewer Depth. Construct side sewers to a minimum invert depth of five feet below the ground surface at end of the side sewer or five feet below the floor being served, whichever is deeper, unless otherwise directed in writing. Where the

property is vacant, construct side sewers at a two percent (2%) slope at the right-of-way or easement line unless otherwise directed in writing.

- D. Deflection. Construct side sewers with a maximum deflection not to exceed manufacturer's recommendations and not over two inches (2") per foot in any joint. Use standard bends for larger changes in direction.
- E. Plugs. Install and block plug in each side sewer to sufficiently withstand test pressures without leakage.
- F. Location Marker. Place a length of 2 x 4 and wire at the end of the side sewer stub to a length of 12 inches above the ground surface. Paint with a stencil the work "SEWER" in two-inch (2") high letters and the depth below the top of board to the side sewer invert.
- G. Inspections. Do not backfill any side sewers until the District has visually inspected and approved the installation. If any work is covered up without approval or consent, it must be uncovered for examination at the Contractor's expense if required by the District.

3.05 MANHOLES

- A. Construct and install all manholes in accordance with Section 02532, Utility Structures, of the Technical Specifications and as required by the Contract Drawings.
- B. Excavate completely around existing manholes to insure against unbalanced loading of the manhole. Take precaution to prevent debris from entering manholes. Repair all damage to manhole resulting from the work. Verify all existing invert elevations prior to constructing new line. Report discrepancies to District for resolution. Re-channel existing base as required.
- C. Connections to existing manholes shall be made as follows:
- D. Manholes without an existing stubout, must be core drilled.
- E. A water tight joint (Kor-n-Seal boot or approved equal) shall be provided where the pipe passes through the manhole wall. The nut of the Kor-n-Seal boot shall be positioned away from the crown of the pipe so that it does not interfere with jetting equipment.
- F. If the manhole is "live," the manhole channel shall be tightly covered to prevent debris from entering the sewer line prior to breaking into the manhole wall. Immediately after the connection is made, the new pipe shall be plugged and blocked in such a manner that no water shall enter into the existing manhole. The plug shall not be removed without permission of the District.
- G. If the existing manhole is not "live," a plug shall be installed in the downstream or discharge pipe of the existing manhole in addition to the above. Where new connections to existing manholes require an outside drop, two plugs for each drop shall be installed and blocked.
- H. The existing manhole shall be rechanneled.

- I. The opening through which the side sewer passes shall be completely and thoroughly grouted.
- J. Where the direction of future extensions from the manhole are known, a 2-foot stub and cap shall be installed in a Kor-n-Seal boot at that location and the manhole shall be channeled to receive the future flow. The 2-foot stub shall be removed and replaced when the future extension is installed.

3.06 CLEANING

- A. Prior to sewer pipe testing, all pipes shall be cleaned by jetting. All debris from the jetting shall be removed at the first manhole where presence of the debris is noted. In event that cemented or wedged debris or damage pipe cannot be dislodged by jetting, the obstruction shall be removed and/or repaired.
- B. No debris shall be permitted to enter the existing sewer system and jetting water shall be pumped from the lines being cleaned and disposed of at a suitable location approved by the District.

3.07 TESTING

- A. All tests will be witnessed by the District. Provide 24 hours notice to the District before acceptance testing.
- B. Test Gauge. Test gauge shall be 6 inch Style 271W Crosby gauge with phosphor bronze, silver brazed bourdon tube and low friction, bronze rotary geared movement. Range shall be 0 to 15 psi graduated in 0.10 psi increments. Accuracy shall be 1/4 percent of span (ANSI Grade 3A). Provide certification of accuracy. Similar gauges by Ashcroft are acceptable.
- C. Testing for Non-Pressure Sewer Pipe. See District standard materials and construction notes on Drawings for additional requirements.
 - 1. Low pressure air test. Test in accordance with the requirements of WSDOT/APWA Section 7-17.3(2)F for non-air permeable material. Side sewers shall be tested with the main sewers. The District will calculate the minimum acceptance time required for each test section according to the criteria listed herein.
 - 2. Deflection Testing. Test for excess deflection of installed pipe as specified in WSDOT/APWA 7-17.3(2)G 30 days after the trench backfill and compaction has been completed and prior to final acceptance.
 - 3. Infiltration Testing. Infiltration tests shall be performed on segments of sewers that exhibit excessive infiltration. The District shall be the sole judge of whether or not this test is required. The maximum allowable limit for infiltration shall be per WSDOT/APWA 7-17.3(2)C. Failure to pass infiltration test shall be cause for rejection.

4. Television Inspection. The District shall require the sewer to be inspected by the use of a television camera not less than 30 days after the trench backfill and compaction has been completed and prior to final acceptance. The television camera used for this inspection shall be a moveable head that is capable of rotating a full 360 degrees, to inspect joints and to look into laterals entering the main at all possible angles. The costs of making the inspection(s) shall be borne by the Contractor. The District's 1-1/2-inch target, or the Contractor's District approved target shall be used. Television inspection shall be scheduled after all tests have been successfully completed. The television-inspection format shall be provided on DVD, not VHS tape, with scene selection markings on the recording between each manhole. The associated television-inspection reports and the original DVDs shall be provided to the District within one week of television-inspection. If Contractor wants a copy, the Contractor shall obtain one at the same time as the original is completed.
- D. Testing of Pressure Sewer Pipe. Hydrostatic pressure testing of HDPE sewer pipe shall be in accordance with Section 02530, Plastic Pipe.
- E. Acceptance. If the pipe installation fails to meet any of the specified testing requirements, the Contractor shall determine at his own expense the source or sources of leakage and shall repair or replace all defective materials or workmanship.

3.08 REGULATORY REQUIREMENTS

- A. Unless otherwise shown on the Drawings, separate sewer pipes from water pipes as follows:
- B. Horizontal Separation. Whenever possible, sewers should be laid at least ten feet (10'), horizontally, from any existing water main. Should local conditions prevent a lateral separation of ten feet (10'), a sewer may be laid as close as five feet (5') from a water main if:
 - C. It is laid in a separate trench.
 - D. It is laid in the same trench with the water mains located at one side on a bench of undisturbed earth.
 - E. In either case the elevation of the crown of the sewer is at least 18 inches below the invert of the water main.
- F. Vertical Separation. Whenever it is necessary for sewers to cross water mains, the crossing shall be made at an angle of ninety (90) degrees and the sewer shall be laid at such an elevation that the top of the sewer is at least 18 inches below the bottom of the water main. When the elevation of the sewer cannot be buried to meet the above requirements:
- G. The sewer main shall be constructed of ductile iron with mechanical joints, meeting the requirements of AWWA C151, C111, and C110. The length of sewer pipe shall be centered at the point of crossing so that the joints will be equidistant and as far as possible from the water line. The

sewer pipe shall be the longest standard length available from the manufacturer.

- H. The sewer main can be constructed of standard gravity-sewer material encased in concrete or in a one-quarter-inch thick continuous steel, ductile iron, or pressure rated PVC pipe with a DR of 18 or less, with all voids pressure-grouted with sand-cement grout or bentonite.

3.09 PROTECTION OF EXISTING WATER MAINS

Care shall be taken in working in the vicinity of existing water main so that damage does not occur to the existing mains. Existing water mains and appurtenances that are damaged by the Contractor due to his operations shall be repaired by the Contractor under direct observation by the District. The Contractor shall be responsible for all costs associated with the effecting repair.

SECTION 02532 UTILITY STRUCTURES

PART 1 – GENERAL

1.01 SCOPE

This Section covers the work necessary for furnishing and installing precast concrete vaults, manholes, catch basins, castings, and steps for a complete installation.

1.02 RELATED WORK SPECIFIED ELSEWHERE

<u>Section</u>	<u>Item</u>
02315	Trenching, Backfilling and Compaction for Pipelines
02511	Water Main Installation
02531	Sanitary Sewer Installation

1.03 SUBMITTALS

Submit as project information catalog cuts or detail drawings and designs of all items specified in Part 2 herein.

PART 2 – PRODUCTS

2.01 GENERAL

All material shall comply with District standards.

2.02 PRECAST VAULTS

Precast concrete vaults shall be cast in an established precast yard. Precast vaults shall be designed for H-20 loads. Submit design calculations and shop drawings for review and approval prior to fabrication. Shop drawings shall detail wall thickness, concrete strength, reinforcing requirements, and shall include all appurtenances, such as access hatches, floor drains, and other items called for on the Drawings.

2.03 PRECAST CONCRETE MANHOLES

- C. Precast manhole components shall conform to ASTM C478 except as modified herein. Base section openings to receive pipe shall be circular and held to the minimum size practical to accommodate the pipe to be inserted to effectively seal the joint. Connections shall conform to WASHDOT/APWA 7-05.3.
- D. Standard precast riser sections shall consist of circular sections in standard nominal inside diameter as shown on the Drawings. Reinforcement shall be in accordance with ASTM C478. Minimum height of a riser section shall be one (1) foot. Heights of riser and base sections shall be arranged so no pipes pass through the joining surfaces.

Standard precast cones shall provide an eccentric reduction from forty-eight (48) inches to twenty-four (24) inches and shall not be less than seventeen (17) inches in height. Precast cones shall conform to WASHDOT/APWA 9-12.4.

- E. Precast base may be separate or integral with the riser section. The base shall be a minimum of six (6) inches thick underneath the pipe invert. Openings for pipe shall be circular, tapered toward the inside of the section, and shall be of the minimum size possible to accommodate the size of pipe to be inserted and to effectively seal the joint. Pre-channeled base sections will not be permitted.
- F. Joints between precast manhole elements shall be rubber gasketed with O-rings or approved equal conforming to AASHTO M198. Shop drawings of the joint design shall be submitted to the District for approval, prior to manufacture or purchase. Completed joints shall show no visible leakage and shall conform to the dimensional requirements of ASTM C478.
- G. Kor-n-Seal boots shall be provided for all pipe penetrations.

2.04 PRECAST CONCRETE CATCH BASINS

Precast concrete catch basins shall meet the requirements of WSDOT/APWA 9-12.5.

2.05 SANITARY SEWER MANHOLE RINGS AND COVERS

- A. Cast Iron frames and covers shall conform to the Olympic Foundry Company No. MH 36 Traffic Type or equivalent marked "SEWER" in two (2) inch raised letters. The outside diameter of manhole lids shall measure 25-3/8" and the inside diameter of manhole frames shall measure 25-5/8", with a 1/8" tolerance. 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 which would impair service ability. Repair or defects by welding, or by the use of "smooth-on" or similar material will not be permitted. Cover shall have a maximum of one hole, and a rubber plug per the Standard District Detail shall be installed in the hole.
- B. Manholes located outside of public rights-of-way shall be equipped with a 3-bolt, lockdown cover. All movable parts shall be made of noncorrosive metals otherwise arranged to avoid possible binding. The locking frame and cover shall be Olympic Foundry Company No. MH 36 D/T Traffic Type or equivalent marked "SEWER" in two (2) inch raised letters.
- C. Manhole covers in pedestrian or bike lane areas shall have low embossment lids.

All manholes rings and covers shall be machine finished or ground on seating surfaces so as to assure nonrocking fit in any position, and interchangeability. At the request of the District, there shall be made available at the foundry standard rings and standard covers for use by inspectors in testing fit and seating.

- D. Provide a letter of certification from the manufacturer stating that the castings supplied for this Contract conform to ASTM A48 Class 30 or

better. The manufacturer shall furnish a notarized report of physical test results for every 200 castings. Type B tensile specimens shall be furnished to the Owner upon request. The Owner reserves the right to witness the testing procedures and shall be notified prior to their execution.

2.06 METAL CASTINGS AND INLETS FOR STORM DRAIN SYSTEMS

Metal castings for drainage structures shall meet the requirements of WSDOT/APWA 9-05.15. Grate Inlets and Drop Inlets shall meet the requirements of WSDOT/APWA 9-05.16.

2.07 STEPS

- A. Polypropylene manhole steps shall be made of a copolymer polypropylene, superior in its resistance to corrosion, meeting the requirements of ASTM 2146 Type II, Grade 16906, and shall completely encapsulate a deformed 1/2-inch steel reinforcing rod conforming to ASTM A615, Grade 60. Polypropylene steps shall be factory installed in complete accordance with the manufacturer's instructions. This shall be accomplished by pre-drilling two (2) parallel 1-inch holes, 3-3/4 inch deep and 13 inches on center in the cured concrete base, riser and taper sections of the manhole. The insertion ends of the step shall be fully coated with non-shrink epoxy grout then driven into the holes to the prescribed depth. In no case will the pre-drilled hole be allowed to penetrate through the wall of the manhole section.
- B. Steps shall be Lane International Corporation Manhole Step, or equal.

2.08 LADDERS AND MANHOLE PLATFORMS

Ladders and manhole platforms shall conform to the requirements of the materials and construction notes and sewer details.

2.09 MANHOLE CORROSION RESISTANT COATING AND/OR LINING

Manholes that require a corrosion resistant coating shall be provided with a lining of 5-9 mils of Tnemec Series 466 Permashield MCU, or Wasser Aeroshield.

PART 3 – EXECUTION

3.01 PRECAST VAULTS

Precast vaults shall be as detailed on the Drawings. Prior to setting vault in place, the foundation gravel shall be carefully leveled to provide full bracing for the entire base section.

3.02 MANHOLES

- A. Manhole installation shall be as detailed on the Drawings. Precast sections with damaged joint surfaces or with cracks or damage that would permit infiltration shall not be installed. Precast base sections shall be set

on prepared bedding materials. Before the precast base is set in place, the bedding material shall be carefully leveled to provide full bearing for the entire base section. Leveling the base section by wedging gravel under the edges shall not be permitted.

- B. Precast riser sections and cones shall be set using the specified joint sealant or gasket. Priming and preparation of surfaces and installation of jointing material shall be in strict conformance with the manufacturer's instructions. Only one (1) riser section one (1) foot high shall be used per manhole and it shall be placed immediately below the cone. Grade rings shall be set in a full bed of cement grout.
- C. All pipe connections to manholes shall be made with Kor-N-Seal flexible connections or approved equal materials to ensure a water-tight joint where flexible pipe passes through the manhole wall.
- D. Where the direction of future extensions from the manhole are known, a 2-foot stub and cap shall be installed in a Kor-n-Seal boot at that location and the manhole shall be channeled to receive the future flow. The 2-foot stub shall be removed and replaced when the future extension is installed.
- E. Connections between ductile iron and PVC gravity sewer pipe at drop structures shall be made using MJ x SDR35 transition gaskets as manufactured by Romac Industries, Inc., or equal. Gasket material shall be compounded to be sewage and grease resistant.
- F. Precast manhole elements shall be provided with steps and/or ladders such that the complete manhole will contain a continuous vertical ladder with rungs equally spaced at twelve (12) inches plus or minus 3/4 inch. The lowest rung shall not be more than sixteen (16) inches above the shelf, and the uppermost rung shall be not more than eighteen (18) inches below the top of frame. Ladder rungs or handholes in the manhole neck area must be recessed 2 inches for improved clearance.

Manhole frames shall be set carefully to the established surface grade in a full bed of cement grout. The manhole rim elevation shall be set flush with the existing pavement or grade in paved and improved areas. In unimproved areas, manhole rim elevations shall be set six (6) inches above grade unless otherwise shown on the Drawings to be set higher.

- G. All lift holes (inside and outside) and the inside face of rubber gasket joints between precast sections shall be thoroughly wetted and then filled with grout, smoothed and all joints pointed.
- H. After placement, channel decks shall be given a light broom finish and shall be sloped to drain into the channels.
- I. Steps shall be installed in base sections, riser sections and tapered sections so that the completed manhole will have a continuous vertical ladder with equally spaced rungs as shown on the Drawings. Steps shall be firmly cast or grouted in place. Infiltration from or around steps will not be permitted.
- J. Manholes greater than 25-feet in depth shall have a maximum deviation of 6 inches from vertical.

3.03 MANHOLE CORROSION RESISTANT COATING OR LINING

- A. Where a new manhole structure requires a corrosion resistant coating it shall be applied in the precast sections manufacturer's yard. Apply the coating to all riser and transition sections. Coat grade rings, and base sections above the channel bench and fill joints after installation and final adjustments to grade.
- B. Follow corrosion resistant coating and joint compound manufacturer's application directions for priming, coating, and filling joints. Repair damage to coating occurring during installation.

3.04 STRUCTURE EXCAVATION

- A. All excavations for structures shall be done to the dimensions and levels indicated on the Drawings or specified herein. Excavation shall be made to such width outside the lines of the structure to be constructed as may be required for proper working methods, the erection of forms and the protection of the work.
- B. Care shall be taken to preserve the foundation surfaces shown on the Drawings in an undisturbed condition. If the Contractor overexcavates or disturbs the foundation surfaces shown on the Drawings or specified herein, without written authorization of the Owner, he shall replace such foundations with concrete fill or other material approved by the Owner in a manner which will show by test an equal bearing power with the undisturbed foundation material. No additional payment will be made for the added quantity of concrete fill or other material used because of overexcavation.

All excavation shall be kept free from water and all construction shall be carried on in the dry. Water shall be kept down until compacted fills and structures are complete to above water, safe from uplift and horizontal water pressure, and the backfill has been placed.

- C. The Contractor shall notify the Owner when excavation for compacted fill or structure is complete, and no structures shall be placed until the excavation has been inspected by the Owner.
- D. If the Contractor wishes to stockpile excavated material, he shall provide adequate facilities for drainage of water from the material and adequate facilities for handling of storm drainage from the area.
- E. Where unsatisfactory material is encountered below the grades shown, for structural excavations, it shall be removed and replaced and compacted with selected import material as approved by the Owner.

3.05 SUPPORT OF STRUCTURE EXCAVATION

Excavation for structures shall be adequately supported to meet all requirements in the current rules, orders and regulations prescribed in the Safety Standards for Construction Work, Division of Industrial Safety and Health, Department of Labor and Industries, State of Washington. Excavation shall be adequately shored,

braced and sheeted so that the earth will not slide or settle and so that all existing structures and all new structures will be fully protected from damage. The support for excavation shall remain in place until the structure has been completed. During the backfilling of the structure, the shoring, sheeting, and bracing shall be carefully removed so that there shall be no caving, lateral movement, or flowing of the subsoils.

3.06 FOUNDATION GRAVEL UNDER STRUCTURES

The Contractor shall place a layer of Pea Gravel compacted to 95 percent relative compaction, under structures to the lines, grades and thicknesses shown on the Drawings. The minimum thickness of the compacted gravel base layer shall be 12 inches.

3.07 STRUCTURE BACKFILL

- A. Backfill with suitable excavated native material or select import structural back fill material. The fill shall be placed in 8-inch level, uniform layers measured before compaction. Compaction shall be with optimum water content and the compaction equipment shall be adequate to produce a minimum 95 percent relative density determined.
- B. Bring backfill up uniformly on all sides of the structure, and on both sides of buried walls.

3.08 COMPACTION

- A. Add water to the backfill material or dry the material as necessary to obtain a moisture content within two percent of optimum. Employ such means as may be necessary to secure a uniform moisture content throughout the material of each layer being compacted.
- B. After the material has been moisture conditioned, compact it with compaction equipment appropriate to the use to achieve specified compaction.
- C. If the backfill material becomes saturated from rains or any other source because it was not compacted to the specified density or was not backfilled and compacted to surface grade, through negligence or otherwise, remove the faulty material and replace it with suitable material compacted to the specified density. No additional payment will be made for doing such work or removal and replacement.
- D. Compaction of embedment and backfill materials by flooding, ponding or jetting will not be permitted.
- E. When densities of compacted materials do not meet the requirements, remove and/or re-compact the material until the requirements are met. The Contractor will be back charged the cost of retesting all failing tests, including the initial retest. Such back charges will be deducted from the Contractor's Progress Payments.

3.09 DISPOSAL OF EXCAVATED MATERIAL

Dispose of unsuitable material or excavated material in excess of that needed for backfill or fill offsite in a manner that will meet all requirements of applicable state and local regulations.

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**SECTION 02700
GRAVEL MATERIALS**

PART 1 – GENERAL

1.01 DESCRIPTION

The work specified in this Section includes the various types of granular materials that are to be used in trenches and other excavations throughout the Project.

1.02 RELATED WORK SPECIFIED ELSEWHERE

<u>Section</u>	<u>Item</u>
02315	Trenching, Backfilling, and Compaction for Pipelines
02510	Ductile Iron Pipe
02511	Water Main Installation

1.03 SUBMITTALS

- A. The Contractor shall provide certificates of laboratory tests indicating particle size distribution for review for each type of granular material furnished and proctor test reports for all material to be placed as pipe bedding material, trench backfill, backfill under and around structures and underneath crushed surfacing and asphalt concrete pavements.
- B. The certificates and proctor test reports shall be provided to the Engineer at least five (5) calendar days prior to placement.

PART 2- PRODUCTS

2.01 FOUNDATION GRAVEL

- A. Foundation gravel shall conform to the requirements of WSDOT/APWA 9-03.17, Foundation Material, Class B.

2.02 PEA GRAVEL

- A. Material commonly referred to required by the Contract Documents as Pea Gravel shall be well graded, clean granular gravel material meeting the following requirements:

<u>Sieve Size</u>	<u>Percent Passing*</u>
3/8" Square	100
U.S. No. 8	0 - 5

2.03 SAND BEDDING MATERIAL

Sand bedding material shall conform to the requirements of WSDOT/APWA 9-03.13, Backfill for Sand Drain

2.04 SELECT IMPORT BACKFILL MATERIAL

Durable crushed gravel or rock; or naturally occurring sands and gravels free from wood, bark, roots or other extraneous material, meeting the requirements of WSDOT/APWA 9-03.19 for "Bank Run Gravel for Trench Backfill," with percent passing the No. 200 sieve limited to 5 percent max.

2.05 NATIVE TRENCH BACKFILL MATERIAL

Native materials will be considered suitable for use in backfilling if the material is not sensitive to moisture (compactable if moisture content is greater than optimum). Native materials shall be a sand and gravel combination, free of organic matter or other deleterious materials. All materials shall pass a 3-inch sieve. Native material shall have similar characteristics to that of Select Import Backfill Material.

2.06 CRUSHED SURFACING material

- A. Top Course and Keystone Material (5/8" Minus): For use in the restoration of excavated areas. Top Course and Keystone material shall conform to the requirements of WSDOT/APWA 9-03.9(3), "Crushed Surfacing" for Top Course and Keystone.
- B. Base Course Material (1 1/4" Minus): Base Course Material shall conform to the requirements of WSDOT/APWA 9-03.9(3), "Crushed Surfacing" for Base Course.

2.07 CONCRETE ENCASEMENT - CONTROLLED DENSITY FILL (CDF)

Controlled Density Fill (CDF) shall be a mixture of portland cement (Type I or II), fly ash (ASTM C618, Class F), fine aggregates (coarse sand with 100 percent passing, 3/8-inch sieve, 60 – 100 percent passing No. 4 sieve, and 0 – 5 percent passing No. 200 sieve), and water, with a maximum 28-day compressive strength of 100 psi, conforming to the following proportions:

<u>Material</u>	<u>Batch Weight/Cubic Yard</u>
Mixing Water	50 lb/cubic yard
Portland Cement	30 lb/cubic yard
Fly Ash, Class F	200 lb/cubic yard
Fine Aggregate	3,200 lb/cubic yard

Submit CDF mix design for District review prior to use.

2.08 7/8-INCH DRAIN ROCK

Material for drains around facilities such as hydrants, blowoffs, and hill holders shall conform to the requirements of WSDOT/APWA 9-03.12(5), Gravel Backfill for Drywells, except that the material shall be washed to remove fines.

2.09 GROUT

Grout shall meet the nonshrink requirements of WSDOT/APWA Section 9-20.3(2). The material known as or similar to "Jet-Set" is not allowed.

PART 3 – EXECUTION

3.01 GENERAL

All trench backfill shall be accomplished as specified in Section 02315.

3.02 FOUNDATION GRAVEL

- A. Foundation gravel shall be placed and compacted underneath all structures to a minimum depth of 12 inches unless indicated otherwise on the Drawings, and with the approval of the District to a greater depth where foundations are unstable.
- B. In the event the Contractor unnecessarily overexcavates the pipe trench or structure foundation, or if the width of the pipe trench becomes wider than the pay limit shown on the Drawings, all material so placed shall be at the Contractor's sole expense.

3.03 GRAVEL BACKFILL FOR PIPE BEDDING

- A. Bedding material shall be placed simultaneously on both sides of the pipe for the full width of the trench in lifts not exceeding six (6) inches. To assure uniform support, the material shall be carefully worked underneath the pipe haunches with a tool capable of preventing the formation of void spaces around the pipe.
- B. In the event the Contractor overexcavates the pipe trench, or if the width of the pipe trench becomes wider than the pay limit shown on the Drawings, all material so placed shall be at the Contractor's sole expense.

3.04 GRAVEL BACKFILL FOR PIPE BEDDING

- A. Bedding material for PVC or HDPE pipe shall be Pea Gravel. Material that is slightly smaller than pea gravel may be used in its place.

3.05 SELECT IMPORT BACKFILL MATERIAL

Select import backfill material shall be used where excavated material is unsuitable or unavailable for the backfill of trenches, around manholes, vaults and structures, as shown on the Drawings and as specified herein or as approved by the District in the field.

3.06 CRUSHED SURFACING

- A. Crushed surfacing shall be placed uniformly to a compacted thickness of six (6) inches, or as otherwise designated by the District, in those areas where shown on the Plans and approved by the District. Crushed surfacing shall be placed in accordance with WSDOT/APWA Section 4-04.

- B. The Contractor shall construct the base course as specified hereunder. The cross-section of the finished surface shall be subject to reasonable variations as approved by the District to meet the varying conditions encountered. Base course material shall be spread over the native soil to such a loose depth that when compacted, it will have minimum compacted depths as shown on the Plans.
- C. The top course material shall be compacted and rolled with a power roller until the top surface is smooth and conforms to the grade and crown requirements shown, with any minor adjustments herein before specified. Roller shall not be operated adjacent to structures where such use may cause damage. Where the base course abuts structures and compaction with a roller is not possible for practical reasons, the area shall be compacted with mechanical tampers or other approved equipment.
- D. The finished surface of top course shall be at the elevations necessary to receive the asphalt concrete pavement.

3.07 CONTROLLED DENSITY FILL (CDF)

CDF shall be used for the water main concrete encasement and for the sewer main concrete encasement where identified on the project Drawings and as further identified by the technical specifications.

APPENDIX A

Prevailing Wage Rates

Washington State Prevailing Wage Rates for Public Works Contracts

Department of L & I's prevailing wage rates can be found at the following website address:

- <https://fortress.wa.gov/lni/wagelookup/prvWagelookup.aspx>

Based upon the submittal deadline for this project the wage publication effective date to use is:

- **TBD**

The county in which the Public Works project is located is:

- **King County**

A copy of this wage rate is available for viewing in our office located at:

- City of Sammamish Public Works Department
801 228th Avenue SE
Sammamish, WA 98075

The City will mail or e-mail a copy of the applicable wage publication upon request:

- **to request a copy via e-mail please e-mail your request to**
maderson@sammamish.us
- **to request a copy via mail please call (425) 295-0500 and request City Clerk's office**

Benefit Code Key – Effective 3/3/2018 thru 8/30/2018

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.
- S. 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 hours worked on holidays and 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.
- 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.
 - C. All hours worked on Sundays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at two 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.
 - G. 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 hours worked on Sunday shall be paid at two 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.
 - O. All hours worked on Sundays and holidays shall be paid at one and one-half times 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.
 - W. 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 first eight (8) hours worked on the fifth day shall be paid at one and one-half times the hourly rate of wage. All other hours worked on the fifth, sixth, and seventh days and on 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.
- A. 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 shift, and all work on Saturdays shall be paid at time and one-half the straight time rate. Hours worked over twelve hours (12) in a single shift and all work performed after 6:00 pm Saturday to 6:00 am Monday and holidays shall be paid at double the straight time rate of pay. Any shift starting between the hours of 6:00 pm and midnight shall receive an additional one dollar (\$1.00) per hour for all hours worked that shift. The employer shall have the sole discretion to assign overtime work to employees. Primary consideration for overtime work shall be given to employees regularly assigned to the work to be performed on overtime situations. 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.
 - C. 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 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 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.

Overtime Codes Continued

3.
 - E. All hours worked Sundays and holidays shall be paid at double the hourly rate of wage. Each week, once 40 hours of straight time work is achieved, then any hours worked over 10 hours per day Monday through Saturday shall be paid at double the hourly wage rate.
 - 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.
 - I. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. In the event the job is down due to weather conditions during a five day work week (Monday through Friday,) or a four day-ten hour work week (Tuesday through Friday,) 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 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.
 - 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.
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.
 - B. All hours worked over twelve (12) hours per day and all hours worked on 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.

Overtime Codes Continued

4. 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.

- F. All hours worked between the hours of 6:00 pm and 6:00 am, Monday through Saturday, shall be paid at a premium rate of 20% over the hourly rate of wage. All hours worked on 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.

- 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.

- H. 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.

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).

Benefit Code Key – Effective 3/3/2018 thru 8/30/2018

Holiday Codes Continued

5. 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).
- J. Holidays: New Year's Day, Memorial Day, Independence Day, Thanksgiving Day, Friday after Thanksgiving Day, Christmas Eve Day, And Christmas Day (7).
- 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).
- T. Paid Holidays: New Year's Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, The Friday After Thanksgiving Day, Christmas Day, And The Day Before Or After Christmas (9).
- 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. A. Paid Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8).
- E. Paid 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 a Half-Day On Christmas Eve Day. (9 1/2).
- 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).

Benefit Code Key – Effective 3/3/2018 thru 8/30/2018

Holiday Codes Continued

6. 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).
- I. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday After Thanksgiving Day, And Christmas Day (7).
- 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.

Holiday Codes Continued

7. 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, 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.
- M. Paid Holidays: New Year's Day, The Day after or before New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, And the Day after or before Christmas Day (10). 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.
- R. Paid Holidays: New Year's Day, the day after or before New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and the day after or before Christmas Day (10). If any of the listed holidays fall on Saturday, the preceding Friday shall be observed as the holiday. If any of the listed holidays falls on a Sunday, the day observed by the Nation shall be considered a holiday and compensated accordingly.
- 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.

Holiday Codes Continued

- T. Paid Holidays: New Year's Day, the Day after or before New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and The Day after or before Christmas Day. (10). If any of the listed holidays falls on a Sunday, the day observed by the Nation shall be considered a holiday and compensated accordingly. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

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.
- P. 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.
- Q. 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.
- R. 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.
- 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.

Note Codes Continued

8. 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.

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: 3/30/2018

<u>County</u>	<u>Trade</u>	<u>Job Classification</u>	<u>Wage</u>	<u>Holiday</u>	<u>Overtime</u>	<u>Note</u>
King	Asbestos Abatement Workers	Journey Level	\$46.57	5D	1H	
King	Boilermakers	Journey Level	\$66.54	5N	1C	
King	Brick Mason	Journey Level	\$55.82	5A	1M	
King	Brick Mason	Pointer-Caulker-Cleaner	\$55.82	5A	1M	
King	Building Service Employees	Janitor	\$23.73	5S	2F	
King	Building Service Employees	Traveling Waxer/Shampooer	\$24.18	5S	2F	
King	Building Service Employees	Window Cleaner (Non-Scaffold)	\$27.23	5S	2F	
King	Building Service Employees	Window Cleaner (Scaffold)	\$28.13	5S	2F	
King	Cabinet Makers (In Shop)	Journey Level	\$22.74		1	
King	Carpenters	Acoustical Worker	\$57.18	5D	4C	
King	Carpenters	Bridge, Dock And Wharf Carpenters	\$57.18	5D	4C	
King	Carpenters	Carpenter	\$57.18	5D	4C	
King	Carpenters	Carpenters on Stationary Tools	\$57.31	5D	4C	
King	Carpenters	Creosoted Material	\$57.28	5D	4C	
King	Carpenters	Floor Finisher	\$57.18	5D	4C	
King	Carpenters	Floor Layer	\$57.18	5D	4C	
King	Carpenters	Scaffold Erector	\$57.18	5D	4C	
King	Cement Masons	Journey Level	\$57.21	7A	1M	
King	Divers & Tenders	Bell/Vehicle or Submersible Operator (Not Under Pressure)	\$110.54	5D	4C	
King	Divers & Tenders	Dive Supervisor/Master	\$72.97	5D	4C	
King	Divers & Tenders	Diver	\$110.54	5D	4C	8V
King	Divers & Tenders	Diver On Standby	\$67.97	5D	4C	
King	Divers & Tenders	Diver Tender	\$61.65	5D	4C	
King	Divers & Tenders	Manifold Operator	\$61.65	5D	4C	
King	Divers & Tenders	Manifold Operator Mixed Gas	\$66.65	5D	4C	
King	Divers & Tenders	Remote Operated Vehicle Operator/Technician	\$61.65	5D	4C	
King	Divers & Tenders	Remote Operated Vehicle Tender	\$57.43	5A	4C	
King	Dredge Workers	Assistant Engineer	\$56.44	5D	3F	
King	Dredge Workers	Assistant Mate (Deckhand)	\$56.00	5D	3F	

King	Dredge Workers	Boatmen	\$56.44	<u>5D</u>	<u>3F</u>	
King	Dredge Workers	Engineer Welder	\$57.51	<u>5D</u>	<u>3F</u>	
King	Dredge Workers	Leverman, Hydraulic	\$58.67	<u>5D</u>	<u>3F</u>	
King	Dredge Workers	Mates	\$56.44	<u>5D</u>	<u>3F</u>	
King	Dredge Workers	Oiler	\$56.00	<u>5D</u>	<u>3F</u>	
King	Drywall Applicator	Journey Level	\$56.78	<u>5D</u>	<u>1H</u>	
King	Drywall Tapers	Journey Level	\$57.43	<u>5P</u>	<u>1E</u>	
King	Electrical Fixture Maintenance Workers	Journey Level	\$28.99	<u>5L</u>	<u>1E</u>	
King	Electricians - Inside	Cable Splicer	\$76.96	<u>7C</u>	<u>4E</u>	
King	Electricians - Inside	Cable Splicer (tunnel)	\$82.24	<u>7C</u>	<u>4E</u>	
King	Electricians - Inside	Certified Welder	\$74.38	<u>7C</u>	<u>4E</u>	
King	Electricians - Inside	Certified Welder (tunnel)	\$79.80	<u>7C</u>	<u>4E</u>	
King	Electricians - Inside	Construction Stock Person	\$39.69	<u>7C</u>	<u>4E</u>	
King	Electricians - Inside	Journey Level	\$71.80	<u>7C</u>	<u>4E</u>	
King	Electricians - Inside	Journey Level (tunnel)	\$76.96	<u>7C</u>	<u>4E</u>	
King	Electricians - Motor Shop	Craftsman	\$15.37		<u>1</u>	
King	Electricians - Motor Shop	Journey Level	\$14.69		<u>1</u>	
King	Electricians - Powerline Construction	Cable Splicer	\$79.43	<u>5A</u>	<u>4D</u>	
King	Electricians - Powerline Construction	Certified Line Welder	\$69.75	<u>5A</u>	<u>4D</u>	
King	Electricians - Powerline Construction	Groundperson	\$46.28	<u>5A</u>	<u>4D</u>	
King	Electricians - Powerline Construction	Heavy Line Equipment Operator	\$69.75	<u>5A</u>	<u>4D</u>	
King	Electricians - Powerline Construction	Journey Level Lineperson	\$69.75	<u>5A</u>	<u>4D</u>	
King	Electricians - Powerline Construction	Line Equipment Operator	\$59.01	<u>5A</u>	<u>4D</u>	
King	Electricians - Powerline Construction	Meter Installer	\$46.28	<u>5A</u>	<u>4D</u>	<u>8W</u>
King	Electricians - Powerline Construction	Pole Sprayer	\$69.75	<u>5A</u>	<u>4D</u>	
King	Electricians - Powerline Construction	Powderperson	\$52.20	<u>5A</u>	<u>4D</u>	
King	Electronic Technicians	Journey Level	\$31.00		<u>1</u>	
King	Elevator Constructors	Mechanic	\$91.24	<u>7D</u>	<u>4A</u>	
King	Elevator Constructors	Mechanic In Charge	\$98.51	<u>7D</u>	<u>4A</u>	
King	Fabricated Precast Concrete Products	All Classifications - In-Factory Work Only	\$17.72	<u>5B</u>	<u>1R</u>	
King	Fence Erectors	Fence Erector	\$15.18		<u>1</u>	
King	Flaggers	Journey Level	\$39.48	<u>7A</u>	<u>3I</u>	
King	Glaziers	Journey Level	\$61.81	<u>7L</u>	<u>1Y</u>	
King	Heat & Frost Insulators And Asbestos Workers	Journeyman	\$67.93	<u>5J</u>	<u>4H</u>	
King	Heating Equipment Mechanics	Journey Level	\$78.17	<u>7F</u>	<u>1E</u>	
King	Hod Carriers & Mason Tenders	Journey Level	\$48.02	<u>7A</u>	<u>3I</u>	
King	Industrial Power Vacuum Cleaner	Journey Level	\$11.50		<u>1</u>	

King	Inland Boatmen	Boat Operator	\$61.41	<u>5B</u>	<u>1K</u>	
King	Inland Boatmen	Cook	\$56.48	<u>5B</u>	<u>1K</u>	
King	Inland Boatmen	Deckhand	\$57.48	<u>5B</u>	<u>1K</u>	
King	Inland Boatmen	Deckhand Engineer	\$58.81	<u>5B</u>	<u>1K</u>	
King	Inland Boatmen	Launch Operator	\$58.89	<u>5B</u>	<u>1K</u>	
King	Inland Boatmen	Mate	\$57.31	<u>5B</u>	<u>1K</u>	
King	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Cleaner Operator, Foamer Operator	\$31.49		<u>1</u>	
King	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Grout Truck Operator	\$11.50		<u>1</u>	
King	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Head Operator	\$24.91		<u>1</u>	
King	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Technician	\$19.33		<u>1</u>	
King	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Tv Truck Operator	\$20.45		<u>1</u>	
King	Insulation Applicators	Journey Level	\$57.18	<u>5D</u>	<u>4C</u>	
King	Ironworkers	Journeyman	\$67.88	<u>7N</u>	<u>10</u>	
King	Laborers	Air, Gas Or Electric Vibrating Screed	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Airtrac Drill Operator	\$48.02	<u>7A</u>	<u>3I</u>	
King	Laborers	Ballast Regular Machine	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Batch Weighman	\$39.48	<u>7A</u>	<u>3I</u>	
King	Laborers	Brick Pavers	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Brush Cutter	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Brush Hog Feeder	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Burner	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Caisson Worker	\$48.02	<u>7A</u>	<u>3I</u>	
King	Laborers	Carpenter Tender	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Caulker	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Cement Dumper-paving	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Cement Finisher Tender	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Change House Or Dry Shack	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Chipping Gun (under 30 Lbs.)	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Chipping Gun(30 Lbs. And Over)	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Choker Setter	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Chuck Tender	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Clary Power Spreader	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Clean-up Laborer	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Concrete Dumper/chute Operator	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Concrete Form Stripper	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Concrete Placement Crew	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Concrete Saw Operator/core Driller	\$47.44	<u>7A</u>	<u>3I</u>	

King	Laborers	Crusher Feeder	\$39.48	<u>7A</u>	<u>3I</u>	
King	Laborers	Curing Laborer	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Demolition: Wrecking & Moving (incl. Charred Material)	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Ditch Digger	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Diver	\$48.02	<u>7A</u>	<u>3I</u>	
King	Laborers	Drill Operator (hydraulic, diamond)	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Dry Stack Walls	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Dump Person	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Epoxy Technician	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Erosion Control Worker	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Faller & Bucker Chain Saw	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Fine Graders	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Firewatch	\$39.48	<u>7A</u>	<u>3I</u>	
King	Laborers	Form Setter	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Gabian Basket Builders	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	General Laborer	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Grade Checker & Transit Person	\$48.02	<u>7A</u>	<u>3I</u>	
King	Laborers	Grinders	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Grout Machine Tender	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Groutmen (pressure)including Post Tension Beams	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Guardrail Erector	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Hazardous Waste Worker (level A)	\$48.02	<u>7A</u>	<u>3I</u>	
King	Laborers	Hazardous Waste Worker (level B)	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Hazardous Waste Worker (level C)	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	High Scaler	\$48.02	<u>7A</u>	<u>3I</u>	
King	Laborers	Jackhammer	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Laserbeam Operator	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Maintenance Person	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Manhole Builder-mudman	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Material Yard Person	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Motorman-dinky Locomotive	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Nozzleman (concrete Pump, Green Cutter When Using Combination Of High Pressure Air & Water On Concrete & Rock, Sandblast, Gunit, Shotcrete, Water Bla	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Pavement Breaker	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Pilot Car	\$39.48	<u>7A</u>	<u>3I</u>	
King	Laborers	Pipe Layer Lead	\$48.02	<u>7A</u>	<u>3I</u>	
King	Laborers	Pipe Layer/tailor	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Pipe Pot Tender	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Pipe Reliner	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Pipe Wrapper	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Pot Tender	\$46.57	<u>7A</u>	<u>3I</u>	

King	Laborers	Powderman	\$48.02	<u>7A</u>	<u>3I</u>	
King	Laborers	Powderman's Helper	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Power Jacks	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Railroad Spike Puller - Power	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Raker - Asphalt	\$48.02	<u>7A</u>	<u>3I</u>	
King	Laborers	Re-timberman	\$48.02	<u>7A</u>	<u>3I</u>	
King	Laborers	Remote Equipment Operator	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Rigger/signal Person	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Rip Rap Person	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Rivet Buster	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Rodder	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Scaffold Erector	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Scale Person	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Sloper (over 20")	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Sloper Sprayer	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Spreader (concrete)	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Stake Hopper	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Stock Piler	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Tamper & Similar Electric, Air & Gas Operated Tools	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Tamper (multiple & Self-propelled)	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Timber Person - Sewer (lagger, Shorer & Cribber)	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Toolroom Person (at Jobsite)	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Topper	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Track Laborer	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Track Liner (power)	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Traffic Control Laborer	\$42.22	<u>7A</u>	<u>3I</u>	<u>8R</u>
King	Laborers	Traffic Control Supervisor	\$42.22	<u>7A</u>	<u>3I</u>	<u>8R</u>
King	Laborers	Truck Spotter	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Tugger Operator	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Tunnel Work-Compressed Air Worker 0-30 psi	\$92.60	<u>7A</u>	<u>3I</u>	<u>8Q</u>
King	Laborers	Tunnel Work-Compressed Air Worker 30.01-44.00 psi	\$97.63	<u>7A</u>	<u>3I</u>	<u>8Q</u>
King	Laborers	Tunnel Work-Compressed Air Worker 44.01-54.00 psi	\$101.31	<u>7A</u>	<u>3I</u>	<u>8Q</u>
King	Laborers	Tunnel Work-Compressed Air Worker 54.01-60.00 psi	\$107.01	<u>7A</u>	<u>3I</u>	<u>8Q</u>
King	Laborers	Tunnel Work-Compressed Air Worker 60.01-64.00 psi	\$109.13	<u>7A</u>	<u>3I</u>	<u>8Q</u>
King	Laborers	Tunnel Work-Compressed Air Worker 64.01-68.00 psi	\$114.23	<u>7A</u>	<u>3I</u>	<u>8Q</u>
King	Laborers	Tunnel Work-Compressed Air Worker 68.01-70.00 psi	\$116.13	<u>7A</u>	<u>3I</u>	<u>8Q</u>
King	Laborers	Tunnel Work-Compressed Air Worker 70.01-72.00 psi	\$118.13	<u>7A</u>	<u>3I</u>	<u>8Q</u>
King	Laborers	Tunnel Work-Compressed Air	\$120.13	<u>7A</u>	<u>3I</u>	<u>8Q</u>

		Worker 72.01-74.00 psi				
King	Laborers	Tunnel Work-Guage and Lock Tender	\$48.12	<u>7A</u>	<u>3I</u>	<u>8Q</u>
King	Laborers	Tunnel Work-Miner	\$48.12	<u>7A</u>	<u>3I</u>	<u>8Q</u>
King	Laborers	Vibrator	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Vinyl Seamer	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers	Watchman	\$35.88	<u>7A</u>	<u>3I</u>	
King	Laborers	Welder	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Well Point Laborer	\$47.44	<u>7A</u>	<u>3I</u>	
King	Laborers	Window Washer/cleaner	\$35.88	<u>7A</u>	<u>3I</u>	
King	Laborers - Underground Sewer & Water	General Laborer & Topman	\$46.57	<u>7A</u>	<u>3I</u>	
King	Laborers - Underground Sewer & Water	Pipe Layer	\$47.44	<u>7A</u>	<u>3I</u>	
King	Landscape Construction	Irrigation Or Lawn Sprinkler Installers	\$13.56		<u>1</u>	
King	Landscape Construction	Landscape Equipment Operators Or Truck Drivers	\$28.17		<u>1</u>	
King	Landscape Construction	Landscaping or Planting Laborers	\$17.87		<u>1</u>	
King	Lathers	Journey Level	\$56.78	<u>5D</u>	<u>1H</u>	
King	Marble Setters	Journey Level	\$55.82	<u>5A</u>	<u>1M</u>	
King	Metal Fabrication (In Shop)	Fitter	\$15.86		<u>1</u>	
King	Metal Fabrication (In Shop)	Laborer	\$11.50		<u>1</u>	
King	Metal Fabrication (In Shop)	Machine Operator	\$13.04		<u>1</u>	
King	Metal Fabrication (In Shop)	Painter	\$11.50		<u>1</u>	
King	Metal Fabrication (In Shop)	Welder	\$15.48		<u>1</u>	
King	Millwright	Journey Level	\$58.68	<u>5D</u>	<u>4C</u>	
King	Modular Buildings	Cabinet Assembly	\$11.56		<u>1</u>	
King	Modular Buildings	Electrician	\$11.56		<u>1</u>	
King	Modular Buildings	Equipment Maintenance	\$11.56		<u>1</u>	
King	Modular Buildings	Plumber	\$11.56		<u>1</u>	
King	Modular Buildings	Production Worker	\$11.50		<u>1</u>	
King	Modular Buildings	Tool Maintenance	\$11.56		<u>1</u>	
King	Modular Buildings	Utility Person	\$11.56		<u>1</u>	
King	Modular Buildings	Welder	\$11.56		<u>1</u>	
King	Painters	Journey Level	\$41.60	<u>6Z</u>	<u>2B</u>	
King	Pile Driver	Crew Tender	\$52.37	<u>5D</u>	<u>4C</u>	
King	Pile Driver	Hyperbaric Worker - Compressed Air Worker 0-30.00 PSI	\$71.35	<u>5D</u>	<u>4C</u>	
King	Pile Driver	Hyperbaric Worker - Compressed Air Worker 30.01 - 44.00 PSI	\$76.35	<u>5D</u>	<u>4C</u>	
King	Pile Driver	Hyperbaric Worker - Compressed Air Worker 44.01 - 54.00 PSI	\$80.35	<u>5D</u>	<u>4C</u>	
King	Pile Driver	Hyperbaric Worker - Compressed Air Worker 54.01 - 60.00 PSI	\$85.35	<u>5D</u>	<u>4C</u>	
King	Pile Driver	Hyperbaric Worker - Compressed Air Worker 60.01 - 64.00 PSI	\$87.85	<u>5D</u>	<u>4C</u>	
King	Pile Driver	Hyperbaric Worker - Compressed Air Worker 64.01 - 68.00 PSI	\$92.85	<u>5D</u>	<u>4C</u>	

King	Pile Driver	Hyperbaric Worker - Compressed Air Worker 68.01 - 70.00 PSI	\$94.85	<u>5D</u>	<u>4C</u>	
King	Pile Driver	Hyperbaric Worker - Compressed Air Worker 70.01 - 72.00 PSI	\$96.85	<u>5D</u>	<u>4C</u>	
King	Pile Driver	Hyperbaric Worker - Compressed Air Worker 72.01 - 74.00 PSI	\$98.85	<u>5D</u>	<u>4C</u>	
King	Pile Driver	Journey Level	\$57.43	<u>5D</u>	<u>4C</u>	
King	Plasterers	Journey Level	\$54.89	<u>7Q</u>	<u>1R</u>	
King	Playground & Park Equipment Installers	Journey Level	\$11.50		<u>1</u>	
King	Plumbers & Pipefitters	Journey Level	\$81.69	<u>6Z</u>	<u>1G</u>	
King	Power Equipment Operators	Asphalt Plant Operators	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Assistant Engineer	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Barrier Machine (zipper)	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Batch Plant Operator, Concrete	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Bobcat	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Brokk - Remote Demolition Equipment	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Brooms	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Bump Cutter	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Cableways	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Chipper	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Compressor	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Concrete Pump: Truck Mount With Boom Attachment Over 42 M	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Concrete Finish Machine -laser Screed	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Concrete Pump - Mounted Or Trailer High Pressure Line Pump, Pump High Pressure.	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Concrete Pump: Truck Mount With Boom Attachment Up To 42m	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Conveyors	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Cranes Friction: 200 tons and over	\$62.33	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Cranes: 20 Tons Through 44 Tons With Attachments	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Cranes: 100 Tons Through 199 Tons, Or 150' Of Boom (Including Jib With Attachments)	\$61.10	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Cranes: 200 tons- 299 tons, or 250' of boom including jib with attachments	\$61.72	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Cranes: 300 tons and over or 300' of boom including jib with attachments	\$62.33	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Cranes: 45 Tons Through 99 Tons, Under 150' Of Boom (including Jib With Attachments)	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Cranes: A-frame - 10 Tons And Under	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>

King	Power Equipment Operators	Cranes: Friction cranes through 199 tons	\$61.72	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Cranes: Through 19 Tons With Attachments A-frame Over 10 Tons	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Crusher	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Deck Engineer/deck Winches (power)	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Derricks, On Building Work	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Dozers D-9 & Under	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Drill Oilers: Auger Type, Truck Or Crane Mount	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Drilling Machine	\$61.10	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Elevator And Man-lift: Permanent And Shaft Type	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Finishing Machine, Bidwell And Gamaco & Similar Equipment	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Forklift: 3000 Lbs And Over With Attachments	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Forklifts: Under 3000 Lbs. With Attachments	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Grade Engineer: Using Blue Prints, Cut Sheets, Etc	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Gradechecker/stakeman	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Guardrail Punch	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Hard Tail End Dump Articulating Off- Road Equipment 45 Yards. & Over	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Hard Tail End Dump Articulating Off-road Equipment Under 45 Yards	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Horizontal/directional Drill Locator	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Horizontal/directional Drill Operator	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Hydralifts/boom Trucks Over 10 Tons	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Hydralifts/boom Trucks, 10 Tons And Under	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Loader, Overhead 8 Yards. & Over	\$61.10	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Loader, Overhead, 6 Yards. But Not Including 8 Yards	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Loaders, Overhead Under 6 Yards	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Loaders, Plant Feed	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Loaders: Elevating Type Belt	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Locomotives, All	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Material Transfer Device	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Mechanics, All (leadmen - \$0.50 Per Hour Over Mechanic)	\$61.10	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Motor Patrol Graders	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Mucking Machine, Mole, Tunnel	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>

		Drill, Boring, Road Header And/or Shield				
King	Power Equipment Operators	Oil Distributors, Blower Distribution & Mulch Seeding Operator	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Outside Hoists (elevators And Manlifts), Air Tuggers, strato	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Overhead, Bridge Type Crane: 20 Tons Through 44 Tons	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Overhead, Bridge Type: 100 Tons And Over	\$61.10	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Overhead, Bridge Type: 45 Tons Through 99 Tons	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Pavement Breaker	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Pile Driver (other Than Crane Mount)	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Plant Oiler - Asphalt, Crusher	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Posthole Digger, Mechanical	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Power Plant	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Pumps - Water	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Quad 9, Hd 41, D10 And Over	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Quick Tower - No Cab, Under 100 Feet In Height Based To Boom	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Remote Control Operator On Rubber Tired Earth Moving Equipment	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Rigger And Bellman	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Rigger/Signal Person, Bellman (Certified)	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Rollagon	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Roller, Other Than Plant Mix	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Roller, Plant Mix Or Multi-lift Materials	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Roto-mill, Roto-grinder	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Saws - Concrete	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Scraper, Self Propelled Under 45 Yards	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Scrapers - Concrete & Carry All	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Scrapers, Self-propelled: 45 Yards And Over	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Service Engineers - Equipment	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Shotcrete/gunite Equipment	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Shovel , Excavator, Backhoe, Tractors Under 15 Metric Tons.	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Shovel, Excavator, Backhoe: Over 30 Metric Tons To 50 Metric Tons	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Shovel, Excavator, Backhoes, Tractors: 15 To 30 Metric Tons	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Shovel, Excavator, Backhoes: Over 50 Metric Tons To 90 Metric Tons	\$61.10	<u>7A</u>	<u>3C</u>	<u>8P</u>

King	Power Equipment Operators	Shovel, Excavator, Backhoes: Over 90 Metric Tons	\$61.72	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Slipform Pavers	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Spreader, Topsider & Screedman	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Subgrader Trimmer	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Tower Bucket Elevators	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Tower Crane Up To 175' In Height Base To Boom	\$61.10	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Tower Crane: over 175' through 250' in height, base to boom	\$61.72	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Tower Cranes: over 250' in height from base to boom	\$62.33	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Transporters, All Track Or Truck Type	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Trenching Machines	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Truck Crane Oiler/driver - 100 Tons And Over	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Truck Crane Oiler/driver Under 100 Tons	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Truck Mount Portable Conveyor	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Welder	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Wheel Tractors, Farmall Type	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators	Yo Yo Pay Dozer	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Asphalt Plant Operators	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Assistant Engineer	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Barrier Machine (zipper)	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Batch Plant Operator, Concrete	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Bobcat	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Brokk - Remote Demolition Equipment	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Brooms	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Bump Cutter	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Cableways	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Chipper	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Compressor	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Concrete Pump: Truck Mount With Boom Attachment Over 42 M	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Concrete Finish Machine -laser Screed	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Concrete Pump - Mounted Or Trailer High Pressure Line Pump, Pump High Pressure.	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>

King	Power Equipment Operators-Underground Sewer & Water	Concrete Pump: Truck Mount With Boom Attachment Up To 42m	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Conveyors	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Cranes Friction: 200 tons and over	\$62.33	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Cranes: 20 Tons Through 44 Tons With Attachments	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Cranes: 100 Tons Through 199 Tons, Or 150' Of Boom (Including Jib With Attachments)	\$61.10	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Cranes: 200 tons- 299 tons, or 250' of boom including jib with attachments	\$61.72	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Cranes: 300 tons and over or 300' of boom including jib with attachments	\$62.33	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Cranes: 45 Tons Through 99 Tons, Under 150' Of Boom (including Jib With Attachments)	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Cranes: A-frame - 10 Tons And Under	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Cranes: Friction cranes through 199 tons	\$61.72	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Cranes: Through 19 Tons With Attachments A-frame Over 10 Tons	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Crusher	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Deck Engineer/deck Winches (power)	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Derricks, On Building Work	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Dozers D-9 & Under	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Drill Oilers: Auger Type, Truck Or Crane Mount	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Drilling Machine	\$61.10	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Elevator And Man-lift: Permanent And Shaft Type	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Finishing Machine, Bidwell And Gamaco & Similar Equipment	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Forklift: 3000 Lbs And Over With Attachments	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Forklifts: Under 3000 Lbs. With Attachments	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Grade Engineer: Using Blue Prints, Cut Sheets, Etc	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Gradechecker/stakeman	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-	Guardrail Punch	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>

	Underground Sewer & Water					
King	Power Equipment Operators- Underground Sewer & Water	Hard Tail End Dump Articulating Off- Road Equipment 45 Yards. & Over	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Hard Tail End Dump Articulating Off-road Equipment Under 45 Yards	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Horizontal/directional Drill Locator	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Horizontal/directional Drill Operator	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Hydralifts/boom Trucks Over 10 Tons	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Hydralifts/boom Trucks, 10 Tons And Under	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Loader, Overhead 8 Yards. & Over	\$61.10	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Loader, Overhead, 6 Yards. But Not Including 8 Yards	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Loaders, Overhead Under 6 Yards	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Loaders, Plant Feed	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Loaders: Elevating Type Belt	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Locomotives, All	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Material Transfer Device	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Mechanics, All (leadmen - \$0.50 Per Hour Over Mechanic)	\$61.10	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Motor Patrol Graders	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Mucking Machine, Mole, Tunnel Drill, Boring, Road Header And/or Shield	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Oil Distributors, Blower Distribution & Mulch Seeding Operator	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Outside Hoists (elevators And Manlifts), Air Tuggers, strato	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Overhead, Bridge Type Crane: 20 Tons Through 44 Tons	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Overhead, Bridge Type: 100 Tons And Over	\$61.10	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Overhead, Bridge Type: 45 Tons Through 99 Tons	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Pavement Breaker	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Pile Driver (other Than Crane Mount)	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators- Underground Sewer & Water	Plant Oiler - Asphalt, Crusher	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>

King	Power Equipment Operators-Underground Sewer & Water	Posthole Digger, Mechanical	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Power Plant	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Pumps - Water	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Quad 9, Hd 41, D10 And Over	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Quick Tower - No Cab, Under 100 Feet In Height Based To Boom	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Remote Control Operator On Rubber Tired Earth Moving Equipment	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Rigger And Bellman	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Rigger/Signal Person, Bellman (Certified)	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Rollagon	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Roller, Other Than Plant Mix	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Roller, Plant Mix Or Multi-lift Materials	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Roto-mill, Roto-grinder	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Saws - Concrete	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Scraper, Self Propelled Under 45 Yards	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Scrapers - Concrete & Carry All	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Scrapers, Self-propelled: 45 Yards And Over	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Service Engineers - Equipment	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Shotcrete/gunite Equipment	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Shovel , Excavator, Backhoe, Tractors Under 15 Metric Tons.	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Shovel, Excavator, Backhoe: Over 30 Metric Tons To 50 Metric Tons	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Shovel, Excavator, Backhoes, Tractors: 15 To 30 Metric Tons	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Shovel, Excavator, Backhoes: Over 50 Metric Tons To 90 Metric Tons	\$61.10	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Shovel, Excavator, Backhoes: Over 90 Metric Tons	\$61.72	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Slipform Pavers	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Spreader, Topsider & Screedman	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-	Subgrader Trimmer	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>

	Underground Sewer & Water					
King	Power Equipment Operators-Underground Sewer & Water	Tower Bucket Elevators	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Tower Crane Up To 175' In Height Base To Boom	\$61.10	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Tower Crane: over 175' through 250' in height, base to boom	\$61.72	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Tower Cranes: over 250' in height from base to boom	\$62.33	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Transporters, All Track Or Truck Type	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Trenching Machines	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Truck Crane Oiler/driver - 100 Tons And Over	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Truck Crane Oiler/driver Under 100 Tons	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Truck Mount Portable Conveyor	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Welder	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Wheel Tractors, Farmall Type	\$56.90	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Equipment Operators-Underground Sewer & Water	Yo Yo Pay Dozer	\$59.96	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Power Line Clearance Tree Trimmers	Journey Level In Charge	\$50.02	<u>5A</u>	<u>4A</u>	
King	Power Line Clearance Tree Trimmers	Spray Person	\$47.43	<u>5A</u>	<u>4A</u>	
King	Power Line Clearance Tree Trimmers	Tree Equipment Operator	\$50.02	<u>5A</u>	<u>4A</u>	
King	Power Line Clearance Tree Trimmers	Tree Trimmer	\$44.64	<u>5A</u>	<u>4A</u>	
King	Power Line Clearance Tree Trimmers	Tree Trimmer Groundperson	\$33.67	<u>5A</u>	<u>4A</u>	
King	Refrigeration & Air Conditioning Mechanics	Journey Level	\$77.86	<u>6Z</u>	<u>1G</u>	
King	Residential Brick Mason	Journey Level	\$55.82	<u>5A</u>	<u>1M</u>	
King	Residential Carpenters	Journey Level	\$28.20		<u>1</u>	
King	Residential Cement Masons	Journey Level	\$22.64		<u>1</u>	
King	Residential Drywall Applicators	Journey Level	\$42.86	<u>5D</u>	<u>4C</u>	
King	Residential Drywall Tapers	Journey Level	\$57.43	<u>5P</u>	<u>1E</u>	
King	Residential Electricians	Journey Level	\$30.44		<u>1</u>	
King	Residential Glaziers	Journey Level	\$41.05	<u>7L</u>	<u>1H</u>	
King	Residential Insulation Applicators	Journey Level	\$26.28		<u>1</u>	
King	Residential Laborers	Journey Level	\$23.03		<u>1</u>	
King	Residential Marble Setters	Journey Level	\$24.09		<u>1</u>	
King	Residential Painters	Journey Level	\$24.46		<u>1</u>	
King	Residential Plumbers & Pipefitters	Journey Level	\$34.69		<u>1</u>	
King	Residential Refrigeration & Air Conditioning Mechanics	Journey Level	\$77.86	<u>6Z</u>	<u>1G</u>	

King	Residential Sheet Metal Workers	Journey Level (Field or Shop)	\$44.56	<u>7F</u>	<u>1R</u>	
King	Residential Soft Floor Layers	Journey Level	\$47.61	<u>5A</u>	<u>3J</u>	
King	Residential Sprinkler Fitters (Fire Protection)	Journey Level	\$46.58	<u>5C</u>	<u>2R</u>	
King	Residential Stone Masons	Journey Level	\$55.82	<u>5A</u>	<u>1M</u>	
King	Residential Terrazzo Workers	Journey Level	\$51.36	<u>5A</u>	<u>1M</u>	
King	Residential Terrazzo/Tile Finishers	Journey Level	\$21.46		<u>1</u>	
King	Residential Tile Setters	Journey Level	\$20.00		<u>1</u>	
King	Roofers	Journey Level	\$51.02	<u>5A</u>	<u>3H</u>	
King	Roofers	Using Irritable Bituminous Materials	\$54.02	<u>5A</u>	<u>3H</u>	
King	Sheet Metal Workers	Journey Level (Field or Shop)	\$78.17	<u>7F</u>	<u>1E</u>	
King	Shipbuilding & Ship Repair	Boilermaker	\$43.31	<u>7M</u>	<u>1H</u>	
King	Shipbuilding & Ship Repair	Carpenter	\$41.06	<u>7T</u>	<u>2B</u>	
King	Shipbuilding & Ship Repair	Electrician	\$42.07	<u>7T</u>	<u>4B</u>	
King	Shipbuilding & Ship Repair	Heat & Frost Insulator	\$67.93	<u>5J</u>	<u>4H</u>	
King	Shipbuilding & Ship Repair	Laborer	\$41.99	<u>7T</u>	<u>4B</u>	
King	Shipbuilding & Ship Repair	Machinist	\$42.00	<u>7T</u>	<u>4B</u>	
King	Shipbuilding & Ship Repair	Operator	\$41.95	<u>7T</u>	<u>4B</u>	
King	Shipbuilding & Ship Repair	Painter	\$42.00	<u>7T</u>	<u>4B</u>	
King	Shipbuilding & Ship Repair	Pipefitter	\$41.96	<u>7T</u>	<u>4B</u>	
King	Shipbuilding & Ship Repair	Rigger	\$42.05	<u>7T</u>	<u>4B</u>	
King	Shipbuilding & Ship Repair	Sheet Metal	\$41.98	<u>7T</u>	<u>4B</u>	
King	Shipbuilding & Ship Repair	Shipfitter	\$42.05	<u>7T</u>	<u>4B</u>	
King	Shipbuilding & Ship Repair	Trucker	\$41.91	<u>7T</u>	<u>4B</u>	
King	Shipbuilding & Ship Repair	Warehouse	\$41.94	<u>7T</u>	<u>4B</u>	
King	Shipbuilding & Ship Repair	Welder/Burner	\$42.05	<u>7T</u>	<u>4B</u>	
King	Sign Makers & Installers (Electrical)	Sign Installer	\$22.92		<u>1</u>	
King	Sign Makers & Installers (Electrical)	Sign Maker	\$21.36		<u>1</u>	
King	Sign Makers & Installers (Non-Electrical)	Sign Installer	\$27.28		<u>1</u>	
King	Sign Makers & Installers (Non-Electrical)	Sign Maker	\$33.25		<u>1</u>	
King	Soft Floor Layers	Journey Level	\$47.61	<u>5A</u>	<u>3J</u>	
King	Solar Controls For Windows	Journey Level	\$12.44		<u>1</u>	
King	Sprinkler Fitters (Fire Protection)	Journey Level	\$75.64	<u>5C</u>	<u>1X</u>	
King	Stage Rigging Mechanics (Non Structural)	Journey Level	\$13.23		<u>1</u>	
King	Stone Masons	Journey Level	\$55.82	<u>5A</u>	<u>1M</u>	
King	Street And Parking Lot Sweeper Workers	Journey Level	\$19.09		<u>1</u>	
King	Surveyors	Assistant Construction Site Surveyor	\$59.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Surveyors	Chainman	\$58.93	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Surveyors	Construction Site Surveyor	\$60.49	<u>7A</u>	<u>3C</u>	<u>8P</u>
King	Telecommunication Technicians	Journey Level	\$22.76		<u>1</u>	
King	Telephone Line Construction -	Cable Splicer	\$40.52	<u>5A</u>	<u>2B</u>	

	Outside					
King	Telephone Line Construction - Outside	Hole Digger/Ground Person	\$22.78	<u>5A</u>	<u>2B</u>	
King	Telephone Line Construction - Outside	Installer (Repairer)	\$38.87	<u>5A</u>	<u>2B</u>	
King	Telephone Line Construction - Outside	Special Aparatus Installer I	\$40.52	<u>5A</u>	<u>2B</u>	
King	Telephone Line Construction - Outside	Special Apparatus Installer II	\$39.73	<u>5A</u>	<u>2B</u>	
King	Telephone Line Construction - Outside	Telephone Equipment Operator (Heavy)	\$40.52	<u>5A</u>	<u>2B</u>	
King	Telephone Line Construction - Outside	Telephone Equipment Operator (Light)	\$37.74	<u>5A</u>	<u>2B</u>	
King	Telephone Line Construction - Outside	Telephone Lineperson	\$37.74	<u>5A</u>	<u>2B</u>	
King	Telephone Line Construction - Outside	Television Groundperson	\$21.60	<u>5A</u>	<u>2B</u>	
King	Telephone Line Construction - Outside	Television Lineperson/Installer	\$28.68	<u>5A</u>	<u>2B</u>	
King	Telephone Line Construction - Outside	Television System Technician	\$34.10	<u>5A</u>	<u>2B</u>	
King	Telephone Line Construction - Outside	Television Technician	\$30.69	<u>5A</u>	<u>2B</u>	
King	Telephone Line Construction - Outside	Tree Trimmer	\$37.74	<u>5A</u>	<u>2B</u>	
King	Terrazzo Workers	Journey Level	\$51.36	<u>5A</u>	<u>1M</u>	
King	Tile Setters	Journey Level	\$51.36	<u>5A</u>	<u>1M</u>	
King	Tile, Marble & Terrazzo Finishers	Finisher	\$42.19	<u>5A</u>	<u>1B</u>	
King	Traffic Control Stripers	Journey Level	\$45.43	<u>7A</u>	<u>1K</u>	
King	Truck Drivers	Asphalt Mix Over 16 Yards (W. WA-Joint Council 28)	\$52.70	<u>5D</u>	<u>3A</u>	<u>8L</u>
King	Truck Drivers	Asphalt Mix To 16 Yards (W. WA-Joint Council 28)	\$51.86	<u>5D</u>	<u>3A</u>	<u>8L</u>
King	Truck Drivers	Dump Truck & Trailer	\$52.70	<u>5D</u>	<u>3A</u>	<u>8L</u>
King	Truck Drivers	Dump Truck (W. WA-Joint Council 28)	\$51.86	<u>5D</u>	<u>3A</u>	<u>8L</u>
King	Truck Drivers	Other Trucks (W. WA-Joint Council 28)	\$52.70	<u>5D</u>	<u>3A</u>	<u>8L</u>
King	Truck Drivers	Transit Mixer	\$43.23		<u>1</u>	
King	Well Drillers & Irrigation Pump Installers	Irrigation Pump Installer	\$17.71		<u>1</u>	
King	Well Drillers & Irrigation Pump Installers	Oiler	\$12.97		<u>1</u>	
King	Well Drillers & Irrigation Pump Installers	Well Driller	\$18.00		<u>1</u>	

APPENDIX B

Standard Plans and Details

APPENDIX B

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City of Sammamish

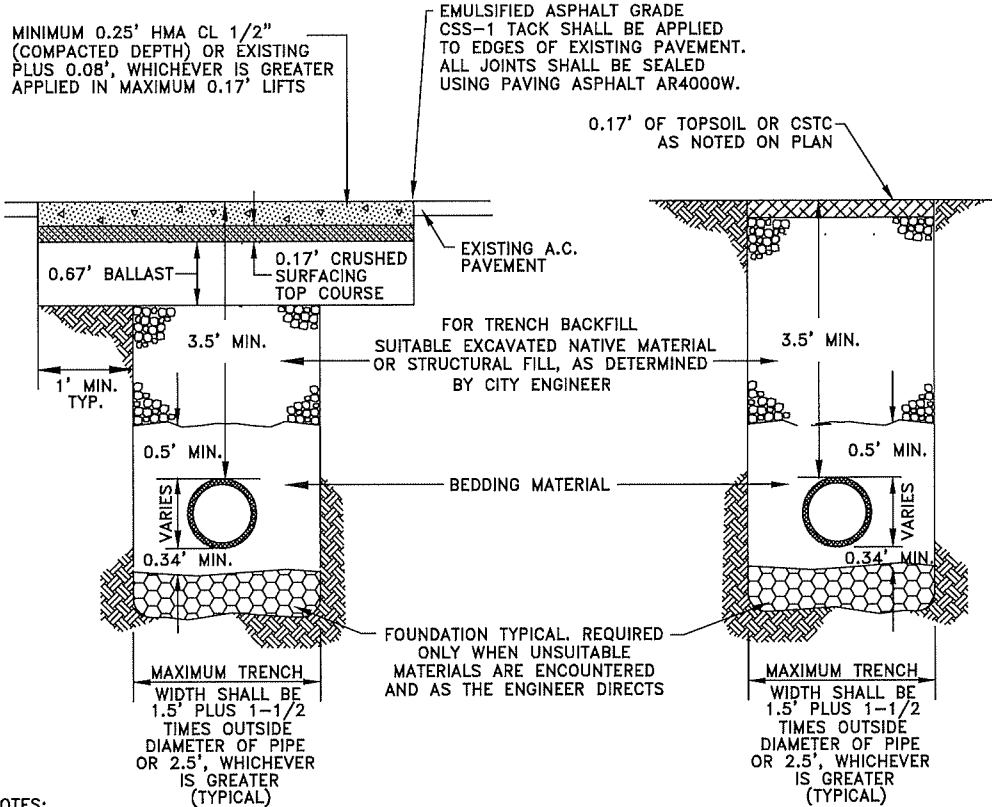
City of Sammamish	Construction Stage
FIG02-05a	Trench – Pavement Restoration Detail
FIG02-05b	HMA Pavement Overlay for Trench Repair
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FIG09-03	Single-Lane Closure for Multi-Lane Roadways
FIG09-05	Shoulder Closure – Low Speed (40 MPH or Less)
FIG09-14	Single-Lane Closure with Shift

WSDOT

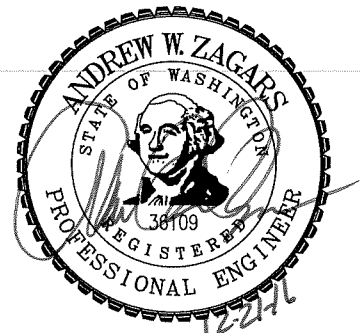
Standard Plan C-1b (2)	Beam Guardrail Posts and Blocks
Standard Plan C-7a	Thrie Beam End Sections
Standard Plan C-7	Beam Guardrail End Sections
Standard Plan C-20.10-04	Beam Guardrail Type 31
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Standard Plan I-30.16-00	High Visibility Silt Fence with Backup Support
Standard Plan I-30.20-00	Erosion Control at Culvert Ends
Standard Plan I-30.30-01	Wattle Installation on Slope
Standard Plan I-30.40-01	Compost Sock
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Sammamish Plateau Water and Sewer District

Standard Water Details WD-1	1" Service Line Water Service Notes and Meter Box Requirements
Standard Water Details WD-2	¾" and 1" Meter Setter
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Standard Sewer Details SD-4	Pressure Line Connection Concrete Encasement for Sanitary Sewers Sanitary Forcemain Cleanout Type II
Standard Sewer Details SD-7	Sanitary Sewer Trench Section Forcemain Tracer Wire Locate Station



- NOTES:
1. DIMENSIONS SHOWN ARE MINIMUM; GREATER THICKNESS MAY BE REQUIRED BY CITY ENGINEER.
 2. ALL MATERIALS EXCEPT A.C.P. AND BEDDING MATERIAL SHALL BE COMPACTED IN 6-INCH MAXIMUM LIFTS TO 95% DENSITY.
 3. BEDDING SHALL CONFORM TO SECTION 9-03.16 OF STANDARD SPECIFICATIONS.
 4. COMPACTION: BEDDING SHALL BE COMPACTED TO 95% MAX. AS DETERMINED BY ASTM D1557. BACKFILL SHALL BE COMPACTED TO 85% IN UNPAVED AREA, AND 95% IN PAVED OR SHOULDER AREAS AS DETERMINED BY ASTM D1557.
 5. ALL MATERIALS, WORKMANSHIP, AND INSTALLATION SHALL BE IN CONFORMANCE WITH THE LATEST VERSION OF WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION.
 6. KEEP TRENCH BOTTOM COMPACTED WITH UNIFORM GRADE. A BELL JOINT SHALL BE REQUIRED AT EACH JOINT FOR PROPER SUPPORT. NO TEMPORARY SUPPORTS, I.E. BLOCKS, WILL BE ALLOWED TO SUPPORT PIPE. TRENCH BOTTOM SHALL BE TO GRADE PRIOR TO PIPE INSTALLATION.

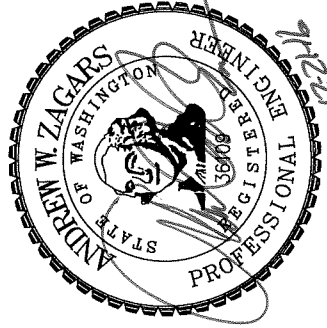


CITY OF SAMMAMISH DEPARTMENT OF PUBLIC WORKS			
TRENCH-PAVEMENT RESTORATION DETAIL			
APPROVED BY CITY ENGINEER _____		DATE _____	
DWN XXX	CKD XXX	DATE AUG-XX-2015	FILE FIG02-05a

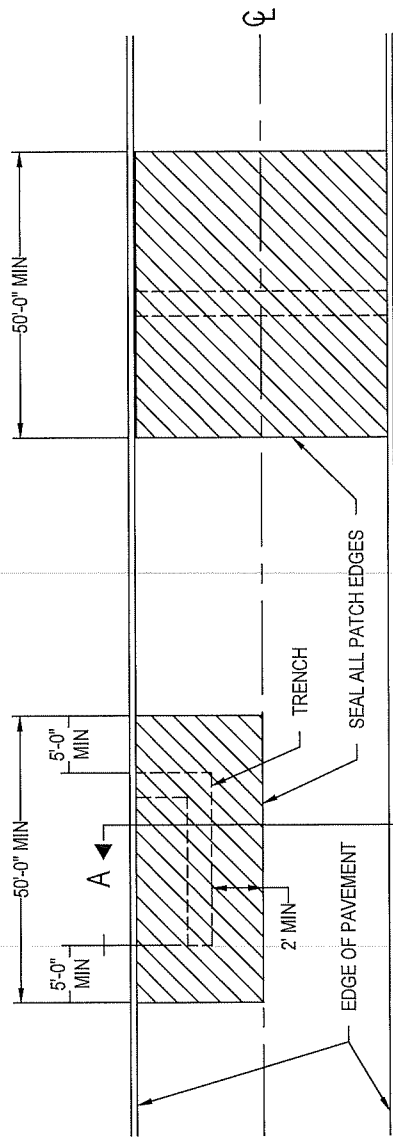
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NOTES:

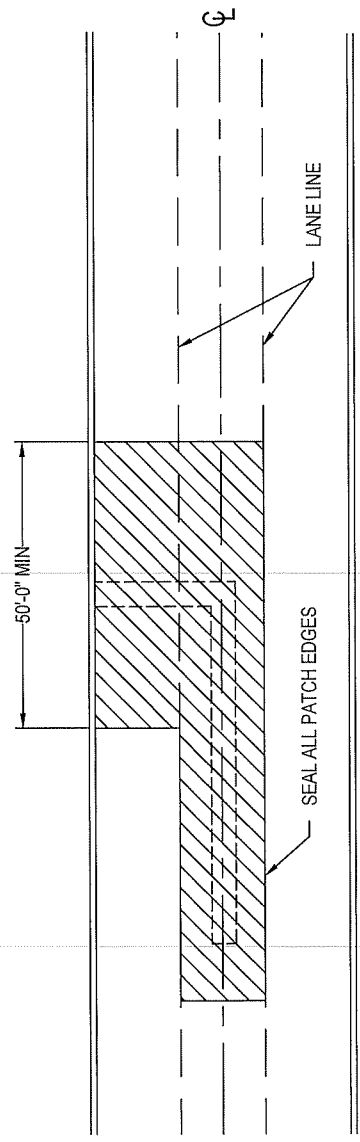
1. THIS DETAIL APPLIES TO ALL PAVEMENT CUTS.
2. DIMENSIONS SHOWN ARE MINIMUM. LIMITS MAY BE INCREASED TO MATCH NEARBY PAVING LIMITS OR OTHER PATCHES.
3. OVERLAY LIMITS MAY BE REDUCED BY CITY ON PAVEMENT IN FAIR CONDITION OR WORSE. SEE PAVEMENT CONDITION MAP FOR LOCATIONS.
4. REPAIR PAVEMENT PER WSDOT STANDARD SPECIFICATIONS SECTION 5-04.
5. HMA SHALL BE PLACED BY PAVERS MEETING THE REQUIREMENTS OF SECTION 5-04.3(3). ROLLERS SHALL MEET THE REQUIREMENTS OF SECTION 5-04.3(4)
6. LOWER ALL UTILITY CASTING PRIOR TO OVERLAY. ADJUST UTILITY CASTINGS TO FINISH GRADE AND RESTORE CHANNELIZATION AND LOOP DETECTORS.



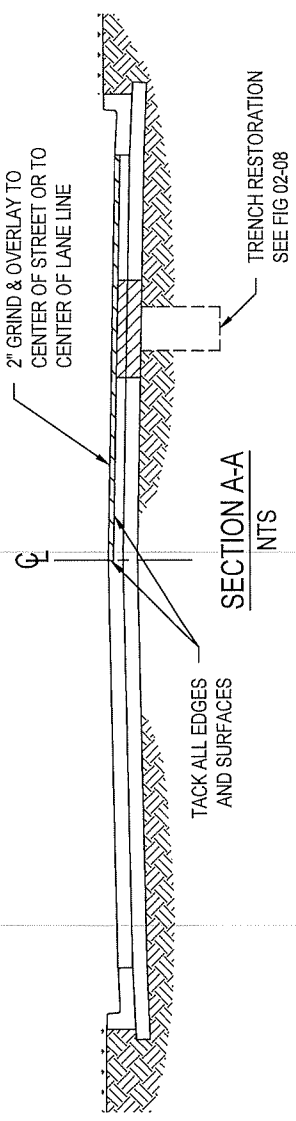
CITY OF SAMMAMISH DEPARTMENT OF PUBLIC WORKS			
HMA PAVEMENT OVERLAY FOR TRENCH REPAIR			
APPROVED BY CITY ENGINEER	DATE	FILE	DATE
DWN JG	AUG-XX-2015	FIG02-05b	REV. NO. X



PLAN VIEW
NTS

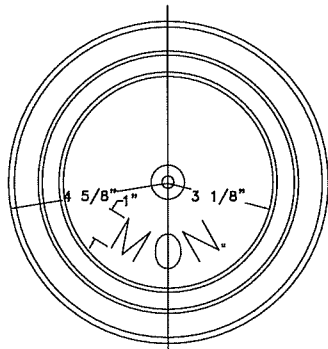


PLAN VIEW
NTS

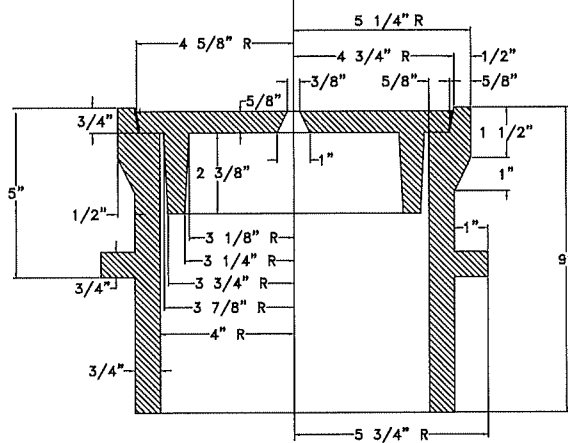


SECTION A-A
NTS

REV

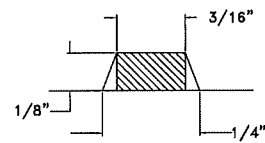


PLAN OF COVER

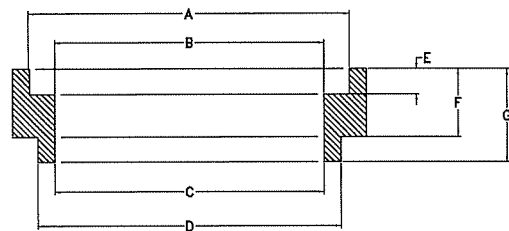


PLAN

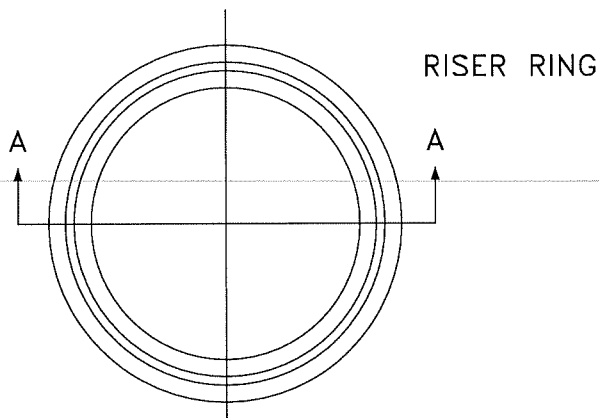
SECTION



SECTION OF LETTER



SECTION A-A



RISER RING



SIZE			
DIM	1-1/2"	2"	3"
A	10-1/2"	10-1/2"	10-1/2"
B	9-1/2"	9-1/2"	9-1/2"
C	8"	8"	8"
D	9"	9"	9"
E	3/4"	3/4"	3/4"
F	1-1/2"	2"	3"
G	2-1/4"	2-3/4"	3-3/4"

REV

NOTES:
 THE CASTINGS SHALL BE GRAY-IRON CASTINGS, ASTM DESIGNATION A 48, CLASS 40. THE COVER AND SEAT SHALL BE MACHINED SO AS TO HAVE PERFECT CONTACT AROUND THE ENTIRE CIRCUMFERENCE AND FULL WIDTH OF BEARING SURFACE.
 WHEN THE MONUMENT CASE AND COVER ARE PLACED IN CEMENT CONCRETE PAVEMENT THE CONCRETE BASE WILL BE NECESSARY.

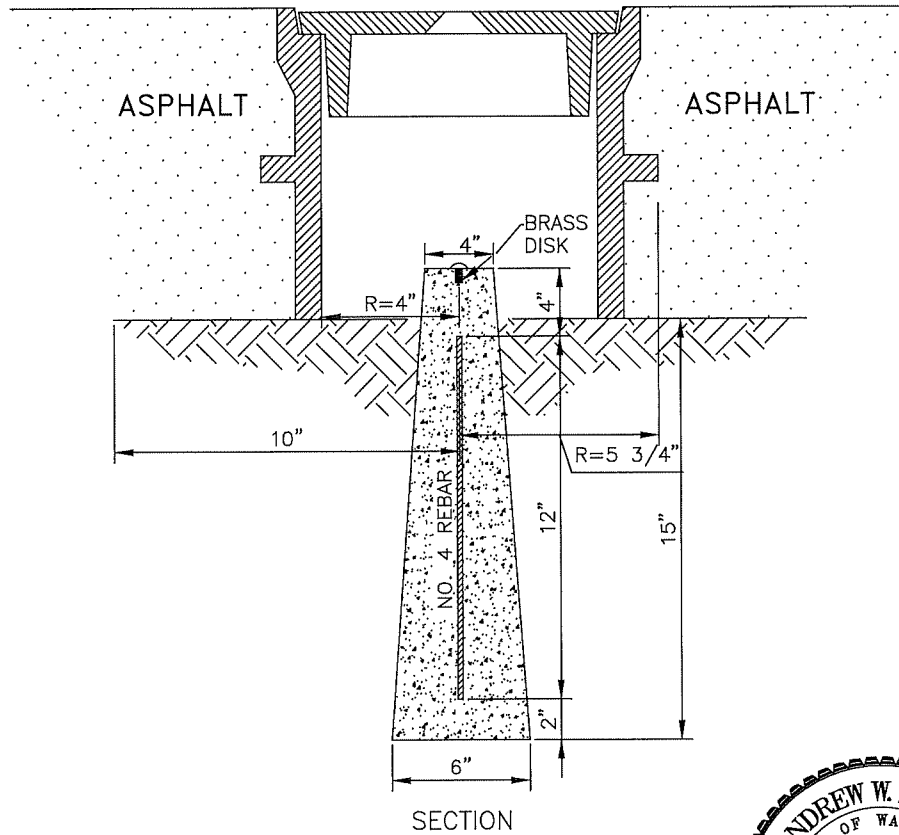
APPROXIMATE WEIGHTS:
 CASE 60 LBS.
 COVER 19 LBS.
 TOTAL 79 LBS.

CITY OF SAMMAMISH
 DEPARTMENT OF PUBLIC WORKS

MONUMENT CASE AND COVER WITH RISER

APPROVED BY _____ DATE _____
 CITY ENGINEER

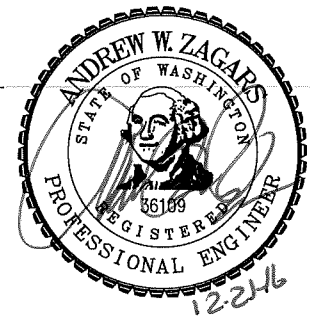
DWN XXX CKD XXX DATE AUG-XX-2015 FILE FIG02-11a



SECTION

NOTES

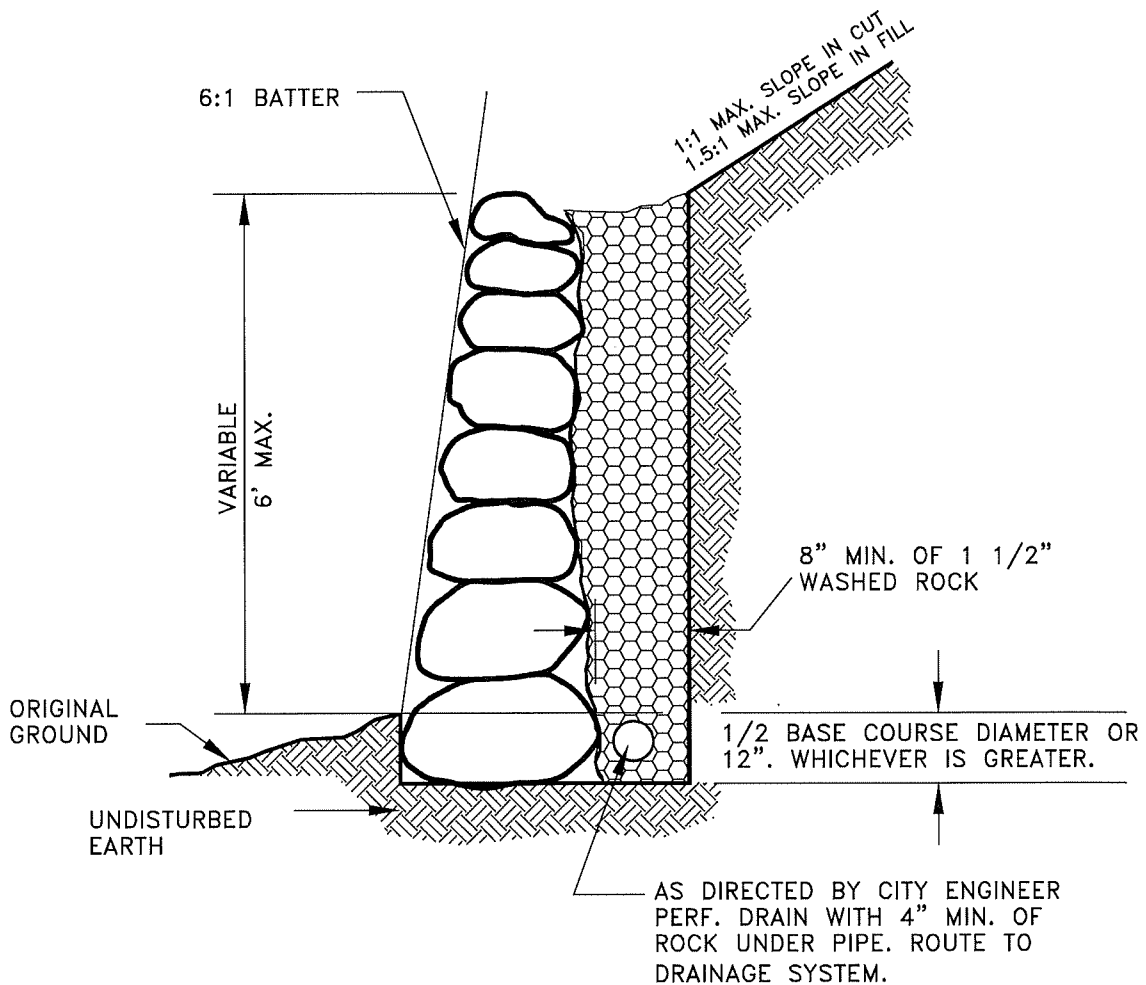
1. ASPHALT SHOULD BE PLACED IN LIFTS NO LARGER THAN 4".
2. MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE CASTING AT 28 DAYS - 3000#.



CITY OF SAMMAMISH DEPARTMENT OF PUBLIC WORKS			
MONUMENT CASE AND COVER			
APPROVED BY CITY ENGINEER _____		DATE _____	
DWN XXX	CKD XXX	DATE AUG-XX-2015	FILE FIG02-11b

REV

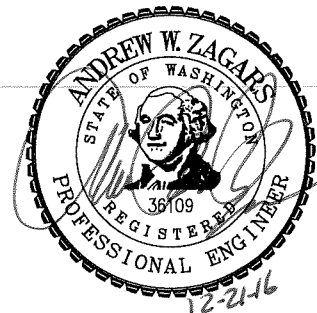
REV. NO. X



GENERAL NOTES:

1. Rockeries higher than 5' shall be constructed of rocks of graduated sizes from 5-man to 2-man from bottom to top. Rockeries of 5' or lower shall be constructed of 3-man to 2-man from bottom to top. Rock size categories shall include:
 - Two-man rocks (300 to 600 pounds), 13 inches in least dimension;
 - Three-man rocks (800 to 1200 pounds), 16 inches in least dimension;
 - Four-man rocks (1500 to 2200 pounds), 18 inches in least dimension;
 - Five-man rocks (2400 to 3400 pounds), 24 inches in least dimension.
2. The rockery shall be installed with a smooth face.
3. The long dimension of the rocks shall extend into the earth to provide maximum stability.
4. The rock shall be placed so as to lock into two rocks in the lower tier.
5. Call for inspection prior to base course being placed (for verification of rockery height, foundation material and rock size).
6. Design varying from those indicated shall carry the seal of a civil or geotechnical engineer experienced in soil mechanics.

AS DIRECTED BY CITY ENGINEER
 PERF. DRAIN WITH 4" MIN. OF
 ROCK UNDER PIPE. ROUTE TO
 DRAINAGE SYSTEM.

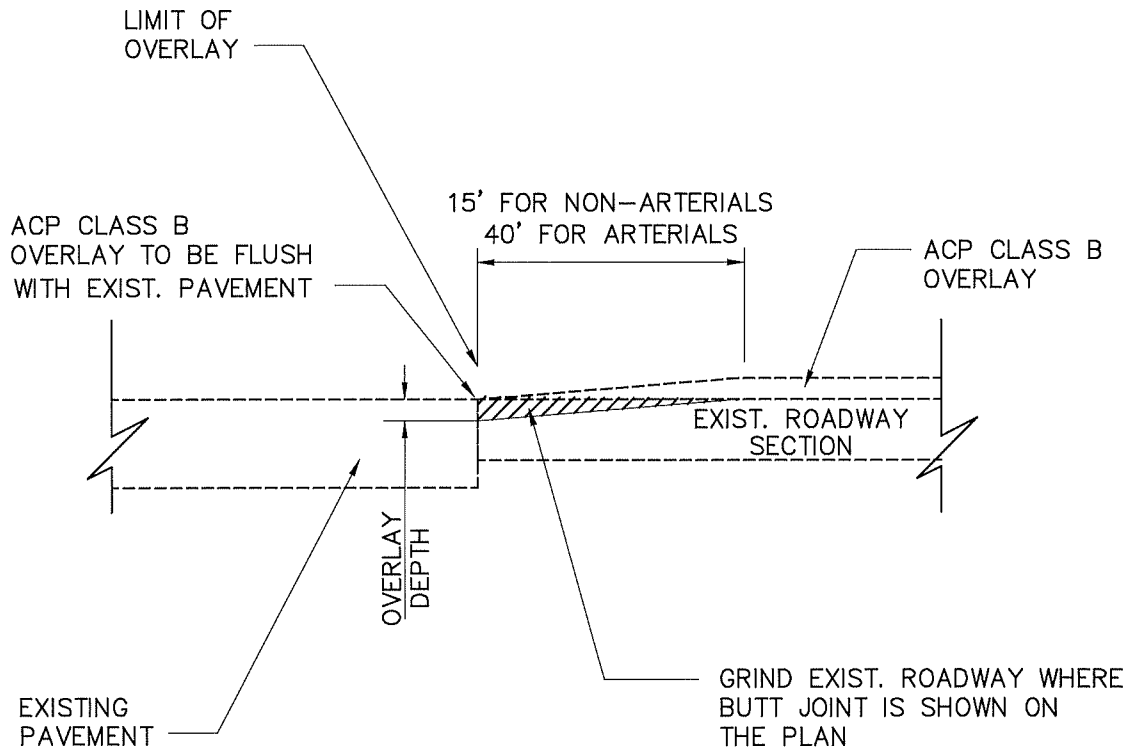


CITY OF SAMMAMISH
 DEPARTMENT OF PUBLIC WORKS

ROCK RETAINING WALL

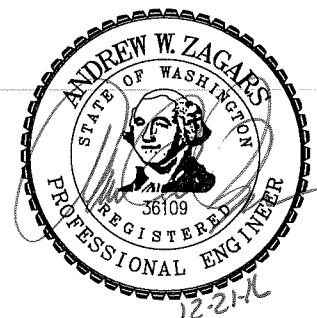
APPROVED BY CITY ENGINEER _____		DATE _____	
DWN XXX	CKD XXX	DATE AUG-XX-2015	FILE FIG02-15

REV



NOTES:

1. EMULSIFIED ASPHALT GRADE CSS-1. TACK SHALL BE APPLIED TO EDGES OF EXISTING PAVEMENT. ALL JOINTS SHALL BE SEALED USING PAVING ASPHALT AR4000W.



CITY OF SAMMAMISH
DEPARTMENT OF PUBLIC WORKS

**BUTT JOINT
DETAIL**

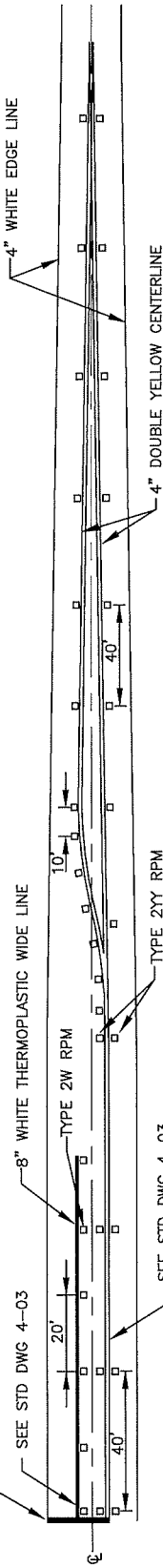
APPROVED BY _____ DATE _____
CITY ENGINEER

REV

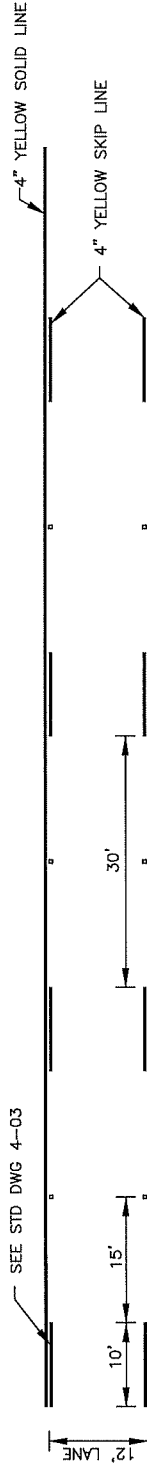
DWN XXX	CKD XXX	DATE AUG-XX-2015	FILE FIG02-23
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REV. NO. X

16" THERMOPLASTIC STOP LINE
(FOR STOP-CONTROLLED OR
SIGNAL-CONTROLLED
INTERSECTIONS ONLY)



LEFT TURN LANE AND MEDIAN



TWO-WAY LEFT TURN LANE

TYPE 2YY RPM



CITY OF SAMMAMISH
DEPARTMENT OF PUBLIC WORKS

**CHANNELIZATION - LEFT TURN
LANES**

APPROVED BY
CITY ENGINEER
DWN XXX

DATE

AUG-XX-2015

CKD

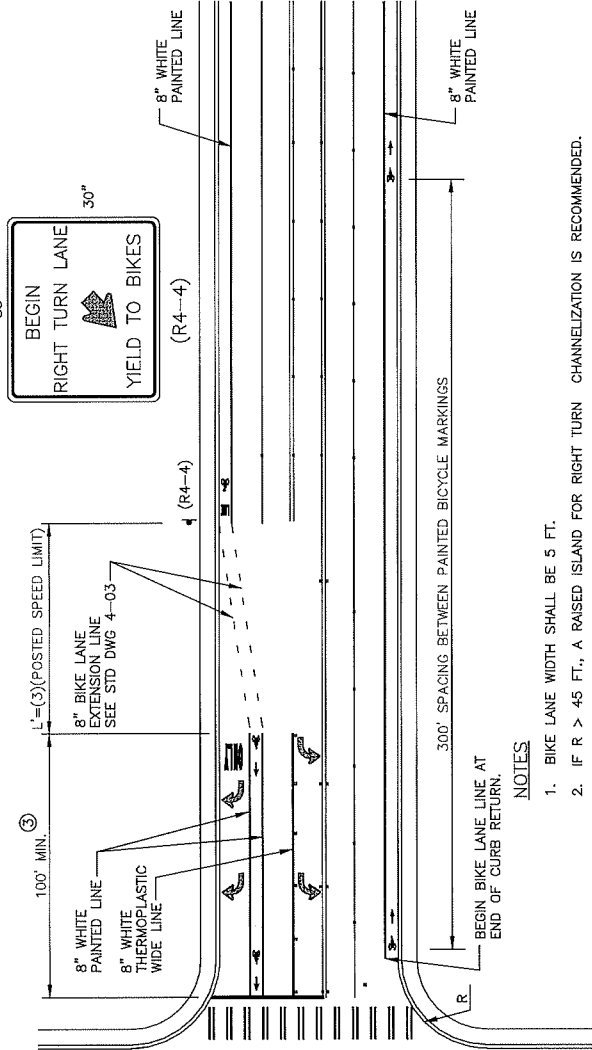
XXX

FILE

FIG04-01

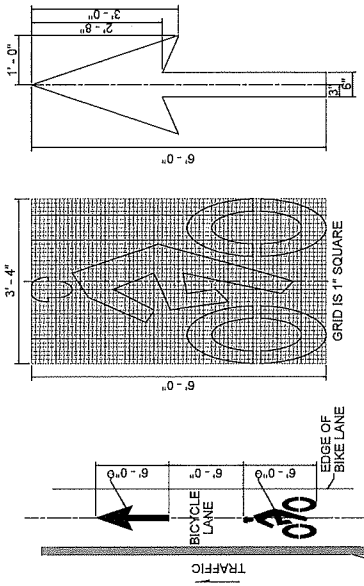
REV

REV. NO. X



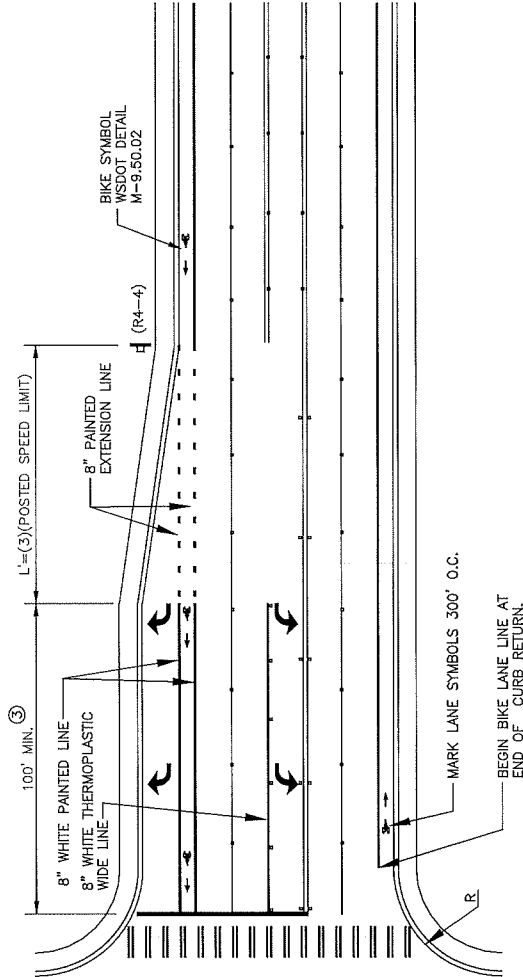
NOTES

1. BIKE LANE WIDTH SHALL BE 5 FT.
2. IF $R > 45$ FT., A RAISED ISLAND FOR RIGHT TURN CHANNELIZATION IS RECOMMENDED.
3. POCKET LENGTH SHALL BE SUPPORTED BY TRAFFIC ANALYSIS
4. PLACE R3-18 SIGN IF THE BIKE LANE TERMINATES AT OR BEFORE THE APPROACHING INTERSECTION.
5. RIGHT TURN LANES, LEFT TURN LANES, AND TWO-WAY LEFT TURN LANES SHALL BE 12 FT. IN WIDTH.
6. TURN LANE ARROWS SHALL BEGIN AT THE START OF THE TURN LANE AND 40 FT. BEHIND THE STOP LINE. IF NEEDED LONGER LANES MAY BE REQUIRED. ADDITIONAL ARROWS 150 FT. APART.



NOTES

1. WSDOT DETAIL M-9.50.02
2. 2' x 8' WHITE BIKE LANE ARROW
3. BIKE RIDER SYMBOL



NOT TO SCALE



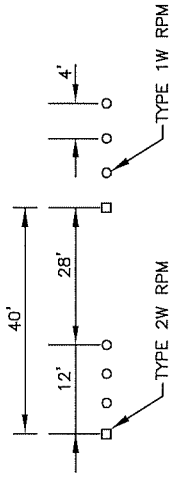
CITY OF SAMMAMISH
DEPARTMENT OF PUBLIC WORKS
**CHANNELIZATION – VEHICLE
AND BICYCLES**

APPROVED BY CITY ENGINEER	DATE	FILE
DWN	XXX	XXX
CKD	XXX	XXX
XXX	XXX	XXX
DATE	AUG-XX-2015	FIG04-02

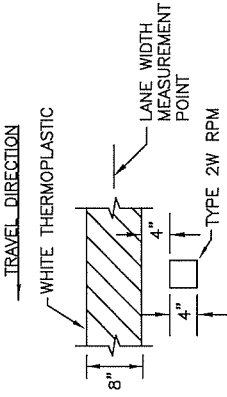
REV. NO. X



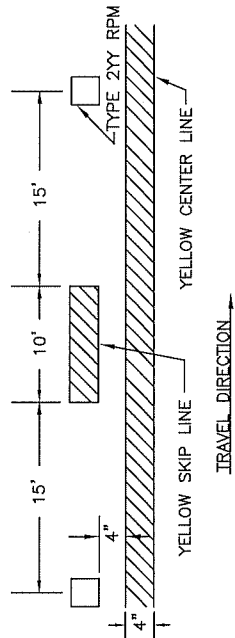
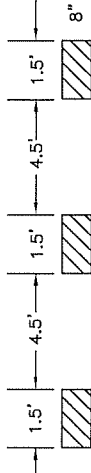
SINGLE LANE TWO-WAY TRAFFIC



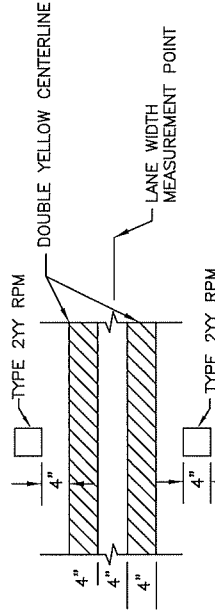
**TRAVEL DIRECTION
ALTERNATE LANE MARKINGS**



LANE EXTENSION LINE



CENTERLINE



CITY OF SAMMAMISH
DEPARTMENT OF PUBLIC WORKS

PAVEMENT MARKINGS

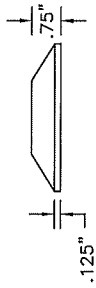
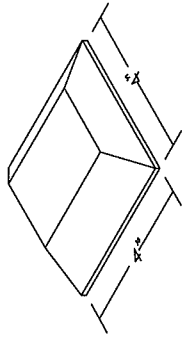
APPROVED BY
CITY ENGINEER

DWN XXX CKD XXX

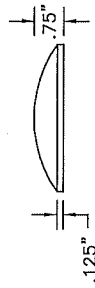
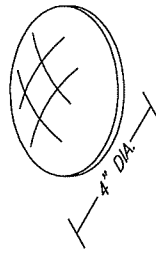
DATE
AUG-XX-2015

FILE
FIG04-03A

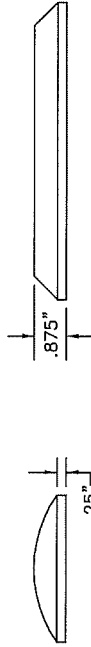
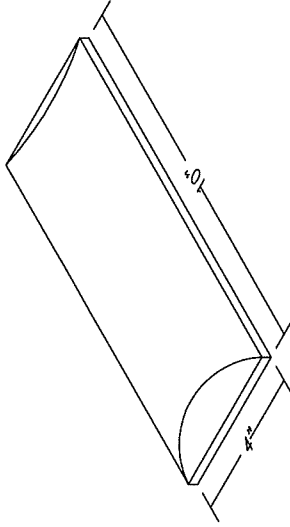
REV. NO. X



TYPE 2 RPM



TYPE 1 RPM

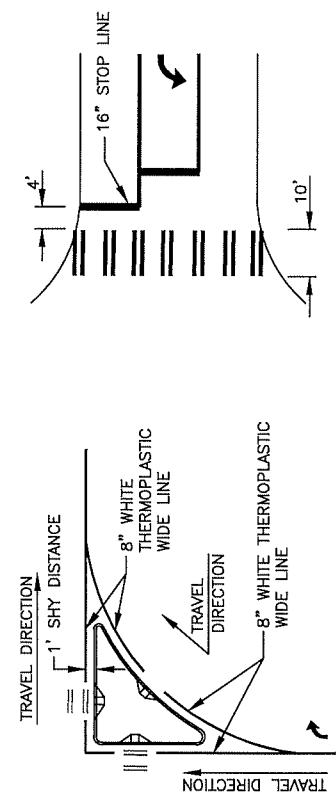
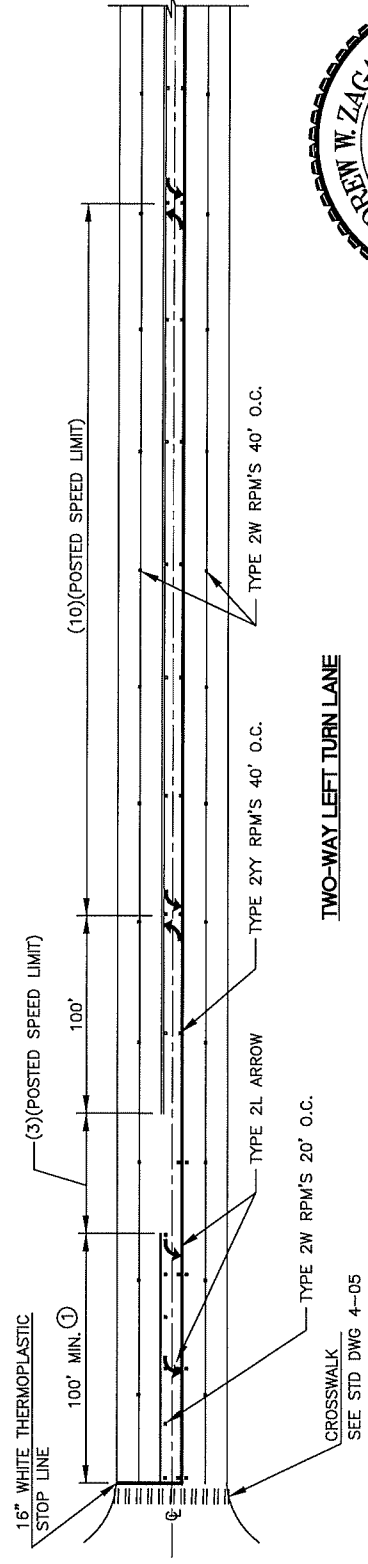
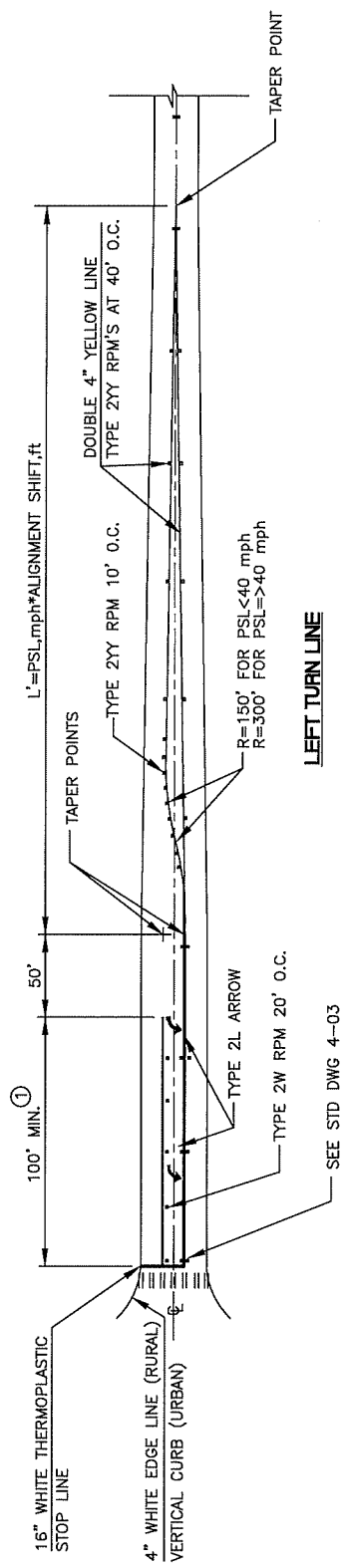


TYPE 3 RPM

RAISED PAVEMENT MARKER COLORS	
TYPE 1W	NONREFLECTORIZED WHITE
TYPE 1Y	NONREFLECTORIZED YELLOW
TYPE 2W	REFLECTORIZED WHITE - ONE SIDE ONLY
TYPE 2Y	REFLECTORIZED YELLOW - ONE SIDE ONLY
TYPE 2YY	REFLECTORIZED YELLOW - BOTH SIDES



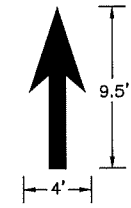
CITY OF SAMMAMISH		APPROVED BY		DATE	
DEPARTMENT OF PUBLIC WORKS		CITY ENGINEER		FILE	
RAISED PAVEMENT MARKERS		DWN	XXX	CKD	XXX
REV				DATE	AUG-XX-2015
				FILE	FIG04-03B



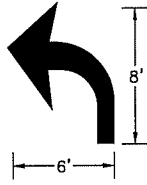
NOTES
 ① POCKET LENGTHS SHALL BE SUPPORTED BY TRAFFIC ANALYSIS.
 PSL = POSTED SPEED LIMIT



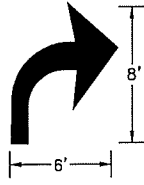
CITY OF SAMMAMISH DEPARTMENT OF PUBLIC WORKS		APPROVED BY CITY ENGINEER	DATE
INTERSECTION APPROACH STRIPING		DWN XXX	DATE AUG-XX-2015
REV	CKD XXX	FILE FIG04-04	REV. NO. X



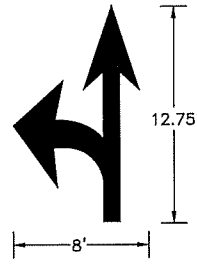
TYPE 1
THRU ARROW



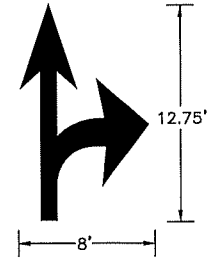
TYPE 2L
LEFT TURN ARROW



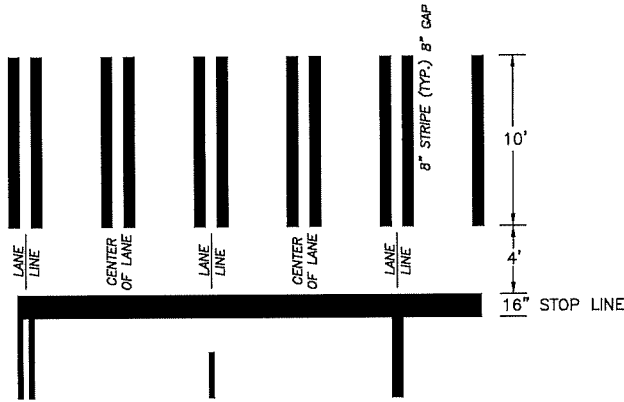
TYPE 2R
RIGHT TURN ARROW



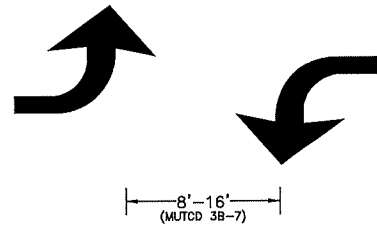
TYPE 3L
LEFT/THRU ARROW



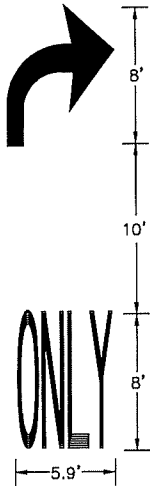
TYPE 3R
RIGHT/THRU ARROW



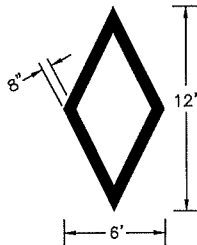
CROSSWALK STRIPING



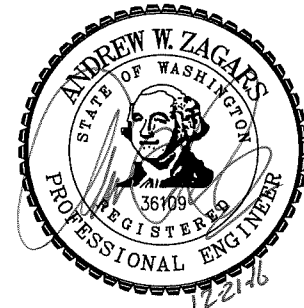
TWO WAY LEFT TURN LANE
ARROW SPACING



DROP LANE



HIGH OCCUPANCY VEHICLE (HOV)



NOTES

1. ALL PAVEMENT SYMBOLS SHALL BE THERMOPLASTIC.

CITY OF SAMMAMISH
DEPARTMENT OF PUBLIC WORKS

PAVEMENT SYMBOLS

APPROVED BY _____ DATE _____
CITY ENGINEER

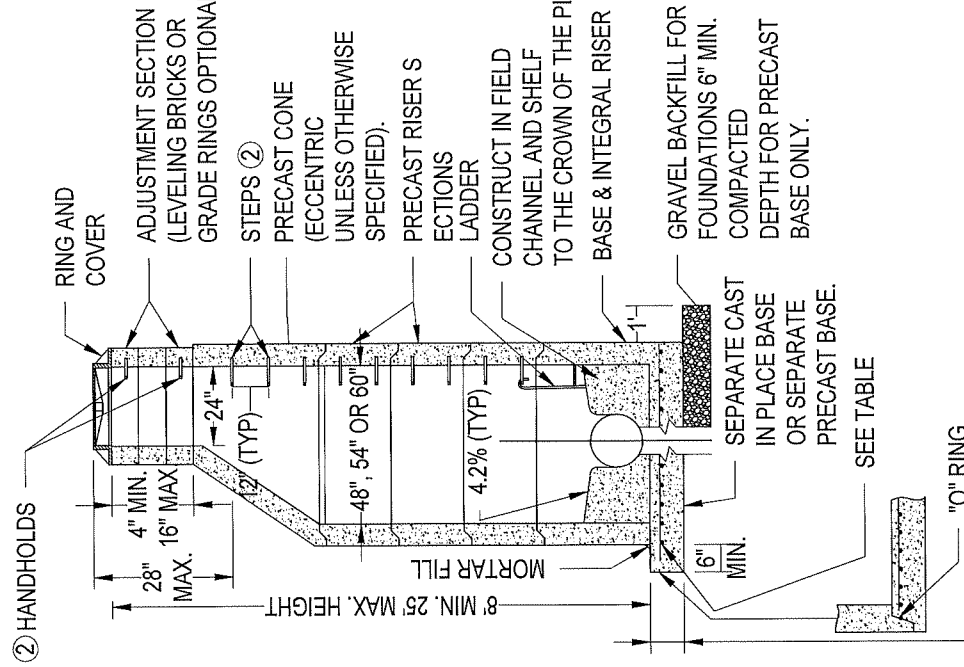
REV

DWN	CKD	DATE	FILE
XXX	XXX	AUG-XX-2015	FIG04-05

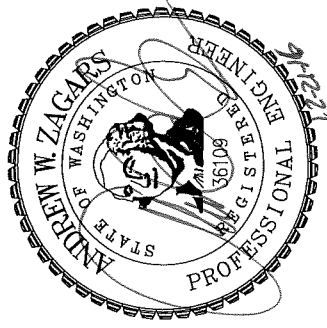
REV. NO. X

NOTES:

1. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M199 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE WSDOT/APWA STANDARD SPECIFICATIONS.
2. HANDHOLDS IN ADJUSTMENT SECTION SHALL HAVE 3" MIN. CLEARANCE. STEPS IN MANHOLE SHALL HAVE 6" MIN. CLEARANCE. SEE STD DWG 7-12, "MANHOLE DETAILS." HANDHOLDS SHALL BE PLACED IN ALTERNATING GRADE RINGS OR LEVELING BRICK COURSE WITH A MIN. OF ONE HAND HOLD BETWEEN THE LAST STEP AND THE TOP OF THE MANHOLE.
3. ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000. ALL PRECAST CONCRETE SHALL BE CLASS 3000. NON-REINFORCED CONCRETE IN CHANNEL AND SHELF SHALL BE CLASS 3000.
4. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE WALL THICKNESS OF 2" MIN. UNUSED KNOCKOUTS NEED NOT BE GROUTED IF WALL IS LEFT INTACT. PIPES SHALL BE INSTALLED ONLY IN FACTORY KNOCKOUTS UNLESS OTHERWISE APPROVED BY THE ENGINEER.
5. KNOCKOUT OR CUTOUT HOLE SIZE SHALL EQUAL PIPE OUTER DIAM. PLUS MANHOLE WALL THICKNESS. MAX. HOLE SIZE SHALL BE 36" FOR 48" MANHOLE, 42" FOR 54" MANHOLE, 48" FOR 60" M.H. MIN. DISTANCE BETWEEN HOLES SHALL BE 8".
6. MANHOLE RINGS AND COVERS SHALL MEET THE STRENGTH REQUIREMENTS OF FEDERAL SPECIFICATION A-A-60005. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.
7. ALL BASE REINFORCING STEEL SHALL HAVE A MIN. YIELD STRENGTH OF 60,000 PSI AND BE PLACED IN THE UPPER HALF OF THE BASE WITH 1" MIN. CLEARANCE.
8. FOR HEIGHTS OF 12' OR LESS, MIN. SOIL BEARING VALUE SHALL EQUAL 3,300 POUNDS PER SQUARE FOOT. FOR HEIGHTS OVER 12', MIN. SOIL BEARING VALUE SHALL EQUAL 3,800 POUNDS PER SQUARE FOOT.
9. FOR DETAILS SHOWING GRADE RING, LADDER, STEPS, HANDHOLDS, AND TOP SLABS, SEE STD DWG 7-12, "MANHOLE DETAILS".
10. SEE THE WSDOT STANDARD SPECIFICATIONS SEC. 7-05.3 FOR JOINT REQUIREMENTS.



REINFORCING STEEL			
PRECAST BASE JOINT	FOR SEPARATE BASES	FOR PRECAST BASE & INTEGRAL RISER	
DIAM.	SQ. IN./FT.	DIAM.	SQ. IN./FT.
48"	0.23	48"	0.15
54"	0.19	54"	0.19
60"	0.25	60"	0.25



CITY OF SAMMAMISH
DEPARTMENT OF PUBLIC WORKS

**MANHOLE TYPE 1—
48", 54" & 60"**

APPROVED BY: XXX DATE: XXX

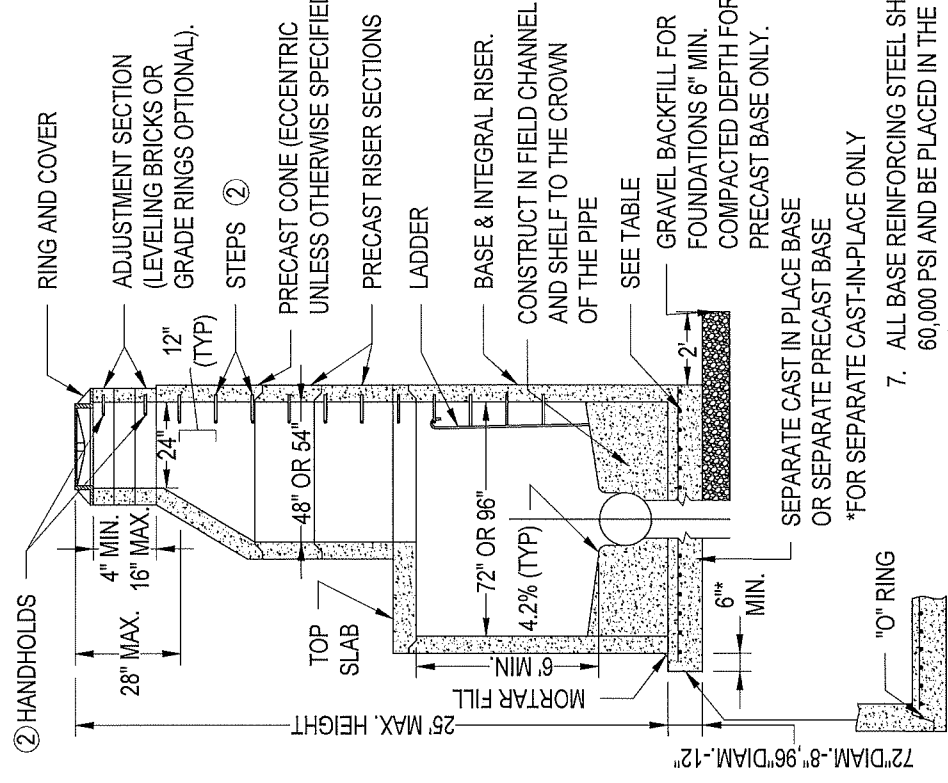
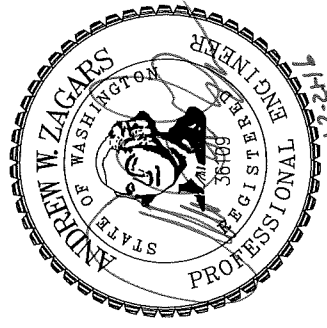
CITY ENGINEER: XXX CKD: XXX

REV: _____

FILE: FIG07-09
DATE: AUG-XX-2015
REV. NO.: X

NOTES:

- MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M199 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE WSDOT/APWA STANDARD SPECIFICATIONS.
- HANDHOLDS IN ADJUSTMENT SECTION SHALL HAVE 3" MIN. CLEARANCE. STEPS IN MANHOLE SHALL HAVE 6" MIN. CLEARANCE. SEE STD DWG 7-12, "MANHOLE DETAILS." HANDHOLDS SHALL BE PLACED IN ALTERNATING GRADE RINGS OR LEVELING BRICK COURSE WITH A MIN. OF ONE HAND HOLD BETWEEN THE LAST STEP AND THE TOP OF THE MANHOLE.
- ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000. ALL PRECAST CONCRETE SHALL BE CLASS 4000. NON-REINFORCED CONCRETE IN CHANNEL AND SHELF SHALL BE CLASS 3000.
- PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE WALL THICKNESS OF 2" MIN. UNUSED KNOCKOUTS NEED NOT BE GROUTED IF WALL IS LEFT INTACT. PIPES SHALL BE INSTALLED ONLY IN FACTORY KNOCKOUTS UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- KNOCKOUT OR CUTOUT HOLE SIZE SHALL EQUAL PIPE OUTER DIAM. PLUS MANHOLE WALL THICKNESS. MAX. HOLE SIZE SHALL BE 60" FOR 72" MANHOLE, 84" FOR 96" MANHOLE. MIN. DISTANCE BETWEEN HOLES SHALL BE 12".
- MANHOLE RINGS AND COVERS SHALL MEET THE STRENGTH REQUIREMENTS OF FEDERAL SPECIFICATION A-A-60005. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.



- ALL BASE REINFORCING STEEL SHALL HAVE A MIN. YIELD STRENGTH OF 60,000 PSI AND BE PLACED IN THE UPPER HALF OF THE BASE WITH 1" MIN. CLEARANCE.
- FOR HEIGHTS OF 12' OR LESS, MIN. SOIL BEARING VALUE SHALL EQUAL 3,300 POUNDS PER SQUARE FOOT. FOR HEIGHTS OVER 12', MIN. SOIL BEARING VALUE SHALL EQUAL 3,800 POUNDS PER SQUARE FOOT.
- FOR DETAILS SHOWING GRADE RING, LADDER, STEPS, HANDHOLDS, AND TOP SLABS, SEE STD DWG 7-12, "MANHOLE DETAILS".
- SEE THE WSDOT STANDARD SPECIFICATIONS SEC. 7-05.3 FOR JOINT REQUIREMENTS.

REINFORCING STEEL	
FOR SEPARATE BASES & INTEGRAL RISER	
DIAM. SQ. IN./FT.	SQ. IN./FT.
72"	0.35
96"	0.39

CITY OF SAMMAMISH
DEPARTMENT OF PUBLIC WORKS

MANHOLE TYPE 2 -
72" & 96"

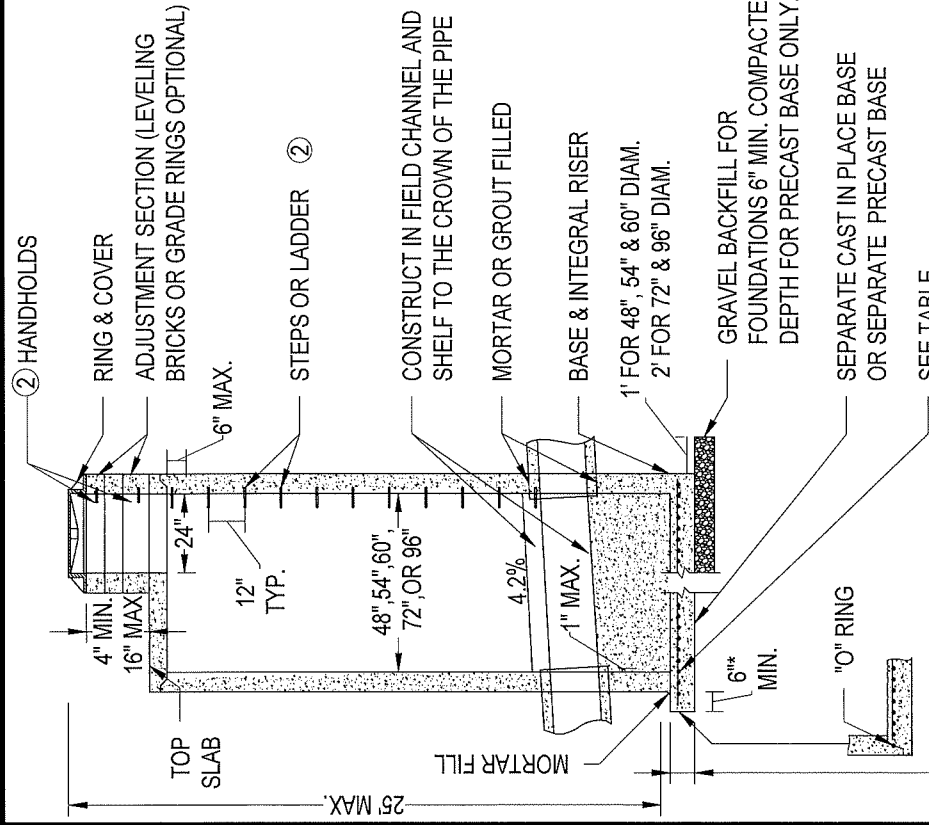
APPROVED BY CITY ENGINEER _____ DATE _____

DWN XXX CKD XXX FILE FIG07-10

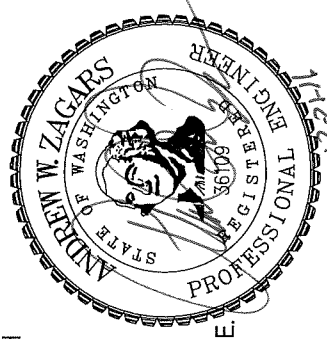
REV _____

NOTES:

- MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M199 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE WSDOT/APWA STANDARD SPECIFICATIONS.
- HANDHOLDS IN ADJUSTMENT SECTION SHALL HAVE 3" MIN. CLEARANCE. STEPS IN MANHOLE SHALL HAVE 6" MIN. CLEARANCE. SEE STD DWG 7-12, "MANHOLE DETAILS." HANDHOLDS SHALL BE PLACED IN ALTERNATING GRADE RINGS OR LEVELING BRICK COURSE WITH A MIN. OF ONE HAND HOLD BETWEEN THE LAST STEP AND THE TOP OF THE MANHOLE.
- ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000. ALL PRECAST CONCRETE SHALL BE CLASS 4000. NON-REINFORCED CONCRETE IN CHANNEL AND SHELF SHALL BE CLASS 3000.
- PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE WALL THICKNESS OF 2" MIN. UNUSED KNOCKOUTS NEED NOT BE GROUTED IF WALL IS LEFT INTACT. PIPES SHALL BE INSTALLED ONLY IN FACTORY KNOCKOUTS UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- KNOCKOUT OR CUTOUT HOLE SIZE SHALL EQUAL PIPE OUTER DIAM. PLUS MANHOLE WALL THICKNESS. MAX. HOLE SIZE SHALL BE 36" FOR 48" M.H., 42" FOR 54" M.H., 48" FOR 60" M.H., 60" FOR 72" M.H., 84" FOR 96" M.H. MIN. DISTANCE BETWEEN HOLES SHALL BE 8" FOR 48", 54", AND 60" M.H., 12" FOR 72" AND 96" M.H.
- MANHOLE RINGS AND COVERS SHALL MEET THE STRENGTH REQUIREMENTS OF FEDERAL SPECIFICATION A-A-60005. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.
- ALL BASE REINFORCING STEEL SHALL HAVE A MIN. YIELD STRENGTH OF 60,000 PSI AND BE PLACED IN THE UPPER HALF OF THE BASE WITH 1" MIN. CLEARANCE.



REINFORCING STEEL		FOR SEPARATE CAST-IN-PLACE ONLY	
DIAM.	SQ. IN./FT.	DIAM.	SQ. IN./FT.
48"	0.23	48"	0.15
54"	0.19	54"	0.19
60"	0.25	60"	0.25
72"	0.35	72"	0.24
96"	0.39	96"	0.29



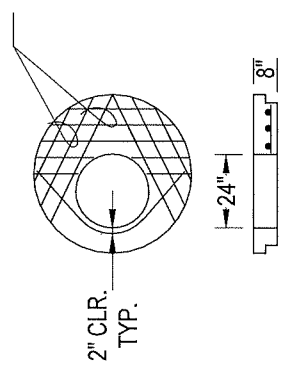
CITY OF SAMMAMISH
DEPARTMENT OF PUBLIC WORKS

MANHOLE TYPE 3 -
48", 54", 60", 72" & 96"

APPROVED BY _____ DATE _____
CITY ENGINEER

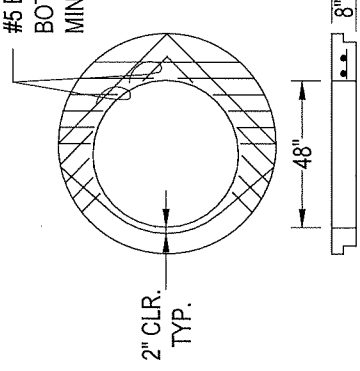
DWN XXX KCD XXX FILE FIG07-11
AUG-XX-2015

#4 BARS @ 6" CENTERS
BOTTOM FACE WITH 1"
MIN. COVER



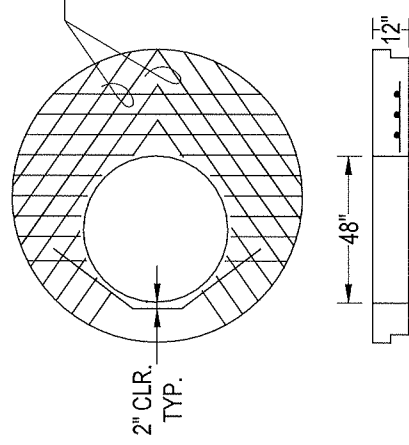
48", 54", & 60" TOP SLAB

#5 BARS @ 6" CENTERS
BOTTOM FACE WITH 1"
MIN. COVER



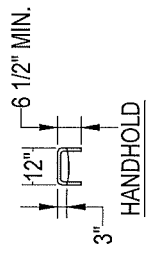
72" TOP SLAB

#6 BARS @ 7" CENTERS
BOTTOM FACE WITH 1"
MIN. COVER

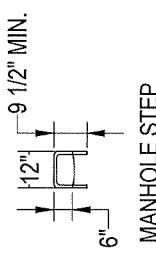


96" TOP SLAB

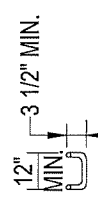
*ALL STEPS & RUNGS 1" DIAM.
GALV. REBAR OR COPOLYMER
PROPYLENE.



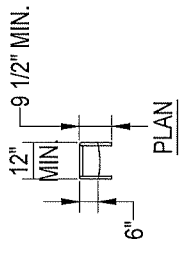
HANDHOLD



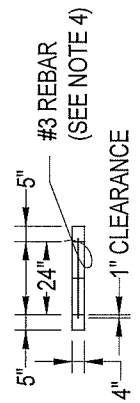
MANHOLE STEP



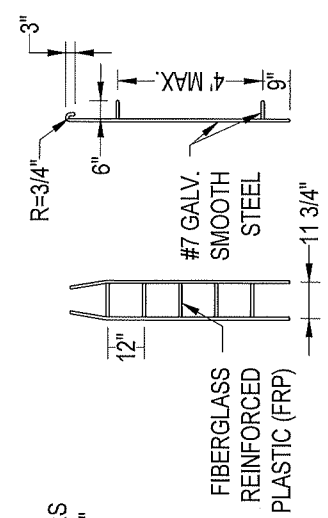
ELEVATION



PLAN



GRADE RING



PREFABRICATED LADDER

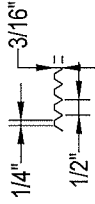
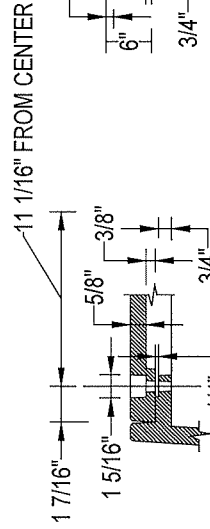
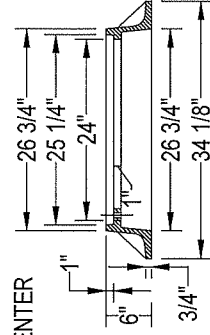
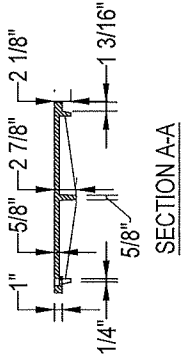
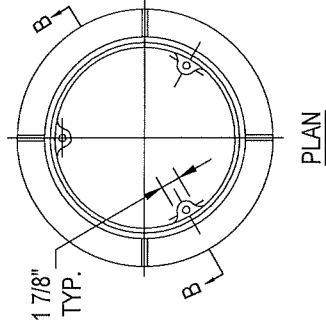
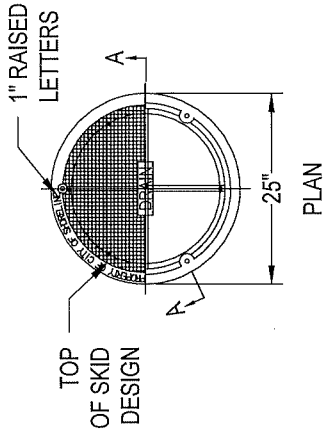
NOTES:

1. PROPRIETARY MANHOLE HANDHOLDS AND STEPS ARE ACCEPTABLE, PROVIDED THAT THEY CONFORM TO SEC. R, ASTM C478, AASHTO M199 AND MEET ALL WISHA REQUIREMENTS.
2. MANHOLE STEP/HANDHOLD LEGS SHALL BE PARALLEL OR APPROXIMATELY RADIAL AT THE OPTION OF THE MANUFACTURER, EXCEPT THAT ALL STEPS IN ANY MANHOLE SHALL BE SIMILAR. PENETRATION OF OUTER WALL BY A LEG IS PROHIBITED.
3. HANDHOLDS AND STOPS SHALL HAVE "DROP" RUNGS OR PROTUBERANCES TO PREVENT SIDEWAYS SLIP.
4. LADDERS OR STEPS SHALL EXTEND TO WITHIN 16" OF BOTTOM OF MANHOLE.
5. HANGING LADDERS SHALL BE PERMANENTLY FASTENED AT TOP BY HANGING ON STEP OR BY BOLTING OR EMBEDDING IN CONCRETE. EACH SHALL BE EMBEDDED AT BOTTOM IN BASE.
6. ADDITIONAL SAFETY FEATURES MAY BE REQUIRED.



CITY OF SAMMAMISH DEPARTMENT OF PUBLIC WORKS	
MANHOLE DETAILS	
APPROVED BY CITY ENGINEER	DATE
DWN XXX	XXX
KCD	FILE
XXX	AUG-XX-2015
	FIG07-12

REV. NO. X



COVER SKID DESIGN DETAIL

BOLT-DOWN DETAIL

SECTION B-B

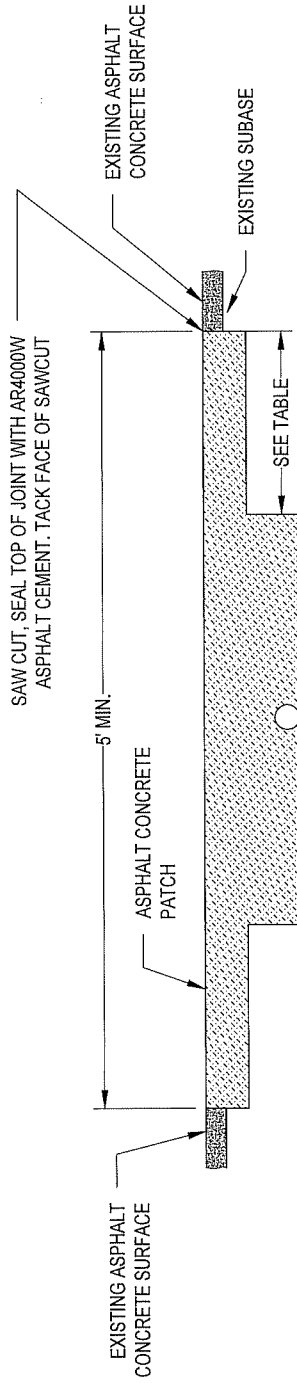
BOLT-DOWN DETAIL



NOTES:

1. USE WITH THREE LOCKING BOLTS 5/8"-11 NC STAINLESS TYPE 304 STEEL SOCKET HEAD (ALLEN HEAD) CAP SCREWS 2" LONG. DRILL HOLES SPACED 120° AT 11 1/16" RADIUS.
2. MATERIAL SHALL BE DUCTILE IRON ASTM A536 GRADE 80-55-06 OR CAST IRON ASTM A48 CLASS 30.
3. A 2-FOOT ASPHALT PAVEMENT SURFACE SHALL BE PLACED AROUND THE OUTSIDE PERIMETER OF THE FRAME AND LID IN LOCATIONS IN UNPAVED AREAS.

CITY OF SAMMAMISH DEPARTMENT OF PUBLIC WORKS		APPROVED BY CITY ENGINEER	DATE
LOCKING MANHOLE COVER AND INSTALLATION		DWN XXX	AUG-XX-2015
REV	CKD	FILE	DATE
	XXX	FIG07-13	



NOTES:

1. ASPHALT CONCRETE MIX SHALL BE HMA CL 1/2 INCH.
2. ASPHALT PATCHING AND TRENCH BACKFILL PER STD DWG 02-05A.
3. SAW CUTS LIMITS MAY BE REVISED BASED UPON EXISTING CONDITIONS. PATCH MAY NEED TO EXTEND TO CONFIDENT ASPHALT.
4. SAWCUTS NEED TO BE NEAT AND CLEAN PRIOR TO PAVING.

PAVEMENT CUT DIMENSIONS	
TRENCH DEPTH (FT)	MINIMUM CUT BEYOND TRENCH (FT) ALL FOUR SIDES
10	2.5
12	3.0
14	3.5
16	4.0
18	4.5
20	5.0
PAVEMENT LESS THAN 5 YEARS OLD ADDITIONAL RESTORATION WORK MAY BE REQUIRED	



CITY OF SAMMAMISH
DEPARTMENT OF PUBLIC WORKS

FLEXIBLE PAVEMENT PATCHING

APPROVED BY CITY ENGINEER	DATE	FILE
DWN XXX	XXX	FIG08-02
REV	CKD	REV. NO. X
	DATE	
	AUG--XX--2015	

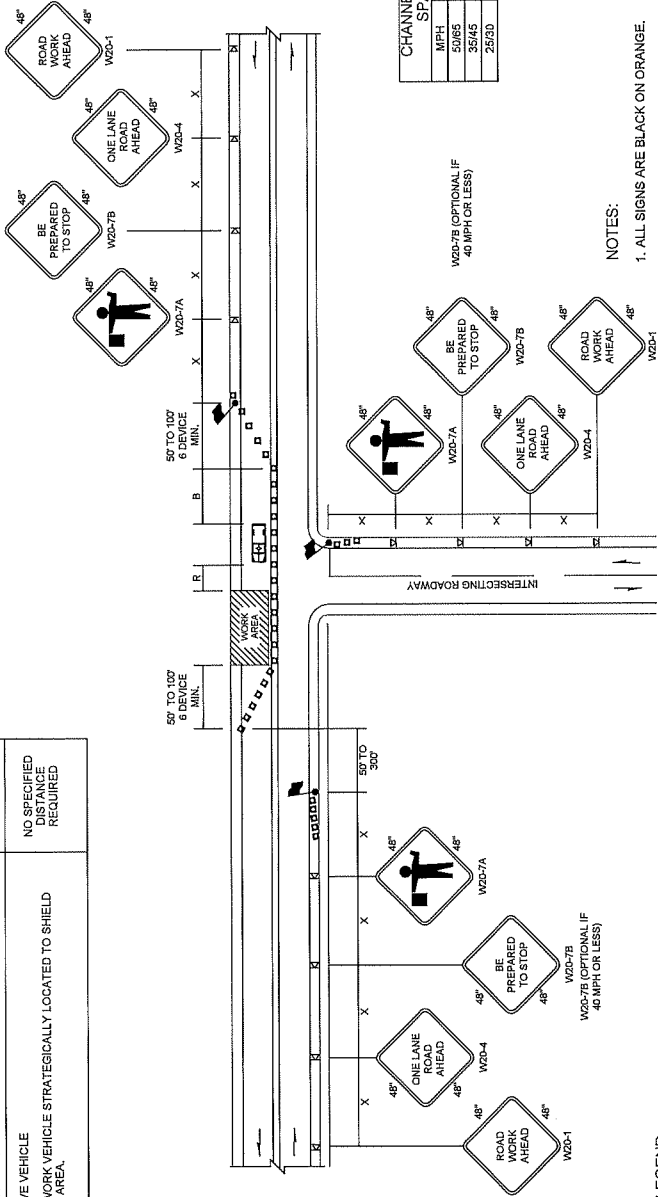
BUFFER DATA										
LONGITUDINAL BUFFER SPACE = B										
SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (FEET)	155	200	250	305	360	425	465	570	645	-
BUFFER VEHICLE ROLL AHEAD DISTANCE = R										
TRANSPORTABLE ATTENUATOR	30 FEET MIN. TO 100 FEET MAX.									
MINIMUM HOIST VEHICLE WEIGHT 15,000 LBS. THE MAXIMUM WEIGHT SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATION.										
PROTECTIVE VEHICLE	NO SPECIFIED DISTANCE REQUIRED									
MAY BE A WORK VEHICLE STRATEGICALLY LOCATED TO SHIELD THE WORK AREA.										

SIGN SPACING = X (1)

RURAL HIGHWAYS	60 / 65 MPH	800 ±
RURAL ROADS	45 / 55 MPH	500 ±
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350 ±
RESIDENTIAL & BUSINESS DISTRICTS	25 / 30 MPH	200 ± (2)
URBAN STREETS	25 MPH OR LESS	100 ± (2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE ROADWAY CONDITIONS.
 (2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

W20-7B (OPTIONAL IF 40 MPH OR LESS)



CHANNELIZATION DEVICE SPACING (FEET)	
MPH	TANGENT
50/65	10 TO 20
35/45	10 TO 20
25/30	10 TO 20
	40

NOTES:

1. ALL SIGNS ARE BLACK ON ORANGE.
2. EXTENDING THE CHANNELIZING DEVICE TAPER ACROSS SHOULDER IS RECOMMENDED.
3. NIGHT WORK REQUIRES ADDITIONAL ROADWAY LIGHTING AT FLAGGING STATIONS. SEE THE WSDOT STD SPECIFICATIONS FOR ADDITIONAL DETAILS.
4. SEE SPECIAL PROVISIONS FOR WORK HOUR RESTRICTIONS.

ONE-LANE, TWO-WAY TRAFFIC CONTROL

WITH FLAGGERS

NOT TO SCALE

- LEGEND
- FLAGGING STATION
 - TEMPORARY SIGN LOCATION
 - CHANNELIZING DEVICES
 - PROTECTIVE VEHICLE



CITY OF SAMMAMISH
 DEPARTMENT OF PUBLIC WORKS

ONE-LANE, TWO-WAY TRAFFIC CONTROL WITH FLAGGERS

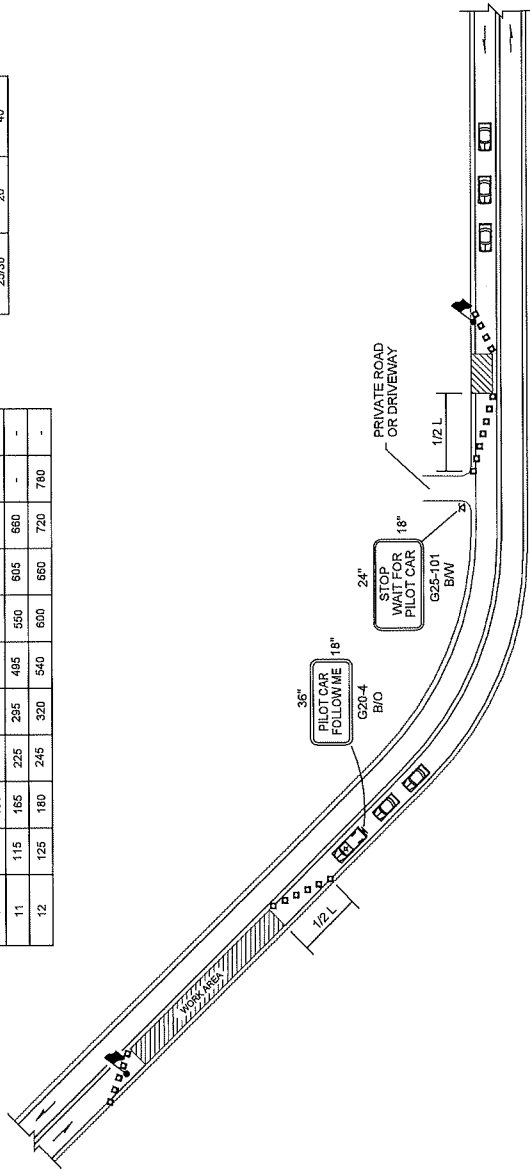
APPROVED BY _____ DATE _____
 CITY ENGINEER

REV _____ CKD XXXX FILE FIG09-01
 DWN XXXX AUG-XX-2015

REV. NO. X

MINIMUM TAPER LENGTH = L (feet)		Posted Speed (mph)									
LANE WIDTH (feet)		25	30	35	40	45	50	55	60	65	70
10		105	150	205	270	450	500	550	-	-	-
11		115	165	225	285	495	550	605	660	-	-
12		125	180	245	320	540	600	660	720	780	-

CHANNELIZATION DEVICE SPACING (feet)		
MPH	TAPER	TANGENT
50/65	40	80
35/45	30	60
25/30	20	40



LEGEND

- ▲ FLAGGING STATION
- ⋈ TEMPORARY SIGN LOCATION
- ▣ CHANNELIZATION DEVICES
- ▭ PILOT VEHICLE
- ▭ MOTORIST VEHICLE

NOTES:

1. SEE STD DWG 9-01 FOR ADDITIONAL SIGNING AND FLAGGING DETAILS NOT SHOWN.
2. CHANNELIZING DEVICES ARE RECOMMENDED ALONG CENTERLINE TO SEPARATE TRAFFIC FROM WORK OPERATION. DEVICES ARE REQUIRED AT TAPERS TO SHIFT TRAFFIC MOVEMENT BETWEEN LANES AND TO PROTECT FLAGGING STATIONS.
3. SIGN G25-101 IS RECOMMENDED FOR NON-STOP SIGN CONTROLLED APPROACHES SUCH AS PRIVATE ROADS AND DRIVEWAYS. THIS SIGN IS NOT REQUIRED TO BE ALUMINUM SUBSTRATE AND CAN BE MADE OF ALTERNATIVE MATERIALS.



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PILOT CAR OPERATION

APPROVED BY
CITY ENGINEER

DWN XXX CKD XXX

DATE AUG-XX-2015

FILE FIG09-02

REV

REV. NO. X

MINIMUM LANE CLOSURE TAPER LENGTH = L (feet)		Posted Speed (mph)									
LANE WIDTH (feet)		25	30	35	40	45	50	55	60	65	70
10		105	150	205	270	450	500	550	-	-	-
11		115	165	225	295	465	530	605	660	-	-
12		125	180	245	320	540	630	720	790	840	-

MINIMUM SHOULDER TAPER LENGTH = L/3 (feet)		Posted Speed (mph)									
SHOULDER WIDTH (feet)		25	30	35	40	45	50	55	60	65	70
8'		40	40	50	50	120	130	150	160	170	190
10'		40	60	90	90	150	170	190	200	220	240

USE A MINIMUM 3 DEVICES TAPER FOR SHOULDER LESS THAN 8'.

SIGN SPACING = X (1)

FREeways & EXPRESSWAYS	55/70 MPH	1500' ±
RURAL HIGHWAYS	60/65 MPH	800' ±
RURAL ROADS	45/55 MPH	500' ±
RURAL ROADS & URBAN ARTERIALS	35/40 MPH	350' ±
RURAL ROADS & URBAN ARTERIALS	25/30 MPH	200' ± (2)
RESIDENTIAL & BUSINESS DISTRICTS	25 MPH OR LESS	100' ± (2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMP, AT-GRADE INTERSECTIONS AND DRIVEWAYS.
 (2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

BUFFER DATA

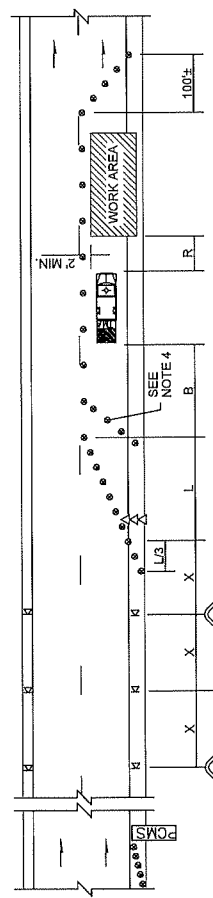
LONGITUDINAL BUFFER SPACE = B											
LENGTH (feet)	25	30	35	40	45	50	55	60	65	70	
	155	200	250	305	360	425	485	570	645	730	

BUFFER VEHICLE ROLL AHEAD DISTANCE = R

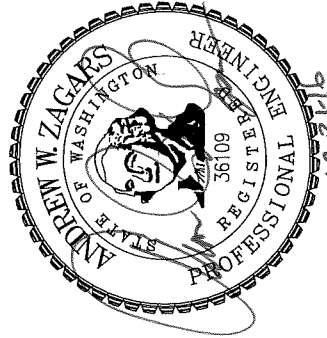
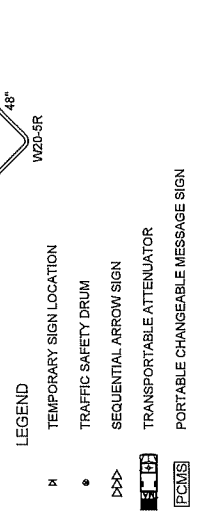
TRANSPORTABLE ATTENUATOR	MINIMUM HOST VEHICLE WEIGHT (5000 LBS. THE MAXIMUM RECOMMENDATION)	30 FEET MIN. TO 100 FEET MAX.

CHANNELIZATION DEVICE SPACING (feet)

MPH	TAPER	TANGENT
50/70	40	80
35/45	30	60
25/30	20	40



- NOTES:
- SEE SPECIAL PROVISIONS FOR WORK HOUR RESTRICTIONS.
 - EXTEND DEVICE TAPER AT L/3 ACROSS SHOULDER.
 - DEVICES SHALL NOT ENCR OACH INTO THE ADJACENT LANE.
 - USE TRANSVERSE DEVICES IN CLOSED LANE EVERY 1000' (FT) (RECOMMENDED).
 - DEVICE SPACING FOR THE DOWNSTREAM TAPER SHALL BE 20' (FT).
 - ALL SIGNS ARE BLACK ON ORANGE.



FIELD LOCATE 1/4 MILE ± IN ADVANCE OF LANE CLOSURE SIGNING.

PCMS	1	2
RIGHT LANE CLOSURE AHEAD	1/4 MILE AHEAD	2.0 SEC [2.0 SEC

CITY OF SAMMAMISH
 DEPARTMENT OF PUBLIC WORKS

SINGLE-LANE CLOSURE FOR MULTI-LANE ROADWAYS

APPROVED BY: _____ DATE: _____
 CITY ENGINEER: DWN XXX CKD XXX FILE FIG09-03
 AUG-XX-2015 REV. NO. X

SIGN SPACING = X (1)	
RURAL ROADS & URBAN ARTERIALS	350 ±
RURAL ROADS URBAN ARTERIALS	200 ± (2)
RESIDENTIAL & BUSINESS DISTRICTS	100 ± (2)
URBAN STREETS	25 MPH OR LESS

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERSECTIONS AND DRIVeways.
 (2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

SHOULDER WIDTH (feet)	Posted Speed (mph)					
	25	30	35	40	45	50
8'	-	-	-	-	-	-
10'	-	-	-	-	-	-

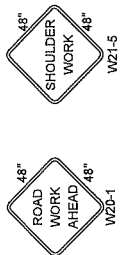
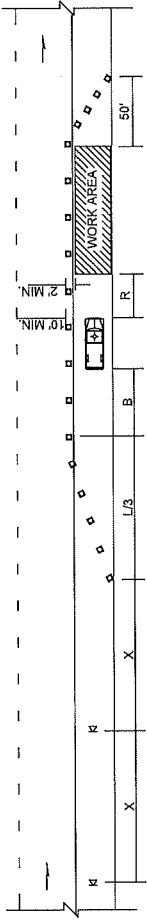
USE A 3 DEVICES TAPER FOR SHOULDERS LESS THEN 8'

MPH	CHANNELIZATION DEVICE SPACING (feet)	
	TAPER	TANGENT
35-40	30	50
25-30	20	40

BUFFER DATA						
LONGITUDINAL BUFFER SPACE = B						
SPEED (MPH)	25	30	35	40	45	50
LENGTH (feet)	155	200	250	305		

BUFFER VEHICLE ROLL AHEAD DISTANCE = R

TRANSPORTABLE ATTENUATOR	30 FEET MIN. TO 100 FEET MAX.
MINIMUM HOST VEHICLE WEIGHT IS 3,000 LBS. THE MAXIMUM WEIGHT SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATION.	
PROTECTIVE VEHICLE MAY BE A WORK VEHICLE STRATEGICALLY LOCATED TO SHIELD THE WORK AREA.	NO SPECIFIED DISTANCE REQUIRED



- LEGEND
- K TEMPORARY SIGN LOCATION
 - CHANNELIZING DEVICES
 - ▭ PB PROTECTIVE VEHICLE

- NOTES:
1. DEVICE SPACING FOR THE DOWNSTREAM TAPER SHALL BE 20' (FT).
 2. ALL SIGNS ARE BLACK ON ORANGE.



CITY OF SAMMAMISH
 DEPARTMENT OF PUBLIC WORKS

**SHOULDER CLOSURE - LOW SPEED
 (40 MPH OR LESS)**

APPROVED BY
 CITY ENGINEER

REV _____ DATE _____

DWN XXX CKD XXX FILE FIG09-05

AUG-XX-2015

REV. NO. X

BUFFER DATA										
LONGITUDINAL BUFFER SPACE = B										
SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	485	570	645	730
BUFFER VEHICLE ROLL AHEAD DISTANCE = R										
TRANSPORTABLE ATTENUATOR	30 FEET MIN. 100 FEET MAX.									
MINIMUM HOST VEHICLE WEIGHT IS 6000 LBS. THE MAXIMUM WEIGHT SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATION.										

LANE WIDTH (feet)	MINIMUM LANE CLOSURE TAPER LENGTH = L (feet)									
	Posted Speed (mph)									
25	30	35	40	45	50	55	60	65	70	
105	150	205	270	450	500	550	-	-	-	-
11	115	165	225	295	495	550	605	680	-	-
12	125	180	245	320	540	600	660	720	780	840

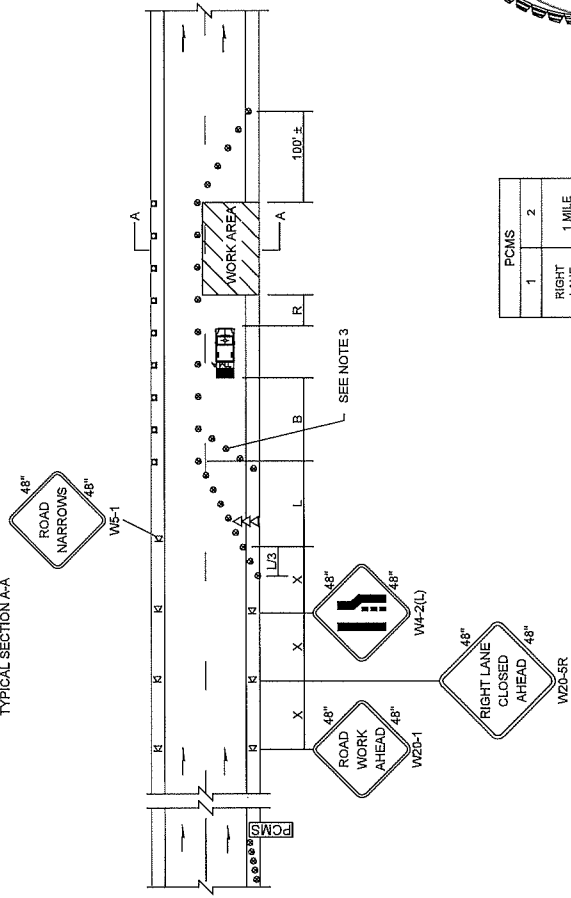
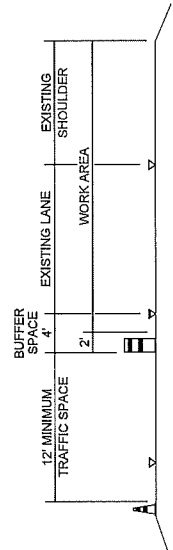
SHOULDER WIDTH (feet)	MINIMUM SHOULDER TAPER LENGTH = L/3 (feet)									
	Posted Speed (mph)									
25	30	35	40	45	50	55	60	65	70	
8'	40	60	90	120	130	150	160	170	190	
10'	40	60	90	150	170	190	200	220	240	
USE A MINIMUM 3 DEVICES TAPER FOR SHOULDER LESS THEN 8'.										

CHANNELIZATION DEVICE SPACING (feet)	
TAPER	TANGENT
50/70	60
35/45	30
25/30	20

- LEGEND
- ⊠ TEMPORARY SIGN LOCATION
 - CHANNELIZING DEVICES
 - TRAFFIC SAFETY DRUM
 - ⇨ SEQUENTIAL ARROW SIGN
 - ⊠ PORTABLE ATTENUATOR
 - ⊠ PORTABLE CHANGEABLE MESSAGE SIGN

SIGN SPACING = X (1)		
FREeways & EXPRESSWAYS	35 / 70 MPH	1500' ±
RURAL HIGHWAYS	60 / 65 MPH	800' ±
RURAL ROADS	45 / 55 MPH	500' ±
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' ±
RURAL ROADS & URBAN ARTERIALS	25 / 30 MPH	200' ± (2)
RESIDENTIAL & BUSINESS DISTRICTS	25 MPH OR LESS	100' ± (2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMP, AT-GRADE INTERSECTIONS AND DRIVEWAYS.
(2) URBAN AREAS TO BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.



PCMS	
1	2
RIGHT LANE CLOSURE	1 MILE AHEAD
2.0 SEC	2.0 SEC

FIELD LOCATE 1 MILE ± IN ADVANCE OF LANE CLOSURE SIGNING.

- NOTES
- SEE SPECIAL PROVISIONS FOR WORK HOUR RESTRICTIONS.
 - RECOMMEND EXTENDING DEVICE TAPER (L/3) ACROSS SHOULDER.
 - USE TRANSVERSE DEVICES IN CLOSED LANE EVERY 1000' (RECOMMENDED).
 - ALL SIGNS ARE BLACK ON ORANGE.
 - RECOMMEND ADVANCE NOTICE FOR ANY OVER WIDTH LOADS PRIOR TO LANE CLOSURE FOR ALTERNATE ROUTES IF APPLICABLE.



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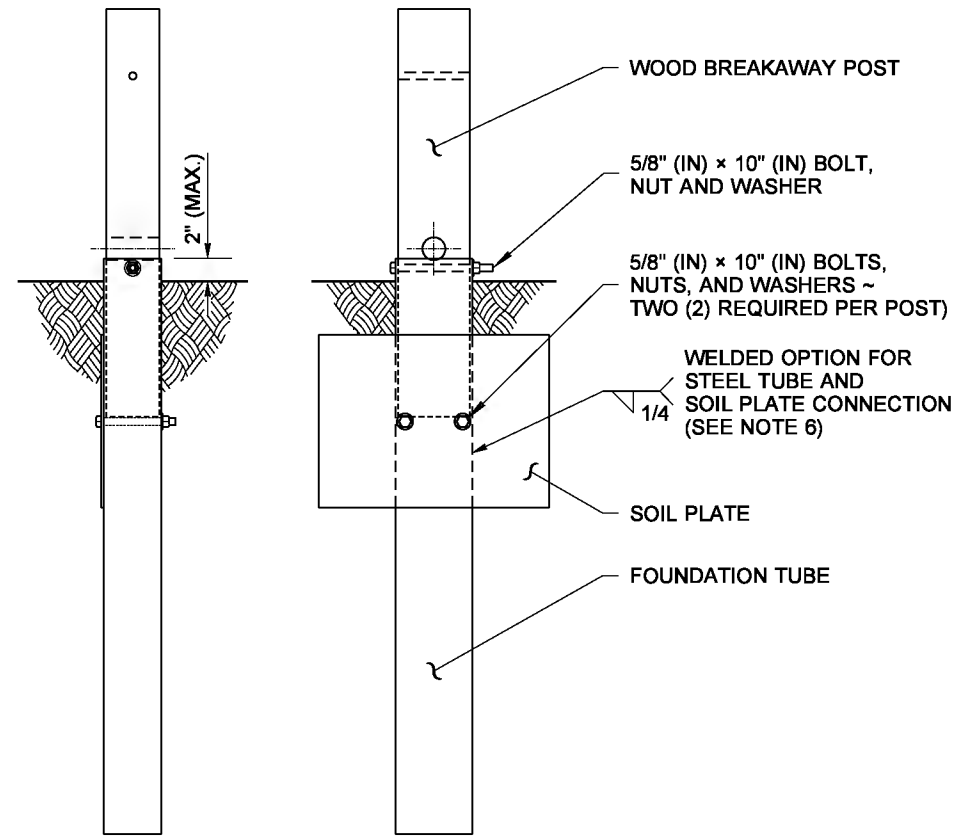
SINGLE-LANE CLOSURE WITH SHIFT

APPROVED BY CITY ENGINEER _____ DATE _____

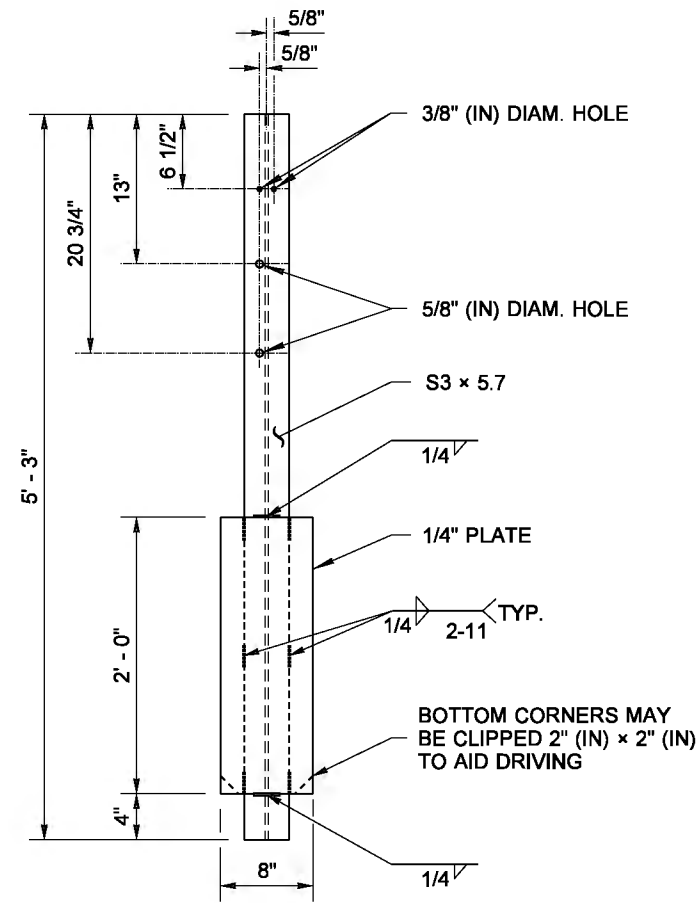
DWN XXX CKD XXX FILE FIG09-14

REV _____ DATE AUG-XX-2015

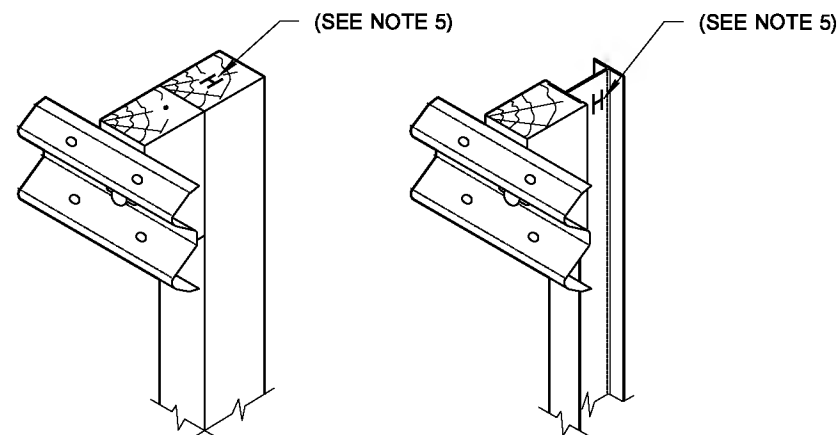
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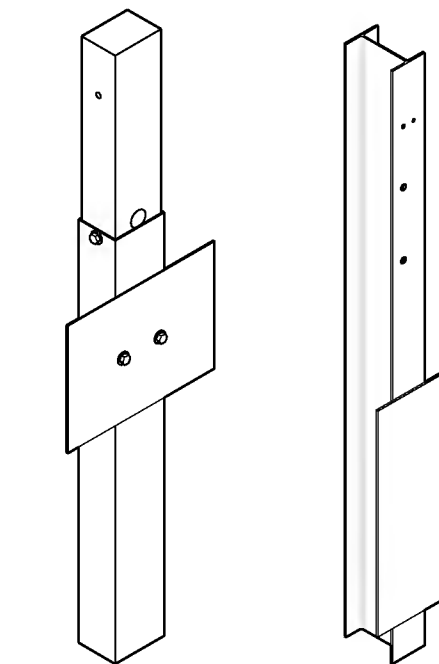
FRONT VIEW SIDE VIEW
ANCHOR POST ASSEMBLY



G-2 POST



TIMBER POST STEEL POST
PARTIAL ASSEMBLY DETAIL



ANCHOR POST G-2 POST
ISOMETRIC

NOTES

1. Wood posts for all guardrail placement plans shall be 6 x 8 except where noted otherwise.
2. Lower hole is for Rub Rail of Type 2 and Type 3 Beam Guardrail.
3. W6x8.5 or W6x9 steel posts and timber blocks are alternates for 6x8 timber posts and blocks. W6x15 steel posts and timber blocks are alternates for 10x10 timber posts and blocks.
4. Holes shall be located on approaching traffic side of web.
5. When "Beam Guardrail Type - __ Ft. Long Post" is specified in the Contract, the post length shall be stamped with numbers, 1 1/2 (in) min. high and 3/4 (in) wide at the location where the letter "H" is shown in the ASSEMBLY DETAIL. For wood post applications, the letter shall be stamped to a minimum depth of 1/4 (in). For steel post applications, the letter shall be legible after the post is galvanized. After post installation, it shall be the Contractor's responsibility to ensure the stamped numbers remain visible.
6. Soil plate may be welded to foundation tube. If so, holes in soil plate and foundation tube may be omitted.

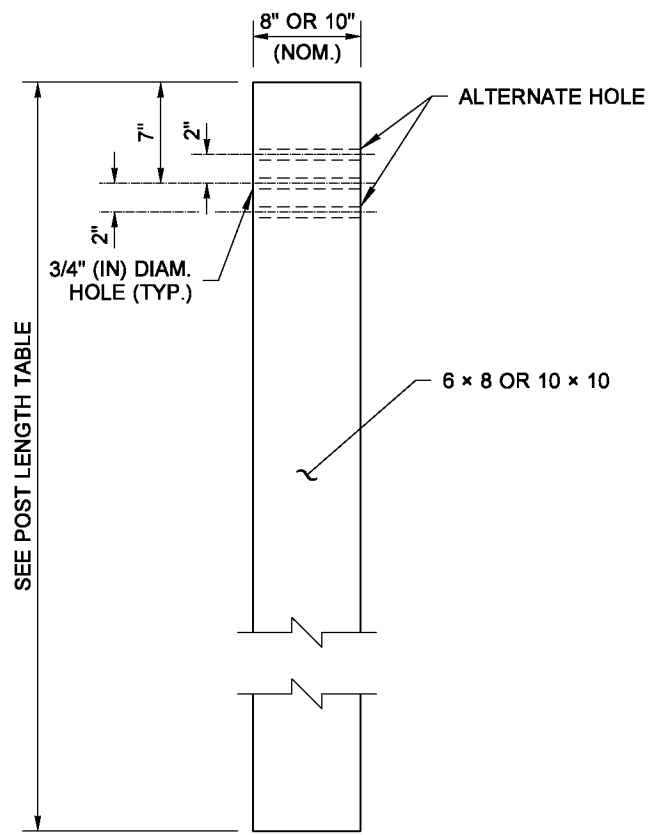


**BEAM GUARDRAIL
POSTS AND BLOCKS
STANDARD PLAN C-1b**

SHEET 1 OF 2 SHEETS

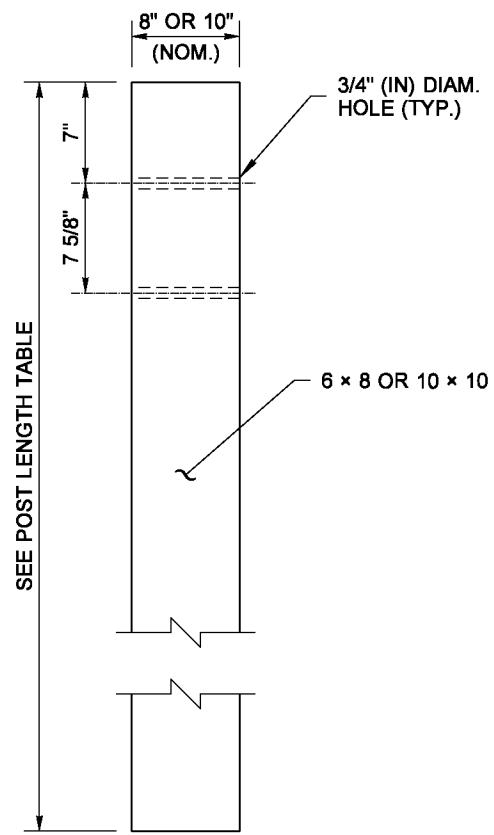
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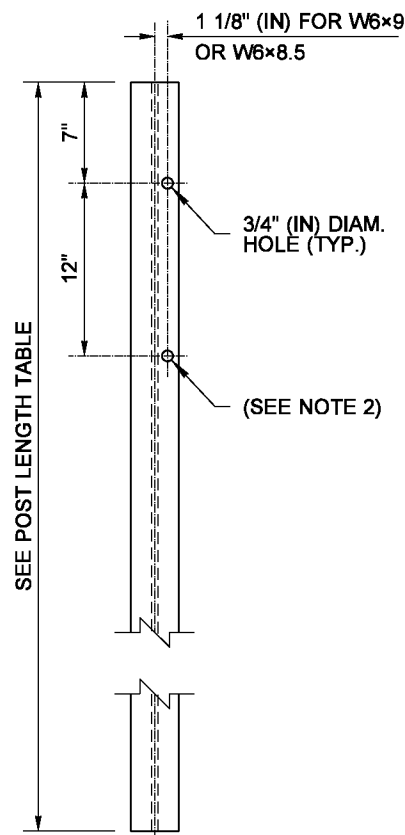


W-BEAM

WOOD POST

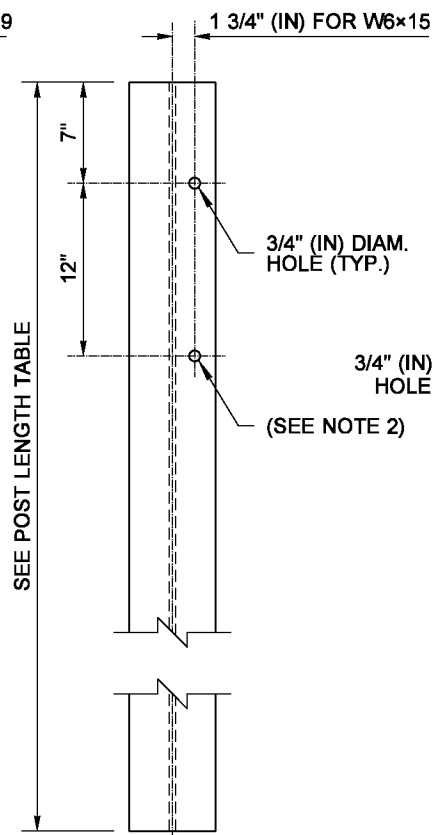


THRIE BEAM

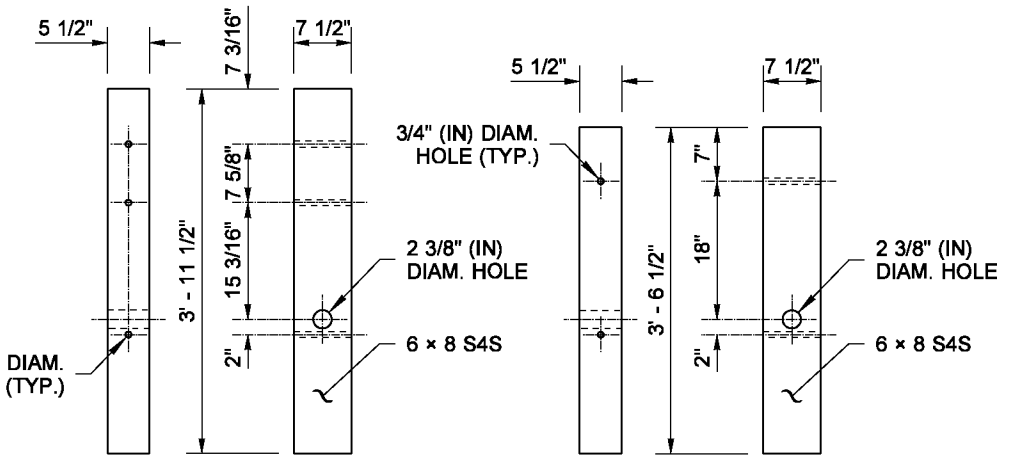


W-BEAM

STEEL POST
(SEE NOTES 3 AND 4)



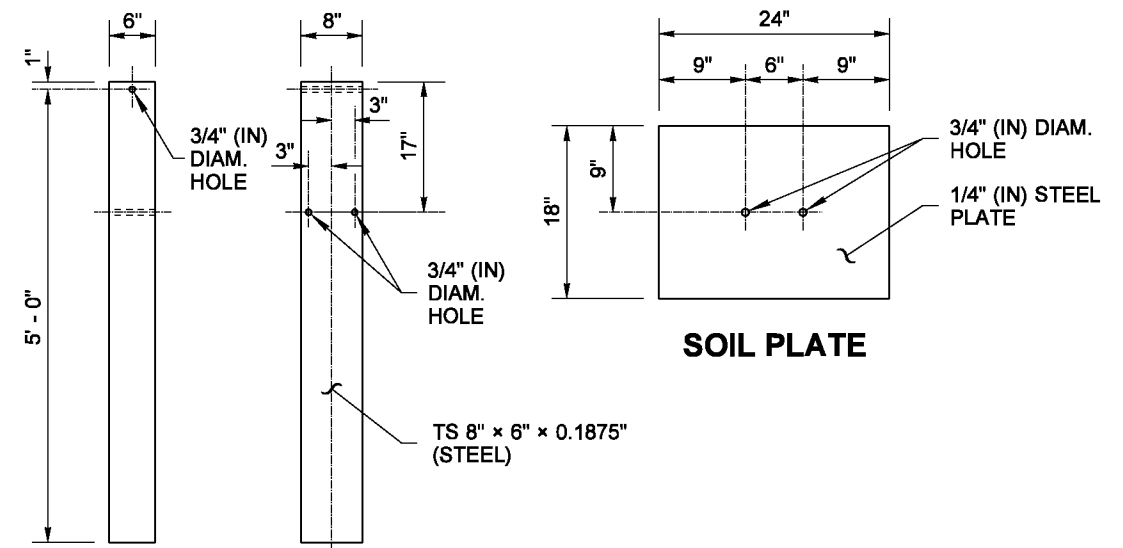
THRIE BEAM



THRIE BEAM

W-BEAM

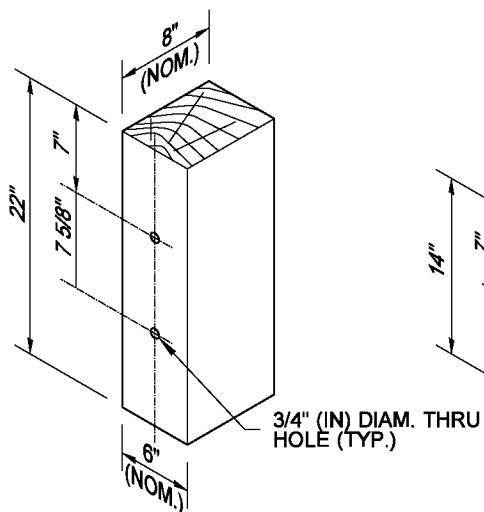
WOOD BREAKAWAY POST



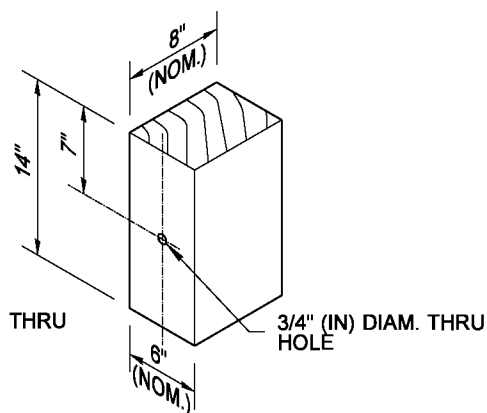
FOUNDATION TUBE

SOIL PLATE

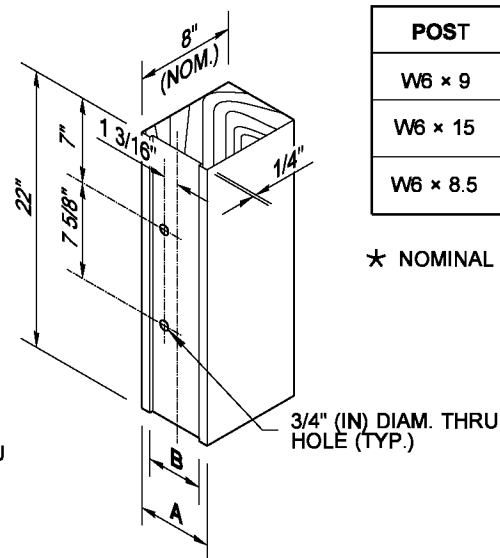
POST LENGTH TABLE	
GUARDRAIL TYPE	LENGTH
1 through 4 & 31	6' - 0"
10 or 11	6' - 6"



THRIE BEAM WOOD BLOCK FOR WOOD POST



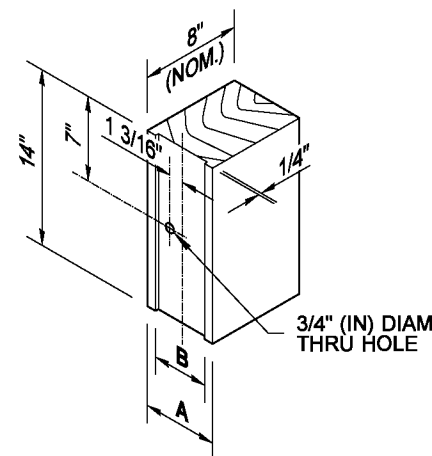
W-BEAM WOOD BLOCK FOR WOOD POST



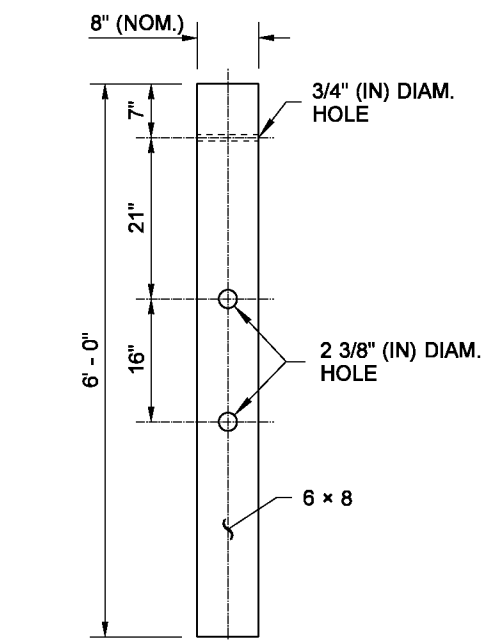
THRIE BEAM WOOD BLOCK FOR STEEL POST

POST	A	B
W6 x 9	6"*	4 1/4"
W6 x 15	8"*	6 1/4"
W6 x 8.5	8"*	6 1/4"

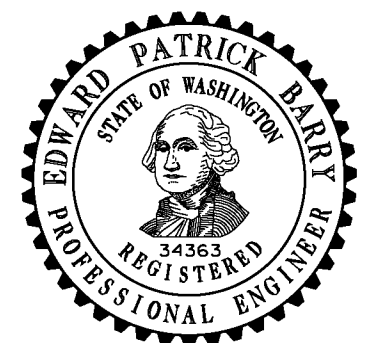
* NOMINAL (NOM.)



W-BEAM WOOD BLOCK FOR STEEL POST



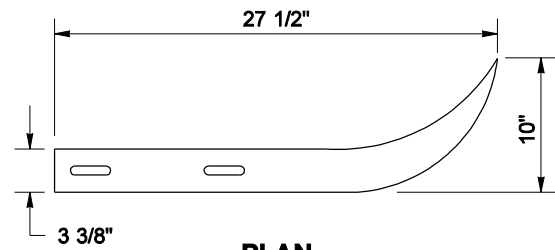
CONTROLLED RELEASING TERMINAL (CRT) POST



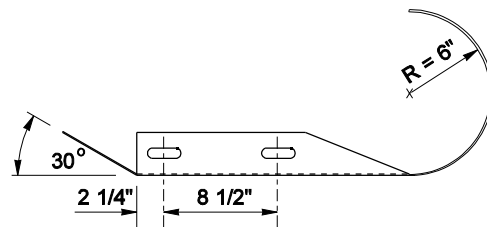
BEAM GUARDRAIL POSTS AND BLOCKS
STANDARD PLAN C-1b

SHEET 2 OF 2 SHEETS

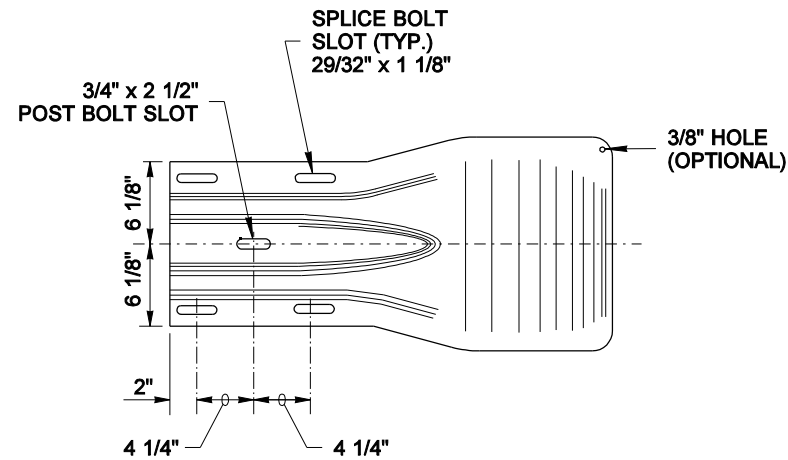
APPROVED FOR PUBLICATION



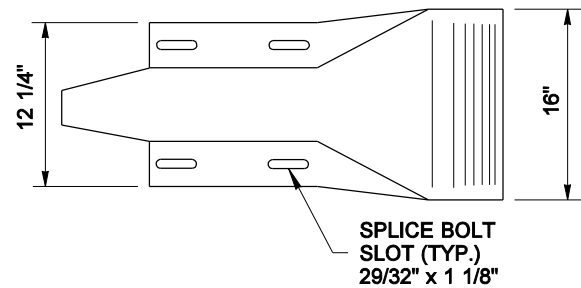
PLAN



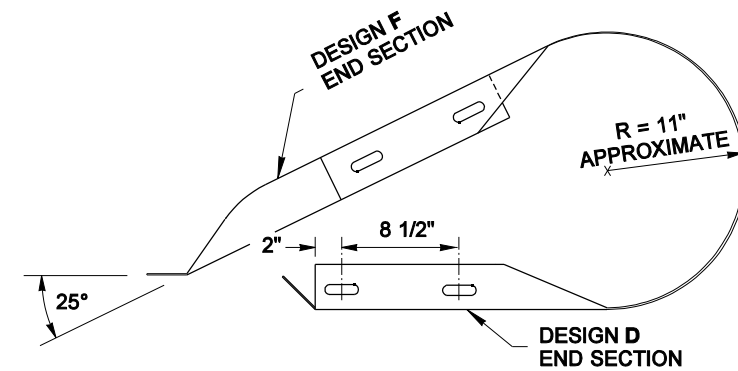
PLAN



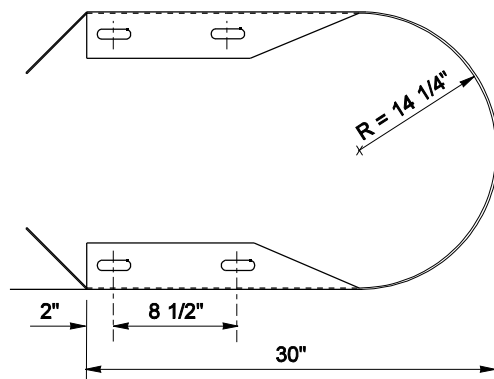
**ELEVATION
DESIGN A**



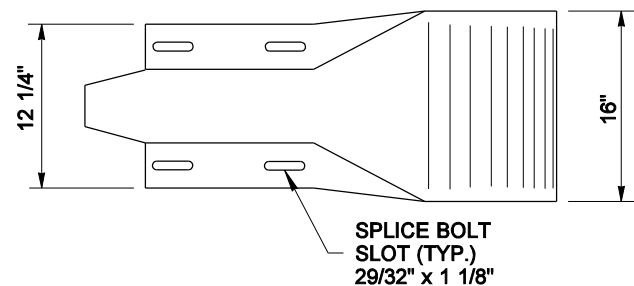
**ELEVATION
DESIGN C**



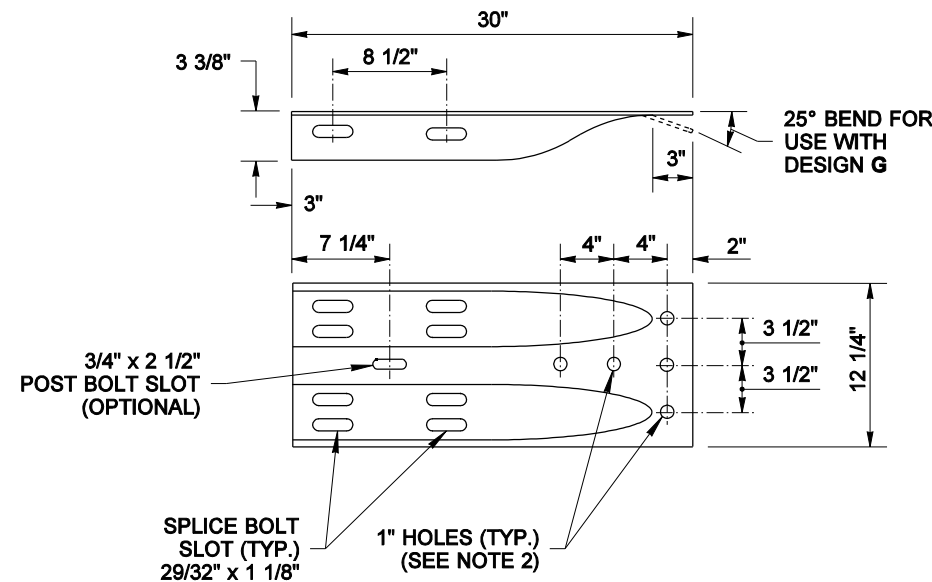
PLAN



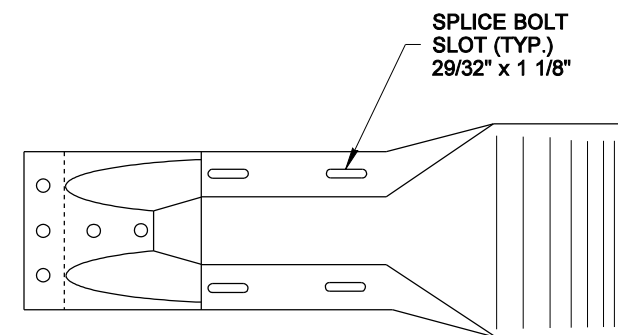
PLAN



**ELEVATION
DESIGN D**



**ELEVATION
DESIGN F
(SEE NOTE 4)**



**ELEVATION
DESIGN G
(SEE NOTE 3)**

NOTES

1. End Section Design G shall be used except where noted on the plans or contract.
2. Attach guardrail to bridge rail or concrete barrier with 7/8" diameter bolts (five minimum) **Standard Spec. 9-06.5(4)**, with thin slab ferrule inserts or resin bonded anchors. See the Contract Plans.
3. A single piece having similar dimensional shape to Design G and mating with the W-beam guardrail is an alternate.
4. In cases where Design "F" end section is lapped on the outside of the guardrail, a galvanized 1" ID, 2" OD, 0.134" thick, narrow Type A Plain Washer or a anchor rail washer shall be placed under the splice bolt heads.



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**BEAM GUARDRAIL
END SECTIONS**

STANDARD PLAN C-7

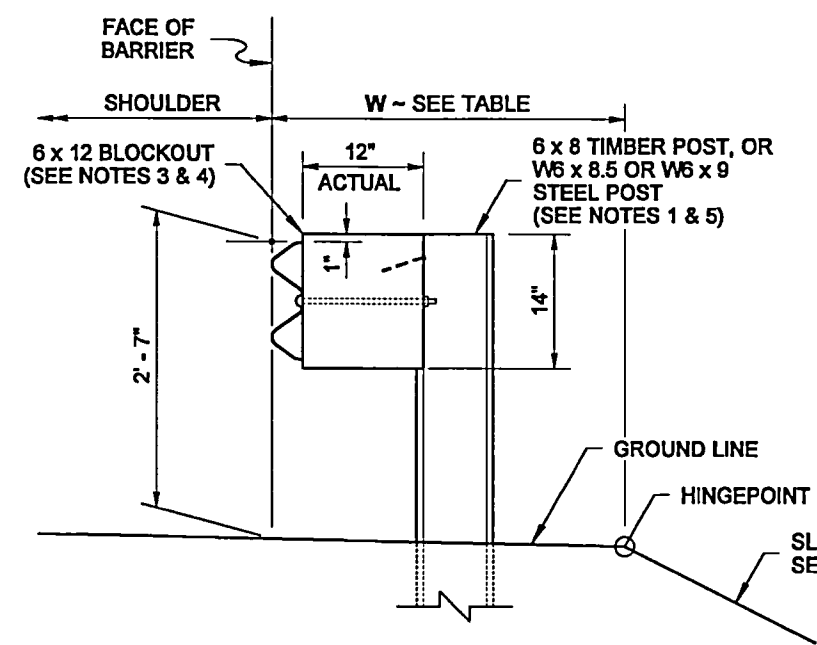
SHEET 1 OF 1 SHEET

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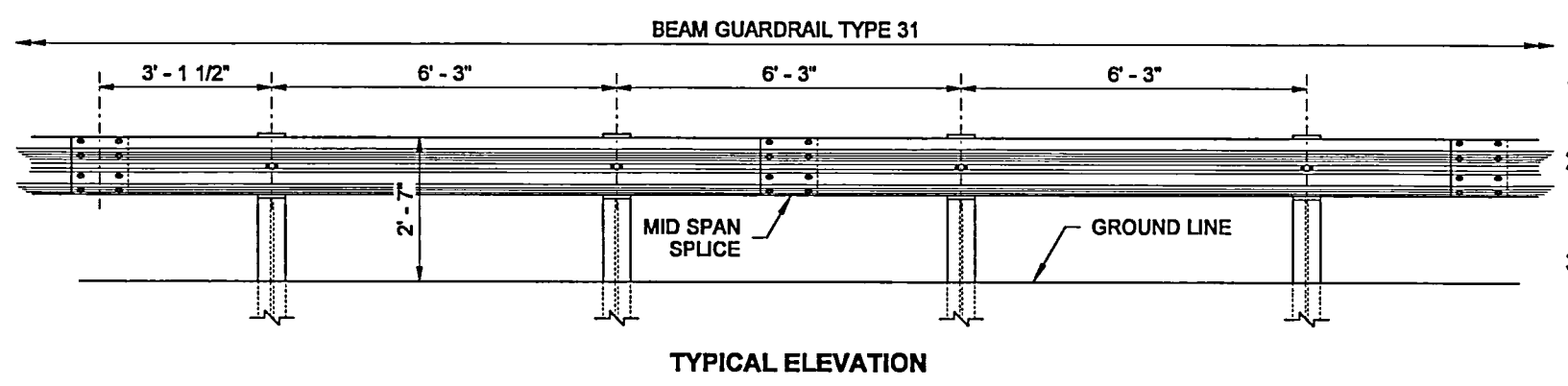
Pasco Bakotich III 06-16-11
STATE DESIGN ENGINEER DATE



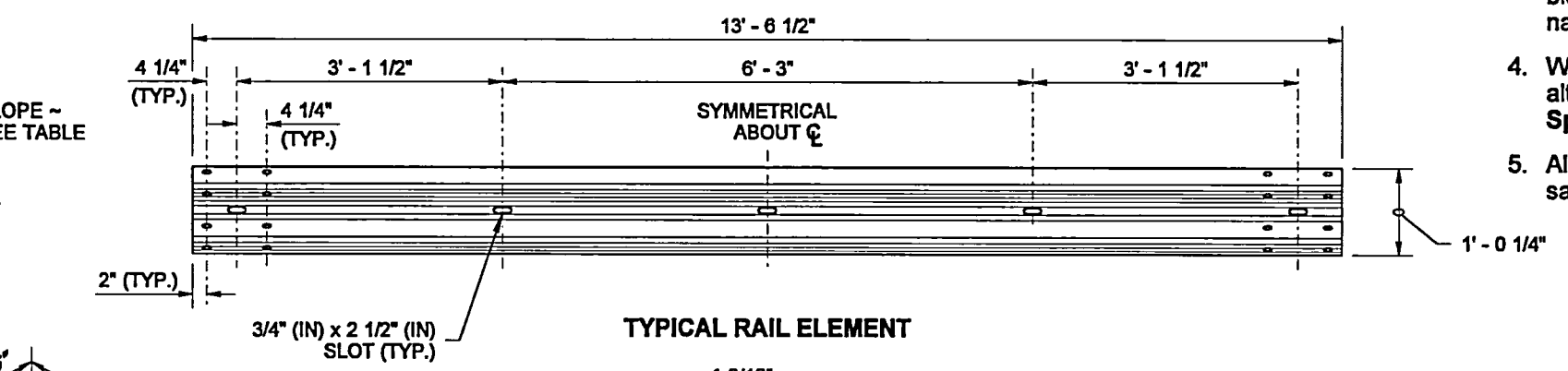
DRAWN BY: FERN LIDDELL



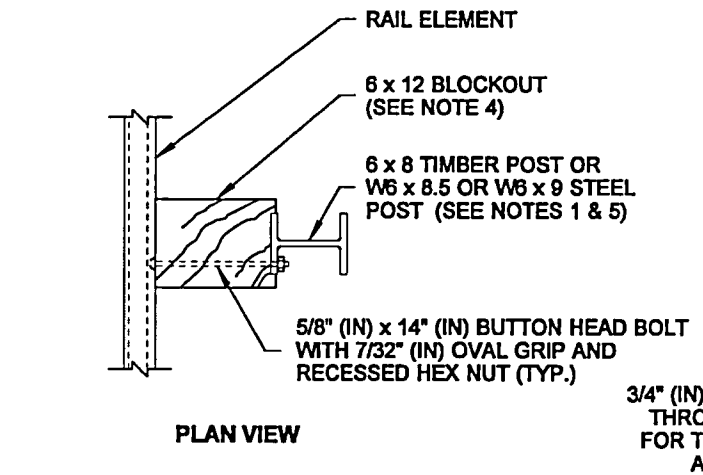
TYPICAL SECTION ~ WITHOUT CURB
(6' - 0" LONG POSTS)



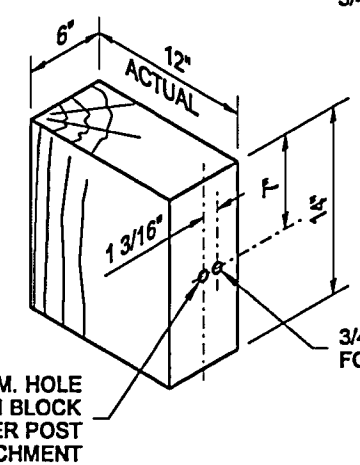
TYPICAL ELEVATION



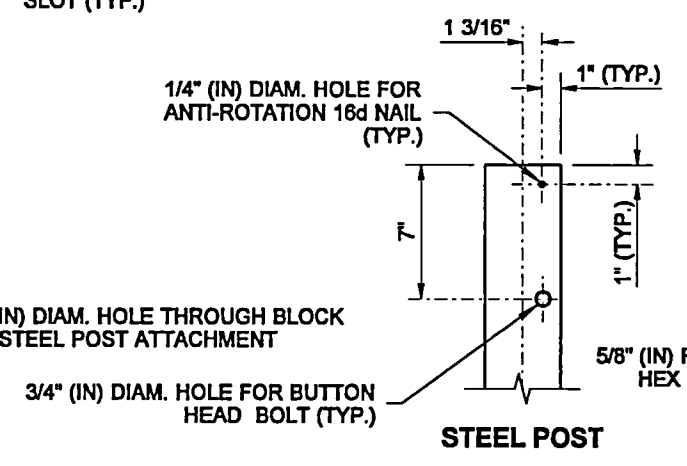
TYPICAL RAIL ELEMENT



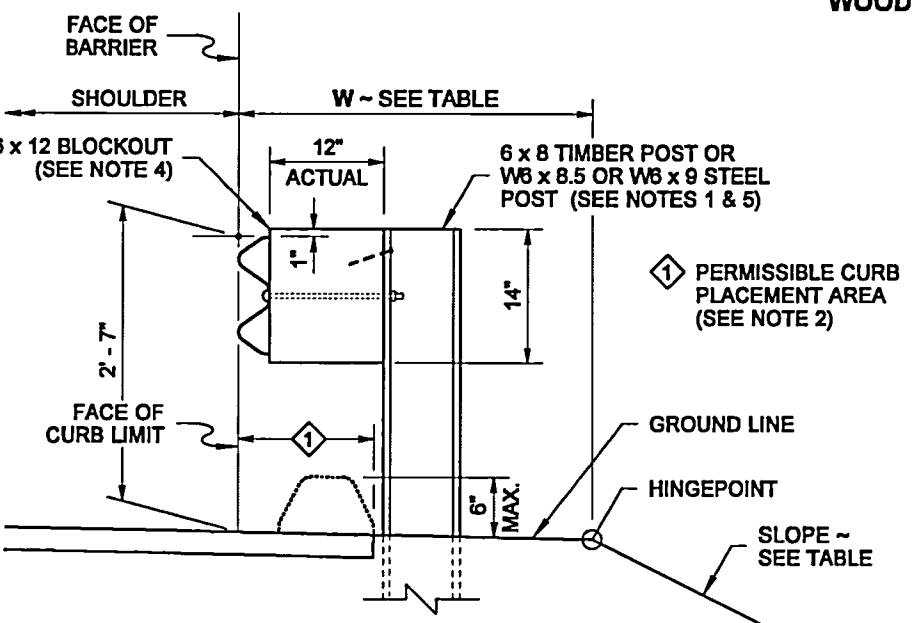
PLAN VIEW



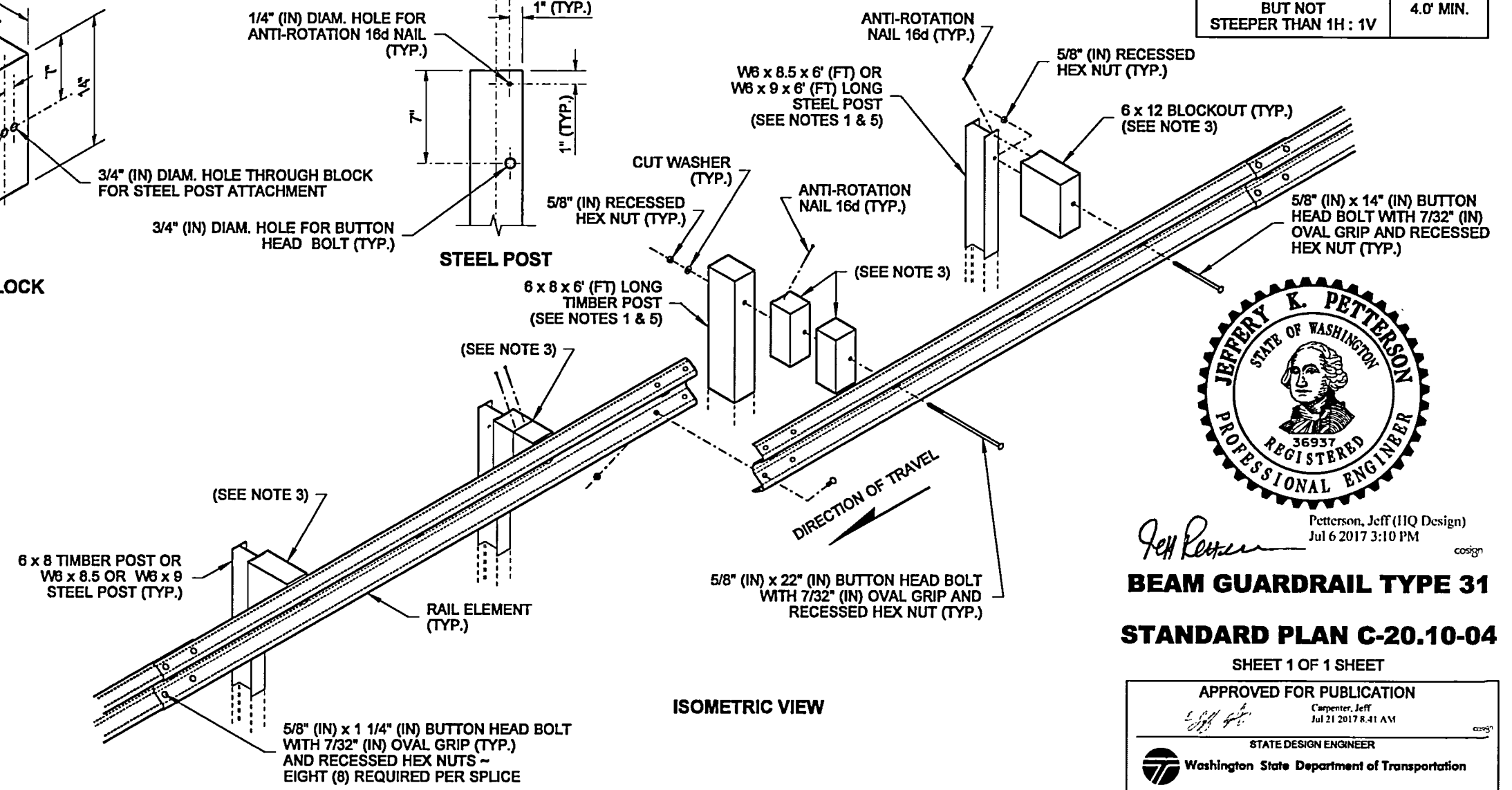
WOOD BLOCK



STEEL POST



ELEVATION VIEW
TYPICAL SECTION ~ WITH CURB
(6' - 0" LONG POSTS)

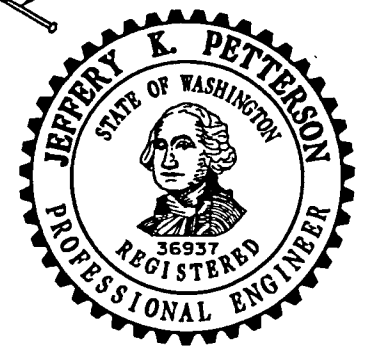


ISOMETRIC VIEW

NOTES

1. Refer to **Standard Plan C-1b** and **C-20.11** for additional details not shown on this plan.
2. Extend shoulder pavement to provide a base for the extruded curb. See Contract Plans for exceptions to distances shown.
3. Use a single block or combination of blocks (no more than two (2) to achieve the actual 12" (in) offset. See **Standard Specification Section 9-16.3(2)**. Wood blocks shall be secured to the posts with anti-rotation nails. If combination blocks are used, the adjacent blocks shall be toenailed with two 16d galvanized nails to prevent block rotation.
4. Wood blocks are shown. Blocks of an approved alternative material may be used. See **Standard Specification Section 9-16.3(2)**.
5. All posts for any standard barrier run shall be of the same type: timber or steel.

SLOPE \ EMBANKMENT TABLE	
SLOPE	W (FT)
2H : 1V OR FLATTER	2.5' MIN.
STEEPER THAN 2H : 1V BUT NOT STEEPER THAN 1H : 1V	4.0' MIN.



Peterson, Jeff (HQ Design)
Jul 6 2017 3:10 PM
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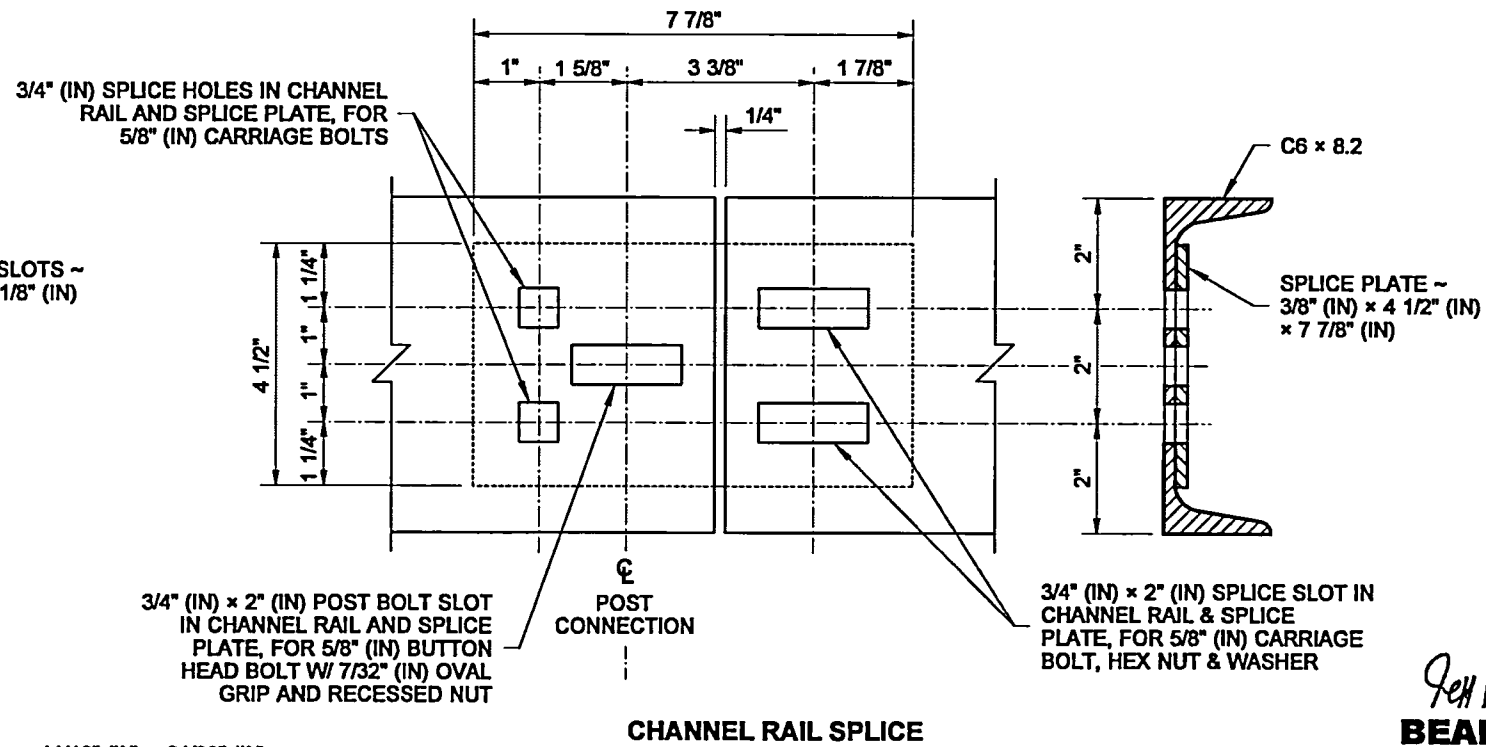
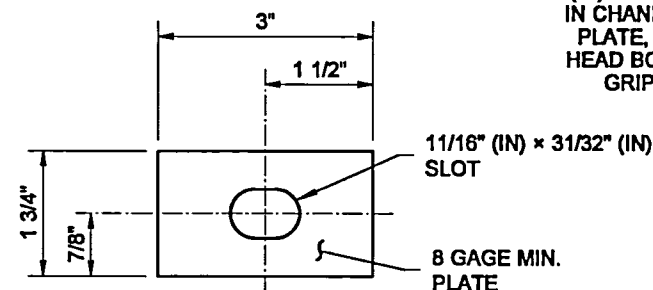
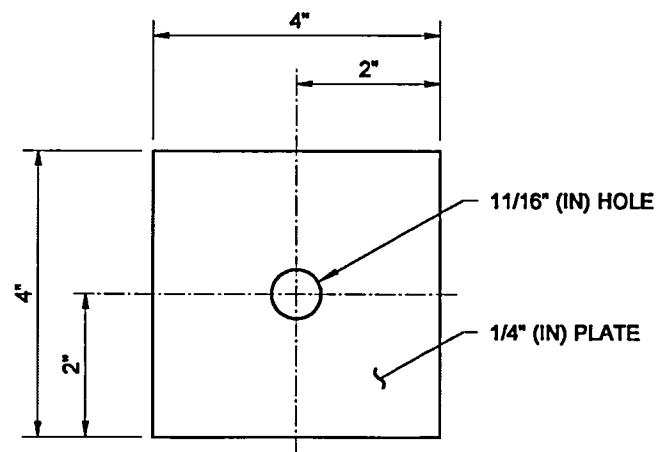
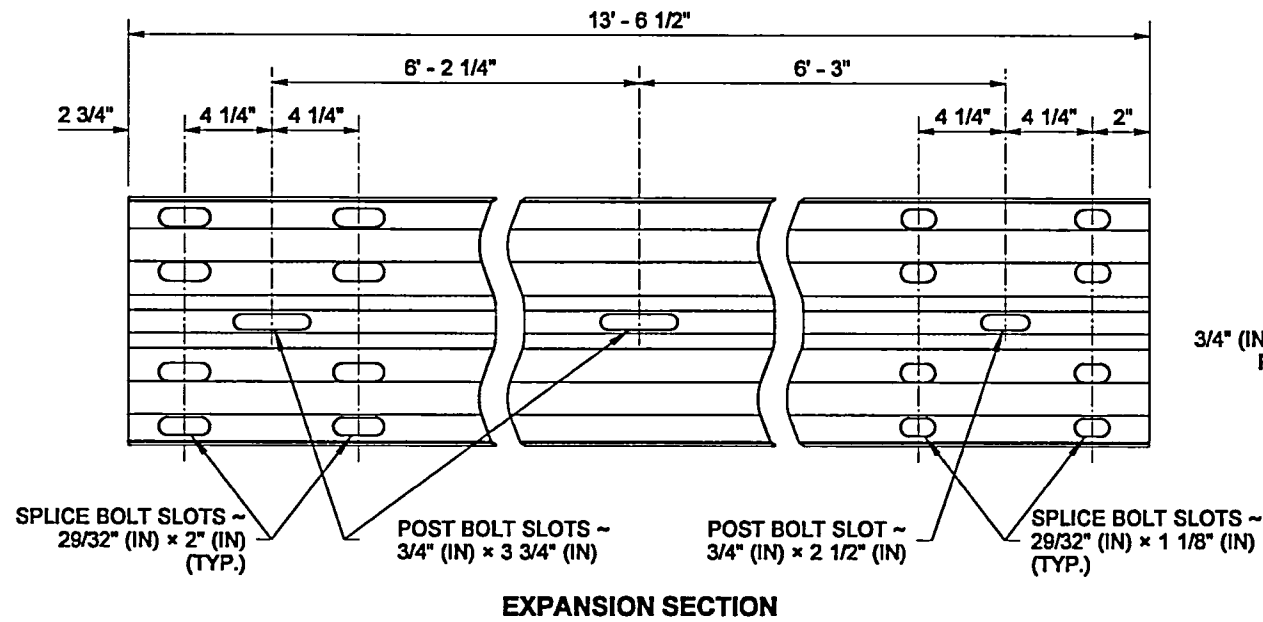
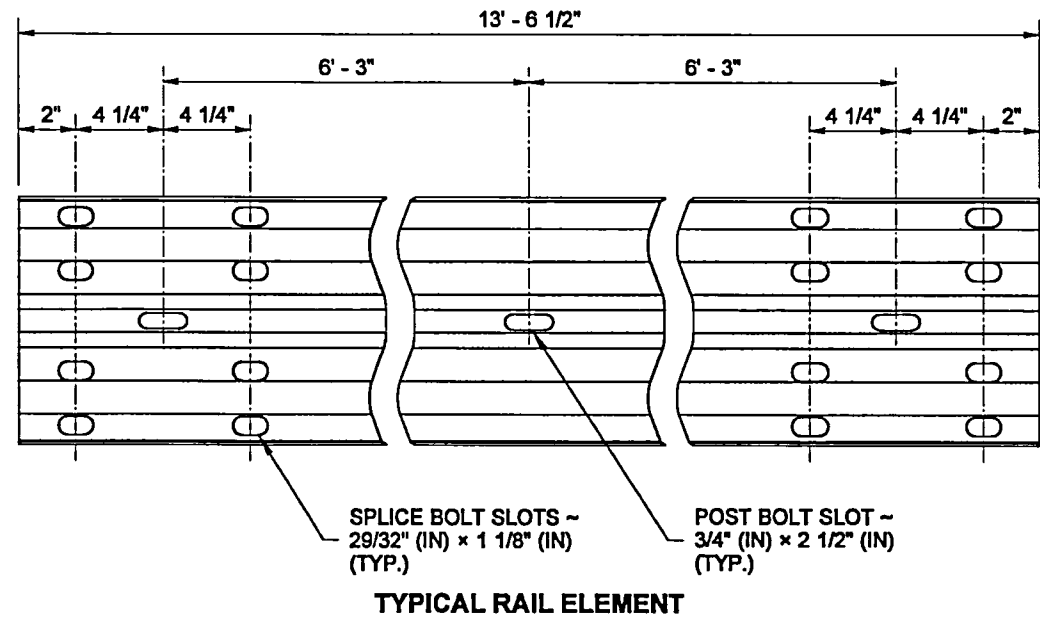
BEAM GUARDRAIL TYPE 31

STANDARD PLAN C-20.10-04

SHEET 1 OF 1 SHEET

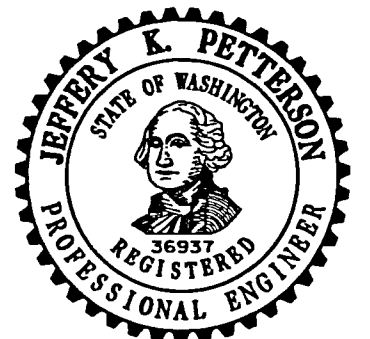
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Washington State Department of Transportation

DRAWN BY: FERN LIDDELL



NOTES

- When required by the Contract, a Snow Load Post Washer shall be used on the backside of the post (in lieu of the 1 3/4" (in) Post Bolt Washer) and a Snow Load Rail Washer shall be placed on the face side of Beam Guardrail Types 1 and 2. Snow Load Rail Washers shall not be installed on terminals.
- Rail Washers, also called "Snow Load Rail Washers", are not required on new installation, except as called for in Note 1. Unnecessary Rail washers need not be removed from existing installations, except those on posts 2 through 8 of a BCT installation shall be removed.
- Timber blocks shall be toe-nailed to the post with a 16d galvanized nail to prevent block rotation.
- For post and block details, see **Standard Plan C-1b**.
- When "Beam Guardrail Type - ___ Ft. Long Post" is specified in the Contract, the post length shall be stamped with numbers, 1 1/2" (in) min. high and 3/4" (in) wide at the location where the letter "H" is shown in the ASSEMBLY DETAIL. For wood post applications, the letter shall be stamped to a minimum depth of 1/4" (in). For steel post applications, the letter shall be legible after the post is galvanized. After post installation, it shall be the Contractor's responsibility to ensure the stamped numbers remain visible.
- Existing posts shall not be raised. Replace posts as necessary to achieve required guardrail height.
- Holes shall be located on approaching traffic side of web.



Petterson, Jeff (HQ Design)
Jul 6 2017 3:11 PM

BEAM GUARDRAIL TYPE 31 COMPONENTS

STANDARD PLAN C-20.11-00

SHEET 1 OF 1 SHEET

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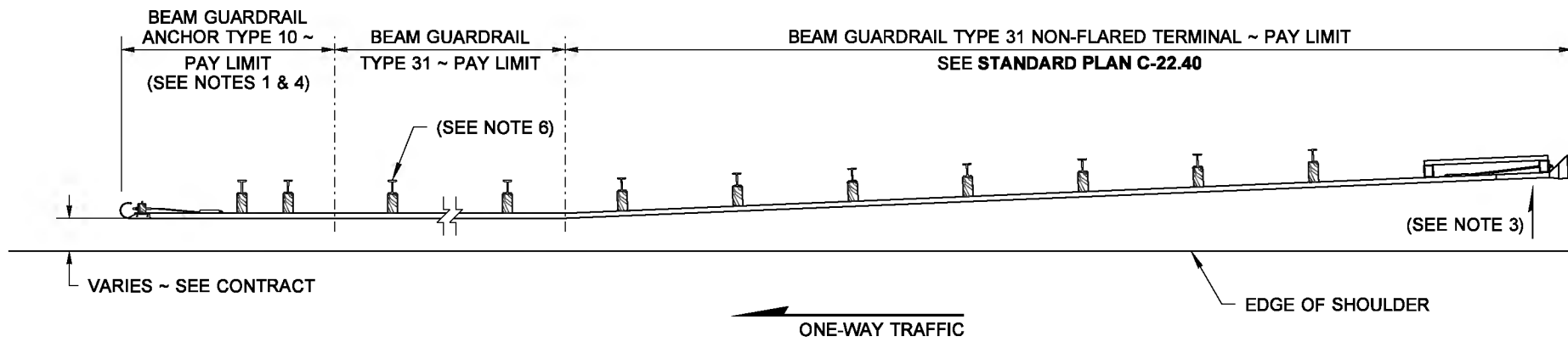
Carpenter, Jeff
Jul 21 2017 8:31 AM

STATE DESIGN ENGINEER

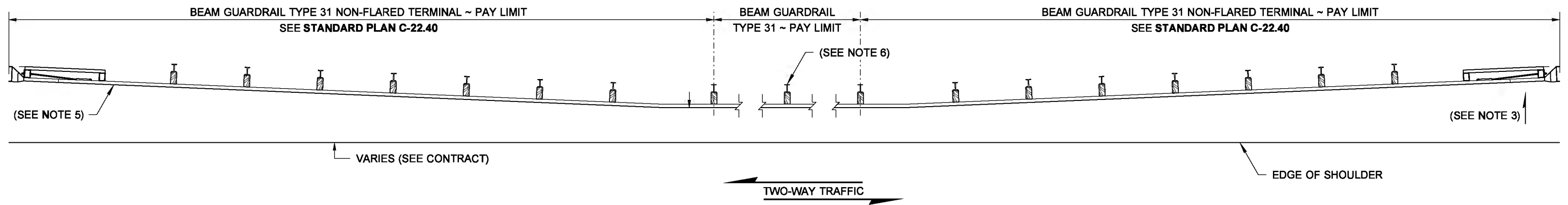
Washington State Department of Transportation

NOTES

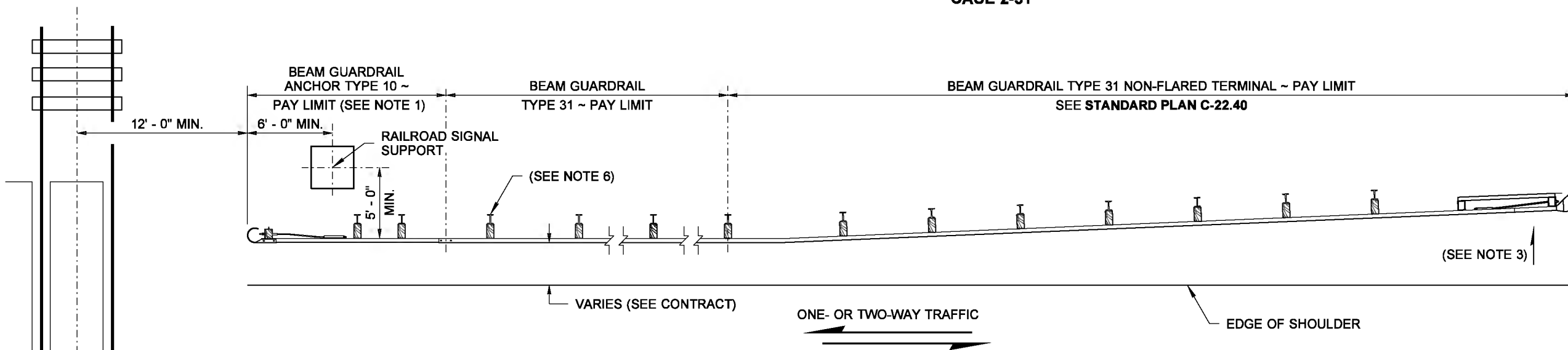
1. For component details, see **Standard Plan C-23.60**.
2. For terminal type and details, see Contract Plans and applicable drawings.
3. The slope from the edge of the shoulder into the face of the guardrail cannot exceed 10H : 1V when the face of the guardrail is less than 12' - 0" from the edge of the shoulder.
4. For one-way traffic and where a crashworthy terminal is not required, use the Beam Guardrail Anchor Type 10; see **Standard Plan C-23.60**.
5. Where a crashworthy terminal is required, use a Beam Guardrail Type 31 Non-Flared Terminal; see **Standard Plan C-22.40**.
6. Timber or steel post. Steel post shown.



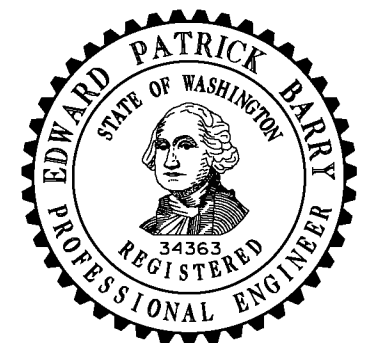
CASE 1-31



CASE 2-31



CASE 3-31

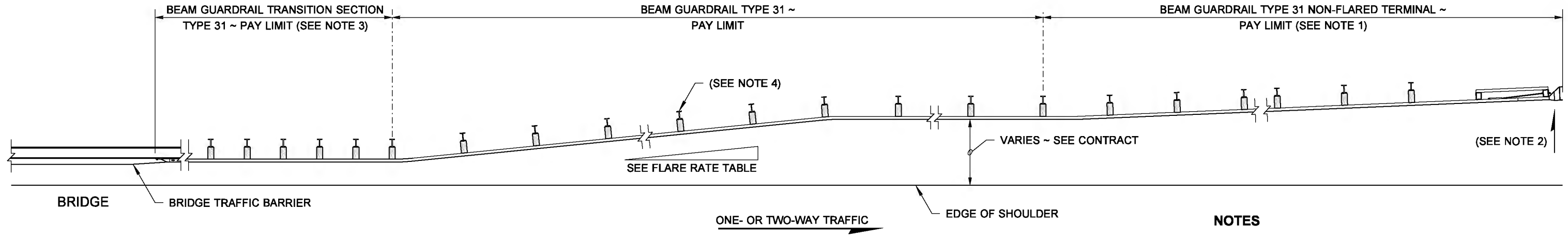


**BEAM GUARDRAIL TYPE 31
PLACEMENT
(CASES 1-31, 2-31 & 3-31)
STANDARD PLAN C-20.14-03**

SHEET 1 OF 1 SHEET

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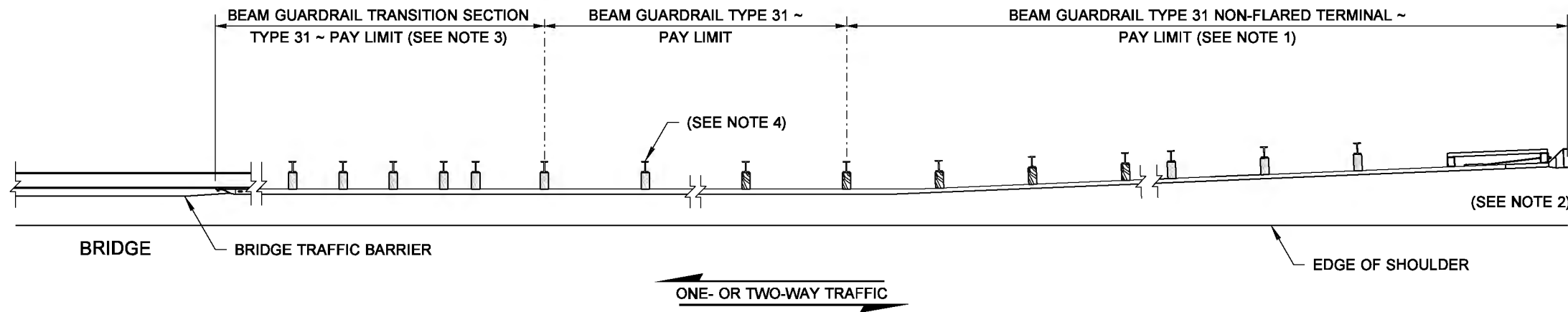
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CASE 4 - 31

NOTES

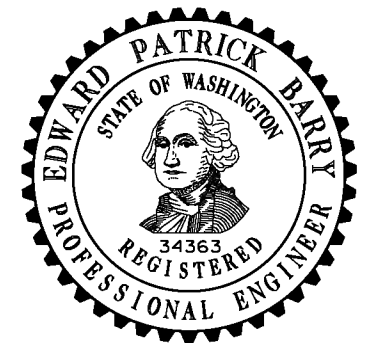
1. For details, see **Standard Plan C-22.40**.
2. The slope from the edge of the shoulder into the face of the guardrail should not be steeper than 10H : 1V when the guardrail is within 12' - 0" from the edge of the shoulder.
3. See Contract for Beam Guardrail Transition Section type and Connection to Bridge Traffic Barrier or Concrete Barrier. See **Standard Plan C-24.10** for connection details.
4. Timber or steel post. Steel post shown.



CASE 5 - 31

FLARE RATE TABLE

POSTED SPEED (MPH)	RATE (FT)
70	15 : 1
60	14 : 1
55	12 : 1
50	11 : 1
45	10 : 1
40 OR LESS	9 : 1



**BEAM GUARDRAIL TYPE 31
PLACEMENT
(CASES 4-31 & 5-31)**

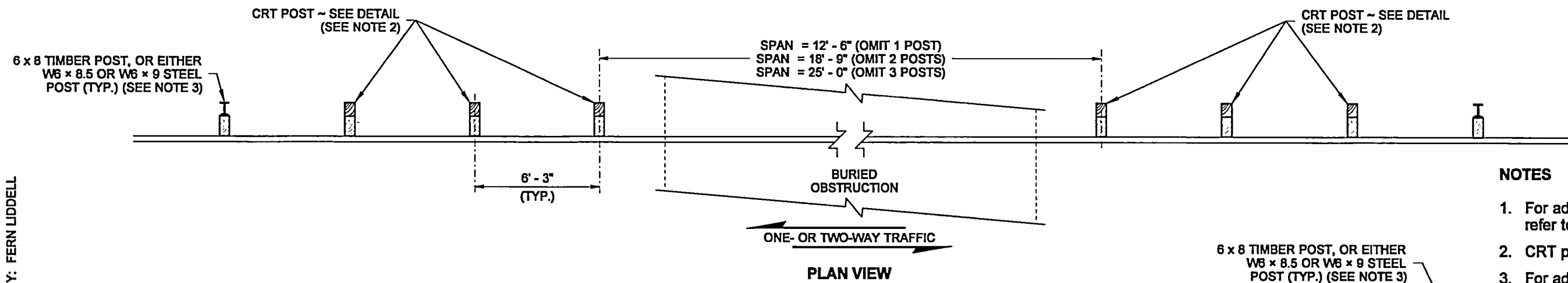
STANDARD PLAN C-20.15-02

SHEET 1 OF 1 SHEET

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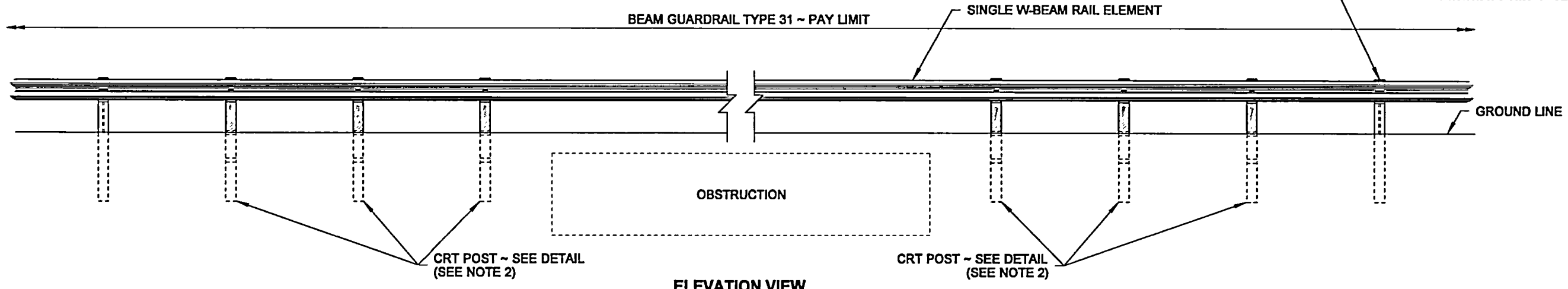
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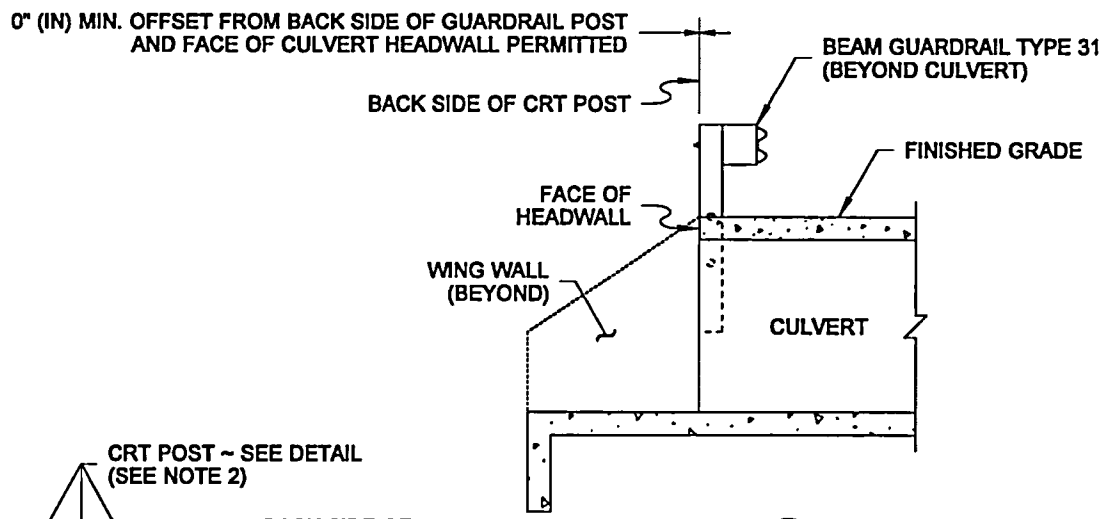
PLAN VIEW

NOTES

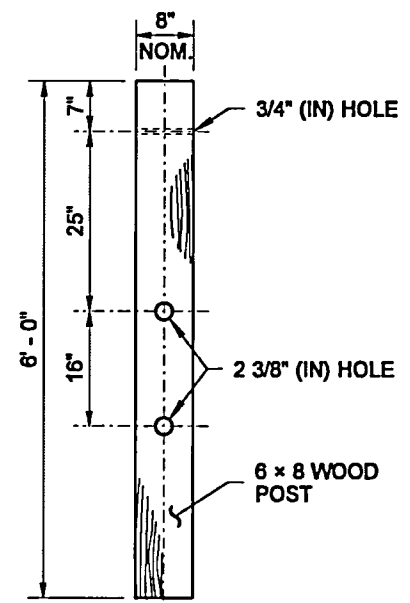
1. For additional details not shown on this plan, refer to **Standard Plan C-20.10**.
2. CRT post to be wood only.
3. For additional details not shown, see **Standard Plan C-1b**.



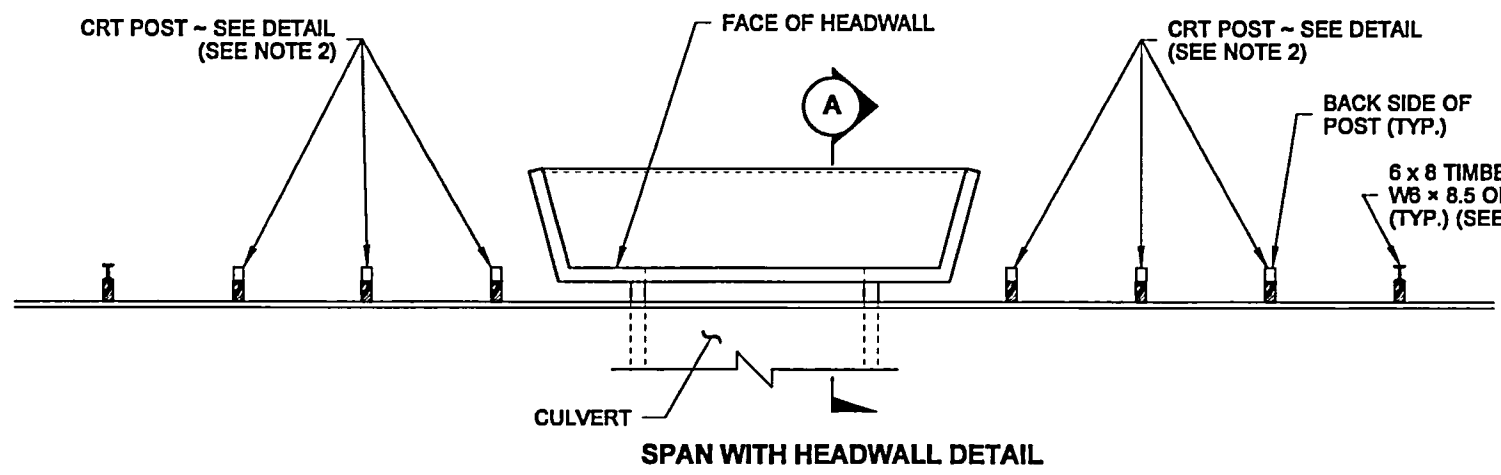
ELEVATION VIEW



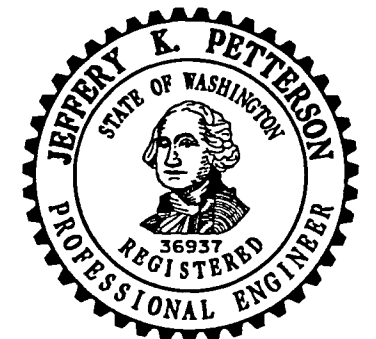
SECTION A



CONTROLLED RELEASING TERMINAL (CRT) POST DETAIL



SPAN WITH HEADWALL DETAIL



Petterson, Jeff (IIQ Design)
Jul 6 2017 3:12 PM

**BEAM GUARDRAIL TYPE 31
PLACEMENT 12' - 6", 18' - 9",
OR 25' - 0" SPAN**

STANDARD PLAN C-20.40-06

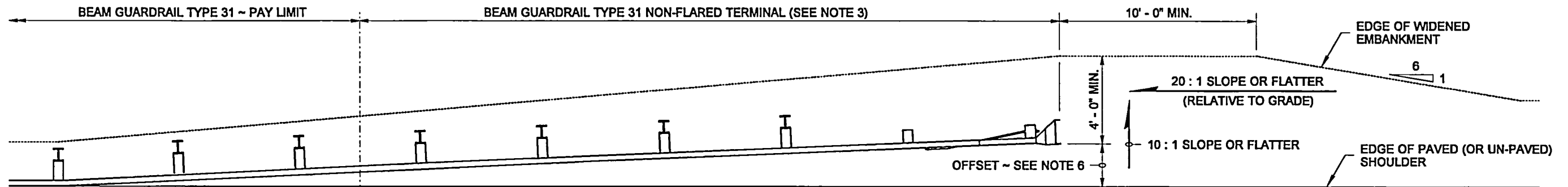
SHEET 1 OF 1 SHEET

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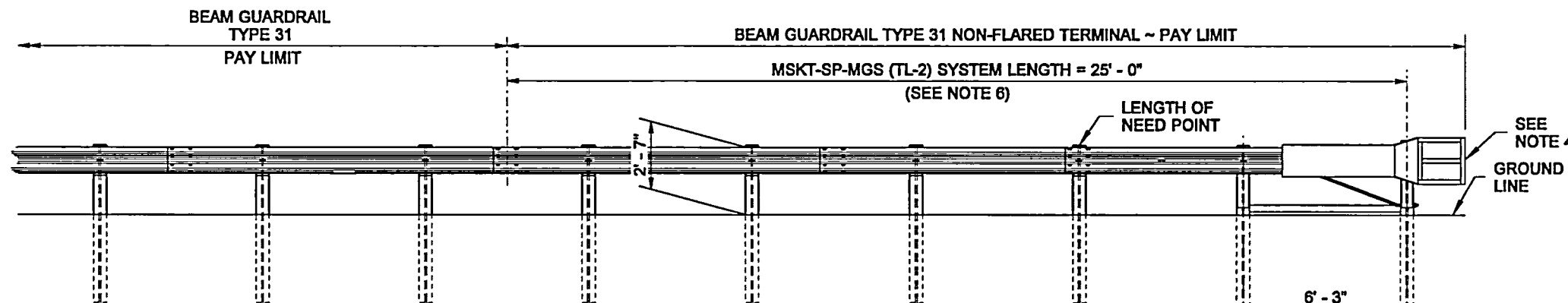
Washington State Department of Transportation



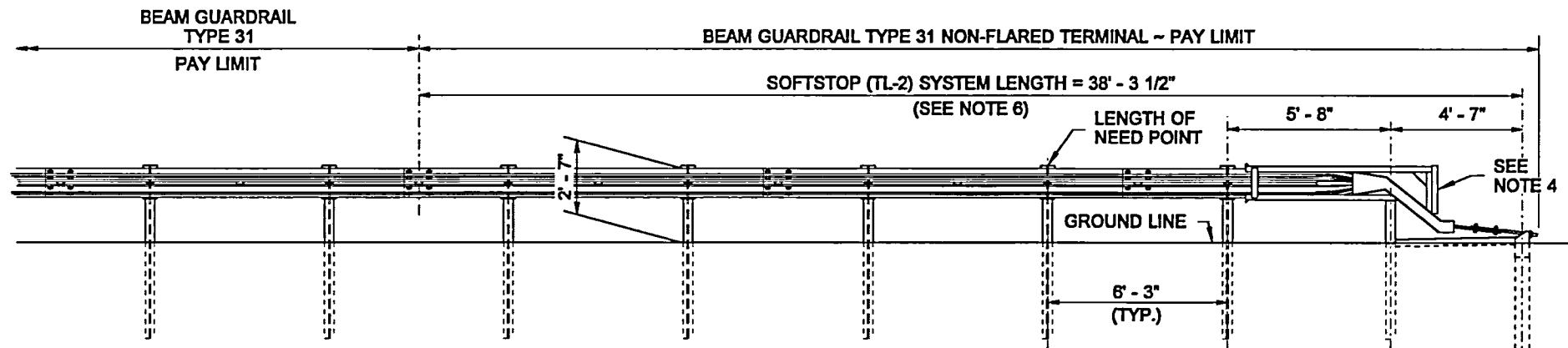
PLAN VIEW
(MSKT-SP-MGS (TL-2) SHOWN)

NOTES

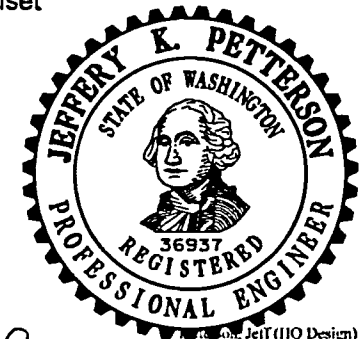
1. The Implementation of the Manual for Assessment of Safety Hardware (MASH) criteria may result in the acceptance of guardrail terminal systems currently not shown on this plan. Non-Flared terminals shall be selected from the WSDOT Qualified Products List (QPL) or approved through the WSDOT Request for Approval of Materials (RAM) process.
2. This terminal is MASH compliant at Test Level Two (TL-2) and may be used in applications with posted speeds of 45 mph or less.
3. An MSKT-SP-MGS (TL-2) as manufactured by Road Systems, Inc. or SOFTSTOP (TL-2) as manufactured by Trinity Highway Products, LLC shall be installed according to manufacturer's recommendations.
4. A reflectorized object marker shall be installed according to manufacturer's recommendations.
5. When snow load post washers and snow load rail washers are required by the Contract, the snow load rail washers shall not be installed within the terminal limits.
6. Terminal shall be installed at a widening, ensuring the end piece is entirely off the shoulder. While this terminal does not require an offset at the end, a flare is recommended. For the MSKT-SP-MGS (TL-2), a maximum flare of 25 : 1 or flatter over the length of the terminal is allowed with a maximum offset of 24" (in) over 50' (ft).
For the SOFTSTOP (TL-2) a maximum flare of 38.29 : 1 or flatter is allowed over the system length of 38' - 3 1/2" with a maximum offset of 12" (in) at the anchor post.
7. For terminal details, see WSDOT approved manufacturer's drawings.
8. These terminals are supplied with steel posts only. They can be used with guardrail runs composed of steel or wood guardrail posts.



ELEVATION VIEW
MSKT-SP-MGS (TL-2)
(SEE NOTE 8)



ELEVATION VIEW
SOFTSTOP (TL-2)
(SEE NOTE 8)

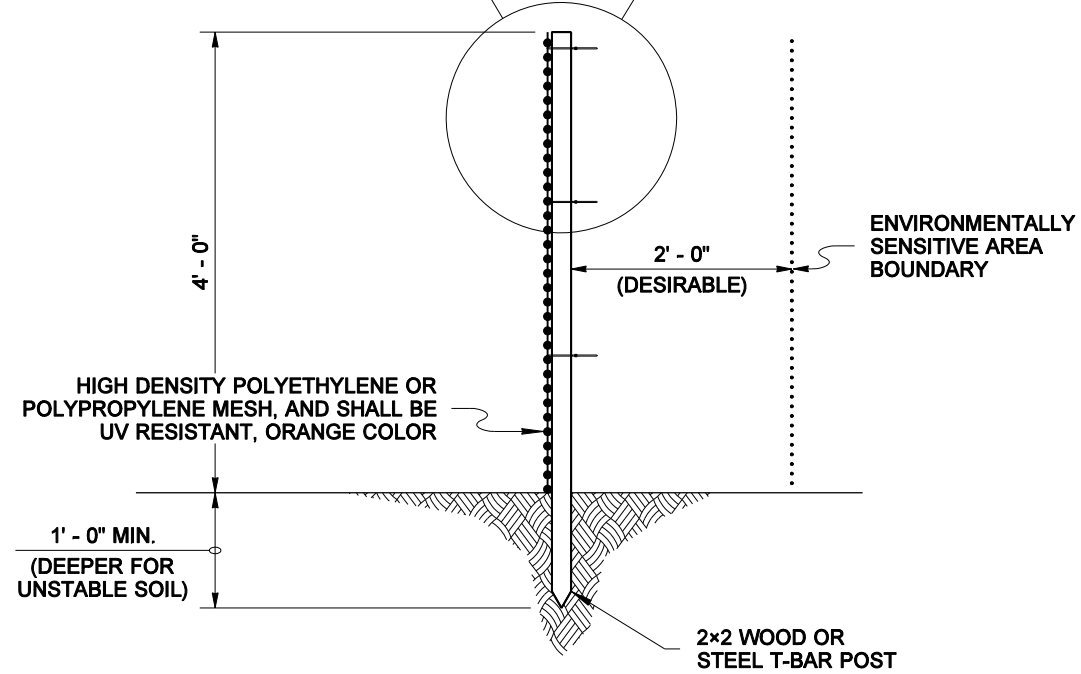
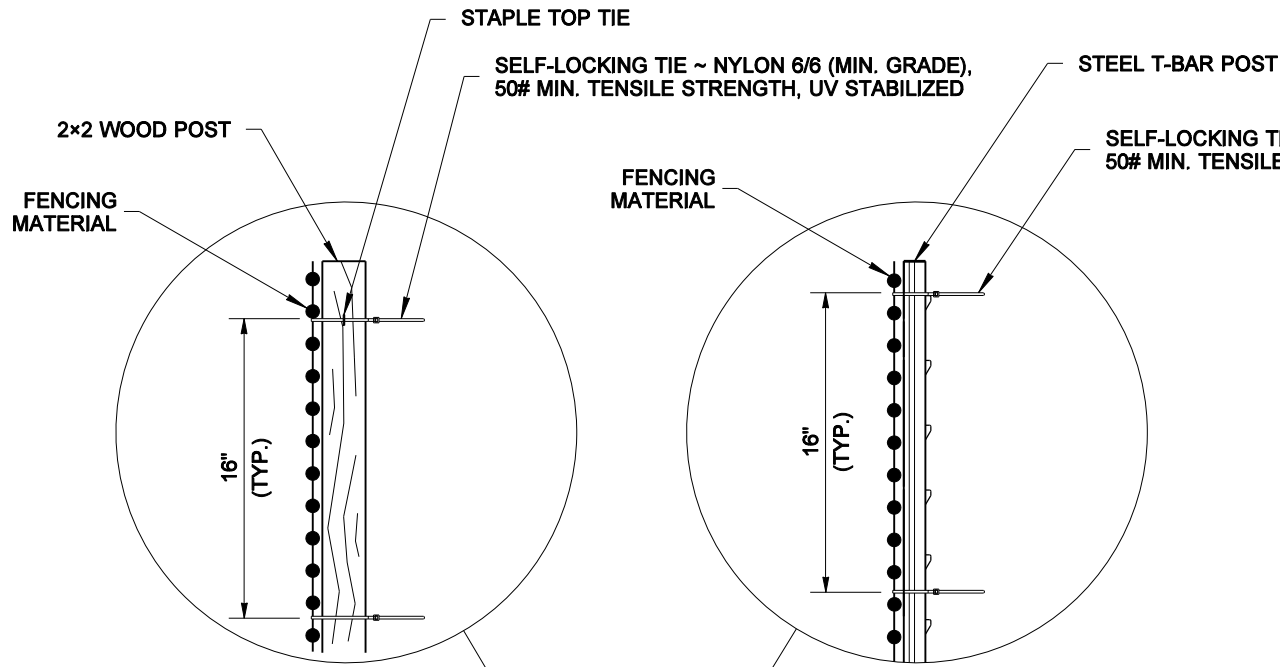


Jeff Petterson
**BEAM GUARDRAIL TYPE 31
 NON-FLARED TERMINAL
 (POSTED SPEED
 45 MPH AND BELOW)
 STANDARD PLAN C-22.45-03**

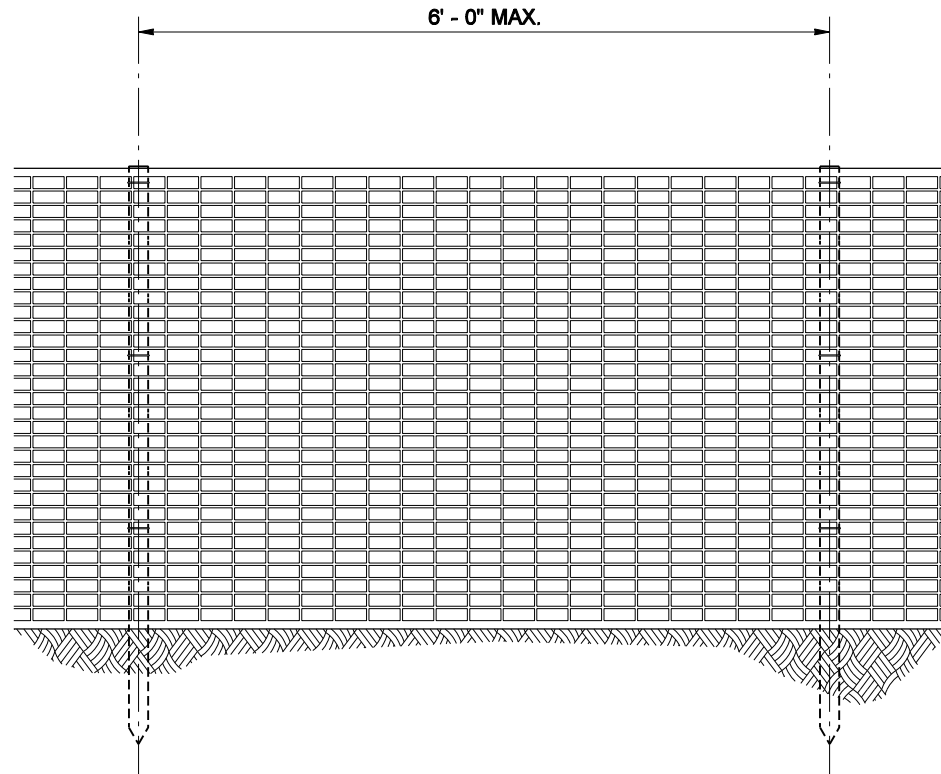
SHEET 1 OF 1 SHEET

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 STATE DESIGN ENGINEER
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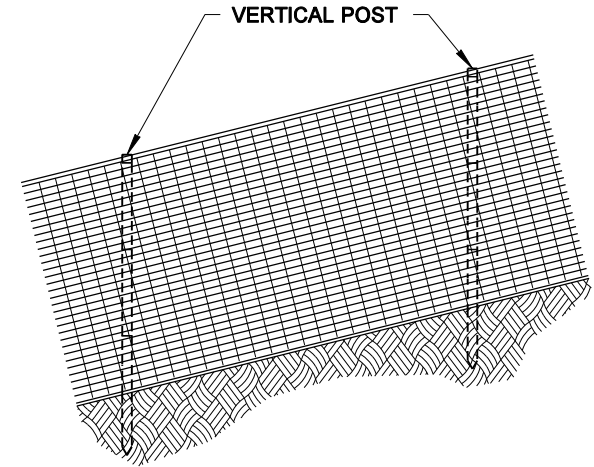
DRAWN BY: BILL BERENS



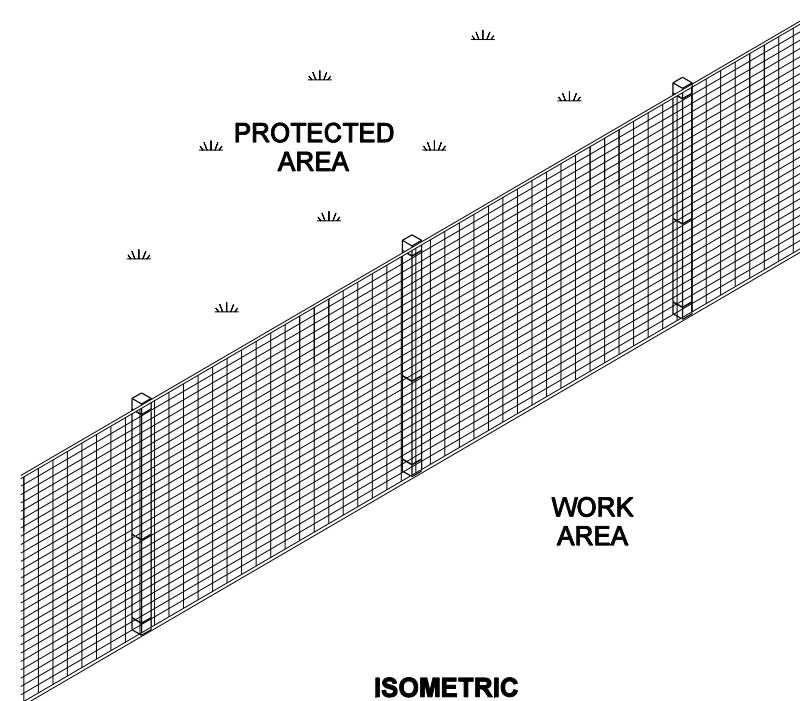
TYPICAL SECTION



ELEVATION



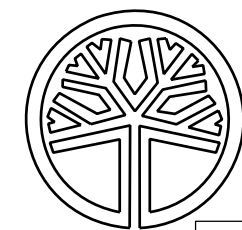
ELEVATION
FENCE ON SLOPE



ISOMETRIC

NOTE

1. Post shall have sufficient strength and durability to support the fence through the life of the project.



STATE OF WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT

MARK W. MAURER
CERTIFICATE NO. 000598

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HIGH VISIBILITY FENCE

STANDARD PLAN I-10.10-01

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

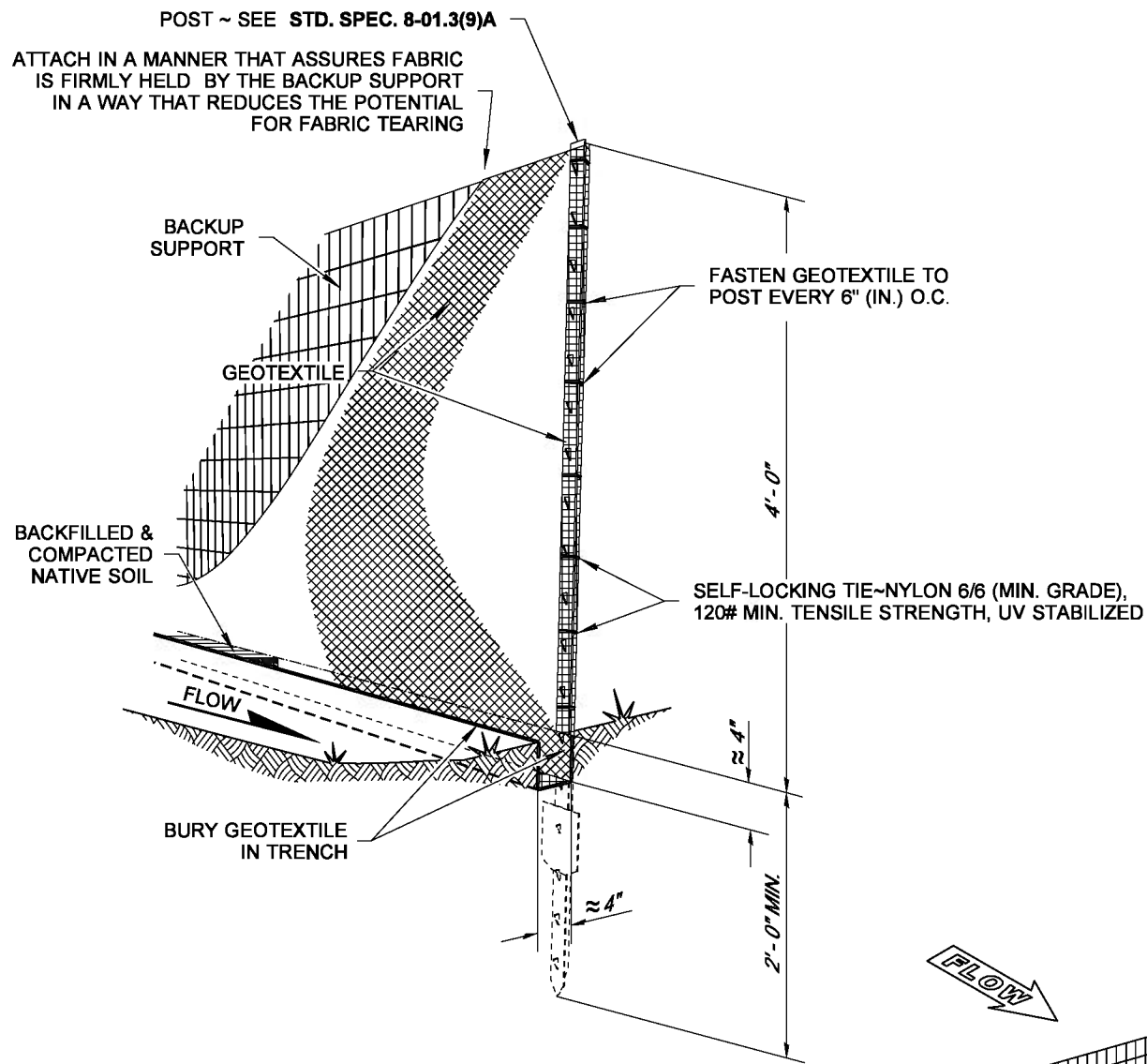
Pasco Bakotich III 08-11-09

STATE DESIGN ENGINEER

DATE

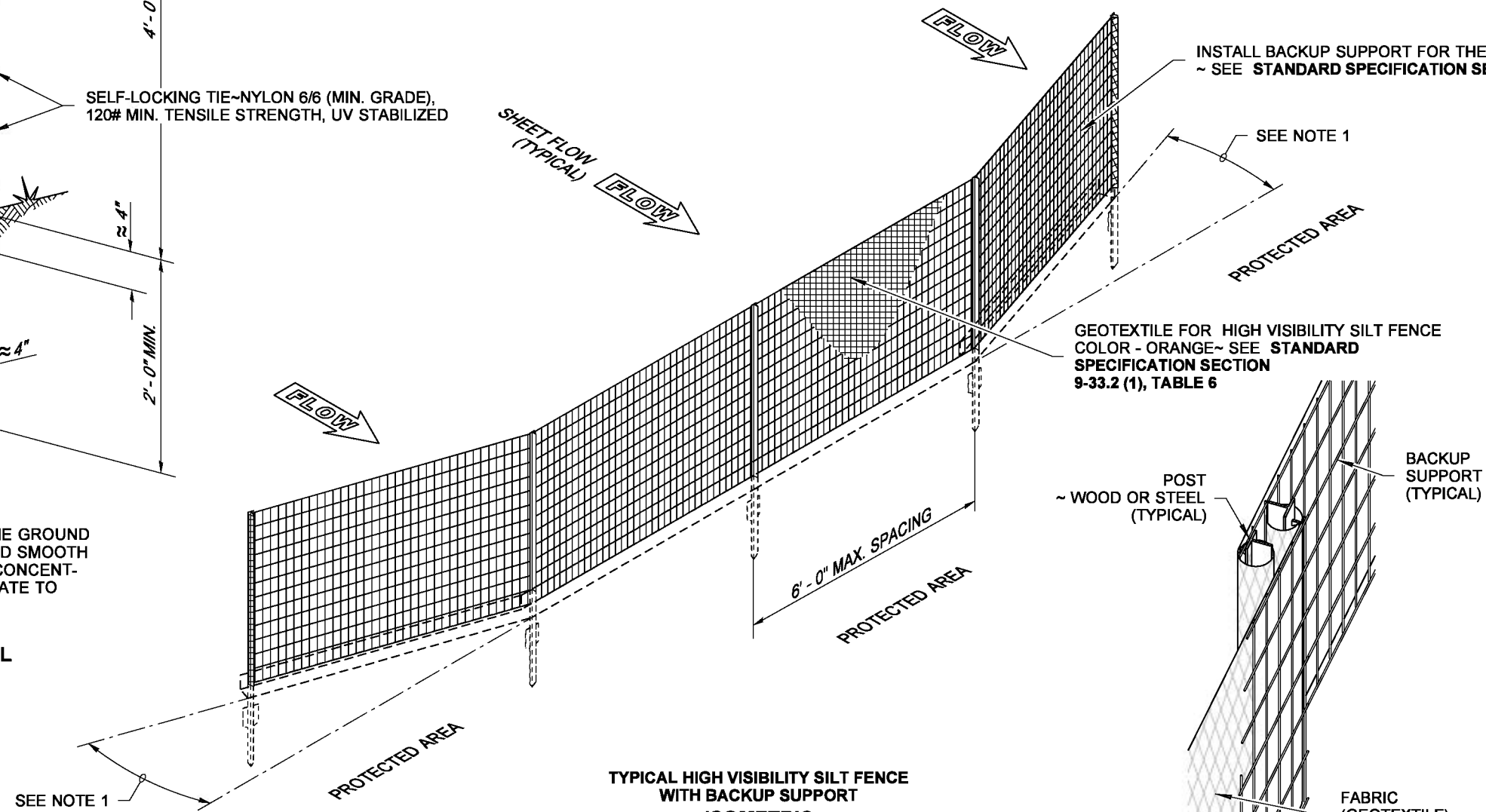


Washington State Department of Transportation



NOTE
 DURING EXCAVATION, MINIMIZE DISTURBING THE GROUND AROUND TRENCH AS MUCH AS IS FEASIBLE, AND SMOOTH SURFACE FOLLOWING EXCAVATION TO AVOID CONCENTRATING FLOWS. COMPACTION MUST BE ADEQUATE TO PREVENT UNDERCUTTING FLOWS.

TYPICAL INSTALLATION DETAIL
 (STEEL POSTS SHOWN)



TYPICAL HIGH VISIBILITY SILT FENCE WITH BACKUP SUPPORT ISOMETRIC
 (STEEL POSTS SHOWN)

SPLICE DETAIL
 (STEEL POSTS SHOWN)

SPLICED FENCE SECTIONS SHALL BE CLOSE ENOUGH TOGETHER TO PREVENT SILT LADEN WATER FROM ESCAPING THROUGH THE FENCE AT THE OVERLAP.

NOTES

1. Install the ends of the high visibility silt fence to point slightly upslope to prevent sediment from flowing around the ends of the fence.
2. Perform maintenance in accordance with **Standard Specifications 8-01.3(9)A and 8-01.3(15)**.
3. Splices shall never be placed in low spots or sump locations. If splices are located in low or sump areas, the fence may need to be reinstalled unless the Project Engineer approves the installation.
4. Install silt fencing parallel to mapped contour lines.

DRAWN BY: BILL BERENS

STATE OF WASHINGTON
 REGISTERED
 LANDSCAPE ARCHITECT

SANDRA L. SALISBURY
 CERTIFICATE NO. 000860

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HIGH VISIBILITY SILT FENCE WITH BACKUP SUPPORT

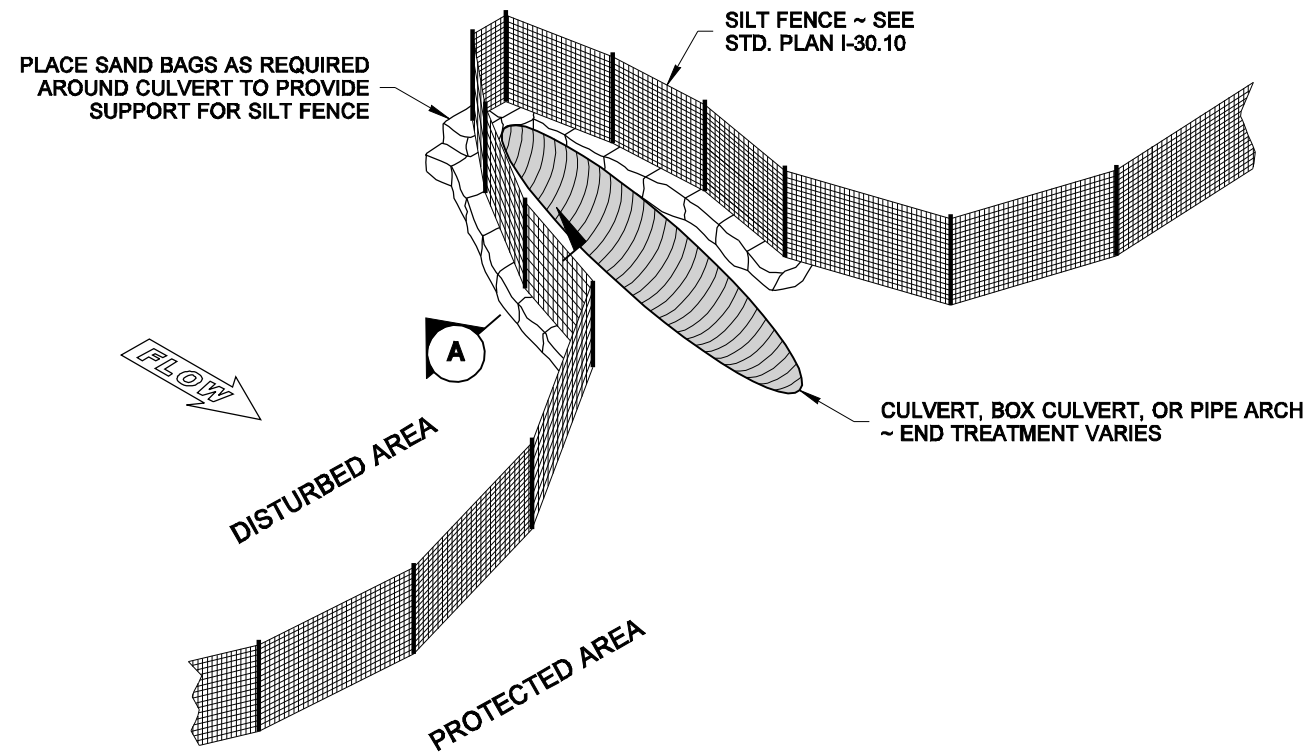
STANDARD PLAN I-30.16-00

SHEET 1 OF 1 SHEET

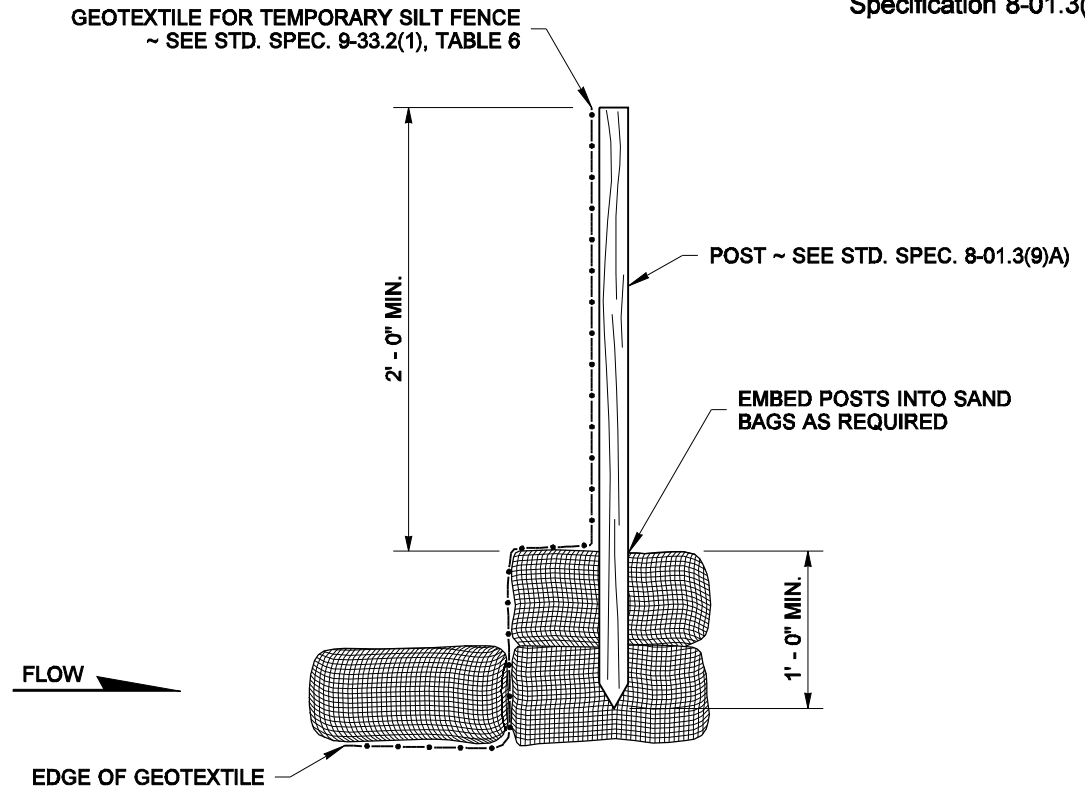
APPROVED FOR PUBLICATION

Pasco Bakotich III 3/22/13
 STATE DESIGN ENGINEER DATE





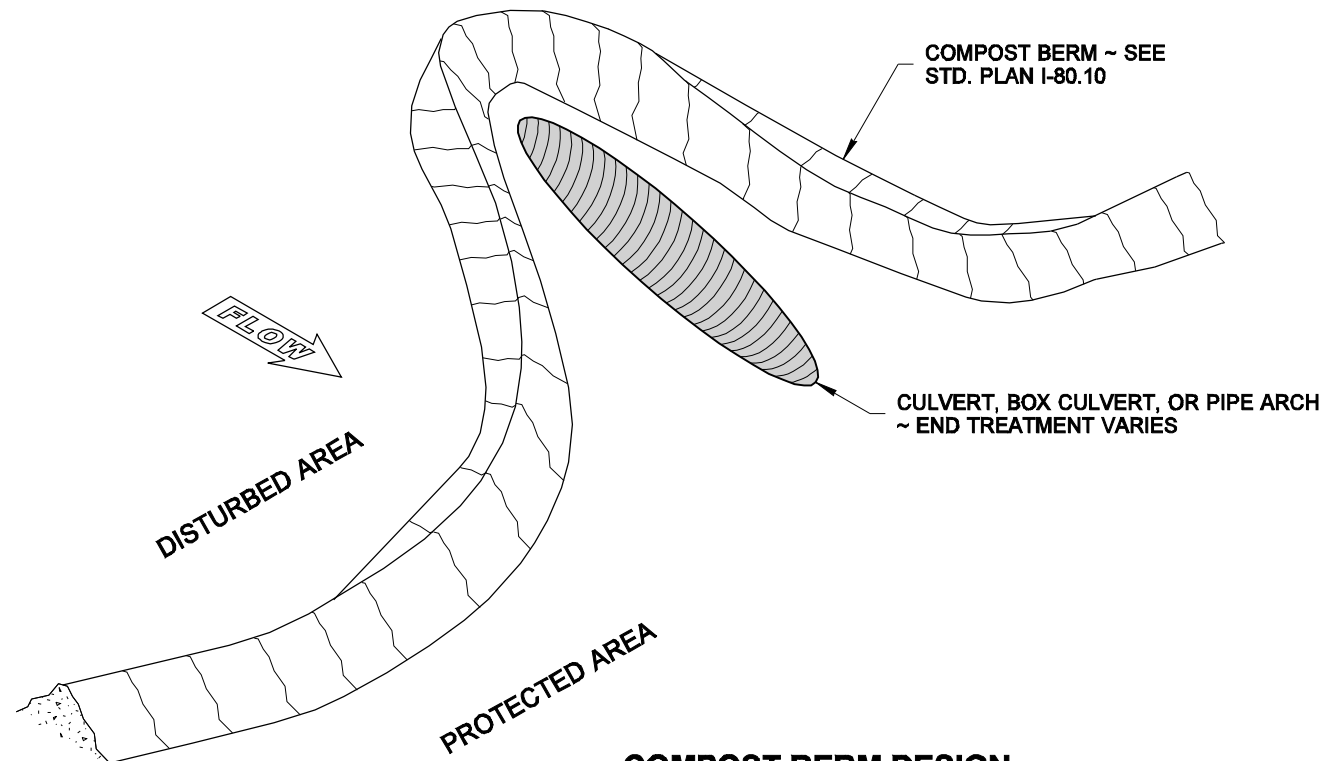
SILT FENCE DESIGN



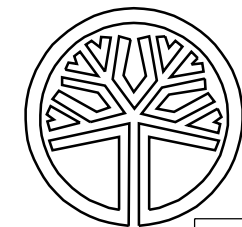
SECTION A

NOTE

Perform maintenance in accordance with Standard Specification 8-01.3(9)A and 8-01.3(15).



COMPOST BERM DESIGN



STATE OF WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT

MARK W. MAURER
CERTIFICATE NO. 000598

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**EROSION CONTROL
AT CULVERT ENDS
STANDARD PLAN I-30.20-00**

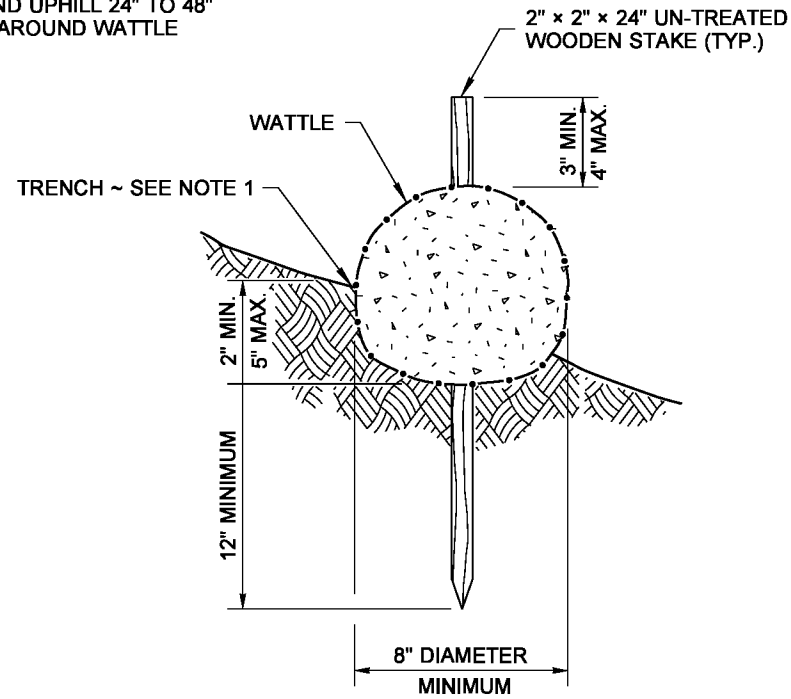
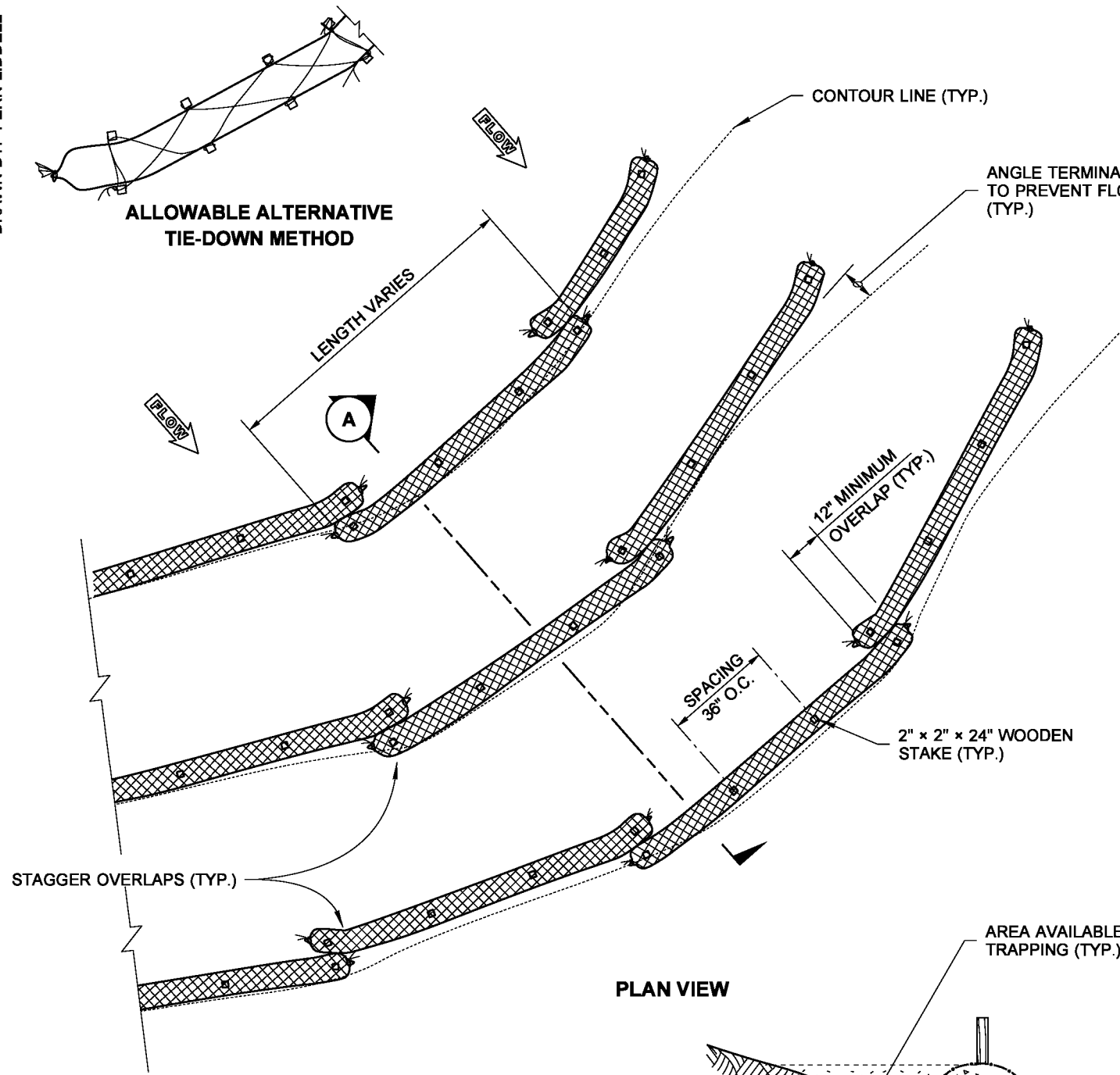
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

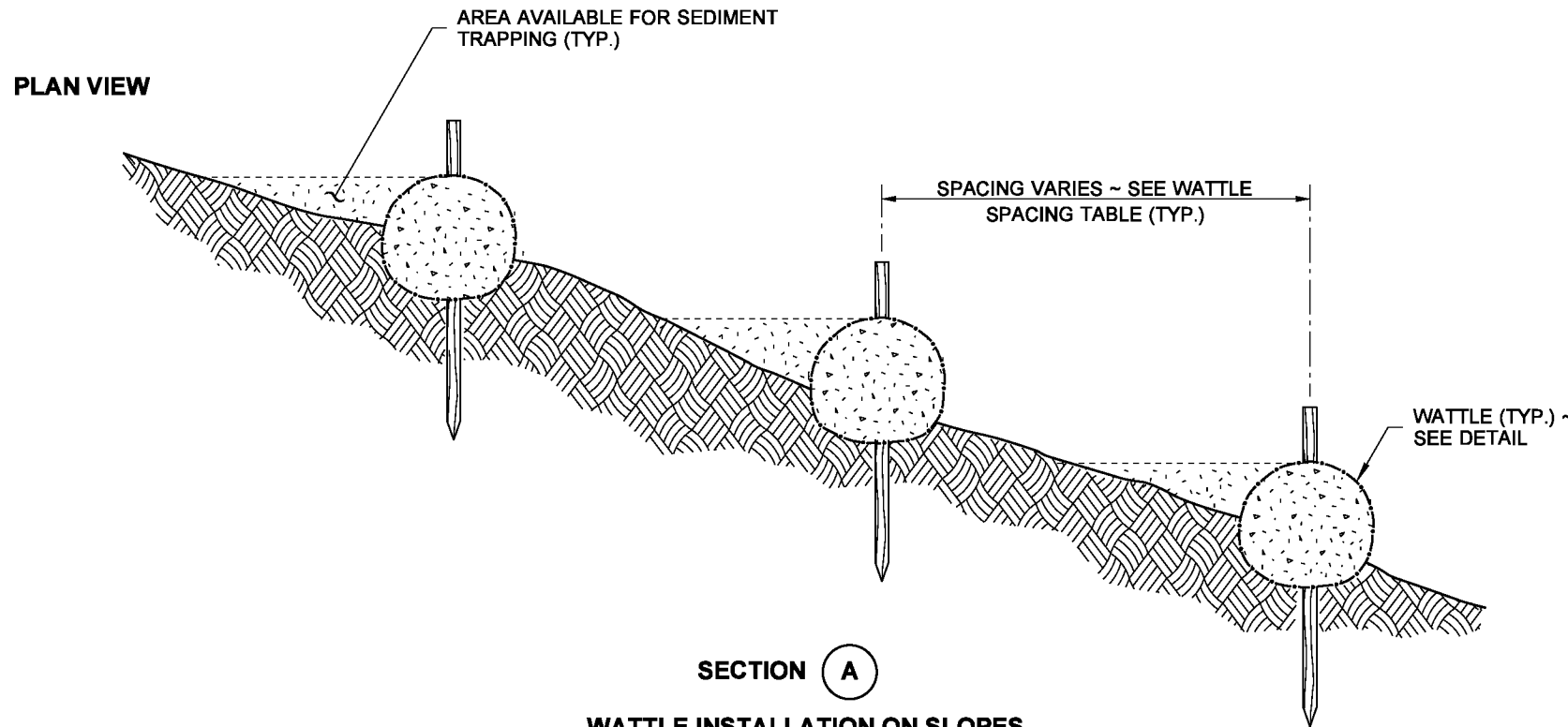
Pasco Bakotich III 09-20-07
STATE DESIGN ENGINEER DATE



DRAWN BY: FERN LIDDELL



WATTLE DETAIL



SECTION A
WATTLE INSTALLATION ON SLOPES

8" DIAMETER WATTLE SPACING TABLE	
SLOPE	MAXIMUM SPACING
1H : 1V	10' - 0"
2H : 1V	20' - 0"
3H : 1V	30' - 0"
4H : 1V	40' - 0"

NOTES

1. Wattles shall be in accordance with **Standard Specification 9-14.5(5)**. Install Wattles along contours. Installation shall be in accordance with **Standard Specification 8-01.3(10)**.
2. Securely knot each end of Wattle. Overlap adjacent Wattle ends 12" behind one another and securely tie together.
3. Compact excavated soil and trenches to prevent undercutting. Additional staking may be necessary to prevent undercutting.
4. Install Wattle perpendicular to flow along contours.
5. Wattles shall be inspected regularly, and immediately after a rainfall produces runoff, to ensure they remain thoroughly entrenched and in contact with the soil.
6. Perform maintenance in accordance with **Standard Specification 8-01.3(15)**.
7. Refer to **Standard Specification 8-01.3(16)** for removal.

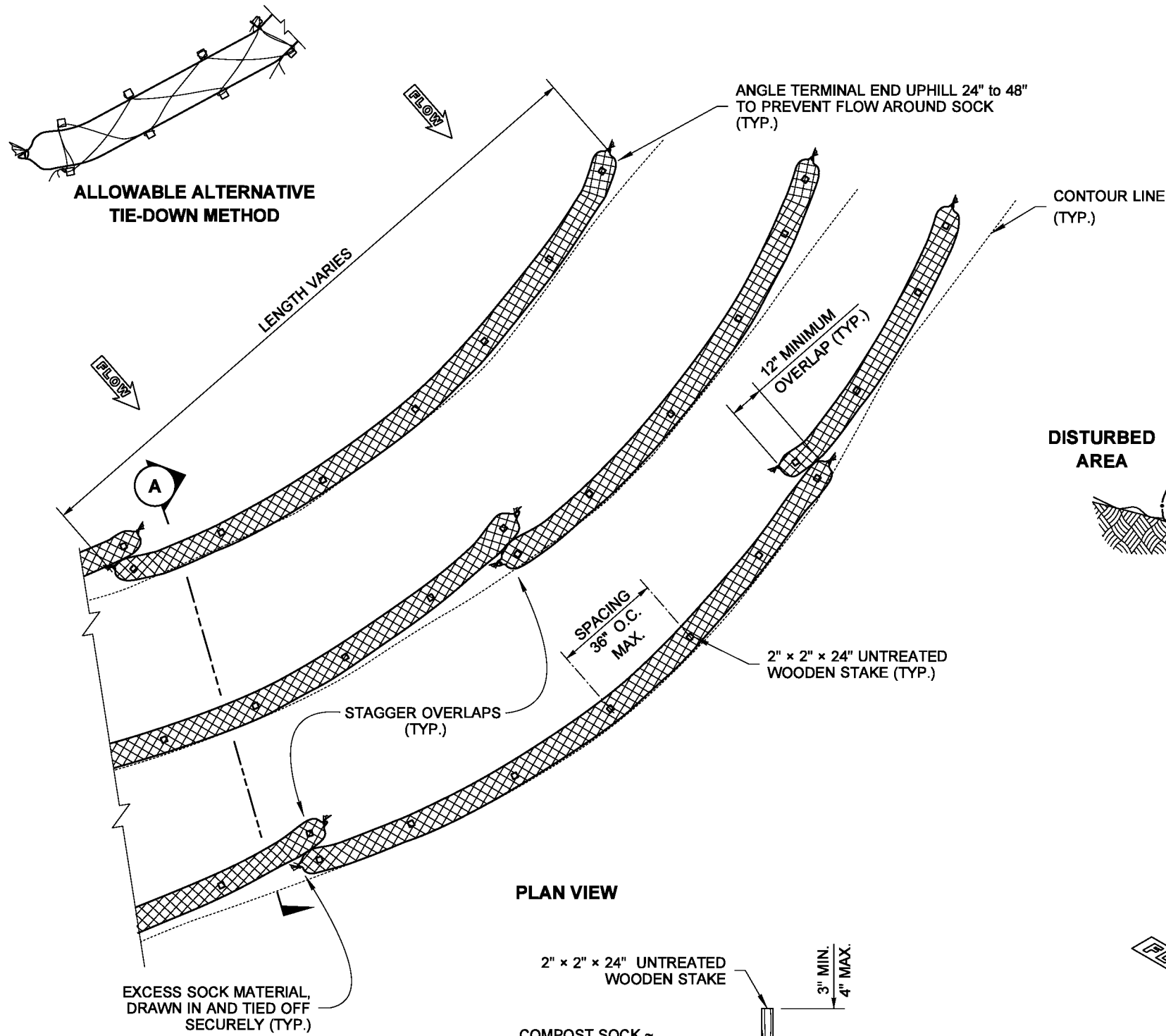
STATE OF WASHINGTON
REGISTERED LANDSCAPE ARCHITECT
Sandra L. Salisbury
SANDRA L. SALISBURY
LICENSE NO. 860
DATE: June 10, 2013

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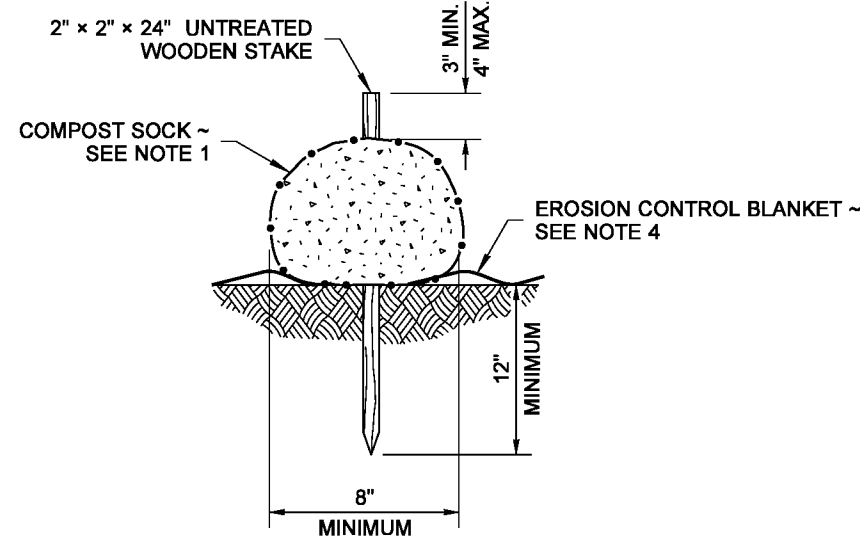
WATTLE INSTALLATION ON SLOPE
STANDARD PLAN I-30.30-01
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION
Pasco Bakotich III 6/10/13
STATE DESIGN ENGINEER DATE
Washington State Department of Transportation

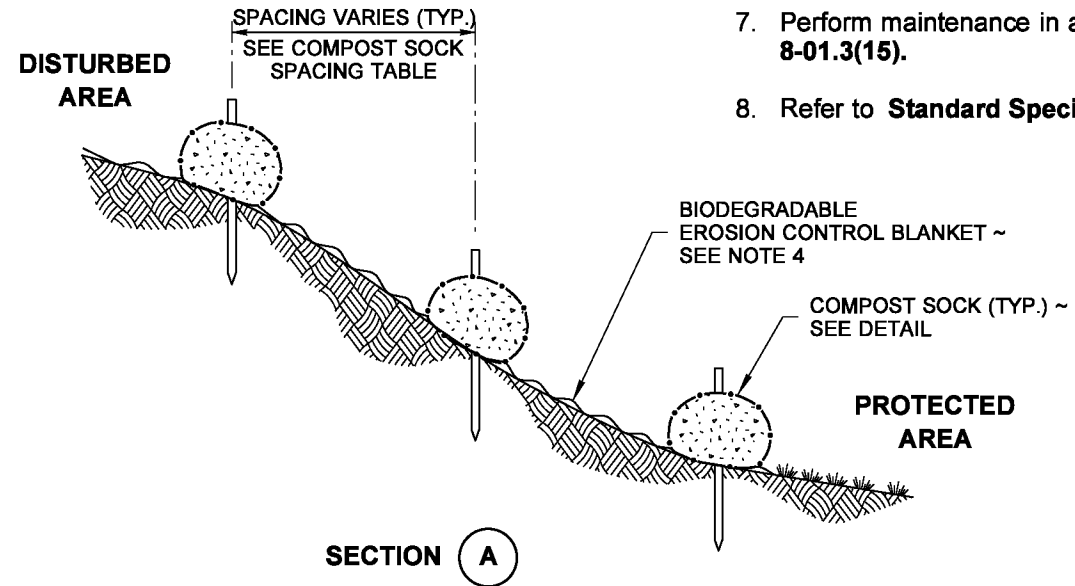
DRAWN BY: FERN LIDDELL



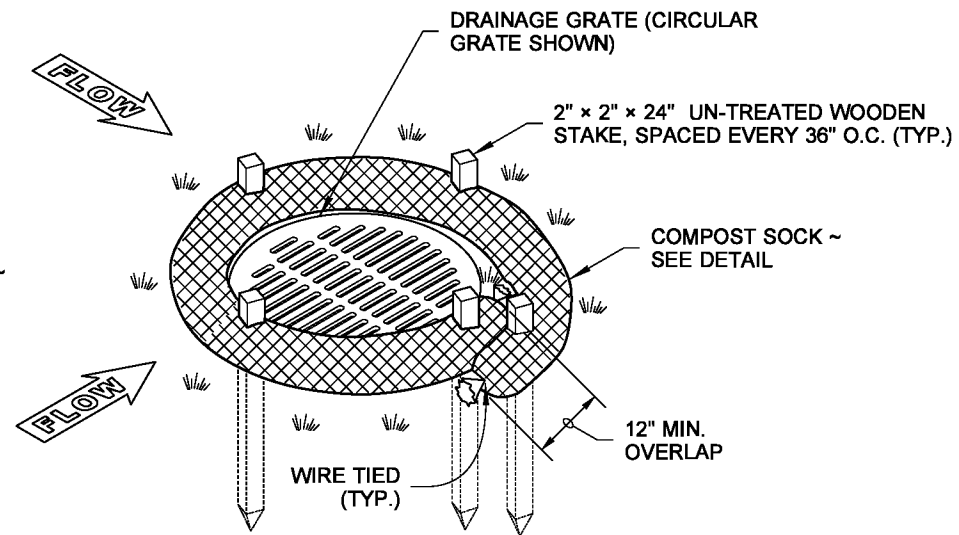
PLAN VIEW



COMPOST SOCK DETAIL



SECTION A



**ISOMETRIC VIEW
CATCH BASIN INSTALLATION**

NOTES

1. Compost Sock shall be in accordance with **Standard Specification 9-14.5(6)**.
2. Securely knot each end of Compost Sock. Overlap adjacent Compost Sock ends 12" behind one another and securely tie together.
3. Compost to be dispersed on site as determined by the Engineer, when vegetation covers the surface.
4. If Erosion Control Blanket is specified, place Compost Sock on top of blanket. See **Standard Plan I-60.10**.
5. Install Compost Sock perpendicular to flow along contours.
6. Remove sediment from the up slope side of the Compost Sock when accumulation has reached 1/2 of the effective height of the Compost Sock.
7. Perform maintenance in accordance with **Standard Specification 8-01.3(15)**.
8. Refer to **Standard Specification 8-01.3(16)** for removal.

8" DIAMETER COMPOST SOCK SPACING TABLE	
SLOPE	MAXIMUM SPACING
1H : 1V	10' - 0"
2H : 1V	20' - 0"
3H : 1V	30' - 0"
4H : 1V	40' - 0"



STATE OF
WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT

Sandra L. Salisbury
SANDRA L. SALISBURY
LICENSE NO. 860
DATE: June 6, 2013

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COMPOST SOCK

STANDARD PLAN I-30.40-01

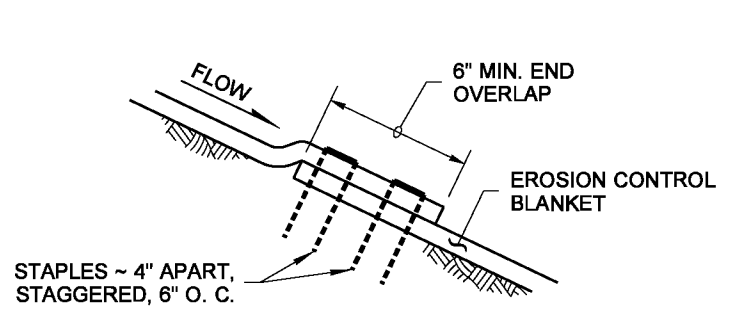
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

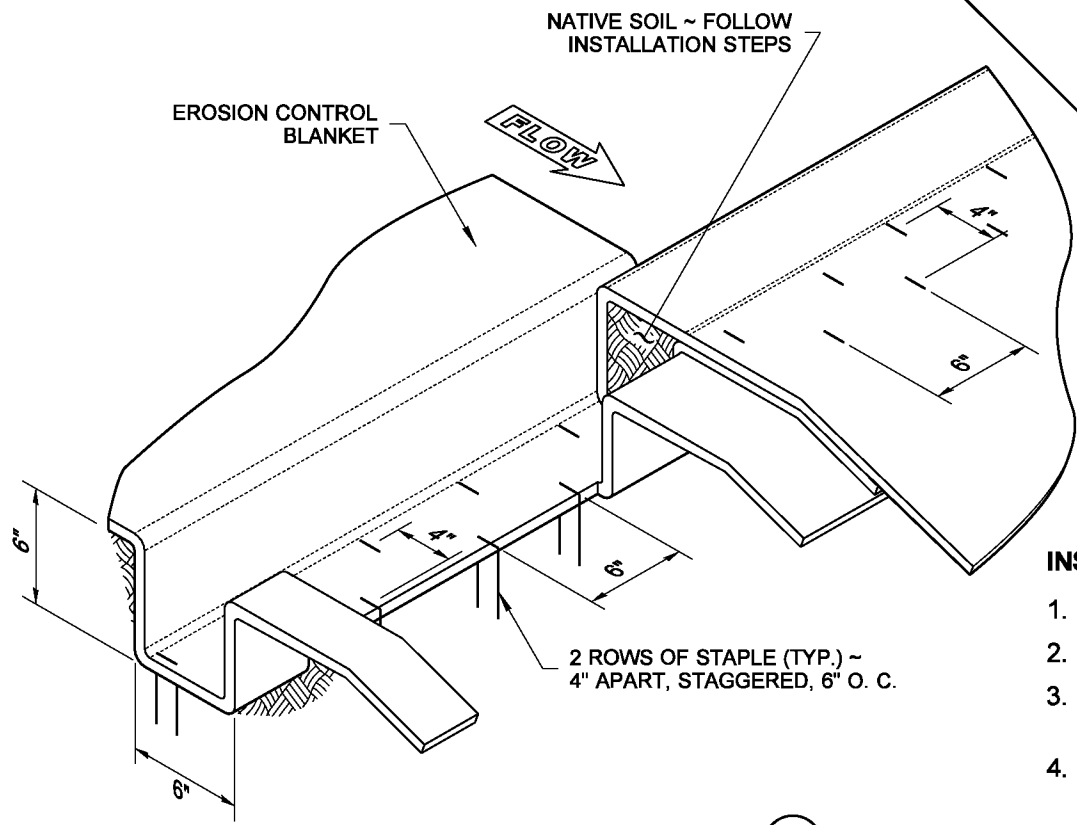
Pasco Bakotich III 6/10/13
STATE DESIGN ENGINEER DATE



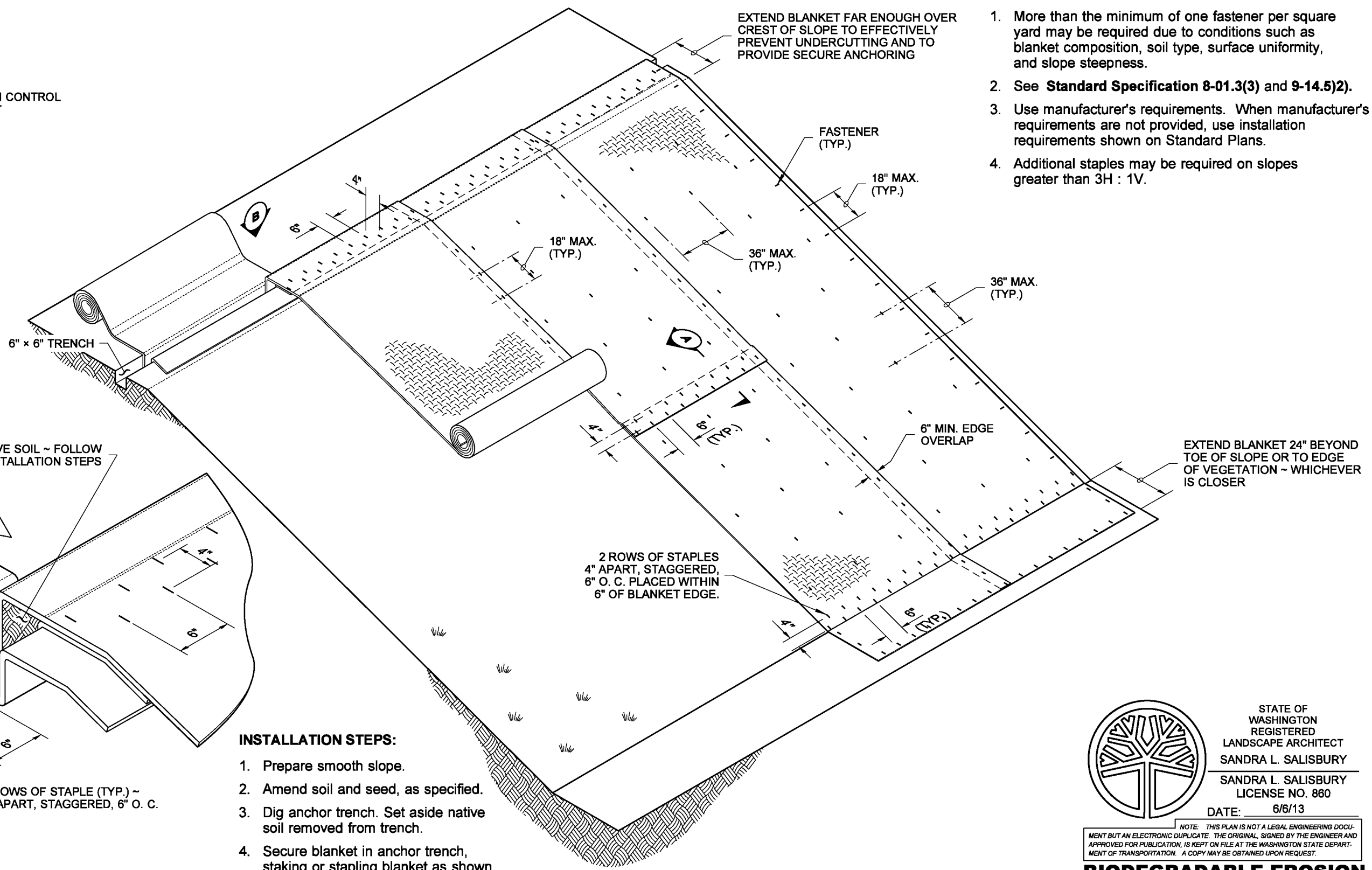
DRAWN BY: LISA CYFORD



SHINGLE SPLICE ~ SECTION A



INITIAL ANCHOR ~ DETAIL B



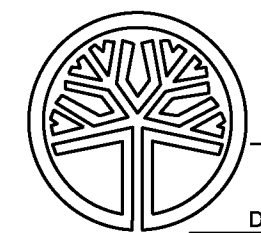
ISOMETRIC VIEW

INSTALLATION STEPS:

1. Prepare smooth slope.
2. Amend soil and seed, as specified.
3. Dig anchor trench. Set aside native soil removed from trench.
4. Secure blanket in anchor trench, staking or stapling blanket as shown.
5. Replace native soil previously removed from trench.
6. Roll blanket down the slope in a controlled manner, taking care to remove excess slack, and taking care not to stretch blanket.
7. Stake or staple blanket as shown so there are no gaps between the blanket and the soil. Staple while unrolling blanket to minimize walking on blanket.

NOTES

1. More than the minimum of one fastener per square yard may be required due to conditions such as blanket composition, soil type, surface uniformity, and slope steepness.
2. See **Standard Specification 8-01.3(3) and 9-14.5(2)**.
3. Use manufacturer's requirements. When manufacturer's requirements are not provided, use installation requirements shown on Standard Plans.
4. Additional staples may be required on slopes greater than 3H : 1V.



STATE OF WASHINGTON
 REGISTERED
 LANDSCAPE ARCHITECT
 SANDRA L. SALISBURY
 SANDRA L. SALISBURY
 LICENSE NO. 860
 DATE: 6/6/13

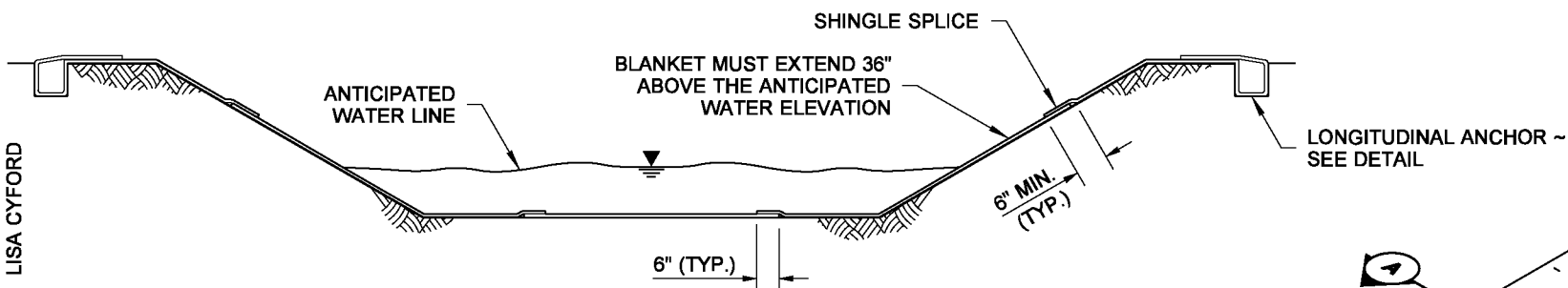
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BIODEGRADABLE EROSION CONTROL BLANKET PLACEMENT FOR SLOPES STANDARD PLAN I-60.10-01

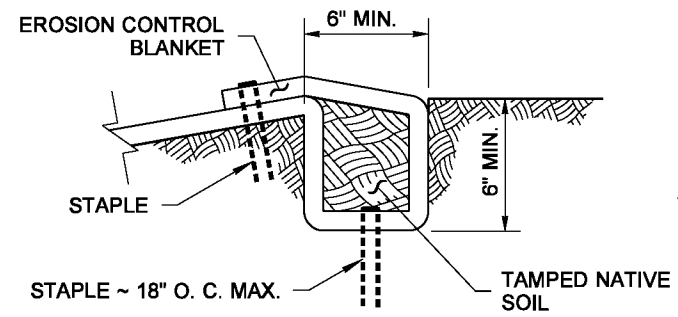
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION
Pasco Bakotich III 6/10/13
 STATE DESIGN ENGINEER DATE
 Washington State Department of Transportation

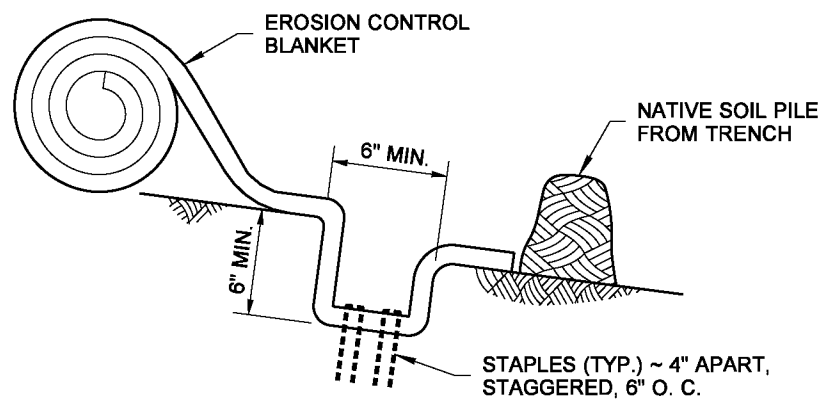
DRAWN BY: LISA CYFORD



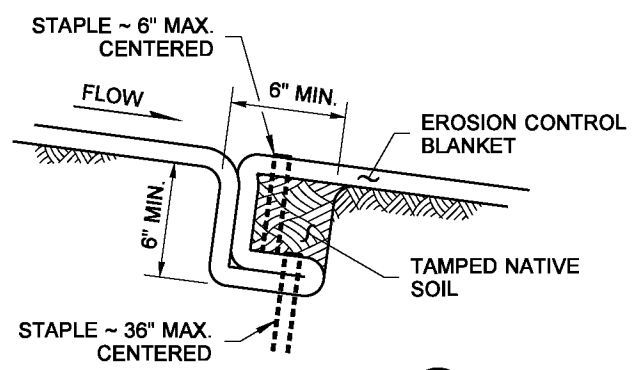
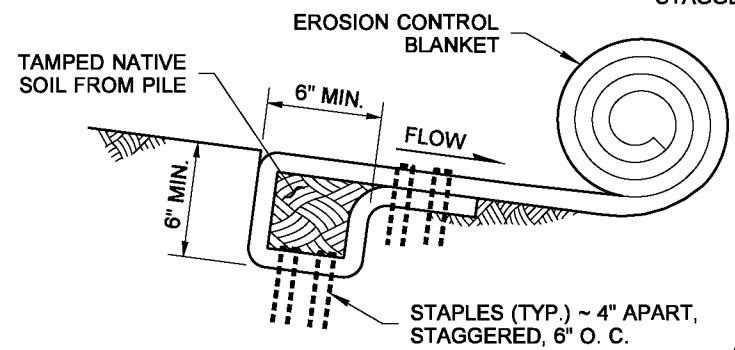
CHANNEL INSTALLATION ~ SECTION A



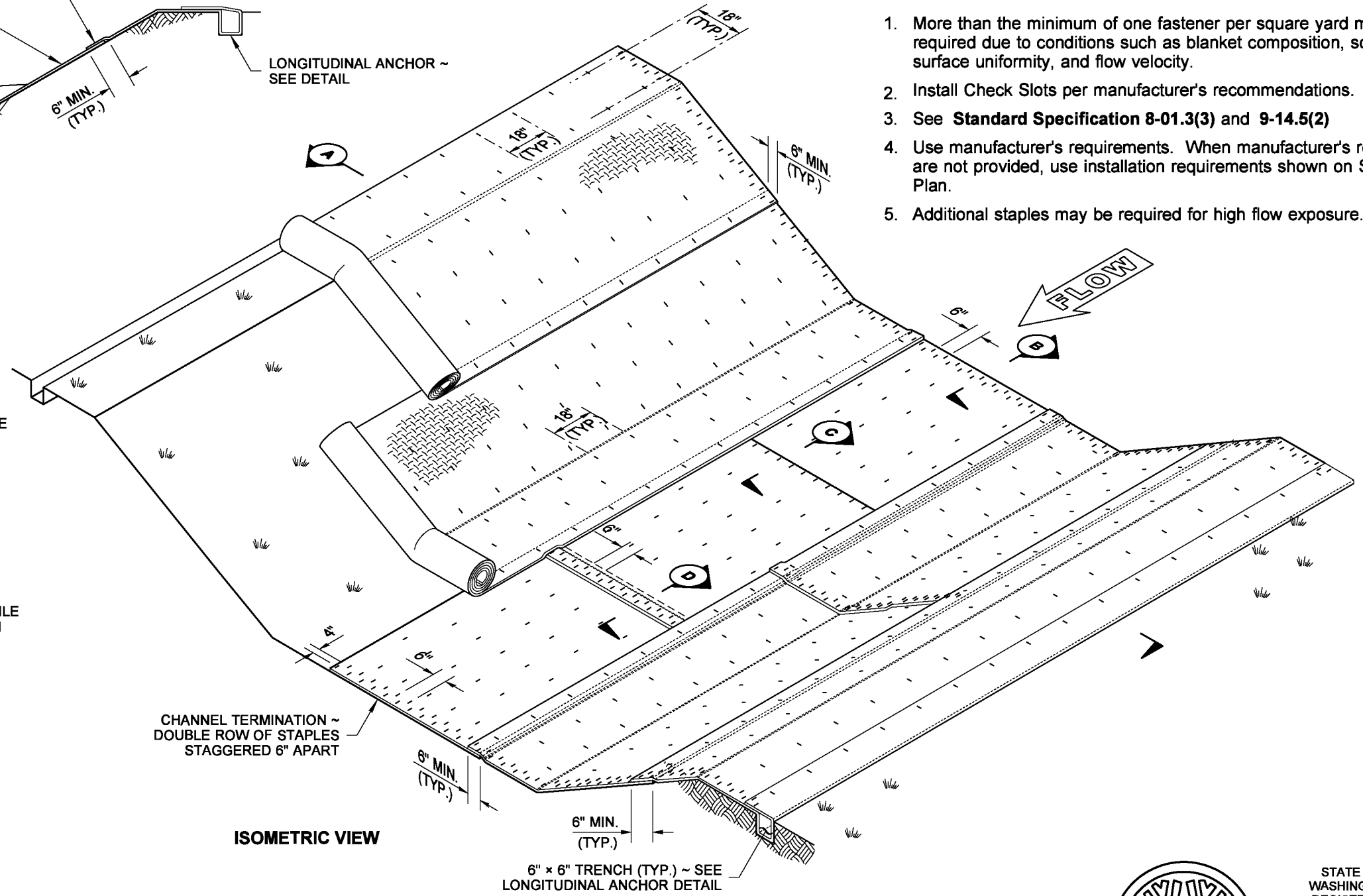
LONGITUDINAL ANCHOR DETAIL



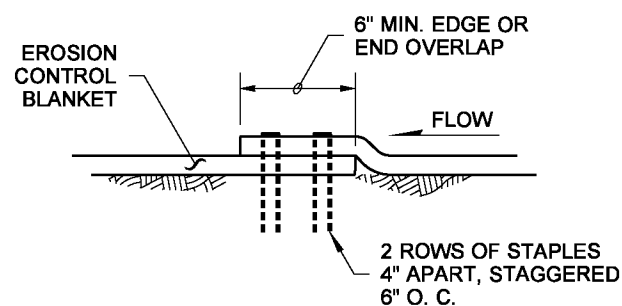
INITIAL ANCHOR ~ SECTION B



CHECK SLOT ~ SECTION C



ISOMETRIC VIEW



SHINGLE SPLICE AT END OF ROLL SECTION D

NOTES

1. More than the minimum of one fastener per square yard may be required due to conditions such as blanket composition, soil type, surface uniformity, and flow velocity.
2. Install Check Slots per manufacturer's recommendations.
3. See **Standard Specification 8-01.3(3)** and **9-14.5(2)**
4. Use manufacturer's requirements. When manufacturer's requirements are not provided, use installation requirements shown on Standard Plan.
5. Additional staples may be required for high flow exposure.

INSTALLATION STEPS:

1. Prepare smooth slope.
2. Amend soil and seed, as specified.
3. Dig anchor trench. Set aside native soil removed from trench.
4. Secure blanket in anchor trench, staking or stapling blanket as shown.
5. Replace native soil previously removed from trench.
6. Roll blanket parallel to the slope in a controlled manner, taking care to remove excess slack, and taking care not to stretch blanket.
7. Stake or staple blanket as shown so there are no gaps between the blanket and the soil. Staple while unrolling blanket to minimize walking on blanket.

STATE OF WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT
SANDRA L. SALISBURY
SANDRA L. SALISBURY
LICENSE NO. 860
DATE: 6/6/13

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BIODEGRADABLE EROSION CONTROL BLANKET PLACEMENT FOR DITCHES STANDARD PLAN I-60.20-01

SHEET 1 OF 1 SHEET

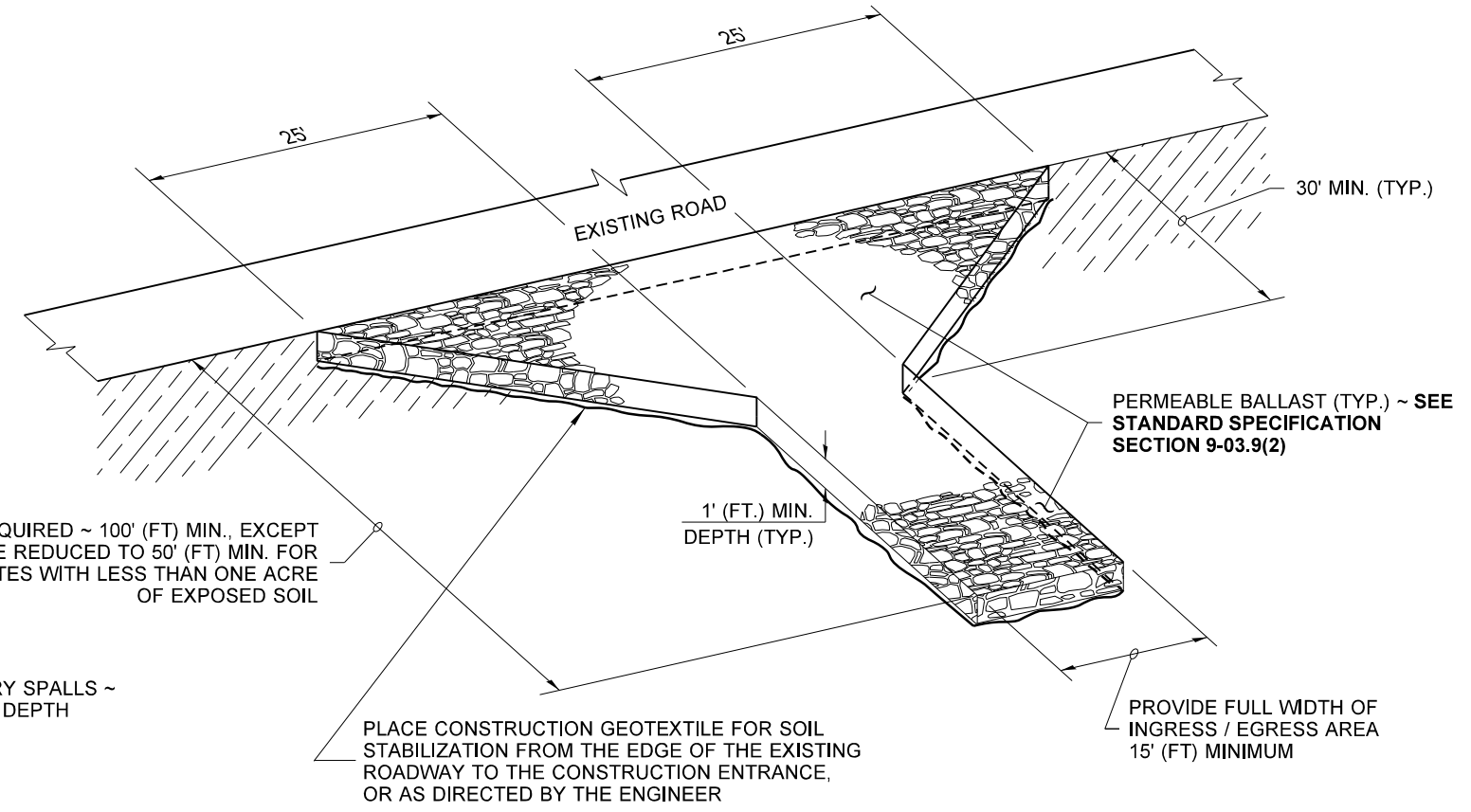
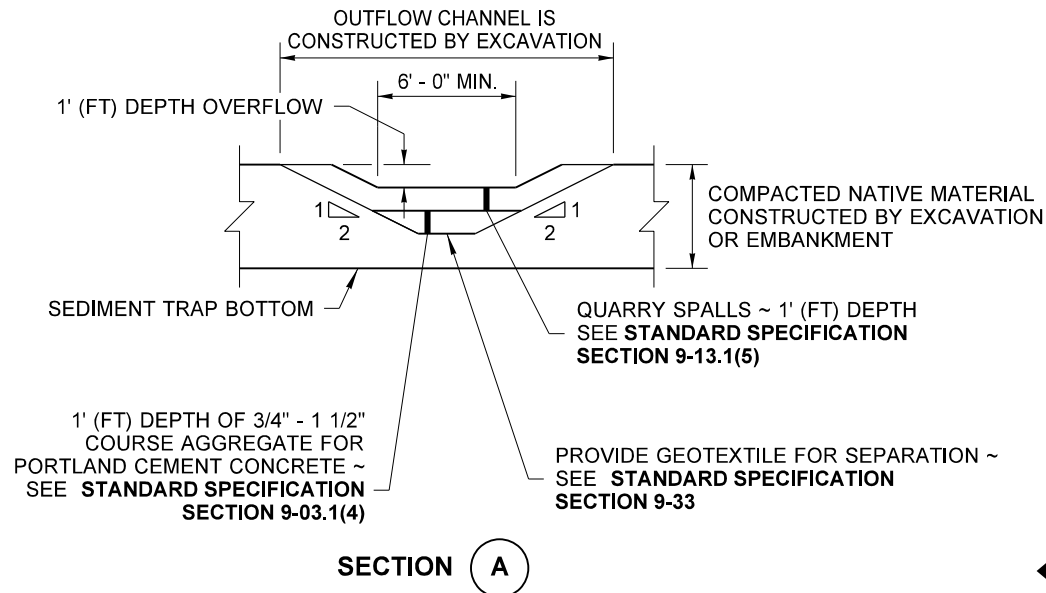
APPROVED FOR PUBLICATION

Pasco Bakotich III
STATE DESIGN ENGINEER

6/10/13
DATE

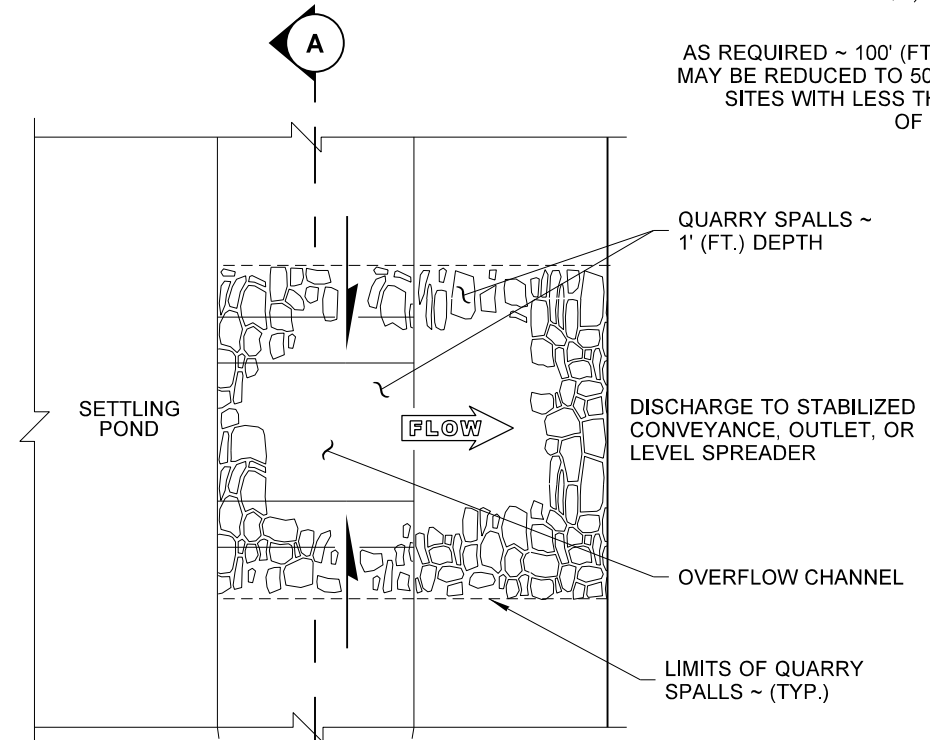
Washington State Department of Transportation

DRAWN BY: FERN LIDDELL

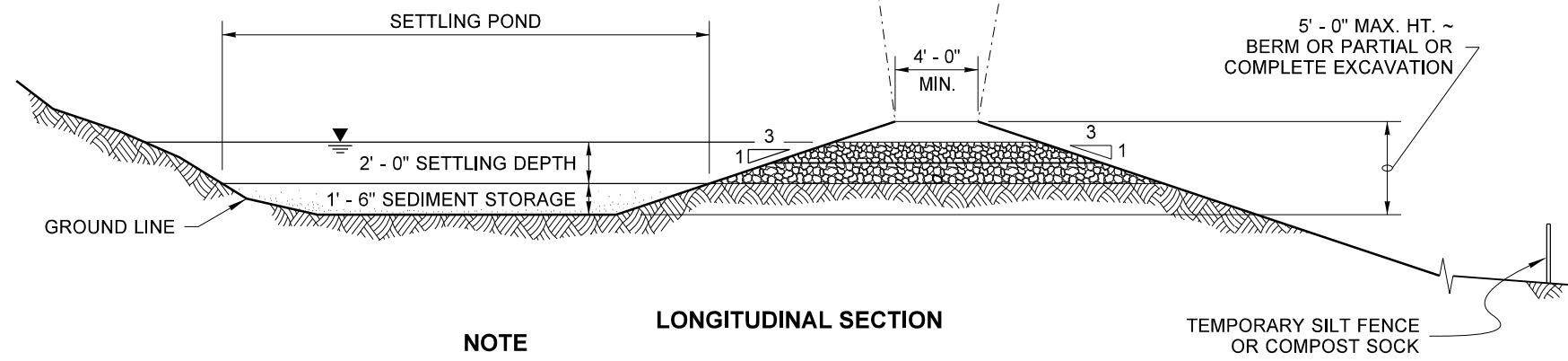


**ISOMETRIC VIEW
STABILIZED CONSTRUCTION ENTRANCE**

STABILIZED CONSTRUCTION ENTRANCE SHALL MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 8-01.3(7).



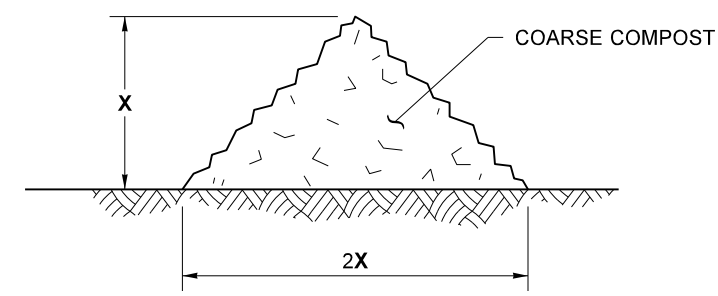
**PARTIAL PLAN VIEW OF BERM
SHOWN LARGER FOR CLARITY**



LONGITUDINAL SECTION

NOTE
PLACE GEOTEXTILE UNDER THE SPILLWAY AND SIDE SLOPES. PROVIDE A CONTINUOUS LAYER BETWEEN THE GRAVEL/ROCK AND THE NATIVE EARTHEN MATERIAL.

TEMPORARY SEDIMENT TRAP



**TYPICAL SECTION
COMPOST BERM DETAIL**

X = 1' - 0" FOR SLOPES 4H:1V OR FLATTER
X = 1' - 6" FOR SLOPES STEEPER THAN 4H:1V



STATE OF WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT

JULI DEE HARTWIG
LICENSE NO. 1422
DATE: 06-21-17

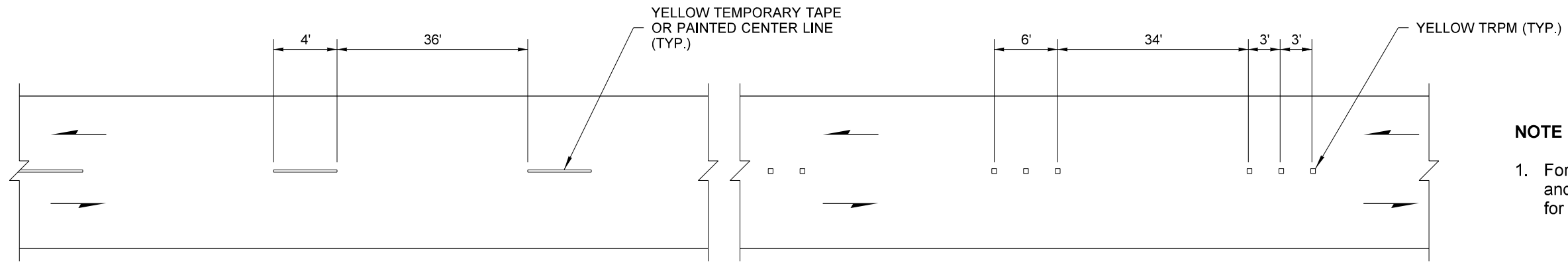
**MISCELLANEOUS
EROSION CONTROL DETAILS
STANDARD PLAN I-80.10-02**

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER
Washington State Department of Transportation

DRAWN BY: FERN LIDDELL



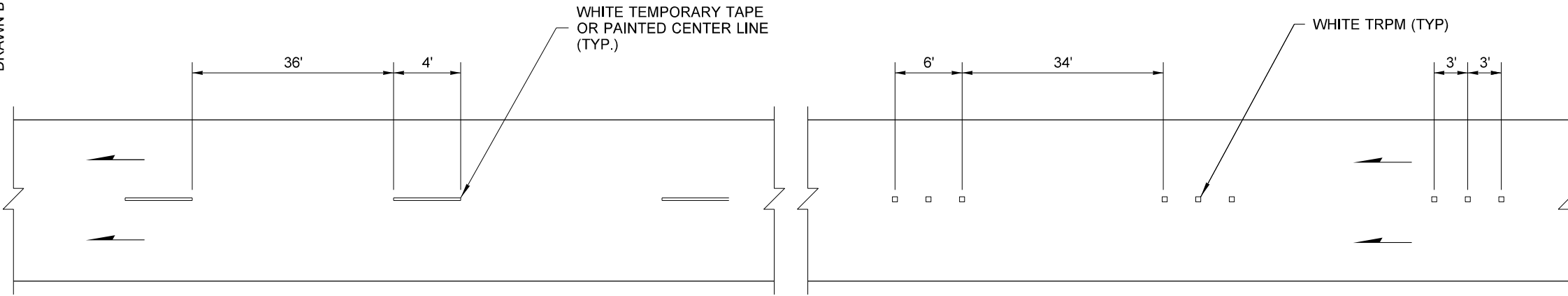
HOT MIX ASPHALT PAVEMENT

BITUMINOUS SURFACE TREATMENT

TWO-LANE ROADWAY

NOTE

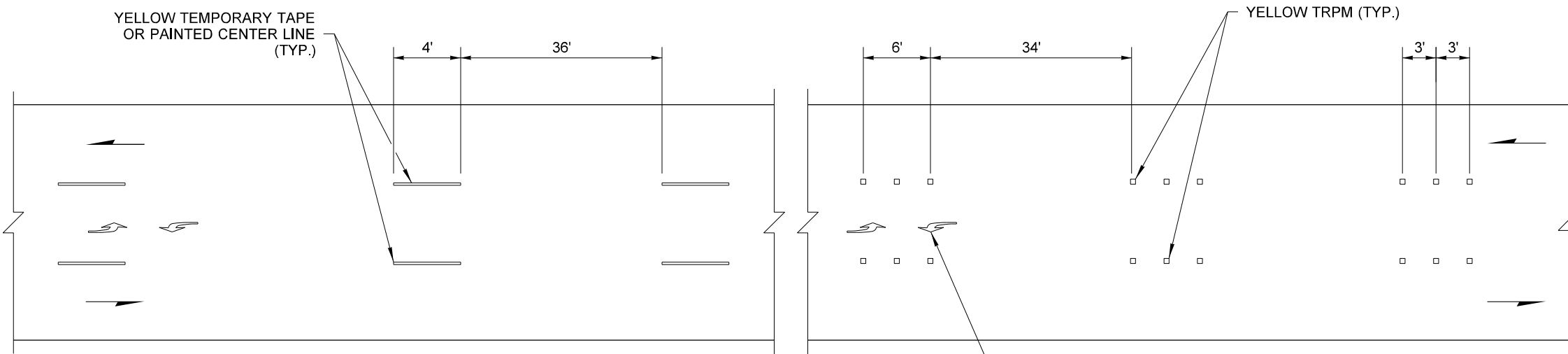
1. For Hot Mix Asphalt Paving projects ~ "DO NOT PASS" and "PASS WITH CARE" signs shall be included for passing zones.



HOT MIX ASPHALT PAVEMENT

BITUMINOUS SURFACE TREATMENT

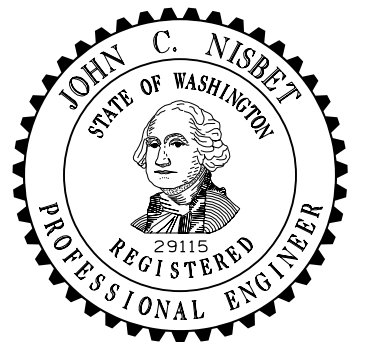
ONE-WAY TWO-LANE ROADWAY



HOT MIX ASPHALT PAVEMENT

BITUMINOUS SURFACE TREATMENT

TWO-WAY TWO-LANE LEFT TURN ROADWAY



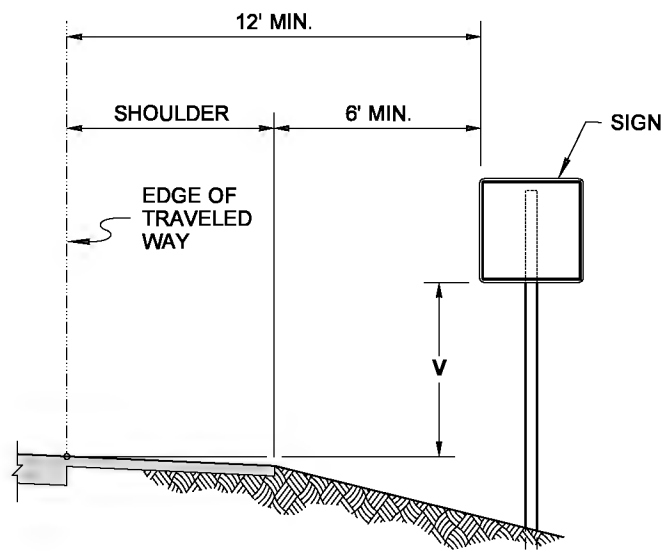
TEMPORARY PAVEMENT MARKING ~ SHORT DURATION STANDARD PLAN K-70.20-01

SHEET 1 OF 1 SHEET

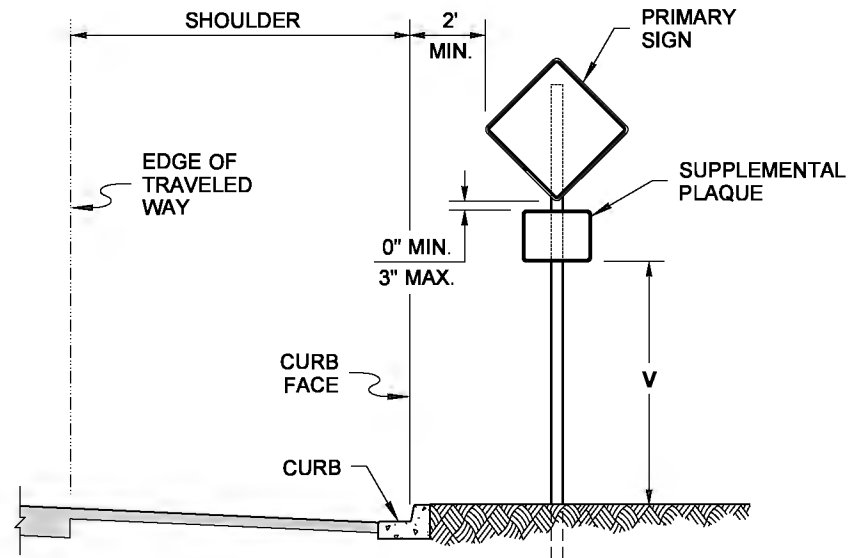
APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER
 Washington State Department of Transportation

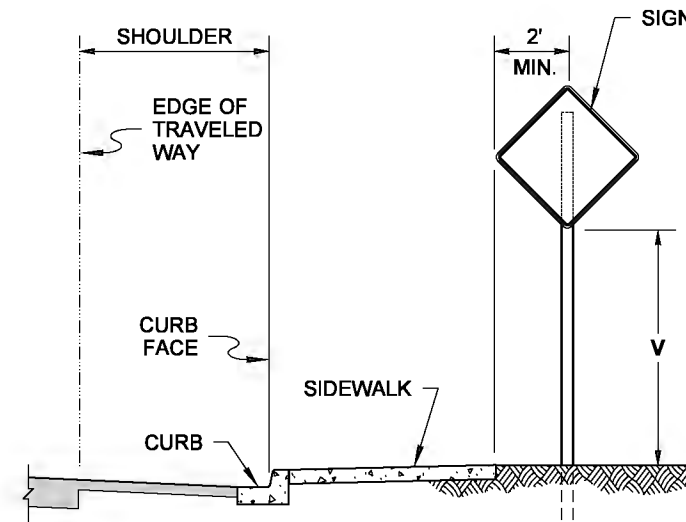
DRAWN BY: FERN LIDDELL



**SIGN INSTALLATION
(FILL SECTION)**



**SIGN INSTALLATION
(CURB SECTION)**

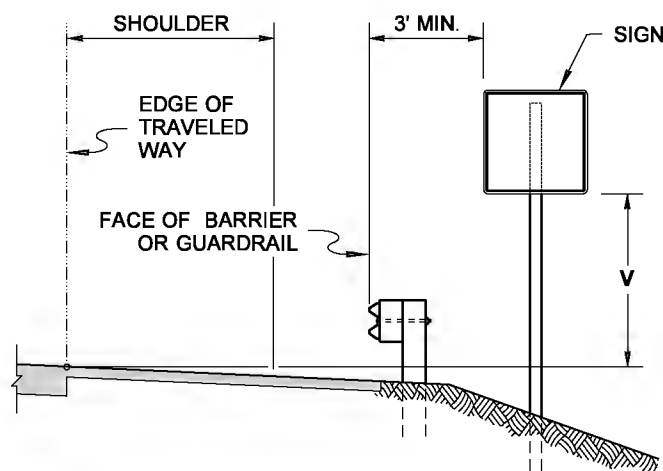


**SIGN INSTALLATION
(SIDEWALK AND CURB SECTION)**

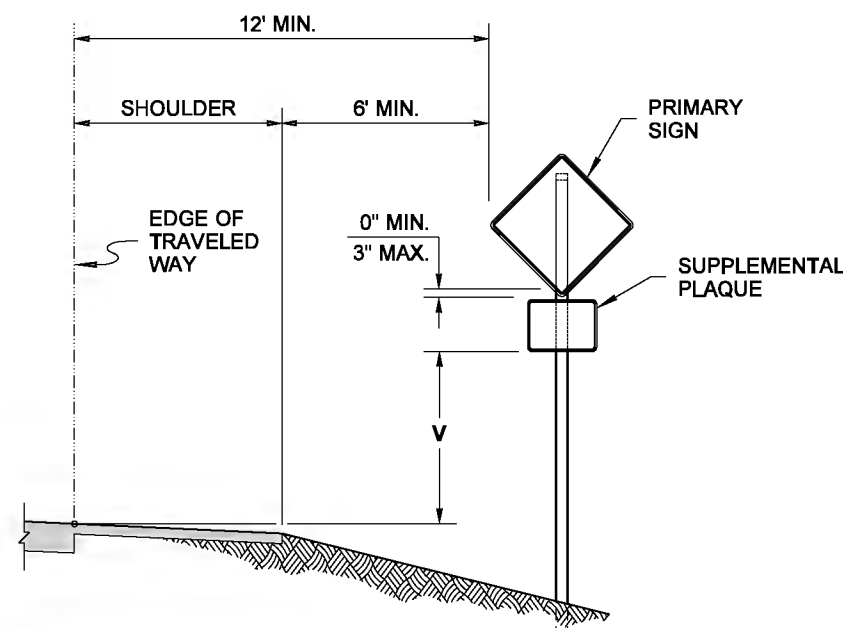
NOTES

1. For sign installation details, see **Standard Plan G - series**.
2. Where it is impractical to locate a sign with the lateral offset, a minimum of 2'(ft) offset may be used. A 1'(ft) lateral offset may be used in business, commercial or residential areas.
3. The "V" height for signs, with an area of more than 50 square feet and two or more sign supports, is 7 feet in both rural and urban areas.

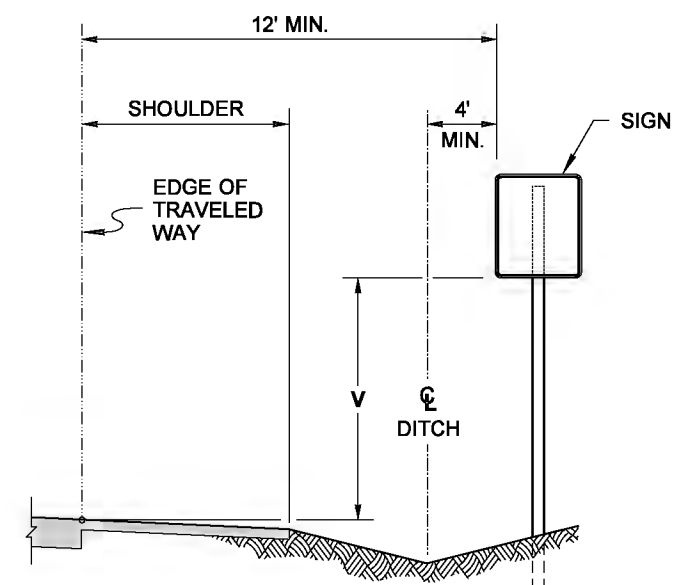
HEIGHT V		
	TO BOTTOM OF SIGN (NO SUPPLEMENTAL PLAQUE)	TO BOTTOM OF SUPPLEMENTAL PLAQUE (WHEN REQUIRED)
RURAL	5' MINIMUM	4' MINIMUM
URBAN	7' MINIMUM	6' MINIMUM



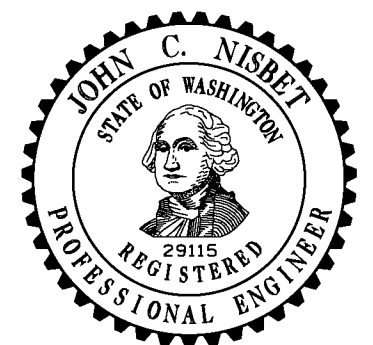
**SIGN INSTALLATION
(BEHIND TRAFFIC BARRIER)**



**SIGN WITH SUPPLEMENTAL
PLAQUE INSTALLATION
(FILL SECTION)**



**SIGN INSTALLATION
(DITCH SECTION)**



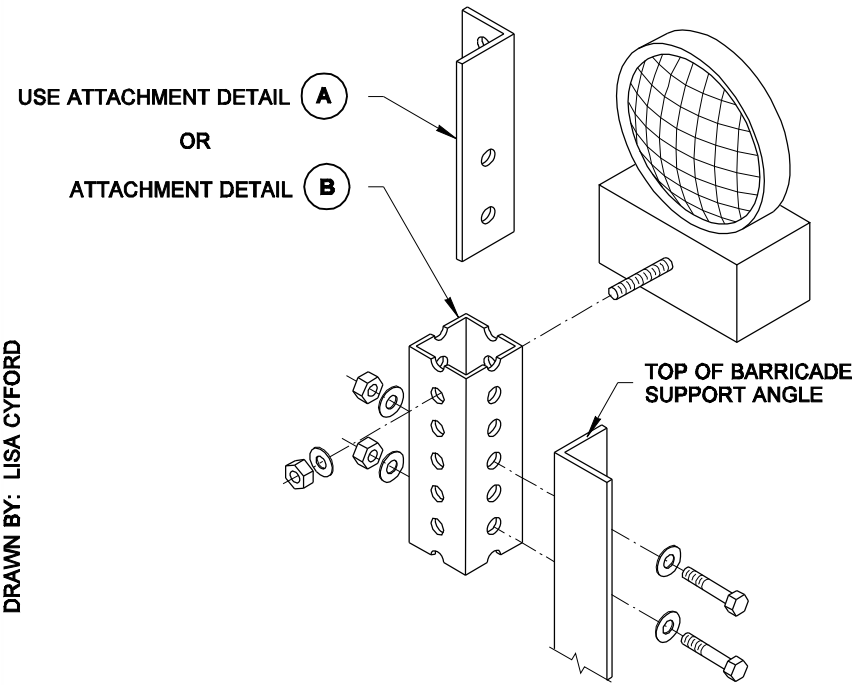
**CLASS A
CONSTRUCTION SIGNING
INSTALLATION
STANDARD PLAN K-80.10-01**

SHEET 1 OF 1 SHEET

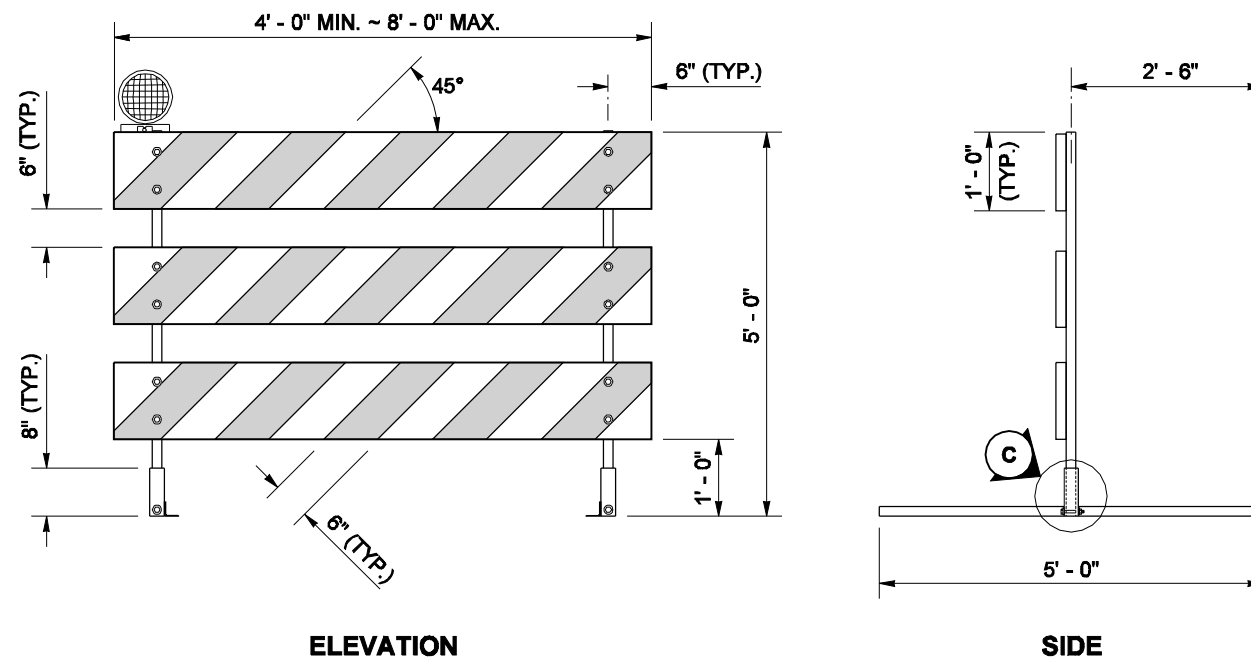
APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER
Washington State Department of Transportation

DRAWN BY: LISA CYFORD



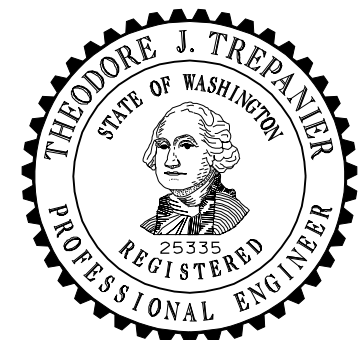
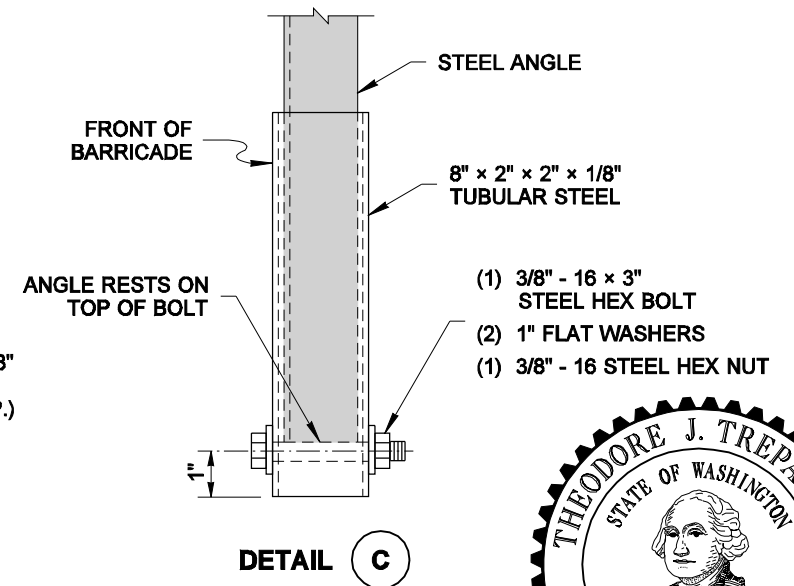
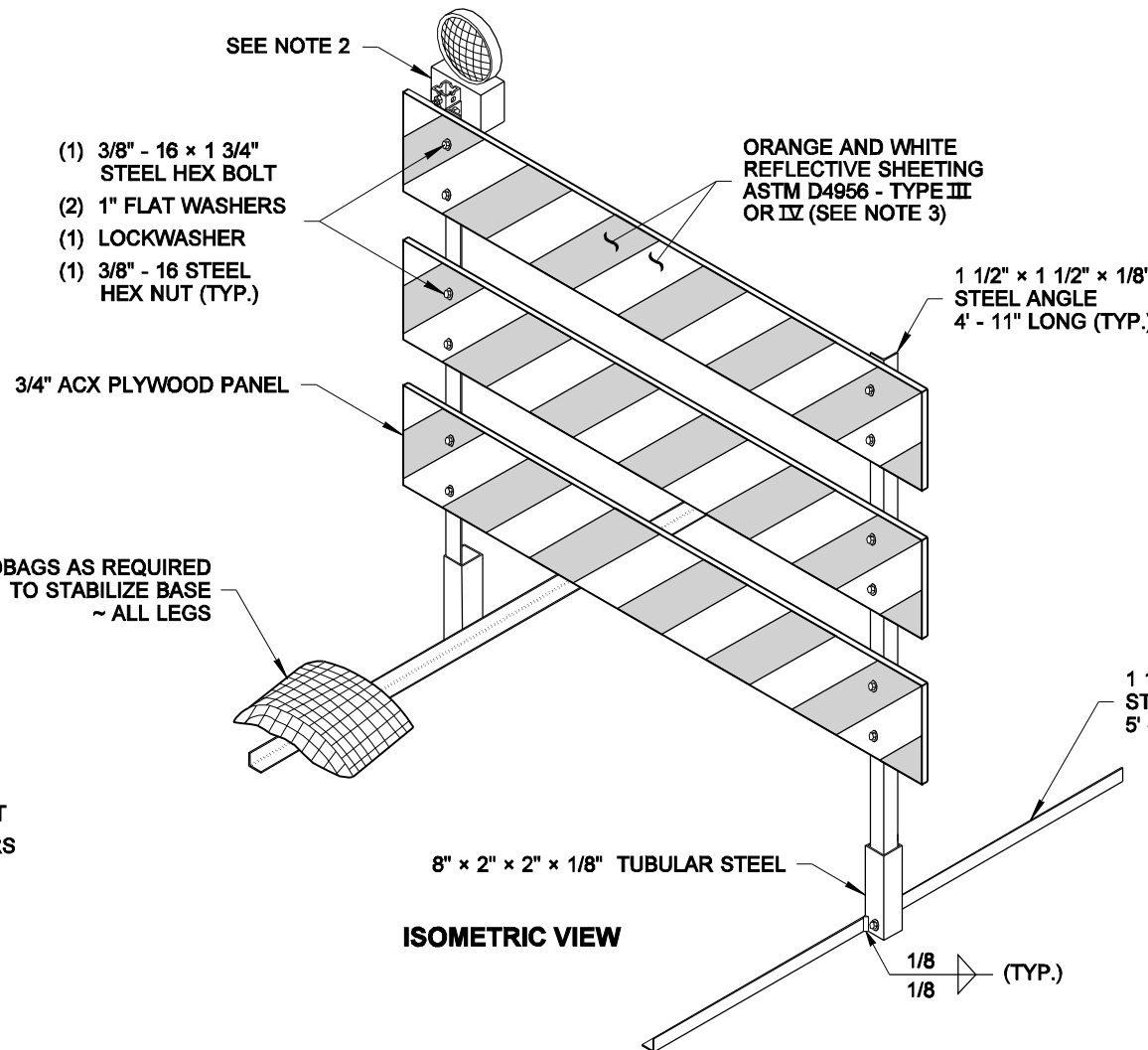
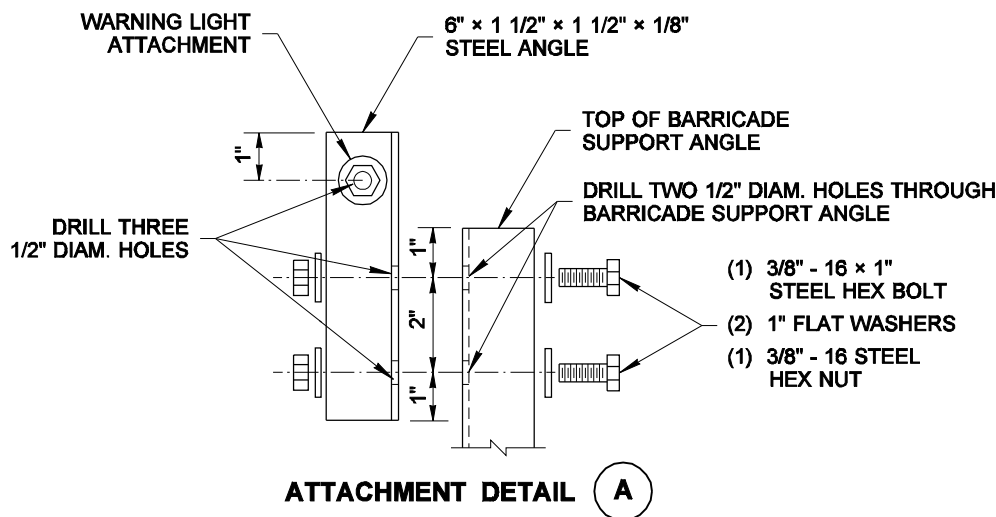
WARNING LIGHT ATTACHMENT DETAIL



TYPE 3 BARRICADE

NOTES

1. All fasteners may be zinc plated, galvanized or stainless steel. All steel angle and tubular steel shall be hot-rolled, high carbon steel, painted or galvanized.
2. Install one lightweight Type A Low-Intensity flashing warning light on the traffic side of the barricade. Install two Type A Low-Intensity flashing warning lights per barricade when the barricades are used to close a roadway. Attach the light to the barricade according to the light manufacturer's recommendations or use the details shown on this plan.
3. Stripes on barricade rails shall be alternating orange and white retroreflective stripes (sloping downward at an angle of 45 degrees in the direction traffic is to pass).
4. The Type 3 barricade design shown on this plan meets the crash test requirements of NCHRP 350. Alternative designs may be approved if they conform to the NCHRP 350 crash test criteria and the MUTCD.
5. When a sign is mounted on the barricade, it shall be securely bolted to at least two plywood panels. The top of the sign shall not be higher than the top panel of the barricade.
6. When sandbags are used in freezing weather, Urea fertilizer shall be mixed with the sand in a quantity to prevent the sand from freezing.

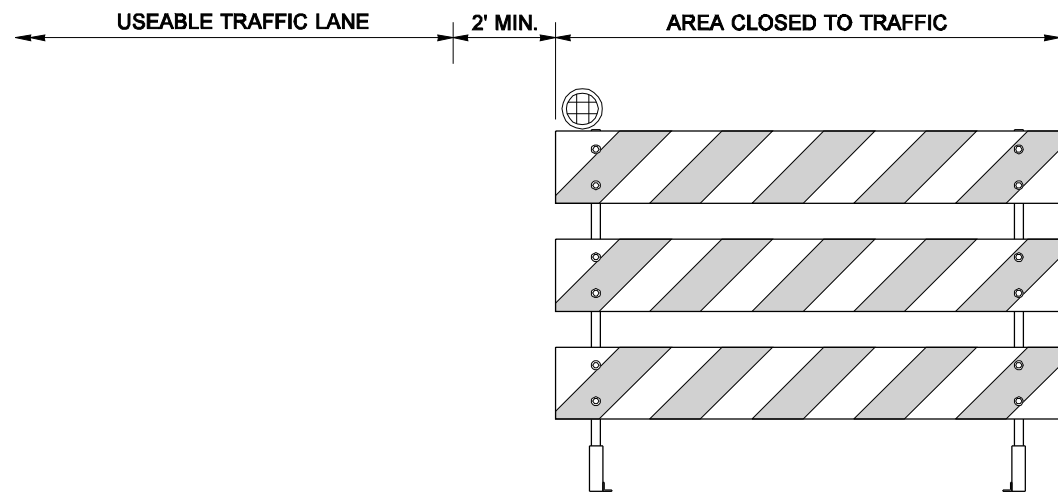


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TYPE 3 BARRICADE
STANDARD PLAN K-80.20-00
SHEET 1 OF 2 SHEETS

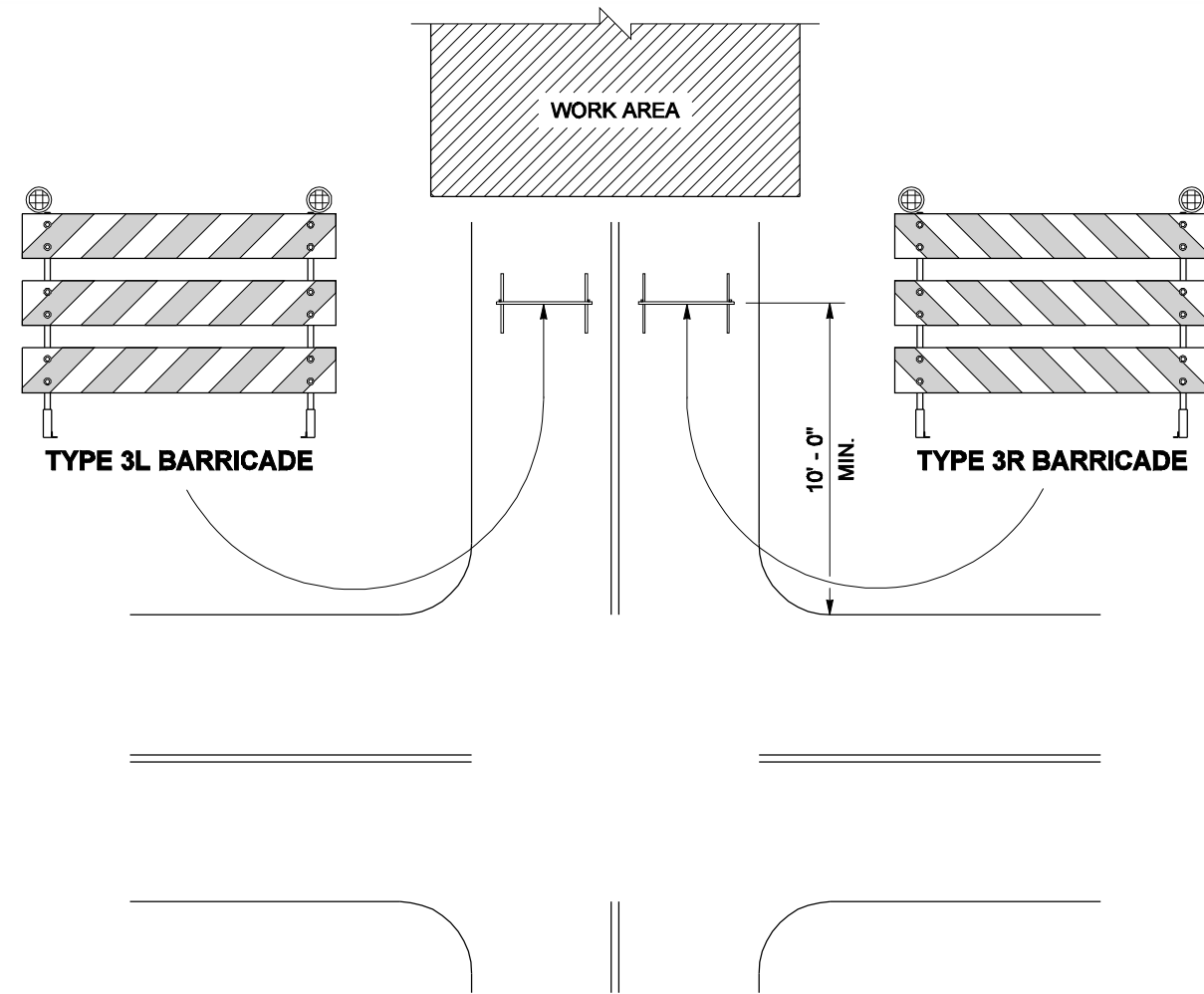
APPROVED FOR PUBLICATION
Kevin J. Dayton 12-20-06
STATE DESIGN ENGINEER DATE
Washington State Department of Transportation

DRAWN BY: LISA CYFORD

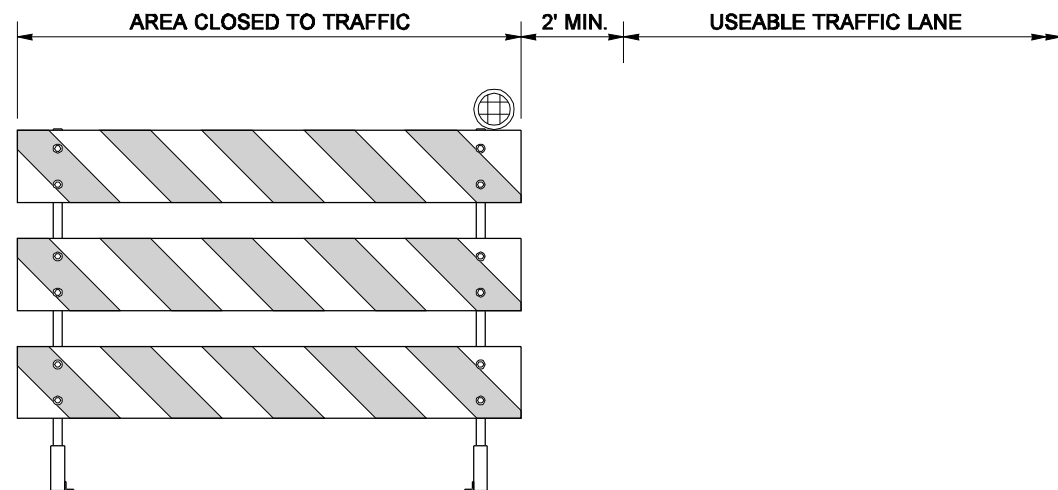


TYPE 3L BARRICADE

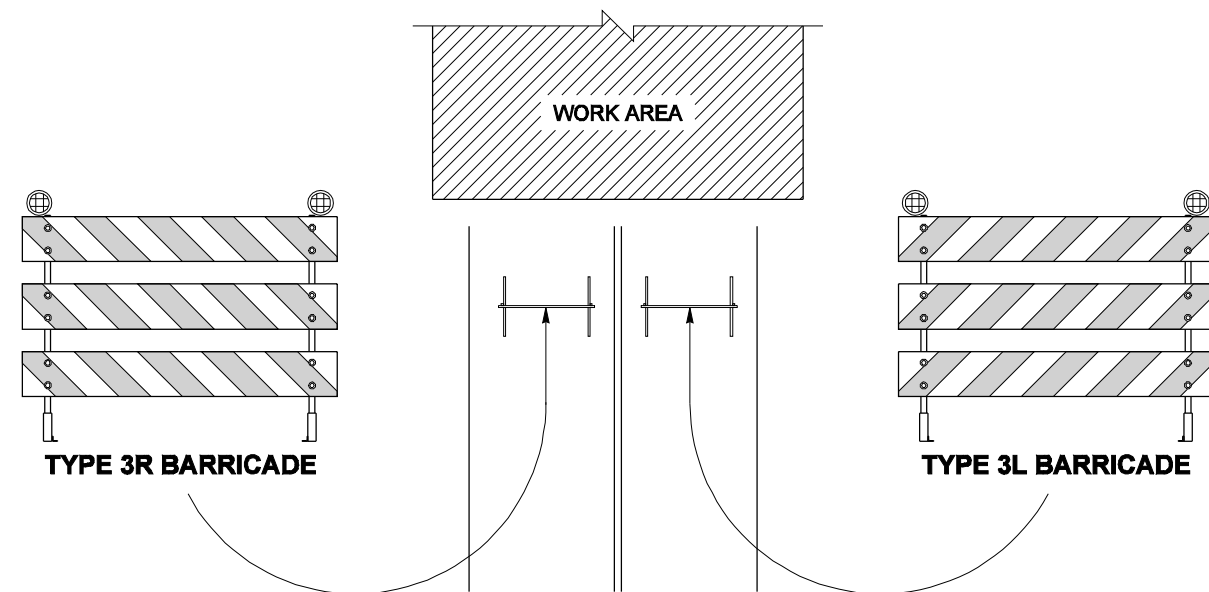
STRIPES ON THE BARRICADES SHALL SLOPE DOWNWARD IN THE DIRECTION TRAFFIC IS TO PASS



ROAD CLOSURE AT INTERSECTION

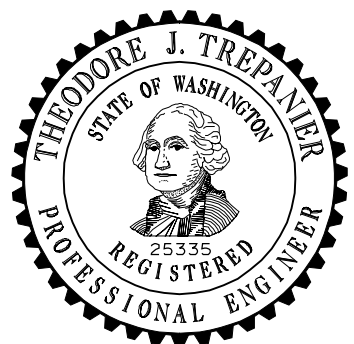


TYPE 3R BARRICADE



ROAD CLOSURE AT OTHER LOCATIONS

BARRICADE PLACEMENT



EXPIRES AUGUST 9, 2007

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TYPE 3 BARRICADE
STANDARD PLAN K-80.20-00

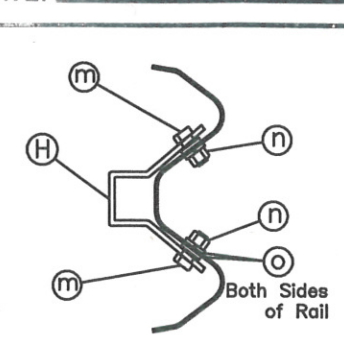
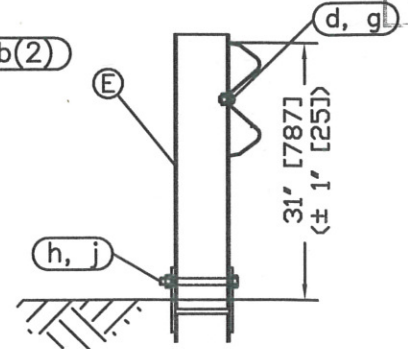
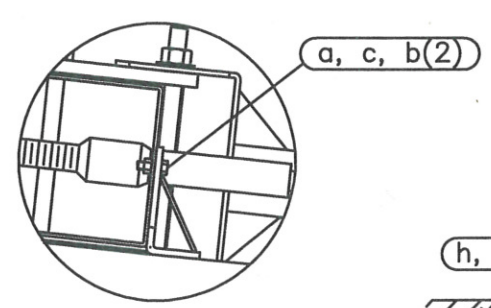
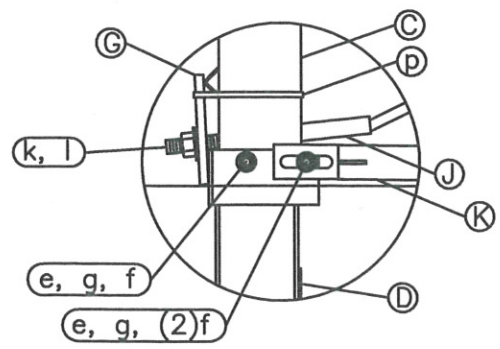
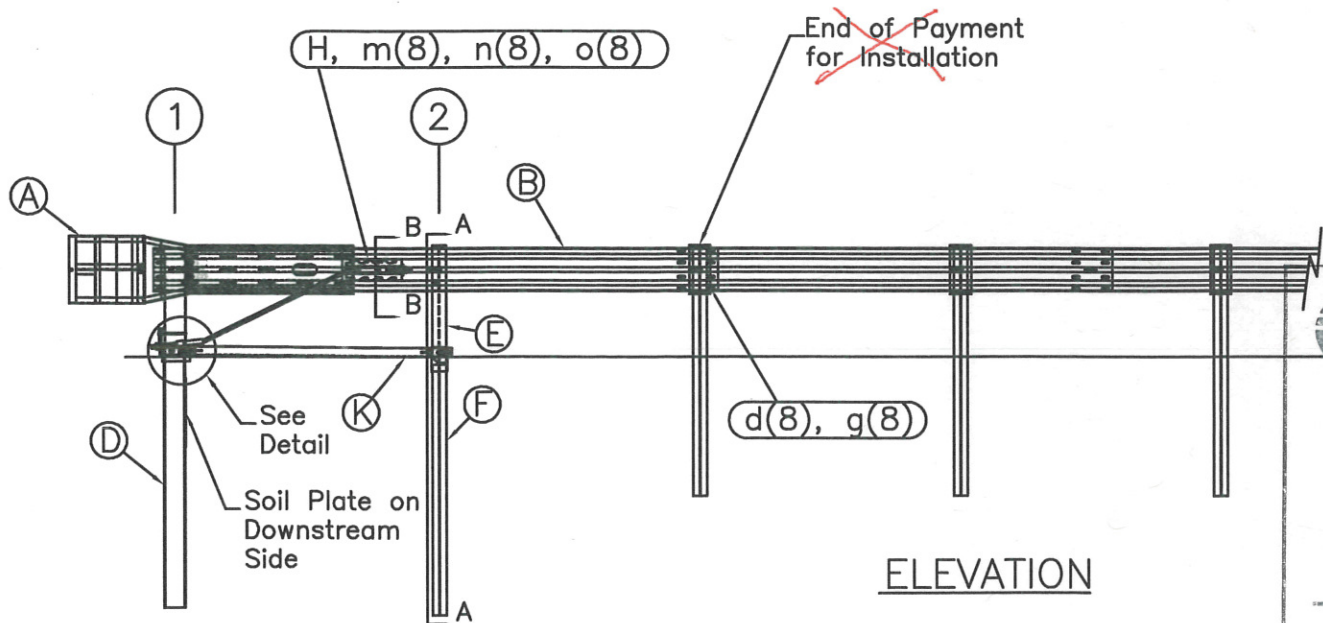
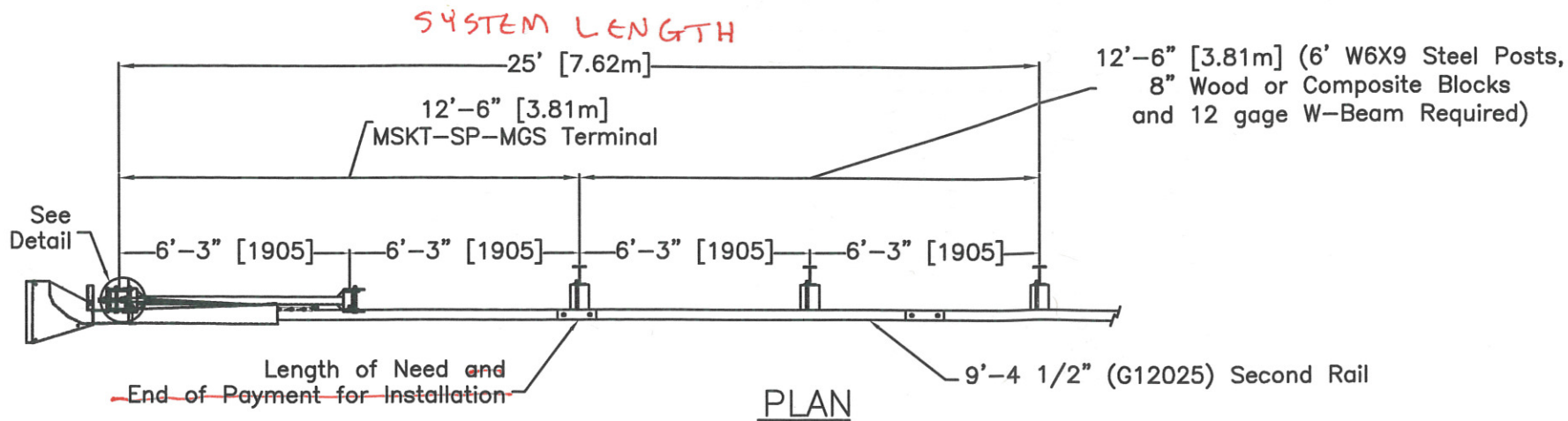
SHEET 2 OF 2 SHEETS

APPROVED FOR PUBLICATION

Kevin J. Dayton 12-20-06

STATE DESIGN ENGINEER DATE

Washington State Department of Transportation



ITEM	QTY	BILL OF MATERIALS	ITEM NO.
A	1	IMPACT HEAD	MS3000
B	1	W-BEAM GUARDRAIL END SECTION, 12 Ga.	SF1303
C	1	FIRST POST TOP (6X6X1/4" Tube)	MTPHP1A
D	1	FIRST POST BOTTOM (6" W6X15)	MTPHP1B
E	1	SECOND POST ASSEMBLY TOP	UHP2A
F	1	SECOND POST ASSEMBLY BOTTOM	HP2B
G	1	BEARING PLATE	E750
H	1	CABLE ANCHOR BOX	S760
J	1	BCT CABLE ANCHOR ASSEMBLY	E770
K	1	STRUT	MS785
HARDWARE (ALL DIMENSIONS IN INCHES)			
a	2	5/16 x 1 HEX BOLT GRD 5	B5160104A
b	4	5/16 WASHER	W0516
c	2	5/16 HEX NUT	N0516
d	9	5/8 Dia. x 1 1/4 SPLICE BOLT (POST #2)	B580122
e	2	5/8 Dia. x 9 HEX BOLT GRD 5	B580904A
f	3	5/8 WASHER	W050
g	11	5/8 Dia. H.G.R NUT	N050
h	1	3/4 Dia. x 8 1/2 HEX BOLT GRD A449	B340854A
j	1	3/4 Dia. HEX NUT	N030
k	2	1 ANCHOR CABLE HEX NUT	N100
l	2	1 ANCHOR CABLE WASHER	W100
m	8	1/2 RSI SHOULDER BOLT W/WASHER	SB12A
n	8	1/2 STRUCTURAL NUT	N012A
o	8	1/2 STRUCTURAL WASHER	W012A
p	1	BEARING PLATE RETAINER TIE	CT-100ST

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

Approved

Approved with revision

Rejected

BY: *Jay R*

DATE: 5/16/17

GENERAL NOTES:

- All bolts, nuts, cable assemblies, cable anchors and bearing plates shall be galvanized.
- The lower sections of the Posts 1&2 shall not protrude more than 4 in [100] above the ground (measured along a 5' [1.5m] cord). Site grading may be necessary to meet this requirement.
- The lower section of the hinged post should not be driven with the upper post attached. If the post is placed in a drilled hole, the backfill material must be satisfactorily compacted to prevent settlement.
- When competent rock is encountered, a 12" [300] Ø post hole, 20 in. [500] deep cored into the rock surface may be used if approved by the engineer for Posts 1 and/or 2. Granular material will be placed in the bottom of the hole, approximately 2.5" [60] deep to provide drainage. The first and/or second post can be field cut to length, placed in the hole and backfilled with suitable backfill. The soil plate may be trimmed if required.
- The breakaway cable assembly must be taut. A locking device (vice grips or channel lock pliers) should be used to prevent the cable from twisting when tightening nuts.

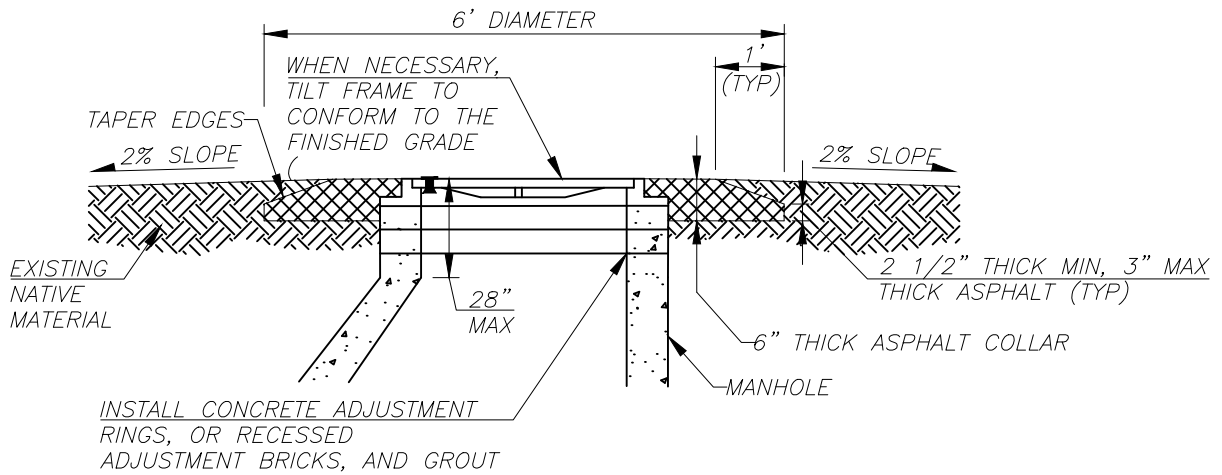


MSKT-SP-MGS Terminal Test Level 2

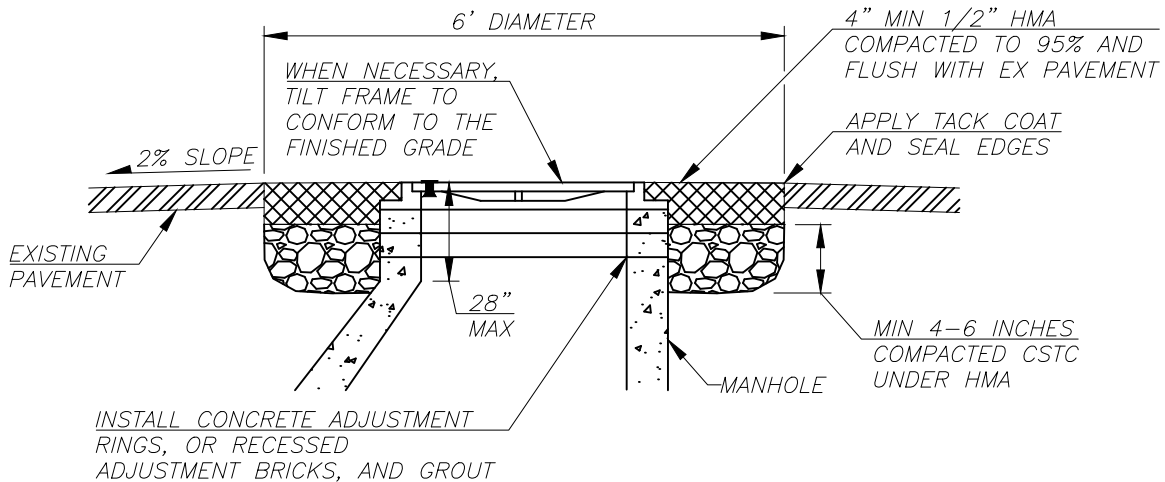
Drawing Name: MSKT-SP-MGS-TL2

Scale: None

Sheet:	1
Date:	07/30/16
By:	JRR
Rev:	0



MANHOLE ASPHALT COLLAR FOR NON-PAVED AREAS REV. 5/12/17



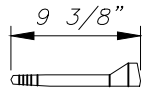
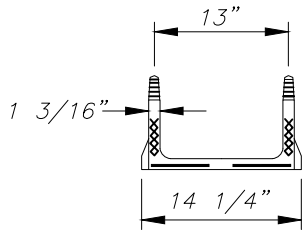
MANHOLE PAVEMENT PATCH FOR PAVED AREAS REV. 5/12/17

NOTES

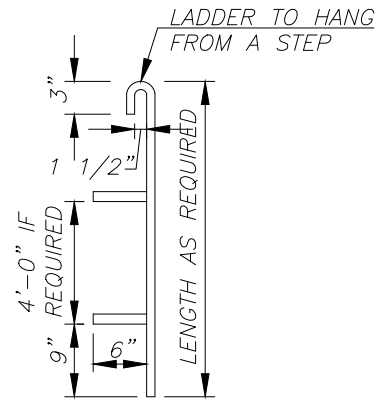
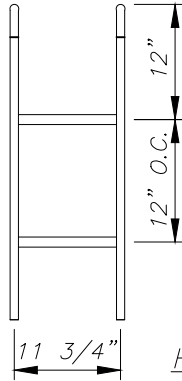
1. CONTRACTOR SHALL WARRANTY MANHOLE ADJUSTMENT AREA FREE FROM LEAKS FOR ONE YEAR.
2. IN PAVED AREAS, MANHOLE FRAMES SHALL BE RAISED TO GRADE AFTER PLACEMENT OF THE ASPHALT'S FINAL LIFT AND WITHIN 48 HOURS UNLESS OTHERWISE APPROVED BY THE DISTRICT.
3. IN PAVED AREAS, NEATLY REMOVE ASPHALT AROUND EXISTING MANHOLE FRAME.
4. INSTALL CHANNEL BOARD IN MANHOLE PRIOR TO ANY WORK, AND REMOVE AFTER FINAL ADJUSTMENT.
5. PRIOR TO ADJUSTMENT, NOTIFY DISTRICT IF THE FINAL MANHOLE NECK WILL EXCEED 28".
6. IN PAVED AREAS, EXCAVATE AROUND EXISTING MANHOLE FRAME TO A MIN. DEPTH OF 12".
7. REMOVE FRAME AND COVER, AND INSTALL ADJUSTMENT RINGS, TILTING FRAME AS NECESSARY TO MATCH EXISTING GRADE. ADJUSTMENT BRICKS RECESSED FOR GROUTING, CAN BE UTILIZED. REINSTALL FRAME AND COVER.
8. IN PAVED AREAS BACKFILL WITH CRUSHED SURFACING TOP COURSE (CSTC) COMPACTED TO 95% (MODIFIED PROCTOR).
9. IN NON-PAVED AREAS, BACKFILL WITH APPROVED BACKFILL MATERIAL COMPACTED TO 95%.
10. IN PAVED AREAS, INSTALL 1/2" HMA IN 2-INCH LIFTS, TO A COMPACTED DEPTH EQUAL TO THE EXISTING PAVEMENT OR A MINIMUM OF 4", WHICHEVER IS GREATER. TACK ALL EDGES AND SEAL FINISH JOINTS WITH TAR AND SAND.
11. IN UN-PAVED AREAS, INSTALL ASPHALT PATCH TO A MINIMUM COMPACTED DEPTH OF 6" AS SHOWN ABOVE.
12. GROUT MANHOLE NECK. "JETSET" NOT ALLOWED. DO NOT RUN GROUT ONTO MANHOLE FRAME.

REV. 5/19/17

GENERAL NOTES FOR ASPHALT COLLAR/PATCHES AROUND MANHOLES



SAFETY STEP
(LANE INTERNATIONAL
OR APPROVED EQUAL)



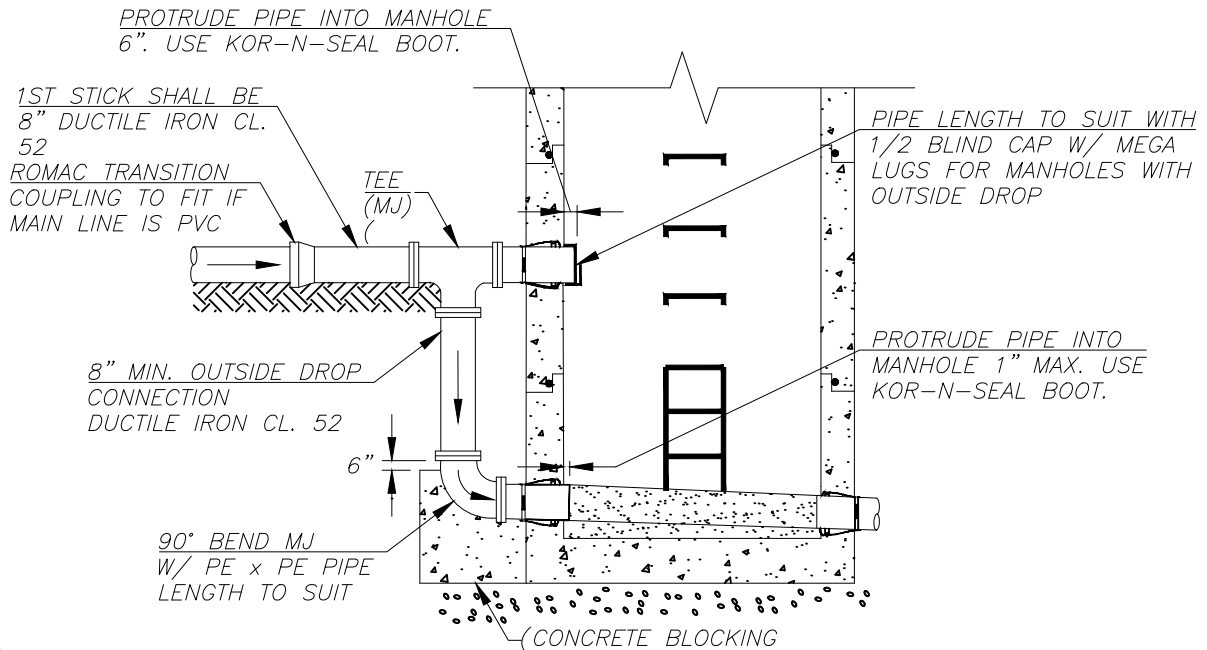
HANGING LADDER
(LANE INTERNATIONAL
OR APPROVED EQUAL)

NOTES

- POLYPROPYLENE PLASTIC STEPS SHALL BE A POLYPROPYLENE PLASTIC STEP INJECTION MOLDED AROUND A 1/2 INCH DIAMETER ASTM A-615, GRADE 60, STEEL REINFORCING BAR. INSTALLATION AS PER THE MANUFACTURER'S SPECIFICATIONS.
- POLYPROPYLENE PLASTIC LADDER SHALL HAVE A POLYPROPYLENE PLASTIC STEP INJECTION MOLDED AROUND A 1/2 INCH DIAMETER ASTM A-615, GRADE 60, STEEL REINFORCING BAR, AND A POLYPROPYLENE PLASTIC RAIL INJECTION MOLDED AROUND A 9/16 INCH DIAMETER ASTM C-1018, COLD DRAWN BAR. INSTALLATION AS PER THE MANUFACTURER'S SPECIFICATION.

MANHOLE STEP AND LADDER

REV. 5/19/17

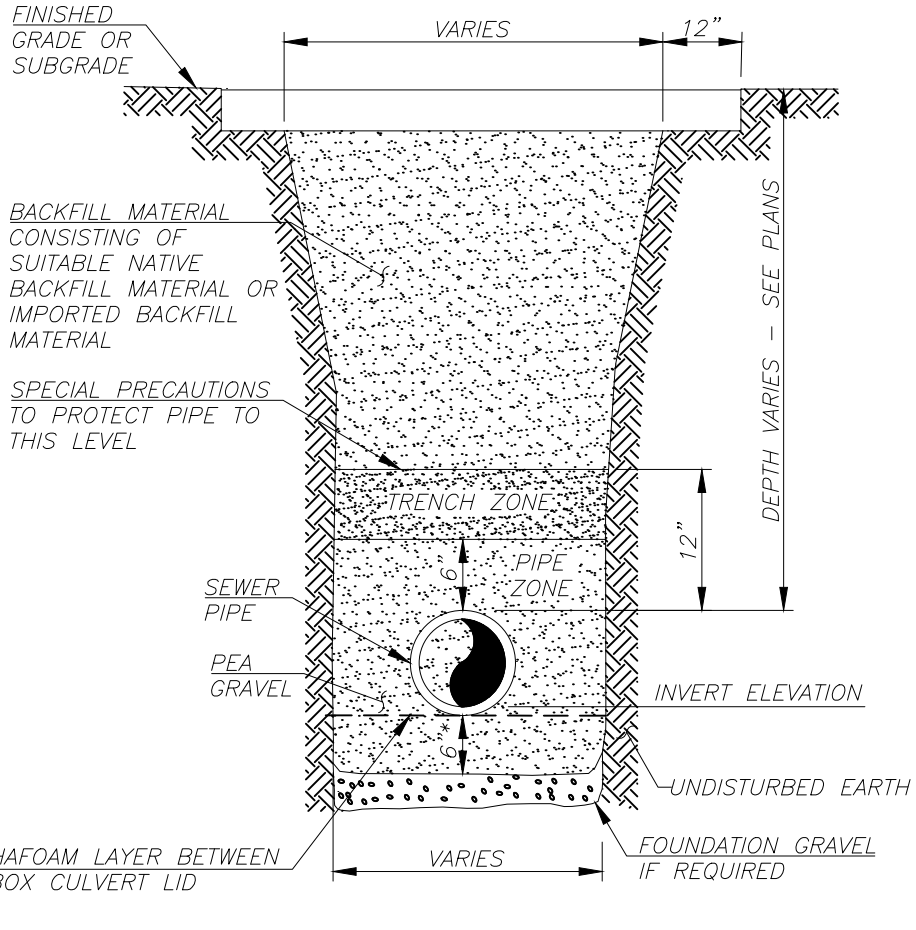


NOTES

- ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE PROTECTO 401 LINED.
- DROP MANHOLE SHALL MEET ALL REQUIREMENTS AS STATED IN THE STANDARD MANHOLE DETAIL, MATERIALS AND CONSTRUCTION NOTES.
- DROP MANHOLES SHALL ONLY BE USED IN STRAIGHT FLOW-THROUGH LOCATIONS (NO 90° TURNS).
- ALL DUCTILE IRON FITTINGS WITH MEGA-LUGS.
- VERTICAL BEND MAY BE REQUIRED DUE TO PIPE SLOPE CONDITIONS AT DUCTILE IRON TEE.

DROP MANHOLE

REV. 5/19/17



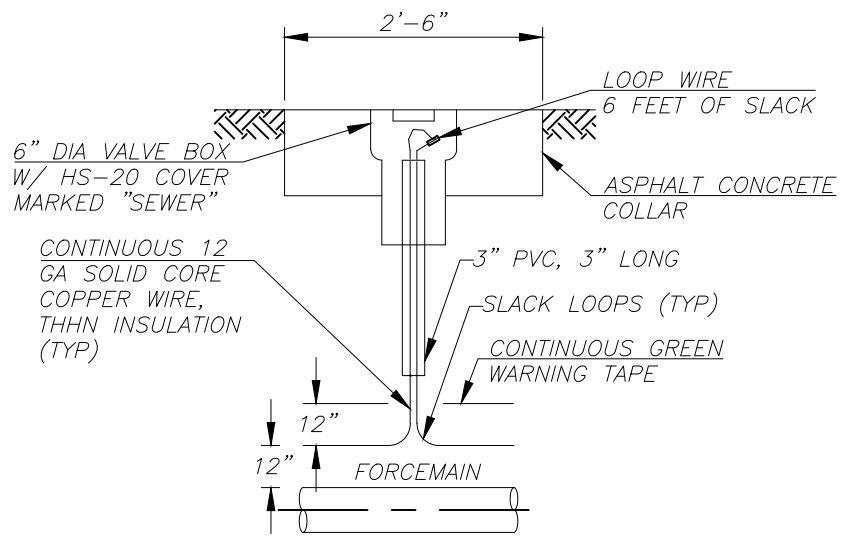
6" MIN. ETHAFOAM LAYER BETWEEN PIPE AND BOX CULVERT LID (6"x2'x12')

NOTES

1. * FOR PIPE DEEPER THAN 18', PIPE BEDDING SHALL EXTEND 18" ABOVE CROWN OF PIPE
2. NOT TO SCALE

SANITARY SEWER TRENCH SECTION

REV. 5/26/17

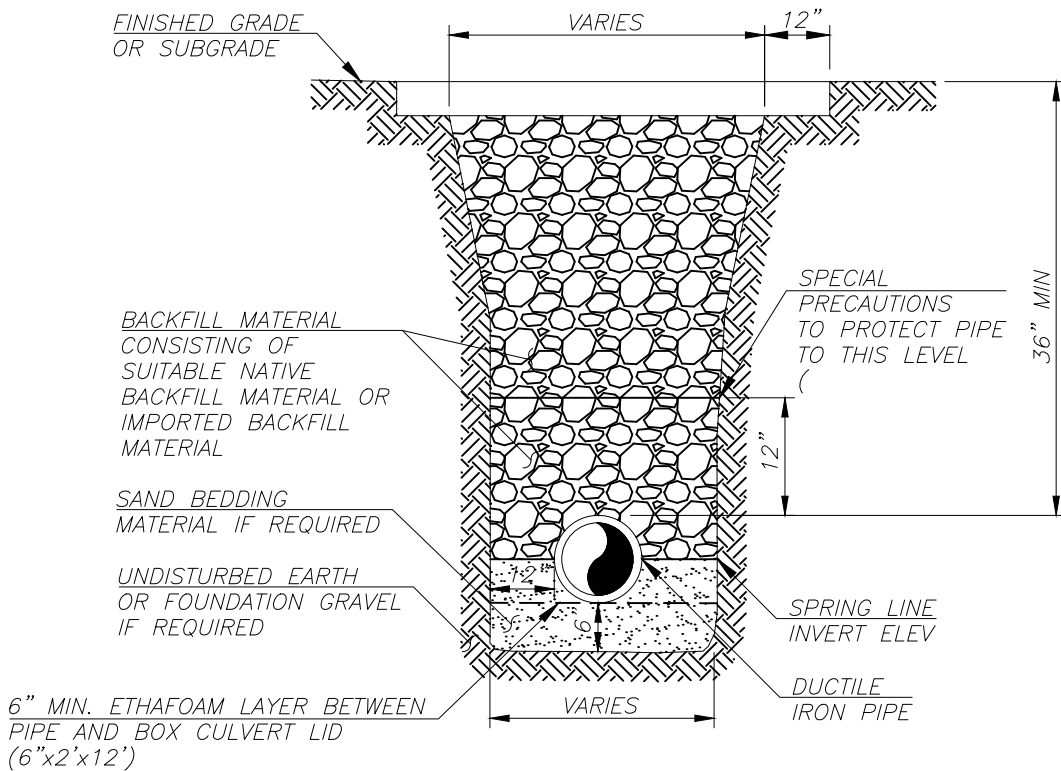


NOTES

1. LOCATE TEST BOX OVER CENTERLINE OF FORCEMAIN.
2. PROVIDE TEST BOX AT 500' INTERVALS AND AT BENDS.
3. PROVIDE 12" WIRE LOOP INSIDE VALVE BOX (TYP).
4. INLINE CONNECTORS ON WIRE ARE NOT ALLOWED.

FORCEMAIN TRACER WIRE LOCATE STATION

REV. 5/26/17



WATER MAIN TRENCH SECTION

REV. 5/5/17

○	3" METER (ONLY)	⬡	4" METER (ONLY)
A	3" GALV	H	4" DI
B	3" BLIND FLG TAPPED 2" (2 PLACES TYP)	I	4" BLIND FLANGE TAPPED 2" (2 PLACES TYP)
C	3" TEE (FLG)	J	4" TEE (FLG) (TYP)
D	4" x 3" REDUCER (FLxFL)	K	4" FCA (TYP)
E	4" FCA (TYP)	L	4" GATE VALVE (FLG) W/HAND WHEEL OPERATOR (TYP)
F	3" GATE VALVE (FLG) W/HAND WHEEL OPERATOR (TYP)	M	4" ADJUSTABLE PIPE SADDLE SUPPORT GRINNELL #26#
G	3" ADJUSTABLE PIPE SADDLE SUPPORT GRINNELL #26#		

NOTES

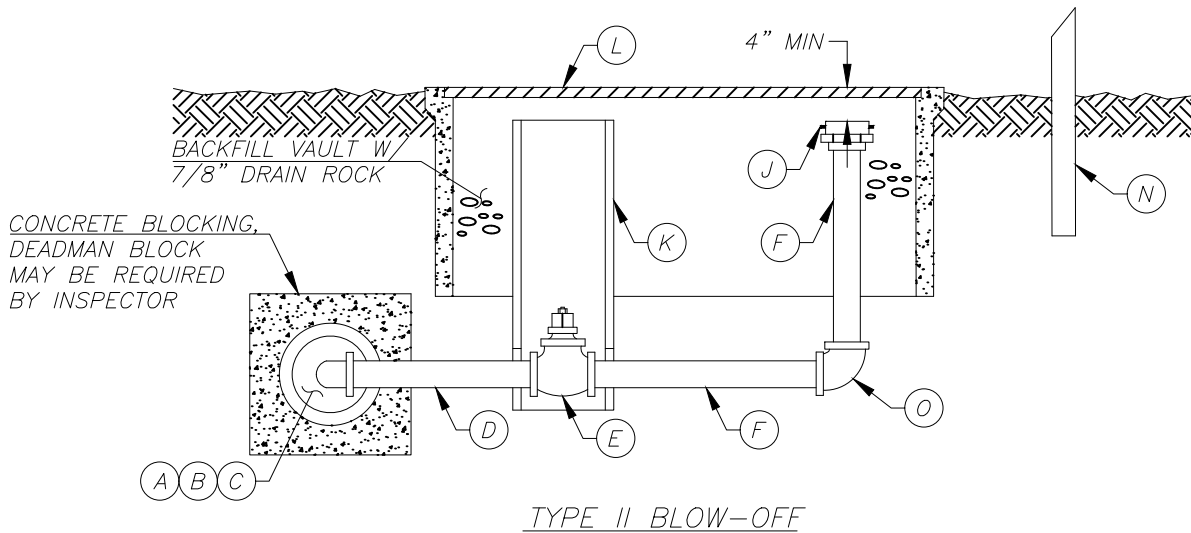
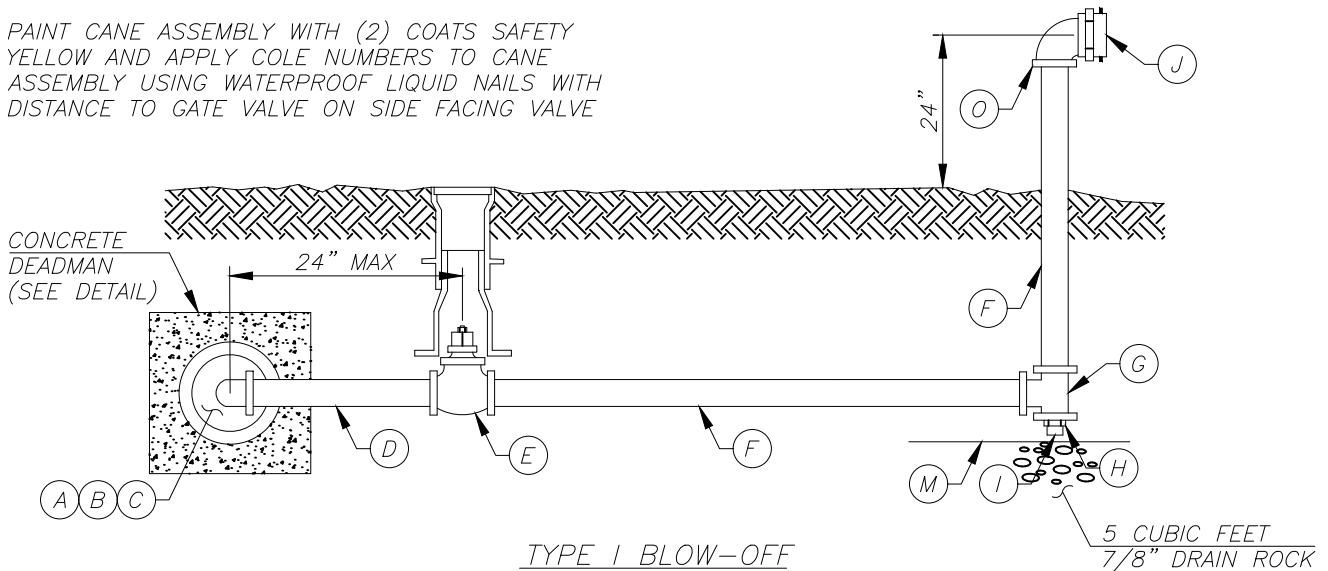
1. VAULT COVER SHALL MATCH EXISTING GRADE OR 6" ABOVE IN UNIMPROVED AREAS.
2. PAINT SCHEDULE:
EXTERIOR OF VAULT – BELOW GRADE TWO COATS OF BLACK BITUMASTIC SOLUTION (VAULT SHOULD BE DRIED WITH NO MOISTURE PRESENT PRIOR TO APPLICATION OF COATINGS)

PAINT INTERIOR PIPING (NON BRASS) – ONE (1) COAT RUST RESISTOR PRIMER TWO (2) COATS SAFETY BLUE SEMI GLOSS PAINT
3. IF POSITIVE DRAINAGE FROM VAULT CANNOT BE ACHIEVED A SUMP PUMP SYSTEM WILL BE REQUIRED WITH DISTRICT APPROVAL. POWER SHALL BE SUPPLIED AND MAINTAINED BY THE DEVELOPMENT.
4. FLEXIBLE FITTING WHEN ENTERING AND EXITING VAULT WITHIN 5 FEET OF VAULT. IF (MJ) BELL CONNECTION IS WITHIN 5 FEET OF THE VAULT, FITTING MAY BE OMITTED (2 PLACES TYPICAL).
5. CORE DRILL 1-3/4" HOLE IN ONE OF THE HATCHES NEAR CENTER FOR INSTALLATION OF TOUCH PAD FOR A TOUCH READ METER.
6. USE 2" THREADED BRASS AND UNION AS NEEDED.

3" AND 4" METER NOTES AND MATERIALS

REV. 5/5/17

PAINT CANE ASSEMBLY WITH (2) COATS SAFETY YELLOW AND APPLY COLE NUMBERS TO CANE ASSEMBLY USING WATERPROOF LIQUID NAILS WITH DISTANCE TO GATE VALVE ON SIDE FACING VALVE



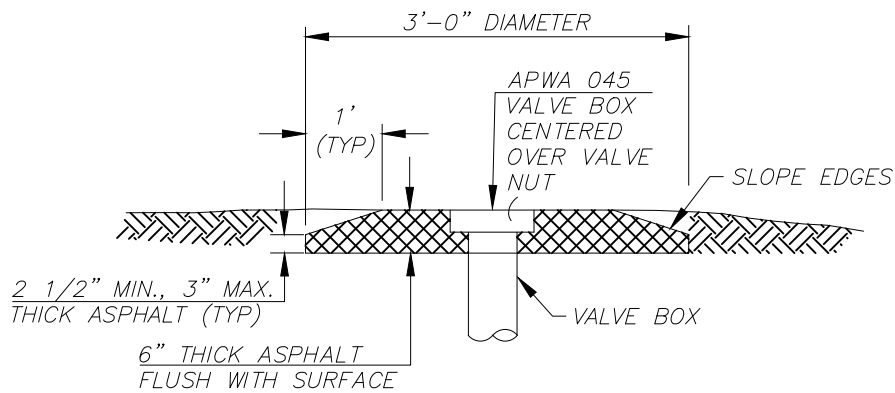
NOTE

1. ALL PIPE AND FITTINGS TO BE GALVANIZED EXCEPT WHERE NOTES AND ALL ASSEMBLED WITH TEFLON TAPE AND PIPE DOPE.

ITEM	TYPE I QTY	TYPE II QTY	DESCRIPTION
A	1	1	CAP W/ 2" IPS TAP
B	1	1	2" X 6" BRASS NIPPLE
C	1	1	2" 90° BRASS BEND
D	-	-	2" BRASS PIPE (LENGTH TO SUIT)
E	1	1	2" GATE VALVE W/SQUARE OPERATING NUT TYPE I REQUIRES CAST IRON VALVE BOX W/ DEEP SKIRT LID, TYPE II WITH 6" PVC PIPE ONLY
F	-	-	2" GALVANIZED IRON PIPE (LENGTH TO SUIT)
G	1	0	2" X 2" TEE
H	1	0	2" X 1/2" BUSHING
I	1	0	AUTOMATIC DRAIN VALVE - WEATHERMATIC 910
J	1	1	2" MIP X 2 1/2" NST FIRE HOSE ADAPTOR W/CAP TYPE I (MIP) , TYPE II (FIP) W/ 2" COUPLER
K	0	1	6" PVC (LENGTH TO SUIT)
L	0	1	FOGTITE TYPE 2 METER BOX W/ 3/8" SOLID STEEL TRAFFIC COVER (REINFORCED ON FOUR SIDES) AND H-20 LOADING MARKED "B.O."
M	-	-	FABRIC OR PLASTIC BARRIER
N	0	1	VALVE MARKER POST
O	1	1	2" 90° GALV. BEND

TYPE I AND II BLOW-OFF ASSEMBLY

REV. 5/5/17

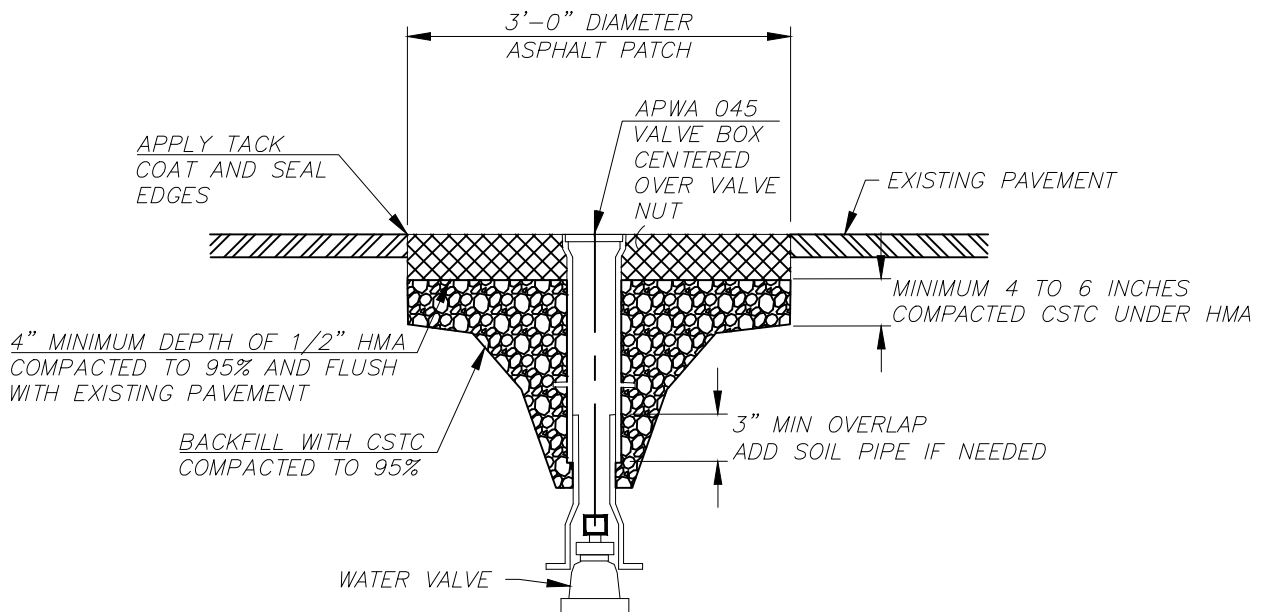


NOTES

1. THE COMPLETED PATCH SHALL BE FLUSH WITH THE SURROUNDING FINAL GRADE, SHALL NOT BE MORE THAN 1/8" FLUSH WITH THE SURROUND PAVEMENT, AND SHALL BE SMOOTH FOR TRAFFIC.
2. WHEN RAISING THE VALVE BOX TO FINISHED GRADE, EXCAVATE CASTING TO A DEPTH NECESSARY TO VERIFY CASTING OVERLAPS SOIL PIPE BY 3". ADD SOIL PIPE AS NEEDED. VALVE BOX SHALL BE CENTERED OVER THE VALVE NUT.
3. SLIP CANS ARE NOT ALLOWED WHEN RAISING VALVE BOXES TO GRADE.

REV. 5/12/17

VALVE BOX ASPHALT COLLAR DETAIL FOR NON-PAVED AREAS

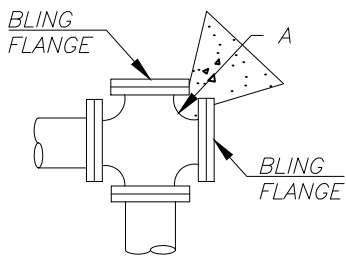


NOTES

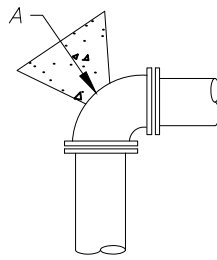
1. VALVE CANS SHALL BE RAISED TO GRADE AFTER PLACEMENT OF THE ASPHALT'S FINAL LIFT AND WITHIN 48 HOURS UNLESS OTHERWISE APPROVED BY THE DISTRICT.
2. NEATLY REMOVE ASPHALT AROUND EXISTING VALVE CASTING.
3. EXCAVATE VALVE CASTING TO A DEPTH NECESSARY TO RAISE CASTING AND VERIFY CASTING OVERLAPS SOIL PIPE BY 3". ADD SOIL PIPE AS NEEDED. VALVE BOX SHALL BE CENTERED OVER THE VALVE NUT.
4. SLIP CANS ARE NOT ALLOWED.
5. BACKFILL WITH CSTC COMPACTED TO 95% (MODIFIED PROCTOR).
6. INSTALL 1/2" HMA IN 2-INCH LIFTS, TO A COMPACTED DEPTH EQUAL TO THE EXISTING PAVEMENT OR A MINIMUM OF 4", WHICHEVER IS GREATER. TACK ALL EDGES AND SEAL FINISH JOINTS WITH TAR AND SAND.
7. THE COMPLETED PATCH SHALL BE FLUSH WITH THE SURROUNDING PAVEMENT, SHALL NOT VARY FROM BEING FLUSH BY MORE THAN 1/8", AND SHALL BE SMOOTH FOR TRAFFIC.

REV. 5/12/17

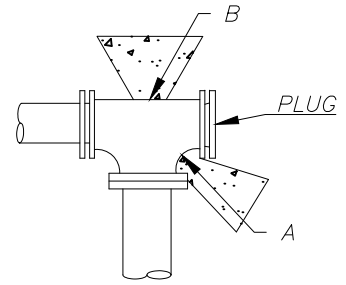
VALVE BOX PAVEMENT PATCH DETAIL AND PAVED AREAS



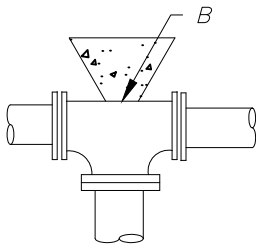
CAPPED CROSS



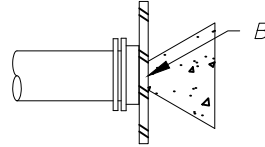
90° BEND



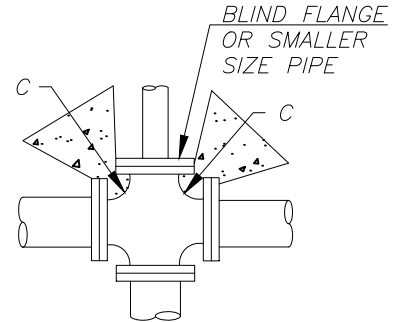
TEE



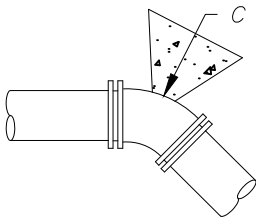
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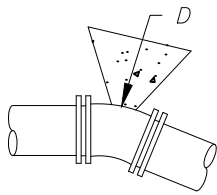
CAP



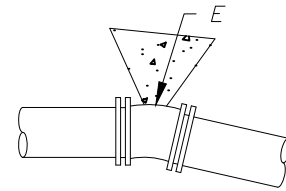
CROSS



45° BEND



22 1/2° BEND

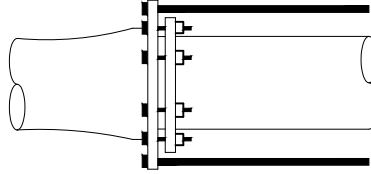


11 1/4° BEND

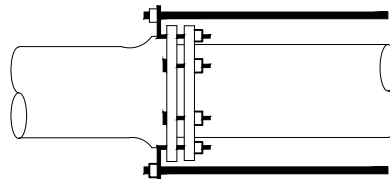
THRUST BLOCK TABLE						
MIN BEARING AREA AGAINST UNDISTURBED SOIL (SF)						
PIPE SIZE	A(FT ²)	B(FT ²)	C(FT ²)	D(FT ²)	E(FT ²)	X
4"	3	1	1	1	1	NONE
6"	4	4	2	1	1	NONE
8"	7	6	4	2	1	4
10"	11	10	6	3	2	6
12"	16	14	9	5	3	9
14"	22	19	12	6	3	12
16"	29	25	16	8	4	16
18"	36	31	20	10	5	20
20"	45	39	24	13	6	24
22"	54	47	29	15	8	29
24"	64	56	35	18	9	35
28"	87	76	48	24	12	48
30"	101	87	55	28	14	55
36"	145	125	78	40	20	78
42"	197	171	107	55	27	107
48"	257	223	140	71	36	140

NOTES

1. BEARING AREA OF CONCRETE THRUST-BLOCK BASED ON 200 PSI PRESSURE AND SAFE SOIL BEARING LOAD OF 2,000 POUNDS PER SQUARE FOOT.
2. AREAS MUST BE ADJUSTED FOR OTHER PIPE SIZES, PRESSURES AND SOIL CONDITIONS.
3. CONCRETE BLOCKING SHALL BE CAST-IN-PLACE AND HAVE A MINIMUM OF 1/4 SQUARE FOOT BEARING AGAINST THE FITTING.
4. BLOCK SHALL BEAR AGAINST FITTINGS ONLY AND SHALL BE CLEAR OF JOINTS TO PERMIT TAKING UP OR DISMANTLING OF JOINT.
5. CONTRACTOR SHALL INSTALL BLOCKING ADEQUATE TO WITHSTAND FULL TEST PRESSURE AS WELL AS TO CONTINUOUSLY WITHSTAND OPERATION PRESSURE UNDER ALL CONDITIONS OF SERVICE.



CAST OF LUGS



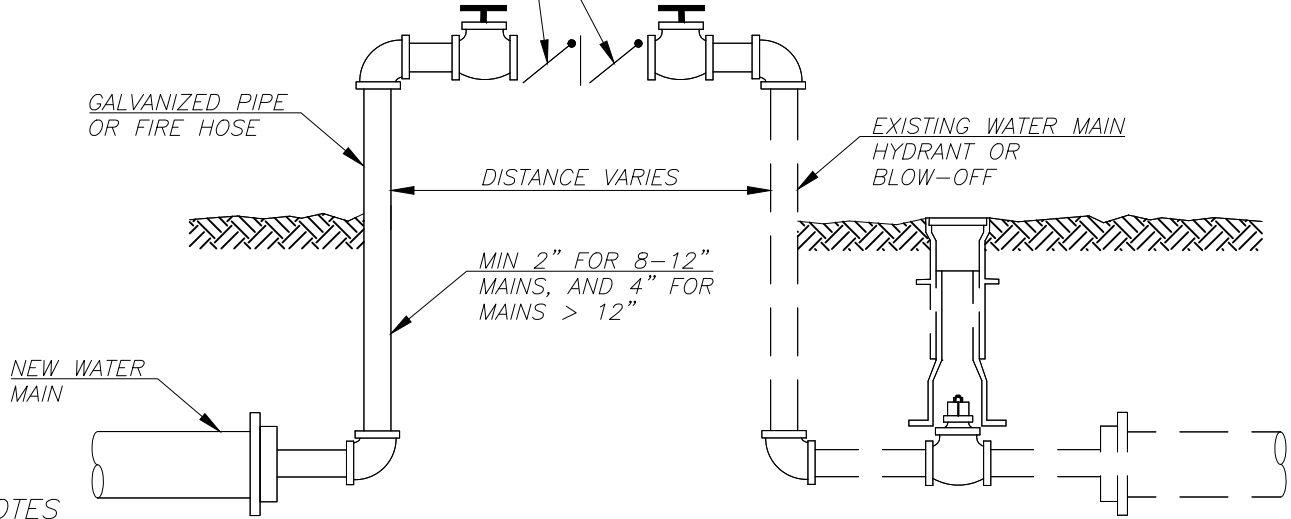
TIE BOLT

SIZE	PRESSURE PSI	FORCE IN POUNDS	NUMBER OF TIE RODS												
			2	3	4	6	8	10	12	14	16	24			
3"	300	2,120	3/8"												
4"	300	3,780	3/8"												
6"	300	8,500	5/8"	1/2"		3/8"									
8"	300	15,100		3/4"	5/8"	1/2"									
10"	275	21,620			3/4"	5/8"	1/2"								
12"	250	33,930				3/4"	5/8"								
14"	250	46,200					3/4"								
16"	225	45,250					3/4"		5/8"						
18"	200	50,900					3/4"		5/8"						
20"	200	62,840						3/4"		5/8"					
24"	200	90,480								3/4"					
30"	200	141,370									1"	7/8"			
36"	200	203,580										1"	7/8"		

TIE ROD ATTACHMENTS

REV. 5/19/17

DOUBLE CHECK VALVES TO MATCH PIPE DIAMETER APPROVED IN WASHINGTON STATE AND TESTED WHENEVER INSTALLED OR MOVED. PROVIDE CERTIFICATION TO DISTRICT.

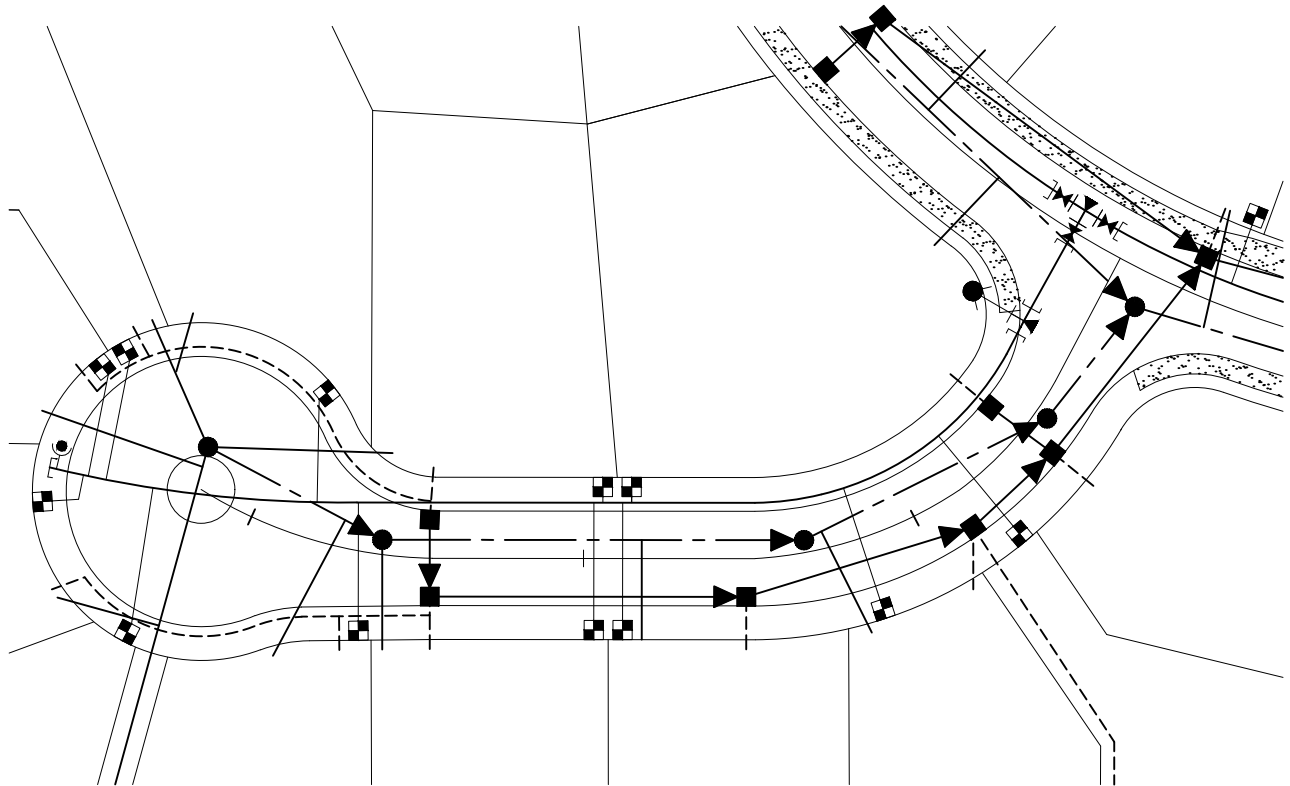


NOTES

1. FOR BELOW GROUND INSTALLATION, USE TYPE II BLOW-OFF ASSEMBLY, MODIFIED AS REQUIRED BY DISTRICT. INSTALL IN AREA NOT SUBJECT TO FLOODING.
2. ALL FILLING AND FLUSHING SHALL BE METERED BY DISTRICT. PROVIDE SPACE FOR INSTALLATION OF METER.
3. ALL NEW MAINS SHALL BE KEPT SEPARATE FROM THE DISTRICT'S EXISTING SYSTEM UNTIL THE NEW MAINS ARE TESTED AND ACCEPTED. FINAL CONNECTION REQUIRES 100% INSPECTION BY DISTRICT.
4. PROTECT ABOVE GROUND INSTALLATION FROM DAMAGE AND FREEZING.

TESTING CONNECTION

REV. 5/19/17

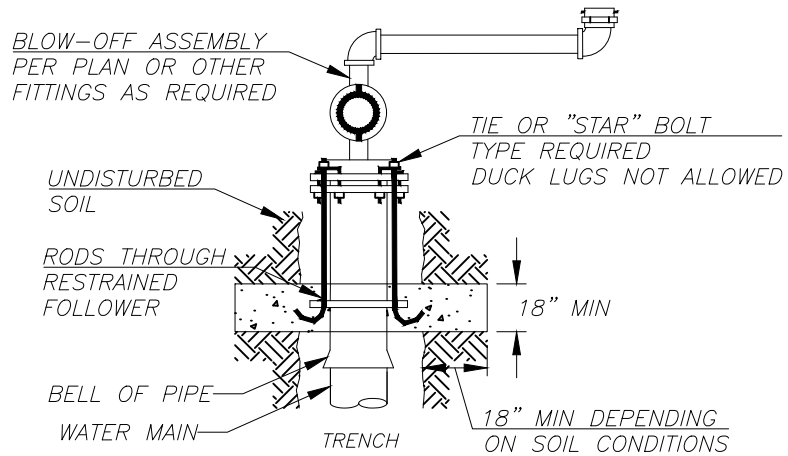


NOTE

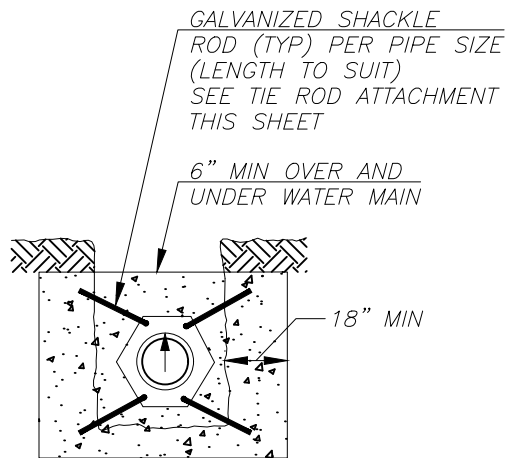
PROVIDE POINT-PLOT MAP (HARD COPY AND ELECTRONIC) OF SURVEYED FEATURES FOR DISTRICT REVIEW.

WATER AS-BUILT

REV. 5/19/17

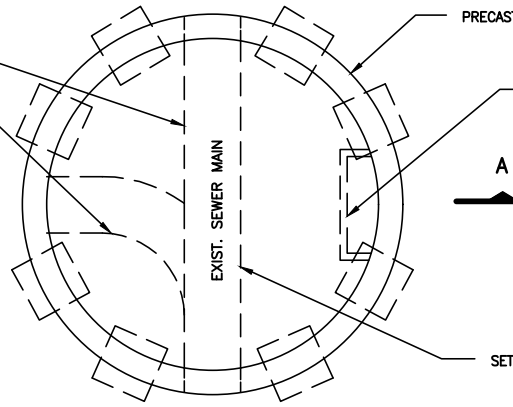


PLAN



ELEVATION

CARRY CHANNELS UP VERTICALLY TO 3/4" PIPE THEN RPUND TO FULL PIPE DIA. HEIGHT. BENCHES TO SLOPE 1/2" PER FOOT.

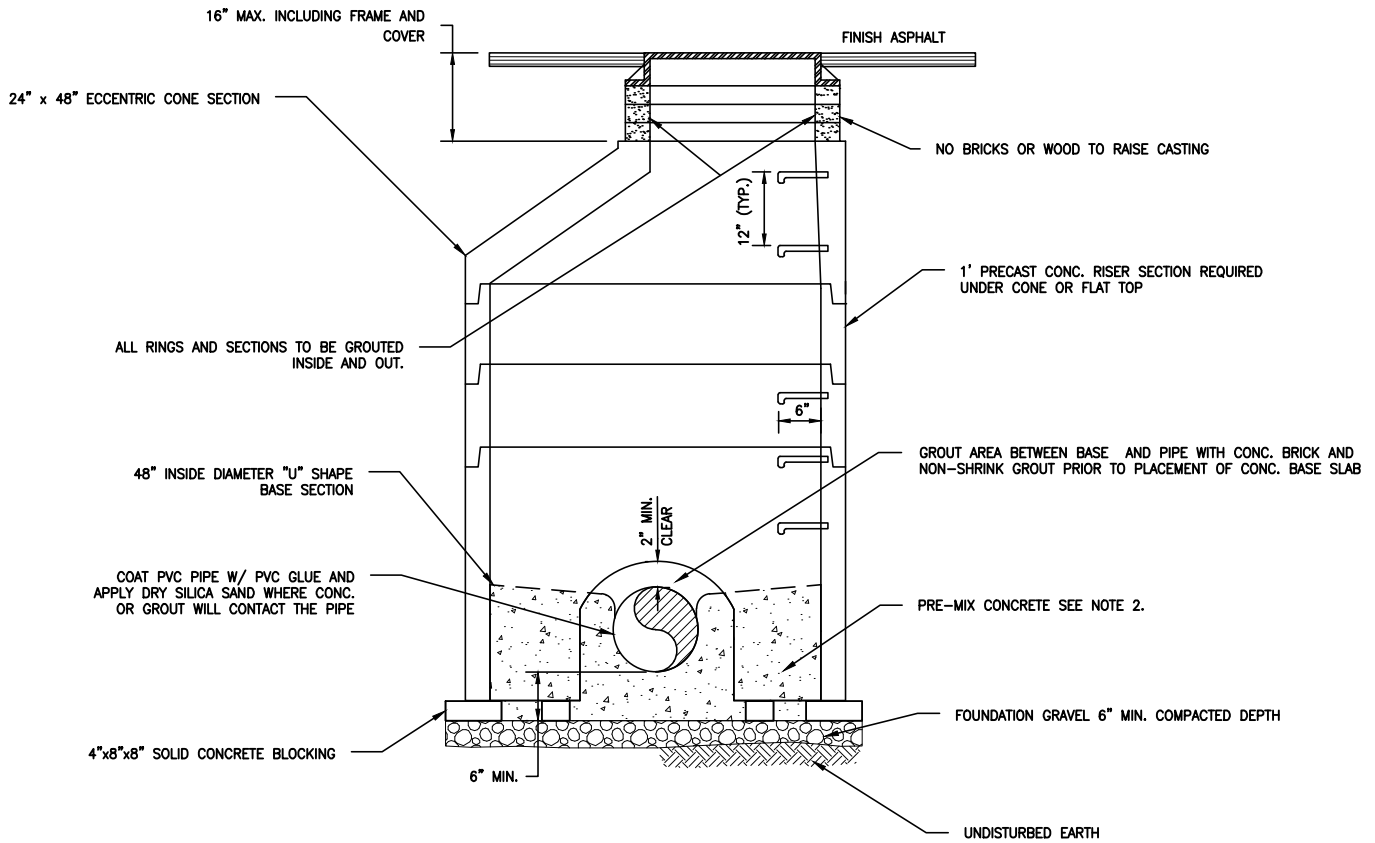


PRECAST CONC. "U" SHAPED BASE SECTION

PER STD DETAIL 643.

SET INVERT .1' TO .2' HIGHER THAN EXISTING I.E.

PLAN VIEW



SECTION A-A

NOTES:

1. ALL APPLICABLE DETAILS AND NOTES FROM STD DETAIL 621 (STANDARD PRECAST MH) APPLY TO SADDLE MH.
2. 3000 PSI PRE-MIX CONCRETE WITH AIR ENTRAINMENT SHALL BE PLACED FROM 6" (MIN.) UNDER SEWER MAIN TO FINISHED BENCH HEIGHT. CHANNELING SHALL BE COMPLETED AT TIME OF PLACEMENT. THIN OVERLAYED OF GROUT IN CHANNELS NOT ALLOWED.
3. TOP OF PIPE NOT TO BE CUT OUT UNTIL AUTHORIZED BY THE ENGINEER.

SADDLE MANHOLE

NOT TO SCALE



SADDLE MANHOLE

501

REVISION DATE
Aug, 2017

APPENDIX C

Easement Documents

To be included via Addendum.

APPENDIX D

Geotechnical Report

GEOTECHNICAL ENGINEERING REPORT

Zackuse Creek Fish Passage Project
Sammamish, Washington

Prepared for: City of Sammamish

Project No. 160277 • December 11, 2017 DRAFT



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GEOTECHNICAL ENGINEERING REPORT
Zackuse Creek Fish Passage Project
Sammamish, Washington
Prepared for: City of Sammamish

Project No. 160277 • December 11, 2017 DRAFT

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V:\160277 Zackuse Creek Fish Passage Project\Deliverables\Geotech Report\Zackuse Creek Fish Passage Draft Geotechnical Report_20171211.docx



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- B Laboratory Test Results

1 Introduction and Project Description

This draft geotechnical report presents the results of a site reconnaissance, subsurface explorations, and geotechnical analyses and recommendations performed by Aspect Consulting, LLC (Aspect) in support of the Zackuse Creek Fish Passage Project (Project). Our services were provided in support of engineering studies led by OTAK, Inc (Otak) for the City of Sammamish (Client).

The Project involves the replacement of an existing 30-inch-diameter concrete culvert under East Lake Sammamish Parkway (ELSP) and rerouting portions of Zackuse Creek east of ELSP. The culvert replacement is designed to provide upstream fish passage and spawning habitat for native Lake Sammamish kokanee. The project location is shown on Figure 1, *Project Area Location Map*.

We anticipate that design and construction of the culvert and associated roadway improvements will be in accordance with the current American Association of State Highway and Transportation Officials (AASHTO) Load and Resistance Factor Design (LRFD) Bridge Design Specifications (BDS; AASHTO, 2014), and selected Washington State Department of Transportation (WSDOT; WSDOT, 2016) guidance and methodologies.

This draft report summarizes the results of the completed field explorations and presents Aspect's geotechnical engineering conclusions and design recommendations for plan, specification, and estimate (PS&E) development. This draft report is submitted following OTAK's 90% review set of project plans. The conclusions and recommendations formally provided herein were previously provided to OTAK informally (by email and/or verbally in design meetings).

2 Site Conditions

The Project area consists of a hummocky alluvial plain and wetland to the east of ELSP and a generally southwest to northeast trending fill embankment supporting ELSP above the surrounding alluvial plain. Zackuse Creek meanders across the alluvial plain traversing generally east to west before ponding up against and travelling north along ELSP about 200 feet south of a concrete culvert. The 30-inch-diameter concrete culvert carries Zackuse Creek beneath ELSP at the elevation of the alluvial plain. Zackuse Creek passes through two additional culverts before entering Lake Sammamish about 200 feet west of ELSP.

Project area topography is a generally flat alluvial plain with incised stream channels between ELSP and a west-facing slope about 650 feet east of ELSP. The fill embankment supporting ELSP is between 5-feet and 7-feet above the surrounding alluvial plain. The sides of the embankment are typically around a 1H:1V slope. The Zackuse Creek stream channel is incised into the surrounding alluvial plain up to 5-feet east exploration HA-3. West of exploration HA-3, Zackuse Creek is typically wider than upstream and near the elevation of the ground surface. Project area topography is shown on Figure 2.

2.1 Surface Conditions

Surface conditions near the culvert replacement generally consist of relatively flat asphalt paved roadway over the existing culvert, shrubs and bushes on either side of the fill embankment, and wetland vegetation consisting of bushes, common juvenile deciduous trees, and occasional large conifers growing on the alluvial plain east of ELSP.

2.2 Tectonics and Regional Geology

The Puget Lowland is located within an area of repeated glaciations in a complex tectonic environment with active seismicity. Starting about 25 million years ago, the geologic evolution of western Washington has been dominated by the subduction of the Juan de Fuca oceanic plate beneath the North American continental plate. This convergence of plates has created the Puget Trough, which is flanked by the Olympic Mountains to the west and the Cascade Range to the east. The Project will be constructed within the Puget Trough. The Tertiary and Quaternary deposits in the Puget Trough are estimated to be up to 4 miles thick.

The Project area lies about two miles north of the Seattle fault zone, in the Seattle basin, a trough containing a thick accumulation of Quaternary and Tertiary sediments. Northward-directed compression of the Puget Trough has resulted in formation of a chain of sedimentary basins that extend from the Chehalis area of Washington northward past the Canadian border. These sedimentary basins are separated by fold-and-thrust belts that occur as broad zones of active thrust faults, strike-slip faults, folds, and uplifted and deformed bedrock and sediments.

The present-day land surface in the Project area reflects deposition of postglacial sediments that lie above glacial and nonglacial sediments that were deposited during the Quaternary Period (within the last 2.6 million years). During episodes of cooler mean global temperatures, continental ice sheets originating in Canada advanced southward covering much of the Puget Lowland with glacial ice over a mile thick in places, and up

to about 3,000 feet thick in the Project Area. Glacial ice and meltwater from the glaciers and glacially impounded Puget Lowland rivers deposited sequences of clayey and silty to sandy glaciolacustrine (glacial lake) deposits in glacially impounded areas, broad sheets of outwash sand and gravel, glacial tills and diamicts (poorly sorted deposits), and sandy to gravelly recessional outwash.

Lake Sammamish resulted from this subglacial meltwater scour and erosion. The slopes above the lake, including those east of Lower Coal Creek, were then modified by normal slope erosion processes including landslides and incision by ravines and drainages from the uplands. Geological mapping indicates the Project area is underlain by Quaternary Alluvium, Mass Wasting Deposits, and Vashon Stade recessional outwash; till, and advance outwash from the Vashon Stade glaciation are mapped on the slopes to the east of the Project area (Booth et. al, 2012).

Artificial fill is not mapped at the Project Area, but is present in the roadway embankment. We did not encounter mass wasting deposits in our explorations. Soil units encountered in soil boring explorations completed at the Project Area are described in more detail below in Section 3.2.

2.3 Seismic Hazards

The Project will be constructed within an area of active tectonic forces associated with the interaction of the offshore Juan de Fuca plate, the Pacific plate, and the onshore North American plate. These plate interactions result in seismic hazards to the Project. Significant hazards include regional ground shaking from subduction zone earthquakes, deep earthquakes, and shallow crustal earthquakes; liquefaction of soft ground; seismically triggered landslides; and the potential for surficial ground rupture.

The Project lies within two miles of the Seattle fault zone. This broad zone of compressional folding and faulting is known to be active, and has ruptured and triggered earthquakes several times during the last 10,000 years. The U. S. Geological Survey (USGS; USGS, 2014) estimates that it is capable of producing earthquakes of magnitude 7.3 or greater. The last large earthquake on this fault system was about 1,100 years ago, and resulted in up to 27 feet of uplift in parts of west Seattle, and surficial ground rupture at Vasa Park east of the Project Area. Faulting was likely associated with surficial ground rupture elsewhere in Bellevue, although most traces of the rupture have been obliterated by erosion and urban development.

The Project Area also lies within the zone of strong shaking from subduction zone earthquakes. The recurrence interval of these earthquakes is thought to be on the order of about 500 years. The most recent subduction zone earthquake occurred about 300 years ago. Deep intraslab earthquakes also occur in the region every decade or two, including the 2001 Nisqually earthquake. These earthquakes are generally less severe than the shallow crustal and subduction zone earthquakes, but have the potential to cause damage to older structures built before modern seismic codes were enacted, and those in areas susceptible to liquefaction.

ASPECT CONSULTING

The Project Area shallow subsurface is underlain by loose gravel, sand, and soft silts that are susceptible to liquefaction during a large earthquake. Liquefaction could result in vertical settlement and lateral displacements of the roadway fill embankment and unconsolidated alluvial sediments.

However, AASHTO and WSDOT standards for design of buried concrete culverts is that they do not need to be designed for seismic effects: AASHTO qualifies this policy for projects that are not along known active faults; WSDOT qualifies this policy for culverts with a span width of less than 20 feet. There are no known active faults crossing the Project Area, and the planned culvert will have a span width of about 12 feet. Therefore, the culvert will not be designed for seismic hazards.

3 Subsurface Conditions

3.1 Field Exploration Program

We completed two machine-drilled borings on December 8 and December 9, 2016. The borings, designated MW-1 and B-2, were completed on either side of the existing culvert and along the proposed replacement alignment (Figure 2). A 2-inch-diameter slotted piezometer was installed in the southwestern boring, MW-1.

The borings were sampled at 2.5-foot intervals from the surface to 20 feet below ground surface (bgs), and sampled at 5-foot intervals from 20 feet bgs to the end of hole. Disturbed soil and bedrock samples were taken using Standard Penetration Testing (SPT) methods for soil density and consistency correlation.

Along the proposed creek re-alignment to the east of ELSP, we completed five shallow borings using hand tools along. These shallow borings, HA-1 to HA-5 were selectively sampled and relative soil density/ consistency measurements taken at depths determined by Aspect field staff. Locations of all borings are shown on Figure 2.

Descriptions of the soils units encountered in the borings, as well as the depths where characteristics of the geology and engineering units changed, are indicated on the exploration logs presented in Appendix A. Definitions of the terminology and symbols used on the logs are included as Appendix A-1.

Selected soil samples were submitted to a subcontracted geotechnical testing laboratory (Materials Testing and Consulting, Inc) to complete index testing consisting of moisture content, grain-size distribution, percent fines content, and organic content. Further description of the soil samples submitted, test methods, and results are presented in Appendix B.

3.2 Stratigraphy

From the roadway surface, we observed a 4-inch-thick layer of hot mix asphalt over a 3-inch-thick layer of concrete. Beneath the roadway, we observed roadway embankment fill overlying non-glacially consolidated Quaternary Alluvium and Vashon Stade Glacial Recessional Deposits. Beneath the non-glacially consolidated deposits, we encountered glacially consolidated Glacial till and Glacial outwash of the Vashon Stade. Figure 3 presents a cross-section with our interpretation of geologic conditions across the existing culvert.

3.2.1 Roadway Embankment Fill

Below pavement, both of our borings, MW-1 and B-2 encountered roadway embankment fill (fill) that extended between 5-feet and 5.5-feet bgs. This fill was moist, very gravelly, silty SAND (SM)¹ or slightly silty SAND (SP-SM) and contained scattered organic

¹ Soil Classification per the Unified Soil Classification System (USCS). Refer to ASTM D2488 (ASTM, 2012).

fragments. Embankment fill was not observed in the shallow hand borings to the east of ELSP.

SPT² sampling indicates the fill has medium dense to dense relative density. The fill is expected to exhibit moderate to high shear strength and low compressibility.

3.2.2 Quaternary Alluvium

Quaternary alluvium (alluvium) was encountered below the fill to 21 feet and 25 feet bgs in borings MW-1 and B-2 respectively. Additionally, alluvium was encountered in all the shallow hand borings (HA-1 to HA-5). The alluvium typically consisted of wet, brown and gray, PEAT (PT), SILT (ML), slightly silty SAND (SP-SM), silty SAND (SM), or GRAVEL (GP). Soil units were interbedded with beds between 1 foot and 5 feet thick. The high variability of the soils in the alluvium units is indicative of a low-gradient stream frequently traversing a wetland and floodplain environment.

SPT sampling indicates the alluvium has very loose to medium dense density or soft to medium stiff consistency. The fill is expected to exhibit low shear strength and high compressibility. Under seismic shaking conditions, saturated areas of the alluvium may liquefy.

3.2.3 Glacial Deposits of the Vashon Stade

Recessional Deposits

Vashon Stade glacial recessional deposits were encountered beneath the alluvium to between 35 feet and 36 feet bgs in both borings MW-1 and B-2. Recessional glacial deposits were wet, brown and yellow-brown, SILT (ML), slightly silty SAND (SP-SM), silty SAND (SM), or slightly silty GRAVEL (GP-GM). The variations in soil types within the glacial recessional deposits indicate a variable fluvial and lacustrine environment encounter during glacial recession.

The glacial recessional deposit silt was non-plastic to low plasticity, the sand fraction was fine to coarse, and the gravel fraction was typically fine. SPT sampling indicates the glacial recessional deposits are medium dense to dense. The glacial recessional deposits are expected to exhibit moderate to high shear strength and low compressibility.

Till

Vashon Stade till was encountered beneath recessional deposits from 35 feet to 40 feet in boring MW-1 and from 36 feet to 51.5 feet (end of the boring) in B-2. Till typically consisted of very moist or wet, gray, gravelly, silty SAND (SM) and exhibited a distinctive diamict grain-size distribution and texture.

The till sand fraction was fine to coarse and the gravel fraction was typically fine. SPT sampling indicated the was very dense. The till is expected to exhibit high shear strength and little to no compressibility.

² SPT blow count refers to standard penetration test (SPT) N-values, in accordance with ASTM D1586.

Advance Outwash

Vashon Stade advance outwash was encountered beneath till in boring MW-1 from 40 feet to 46.5 feet (end of the boring). Advance outwash consisted of wet, brown, very gravelly, slightly silty SAND (SM).

The advance outwash sand and gravel fractions were fine to coarse. SPT sampling indicated the advance outwash was very dense and is expected to exhibit high shear strength and little to no compressibility.

3.3 Groundwater

We measured groundwater at 7.5 feet below the pavement in both borings, MW-1 and B-2 during drilling. Subsequently, groundwater was measured at 1-foot bgs in MW-1 on December 15, 2016 at the completion of the monument. On September 26, 2017 we returned to the site and measured groundwater to be 0.7 feet below the pavement. Given these groundwater measurements are higher than the average creek and wetland elevation, we conclude the piezometer screened zone is influenced by a partially confined aquifer layer.

Groundwater levels are expected to vary due to seasonal variations in weather, snowmelt, and the water level of Lake Sammamish.

4 Conclusions and Recommendations

4.1 Pre-Cast Concrete Box Culvert

The new culvert will be placed on the same alignment as the existing metal pipe culvert being replaced. The new culvert will be a four-sided, pre-cast concrete box, with inside dimensions of 12 feet wide by 6 feet tall. The culvert bottom will be covered with imported gravel to simulate a natural streambed. The culvert will be constructed with a six percent slope to approximately match the existing stream gradient, which is approximately 6 percent.

We understand the work will be completed with a combination of single-lane closures of ELSP and complete road closure is limited to two weeks total duration. To minimize the roadway closure period, the Project will utilize pre-cast concrete elements to the maximum extent possible. The contractor will have the option to shore the proposed excavation to reduce impacts of construction in the road sections. We have assumed shoring will be completed using two rows of internally-braced sheet piling.

The current 90 percent plans show the box culvert bottom at approximate Elevation +39 mean sea level (MSL) at the southeast/inlet end, and approximate Elevation +36.5 MSL at the northwest/outlet end.

The recent alluvium encountered in our explorations MW-1 and B-2 revealed interbeds of soft peat extending below proposed culvert bottom. Peat is highly compressible when loaded, and it exhibits significant long-term settlement, or secondary compression, characteristics.

In our boring B-2 on the north side of the culvert, a loose sandy peat interbed was encountered that extended down to approximate Elevation +31 feet MSL. In boring MW-1 on the south side of the culvert, very soft to medium stiff peat with variable sand and gravel content, was encountered extending down to approximate Elevation +28 feet MSL. Below these elevations, the alluvium is granular and mostly free of peat (in B-2) or recessional outwash sand exists, which is also free of peat (in MW-1).

The base of the proposed culvert is anticipated to range from Elevation +36.74 to +38.87 feet MSL. The bottom of peat is anticipated to range from Elevation +28 to +31 feet MSL.

4.1.1 Estimated Settlement if Peat is not Removed

We performed three-dimensional settlement analyses to model settlement as a result of loading the peat-rich alluvium with the proposed box culvert, leaving the peat in place with a 36-inch thick gravel pad installed below the culvert bottom. We utilized the program Settle 3D (Rocscience, 2017) to model and evaluate the presence of the culvert, the gravel bearing pad, the imported streambed gravel, imported granular backfill against the culvert walls, and granular fill and pavement over the top of the culvert. These analyses considered the rigidity of the four-sided box culvert, with interlocking joints.

The analyses predicted total settlements under the rigid box culvert of about 3 to 4 inches after 12 months, and 5 to 6 inches after 24 months, with no appreciable consolidation settlement thereafter. The rigidity of the four-sided box culvert, combined with relatively

uniform subsurface conditions, are such that settlements should be relatively uniform across its width and length. However, moving away from the box culvert in the direction parallel to the roadway, the analyses predict settlement will taper over about 14 feet (the culvert width), with no appreciable settlement beyond these points. With respect to the culvert, from structural and stream flow capacity perspectives, we believe these predicted settlements are tolerable. However, through coordination with OTAK and the City of Sammamish, from roadway and buried utility serviceability perspectives, this magnitude of settlement is unacceptable.

4.1.2 Sub-Excavation of Peat

Sub-excavation of the alluvial peat from below the box culvert, and replacement with angular crushed rock, will limit the expected settlement to less than one inch. The Peat sub-excavation would extend down to target Elevation +28 feet MSL replacing the sub-excavation with quarry spalls and crushed rock back up to culvert bottom elevation.

The 5½- to 8-foot deeper sub-excavation will increase the size of the temporary excavation, and will lengthen the project duration, but will essentially eliminate future roadway and buried utility serviceability issues at this crossing location.

Sub-excavation of the peat can be completed in the wet using a long-reach excavator. Sounding in the wet using a weighted tape and/or a long-handled steel soil probe would be done to confirm the peat is adequately removed and granular materials are exposed at the target subgrade Elevation +28 feet MSL.

The sub-excavation would be replaced in the wet using clean quarry spalls as specified in Section 9-13.1(5) of the WSDOT Standard Specifications. The clean quarry spalls would be placed in the wet, and tamped into place with the long-reach excavator bucket. The quarry spalls would then be capped with crushed surfacing base course, as specified in Section 9-03.9(3) of the WSDOT Standard Specifications. The CSBC cap would be graded to a uniform slope condition providing a smooth base for the box culvert. We recommend the CSBC cap be 24 inches thick. The CSBC would need to be placed and compacted in the dry; thus, the excavation would need to be dewatered to at least 2 feet below the culvert bottom.

There will be some mixing and migration of smaller CSBC aggregate into voids at the top of the quarry spalls during placement and vibratory compaction. However, a granular filter will develop in the interface of these layers that will stabilize during placement and compaction. There should be no appreciable settlement after the We recommend the bid quantity for CSBC include a 50% increase (for an effective thickness of 3 feet) to account for mixing and migration of material.

If a complete peat sub-excavation and replacement with quarry spalls and crushed surfacing were completed in the manner described above, total and differential post-construction settlements are expected to be less than one inch.

4.2 Culvert Wing Walls

The 90 percent plans call for 10- to 13-foot-long, pre-cast concrete cantilever wing walls extending at 45 degrees away from the culvert centerline. The retained height of soils behind the wingwalls will vary from about 10 or 12 feet where they tie in to the culvert, to about 7 to 8 feet at the opposite ends.

The planned sub-excavation and replacement of peat with compacted gravel from below the box culvert to the full extent of the peat Elevation +28, will largely mitigate the potential for differential settlement where the wingwalls connect to the box culvert. However, it may be impractical to sub-excavate and replace the peat to Elevation +28 under the entire wingwalls.

Our analyses indicate that constructing pre-cast concrete cantilever walls over the existing peat-rich alluvium will result in differential settlement along the length of the walls. If the wingwalls were not structurally connected to the culvert, differential wingwall movement could appear as outward wall rotation, or differential in-plane rotation/movement, either of would tend to cause gaps to form between segments and between the wingwall and the box culvert. The magnitude of total and differential settlement could be in the range of several inches, and settlements will be highly differential given the variation in exposed heights of the walls and steps in foundation elevation moving away from the culvert.

In our opinion, to avoid such aesthetic issues with differential wingwall movement, we recommend the wingwall panels be structurally connected (to the culvert and individual segments to one-another) using epoxy-doweled anchors and structural steel clips.

We recommend that a 24-inch-thick leveling pad of compacted crushed surfacing base course should be placed under each pre-cast concrete wingwall footing. The CSBC pad should extend the full width of the footing under all of the wingwalls.

4.3 Temporary Excavations and Construction Dewatering

It is understood that a bypass of Zackuse Creek will be installed during construction. The bypass will collect and divert creek water in a temporary force main to a discharge location downstream from the project. Our piezometer reading taken in December 2016 encountered groundwater about 1 foot below the roadway pavement. We expect groundwater at the Project area will be highly influenced by creek flow and the time of year. Stream diversion will likely bring down the water level appreciably; however, construction dewatering will still be necessary to complete this culvert replacement project.

Ideally construction would be completed during the late summer or early fall months, when groundwater levels are typically at seasonally lowest levels. Aspect is not currently aware of any fish or shoreline permit construction window limitations that may further constrain the construction schedule.

4.3.1 Temporary Shoring Using Sheet Piling

Given the project will mostly be completed with a combination of single lane road closures, we anticipate temporary shoring using sheet piling will be most economical for the Project. We recommend rows of interlocking steel sheet piling, installed parallel to the culvert, and would be internally braced using walers and struts. The contractor should be required to design and install the temporary shoring. Recommended lateral earth pressures for use in temporary shoring design are provided in Figure 4. The sheet piling should be installed using a vibratory hammer to minimum tip Elevation +13 feet (15 feet below the target sub-excavation depth). This tip elevation approximately coincides with the top of the Vashon Till which was encountered in both borings MW-1 and B-2 at approximate Elevation +14 feet. In our opinion, it will be possible to advance the sheet piling about 1 foot into the Vashon Till.

After the box culvert is set and the spaces between the box culvert and sheets have been backfilled, the sheet piling should be removed. Alternatively, with approval from the City, the sheet piling could cut off a sufficient depth below the finished roadway surface, and left in the ground.

4.3.2 Open Cuts

The existing fill and alluvium classifies as Type C Soil per Washington Administrative Code (WAC) 296-155 Part N. Temporary cuts in Type C Soil not greater than 20 feet deep, should be inclined no steeper than 1½H:1V (horizontal:vertical). Flatter slopes are required where groundwater seepage exists, if traffic or construction surcharges are present, or where less stable soils are present. It is the Contractor's responsibility to design and construct the temporary excavation and complete the work safely and in accordance with state safety regulations.

4.3.3 Construction Dewatering

Construction dewatering can be accomplished with the aid of a wellpoint eductor system. This consists of a series of small diameter slotted steel pipes that are driven or jetted vertically into the ground along both sides of the temporary excavation, on a horizontal spacing of typically about six feet. At the surface, the vertical well points would be connected to a surface-mounted header system which is in turn attached to a large pump which applies a vacuum to the wellpoints. The practical maximum depth of drawdown with a wellpoint eductor system is typically about 20 feet.

For this project, assuming sheet piling is utilized, the wellpoints would be installed just inside (stream-side) of the sheet piling, in the recessed/fluted area of sheet piling. The upper-most waler that is attached to inside face of the sheet piling can be used to support the header system.

4.4 Structural Fill

The existing Project area soils have a high percentage of organics and silt/clay and therefore they will be unsuitable for re-use as structural fills.

A variety of imported structural fills will be required/recommended for this project. Recommendations for these various materials are provided here

- Quarry spalls placed below “in the wet” or groundwater, under the box culvert should conform to the gradation requirements of Section 9-13.1(5) of the *WSDOT Standard Specifications*. The quarry spalls should extend from approximate Elevation +28 feet to two feet below the bottom of the box culvert.
- Gravel pad material, that will be placed under pre-cast concrete wingwall segments, and directly under the four-sided box culvert, should consist of Crushed Surfacing Base Course, as specified in Section 9-03.9(3) of the *WSDOT Standard Specifications*. Crushed surfacing is also appropriate for use as base course under the restored pavement section. The CSBC pad, below both the box culvert and the pre-cast concrete wingwalls, should be 24 inches thick. We recommend a 50% increase be included in the bid quantity for CSBC placed over the quarry spalls, to account for initial loss of finer material into the quarry spall voids.
- For wall backfill placed against the culvert walls or the pre-cast concrete wing wall segments, we recommend Gravel Backfill for Walls, as specified in Section 9-03.12(2) of the *WSDOT Standard Specifications*.
- Streambed gravel will be determined by OTAK; but Streambed Sediment is described in Section 9-03.11(1) of the *WSDOT Standard Specifications*. This material is not considered structural fill.

All structural fills placed as wall backfill or as a foundation/leveling pad should be placed in horizontal lifts and compacted to a dense and unyielding condition.

4.5 Stream Re-Alignment Considerations

The Project includes re-alignment of Zackuse Creek toward the north with a more favorable approach to the culvert. Our hand auger explorations encountered recent alluvium consisting mostly of silty sand and silty gravel, with occasional peat interbeds.

We recommend the new stream channels be constructed with 3H:1V permanent sideslopes. To reduce scour and erosion issues with the fine-grained alluvium, the constructed stream bottom should be armored/protected with imported gravel such as streambed sediment. The 90 percent plans have incorporated these recommendations.

We understand the stream profile will include several boulder-lined drops (boulder steps) which will facilitate grade changes and allow for flatter, more habitable, stream segments. We have no comments on this from a geotechnical engineering perspective.

4.6 Continuing Engineering Support

We have prepared this final draft report to formalize our conclusions and recommendations to date and to accompany the 90 percent plan set. Aspect will

collaborate with the design team and City of Sammamish to refine and finalize any outstanding geotechnical engineering issues related to the design. We request any review comments or requests on this final draft report, which will be addressed in our final geotechnical engineering report.

References

- American Association of State Highway and Transportation Officials (AASHTO), 2014, LRFD Bridge Design Specifications, Seventh Edition, Customary U.S. Units.
- Booth, D.B., Walsh, T.J., Goetz Troost, K., and Shimel, S.A., 2012, Geologic map of the east half of the Bellevue South 7.5' x 15' quadrangle, Issaquah area, King County, Washington: U.S. Geological Survey Scientific Investigations Map 3211, scale 1:24,000.
- American Society for Testing and Materials (ASTM), 2012, American Society of Testing Materials Annual Book of Standards, Vol. 4.08, West Conshohocken, Pennsylvania.
- Rocscience, 2017, Settle 3D Analysis Program, version 4.005, build date Nov 10, 2016.
- U.S. Geological Survey (USGS), 2014, U.S. Seismic Design Maps Website accessed on November 1, 2016, <http://earthquake.usgs.gov/designmaps/us/application.php>.
- Washington State Department of Transportation (WSDOT), 2016, Standard Specifications for Road, Bridge and Municipal Construction, Document M 41-10.

Limitations

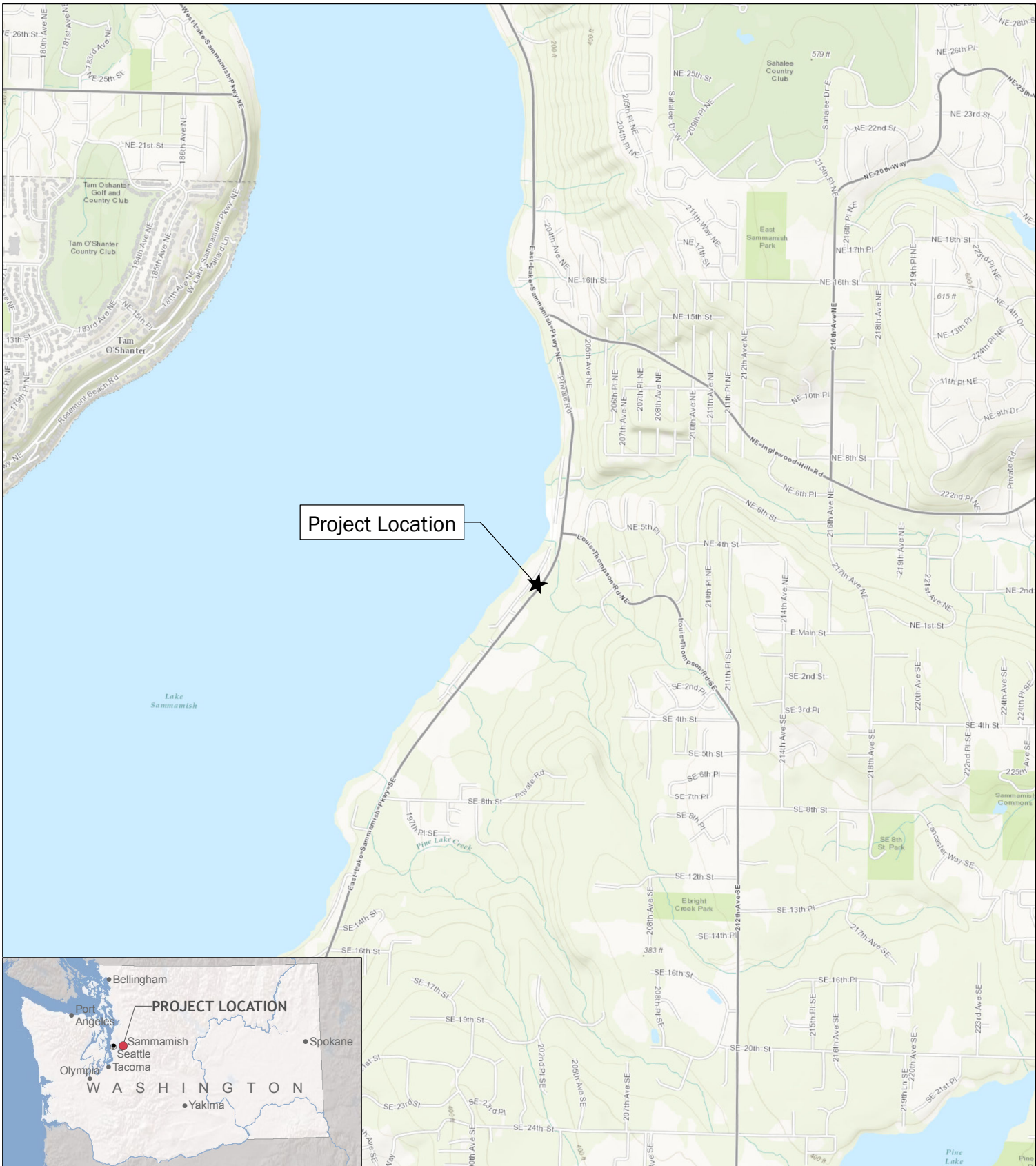
Work for this Project was performed for OTAK Inc and the City of Sammamish (Client), and this report prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed.

All reports prepared by Aspect Consulting are intended solely for the Client and apply only to the services described in the Agreement with Client. Any use or reuse by Client for purposes outside of the scope of Client's Agreement is at the sole risk of Client and without liability to Aspect Consulting. Aspect Consulting shall not be liable for any third parties' use of the deliverables provided by Aspect Consulting. Aspect Consulting's original files/reports shall govern in the event of any dispute regarding the content of electronic documents furnished to others.

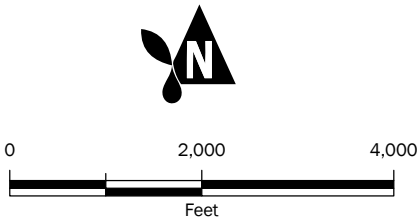
This report and our conclusions and interpretations should not be construed as a warranty of the subsurface conditions. Experience has shown that subsurface soil and groundwater conditions can vary significantly over small distances. Inconsistent conditions can occur between explorations and may not be detected by a geotechnical study. Further geotechnical evaluations, analyses and recommendations may be necessary for the final design of this Project.

If there is a substantial lapse of time between the submission of this report and the start of construction, or if conditions have changed due to construction operations at or near the Site, it is recommended that this report be reviewed to determine the applicability of the conclusions and recommendations considering the changed conditions and time lapse.

FIGURES



Project Location








Project Location Map
 Zackuse Creek Fish Passage Project
 City of Sammamish
 East Lake Sammamish Pkwy NE, Sammamish, WA

	JAN-2017	BY: JF / SCC	FIGURE NO. 1
	PROJECT NO. 160277	REVISED BY: ---	



GIS Path: I:\Projects_8\ZackuseCreekFishPassage_160277\Deliverables and Exploration Map.mxd | Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet | Date Saved: 9/14/2017 | User: scudd | Print Date: 9/14/2017

-  Cross Section Location
-  Boring
-  Hand Auger
-  Monitoring Well
-  Elevation Contours (2 Ft Interval)

Elevation contours from January 27, 2011 version of the Puget Sound Supermosaic. Harvey Greenberg.

Project Area and Exploration Map

Zackuse Creek Fish Passage Project
 City of Sammamish
 East Lake Sammamish Pkwy NE, Sammamish, WA



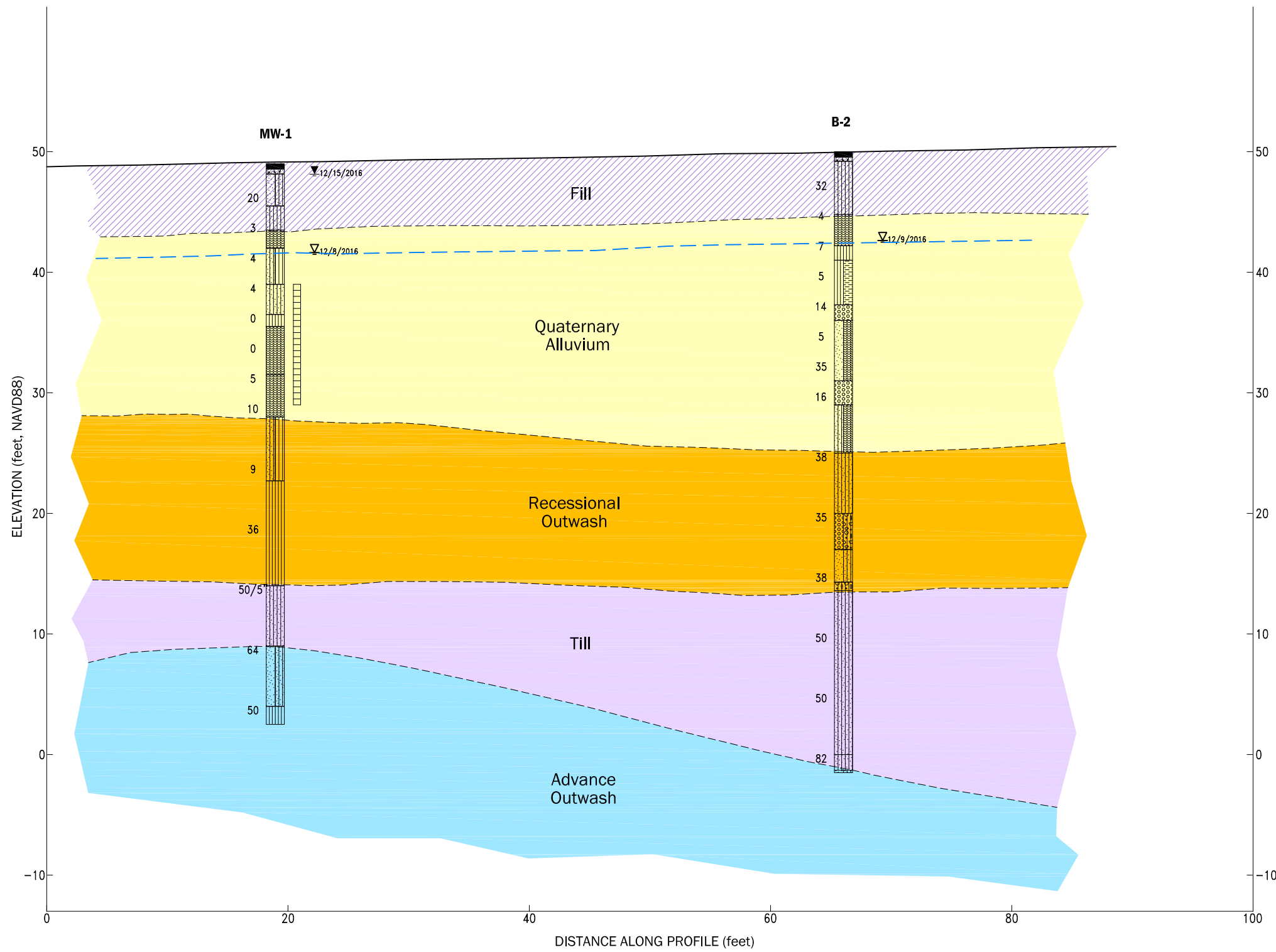
SEP-2017
 PROJECT NO.
 160277

BY:
 JF / SCC
 REVISED BY:

FIGURE NO.
2

A
South

A'
North

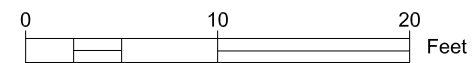


Lithology

- | | | |
|-------------------------------|--|---------------------------------------|
| Asphalt | Concrete | SM: USCS Silty Sand |
| PT: USCS Peat | ML: USCS Silt | ML-PT: USCS Silt and Peat |
| GP: USCS Poorly-graded Gravel | SP/PT: Layers of Poorly Graded Sand and Peat | SM/PT: Sand with Silt; Peat Interbeds |

- B-1** — Well or Borehole ID
- SPT Blow Count N Value — 23
- ▽ Water Level in Borehole at time of drilling
- ▽ Water Level in Well, Date
- Well Screen Interval

Horizontal Scale: 1" = 10'
Vertical Scale: 1" = 10'
Vertical Exaggeration 1x



Geologic Cross Section A-A'

Zackuse Creek Fish Passage Project
City of Sammamish
East Lake Sammamish Parkway NE
Sammamish, Washington

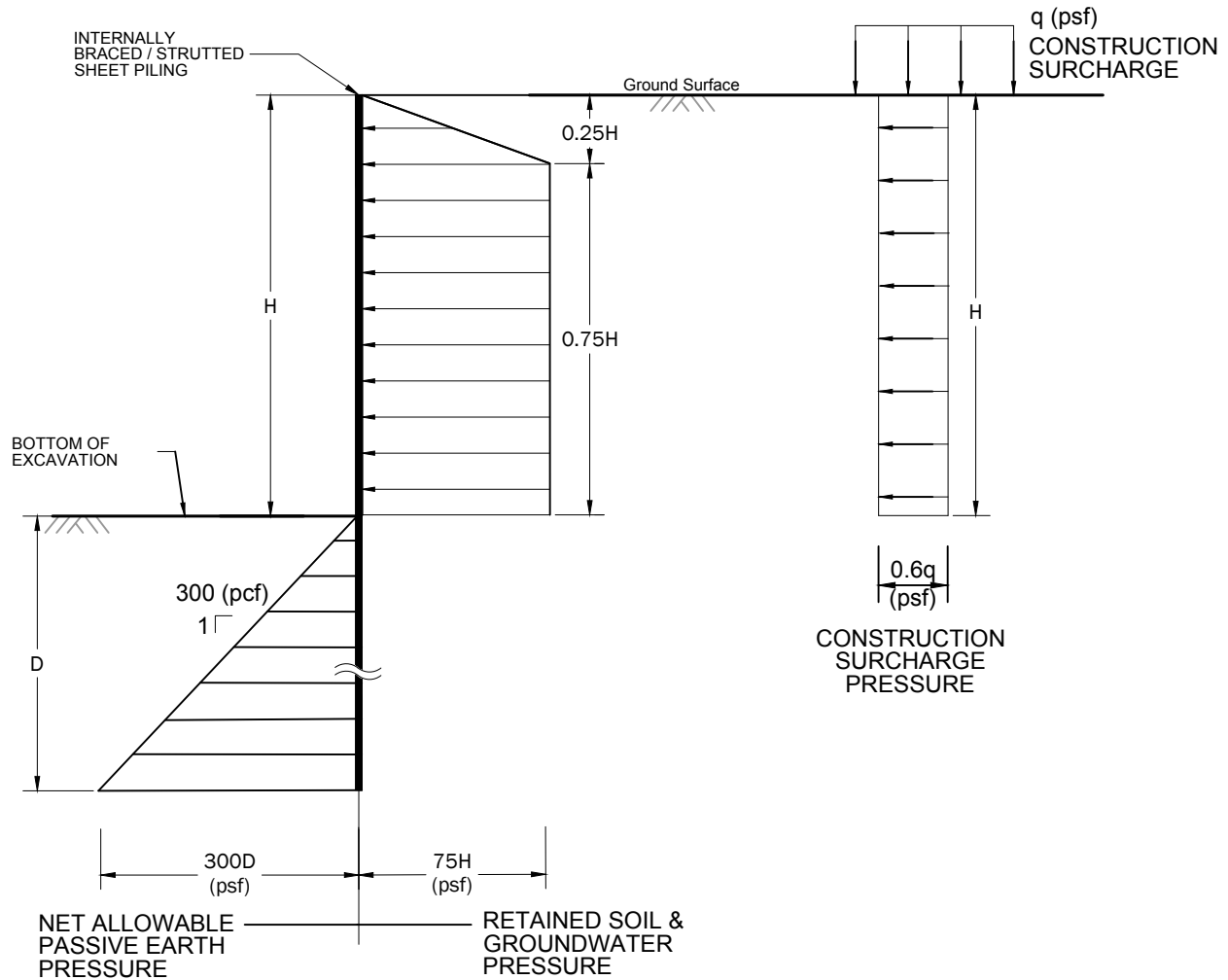


Feb-2017
PROJECT NO.
160227

BY:
JGF/SCC
REVISED BY:
-

FIGURE NO.
3

TEMPORARY SHORING LATERAL EARTH PRESSURES FOR INTERNALLY BRACED SHEET PILING



NOT TO SCALE

NOTES

1. THIS EARTH PRESSURE DIAGRAM IS APPLICABLE FOR INTERNALLY BRACED SHEET PILING.
2. PRESSURES SHOWN ARE IN UNITS OF POUNDS PER SQUARE FOOT (PSF). LINEAR DIMENSIONS ARE IN UNITS OF FEET (FT).
3. THE DEPTH OF EXCAVATION, H , IS ASSUMED TO BE APPROXIMATELY 19 FEET.
4. GROUNDWATER ON THE RETAINED SIDE IS ASSUMED TO BE INITIALLY AT OR NEAR GROUND SURFACE ELEVATION. THE ACTUAL GROUNDWATER LEVEL ON THE EXCAVATION SIDE WILL BE LOWER AND RELATED TO THE STREAM BYPASS. THE RETAINED SOILS AND GROUNDWATER EARTH PRESSURE SHOWN WAS DEVELOPED USING APPARENT EARTH PRESSURE THEORY FOR SATURATED COHESIVE SOILS.
5. SURCHARGE LOADS FROM CONSTRUCTION EQUIPMENT OR ANY VEHICULAR TRAFFIC SHOULD BE CONSIDERED.
6. THE DEPTH OF EMBEDMENT, D , SHOULD BE DETERMINED BY SOLVING EQUILIBRIUM EQUATIONS BUT SHOULD NOT BE LESS THAN 15 FEET. THE ALLOWABLE PASSIVE PRESSURE SHOWN INCLUDES A FACTOR OF SAFETY OF ABOUT 1.5.
7. REFER TO THE REPORT TEXT FOR ADDITIONAL DISCUSSION AND RECOMMENDATIONS,

Temporary Shoring Lateral Earth Pressures
for Internally Braced Sheet Piling

Zackuse Creek Culvert
Sammamish, Washington



Dec-2017

PROJECT NO.
160277

BY:
MO

REVISED BY:
-

FIGURE NO.

4

**From Geotechnical Report:
APPENDIX A**

Subsurface Explorations

A.1 Field Exploration Program

A.1.1 Geotechnical Borings

Between December 8 and December 13, 2016, we performed a site reconnaissance, completed two machine drilled geotechnical soil borings, and completed five shallow borings with hand tools.

The machine drilled borings were advanced using a truck-mounted Mobile Drill B-59 rotary drill rig using 6-inch outer diameter mud-rotary methods. The borings were sampled at selected depth intervals using the Standard Penetration Test (SPT) in general accordance with ASTM method D158. The locations of the borings are shown on Figure 2 of the report.

SPT sampling involves driving a 2-inch outside diameter split-barrel sampler 18-inches into the soil with a 140-pound hammer free-falling from 30-inches (the drill rig employed on this project used an automatic-trip hammer). The number of blows for each 6-inch interval is recorded and the number of blows required to drive the sampler the final 12 inches is known as the Standard Penetration Resistance (“N”) or blow count. The resistance, or N-value, provides a measure of the relative density of granular soils or the relative consistency of cohesive soils.

The shallow borings with hand tools were advanced using a 2.5-inch outer diameter hand auger. The hand auger was advanced at 6-inch intervals and a continuous, disturbed sample of the subsurface is obtained. Grab samples are taken at intervals determined by the Aspect field representative. Relative density is tested at selected depths by using a Dynamic Cone Penetrometer (DCP). The DCP test involves driving a 1.5-inch diameter steel-tipped cone 1.75-inches using a 15-pound anvil with a 20-inch drop. The number of blows for each 1.75-inch interval is recorded. The number of blows is correlated to resistance and provides a means of estimating soil density.

An Aspect Consulting geologist was present throughout the field exploration program to observe the drilling procedure, assist in sampling, and to prepare descriptive logs of the exploration. Soils were classified in general accordance with ASTM D2488, *Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)*. The summary exploration log represents our interpretation of the contents of the field logs. The stratigraphic contacts shown on the individual summary logs represent the approximate boundaries between soil types; actual transitions may be more gradual. The subsurface conditions depicted are only for the specific date and locations reported, and therefore, are not necessarily representative of other locations and times.

Coarse-Grained Soils - More than 50% (1) Retained on No. 200 Sieve			Terms Describing Relative Density and Consistency			
Coarse-Grained Soils - More than 50% (1) Retained on No. 200 Sieve	Gravels - More than 50% (1) of Coarse Fraction Retained on No. 4 Sieve (5)	GW	Well-graded gravel and gravel with sand, little to no fines	Density Very Loose 0 to 4 Loose 4 to 10 Medium Dense 10 to 30 Dense 30 to 50 Very Dense >50 Consistency Very Soft 0 to 2 Soft 2 to 4 Medium Stiff 4 to 8 Stiff 8 to 15 Very Stiff 15 to 30 Hard >30	Test Symbols FC = Fines Content G = Grain Size M = Moisture Content A = Atterberg Limits C = Consolidation DD = Dry Density K = Permeability Str = Shear Strength Env = Environmental PiD = Photoionization Detector	
		GP	Poorly-graded gravel and gravel with sand, little to no fines			
		GM	Silty gravel and silty gravel with sand			
	Sands - 50% (1) or More of Coarse Fraction Passes No. 4 Sieve (5)	GC	Clayey gravel and clayey gravel with sand			
		SW	Well-graded sand and sand with gravel, little to no fines			
		SP	Poorly-graded sand and sand with gravel, little to no fines			
Sands - 50% (1) or More of Coarse Fraction Passes No. 4 Sieve (5)	SM	Silty sand and silty sand with gravel				
	SC	Clayey sand and clayey sand with gravel				
	Fine-Grained Soils - 50% (1) or More Passes No. 200 Sieve	Silts and Clays Liquid Limit Less than 50	ML	Silt, sandy silt, gravelly silt, silt with sand or gravel	Component Definitions Descriptive Term Size Range and Sieve Number Boulders Larger than 12" Cobbles 3" to 12" Gravel 3" to No. 4 (4.75 mm) Coarse Gravel 3" to 3/4" Fine Gravel 3/4" to No. 4 (4.75 mm) Sand No. 4 (4.75 mm) to No. 200 (0.075 mm) Coarse Sand No. 4 (4.75 mm) to No. 10 (2.00 mm) Medium Sand No. 10 (2.00 mm) to No. 40 (0.425 mm) Fine Sand No. 40 (0.425 mm) to No. 200 (0.075 mm) Silt and Clay Smaller than No. 200 (0.075 mm)	(3) Estimated Percentage Percentage by Weight Modifier <5 Trace 5 to 15 Slightly (sandy, silty, clayey, gravelly) 15 to 30 Sandy, silty, clayey, gravelly 30 to 49 Very (sandy, silty, clayey, gravelly)
CL			Clay of low to medium plasticity; silty, sandy, or gravelly clay, lean clay	Moisture Content Dry - Absence of moisture, dusty, dry to the touch Slightly Moist - Perceptible moisture Moist - Damp but no visible water Very Moist - Water visible but not free draining Wet - Visible free water, usually from below water table		
OL			Organic clay or silt of low plasticity			
Silts and Clays Liquid Limit 50 or More		MH	Elastic silt, clayey silt, silt with micaceous or diatomaceous fine sand or silt			
		CH	Clay of high plasticity, sandy or gravelly clay, fat clay with sand or gravel			
		OH	Organic clay or silt of medium to high plasticity			
Highly Organic Soils	PT	Peat, muck and other highly organic soils	Symbols 			
(1) Percentage by dry weight (2) (SPT) Standard Penetration Test (ASTM D-1586) (3) In General Accordance with Standard Practice for Description and Identification of Soils (ASTM D-2488) (4) Depth of groundwater ∇ ATD = At time of drilling ▽ Static water level (date)						
(5) Combined USCS symbols used for fines between 5% and 15% as estimated in General Accordance with Standard Practice for Description and Identification of Soils (ASTM D-2488) BGS = below ground surface						

Classifications of soils in this report are based on visual field and/or laboratory observations, which include density/consistency, moisture condition, grain size, and plasticity estimates and should not be construed to imply field or laboratory testing unless presented herein. Visual-manual and/or laboratory classification methods of ASTM D-2487 and D-2488 were used as an identification guide for the Unified Soil Classification System.

	<h1>Exploration Log Key</h1>	DATE:	PROJECT NO.
		DESIGNED BY:	
		DRAWN BY:	FIGURE NO.
		REVISED BY:	A-1



Zackuse Creek Fish Passage - 160277

Geotechnical Exploration Log

Project Address & Site Specific Location
East Lake Sammamish Parkway, Sammamish, Washington, Fogline of southbound travel lane.

Coordinates (SPN NAD83 ft)

Exploration Number

E:225276.7 N:1335480 (est)

MW-1

Contractor

Equipment
Truck-mounted Mobile Drilling B-59

Sampling Method

Ground Surface (GS) Elev. (NAVD88)

Holt Services

Autohammer; 140 lb hammer; 30" drop

49'(est)

Ecology Well Tag No. BKY-345

Operator

Exploration Method(s)

Work Start/Completion Dates

Top of Casing Elev. (NAVD88)

Depth to Water (Below GS)

Kevin Bacon

6-inch OD Mud rotary

12/8/2016

NA

1' (Static)

Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Blows/foot					Blows/6'	Tests	Material Type	Description	Depth (ft)
				0	10	20	30	40					
1	48	8-inch diameter steel flushmount monument Concrete surface seal 12/15/2016									ARTIFICIAL FILL 5-inches Hot Mix Asphalt	1	
2	47										4-inches Concrete	2	
3	46		S1					14			Medium dense, moist, brown, gravelly, slightly silty SAND (SP-SM); fine to coarse sand, fine and coarse subrounded to angular gravel.	3	
4	45	Backfilled with 3/8" bentonite chips 1.5 - 8' bgs						11			QUATERNARY ALLUVIUM Medium dense, moist, dark brown, silty SAND (SM); fine to coarse sand, fine and coarse subrounded to angular gravel, numerous organic fragments.	4	
5	44		S2					9				5	
6	43							5	=7.9%		Soft, moist, dark brown, fine-grained PEAT (PT); trace fine to medium sand, trace fine subangular gravel.	6	
7	42							2				7	
8	41	12/8/2016	S3					1			Soft, wet, gray and brown banded, very sandy SILT (ML) interbedded with fibrous PEAT (PT) and silty SAND (SM); non-plastic, fine to medium sand, frequent thin interbeds.	8	
9	40							2				9	
10	39		S4					2	FC		Loose, wet, gray, silty SAND (SM); fine sand, scattered PEAT (PT) interbeds.	10	
11	38							3	FC=59.2%			11	
12	37							1				12	
13	36		S5a					WOH			Very loose, wet, gray, sandy SILT (ML); non-plastic, fine sand.	13	
14	35	10/20 Silica sand 8 - 21' bgs	S5b							=29.9%	Very soft, wet, dark brown, fibrous PEAT (PT).	14	
15	34							WOH			Becomes slightly sandy and thinly laminated.	15	
16	33	0.010-inch slotted sched. 40 PVC screen 10 - 20' bgs	S6									16	
17	32											17	
18	31		S7					0			Medium stiff, wet, dark brown, slightly sandy, fine-grained PEAT (PT) interbedded with fibrous PEAT (PT); fine sand, trace fine subrounded gravel, 15% fibrous peat.	18	
19	30							0				19	
20	29							0			Becomes gravelly.	20	
21	28		S8					3			VASHON STADE RECESSONAL OUTWASH Medium dense, wet, brown, slightly gravelly, silty SAND (SM) interbedded with dark gray SILT (ML); non-plastic, fine to coarse sand, fine subangular gravel.	21	
22	27	Backfilled with 3/8-inch bentonite chips 21 - 46.5' bgs						7				22	
23	26											23	
24	25											24	

Legend

- ☐ No Soil Sample Recovery
- ▣ Split Barrel 2" X 1.375" (SPT)

Plastic Limit ——— Liquid Limit

- ▼ Static Water Level
- ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: JGF
Approved by: EOA - 9/12/2017

Exploration Log MW-1

Sheet 1 of 2

ASPECT STANDARD EXPLORATION LOG TEMPLATE - P:\GINT\PROJECT\SZACKUSE CREEK CULVERT.GPJ September 11, 2017



Zackuse Creek Fish Passage - 160277

Geotechnical Exploration Log

Project Address & Site Specific Location
 East Lake Sammamish Parkway, Sammamish, Washington, Fogline of southbound travel lane.

Coordinates (SPN NAD83 ft)
 E:225276.7 N:1335480 (est)

Exploration Number

MW-1

Contractor
 Holt Services

Equipment
 Truck-mounted Mobile Drilling B-59

Sampling Method
 Autohammer; 140 lb hammer; 30" drop

Ground Surface (GS) Elev. (NAVD88)
 49'(est)

Ecology Well Tag No.
 BKY-345

Operator
 Kevin Bacon

Exploration Method(s)
 6-inch OD Mud rotary

Work Start/Completion Dates
 12/8/2016

Top of Casing Elev. (NAVD88)
 NA

Depth to Water (Below GS)
 1' (Static)

Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Blows/foot					Blows/6'	Tests	Material Type	Description	Depth (ft)
				0	10	20	30	40					
26	23		S9						13			26	
27	22								4		Stiff, wet, brown to yellow-brown, slightly sandy SILT (ML); low-plasticity, fine sand.	27	
28	21								5			28	
29	20										Gravelly drilling. No recovery	29	
30	19								13			30	
31	18		S10						19			31	
32	17								17			32	
33	16											33	
34	15											34	
35	14								50/5"		VASHON STADE TILL Very dense, very moist, gray, slightly gravelly, silty SAND (SM); fine to medium sand, fine subrounded to subangular gravel.	35	
36	13		S11									36	
37	12											37	
38	11											38	
39	10											39	
40	9											40	
41	8		S12						34	GS	VASHON STADE ADVANCE OUTWASH Very dense, wet, brown, very gravelly slightly silty SAND (SP-SM); fine to coarse sand, fine and coarse subrounded to subangular gravel.	41	
42	7								33			42	
43	6								31			43	
44	5											44	
45	4								24		Very dense, wet, brown, very sandy SILT (ML); non-plastic, fine sand, trace organics, very thinly laminated.	45	
46	3		S13						25			46	
47	2								25		Bottom of exploration at 46.5 ft. bgs.	47	
48	1											48	
49	0											49	

ASPECT STANDARD EXPLORATION LOG TEMPLATE_P:\GINT\PROJECT\ZACKUSE CREEK CULVERT.GPJ September 11, 2017

Legend

- No Soil Sample Recovery
- Split Barrel 2" X 1.375" (SPT)

- Plastic Limit
- Liquid Limit
- Static Water Level
- Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: JGF
 Approved by: EOA - 9/12/2017

Exploration Log MW-1
 Sheet 2 of 2



Zackuse Creek Fish Passage - 160277

Geotechnical Exploration Log

Project Address & Site Specific Location
East Lake Sammamish Parkway, Sammamish, Washington, Center of northbound travel lane.

Coordinates (SPN NAD83 ft)

Exploration Number

E:225301.9 N:1335520 (est)

B-2

Contractor
Holt Services

Equipment
Truck-mounted Mobile Drilling B-59

Sampling Method
Autohammer; 140 lb hammer; 30" drop

Ground Surface (GS) Elev. (NAVD88)
50'(est)

Operator
Kevin Bacon

Exploration Method(s)
6-inch OD Mud rotary

Work Start/Completion Dates
12/9/2016

Top of Casing Elev. (NAVD88)
NA

Depth to Water (Below GS)
7.5' (ATD)

Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Blows/foot					Blows/6'	Tests	Material Type	Description	Depth (ft)
				0	10	20	30	40					
1	49	Borehole backfilled with bentonite grout and capped with high-strength concrete. ▽ 12/9/2016									ARTIFICIAL FILL	1	
												4-inches Hot Mix Asphalt	
												3.5-inches Concrete	
2	48											Dense, moist, gray, very gravelly, silty SAND (SM); fine to coarse sand, fine and coarse subrounded to angular gravel.	2
3	47			S1						23	GS		3
										20			
										12			
4	46												4
5	45									5			5
				S2						2		QUATERNARY ALLUVIUM	
										2		Soft, moist, dark brown, gravelly, fine-grained PEAT (PT); trace fine sand, fine and coarse rounded gravel.	6
6	44												7
7	43												
8	42			S3						2	FC=56.8%	Medium stiff, wet, gray, SILT (ML); low-plasticity, fine to coarse sand, very thinly bedded silty sand.	8
										2			9
9	41											Medium stiff, wet, brown and gray, sandy, fine-grained PEAT (PT) interbedded with SILT (ML); non-plastic, fine to coarse sand.	10
10	40												11
11	39			S4						2			12
										1			13
12	38												14
13	37			S5						5		Medium dense, wet, gray, sandy GRAVEL (GP); trace silt, fine to coarse sand, fine subangular to angular gravel.	15
										10			16
14	36											Loose, wet, brown and gray, gravelly, slightly silty SAND (SP-SM) interbedded with medium stiff, brown, fine-grained PEAT (PT); fine to coarse sand, fine subangular to angular gravel.	17
15	35									0			18
16	34		S6						4			19	
									1			20	
17	33											21	
18	32		S7						0	=4.5%	Medium dense, wet, gray, sandy GRAVEL (GP); fine to coarse sand, subrounded to rounded fine and coarse gravel.	22	
									14			23	
19	31											24	
20	30												
21	29		S8						15		Medium dense, wet, gray, silty SAND (SM) interbedded with rare laminations of PEAT (PT); fine to coarse sand.	25	
									12			26	
22	28												
23	27												
24	26												

Legend

- ☐ No Soil Sample Recovery
- ▣ Split Barrel 2" X 1.375" (SPT)

Plastic Limit ——— Liquid Limit

Water Level

▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: JGF
Approved by: EOA - 9/12/2017

Exploration Log B-2



Zackuse Creek Fish Passage - 160277

Geotechnical Exploration Log

Project Address & Site Specific Location
East Lake Sammamish Parkway, Sammamish, Washington, Center of northbound travel lane.

Coordinates (SPN NAD83 ft)
E:225301.9 N:1335520 (est)

Exploration Number

B-2

Contractor
Holt Services

Equipment
Truck-mounted Mobile Drilling B-59

Sampling Method
Autohammer; 140 lb hammer; 30" drop

Ground Surface (GS) Elev. (NAVD88)
50'(est)

Operator
Kevin Bacon

Exploration Method(s)
6-inch OD Mud rotary

Work Start/Completion Dates
12/9/2016

Top of Casing Elev. (NAVD88)
NA

Depth to Water (Below GS)
7.5' (ATD)

Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Blows/foot					Blows/6'	Tests	Material Type	Description	Depth (ft)
				0	10	20	30	40					
26	24		S9						11		VASHON STADE RECESSIONAL OUTWASH Dense, wet, gray and yellow-brown, slightly gravelly, silty SAND (SM); fine to coarse sand, fine subrounded to subangular gravel.	26	
27	23								19			27	
28	22								19			28	
29	21											29	
30	20		S10						22		Dense, wet, gray and yellow-brown, sandy, slightly silty GRAVEL (GP-GM); fine to coarse sand, fine and coarse gravel.	30	
31	19								20			31	
32	18								15			32	
33	17										Dense, wet, brown and orange-brown, slightly silty SAND (SP-SM); fine to coarse sand.	33	
34	16											34	
35	15		S11a						11			35	
36	14		S11b						16		Dense, wet, brown, sandy, silty GRAVEL (GM); fine sand, fine and coarse rounded gravel.	36	
37	13								22	GS		37	
38	12										VASHON STADE TILL Very dense, wet, gray, gravelly, silty SAND (SM); fine to medium sand, fine subrounded to subangular gravel, diamict texture.	38	
39	11											39	
40	10											40	
41	9		S12						50			41	
42	8											42	
43	7											43	
44	6											44	
45	5		S13						50			45	
46	4											46	
47	3											47	
48	2											48	
49	1											49	

Legend

- No Soil Sample Recovery
- Split Barrel 2" X 1.375" (SPT)

Plastic Limit ——— Liquid Limit

Water Level

Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: JGF
Approved by: EOA - 9/12/2017

Exploration Log B-2

Sheet 2 of 3

ASPECT STANDARD EXPLORATION LOG TEMPLATE P:\GINT\PROJECT\ZACKUSE CREEK CULVERT.GPJ September 11, 2017



Zackuse Creek Fish Passage - 160277

Geotechnical Exploration Log

Project Address & Site Specific Location
 East Lake Sammamish Parkway, Sammamish, Washington, Center of northbound travel lane.

Coordinates (SPN NAD83 ft)
 E:225301.9 N:1335520 (est)

Exploration Number

B-2

Contractor
 Holt Services

Equipment
 Truck-mounted Mobile Drilling B-59

Sampling Method
 Autohammer; 140 lb hammer; 30" drop

Ground Surface (GS) Elev. (NAVD88)
 50'(est)

Operator
 Kevin Bacon

Exploration Method(s)
 6-inch OD Mud rotary

Work Start/Completion Dates
 12/9/2016

Top of Casing Elev. (NAVD88)
 NA

Depth to Water (Below GS)
 7.5' (ATD)

Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Blows/foot					Blows/6'	Tests	Material Type	Description	Depth (ft)
				0	10	20	30	40					
51	-1		S14						28	FC=19.5%	Very dense, wet, gray, silty SAND (SM); fine to medium sand, trace organics, iron-oxide staining.	51	
52	-2								40			Very dense, wet, gray, gravelly, slightly silty SAND (SP-SM); fine to coarse sand, fine subangular gravel.	52
53	-3								42		Bottom of exploration at 51.5 ft. bgs.	53	
54	-4											54	
55	-5											55	
56	-6											56	
57	-7											57	
58	-8											58	
59	-9											59	
60	-10											60	
61	-11											61	
62	-12											62	
63	-13											63	
64	-14											64	
65	-15											65	
66	-16											66	
67	-17											67	
68	-18											68	
69	-19											69	
70	-20											70	
71	-21											71	
72	-22											72	
73	-23											73	
74	-24											74	

Legend

- No Soil Sample Recovery
- Split Barrel 2" X 1.375" (SPT)

Plastic Limit |-----| Liquid Limit

Water Level ATD

Water Level

See Exploration Log Key for explanation of symbols

Logged by: JGF
 Approved by: EOA - 9/12/2017

Exploration Log B-2

Sheet 3 of 3

ASPECT STANDARD EXPLORATION LOG TEMPLATE - P:\GINT\PROJECTS\ZACKUSE CREEK CULVERT.GPJ September 11, 2017



Zackuse Creek Fish Passage - 160277

Geotechnical Exploration Log

Project Address & Site Specific Location

Coordinates (SPN NAD83 ft)

Exploration Number

East Lake Sammamish Parkway, Sammamish, Washington, -

E:225028.8 N:1335940 (est)

HA-1

Contractor

Equipment

Sampling Method

Ground Surface (GS) Elev. (NAVD88)

Aspect Consulting

2.5-inch OD Hand Auger

Grab / DCPT

76'(est)

Operator

Exploration Method(s)

Work Start/Completion Dates

Top of Casing Elev. (NAVD88)

Depth to Water (Below GS)

JGF

Hand tools

12/13/2016

NA

3.1' (ATD)

Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Blows/foot					Blows/6'	Tests	Material Type	Description	Depth (ft)	
				0	10	20	30	40						50
1	75	Boring backfilled with excavated soil. 12/13/2016	S							T-probe= 14"		Loose, moist, dark brown, slightly gravelly, very silty SAND (SM); fine to medium sand, fine subrounded to subangular gravel, scattered organic content.	1	
2	74									DCPT= 2,3,3		Loose, moist, brown, sandy, silty GRAVEL (GM); fine to coarse sand, fine and coarse rounded to subangular gravel.	2	
3	73									DCPT= 5,6			Very loose, slightly moist, light brown, gravelly, silty SAND (SM); fine to medium sand, fine and coarse rounded to subangular gravel. Becomes wet at 3.1' bgs.	3
4	72													Bottom of exploration at 4.8 ft. bgs.
5	71												Note: Refusal due to coarse gravel.	5
6	70										6			
7	69										7			
8	68										8			
9	67										9			
10	66										10			
11	65										11			
12	64										12			
13	63										13			
14	62										14			
15	61										15			
16	60										16			
17	59										17			
18	58										18			
19	57										19			
20	56										20			
21	55										21			
22	54										22			
23	53										23			
24	52										24			

Legend

Grab Sample

Plastic Limit | Liquid Limit

Water Level ATD

Water Level

See Exploration Log Key for explanation of symbols

Logged by: JGF
Approved by: EOA - 9/12/2017

Exploration Log HA-1

Sheet 1 of 1



Zackuse Creek Fish Passage - 160277

Geotechnical Exploration Log

Project Address & Site Specific Location

Coordinates (SPN NAD83 ft)

Exploration Number

East Lake Sammamish Parkway, Sammamish, Washington, -

E:224965.2 N:1335860 (est)

HA-2

Contractor

Equipment

Sampling Method

Ground Surface (GS) Elev. (NAVD88)

Aspect Consulting

2.5-inch OD Hand Auger

Grab / DCPT

67'(est)

Operator

Exploration Method(s)

Work Start/Completion Dates

Top of Casing Elev. (NAVD88)

Depth to Water (Below GS)

JGF

Hand tools

12/13/2016

NA

1' (ATD)

Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Blows/foot					Blows/6'	Tests	Material Type	Description	Depth (ft)
				0	10	20	30	40					
1	66	<p>12/13/2016 Boring back filled with excavated soil.</p>							T-probe= 6"		Loose, very moist, dark brown, sandy, silty GRAVEL (GM); fine to coarse sand, fine and coarse rounded to subangular gravel.	1	
2	65											Loose, wet, dark brown, sandy, No recovery	2
3	64												3
4	63									DCPT= 5,8,9,10,11		Bottom of exploration at 3.8 ft. bgs.	4
5	62											Note: Hole collapsing from 1' bgs; refusal because of collapsing walls.	5
6	61												6
7	60												7
8	59												8
9	58												9
10	57												10
11	56												11
12	55												12
13	54												13
14	53												14
15	52												15
16	51												16
17	50												17
18	49												18
19	48												19
20	47												20
21	46												21
22	45												22
23	44												23
24	43												24

Legend

Plastic Limit |-----| Liquid Limit

▽ Water Level ATD

Sample Method

Water Level

See Exploration Log Key for explanation of symbols

Logged by: JGF
Approved by: EOA - 9/12/2017

Exploration Log HA-2

Sheet 1 of 1



Zackuse Creek Fish Passage - 160277

Geotechnical Exploration Log

Project Address & Site Specific Location

Coordinates (SPN NAD83 ft)

Exploration Number

East Lake Sammamish Parkway, Sammamish, Washington, -

E:225001.4 N:1335730 (est)

HA-3

Contractor

Equipment

Sampling Method

Ground Surface (GS) Elev. (NAVD88)

Aspect Consulting

2.5-inch OD Hand Auger

Grab / DCPT

62'(est)

Operator

Exploration Method(s)

Work Start/Completion Dates

Top of Casing Elev. (NAVD88)

Depth to Water (Below GS)

JGF

Hand tools

12/13/2016

NA

2.8' (ATD)

Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Blows/foot					Blows/6'	Tests	Material Type	Description	Depth (ft)	
				0	10	20	30	40						50
1	61	Boring backfilled with excavated soil. 12/13/2016	S								T-probe= 12"	<p>QUATERNARY ALLUVIUM Very loose, moist, dark brown, sandy, slightly silty GRAVEL (GP-GM); fine to coarse sand, fine and coarse rounded to subangular gravel.</p> <p>Very loose, wet, brown, gravelly, silty SAND (SM); fine to coarse sand, fine rounded to subrounded gravel.</p> <p>Soft, wet, dark brown, fine-grained PEAT (PT).</p> <p>Loose, wet, brown, gravelly, silty SAND (SM); fine to coarse sand, fine and coarse rounded to subangular gravel.</p> <p>Bottom of exploration at 4 ft. bgs.</p> <p>Note: Refusal because of collapsing walls at 3.2' bgs.</p>	1	
2	60										T-probe= 8"		2	
3	59												GS DCPT= 3,1,1	3
4	58												DCPT= 13,18,15	4
5	57											5		
6	56											6		
7	55											7		
8	54											8		
9	53											9		
10	52											10		
11	51											11		
12	50											12		
13	49											13		
14	48											14		
15	47											15		
16	46											16		
17	45											17		
18	44											18		
19	43											19		
20	42											20		
21	41											21		
22	40											22		
23	39											23		
24	38											24		

Legend

☒ Grab Sample

Plastic Limit |——| Liquid Limit

∇ Water Level ATD

Water Level

See Exploration Log Key for explanation of symbols

Logged by: JGF
Approved by: EOA - 9/12/2017

Exploration Log HA-3

Sheet 1 of 1



Zackuse Creek Fish Passage - 160277

Geotechnical Exploration Log

Project Address & Site Specific Location

Coordinates (SPN NAD83 ft)

Exploration Number

East Lake Sammamish Parkway, Sammamish, Washington, -

E:225088.8 N:1335660 (est)
Ground Surface (GS) Elev. (NAVD88)

HA-4

Contractor

Equipment

Sampling Method

Aspect Consulting

2.5-inch OD Hand Auger

Grab / DCPT

58'(est)

Operator

Exploration Method(s)

Work Start/Completion Dates

Top of Casing Elev. (NAVD88)

Depth to Water (Below GS)

JGF

Hand tools

12/13/2016

NA

0.5' (ATD)

Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Blows/foot					Blows/6'	Tests	Material Type	Description	Depth (ft)
				0	10	20	30	40					
1	57	12/13/2016 Boring backfilled with excavated soil.								T-probe= 36"	TOPSOIL Very loose, very moist, dark brown, gravelly, silty SAND (SM).	1	
2	56									DCPT= 10,12,18,20	QUATERNARY ALLUVIUM Very loose, wet, gray, very gravelly, slightly silty SAND (SP-SM); fine to coarse sand, fine and coarse subrounded to subangular gravel.	2	
3	55										No recovery.	3	
4	54										Bottom of exploration at 3.5 ft. bgs. Note: Refusal because of collapsing walls at 2.7' bgs.	4	
5	53											5	
6	52											6	
7	51											7	
8	50											8	
9	49											9	
10	48											10	
11	47											11	
12	46											12	
13	45											13	
14	44											14	
15	43											15	
16	42											16	
17	41											17	
18	40											18	
19	39											19	
20	38											20	
21	37											21	
22	36											22	
23	35											23	
24	34											24	

Legend

Plastic Limit | Liquid Limit

▽ Water Level ATD

Sample Method

Water Level

See Exploration Log Key for explanation of symbols

Logged by: JGF
Approved by: EOA - 9/12/2017

Exploration Log HA-4

Sheet 1 of 1

ASPECT STANDARD EXPLORATION LOG TEMPLATE - P:\GINT\PROJECT\ZACKUSE CREEK CULVERT.GPJ September 11, 2017



Zackuse Creek Fish Passage - 160277

Geotechnical Exploration Log

Project Address & Site Specific Location

Coordinates (SPN NAD83 ft)

Exploration Number

East Lake Sammamish Parkway, Sammamish, Washington, -

E:225146.4 N:1335590 (est)
Ground Surface (GS) Elev. (NAVD88)

HA-5

Contractor

Equipment

Sampling Method

Aspect Consulting

2.5-inch OD Hand Auger

Grab / DCPT

54'(est)

Operator

Exploration Method(s)

Work Start/Completion Dates

Top of Casing Elev. (NAVD88)

Depth to Water (Below GS)

JGF

Hand tools

12/13/2016

NA

1.5' (ATD)

Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Blows/foot					Blows/6'	Tests	Material Type	Description	Depth (ft)
				0	10	20	30	40					
1	53	Boring backfilled with excavated soil. 12/13/2016	S1							T-probe= 16"	TOPSOIL Very soft, wet, dark brown, slightly gravelly, sandy organic SILT (OL); low-plasticity, fine sand, fine and coarse subangular gravel.	1	
2	52									DCPT= 6,6,6 GS		QUATERNARY ALLUVIUM Loose, wet, gray, very sandy, slightly silty GRAVEL (GP-GM); fine to coarse sand, fine and coarse subrounded to subangular gravel.	2
3	51		S2								Stiff, wet, dark brown, slightly gravelly, fine-grained PEAT (PT); low-plasticity, trace fine to medium sand, fine and coarse subrounded to subangular gravel.	3	
4	50									DCPT= 13,>30	Bottom of exploration at 3.8 ft. bgs.	4	
5	49										Note: Refusal because of collapsing walls at 2' bgs.	5	
6	48											6	
7	47											7	
8	46											8	
9	45											9	
10	44											10	
11	43											11	
12	42											12	
13	41											13	
14	40											14	
15	39											15	
16	38											16	
17	37											17	
18	36											18	
19	35											19	
20	34											20	
21	33											21	
22	32											22	
23	31											23	
24	30											24	

Legend

Grab Sample

Plastic Limit | Liquid Limit

Water Level

Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: JGF
Approved by: EOA - 9/12/2017

Exploration Log HA-5

Sheet 1 of 1

**From Geotechnical Report:
APPENDIX B**

**Geotechnical Laboratory Test
Results**

B.1 Geotechnical Laboratory Testing

Geotechnical laboratory tests were conducted on selected soil and rock samples collected during the field exploration program. Eight samples were dispatched to Materials Testing and Consulting, Inc. for determination of moisture content, grain size distribution, percent material passing a 200# sieve (fines content), or organic content:

- Moisture content was determined by ASTM D2216, *Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass.*
- Grain size analysis was conducted in accordance with ASTM C136, *Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates* and ASTM C117 *Standard Test Method for Materials Finer than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing*
- Percent material passing a 200# sieve (fines content) was conducted in accordance with C117 *Standard Test Method for Materials Finer than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing*
- Organic content was conducted in accordance with ASTM D2974 *Standard Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils.*

The results of the tests are provided in the attached data sheets.

Materials Testing & Consulting, Inc.

Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting



Project: Zackuse Creek Fish Passage
Project #: 16T023-06
Client : Aspect Consulting
Source: Multiple
MTC Sample#: Multiple

Date Received: December 21, 2016
Sampled By: Others
Date Reported: December 29, 2016
Tested By: K. O'Connell

CASE NARRATIVE

1. Eleven samples were submitted for analysis.
2. Three samples were submitted for Percent Finer Than the No. 200 sieve according to ASTM C117.
3. Three samples were submitted for loss on ignition determination according to ASTM D2974. Per client request, gravel was separated prior to analysis.
4. Five samples were submitted for grain size determination according to ASTM C136 and C117.
5. The samples are reported in summary tables and plots.
6. There were no other noted anomalies in this project.

All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Reviewed by: 

Corporate ~ 777 Chrysler Drive • Burlington, WA 98233 • Phone (360) 755-1990 • Fax (360) 755-1980
Regional Offices: Olympia ~ 360.534.9777 Bellingham ~ 360.647.6111 Silverdale ~ 360.698.6787 Tukwila ~ 206.241.1974
Visit our website: www.mtc-inc.net

Materials Testing & Consulting, Inc.

Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting



Project: Zackuse Creek Fish Passage
Project #: 16T023-06
Date Received: December 21, 2016
Date Tested: December 28, 2016

Client: Aspect Consulting
Sampled by: Others
Tested by: K. O'Connell

Amount of Materials Finer Than #200 Sieve - ASTM C117

Sample #	Location	Tare	Before Wash + Tare	After Wash + Tare	Amount of Loss	% -#200
T16-2378	B-1 S4 10	10.2	176.4	78.0	98.4	59.2%
T16-2382	B-2 S3 7.5	10.7	141.8	67.3	74.5	56.8%
T16-2385	B-2 S14 50	10.7	264.0	214.6	49.4	19.5%

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Materials Testing & Consulting, Inc.

Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting



Project: Zackuse Creek Fish Passage
Project #: 16T023-06
Date Received: December 21, 2016
Date Tested: December 28, 2016

Client: Aspect Consulting
Sampled by: Others
Tested by: K. O'Connell

Moisture Content - ASTM D2216

Sample #	Location	Tare	Wet + Tare	Dry + Tare	Wgt. Of Moisture	Wgt. Of Soil	% Moisture
T16-2377	B-1 S2 5	101.77	225.09	181.04	44.05	79.27	55.6%
T16-2379	B-1 S5b 13.5	103.49	220.16	141.44	78.72	37.95	207.4%
T16-2383	B-2 S7 17.5	102.20	237.84	199.50	38.34	97.30	39.4%

Organic Content - ASTM D2974

Sample #	Location	Tare	Soil + Tare, Pre-Ignition	Soil + Tare, Post Ignition	% Organics
T16-2377	B-1 S2 5	101.77	181.04	174.76	7.9%
T16-2379	B-1 S5b 13.5	103.49	141.44	130.08	29.9%
T16-2383	B-2 S7 17.5	102.20	199.50	195.17	4.5%

All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

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Sieve Report

Project: Zackuse Creek Fish Passage Project #: 16T023-06 Client: Aspect Consulting Source: B-1 S12 40 Sample#: T16-2380		Date Received: 21-Dec-16 Sampled By: Others Date Tested: 28-Dec-16 Tested By: K. O'Connell		ASTM D-2487 Unified Soils Classification System SP-SM, Poorly graded Sand with Silt and Gravel Sample Color: Gray																																																																																																																																																																																																			
ASTM D-2216, ASTM D-2419, ASTM D-4318, ASTM D-5821																																																																																																																																																																																																							
Specifications No Specs Sample Meets Specs ? N/A		D ₍₅₎ = 0.045 mm D ₍₁₀₎ = 0.110 mm D ₍₁₅₎ = 0.205 mm D ₍₃₀₎ = 0.540 mm D ₍₅₀₎ = 2.978 mm D ₍₆₀₎ = 5.678 mm D ₍₉₀₎ = 25.668 mm Dust Ratio = 27/89		% Gravel = 42.4% % Sand = 49.4% % Silt & Clay = 8.3% Liquid Limit = n/a Plasticity Index = n/a Sand Equivalent = n/a Fracture %, 1 Face = n/a Fracture %, 2+ Faces = n/a																																																																																																																																																																																																			
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All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Comments:

Reviewed by: *E. Gable*

Corporate ~ 777 Chrysler Drive • Burlington, WA 98233 • Phone (360) 755-1990 • Fax (360) 755-1980

Regional Offices: Olympia ~ 360.534.9777 Bellingham ~ 360.647.6111 Silverdale ~ 360.698.6787 Tukwila ~ 206.241.1974

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Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting



Sieve Report

Project: Zackuse Creek Fish Passage Project #: 16T023-06 Client: Aspect Consulting Source: B-2 S1 2.5 Sample#: T16-2381		Date Received: 21-Dec-16 Sampled By: Others Date Tested: 28-Dec-16 Tested By: K. O'Connell		ASTM D-2487 Unified Soils Classification System SM, Silty Sand with Gravel Sample Color: Gray																																																																																																																																																																																																			
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Comments:

E. J. Hable

Reviewed by:

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Sieve Report

Project: Zackuse Creek Fish Passage Project #: 16T023-06 Client: Aspect Consulting Source: B-2 S11b 36 Sample#: T16-2384		Date Received: 21-Dec-16 Sampled By: Others Date Tested: 28-Dec-16 Tested By: K. O'Connell		ASTM D-2487 Unified Soils Classification System GM, Silty Gravel with Sand Sample Color: Gray																																																																																																																																																																																																			
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Specifications No Specs Sample Meets Specs ? N/A		D ₍₅₎ = 0.009 mm D ₍₁₀₎ = 0.018 mm D ₍₁₅₎ = 0.027 mm D ₍₃₀₎ = 0.054 mm D ₍₅₀₎ = 0.427 mm D ₍₆₀₎ = 2.241 mm D ₍₉₀₎ = 26.360 mm Dust Ratio = 5/6		% Gravel = 34.7% % Sand = 23.6% % Silt & Clay = 41.7% Liquid Limit = n/a Plasticity Index = n/a Sand Equivalent = n/a Fracture %, 1 Face = n/a Fracture %, 2+ Faces = n/a																																																																																																																																																																																																			
				Coeff. of Curvature, C _c = 0.07 Coeff. of Uniformity, C _u = 124.44 Fineness Modulus = 3.16 Plastic Limit = n/a Moisture %, as sampled = 13.3% Req'd Sand Equivalent = Req'd Fracture %, 1 Face = Req'd Fracture %, 2+ Faces =																																																																																																																																																																																																			
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<table border="1"> <thead> <tr> <th colspan="2">Sieve Size</th> <th rowspan="2">Actual Cumulative Percent Passing</th> <th rowspan="2">Interpolated Cumulative Percent Passing</th> <th rowspan="2">Specs Max</th> <th rowspan="2">Specs Min</th> </tr> <tr> <th>US</th> <th>Metric</th> </tr> </thead> <tbody> <tr><td>12.00"</td><td>300.00</td><td></td><td>100%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>10.00"</td><td>250.00</td><td></td><td>100%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>8.00"</td><td>200.00</td><td></td><td>100%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>6.00"</td><td>150.00</td><td></td><td>100%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>4.00"</td><td>100.00</td><td></td><td>100%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>3.00"</td><td>75.00</td><td></td><td>100%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>2.50"</td><td>63.00</td><td></td><td>100%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>2.00"</td><td>50.00</td><td></td><td>100%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>1.75"</td><td>45.00</td><td></td><td>100%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>1.50"</td><td>37.50</td><td></td><td>100%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>1.25"</td><td>31.50</td><td></td><td>100%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>1.00"</td><td>25.00</td><td>87%</td><td>87%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>3/4"</td><td>19.00</td><td>87%</td><td>87%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>5/8"</td><td>16.00</td><td></td><td>82%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>1/2"</td><td>12.50</td><td>75%</td><td>75%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>3/8"</td><td>9.50</td><td>72%</td><td>72%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>1/4"</td><td>6.30</td><td></td><td>67%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>#4</td><td>4.75</td><td>65%</td><td>65%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>#8</td><td>2.36</td><td></td><td>60%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>#10</td><td>2.00</td><td>59%</td><td>59%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>#16</td><td>1.18</td><td></td><td>56%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>#20</td><td>0.850</td><td>54%</td><td>54%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>#30</td><td>0.600</td><td></td><td>52%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>#40</td><td>0.425</td><td>50%</td><td>50%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>#50</td><td>0.300</td><td></td><td>47%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>#60</td><td>0.250</td><td>46%</td><td>46%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>#80</td><td>0.180</td><td></td><td>45%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>#100</td><td>0.150</td><td>44%</td><td>44%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>#140</td><td>0.106</td><td></td><td>43%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>#170</td><td>0.090</td><td></td><td>42%</td><td>100.0%</td><td>0.0%</td></tr> <tr><td>#200</td><td>0.075</td><td>41.7%</td><td>41.7%</td><td>100.0%</td><td>0.0%</td></tr> </tbody> </table>		Sieve Size		Actual Cumulative Percent Passing	Interpolated Cumulative Percent Passing	Specs Max	Specs Min	US	Metric	12.00"	300.00		100%	100.0%	0.0%	10.00"	250.00		100%	100.0%	0.0%	8.00"	200.00		100%	100.0%	0.0%	6.00"	150.00		100%	100.0%	0.0%	4.00"	100.00		100%	100.0%	0.0%	3.00"	75.00		100%	100.0%	0.0%	2.50"	63.00		100%	100.0%	0.0%	2.00"	50.00		100%	100.0%	0.0%	1.75"	45.00		100%	100.0%	0.0%	1.50"	37.50		100%	100.0%	0.0%	1.25"	31.50		100%	100.0%	0.0%	1.00"	25.00	87%	87%	100.0%	0.0%	3/4"	19.00	87%	87%	100.0%	0.0%	5/8"	16.00		82%	100.0%	0.0%	1/2"	12.50	75%	75%	100.0%	0.0%	3/8"	9.50	72%	72%	100.0%	0.0%	1/4"	6.30		67%	100.0%	0.0%	#4	4.75	65%	65%	100.0%	0.0%	#8	2.36		60%	100.0%	0.0%	#10	2.00	59%	59%	100.0%	0.0%	#16	1.18		56%	100.0%	0.0%	#20	0.850	54%	54%	100.0%	0.0%	#30	0.600		52%	100.0%	0.0%	#40	0.425	50%	50%	100.0%	0.0%	#50	0.300		47%	100.0%	0.0%	#60	0.250	46%	46%	100.0%	0.0%	#80	0.180		45%	100.0%	0.0%	#100	0.150	44%	44%	100.0%	0.0%	#140	0.106		43%	100.0%	0.0%	#170	0.090		42%	100.0%	0.0%	#200	0.075	41.7%	41.7%	100.0%	0.0%				
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Comments:

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Sieve Report

Project: Zackuse Creek Fish Passage Project #: 16T023-06 Client: Aspect Consulting Source: HA-3 S1 1.5 Sample#: T16-2386		Date Received: 21-Dec-16 Sampled By: Others Date Tested: 28-Dec-16 Tested By: K. O'Connell		ASTM D-2487 Unified Soils Classification System GP-GM, Poorly graded Gravel with Silt and Sand Sample Color: Gray																																																																																																																																																																																																			
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Specifications No Specs Sample Meets Specs ? N/A		D ₍₅₎ = 0.040 mm D ₍₁₀₎ = 0.086 mm D ₍₁₅₎ = 0.186 mm D ₍₃₀₎ = 0.629 mm D ₍₅₀₎ = 4.456 mm D ₍₆₀₎ = 8.040 mm D ₍₉₀₎ = 21.574 mm Dust Ratio = 35/96		% Gravel = 49.0% % Sand = 41.5% % Silt & Clay = 9.4% Liquid Limit = n/a Plasticity Index = n/a Sand Equivalent = n/a Fracture %, 1 Face = n/a Fracture %, 2+ Faces = n/a																																																																																																																																																																																																			
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All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Comments:

E. J. Hable

Reviewed by:

Corporate ~ 777 Chrysler Drive • Burlington, WA 98233 • Phone (360) 755-1990 • Fax (360) 755-1980

Regional Offices: Olympia ~ 360.534.9777 Bellingham ~ 360.647.6111 Silverdale ~ 360.698.6787 Tukwila ~ 206.241.1974

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Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting



Sieve Report

Project: Zackuse Creek Fish Passage Project #: 16T023-06 Client: Aspect Consulting Source: HA-5 S1 1.5 Sample#: T16-2387		Date Received: 21-Dec-16 Sampled By: Others Date Tested: 28-Dec-16 Tested By: K. O'Connell		ASTM D-2487 Unified Soils Classification System GP-GM, Poorly graded Gravel with Silt and Sand Sample Color: Gray																																																																																																																																																																																																			
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Specifications No Specs Sample Meets Specs ? N/A		D ₍₅₎ = 0.043 mm % Gravel = 46.4% Coeff. of Curvature, C _C = 0.18 D ₍₁₀₎ = 0.096 mm % Sand = 44.9% Coeff. of Uniformity, C _U = 98.06 D ₍₁₅₎ = 0.174 mm % Silt & Clay = 8.8% Fineness Modulus = 4.56 D ₍₃₀₎ = 0.404 mm Liquid Limit = n/a Plastic Limit = n/a D ₍₅₀₎ = 3.267 mm Plasticity Index = n/a Moisture %, as sampled = 17.8% D ₍₆₀₎ = 9.410 mm Sand Equivalent = n/a Req'd Sand Equivalent = D ₍₉₀₎ = 37.245 mm Fracture %, 1 Face = n/a Req'd Fracture %, 1 Face = Dust Ratio = 26/93 Fracture %, 2+ Faces = n/a Req'd Fracture %, 2+ Faces =																																																																																																																																																																																																					
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All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Comments:

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APPENDIX E

Construction Stormwater Pollution Prevention Plan (SWPPP)

Construction Stormwater General Permit

Stormwater Pollution Prevention Plan (SWPPP)

for

Zackuse Creek Fish Passage and Stream Restoration Project

Prepared for:

**The Washington State Department of Ecology
Northwest Regional Office**

Permittee / Owner	Developer	Operator / Contractor
City of Sammamish	City of Sammamish	TBD

City of Sammamish, Washington

Certified Erosion and Sediment Control Lead (CESCL)

Name	Organization	Contact Phone Number
Contractor Superintendent (TBD)	Contractor (TBD)	TBD

SWPPP Prepared By

Name	Organization	Contact Phone Number
Courtney Moore	Otak, Inc.	(425) 822-4446

SWPPP Preparation Date

February 8, 2018

Project Construction Dates

Activity / Phase	Start Date	End Date
Culvert Replacement and Stream Restoration	June 15, 2018	October 15, 2018

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List of Acronyms and Abbreviations

Acronym / Abbreviation	Explanation
303(d)	Section of the Clean Water Act pertaining to Impaired Waterbodies
BMP(s)	Best Management Practice(s)
CESCL	Certified Erosion and Sediment Control Lead
CO₂	Carbon Dioxide
CRO	Central Regional Office of the Department of Ecology
CSWGP	Construction Stormwater General Permit
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DO	Dissolved Oxygen
Ecology	Washington State Department of Ecology
EPA	United States Environmental Protection Agency
ERTS	Environmental Report Tracking System
ESC	Erosion and Sediment Control
GULD	General Use Level Designation
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Units
NWRO	Northwest Regional Office of the Department of Ecology
pH	Power of Hydrogen
RCW	Revised Code of Washington
SPCC	Spill Prevention, Control, and Countermeasure
su	Standard Units
SWMMEW	Stormwater Management Manual for Eastern Washington
SWMMWW	Stormwater Management Manual for Western Washington
SWPPP	Stormwater Pollution Prevention Plan
TESC	Temporary Erosion and Sediment Control
TMDL	Total Maximum Daily Load
WAC	Washington Administrative Code
WSDOT	Washington Department of Transportation
WWHM	Western Washington Hydrology Model

1 Project Information

This Stormwater Pollution Prevention Plan documents the sediment control and water quality measures that will be implemented on the Zackuse Creek Fish Passage and Stream Restoration Project to control sediment deposition in the creek, and the temporary stream bypass that will direct the stream around the project area during construction. Source control measures for controlling pollutants will be implemented when applicable during construction of the project. The 13 elements of a SWPPP (Department of Ecology) and the anticipated Best Management Practices that will be used for this project are documented in the following sections. A pre-construction meeting will be conducted to address these elements prior to initiating construction.

1.1 Existing Conditions

The existing Zackuse Creek flows into Lake Sammamish along the eastern shoreline of the lake, approximately 500 ft. south of Lewis Thompson Road in the City of Sammamish. Zackuse Creek flows down a west-facing slope in a steep-sided ravine east of the East Lake Sammamish (ELS) Parkway before reaching a forested wetland adjacent to the Parkway.

This downstream section of Zackuse Creek crosses through five culverts before reaching the outlet to Lake Sammamish. Zackuse Creek currently flows through a 30" concrete pipe culvert under East Lake Sammamish Parkway that presents a fish barrier at most flows. Zackuse then flows through a 36" concrete pipe culvert under East Lake Sammamish Trail as well as a small box culvert under East Lake Sammamish Shore Lane.

The project site is located at 205 E. Lake Sammamish Shore Lane NE, Sammamish WA 98074. Discharge from the site ultimately drains to Lake Sammamish however no 303(d) listed waterbodies are within the project site. Total acreage (including support activities such as off-site equipment staging yards, material storage areas, borrow areas) are detailed below:

Total acreage:	2.77 A.C.
Disturbed acreage:	2.1 A.C.
Existing structures:	Structures in staging area to be demolished
Landscape Topography:	1.9 A.C.
Drainage patterns:	Along the drainage flow path the topography falls at an average and generally consistent grade of 4% over approximately 460 lf.
Existing Vegetation:	1.9 A.C.
Critical Areas (wetlands, streams, high erosion risk, steep or difficult to stabilize slopes):	.39 A.C.

Table 1 includes a list of suspected and/or known contaminants associated with the construction activity.

Table 1 – Summary of Site Pollutant Constituents

Constituent (Pollutant)	Location	Depth	Concentration
Concrete saw-cut particulate	East Lake Sammamish Parkway	Surface	N.A.
Chlorinated water for water main disinfection	East Lake Sammamish Parkway	Water Main is approximately 4 feet deep and will be exposed during construction	Concentration as required for water main disinfection
Cast In Place Concrete Wing Wall Footings	East Lake Sammamish Parkway	Varies from 12 feet to 1 foot of depth	N.A.
Vehicle Fuels and Lubricants	East Lake Sammamish Parkway	Surface	N.

1.2 Proposed Construction Activities

Work on the Zackuse Creek Fish Passage and Stream Restoration Project includes clearing and grubbing, grading and excavation of approximately 400 linear feet of constructed stream channel with large woody debris stabilization and grade control structures, habitat enhancement planting preparation, demolition of existing building structures, installation of access road, preparation and implementation of storm water pollution prevention plan, installation of temporary staging area, and restoration.

Work also includes demolition and replacement of the existing 30-inch concrete pipe culvert under East Lake Sammamish Parkway (ELSP). This culvert will be replaced with a 12 foot span by 6 foot rise by 49.25 foot long concrete box structure under ELSP. Site work also includes a temporary stream bypass, preparation and implementation of storm water pollution prevention plan, temporary traffic control, installation of guardrail, paving with HMA, and landscape restoration.

Drainage enters the site from the upstream drainage off of the plateau as well as the eastern hillside. Flow then passes through approximately 400 lf of existing stream channel and wetland where it will enter a new concrete box culvert under East lake Sammamish Parkway (ELSP) before discharging to the stream channel.

Final stabilization will include paving all disturbed roadway of ELSP, placing streambed gravels and log structures to stabilize the channel excavation, landscaping and vegetation of disturbed areas and seeding and mulching disturbed slopes.

Contaminated Site Information:

No contaminated soils or groundwater are anticipated and no sewer or contaminated water will be discharged on the site. Demolition and abatement of the existing structures to be removed at the staging area will be evaluated for contaminants by the contractor.

2 Construction Stormwater Best Management Practices (BMPs)

BMP's to control on-site sediment:

- High Visibility Silt Fence
- Erosion Protection Sheeting
- Stabilized Construction Entrance
- Biodegradable Erosion Control Blanket for Ditches
- Straw Wattle
- Gravel Bag Berms
- Tree Wrap
- High Visibility Fence

These BMP's will be implemented and inspected at the beginning of the project, prior to any land disturbance, clearing or grubbing, pavement removal, excavation, staging equipment or stockpiling materials.

Inspection and documentation will be completed at minimum intervals and after significant storm events as required by the City of Sammamish and WA Department of Ecology rules and regulations. The contractor will provide a maintenance and inspection plan that includes identification and contact information for the ESC project lead and backup contacts.

This SWPPP is an active document that reflects current conditions and changes throughout the life of the project. Changes, formal or informal (i.e., hand-written notes and deletions) should be documented in Appendix C. The SWPPP should be updated when the CESCL has noted a deficiency in BMPs or deviation from original design.

2.1 The 13 Elements

2.2 Element 1: Preserve Vegetation / Mark Clearing Limits

To protect adjacent properties and to reduce the area of soil exposed due to construction, the limits of construction will be clearly marked before land-disturbing activities begin. The project limits should be well defined and all wetlands, natural vegetation and native topsoils protected and preserved from unnecessary disturbance. High Visibility Fence and Tree Wrap will be used to protect identified existing trees from disturbance or removal. The BMPs relevant to marking the clearing limits that will be applied for this project include:

- High Visibility Silt Fence
- Tree Wrap
- High Visibility Fence

Installation Schedules:

These BMP's will be implemented and inspected at the beginning of the project, prior to any land disturbance, clearing or grubbing, pavement removal, excavation, staging equipment or stockpiling materials.

2.2.1 Element 2: Establish Construction Access

Two staging areas off of ELSP are available for the project. Stabilized construction entrances shall be installed at the locations for both project staging areas, with temporary culverts provided to maintain drainage. For access to the stream work an access road (nominally 12' wide) shall be constructed to the stream restoration staging area. The access road shall be constructed in such a way that impacts to the wetlands shall be minimized. The BMPs relevant to establish construction access that will be applied for this project include:

- Stabilized Construction Entrance
- Street Sweeping
- Collect and contain any chlorinated water from water mains
- Collect and contain any residual water as a result of placing wet concrete
- Collect and contain saw-cutting particulate from cutting existing concrete panels in Eastlake Sammamish Parkway

Installation Schedules:

- Equipment may operate within the ordinary high water line of the stream only after all fish exclusion has been completed and water bypass systems are in place and functioning properly.
- Work shall occur in the dry watercourse (when no natural flow is occurring in the channel, or when flow is diverted around the job site).

Element 3: Control Flow Rates

In order to protect properties and waterways downstream of the project site, stormwater discharges from the site will be controlled. No detention, permanent infiltration ponds or other low impact development facilities will be constructed or used on the project site.

Prior to commencing work within the ordinary high water mark of Zackuse Creek a temporary stream bypass will be installed to isolate the work zone (details of which are included in the plan set). The temporary bypass is proposed in stages to facilitate work at multiple phases of the project and shall be fully functioning before work on culvert trenching begins. At the downstream outlet of the existing and replaced culvert, erosion control blankets and gravel bag berms will be used to prevent scour.

The BMPs relevant to controlling flow rates that will be applied for this project include:

- Silt Fence
- Gravel Bag Berms
- Wattle
- Biodegradable Erosion Control Blanket for Ditches
- Temporary Stream Bypass

Element 4: Install Sediment Controls

All stormwater runoff from disturbed areas shall pass through an appropriate sediment removal BMP before leaving the construction site. Installation shall occur at the beginning of the project prior to land disturbing activities.

The site soils consist of organic materials including peat overlaying impervious till soils, unfortunately infiltration is not a viable option on this site. Approximately 400 lf of channel construction will be done adjacent to and outside of the existing stream channel, while keeping the existing channel undisturbed and in service. Much of the excavation and earthwork will be performed in the delineated wetland with a high water table. Excavation of the new Zackuse Creek channel in this delineated wetland may require sediment control of water table contributing water into the excavated channeled before the contractor can complete permanent channel stabilization according to plan.

The culvert replacement work will utilize a stream bypass plan to divert stream flow around the disturbance required for construction of the new box culvert. The stream bypass plan will include fish screens to prevent Salmonids from entering off-channel areas or drainages.

The BMPs relevant to installing sediment controls that will be applied for this project include:

- High Visibility Silt Fence
- Stabilized Construction Entrance
- Biodegradable Erosion Control Blanket
- Straw Wattles
- Gravel Bag Berms
- Seeding Fertilizing and Mulching

To avoid potential sediment control issues, the Certified Erosion and Sediment Control Lead will promptly initiate the implementation of an appropriate alternative BMP at the first sign that any existing BMPs are ineffective or failing.

2.2.2 Element 5: Stabilize Soils

Exposed and unworked soils will be protected with temporary seeding and mulching as well as plastic sheeting over gravel or stockpiles over weekends or when rain is a possibility. An extensive stream restoration and planting plan is also a part of this project along the new channel corridor.

No soils shall remain exposed and unworked for more than seven days during the dry season and two days during the wet season (as seen in the below table). The anticipated project dates are June 15, 2018 - October 15, 2018 and construction is not anticipated during the wet season. The connecting area between the access road and channel grading area in particular should be prioritized where final grading and preparation work is completed before planting to be done by others.

Season Delineations West of the Cascade Mountains Crest

Season	Dates	Number of Days Soils Can be Left Exposed
During the Dry Season	May 1 – September 30	7 days
During the Wet Season	October 1 – April 30	2 days

Steep slopes along the Eastlake Sammamish Parkway roadway embankment will be stabilized with a combination of plastic sheeting and straw wattles placed at intervals perpendicular to the slopes as well as seeding and mulching. Although unexpected, if contaminated soils are present, the soils will be contained using plastic sheeting both underneath and over stockpiles. Soils must be stabilized at the end of the shift before a holiday or weekend if needed based on the weather forecast.

The BMPs relevant to stabilizing soils that will be applied for this project include:

- Plastic sheeting
- Temporary and Permanent seeding and mulching
- Planting and landscaping

2.2.3 Element 6: Protect Slopes

Roadway embankment slopes on Eastlake Sammamish Parkway are considered steep slopes and will be replaced at a maximum slope of two horizontal to one vertical (2:1 slope). BMPs will be initiated immediately after placing and compacting the roadway embankments along Eastlake Sammamish Parkway.

The BMPs relevant to protecting slopes that will be applied for this project include:

- Plastic sheeting and sand bags
- Straw wattles
- Seeding and Mulching

2.2.4 Element 7: Protect Drain Inlets

There are no existing drain inlets, catch basins or storm drainage piping on the project and the existing culvert at the project site will be replaced with a concrete box culvert including streambed sediment.

2.2.5 Element 8: Stabilize Channels and Outlets

Work at the Zackuse Creek project can be thought of in two phases, a stream channel construction and culvert replacement. The new Zackuse Creek, as it does not coincide with the existing Zackuse Creek alignment, can be built outside of the fish window, July 1 – September 30. Log structures placed as directed will assist in stabilization of the new channel. The existing stream channel will be isolated from flow during the construction period. Stream bypass phasing suggestions have been presented in the plans. Additionally, the stream bypass plan will utilize gravel bags installed to prevent erosion from any concentrated discharge.

Prior to returning flow to the constructed channel all newly constructed stream channels will be stabilized with a two foot depth of streambed gravels designed to prevent gravel migration and to stabilize the channel in place. Stream flow will not be introduced to the channel until the gravels are placed, secured and inspected. Stream flow shall be introduced slowly in accordance with special provisions in order to stabilize and seal the new streambed and prevent unnecessary sediment transport.

The outlet to both the existing and replaced culvert will be protected (as shown in plans) with a gravel bag berm and biodegradable erosion control to avoid scour at the outlet.

The BMPs relevant to protecting slopes that will be applied for this project include:

- Gravel Bag Berm
- Biodegradable Erosion Control Blanket
- Temporary Stream Bypass

2.2.6 Element 9: Control Pollutants

All pollutants, including waste materials and demolition debris, that occur onsite shall be handled and disposed of in a manner that does not cause contamination of stormwater. Good housekeeping and preventative measures will be taken to ensure that the site will be kept clean, well-organized, and free of debris.

The following potential pollutants are anticipated to be present on-site:

Table 2 – Pollutants

Pollutant (List pollutants and source, if applicable)
Concrete saw-cut particulate
Chlorinated water for water main disinfection
Residual water from cast in place concrete wing wall footings

The contractor will provide a containment plan for both saw-cutting the concrete roadway panels in Eastlake Sammamish Parkway and for water main disinfection at the time of new water main construction and connection. Containment will be implemented at the time of water main disinfection and of concrete saw-cutting

Since maintenance, fueling, and/or repair of heavy equipment and vehicles is expected to occur onsite the contractor will be required to provide a final list of chemicals, fuels or oils the contractor will store on site. In addition, a security and containment plan will need to be approved and implemented prior to bringing any chemicals, fuels or oils onto the site.

An SPCC Plan for approval for any of these times and it will be required to include a security plan for the chemicals and impervious containment. City staff will inspect the SPCC facilities on a regular basis. The Contractor supervisor and City staff to be determined.

Access road, staging area and stabilized construction entrance will be placed prior to hauling materials or channel excavation. The gravel access road is approximately 260 feet long with a stabilized construction entrance at Eastlake Sammamish Parkway (ELSP). We do not expect equipment tires to carry dust or dirt onto the ELSP surface after travelling the access road, but a wheel wash system could be implemented by change order later if this proves to be a problem. Street cleaning will also be required if dirt is carried onto the pavement of ELSP.

Since pH-modifying sources are expected to be present on-site, a list of sources is presented in Table 3. Both headwalls and wingwalls for the culvert have been pre-ordered with the contract thus negating potential cast in place sources of concrete waste. Saw-cutting waste water will be fully contained at the time of saw-cutting. All pumping and mixer washouts would be temporarily placed into containment, hauled off site and properly disposed. Concrete trucks must not be washed out onto the ground, or into storm drains, open ditches, streets, or streams. Excess concrete must not be dumped on-site, except in designated concrete washout areas with appropriate BMPs installed.

Table 3 – pH-Modifying Sources

<input checked="" type="checkbox"/>	None
<input type="checkbox"/>	Bulk cement
<input type="checkbox"/>	Cement kiln dust
<input type="checkbox"/>	Fly ash
<input type="checkbox"/>	Other cementitious materials
<input checked="" type="checkbox"/>	New concrete washing or curing waters
<input checked="" type="checkbox"/>	Waste streams generated from concrete grinding and sawing
<input type="checkbox"/>	Exposed aggregate processes
<input type="checkbox"/>	Dewatering concrete vaults
<input checked="" type="checkbox"/>	Concrete pumping and mixer washout waters
<input type="checkbox"/>	Recycled concrete
<input type="checkbox"/>	Recycled concrete stockpiles
<input type="checkbox"/>	Other (i.e., calcium lignosulfate) [please describe:]

Will uncontaminated water from water-only based shaft drilling for construction of building, road, and bridge foundations be infiltrated provided the wastewater is managed in a way that prohibits discharge to surface waters?

Yes No

2.2.7 Element 10: Control Dewatering

Dewatering is expected to be necessary for the trench excavation of the culvert foundation in Eastlake Sammamish Parkway. Sheet piling will be used to define the trench limits and to hold the excavation to a minimum during culvert construction. The trench excavation will be approximately 20 ft. deep in a high groundwater area with peat soils.

The contractor will be required to provide a dewatering plan that will include turbidity sampling. Installation of dewatering system and containment will be completed prior to trench excavation. Sediment laden water also requires transport off-site for proper disposal or an alternate plan to prevent discharge to Waters of the State. Transport off-site in a vehicle (vacuum truck for legal disposal) will be implemented as necessary and the contractor will provide a dewatering and disposal plan.

Inspection and documentation will be completed at minimum intervals as required by the State or EPA rules and regulations and after significant storm events as defined by the State and EPA rules and regulations. The contractor will provide a maintenance and inspection plan that includes street sweeping as requested, identification and contact information for the ESC project lead and backup contacts. The contractor will identify a responsible person and City staff will provide oversight for these matters.

2.2.8 Element 11: Maintain BMPs

All temporary and permanent Erosion and Sediment Control (ESC) BMPs shall be maintained and repaired as needed to ensure continued performance of their intended function. Maintenance and repair shall be conducted in accordance with each particular BMP specification (see *Volume II of the SWMMWW*).

Visual monitoring of all BMPs installed at the site will be conducted at least once every calendar week and within 24 hours of any stormwater or non-stormwater discharge from the site. If the site becomes inactive and is temporarily stabilized, the inspection frequency may be reduced to once every calendar month.

All temporary ESC BMPs shall be removed within 30 days after final site stabilization is achieved or after the temporary BMPs are no longer needed. Trapped sediment shall be stabilized on-site or removed. Disturbed soil resulting from removal of either BMPs or vegetation shall be permanently stabilized.

Additionally, protection must be provided for all BMPs installed for the permanent control of stormwater from sediment and compaction. BMPs that are to remain in place following completion of construction shall be examined and restored to full operating condition. If sediment enters these BMPs during construction, the sediment shall be removed and the facility shall be returned to conditions specified in the construction documents.

2.2.9 Element 12: Manage the Project

The standard bid item ESC lead has been included in the contract documents. Erosion and sediment control BMPs for this project have been designed based on the following principles:

- Design the project to fit the existing topography, soils, and drainage patterns.
- Emphasize erosion control rather than sediment control.
- Minimize the extent and duration of the area exposed.
- Keep runoff velocities low.
- Thoroughly monitor site and maintain all ESC measures.
- Schedule all earthwork during the dry season to the extent possible.

In addition, projects will be phased to the maximum extent practicable and seasonal work limitations will be taken into account. Since the construction of a new channel does not require immediate re-watering, it is suggested that work that can be done outside of the fish window be prioritized. A BMP implementation scheduling template is included in Table 6 for use as needed.

The SWPPP will be updated, maintained, and implemented in accordance with the CSWGP. As site work progresses the SWPPP will be modified routinely to reflect changing site conditions. The SWPPP will be reviewed monthly to ensure the content is current.

Inspection and monitoring:

- Inspection, maintenance and repair of all BMPs will occur as needed to ensure performance of their intended function.
- Site inspections, monitoring and sampling locations will be located in accordance with applicable requirements of the CSWGP.
- A Certified Erosion and Sediment Control Lead shall be on-site or on-call at all times

3 Pollution Prevention Team

Table 5 is provided as a template for team member information and coordination as members are identified.

Table 5 – Team Information

Title	Name(s)	Phone Number
Certified Erosion and Sediment Control Lead (CESCL)	Provided by Contractor (TBH)	TBD
Resident Engineer	TBD	TBD
Emergency Ecology Contact	TBD	TBD
Emergency Permittee/ Owner Contact	TBD	TBD
Non-Emergency Owner Contact	TBD	TBD
Monitoring Personnel	TBD	TBD
Ecology Regional Office	Northwest Regional Office	(425) 649-7000

4 Monitoring and Sampling Requirements

Monitoring includes visual inspection, sampling for water quality parameters of concern, and documentation of the inspection and sampling findings in a site log book. A site log book will be maintained for all on-site construction activities and will include:

- A record of the implementation of the SWPPP and other permit requirements
- Site inspections
- Stormwater sampling data

A blank form is provided as a template in Appendix D.

The site log book must be maintained on-site within reasonable access to the site and be made available upon request to Ecology or the local jurisdiction.

4.1 Site Inspection

Site inspections will be conducted at least once every calendar week and within 24 hours following any discharge from the site. For sites that are temporarily stabilized and inactive, the required frequency is reduced to once per calendar month.

The discharge point(s) are indicated on the Site Map (see Appendix A) and in accordance with the applicable requirements of the CSWGP.

4.2 Stormwater Quality Sampling

4.2.1 Turbidity Sampling

Turbidity requirements will be dictated by the terms of the 401 water quality permit.

The WA Department of Ecology Regional office contact is included below:

Northwest Region (King, Kitsap, Island, San Juan, Skagit, Snohomish, Whatcom): (425) 649-7000 or http://www.ecy.wa.gov/programs/spills/forms/nerts_online/NWRO_nerts_online.html

4.2.2 pH Sampling

pH requirements will be dictated by the terms of the 401 water quality permit.

The WA Department of Ecology Regional office contact is included below:

Northwest Region (King, Kitsap, Island, San Juan, Skagit, Snohomish, Whatcom): (425) 649-7000 or http://www.ecy.wa.gov/programs/spills/forms/nerts_online/NWRO_nerts_online.html

5 Discharges to 303(d) or Total Maximum Daily Load (TMDL) Waterbodies

5.1 303(d) Listed Waterbodies

No known 303D listed waterbodies exist within the project site.

5.2 TMDL Waterbodies

Discharges to TMDL receiving waterbodies will meet in-stream water quality criteria at the point of discharge. The Construction Stormwater General Permit Proposed New Discharge to an Impaired Water Body form is included in Appendix F.

6 Reporting and Record Keeping

6.1 Record Keeping

6.1.1 Site Log Book

A site log book will be maintained for all on-site construction activities and will include:

- A record of the implementation of the SWPPP and other permit requirements
- Site inspections
- Sample logs

6.1.2 Records Retention

Records will be retained during the life of the project and for a minimum of three (3) years following the termination of permit coverage in accordance with Special Condition S5.C of the CSWGP.

Permit documentation to be retained on-site:

- CSWGP
- Permit Coverage Letter
- SWPPP
- Site Log Book

Permit documentation will be provided within 14 days of receipt of a written request from Ecology. A copy of the SWPPP or access to the SWPPP will be provided to the public when requested in writing in accordance with Special Condition S5.G.2.b of the CSWGP.

6.1.3 Updating the SWPPP

The SWPPP will be modified if:

- Found ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site.
- 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.

The SWPPP will be modified within seven (7) days if inspection(s) or investigation(s) determine additional or modified BMPs are necessary for compliance. An updated timeline for BMP implementation will be prepared.

6.2 Reporting

6.2.1 Discharge Monitoring Reports

Cumulative soil disturbance is one (1) acre or larger; therefore, Discharge Monitoring Reports (DMRs) will be submitted to Ecology monthly. If there was no discharge during a given monitoring period the DMR will be submitted as required, reporting “No Discharge”. The DMR due date is fifteen (15) days following the end of each calendar month.

DMRs will be reported online through Ecology’s WQWebDMR System.

6.2.2 Notification of Noncompliance

If any of the terms and conditions of the permit is not met, and the resulting noncompliance may cause a threat to human health or the environment, the following actions will be taken:

1. Ecology will be notified within 24-hours of the failure to comply by calling the applicable Regional office ERTS phone number (Regional office numbers listed below).
2. Immediate action will be taken to prevent the discharge/pollution or otherwise stop or correct the noncompliance. If applicable, sampling and analysis of any noncompliance will be repeated immediately and the results submitted to Ecology within five (5) days of becoming aware of the violation.
3. A detailed written report describing the noncompliance will be submitted to Ecology within five (5) days, unless requested earlier by Ecology.

Anytime turbidity sampling exceeds requirements of the 401 water quality permit, the Ecology Regional office will be notified by phone within 24 hours of analysis as required by Special Condition S5.A of the CSWGP.

- **Northwest Region** at (425) 649-7000 for Island, King, Kitsap, San Juan, Skagit, Snohomish, or Whatcom County

Include the following information:

1. Your name and / Phone number
2. Permit number
3. City / County of project
4. Sample results
5. Date / Time of call
6. Date / Time of sample
7. Project name

In accordance with Special Condition S4.D.5.b of the CSWGP, the Ecology Regional office will be notified if chemical treatment other than CO₂ sparging is planned for adjustment of high pH water.

- A. Site Map**
- B. Proposed TESC and Stream Bypass Details**
- C. Correspondence**
- D. Site Inspection Form**
- E. Construction Stormwater General Permit (CSWGP)**
- F. Contaminated Site Information – As Needed**
- G. Engineering Calculations – As Needed**

Appendix A (from SWPP) – Site Map

LAKE SAMMAMISH

SCHEDULE DESCRIPTION OF WORK

SCHEDULE A1 (CITY OF SAMMAMISH)
 • ZACKUSE CREEK RELOCATION

SCHEDULE A2 (CITY OF SAMMAMISH)
 • E LAKE SAMMAMISH PARKWAY CULVERT REPLACEMENT

SCHEDULE A3 (CITY OF SAMMAMISH)
 • E LAKE SAMMAMISH PARKWAY WATER AND SEWER UTILITY WORK

SCHEDULE B (KING COUNTY)
 • E LAKE SAMMAMISH REGIONAL TRAIL CULVERT REPLACEMENT

SCHEDULE C (KING COUNTY)
 • E LAKE SAMMAMISH SHORE LANE NE CULVERT REPLACEMENT

SURVEY NOTES

- HORIZONTAL DATUM: WASHINGTON STATE PLANE, NORTH ZONE, NAD83/91.
 BASED ON WASHINGTON STATE REFERENCE NETWORK AND CONSTRAINED TO PUBLISHED COORDINATES OF KING COUNTY CONTROL POINTS 1966, 1499, AND 1561, AS DESCRIBED IN CONTROL TABLE.
 PROJECT HORIZONTAL CONTROL WAS ESTABLISHED BY A COMBINATION OF FIELD TRAVERSE AND GPS RTK THAT MEETS OR EXCEEDS WAC 332-130-090.
 ALL UNITS IN US SURVEY FEET.
- VERTICAL DATUM: NAVD88
 BASED ON ELEVATION INFORMATION FOR KING COUNTY CONTROL POINT 1499, WITH A PUBLISHED ELEVATION 58.86'.
- FIELD SURVEY PERFORMED BY OTAK, INC. BETWEEN OCTOBER 2016 AND JANUARY 2017.
- ALL LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN ESTABLISHED BY FIELD SURVEY OF ABOVE GROUND FACILITIES AND LOCATED PAINT MARKS BY APS INC. OR OBTAINED FROM AVAILABLE RECORDS AND SHOULD THEREFORE BE CONSIDERED APPROXIMATE ONLY AND NOT NECESSARILY COMPLETE.

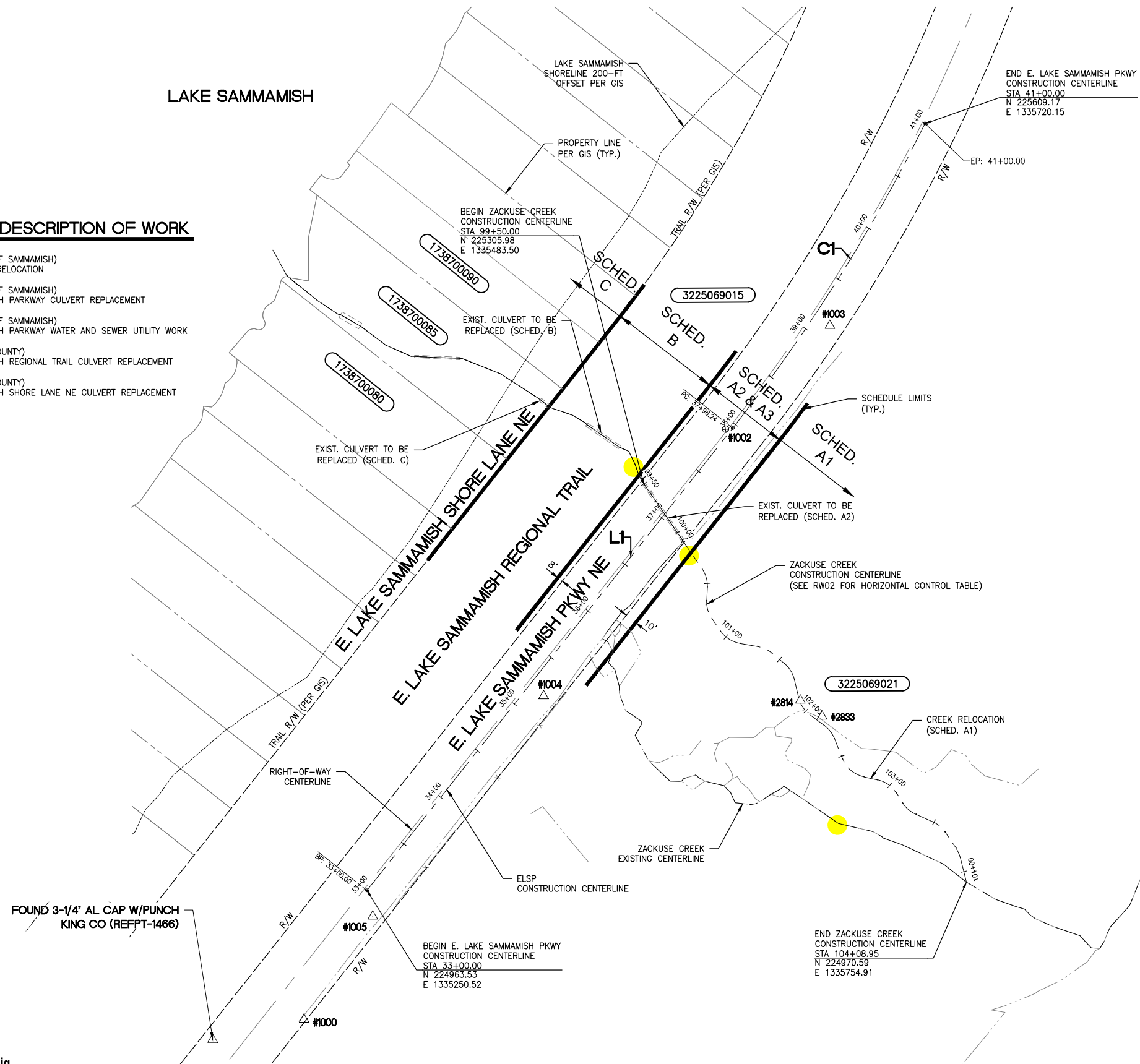
SAMMAMISH PKWY CONSTRUCTION CENTERLINE						
NUMBER	BEGIN STATION	LENGTH	END STATION	RADIUS	BEARING	DELTA
L1	33+00.00	496.24'	37+96.24		N38°19'49"E	
C1	37+96.24	303.76'	41+00.00	1435.19'	N32°16'01"E	12°07'36"

NOTE:
 CONSTRUCTION CENTERLINE DOES NOT EQUAL RIGHT-OF-WAY CENTERLINE

SURVEY CONTROL				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1000	224855.01	1335197.60	50.00	FOUND 1/2 REBAR/CAP
1001	224682.11	1335063.23	51.11	FOUND PK NAIL IN FENCE POST BASE
1002	225351.85	1335552.27	50.27	FOUND 3" MON W/PUNCH
1003	225439.14	1335640.06	52.80	SET PK NAIL
1004	225127.34	1335399.19	48.81	SET PK W/WASHER
1005	224941.79	1335255.43	49.20	SET MAG W/OTAK WASHER
1019	223160.85	1333822.12	51.27	FOUND 2-1/2" BRASS DISK W/PUNCH
1020	224664.14	1335916.86	94.67	FOUND 1-3/4" IRON PIPE
1466	224837.97	1335120.70	49.02	FOUND 3-1/4" AL CAP W/PUNCH KING CO
1489	223958.96	1334477.51	44.96	FOUND 2" AL MON IN CONC BASE (MON BOX)
1499	226078.91	1335855.74	58.86	FOUND 1-1/2" BRASS DISK W/"X" IN CASE
2814	225123.63	1335615.25	53.46	2" IRON PIPE
2833	225110.10	1335633.50	54.19	2" IRON PIPE, 1.6' ABOVE GROUND

LEGEND

- XXXXXX PARCEL NUMBER
- △ SURVEY CONTROL POINT
- PROPOSED DISCHARGE POINT



Know what's below.
 Call before you dig.

ZACKUSE CREEK
 FISH PASSAGE AND STREAM
 RESTORATION PROJECT
 SAMMAMISH, WASHINGTON

NO.	REVISIONS	DATE	DATE:
1			02/23/2018
2			DESIGNED BY: BS/DC/BD/MM/CEM/EH
3			DRAWN BY: AK
4			REVIEWED BY:
5			



REFER TO
 ORIGINAL DRAWINGS
 FOR
 SIGNATURES
 AND SEALS

ROADWAY CONSTRUCTION
 CENTERLINE, SURVEY CONTROL PLAN
 AND SCHEDULE LIMITS

RW01	
SHEET	OF
4	34

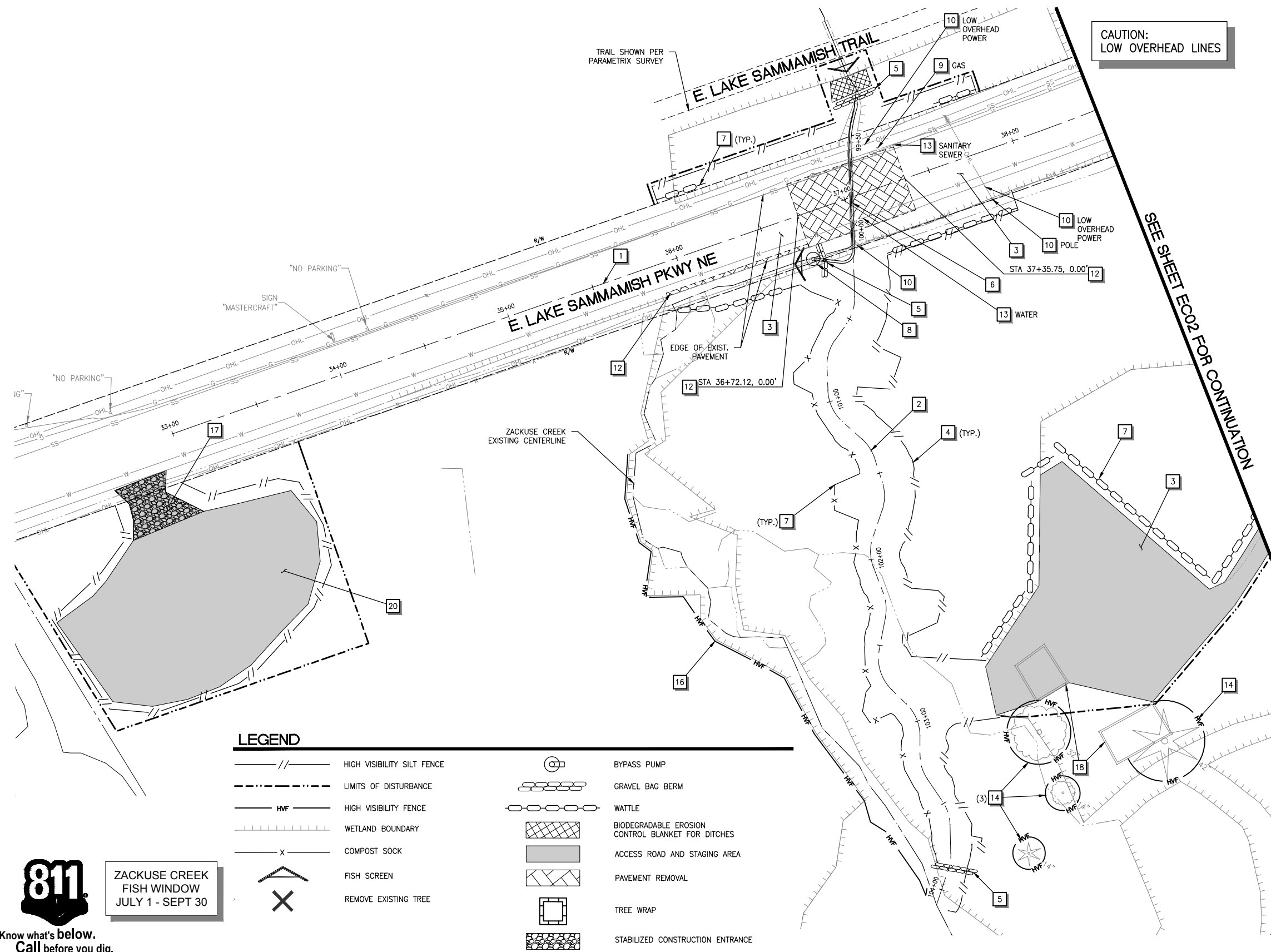
Appendix B (from SWPP) – Proposed TESC and Stream Bypass Details

TESC & DEMOLITION NOTES

- 1 ELSP CONSTRUCTION CENTERLINE, SEE SHEET RW01 FOR DETAILS.
- 2 ZACKUSE CREEK CONSTRUCTION CENTERLINE, SEE SHEET RW02 FOR DETAILS
- 3 CONSTRUCT ACCESS ROAD (NOMINALLY 12' WIDE) AND STAGING AREA FOR STREAM RESTORATION AS NECESSARY. LOCATION SHALL BE FIELD LOCATED AND APPROVED BY ENGINEER. CONTRACTOR MAY PROPOSE ALTERNATIVES THAT REDUCE WETLAND IMPACTS (IF APPROVED BY CITY) AND USE CLOSURE ON ELSP NE FOR STAGING AREA, PROTECT EXISTING PAVEMENT. SEE SHEET EC03 FOR DETAILS.
- 4 INSTALL HIGH VISIBILITY SILT FENCE PER WSDOT STD. PLAN 1-30.16-00.
- 5 INSTALL TEMPORARY GRAVEL BAG BERM PER LOCATIONS AND DETAILS SHOWN ON SHEETS BP01-BP02.
- 6 REMOVE EXISTING CULVERT, 36" DIAMETER, 55' LENGTH.
- 7 INSTALL STRAW WATTLE PER WSDOT STD PLAN 1-30.30-01, OR COMPOST SOCK PER STD PLAN 1-30.40-01.
- 8 TEMPORARY STREAM BYPASS. SEE PLAN ON SHEET BP01 AND DETAILS ON SHEET BP02.
- 9 PROTECT EXISTING UTILITY DURING CONSTRUCTION.
- 10 CONTRACTOR SHALL COORDINATE WITH PSE FOR SUPPORTING AND PROTECTING EXISTING POLE, POWER LINES, AND GUY WIRE DURING CONSTRUCTION.
- 11 REMOVE EXISTING TREES. TREE TO BE USED AS NEEDED IN WOOD STRUCTURE CONSTRUCTION FOR STREAM RESTORATION. REPLACE IN KIND, ON EASTERN SIDE OF ROAD, WITH WESTERN RED CEDAR OR SITKA SPRUCE, SIZING PER SHEET LS06.
- 12 SAWCUT AND REMOVE EXISTING PAVEMENT, INCLUDING HMA PAVEMENT AND CONC. PANEL UNDERNEATH.
- 13 EXISTING UTILITY TO BE RELOCATED/ADJUSTED, SEE SHEETS UT01-UT02 FOR DETAILS.
- 14 PROTECT EXISTING TREE PER TREE/SHRUB PROTECTION DETAIL ON SHEET EC03.
- 15 PROTECT EXISTING TREE PER TREE WRAP PROTECTION, SEE SHEET EC03 FOR DETAILS.
- 16 INSTALL HIGH VISIBILITY FENCE PER WSDOT STD 1-10.10-01.
- 17 INSTALL STABILIZED CONSTRUCTION ENTRANCE PER WSDOT STD PLAN 1-80.10-02. PROVIDE TEMPORARY CULVERT UNDER CONSTRUCTION ENTRANCE TO MAINTAIN DRAINAGE.
- 18 EXISTING STRUCTURES TO BE DEMOLISHED. DEMOLITION WILL REQUIRE A CITY OF SAMMAMISH DEMOLITION PERMIT ACQUIRED BY CONTRACTOR. FILL VOID WITH COMMON BORROW.
- 19 REMOVE EXISTING GUARDRAIL, LIMITS PER PLAN.
- 20 EXISTING TREES 8" AND GREATER CALIPER (DBH) SHALL BE PROTECTED WITHIN STAGING AREA. TREES SMALLER THAN 8" MAY BE REMOVED. APPROX. STAGING AREA IS SHOWN.

GENERAL NOTES

1. SEE SHEET EC02 FOR TREES ALONG THE TEMPORARY ACCESS ROAD THAT HAVE BEEN IDENTIFIED TO BE PROTECTED (PER DETAILS ON SHEET EC03) OR TO BE FELLED AND USED AS PART OF THE STREAM RESTORATION CONSTRUCTION.
2. TESC MEASURES SHOWN ARE APPROXIMATE AND CONTRACTOR SHALL FIELD LOCATE TO ACCOMMODATE SITE CONDITIONS AND WORK SCHEDULE.
3. PROTECT ALL EXISTING FEATURES AND VEGETATION NOT CALLED TO BE REMOVED.
4. SEE SHEET EC03 FOR EROSION AND SEDIMENT CONTROL NOTES.



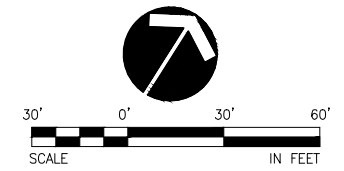
LEGEND

	HIGH VISIBILITY SILT FENCE		BYPASS PUMP
	LIMITS OF DISTURBANCE		GRAVEL BAG BERM
	HIGH VISIBILITY FENCE		WATTLE
	WETLAND BOUNDARY		BIODEGRADABLE EROSION CONTROL BLANKET FOR DITCHES
	COMPOST SOCK		ACCESS ROAD AND STAGING AREA
	FISH SCREEN		PAVEMENT REMOVAL
	REMOVE EXISTING TREE		TREE WRAP
			STABILIZED CONSTRUCTION ENTRANCE

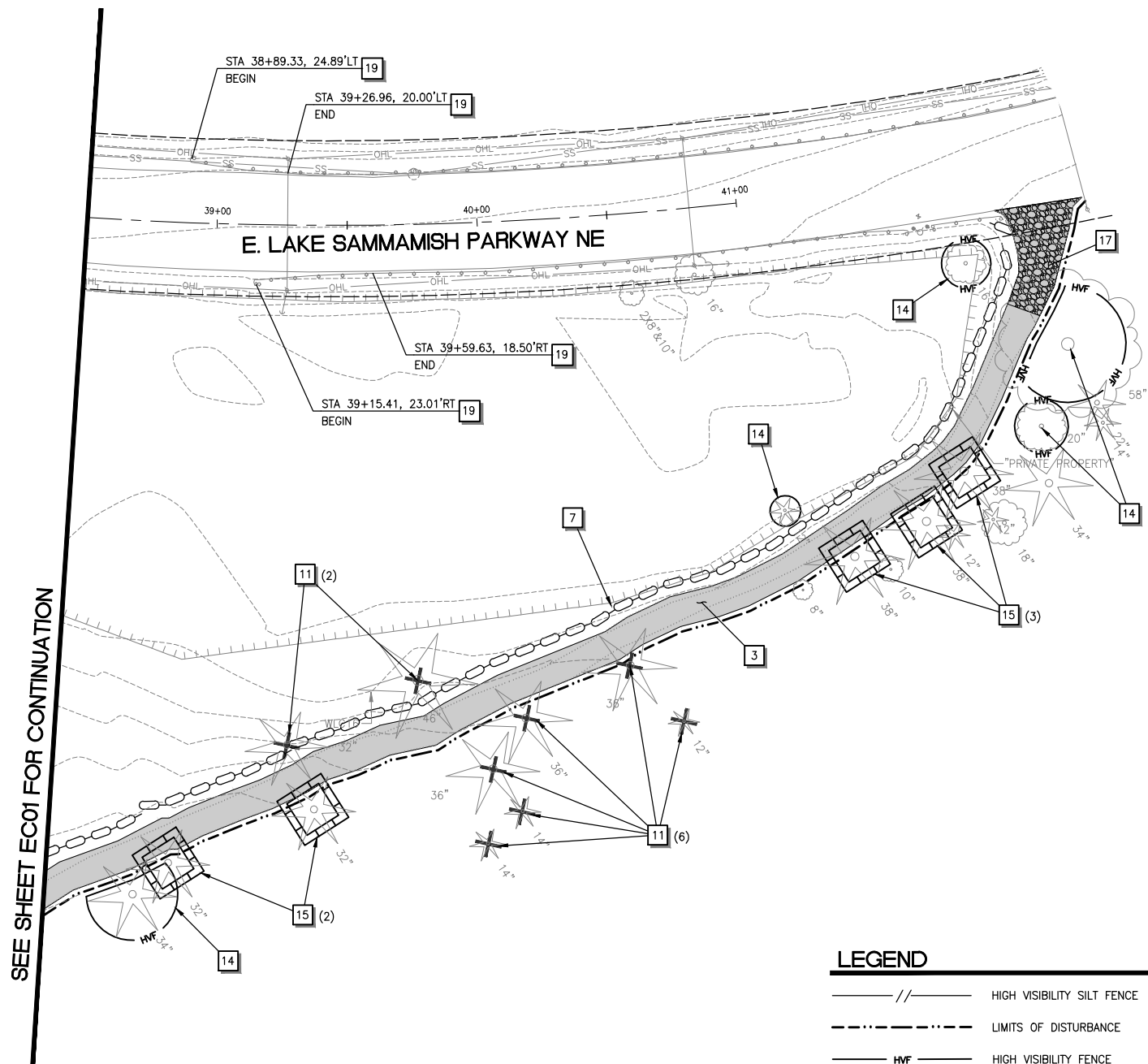


ZACKUSE CREEK FISH WINDOW
JULY 1 - SEPT 30

Know what's below.
Call before you dig.



<p>ZACKUSE CREEK FISH PASSAGE AND STREAM RESTORATION PROJECT SAMMAMISH, WASHINGTON</p>	NO.	REVISIONS	DATE	DATE: 02/23/2018		REFER TO ORIGINAL DRAWINGS SIGNATURES AND SEALS	<p>TESC AND DEMOLITION PLAN 1 OF 2</p>	EC01	
	1			DESIGNED BY: BS/DC/BD/MM/CEM/EH				SHEET	OF
	2			DRAWN BY: AK				9	34
	3			REVIEWED BY:					
	4								
5									



TESC & DEMOLITION NOTES

- 1 ELSP CONSTRUCTION CENTERLINE, SEE SHEET RW01 FOR DETAILS.
- 2 ZACKUSE CREEK CONSTRUCTION CENTERLINE, SEE SHEET RW02 FOR DETAILS
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- 4 INSTALL HIGH VISIBILITY SILT FENCE PER WSDOT STD. PLAN 1-30.16-00.
- 5 INSTALL TEMPORARY GRAVEL BAG BERM PER LOCATIONS AND DETAILS SHOWN ON SHEETS BP01-BP02.
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- 12 SAWCUT AND REMOVE EXISTING PAVEMENT, INCLUDING HMA PAVEMENT AND CONC. PANEL UNDERNEATH.
- 13 EXISTING UTILITY TO BE RELOCATED/ADJUSTED, SEE SHEETS UT01-UT02 FOR DETAILS.
- 14 PROTECT EXISTING TREE PER TREE/SHRUB PROTECTION DETAIL ON SHEET EC03.
- 15 PROTECT EXISTING TREE PER TREE WRAP PROTECTION, SEE SHEET EC03 FOR DETAILS.
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GENERAL NOTES

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2. TESC MEASURES SHOWN ARE APPROXIMATE AND CONTRACTOR SHALL FIELD LOCATE TO ACCOMMODATE SITE CONDITIONS AND WORK SCHEDULE.
3. PROTECT ALL EXISTING FEATURES AND VEGETATION NOT CALLED TO BE REMOVED.

LEGEND

	HIGH VISIBILITY SILT FENCE		BYPASS PUMP
	LIMITS OF DISTURBANCE		GRAVEL BAG BERM
	HIGH VISIBILITY FENCE		WATTLE
	WETLAND BOUNDARY		BIODEGRADABLE EROSION CONTROL BLANKET FOR DITCHES
	COMPOST SOCK		ACCESS ROAD AND STAGING AREA
	FISH SCREEN		PAVEMENT REMOVAL
	REMOVE EXISTING TREE		TREE WRAP
			STABILIZED CONSTRUCTION ENTRANCE



ZACKUSE CREEK FISH WINDOW
JULY 1 - SEPT 30

Know what's below.
Call before you dig.

ZACKUSE CREEK FISH PASSAGE AND STREAM RESTORATION PROJECT
SAMMAMISH, WASHINGTON

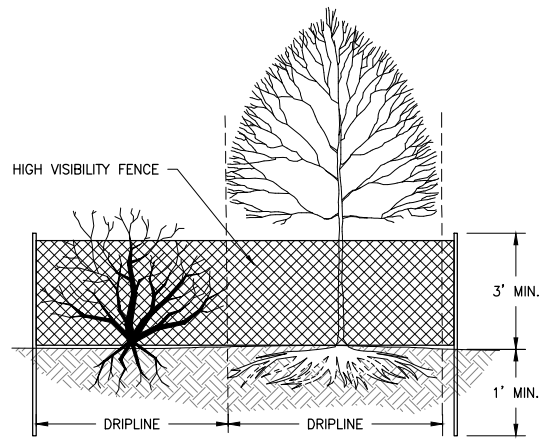
NO.	REVISIONS	DATE	DATE:
1			02/23/2018
2			DESIGNED BY: BS/DC/BD/MM/CEM/EH
3			DRAWN BY: AK
4			REVIEWED BY:
5			



REFER TO ORIGINAL DRAWINGS
SIGNATURES AND SEALS

TESC AND DEMOLITION PLAN
2 OF 2

EC02	
SHEET	OF
10	34

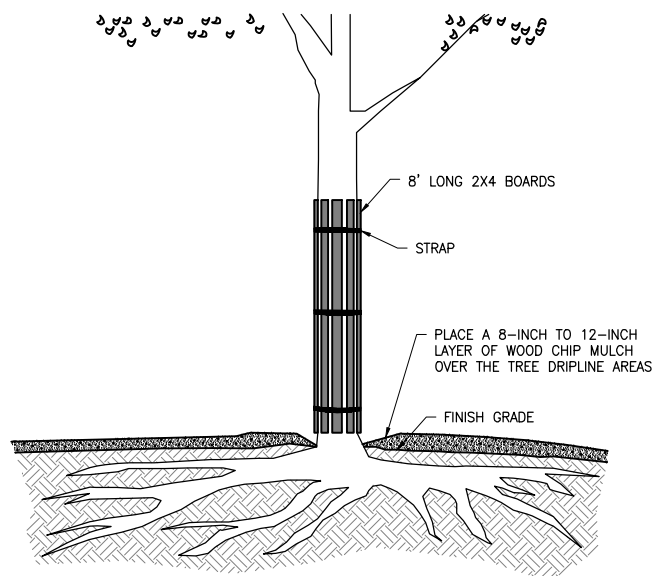


NOTES:

- 3' HIGH VISIBILITY FENCE SHALL BE PLACED AT DRIPLINE OF TREE TO BE SAVED UNLESS OTHERWISE SHOWN ON PLAN. FENCE SHALL COMPLETELY ENCIRCLE TREE(S). AVOID DRIVING POSTS OR STAKES INTO MAJOR ROOTS.
- TREATMENT OF ROOTS EXPOSED DURING CONSTRUCTION: FOR ROOTS OVER 1" IN DIAMETER DAMAGED DURING CONSTRUCTION, MAKE A CLEAN, STRAIGHT CUT TO REMOVE DAMAGED PORTION OF ROOT. ALL EXPOSED ROOTS SHALL BE TEMPORARILY COVERED WITH DAMP BURLAP TO PREVENT DRYING, AND COVERED WITH SOIL AS SOON AS POSSIBLE.
- WORK WITHIN PROTECTION FENCE SHALL BE DONE MANUALLY. NO STOCKPILING OF MATERIALS, VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MACHINERY SHALL BE ALLOWED WITHIN THE LIMIT OF THE FENCING.
- SEE SPECS FOR ADDITIONAL DETAILS.

TREE/SHRUB PROTECTION DETAIL

NOT TO SCALE



NOTES:

- PRUNE TO CROWN RAISE THE CANOPY TO PROVIDE SUFFICIENT CLEARANCE FOR CONSTRUCTION EQUIPMENT AND VEHICLES.
- REMOVE TRUNK PROTECTION STRUCTURE AT CONCLUSION OF PROJECT.
- THE ENGINEER MAY APPROVE THE USE OF ALTERNATIVE TREE PROTECTION TECHNIQUES IF A PROTECTED TREE WILL BE PROTECTED TO AN EQUAL OR GREATER DEGREE THAN THROUGH ALTERNATIVE TECHNIQUES.

TREE WRAP PROTECTION DETAIL

NOT TO SCALE



ZACKUSE CREEK
FISH WINDOW
JULY 1 - SEPT 30

Know what's below.
Call before you dig.

ZACKUSE CREEK
FISH PASSAGE AND STREAM
RESTORATION PROJECT
SAMMAMISH, WASHINGTON

NO.	REVISIONS	DATE	DATE:
1	ACCESS ROAD CLARIFICATION	04/25/2018	02/23/2018
2			DESIGNED BY: BS/DC/BD/MM/CEM/EH
3			DRAWN BY: AK
4			REVIEWED BY:
5			



REFER TO
ORIGINAL DRAWINGS
SIGNATURES
AND SEALS

TESC DETAILS

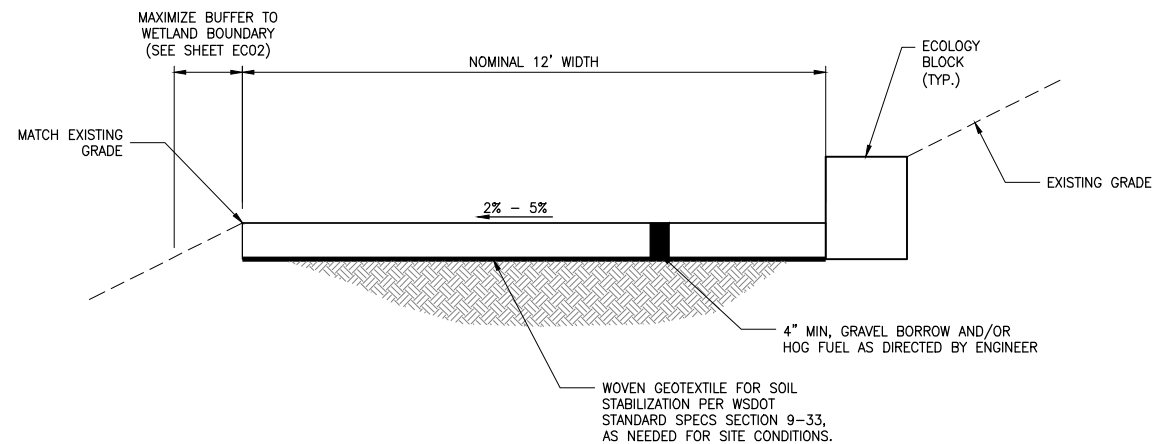
EC03

SHEET OF

11 34

EROSION & SEDIMENT CONTROL NOTES

- THE TEMPORARY EROSION AND SEDIMENT CONTROL FEATURES SHALL BE CONSTRUCTED PRIOR TO ANY GRADING OR EXTENSIVE LAND CLEARING IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE ENGINEER. THESE FACILITIES MUST BE SATISFACTORILY MAINTAINED UNTIL CONSTRUCTION AND LANDSCAPING ARE COMPLETED, AND SITE IS STABILIZED. SEDIMENT LADEN WATER SHALL NOT ENTER THE NATURAL DRAINAGE SYSTEMS.
- TEMPORARY SILT FENCE SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL, AND AT LEAST DAILY DURING PROLONGED RAINFALL. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED WATTLES, END RUNS, AND UNDER-CUTTING BENEATH WATTLES. SEDIMENT DEPOSITS SHALL BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
- ALL CLEARING, GRUBBING, AND GRADING SHALL BE CONTAINED WITHIN THE LIMITS ESTABLISHED BY THE ENGINEER. ALL VEGETATION OUTSIDE DESIGNATED LIMITS SHALL REMAIN UNDISTURBED.
- ALL STOCKPILES ARE TO BE LOCATED IN SAFE AREAS AND PROTECTED FROM EROSION BY MECHANICAL OR VEGETATIVE MEANS.
- ALL EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED BY SEEDING, MULCHING, MATTING OR PLASTIC COVERING. FROM OCT. 1 TO APRIL 30 NO SOILS SHALL REMAIN UNSTABILIZED FOR MORE THAN 2 DAYS. FROM MAY 1 TO SEPT. 30, NO SOILS SHALL REMAIN UNSTABILIZED FOR MORE THAN 7 DAYS.
- ALL PROPERTIES ADJACENT TO THE PROJECT SHALL BE PROTECTED FROM SEDIMENT DEPOSIT.
- DE-WATERING DEVICES SHALL DISCHARGE INTO A SEDIMENT TRAP, SEDIMENT POND, OR OTHER DEVICE APPROVED BY THE ENGINEER.
- ALL POLLUTANTS OTHER THAN SEDIMENTS THAT OCCUR ON-SITE DURING CONSTRUCTION SHALL BE HANDLED AND DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF STORM WATER. SEE DEPARTMENT OF ECOLOGY STORM WATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON, 2012, VOLUME 2, CHAPTER 4.
- SEDIMENTS TRANSPORTED ONTO A ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR SWEEPING AND BE TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA. SEE SPECIAL PROVISION, DISPOSAL OF SURPLUS MATERIAL. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.
- CITY OF SAMMAMISH WILL TRANSFER GENERAL STORMWATER CONSTRUCTION PERMIT TO CONTRACTOR.

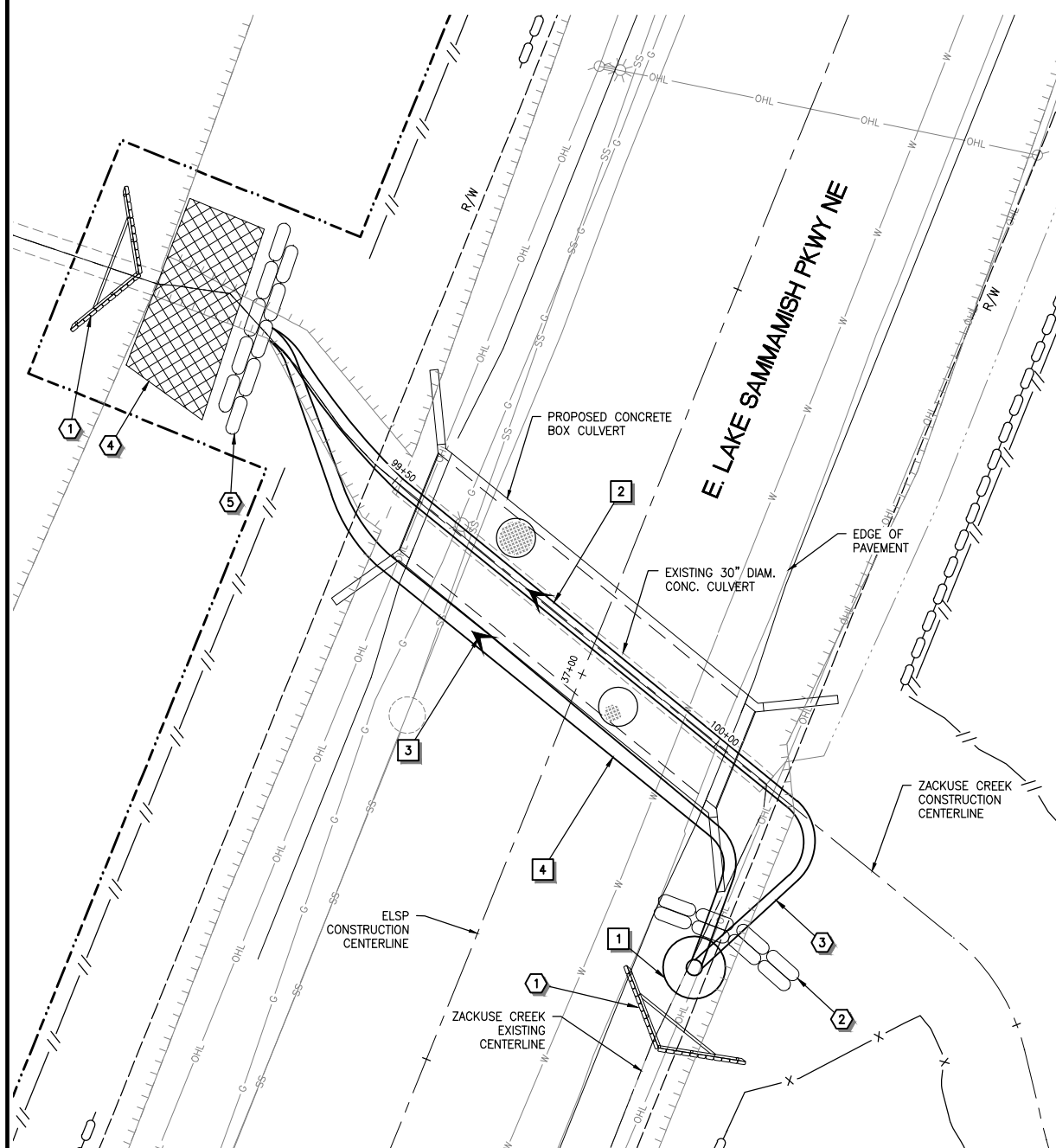


ACCESS ROAD TYPICAL SECTION

NOT TO SCALE

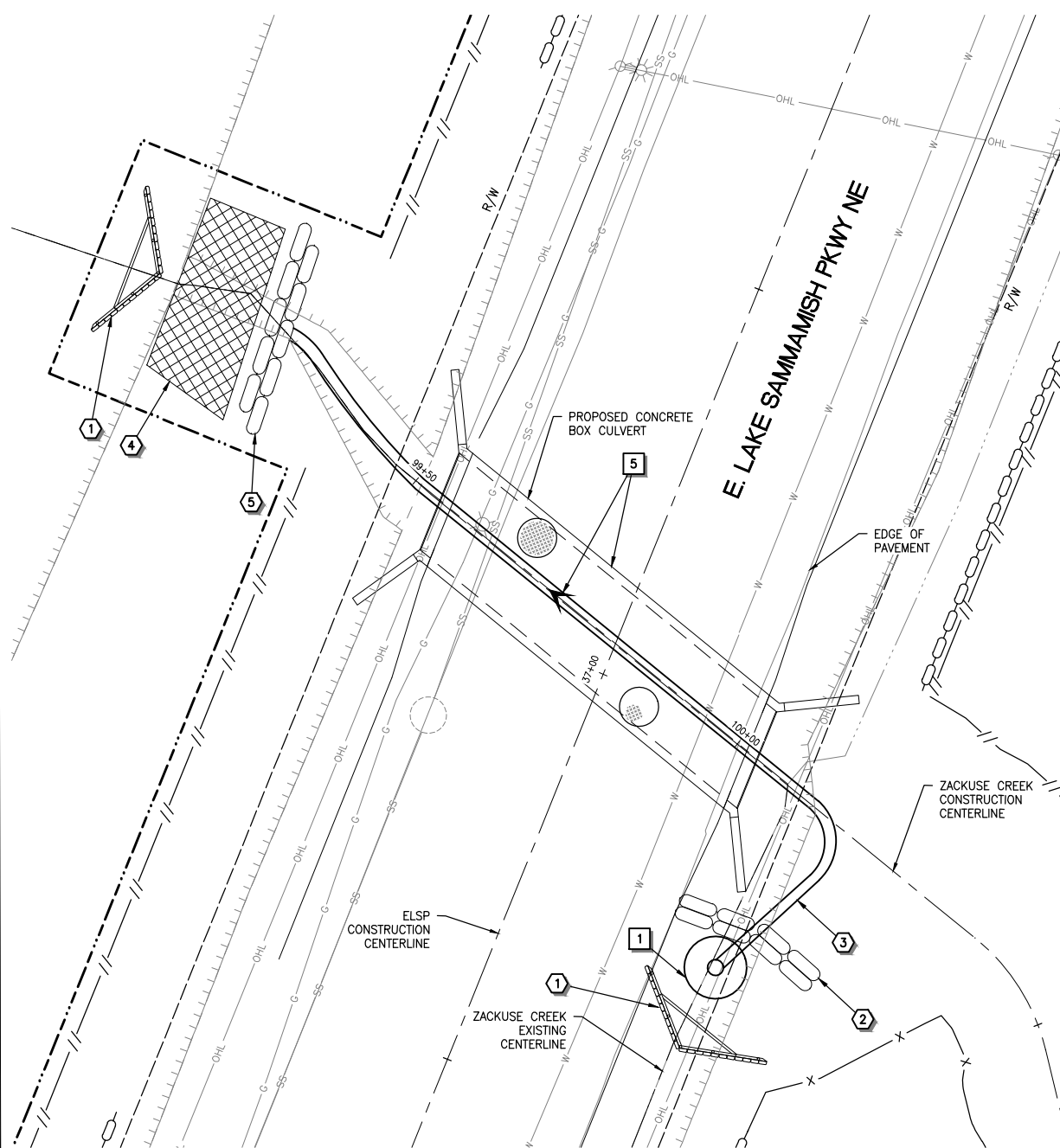
1. ACCESS ROAD SHALL BE MAINTAINED DURING CONSTRUCTION AND REPAIR DAMAGES AS NECESSARY PRIOR TO COMPLETION OF SCHEDULE A1





STAGE 1: SLIP-LINE TEMPORARY BYPASS THROUGH EXISTING CULVERT

STAGE 2: MOVE TEMPORARY BYPASS PIPE WITHIN LIMITS OF EXCAVATION TRENCH



STAGE 3: TEMPORARY BYPASS PIPE IN PLACE UNTIL END OF PROJECT

STREAM BYPASS NOTES

- 1 INSTALL FISH SCREEN PER DETAIL ON SHEET BP02.
- 2 INSTALL TEMP. GRAVEL BAG BERM PER DETAIL ON SHEET BP02.
- 3 INSTALL 24" DIAM. BYPASS PIPE. SEE PROFILES ON THIS SHEET. INSTALL GRAVEL BAGS ON/AROUND PIPE INLET TO STABILIZE.
- 4 INSTALL BIODEGRADABLE EROSION CONTROL BLANKET FOR DITCHES. PER DETAIL ON SHEET BP02.
- 5 INSTALL SUFFICIENT GRAVEL BAGS AT BYPASS OUTFALL TO PREVENT EROSION.

IN-WATER WORK TESC PLAN NOTES AND RECOMMENDED SEQUENCING

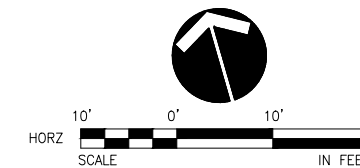
- 1 PROVIDE TEMPORARY PUMP SYSTEM FOR DEWATERING AS NEEDED. APPROXIMATE LOCATION SHOWN. DISCHARGE TO SEDIMENT FILTER MAT OR OTHER APPROVED TESC MEASURE. SEE SPECIFICATIONS FOR DEWATERING REQUIREMENTS.
- 2 INSTALL TEMPORARY STORM DRAIN PIPE THROUGH EXISTING 30" DIAM. CONC. CULVERT IN THE APPROXIMATE LOCATION SHOWN.
- 3 EXCAVATE NEW CHANNEL WITH EXISTING PIPE IN PLACE.
- 4 INSTALL TEMPORARY DIVERSION PIPE IN NEW CHANNEL FOR REMOVAL OF EXISTING 30" DIAM. CONC. CULVERT.
- 5 INSTALL CONCRETE BOX CULVERT BOTTOM AND STREAMBED GRAVELS. TRANSFER TEMPORARY DIVERSION PIPE TO WITHIN BOX CULVERT FOR REMAINDER OF BOX CULVERT CONSTRUCTION AND RESTORATION WORK.

IN-WATER WORK TESC PLAN GENERAL NOTES

1. THE CONTRACTOR SHALL SUBMIT THE TEMPORARY BYPASS AND ISOLATION SYSTEM PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL. THE TEMPORARY BYPASS SYSTEM AND ISOLATION BERM SHOWN ON PLAN IS SUGGESTED ONLY.
2. THE TEMPORARY BYPASS AND ISOLATION SYSTEM SHALL MEET ALL PERMIT REQUIREMENTS. CONTRACTOR SHALL REMOVE ALL TEMPORARY BYPASS MEASURES AFTER COMPLETION OF PROJECT.
3. THE TEMPORARY STREAM BYPASS SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED TO ENSURE CONTINUED PROPER FUNCTION.
4. PEAK FLOW RATES ANTICIPATED DURING THE PERIOD OF CONSTRUCTION COULD BE AS HIGH AS 15 CFS. FLOW MAY BE HIGHER DURING HIGH RAINFALL EVENTS. CONTRACTOR SHALL BE PREPARED TO PROTECT WORK SITE DURING HIGHER FLOWS.
5. FISH EXCLUSION AND FISH REMOVAL SHALL BE PERFORMED FOR IN-WATER WORK IN ACCORDANCE WITH THE WASHINGTON DEPARTMENT OF FISH AND WILDLIFE HPA.
6. PUMP SYSTEM WILL REQUIRE POWER FROM OVERHEAD UTILITY. GENERATORS WILL NOT BE ALLOWED. CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY TO PROVIDE POWER DROP FROM OVERHEAD LINE.

LEGEND

- HIGH VISIBILITY SILT FENCE
- LIMITS OF DISTURBANCE
- FISH SCREEN
- BYPASS PUMP
- GRAVEL BAG BERM
- WATTLE
- BIODEGRADABLE EROSION CONTROL BLANKET FOR DITCHES



ZACKUSE CREEK
FISH WINDOW
JULY 1 - SEPT 30

ZACKUSE CREEK
FISH WINDOW
JULY 1 - SEPT 30

ZACKUSE CREEK
FISH PASSAGE AND STREAM
RESTORATION PROJECT
SAMMAMISH, WASHINGTON

NO.	REVISIONS	DATE
1		
2		
3		
4		
5		

DATE: 02/23/2018
DESIGNED BY: BS/DC/BD/MM/CEM/EH
DRAWN BY: AK
REVIEWED BY:



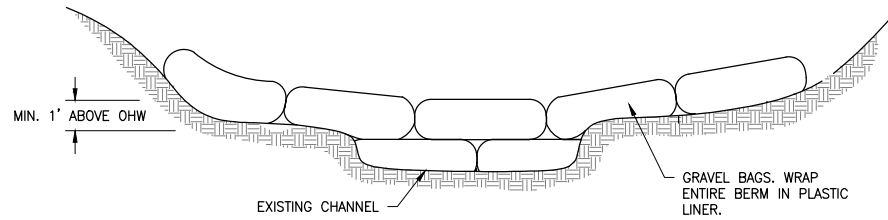
REFER TO
ORIGINAL DRAWINGS
SIGNATURES
AND SEALS

STREAM BYPASS PLAN

BP01

SHEET OF

12 34

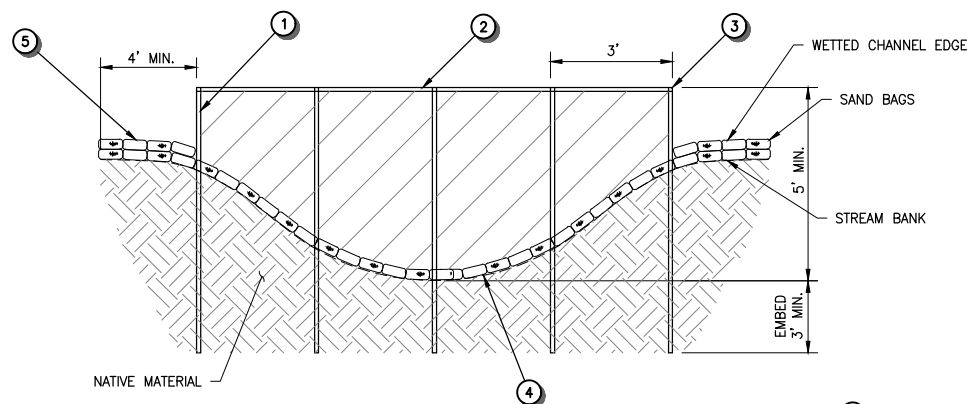


NOTES:

1. GRAVEL BAGS SHALL BE FILLED WITH STREAMBED SEDIMENT PER WSDOT SPEC. 9-03.11(1). STREAMBED SEDIMENT SHALL BE WASTED TO UPSTREAM END OF HABITAT CHANNEL UPON COMPLETION OF WORK.
2. INITIAL ROW OF GRAVEL BAGS SHALL BE KEYED INTO THE GROUND SUCH THAT THEY MAKE TIGHT CONTACT WITH THE GROUND FOR THE LENGTH OF THE BERM.

TEMPORARY GRAVEL BAG BERM DETAIL

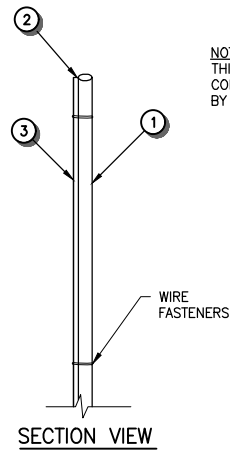
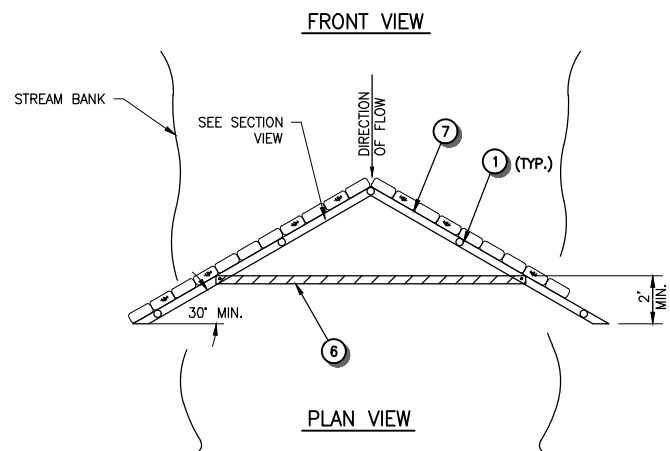
NOT TO SCALE



FISH SCREEN CONSTRUCTION SEQUENCE

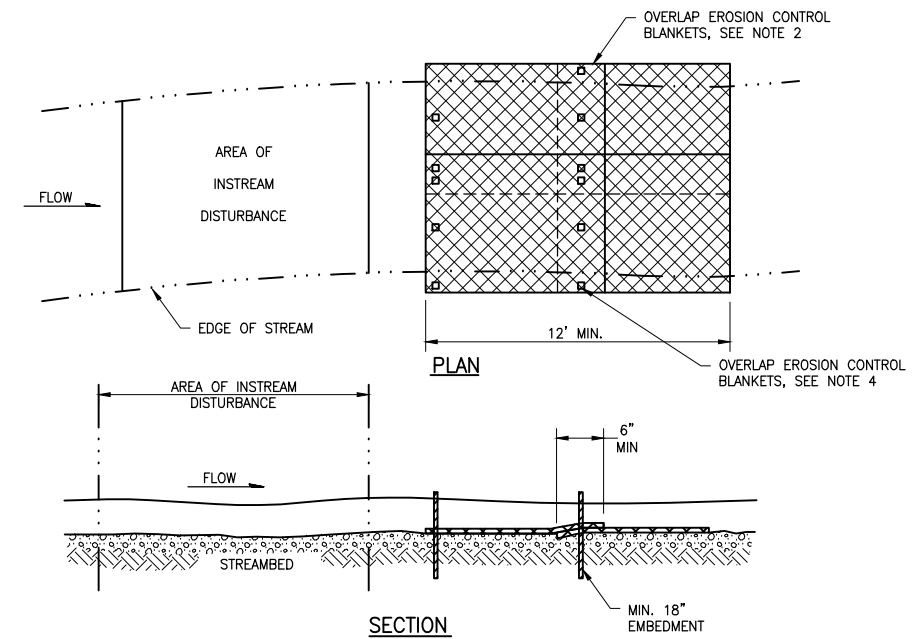
- 1 INSTALL 2" GALVANIZED TUBES ON 3' CENTERS.
- 2 SECURE WIRE MESH TO 2" GALVANIZED TUBES WITH WIRE FASTENER.
- 3 SECURE 1/4" MAX. FISH NYLON NET TO UPSTREAM SIDE OF WIRE MESH WITH WIRE FASTENER.
- 4 SECURE NYLON FISH NET TO STREAM BOTTOM WITH SAND BAGS.
- 5 EXTEND SAND BAGS 4' MIN. INTO STREAM BANKS.
- 6 ADD BRACING TIMBER AS NEEDED TO SUPPORT THE SCREEN.
- 7 REMOVAL OF DEBRIS FROM THE UPSTREAM SIDE OF THE FENCE IS NECESSARY OTHERWISE THE SCREEN WILL BECOME CLOGGED AND WATER MAY TOPPLE OR BREACH THE SCREEN.

NOTE:
THIS IS A RECOMMENDED METHOD FOR CONSTRUCTION SEQUENCE. CONTRACTOR MAY SUBMIT AN ALTERNATE FISH PLAN FOR APPROVAL BY THE ENGINEER.



FISH SCREEN DETAIL

NOT TO SCALE



NOTES:

1. INSTALL EROSION CONTROL BLANKETS FLAT ON THE STREAM BOTTOM AT DOWNSTREAM EDGE OF DISTURBED AREA IMMEDIATELY PRIOR TO INSTREAM DISTURBANCE AND REMOVE IMMEDIATELY AFTER INSTREAM ACTIVITIES ARE COMPLETED.
2. OVERLAP THE TRAILING EDGE OF UPSTREAM EROSION CONTROL BLANKETS OVER THE LEADING EDGE OF DOWNSTREAM EROSION CONTROL BLANKETS BY AT LEAST 6". OVERLAP SIDES A MINIMUM OF 6".
3. HOLD THE LEADING EDGE OF THE MATS TIGHTLY TO STREAMBED CONTOURS WITH ROCKS OR OTHER WEIGHTS SUFFICIENT TO PREVENT MAT FROM LIFTING. ROCKS SHALL BE LARGE ENOUGH THAT THE FORCE OF A 2-YR STORM EVENT WILL NOT CAUSE THE EROSION CONTROL BLANKETS FROM DISLODGING.
4. SECURE UPSTREAM CORNERS AND CENTERS OF EROSION CONTROL BLANKETS IN THE STREAMBED WITH 2"x2"x2' LONG WOOD STAKES.
5. IF STREAM VELOCITY IS HIGH, ENGINEER MAY REQUIRE ADDITIONAL LENGTH OF EROSION CONTROL BLANKET.

TESC EROSION CONTROL BLANKET DETAIL

NOT TO SCALE



ZACKUSE CREEK
FISH WINDOW
JULY 1 - SEPT 30

Know what's below.
Call before you dig.

ZACKUSE CREEK
FISH PASSAGE AND STREAM
RESTORATION PROJECT
SAMMAMISH, WASHINGTON

NO.	REVISIONS	DATE	DATE:
1			02/23/2018
2			DESIGNED BY: BS/DC/BD/MM/CEM/EH
3			DRAWN BY: AK
4			REVIEWED BY:
5			



REFER TO
ORIGINAL DRAWINGS
FOR
SIGNATURES
AND SEALS

STREAM BYPASS DETAILS

BP02

SHEET OF

13 34

Appendix C (from SWPP) – Correspondence

Appendix D (from SWPP) – Site Inspection Form

Construction Stormwater Site Inspection Form

Project Name _____ **Permit #** _____ **Inspection Date** _____ **Time** _____

Name of Certified Erosion Sediment Control Lead (CESCL) or qualified inspector if *less than one acre*
 Print Name: _____

Approximate rainfall amount since the last inspection (in inches): _____

Approximate rainfall amount in the last 24 hours (in inches): _____

Current Weather Clear Cloudy Mist Rain Wind Fog

A. Type of inspection: Weekly Post Storm Event Other

B. Phase of Active Construction (check all that apply):

Pre Construction/installation of erosion/sediment controls	<input type="checkbox"/>	Clearing/Demo/Grading	<input type="checkbox"/>	Infrastructure/storm/roads	<input type="checkbox"/>
Concrete pours	<input type="checkbox"/>	Vertical Construction/buildings	<input type="checkbox"/>	Utilities	<input type="checkbox"/>
Offsite improvements	<input type="checkbox"/>	Site temporary stabilized	<input type="checkbox"/>	Final stabilization	<input type="checkbox"/>

C. Questions:

- | | | | |
|--|-----|----|-------|
| 1. Were all areas of construction and discharge points inspected? | Yes | No | _____ |
| 2. Did you observe the presence of suspended sediment, turbidity, discoloration, or oil sheen | Yes | No | _____ |
| 3. Was a water quality sample taken during inspection? (<i>refer to permit conditions S4 & S5</i>) | Yes | No | _____ |
| 4. Was there a turbid discharge 250 NTU or greater, or Transparency 6 cm or less?* | Yes | No | _____ |
| 5. If yes to #4 was it reported to Ecology? | Yes | No | _____ |
| 6. Is pH sampling required? pH range required is 6.5 to 8.5. | Yes | No | _____ |

If answering yes to a discharge, describe the event. Include when, where, and why it happened; what action was taken, and when.

*If answering yes to # 4 record NTU/Transparency with continual sampling daily until turbidity is 25 NTU or less/ transparency is 33 cm or greater.

Sampling Results: _____ Date: _____

Parameter	Method (circle one)	Result			Other/Note
		NTU	cm	pH	
Turbidity	tube, meter, laboratory				
pH	Paper, kit, meter				

Construction Stormwater Site Inspection Form

D. Check the observed status of all items. Provide "Action Required" details and dates.

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
1 Clearing Limits	Before beginning land disturbing activities are all clearing limits, natural resource areas (streams, wetlands, buffers, trees) protected with barriers or similar BMPs? (high visibility recommended)						
2 Construction Access	Construction access is stabilized with quarry spalls or equivalent BMP to prevent sediment from being tracked onto roads?						
	Sediment tracked onto the road way was cleaned thoroughly at the end of the day or more frequent as necessary.						
3 Control Flow Rates	Are flow control measures installed to control stormwater volumes and velocity during construction and do they protect downstream properties and waterways from erosion?						
	If permanent infiltration ponds are used for flow control during construction, are they protected from siltation?						
4 Sediment Controls	All perimeter sediment controls (e.g. silt fence, wattles, compost socks, berms, etc.) installed, and maintained in accordance with the Stormwater Pollution Prevention Plan (SWPPP).						
	Sediment control BMPs (sediment ponds, traps, filters etc.) have been constructed and functional as the first step of grading.						
	Stormwater runoff from disturbed areas is directed to sediment removal BMP.						
5 Stabilize Soils	Have exposed un-worked soils been stabilized with effective BMP to prevent erosion and sediment deposition?						

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
5 Stabilize Soils Cont.	Are stockpiles stabilized from erosion, protected with sediment trapping measures and located away from drain inlet, waterways, and drainage channels?						
	Have soils been stabilized at the end of the shift, before a holiday or weekend if needed based on the weather forecast?						
6 Protect Slopes	Has stormwater and ground water been diverted away from slopes and disturbed areas with interceptor dikes, pipes and or swales?						
	Is off-site storm water managed separately from stormwater generated on the site?						
	Is excavated material placed on uphill side of trenches consistent with safety and space considerations?						
	Have check dams been placed at regular intervals within constructed channels that are cut down a slope?						
7 Drain Inlets	Storm drain inlets made operable during construction are protected.						
	Are existing storm drains within the influence of the project protected?						
8 Stabilize Channel and Outlets	Have all on-site conveyance channels been designed, constructed and stabilized to prevent erosion from expected peak flows?						
	Is stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes and downstream conveyance systems?						
9 Control Pollutants	Are waste materials and demolition debris handled and disposed of to prevent contamination of stormwater?						
	Has cover been provided for all chemicals, liquid products, petroleum products, and other material?						
	Has secondary containment been provided capable of containing 110% of the volume?						
	Were contaminated surfaces cleaned immediately after a spill incident?						
	Were BMPs used to prevent contamination of stormwater by a pH modifying sources?						

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
9 Cont.	Wheel wash wastewater is handled and disposed of properly.						
10 Control Dewatering	Concrete washout in designated areas. No washout or excess concrete on the ground.						
	Dewatering has been done to an approved source and in compliance with the SWPPP.						
	Were there any clean non turbid dewatering discharges?						
11 Maintain BMP	Are all temporary and permanent erosion and sediment control BMPs maintained to perform as intended?						
12 Manage the Project	Has the project been phased to the maximum degree practicable?						
	Has regular inspection, monitoring and maintenance been performed as required by the permit?						
	Has the SWPPP been updated, implemented and records maintained?						
13 Protect LID	Is all Bioretention and Rain Garden Facilities protected from sedimentation with appropriate BMPs?						
	Is the Bioretention and Rain Garden protected against over compaction of construction equipment and foot traffic to retain its infiltration capabilities?						
	Permeable pavements are clean and free of sediment and sediment laden-water runoff. Muddy construction equipment has not been on the base material or pavement.						
	Have soiled permeable pavements been cleaned of sediments and pass infiltration test as required by stormwater manual methodology?						
	Heavy equipment has been kept off existing soils under LID facilities to retain infiltration rate.						

E. Check all areas that have been inspected. ✓

All in place BMPs All disturbed soils All concrete wash out area All material storage areas
 All discharge locations All equipment storage areas All construction entrances/exits

Construction Stormwater Site Inspection Form

F. Elements checked "Action Required" (section D) describe corrective action to be taken. List the element number; be specific on location and work needed. Document, initial, and date when the corrective action has been completed and inspected.

Element #	Description and Location	Action Required	Completion Date	Initials

Attach additional page if needed

Sign the following certification:

"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief"

Inspected by: (print) _____ (Signature) _____ Date: _____

Title/Qualification of Inspector: _____

Appendix E (from SWPP) – Construction Stormwater General Permit
(CSWGP)

Appendix F (from SWPP) – Contaminated Site Information (As Needed)

Appendix G (from SWPP) – Engineering Calculations (As Needed)

APPENDIX F

Permits



**STATE ENVIRONMENTAL POLICY ACT (SEPA)
THRESHOLD DETERMINATION OF NON-SIGNIFICANCE (DNS)
ZACKUSE CREEK FISH PASSAGE PROJECT PAUE2017-00521**

December 20, 2017

Description of proposal: The City of Sammamish Public Works Department is designing and constructing the Zackuse Creek Fish Passage Project to improve fish passage and spawning habitat for native kokanee salmon in Zackuse Creek. There are two components for this project. The first component will replace three partial fish passage concrete culverts with fish passable culverts. The second project component is to restore an unstable portion of Zackuse Creek in order to create enhanced stream channel morphology that is better suited for kokanee spawning and rearing habitat. The project will improve fish passage within Zackuse Creek by improving fish access and increasing available aquatic habitat. The proposed project will have necessary and unavoidable impacts to critical areas and critical area buffers regulated pursuant to Sammamish Municipal Code (SMC) 21A.50 Environmentally Critical Areas.

The Zackuse Creek Fish Passage and Stream Restoration Project is a City of Sammamish sponsored stand-alone fish habitat enhancement project funded by the City of Sammamish and King County Parks, as well as grants from the King County Flood Reduction Program, King County Executive Council Water Works, and the King County Sub-regional Opportunity Fund.

This project is identified by the Lake Sammamish Kokanee Work Group (*Blueprint for the Restoration and Enhancement of Lake Sammamish Kokanee Tributaries, 2014*) as a habitat restoration action that will directly contribute to the recovery of kokanee salmon in Lake Sammamish. The project has the potential to both reintroduce kokanee into Zackuse Creek and promote the establishment of a self-sustaining population. The project is also identified in the City of Sammamish's *Storm and Surface Water Management Comprehensive Plan (2016)* and *Six Year Stormwater Capital Improvement Plan*. The City of Sammamish is prepared to start construction in June of 2018, given a fish passage window from July 1 to September 30, and expects project completion by October 2018.

Review Process: The application was received on June 23, 2017 and was deemed complete for the purpose of review on July 12, 2017. On July 19, 2017, the City issued a Notice of Application/SEPA Notification by the following means: mailed notice to property owners within 1000 feet of the subject site, a sign posted on the subject site, and a legal notice placed in the newspaper of record. The public comment period for this proposal was July 19, 2017 through August 9, 2017.

Applicant: City of Sammamish, c/o Tawni Dalziel, 801 228th Avenue SE, Sammamish, WA 98075, Phone: (425) 295-0500, Email tdalsiel@sammamish.us.

Authorized Agent: Otak, Inc., c/o Kevin O'Brien, 11241 Willows Road NE, Redmond, WA 98052, Phone: (425) 822-4446.

Property Owners:

- Walter T. Pereyra, 202 East Lake Sammamish Parkway NE, Sammamish, WA 98074
- Peter Weber and Denise Bunckek Weber, 205 East Lake Sammamish Shore Lane NE, Sammamish, WA 98074
- King County Parks, c/o Frank Overton, 201 South Jackson Street, KSC-NR-700, Seattle, WA 98104
- Daniel and Laurie Ivanoff, 2045 250th Place NE, Sammamish, WA 98074

Project Location: The proposed project is located within the NW ¼ of Section 32, Township 25 North, Range 06 East, W.M. The following King County Assessor Parcel Numbers are associated with the proposal: 3225069021 (Pereyra), 3225069015 (King County ROW), 1738700085 (Weber), and 1738700090 (Ivanoff).

Lead agency: City of Sammamish, Department of Community Development.

Threshold Determination of Non-Significance (DNS): The lead agency for this proposal has determined that the proposal does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

This DNS is issued under the optional DNS process specified in WAC 197-11-355; the lead agency will not act on this proposal for 21 days from the date below. Appeals must be received by the City with the appropriate forms and processing fee by the deadline described below.

SEPA Responsible official:
David Pyle, Deputy Director
Department of Community Development
801 228th Ave SE
Sammamish, WA 98075
425-295-0520

Contact person:
Ryan Harriman, AICP, Senior Planner
Department of Community Development
801 228th Ave SE
Sammamish, WA 98075
425-295-0529

12/20/2017
Date of Issuance

Ryan Harriman for David Pyle
Signature

You may appeal this determination. Send comments/appeals to:

SEPA Responsible Official
City of Sammamish
Community Development Department
801 228th Ave SE
Sammamish, WA 98075

Appeal Deadline: Pursuant to SMC 20.10.080 and 20.15.130, appeals must be submitted in writing with the appropriate forms and filing fee (\$250.00). Appeals must be received prior to 5pm on January 10, 2018 at the Sammamish City Hall, located at 801 228th Ave SE, Sammamish, WA, 98075. Appeal instructions are available at City Hall, or are available upon request at (425) 295-0500.

APPENDIX G

Pre-ordered Culvert
(for information only)



Granite Precasting & Concrete
 4010 Bakerview Spur
 Bellingham, WA 98226
 Phone: (360) 671-2251
 Fax: (360) 671-0780

Quote Number: 12399

Quote Date: 3/21/2018

Customer Copy

Bill to:	QUOTE 1 ESTIMATOR	Project:	Zackuse Creek Culvert - City of Sammamish
Contact:	ESTIMATOR	Project Manager:	
Phone :		Phone :	
Fax:		Fax:	
Customer ID:	QUOTE 1	PO:	
Terms:	NET 30	ShipVia:	GPC
		Bid Date:	
		Sales Rep:	Ted Reynolds

Qty	Item	Description	Unit Price	TX	Extension
Structure: <input type="checkbox"/> RISERS		Station:	Access Risers		
2	048X02R	48" X 2' RISER			
2	048X01R	48" X 1' RISER			
2	048TSR	48" FLATTOP/ ROUND HOLE			
2	CR-04X24	4" X 24" GRADE RING			
2	CR-02X24	2" X 24" GRADE RING			
2	C.B25	6 X 24 CI RING & DI COVER (B30.70) (STATE STAMPED)			
2	LG3400-04	4' GALV. I-3400 LADDER			
					\$2,508.00
Structure: <input type="checkbox"/> Cltv		Station:	Precast Split Culvert		
1	CUS 3 SIDE	12' W X 6' T X 49'-4" L INCLUDES: (5) BASE SECTION, (5) TOP SLABS, (2) HEADWALLS, (4) WINGWALLS			
1	ZBID NOTE	DELIVERED FOB JOBSITE WITH 1 HR ALLOWED TO UNLOAD EA. TRUCK. CITY CREW TO OFFLOAD & INSTALL, GROUT JOINTS.HEAVIEST LIFT APPX 40,000# DOES NOT INCLD GUARDRAIL OR POSTS			
					\$91,960.00



Granite Precasting & Concrete
 4010 Bakerview Spur
 Bellingham, WA 98226
 Phone: (360) 671-2251
 Fax: (360) 671-0780

Quote Number: 12399

Quote Date: 3/21/2018

Customer Copy

Total Weight 10,056

Taxable	\$0.00
Non-Taxable	\$94,468.00
Sub Total	\$94,468.00
Tax	\$0.00
Total	\$94,468.00

Only items specifically called out in this quote are included.
 Quantities listed are for estimating purposes and are subject to change upon engineering.
 Quote is based on a complete order. Should only a portion of the quote be ordered, price adjustments may be necessary.
 All structures, 48"-144" include rubber gaskets for ease of installation.
 Polypropylene manhole steps are included, handhold steps are not included and will be billed as extra.
 Castings are not included in price of structures unless indicated otherwise.
 Coatings are not included if not listed seperately as included. Any coating not supplied by Granite Precasting & Concrete, Inc. cannot be applied at our facility.
 FOB Job site, Contractor to unload if a boom truck is unavailable or the product is above our boom capacity.
 Deliveries canceled within 72 hours of scheduled onsite time may result in canceled delivery fees. 1 Hour is allowed for unloading, any excess standby time will be billed per hour.
 Evening or weekend deliveries are charged extra if not included in the quoted price.
 Granite will not be held responsible for project delays or cost impacts directly resulting from third party supplied goods such as metal hatch doors, metal castings, liner systems, or other specialty items.
 Lead time will be determined at time of order.
 Granite Precast manufactures concrete in accordance with ASTM C1567 (1 Year ASR testing) with aggregates from state approved pits that adhere to ASTM C33.
 Domestic lifting inserts are not included in our quote. Some picking and lifting gear imbeded into our products maybe of non domestic origin.

Predl Systems of North America manufactures polypropylene and fiberglass liners for storm and sewer applications as specified by State, County, and City applications. Predl Systems is a third party provider and is not associated with Granite Precast except as a third party provider. Predl System liners are specified by Granite Precast customers and are custom and made to order by Predl Systems specific to the plans provided by the customer. Granite Precast has no control over the Predl quality or product lead times, and Granite Precast accepts no responsibility for any delays or costs associated with Predl Systems products. Granite Precast will support our customers by providing an in-house quality control review of all Predl products prior to casting them into our products. Our findings will be provided to both our customers and Predl Systems of North America, but in no way does this inspection reduce or limit Predl System's responsibility to provide quality products to our customers in a timely fashion. Granite Precast will do our best to support our customer throughout the process of ordering, receiving and installing Predl System products, but at no time does Granite Precast assume responsibility for Predl System's manufacturing errors, defects, shipping delays, or related costs associated with Predl Systems ability to perform to the customer's expectations.



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4010 Bakerview Spur
Bellingham, WA 98226
Phone: (360) 671-2251
Fax: (360) 671-0780

Quote Number: 12399

Quote Date: 3/21/2018

Customer Copy

GENERAL TERMS AND CONDITIONS OF SALE FROM GRANITE PRECASTING AND CONCRETE, INC.

Any and all bids, estimates and proposals submitted by Granite Precasting and Concrete, Inc. ("Granite") to any and all customers ("Customer") are specifically subject to the following General Terms and Conditions of Estimate from Granite Precasting and Concrete, Inc. ("General Terms").

1. CONDITIONS OF QUOTE

All monetary quotes are specifically made and relied upon as being subject to General Terms. To the extent that Customer requests any modifications to the General Terms, Granite reserves the exclusive discretion to accept such request and to modify all monetary quotes based upon any agreed modification. Customer shall be responsible to pay all sales tax and any other tax associated with the sale of the goods, whether or not specifically stated in the quote. Granite specifically relied upon the specifications and information provided by Customer to provide the quote. Granite specifically reserves the right, and Customer expressly agrees to pay, any additional amounts charged by Granite caused by any new or additional information provided by Customer, or changes or modifications to the specifications or parameters of the proposed work requested by Customer at any time. Granite further reserves the right to terminate this Agreement at any time, should Customer make any material change to the specifications or scope of work, and refuses to pay a charge imposed by Granite.

The quote provided is valid for 30 days, at which time Granite's offer to perform the work pursuant to the terms and conditions of the quote shall automatically terminate.

2. ENTIRE AGREEMENT

These General Terms, any written quote, the terms and conditions of Granite's Credit Application, and any invoice and delivery ticket provided by Granite constitute the entire contractual terms under which Granite will be bound to perform the work for Customer and to sell its goods, and the sole terms and conditions of any agreement between the parties. The terms and conditions as set out in the above documents may only be modified through a written agreement between the parties, which is signed by an authorized representative of Granite. ANY TERMS AND CONDITIONS IN ANY OTHER DOCUMENT, INCLUDING, BUT NOT LIMITED TO ANY PURCHASE ORDER PROVIDED BY CUSTOMER, ARE HEREBY REJECTED AND SHALL NOT BE ENFORCEABLE AGAINST GRANITE NOR BECOME A TERM OF THE SALE OF PRODUCT FROM GRANITE TO CUSTOMER, UNLESS EXPLICITLY AGREED TO BY GRANITE IN WRITTEN AND SIGNED BY AN AUTHORIZED REPRESENTATIVE OF GRANITE.

3. PAYMENT TERMS

All payments due from Customer shall be those contained in any formal quote from Granite. If no quote is provided, or no terms contained in such quote, then the payment shall be paid in full net 30 days from receipt of an invoice from Granite. Any amount not timely paid under any payment term is interest owed by Customer to Granite at the rate of 12% per year, compounded daily. Should Customer fail to make a timely payment when due, then Granite may in its discretion, accelerate all amounts then due and owing by Customer, which shall become immediately due and owing, and may terminate any credit that had been granted to Customer, and demand payment C.O.D.

4. SHIPPING TERMS

All shipping terms shall be those contained in any formal quote from Granite. If no such formal quote is provided, or no terms contained in such quote, then the shipping shall be FOB Granite, with Customer to pay for all shipping charges to Customer's destination. Notwithstanding the above, Customer shall assume all risk of damage, loss of any goods, injury or liability associated with transportation during transport from Granite's facility and shall pay for any expenses associated with standby time in excess of one (1) hour. Customer shall provide and maintain suitable access, including access roads, to the closest accessible point or designated storage area. Customer shall have a representative on site at the point of delivery, who shall inspect the goods and execute acceptance of the goods. All goods shall be unloaded using Customer's equipment or equipment secured by Customer, at Customer's and at Customer's responsibility. If Customer fails to have an authorized representative present at the delivery point, Seller shall unload the goods and Customer shall be deemed to have accepted the same at that time. Upon delivery, Customer shall sign delivery tickets acknowledging such delivery. Customer shall examine all goods delivered. Customer shall, at the time of delivery, state in writing any and all defects and/or non-conformities as may exist in the goods delivered against Seller arising out of or relating to such defects and/or non-conformities.

5. SECURITY INTEREST

Customer hereby grants to Granite a security interest in all goods manufactured by Granite for Customer to the greatest extent allowed by law. Where goods are delivered on credit to Customer, then Granite shall have a purchase money security interest in any such goods as allowed by law. Grant all rights to take all reasonable action to perfect and memorialize its security interest in goods, and Customer shall prepare or execute any documents as reasonably requested by Granite. Any breach by Customer of any term and condition shall entitle Granite to exercise any rights as a secured party but not limited to, the right of self-help and repossession.

6. WARRANTIES

Granite warrants for the total period of one (1) year following acceptance of delivery of the goods, only the following as to the goods and products produced for Customer: (i) that such goods will be free from material defects in workmanship; and (ii) that the goods will reasonably conform to the specifications and drawings provided by Customer.

EXCEPT FOR THE EXPRESS WARRANTY STATED ABOVE, THE PARTIES HEREBY SPECIFICALLY AGREE THAT ALL OTHER EXPRESS AND IMPLIED WARRANTIES ARE HEREBY WAIVED, AND GRANITE HEREBY SPECIFICALLY DOES NOT MAKE ANY OTHER EXPRESS, NOR ANY IMPLIED WARRANTIES, NOR ANY WARRANTIES ARISING BY TRADE USAGE OR COURSE OF DEALING, INCLUDING, BUT NOT LIMITED TO, AN IMPLIED WARRANTY OF MERCHANTABILITY, THAT THE PRODUCTS WILL BE FIT FOR A PARTICULAR PURPOSE, TITLE, NON-INFRINGEMENT, AND ANY IMPLIED INDEMNITIES. IN NO EVENT SHALL GRANITE BE LIABLE TO CUSTOMER, EITHER DIRECTLY OR INDIRECTLY, FOR ANY INDIRECT DAMAGES, CONSEQUENTIAL DAMAGES, LOST PROFITS, LOST BUSINESS, OR BUSINESS INTERRUPTION. NOTWITHSTANDING THE ABOVE, THE CUSTOMER SHALL VOID THE LIMITED WARRANTY SET OUT ABOVE IF: (1) CUSTOMER FAILS TO MAKE ANY PAYMENT OWED TO GRANITE FOR THE AT ISSUE PRODUCT WHEN DUE; OR (2) CUSTOMER FAILS TO PROVIDE WRITTEN NOTICE OF THE ALLEGED DEFECT WITHIN SEVENTY TWO (72) HOURS OF DISCOVERY OF THE ALLEGED DEFECT TO GRANITE.

7. CUSTOMER'S LIMITED AND EXCLUSIVE REMEDY

Customer's sole remedy against Granite for breach of the limited express warranty granted herein, and for any other form of liability, whether arising in tort or contract, is for Customer to provide written notice to Granite within the one (1) year time period of any alleged defect. Such notice shall be a cond any obligation of Granite to replace any part or good. Upon verification of such defect, then Granite will replace any parts or goods, in Granite's discretion. This replacement shall be Customer's sole and exclusive remedy against Granite for any claim, demand, damages, or injuries, and Customer hereby waives and releases any other claims, demands, or rights to recover for any injuries and/or damages incurred by Customer that it may have against Granite. Product or goods returned by Customer shall be subject to a requirement that they not be damaged upon return, outside the alleged defect upon which the return is based. Such sole remedy shall be subject to Granite's conclusion that the alleged defect in fact exists, and was caused by Granite. All product and goods for credit will be subject to payment by Customer of freight charges, restocking and disposal fees.

8. INDEMNIFICATION, HOLD HARMLESS AND DUTY TO DEFEND

To the fullest extent permitted by law, Granite specifically obligates itself to Customer as follows:

(i) defend and indemnify Customer against and save them harmless from any and all claims, suits, liability, expense or damage for any actual or alleged infringement of any patent or patented right, arising in connection with this Granite's operations; (ii) defend, indemnify and save Customer harmless from any and all claims, suits or liability for damages arising from or relating to Granite's acts, goods or omissions-provided however, that Granite's obligation shall not apply to the active negligence of Customer. Granite's obligation hereunder shall not be limited by the provisions of any Workers' Compensation act or similar statute and as between Granite and Customer, Granite expressly waives the protection of such acts or statutes.

To the fullest extent permitted by law, Customer specifically obligates itself to Granite and Granite's surety (if any), jointly and severally, as follows:

(i) defend and indemnify Granite against and save it harmless from any and all claims, suits, liability, expense or damage for any actual or alleged infringement of any patent or patented right, arising in connection with Customer's work or actions; (ii) defend, indemnify and save Granite harmless from any and all claims, suits or liability for damages arising from or relating to Customer's acts or omissions-provided however, that Customer's obligation shall not apply to the active negligence of Granite. Customer's obligation extends to and include acts or omissions of its subcontractors, other suppliers, officers, agents, employees, or servants. Customer's obligation hereunder shall not be limited by the provisions of any Workers' Compensation act or similar statute and as between Customer and Granite only Customer expressly waives the protection of such acts or statutes.

9. COMPLIANCE WITH LAWS

Customer warrants and represents that it has obtained all necessary permits and approvals to install and/or use any goods that it is purchasing from Granite, including all necessary approvals of any specifications and drawings associated with the goods. Customer warrants and represents that it will comply with all laws and regulations relating to the installation or use of the goods.

10. ENGINEERING

Unless otherwise specifically agreed between the parties, all engineering reviews, certifications and approvals for the goods shall be obtained by Customer at its sole expense. Any acceptance of any shop drawings from Granite shall constitute full review and acceptance of such drawings by Customer and no responsibility for adequacy or performance of engineering, design, or specifications furnished by Customer.

11. Changes and Modifications to Goods

Any change to the quantity, type, specifications or other aspects of the goods subject to a quote, or any other alteration that changes the quote, shall only be binding upon Granite if accepted in writing, executed by a representative of Granite. Granite may condition acceptance of such change on the payment of additional money by Customer.

Custom precast products ordered by customer are not subject to cancellation or change. Any custom precast products not taken will be charged to the Customer regardless of delivery.

12. BREACH AND CANCELLATION OF AGREEMENT

Should Customer breach any term and condition, then Granite may take any remedial action allowed by law, including, not limited to, all remedies set out under RCW Chapter 62A.2 as the seller of goods. In addition, Granite may immediately terminate any further work for Customer, and Customer obligated to pay all amounts then due and owing, and pay for any goods produced but not yet delivered, and all lost net profits for the goods not manufactured.

Customer may only cancel any order with thirty (30) days notice, and in such case shall remain liable for all amounts then due and owing, and pay for any goods produced but not yet delivered prior to and during the thirty (30) day notice period, and for any actual costs that Granite must incur for the cost of the order.

Granite shall be relieved of all obligations under the agreement, to the extent performance becomes impractical or impossible due to the acts of a third party, by strike, fire, flood, windstorm, accident, other natural disaster, act of God, or other similar type of calamity or event.

13. DELIVERY DATES

Customer shall provide reasonable notice of any due dates for the products, all of which are subject to acceptance by Granite. Granite shall not, under any circumstances, be liable for any damages, injuries, lost profits, liquidated damages, or other costs or fees that may be incurred by Customer for delivery of any goods, including, but not limited to, when caused by an act of a third party, act of God or nature.

Quotations are made on the condition that full delivery will be taken within six months from acceptance of order. Any goods delivered after this period will be subject to any increases in pricing if necessary and at Granite's discretion.

Items are built to order and must be shipped to the jobsite within thirty (30) days of agreed upon completion date or storage fees will be incurred at Granite's discretion.

14. ASSIGNMENT

Customer may not assign any rights or obligations established by this agreement.

15. Costs and Attorneys' Fees

Granite shall be entitled to recover its attorneys' fees and costs incurred in any effort to collect any amounts due and owing from Customer, including, but not limited arising from any action. In addition, in any action to enforce or interpret the terms and conditions of this agreement, the prevailing party shall be entitled to recover its attorneys' fees and costs.

16. APPLICABLE LAW AND CHOOSE OF FORUM

This agreement and any work for Customer shall be governed by and interpreted in accordance with the laws of the state of Washington. Any and all disputes arising from this agreement or the work performed by Granite, including, but not limited to, any claim for recovery of amounts due and owing Customer, shall be commenced in the Superior Court of the State of Washington, Whatcom County, and Customer specifically consents to the jurisdiction and venue of this court.

17. RELATIONSHIP OF PARTIES

Nothing herein shall create or otherwise be construed as creating an agency/principal or partnership relationship between the parties.

18. Terms and Conditions Accepted by Customer

The ordering or acceptance of any product by Customer from Granite shall constitute acceptance of all the terms and conditions set out herein, whether or not Customer executes below. Acceptance of these terms and conditions is additional consideration to Granite. Application of these General Terms specific and valuable consideration and condition of the price quoted by Granite to Customer, and Granite would not sell the product to Customer if these General Terms did not apply to the transaction.

19. INSTALLATION

Customer shall be exclusively responsible for any installation of the product, and shall have no obligations to assist or define how the product should be installed, connected or otherwise used.

20. RETAINAGE AND BOND AND PREVAILING WAGES

No amounts due and owing by Customer to Granite shall be subject to any retainage, nor shall Granite be obligated to post any bond for the work. Unless specifically contained in quote all work to be performed by Granite shall not be at prevailing wage rates. It shall be Customer's responsibility to pay Granite if prevailing wages are required for the work, and shall reimburse Granite for any obligations to pay prevailing wages that may be imposed on Granite.

21. SEVERABILITY

Should any term be found to be unenforceable, then all other terms shall remain enforceable and applicable to the sale of the product.

22. NO WAIVER OF ANY BREACH

Granite has the exclusive discretion to refrain from enforcing any term, and its decision to refrain from enforcing any breach by Customer shall not be a waiver of the right to demand compliance of all terms and conditions, or to declare a breach of any other term or condition.

23. CHANGE OF OWNERSHIP

Customer shall provide prompt written notice to Granite should there be any material change in the ownership of Customer.

24. LIEN CLAIMS

Granite reserves all rights to file and enforce lien claims against any applicable real property. Granite hereby provides notice of its intent to seek any and all rights to record and enforce a lien for the payment of all materials for the improvement of real property.

25. MODIFICATIONS AND ALTERATIONS TO PRODUCT

Customer, its subcontractors, agents and employees shall not make any alterations of any product, including but not limited to drilling of any holes or otherwise make any changes to the product, without the written consent of Granite. Any unauthorized modifications or alterations shall result in the termination of Granite's limited warranty under Section 6.

26. SUBCONTRACTOR WORK

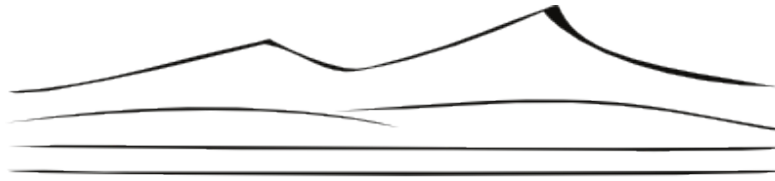
Granite reserves the right to have some or all of the proposed work, including construction of any item, performed by a third party contractor, subject to use of approved specifications and drawings.

Accepted, _____

Name/Title _____

APPENDIX H

Cultural Resources Report



Cultural Resource Consultants

TECHNICAL MEMO 1707E-1

DATE: October 3, 2017

TO: Kevin O'Brien
Otak, Inc.

FROM: Margaret Berger, Principal Investigator

RE: Cultural Resources Assessment for the Zackuse Creek Fish Passage Project,
Sammamish, King County, Washington

DAHP Log No.: 2017-08-05783

The attached short report form constitutes our final report for the above referenced project. Background research demonstrated that the project crosses and will alter a small segment of 45KI451, the Seattle Lake Shore & Eastern Railroad Grade, which was previously determined not eligible for the National Register of Historic Places. Field investigations identified a circa 1950s historic era archaeological site that is recommended not eligible for listing on historic registers. No precontact cultural resources were identified within the project. Archaeological monitoring recommendations are presented due to the higher probability of the location for as-yet unrecorded cultural resources and as testing was not possible in the culvert replacement locations. An inadvertent discovery protocol is attached. Please contact our office should you have any questions about our findings and/or recommendations.

CULTURAL RESOURCES REPORT COVER SHEET

Author: Sonja Kassa

Title of Report: Cultural Resources Assessment for the Zackuse Creek Fish Passage Project, Sammamish, King County, Washington

Date of Report: October 3, 2017

County(ies): King Section: 32 Township: 25 N Range: 06 E

Quad: Issaquah, WA Acres: ~5 acres

PDF of report submitted (REQUIRED) Yes

Historic Property Inventory Forms to be Approved Online? Yes No

Archaeological Site(s)/Isolate(s) Found or Amended? Yes No

TCP(s) found? Yes No

Replace a draft? Yes No

Satisfy a DAHP Archaeological Excavation Permit requirement? Yes # No

Were Human Remains Found? Yes DAHP Case # No

DAHP Archaeological Site #:

45K1451

DAHP temporary # 682969

- **Submission of PDFs is required.**
- **Please be sure that any PDF submitted to DAHP has its cover sheet, figures, graphics, appendices, attachments, correspondence, etc., compiled into one single PDF file.**
- **Please check that the PDF displays correctly when opened.**

**Cultural Resources Assessment for the
Zackuse Creek Fish Passage Project,
Sammamish, King County, Washington**

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Management Summary

This report describes the cultural resources assessment for the Zackuse Creek Fish Passage project in Sammamish, King County, Washington. The purpose of the project is to provide fish passage and suitable spawning and rearing habitat for native kokanee salmon within Zackuse Creek. Background research conducted by Cultural Resource Consultants, LLC (CRC) demonstrated that the project crosses and will alter a small segment of 45KI451, the Seattle Lake Shore & Eastern Railroad Grade. This site was previously determined not eligible for listing on the National Register of Historic Places (NRHP). Field investigations identified a circa 1950s historic site that is recommended not eligible for listing on historic registers. No precontact cultural resources were identified within the project. Archaeological monitoring recommendations are presented due to the higher probability of the location for as-yet unrecorded cultural resources and as testing as not possible in the culvert replacement locations. A recommendation of “No historic properties affected” is presented as neither of the identified resources are considered eligible for listing on historic registers. An inadvertent discovery protocol is attached.

1.0 Administrative Data

1.1 Overview

Report Title: Cultural Resources Assessment for the Zackuse Creek Fish Passage Project, Sammamish, King County, Washington

Author (s): Sonja Kassa

Report Date: October 3, 2017

Location: This project is located East Lake Sammamish Parkway NE, East Lake Sammamish Trail, East Lake Sammamish Shore Lane NE in Sammamish, King County, Washington.

Legal Description: The legal description for the project is Section 32, Township 25 North, Range 06 East, W.M. This project is located within King County Tax Parcels 3225069021, 2249850150, and 3225069277.

USGS 7.5' Topographic Map(s): Issaquah, WA (1992) (Figure 1).

Total Area Involved: ~5 acres.

1.2 Research Design

This assessment was developed as a component of preconstruction environmental review with the goal of preventing cultural resources from being disturbed during construction of the proposed project by identifying the potential for any as-yet unrecorded archaeological or historic sites within the project location. CRC's work was intended, in part, to assist in addressing state regulations pertaining to the identification and protection of cultural resources (e.g., RCW 27.44, RCW 27.53). The Archaeological Sites and Resources Act (RCW 27.53) prohibits knowingly disturbing archaeological sites without a permit from the Washington State Department of

Archaeology and Historic Preservation (DAHP), the Indian Graves and Records Act (RCW 27.44) prohibits knowingly disturbing Native American or historic graves. This project is subject to Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. Under Section 106, agencies involved in a federal undertaking must take into account the undertaking's potential effects to historic properties within the defined area of potential effects (APE) (36 CFR 800.16(1)(1)). Historic properties are typically defined as those 50 years or older. This process involves identifying and inventorying historic properties within the APE, and evaluating those properties to determine if they are eligible for listing on the National Register of Historic Places (NRHP). If NRHP eligible historic properties are identified within the APE then potential adverse effects to the historic properties must be assessed, and a resolution of adverse effects recommended. This project is also subject to Governor's Executive Order 05-05 (GEO 05-05). GEO 05-05 requires that all state agencies with capital improvement projects to integrate DAHP, the Governor's Office of Indian Affairs (GOIA), and concerned tribes into their capital project planning process in order to protect the public interest in historic and cultural sites.

CRC's investigations consisted of review of available project information and correspondence provided by the project proponent, local environmental and cultural information, and historical maps. CRC contacted cultural resources staff of the Duwamish, Muckleshoot, Snohomish, Snoqualmie, Stillaguamish, and Tulalip tribes on a technical staff- to-technical staff basis to inquire about project-related cultural information or concerns (Attachment A). This communication is not intended to be or intended to replace formal government-to-government consultation with affected Tribes. Snoqualmie Indian Tribe cultural resources staff expressed an interest in visiting the project location during fieldwork and CRC provided notification of field schedule (see "Field Investigations," below). Any additional information made available subsequent to the submission of this report will be included in a revision of this report. This assessment utilized a research design that considered previous studies, the magnitude and nature of the undertaking, the nature and extent of potential effects on historic properties, and the likely nature and location of historic properties within the project location, as well as other applicable laws, standards, and guidelines (per 36CFR800.4 (b)(1)) (DAHP 2017a).

1.3 Project Description

The purpose of the project is to provide fish passage and suitable spawning and rearing habitat for native kokanee salmon within Zackuse Creek. The need for this project is to increase the abundance and distribution of spawning locations for kokanee salmon. Currently three undersized culverts impede fish passage in Zackuse Creek. The concrete culverts are a partial fish passage barrier due to their slight elevations, which contribute to high velocity water flows (Lake Sammamish Kokanee Work Group, 2014). Immediately upstream of the culverts and east of East Lake Sammamish Parkway, Zackuse Creek flows in a poorly defined channel through a valley bottom wetland before turning 90 degrees at the East Lake Sammamish Parkway road embankment to enter the culvert. The lack of a linear channel results in poor sediment transport and an accumulation of sediment and debris.

The project is comprised of two components to improve fish passage and habitat within the creek. The first project component includes replacing the three existing concrete culverts under East Lake Sammamish Parkway, East Lake Sammamish Trail, and East Shore Lane with fish passable box culverts. The design of the culverts is based on accepted Washington Department of Fish

and Wildlife (WDFW) stream simulation and hydraulic design criteria to provide appropriate fish passage. The existing culverts will be replaced with 12-foot wide concrete box culverts. A minimum depth of 2 feet of streambed gravels will be placed inside the culvert for scour protection. The second project component is to restore, reconstruct, and realign the existing Zackuse Creek channel through the wetland complex upstream of the East Lake Sammamish Parkway culvert. The work will include altering the channel morphology and gradient to enhance kokanee spawning habitat and reduce the risk of major, lateral channel migration. The linear length of the channel will be reduced from approximately 530 feet to 400 feet to improve sediment transport and spawning habitat for kokanee salmon.

For purposes of this assessment, the area of potential effects (hereafter “the project location”) for cultural resources for this project is considered to contain the locations of all project elements as described above and as shown in Figures 1 – 9.

2.0 Background Research

2.1 Overview

Background research was conducted in August and September 2017.

Recorded Cultural Resources Present: Yes [] No []

Historic site 45KI451, the Seattle Lake Shore & Eastern Railroad Grade, crosses the western terminus of the project location and is presently represented by the East Lake Sammamish Trail (DAHP 2017b). This historic site was determined not eligible for listing on historic registers.

Context Overview: The context presented here summarizes environmental, ethnographic, historical, and archaeological information presented in local cultural resource reports by reference; archaeological and historic data from the Washington State Department of Archaeology and Historic Preservation (DAHP) and the Washington Information System for Architectural and Archaeological Records Data (WISAARD) records search; ethnographic resources; geological and soils surveys (e.g., USDA NRCS 2017; WA DNR 2017); and historical maps and documents from Bureau of Land Management United States Surveyor General (USSG) Land Status & Cadastral Survey Records database, HistoryLink, Historic Map Works, HistoricAerials (NETR 2017), University of Washington’s Digital Collection, Washington State University’s Early Washington Maps Collection, in CRC’s library, and from resources made available through The Sammamish Heritage Society’s website.

2.2 Environmental Context

The project is within the East Lake Sammamish basin of the Sammamish Watershed. It is located within the lower reaches of Zackuse Creek, which drains from the uplands in the east into Lake Sammamish. Elevation within the project ranges between approximately 40 to 90 feet. Vegetation includes a dense understory of blackberries, salmonberry, fern interspersed with cottonwood, vine maple, red alder, and cedar trees.

The topography and geology of western Washington has been shaped by a unique series of geomorphological events that are reflected in the landscape of the project location. The project is geographically situated in the Willamette-Puget Lowland physiographic province, characterized by the wide “trough” between the Coast and Cascade Ranges (Franklin and Dyrness 1973;

McKee 1972:290). This area is in the *Tsuga heterophylla* (Western Hemlock) vegetation zone (Franklin and Dyrness 1973:72).

The landscape of northwest Washington is a product of crustal deformation initiated by the Cascadia subduction zone; successive glacial scouring and deposition most recently during the Pleistocene; and landslides, erosion and deposition, and human activity during the Holocene (Troost and Booth 2008). The project is within the *Tsuga heterophylla* (Western Hemlock) vegetation zone in the Willamette-Puget Lowland physiographic province characterized by the wide “trough” between the Coast and Cascade Ranges formed during the advance and retreat of Pleistocene epoch glaciers (Franklin and Dyrness 1973; McKee 1972:290). During the Late Pleistocene or last glacial period (110,000 to 12,000 years BP), the Cordilleran ice sheet covered much of the American northwest and scoured the landscape during advance and retreat episodes initiated by localized climate fluctuations. The most recent glaciation was the Vashon Stade of the Fraser glaciation during which the Puget Lobe entered northwest Washington around 17,000 years BP (Thorson 1980). This final episode scoured the landscape producing moraine features and topographic lows prior to its recession.

The Puget Lobe reached the vicinity of present-day Seattle by about 14,500 years BP achieving its maximum extent near Olympia by 14,000 years BP (Booth et al. 2003). The onset of climatic warming caused the ice sheets to retreat to the north and began the transition into the Holocene. The Puget Lobe retreated past Seattle by 13,600 years BP (Booth et al. 2003). As the glacier receded during this more temperate period, meltwater became impounded behind the ice forming a series of proglacial lakes that eventually merged into Lake Russell, which extended roughly from the southern margin of present day Whidbey Island to Olympia impounding low lying sections of the Puget Sound and adjacent river valleys including the Sammamish River valley (Bretz 1913; Waitt and Thorson 1983). The glacial Lake Russell created a shoreline at 330 feet elevation in the Redmond area (Thorson 1981). Glacial Lake Russell merged with Lake Bretz, defined by a 130-foot elevation shoreline in the Redmond vicinity (Minard and Booth 1988; Thorson 1981), before draining via the Strait of Juan de Fuca. The retreat of the glacier and draining of recessional meltwater deposited sediments and formed Lake Washington and Lake Sammamish, saltwater lakes that were later replaced by freshwater after they were isolated from Puget Sound. Glacial Lake Snoqualmie drained from the east into glacial Lake Sammamish, with the nearest spillway, the Inglewood Channel, located to the north of the project. Glacial Lake Sammamish drained primarily through two channels to the south currently presented by Issaquah Creek and Tibbets Creek.

In addition, geomorphic processes such as isostatic rebound, global sea level rise, and geologic activity including a large earthquake 1,100 years ago originating from the Seattle fault zone are also factors that have affected the geography of the Puget Sound region to varying degrees during the Holocene (Booth et al. 2003; Thorson 1989). Sedimentation was widespread and voluminous during the Pleistocene; however, deposition during the Holocene has been more restricted occurring in river valleys and at the base of steep slopes (Booth et al. 2003). Geologic activity since glaciation is most pronounced along the walls of the Lake Sammamish trough (Booth et al. 2006). Here, mass wasting has caused Vashon Stade glacial deposits (sands and gravels) to slump revealing early glacial and proglacial deposits (silts and clays). The positioning of these incohesive sands and gravels over impermeable silts and clays had caused seasonal rains

to pool and create conditions for landslides. Many landslide scarps are present on the western and eastern margins of Lake Sammamish, but are often small in scale and obscured by vegetation and human development.

The results of the above geomorphic processes created the surface geology and parent materials that characterize the project location. As defined by Booth et al. (2006), surface geology mapped within the project location consists of:

- Alluvium (Holocene)—Moderately sorted cobble gravel, pebbly sand, and sandy silt mapped along major stream channels. Also includes sediments of similar texture and age found in low-lying areas adjacent to Lake Sammamish, particularly beach and shallow lacustrine deposits that are not discriminated at map scale.
- Mass-wastage deposits (Holocene)— Colluvium, soil, and landslide debris with indistinct morphology. Mapped where underlying deposits and topography obscured. Numerous unmapped areas of mass-wastage deposits occur elsewhere in quadrangle along ravines and sidewalls of Lake Sammamish trough. Thicknesses typically about 3 meters (10 feet) but locally may exceed 10 meters (30 feet).
- Recessional outwash deposits (younger glacial deposits)—Mainly stratified sand and gravel, moderately to well sorted, and less common silty sand and silt. Mostly exposed along the four east-west trending outwash channels that carried glacial meltwater westward into glacial Lake Sammamish from glacial Lake Snoqualmie (east) during ice retreat. This segment of recessional outwash is characterized as Stage 4; stages are subdivided into five deglacial stages on the basis of location and altitude. During Stage 4, glacial Lake Snoqualmie drained via the Inglewood Channel to the north, which has a present-day spillway altitude of 110 m (360 feet).

The soil units mapped in the project location consists of Mixed alluvial land and Alderwood and Kitsap soils in the western portion of the project, and Everett very gravelly sandy loam and Ragnar-Indianola association in the eastern portion of the project (USDA NRCS 2017).

- Mixed alluvial land: This unit is considered to be well drained with a water table at a depth of 12 to 36 inches below surface. A typical profile of this unit is 0 to 8 inches: sand, 8 to 20 inches: fine sand, 20 to 60 inches: sand, and 60 to 70 inches: loamy fine sand, gravelly sand.
- Alderwood and Kitsap soils, very steep, 25 to 70 percent: This unit forms on glacial moraines and till plain landforms from a parent material of basal till with some volcanic ash. It is moderately well drained with the water table occurring at 18 to 37 inches below surface that coincides with a restrictive feature at a similar depth. A typical profile of this unit is 0 to 12 inches: gravelly ashy sandy loam, and 12 to 60 inches: very gravelly sandy loam.
- Everett very gravelly sandy loam, 8 to 15 percent slopes: This unit forms on the convex segments of glacial kames, eskers, and moraine landforms from a parent material of sandy and gravelly glacial outwash. This unit is considered to be excessively drained. A typical profile of this unit is 0 to 1 inches: slightly decomposed plant material, 1 to 3 inches: very gravelly sandy loam, 3 to 35 inches: very gravelly sandy loam, and 35 to 60 inches: extremely cobbly coarse sand.
- Ragnar-Indianola association, moderately steep: This unit forms on glacial eskers, kames, and terrace landforms from a parent material of glacial outwash. This unit is well drained

with strongly contrasting textural stratification at 20 to 40 inches below surface. A typical profile of this unit is 0 to 4 inches: ashy fine sandy loam, 4 to 27 inches: ashy fine sandy loam, and 27 to 60 inches: loamy sand.

2.3 Archaeological Context

Thousands of years of human occupation of the Puget Sound have been summarized in a number of archaeological, ethnographic, and historical investigations over the past several decades that provide a regional context for evaluating the project location (e.g., Kopperl et al. 2010; Larson and Lewarch 1995; Morgan 1999; Nelson 1990). Following deglaciation, subsequent changes to landforms, climate, and vegetation influenced the available resources and, consequently, the spatial distribution of human activities. Similar to elsewhere, human land use was generally structured around the value of natural resources available in local environments including fresh water, terrestrial and marine food resources, forests, and suitable terrain. Archaeological evidence suggests the presence of nomadic hunter-gatherers not long after the area became ice-free approximately 12,000 years before present (B.P.). Evidence of human occupation in the Redmond area dates to 10,000 years B.P. as evidenced by archaeological site 45KI839 identified within deeply buried, stratified sediments at the confluence of Bear Creek and the Sammamish River approximately five miles northwest of the project (Kopperl et al. 2010). A synopsis of the cultural chronology identified in the Puget Sound region is provided by Berger (2014:4-5):

Archaeologists have identified an early period of occupation dated to between 9000 – 5000 B.P. (before present) based on broad similarities in site and lithic assemblages. Many of the early sites are associated with the Olcott Complex in Western Washington, which are contemporaneous with similar Cascade Phase sites identified east of the Cascade Mountains. Olcott sites consist of lithic workshops and temporary hunting camps that contain leaf-shaped projectile points and tools and flakes made from locally available cobbles, and are found on glacial outwash surfaces in inland riverine settings (Morgan et al 1999). The Olcott complex is believed to be representative of highly mobile hunter-gatherers who typically did not utilize marine resources (Carlson 1990), and several Olcott sites have been documented and studied throughout Western Washington and the Olympic Peninsula.

After 5000 B.P., archaeological evidence suggests a change in settlement patterns and subsistence economy in the region. From 5000 – 3000 B.P. an increasing number of tools were manufactured by grinding stone, and more antler and bone material was used for tool production. Living floors with evidence of hearths and structural supports suggesting more long-term site occupation are more common during this period in contrast to the Olcott Complex. On Puget Sound, evidence of task-specific, year-round, broad-based activities, including salmon and clam processing, woodworking, and basket and tool manufacture, date from approximately 4200 B.P. (Larson and Lewarch 1995).

Characteristic of the ethnographic pattern in Puget Sound, seasonal residence and logistical mobility, occurred from about 3000 B.P. Organic materials, including basketry, wood and food stuffs, are more likely to be preserved in sites of this late pre-contact period, both in submerged, anaerobic sites and in sealed storage pits. Sites

dating from this period represent specialized seasonal spring and summer fishing and root-gathering campsites and winter village locations. Sites of this type have been identified in the Puget Sound lowlands, typically located adjacent to, or near, rivers or marine transportation routes. Fish weirs and other permanent constructions are often associated with large occupation sites. Common artifact assemblages consist of a range of hunting, fishing and food processing tools, bone and shell implements and midden deposits.

2.4 Ethnographic Context

The project is within the traditional territory of the Sammamish (or Sam-ahmish) and Snoqualmie, bands of Southern Lushootseed speakers (Suttles and Lane 1990). The Sammamish and Snoqualmie shared many broadly defined traditions with inland Puget Sound people, including lacustrine or riverine settlement patterns, subsistence emphasis on salmon and other fish, land game, and a wide variety of abundant vegetable foods, and household and village communities linked by family and exchange relations (Suttles and Lane 1990). Ethnohistoric economies were structured based on seasonally available resources, which translated to seasonal occupation and logistic mobility. Permanent villages were generally established along rivers during the winter, and temporary camps were used while traveling to obtain seasonal food sources during the warmer summer months.

Early ethnographers documented locations of villages and names for resource areas, water bodies, and other cultural or geographic landscape features from local informants. Knowledge of these features contributes to the broader archaeological context of the project and the nature of the archaeology that may be encountered during this assessment. Similar to other areas in the Puget Sound, ethnographically named places nearest to the project have been recorded in shoreline settings, in this context on the eastern shore of Lake Sammamish (Waterman ca. 1920, 2001:115-116). The place name recorded nearest to the project is approximately one mile southwest near Sulphur Springs Point. *Tsiya'kwIL^{TU}* is the name for a large round promontory with a hillside that becomes flat along the lakeside, where boys who sought to gain shamanistic power came to fast and stay for two to three nights (Waterman 2001:116). A few miles north of the project is *Pu'kwab*, translated as “heap or knoll,” named for a steep hill located at the north end of Lake Sammamish near a historic train station at Adelaide near the mouth of Evans Creek. A few miles south of the project is *QatL³a'dll-qo*, translated as “land otter’s water,” the name of a creek draining from Yellow Lake and entering Lake Sammamish one mile south of Monohon (Waterman 2001:116).

2.5 Historical Context

As stated by Berger (2017), by the mid-1850s, Euro-American settlement in the region had drastically affected Indian people and their traditions. Following the arrival of Euro-Americans and subsequent treaty negotiations between tribal groups and the United States government, Native American groups were compelled to relocate to reservations and many of their villages were abandoned (Ruby and Brown 1986). It is reported that the Sammamish were assigned to either the Tulalip Reservation in Snohomish or the Suquamish Reservation in Port Madison (Ruby and Brown 1986:72). The Snoqualmie people were afforded a reservation near the City of Snoqualmie and were federally recognized prior to 1953 and subsequent to 1999 (Snoqualmie Tribe 2012). The relocation of Native American peoples to reservations opened wide swaths of

land for Euro-American settlement throughout the region. This in conjunction with the enactment of the Homestead Act of 1862, which afforded United States citizens the opportunity to claim 160 acres of surveyed government land, helped hasten the settlement of the American west and the Puget Sound region.

Early Euro-American settlement activity focused on easily accessible areas such as shorelines and river valleys. Late nineteenth century settlements near the project were at Monohon, located on the Lake Sammamish shoreline over two miles to the south, and at Inglewood, located approximately one mile north of the project. In the late nineteenth century, several Lakes Duwamish and Snoqualmie people claimed land at Monohon, Inglewood, and Squak (present-day Issaquah) under the Indian Homestead Act of 1875 (Miller and Blukis Onat 2004:82). Historical maps note such claims and occupation in the area northwest and southwest of the current project, including along lower reaches of Zackuse Creek, which is named for the *dʔakʷus* (Zackuse) family. Members of the Zackuse family had lived on a homestead on Portage Bay in Seattle and worked at David Denny's mill. James (Jim) Zackuse is frequently mentioned in the early literature of Seattle (Miller and Blukis Onat 2004). He is noted as a Duwamish doctor having a homestead on Lake Union in the northeastern portion of Portage Bay and was an employee/friend of David Denny. The Zackuses and other Native peoples were forced out when Seattle began to expand northwards (Miller and Blukis Onat 2004:78, 82). In 1876, the Zackuses relocated to Monohon and filed for a homestead under the Indian Homestead Act of 1875 (Miller and Blukis Onat 2004:82-83). Bill Sbedzue, a Duwamish man, denounced his heritage on an affidavit dated June 1, 1876, like many other Native people including the elder James Zackuse, in order to legally own land under the Indian Homestead Act of 1875 (Miller and Blukis Onat 2004). In 1876, the Sbedzue family was noted as living in Squak (Issaquah).

Jim Zackuse (b. 1872 – d. 1911), son of James Zackuse, married Amelia Brown (b. 1877 – d. 1960) in 1896. Their three children were Mitchell (b. 1902 – d. 1969), Tom (b. 1904 – d. 1944), and Agnes (b. 1898) (Miller and Blukis Onat 2004). After the early 1900s, many Zakuse descendants identified themselves as Snoqualmie. Historic records show that Amelia Zackuse is listed on the Washington Enrollment and Allotment Applications of Washington Indians, 1911-1919. She is listed on the 1930 U. S. Census, on which she is identified as widowed and the head of the household in Inglewood, King County, Washington (Family Search 2017). At this time, her son Tom was living with her and was working as a laborer at a sawmill. He was listed as single. The family was identified as Indian. Other Zackuse family members are listed on the census as well including Mitchell (age 24) and his wife Ella (age 32; d. 1967) and their two daughters Pauline (age 5) and Rebecca (age 3). The 1940 census also lists additional Zackuse family members (Archives 2017). Thomas Zackuse married Nina (b. 1916) and had three daughters Elsie (b. 1934 – d. 2008), Francis (b. 1936 – d. 2016), and Cora (b. 1939) (Ancestry 2017). Their decedents are members of the Snoqualmie Tribe.

Early economic ventures in the Sammamish vicinity were dominated by the logging industry and facilitated by proximity to navigable waters and railroads. The Seattle Lakeshore & Eastern Railroad completed its line along the eastern shore of Lake Sammamish (then called Squak Lake) in 1889. At about this time, the Allen & Nelson Mill Company established a mill on the shore of Lake Sammamish in Monohon (Lange 1998), over two miles south of the project. By

the end of the nineteenth century, parts of the present-day road network had been established along the east side of Lake Sammamish.

The most prominent lumber mills during the late nineteenth to early twentieth century were C. P. Bratnober (1866-1928) and John Bratnober's (1879-1951) Allen & Nelson Mill Company, later renamed as the Bratnober Lumber Company as of 1924 near Monohon, and Campbell's Mill (which burned down, also in 1924) near Adelaide. The Weyerhaeuser Timber Company also owned a large mill near the present-day City of Snoqualmie. By the 1930s, the majority of the eastern border of Lake Sammamish as well as the adjacent plateau had been logged, and timber harvest operations moved to more viable areas by the 1940s (Dougherty 2013). The Sammamish area was predominantly rural until the 1980s. The project location and surrounding area are now characterized by suburban residential development.

2.6 Historical Records Search

Review of historical maps and aerial imagery provided an understanding of the historic and modern land use, and ownership of the project. The General Land Office (GLO) conducted early cadastral surveys to define or re-establish the boundaries and subdivisions of Federal Lands of the United States so that land patents could be issued transferring the title of the land from the Federal government to individuals. These maps and land serial patent records provide information on land ownership in the 1800s. The GLO surveyed the township surrounding the project beginning in 1874 (USSG 1874) (Figure 10). On this map, the project is located within Tracts 2 and 3 of Section 32. No cultural features are annotated within the project location or immediate vicinity. The shoreline is mapped as a natural feature most similar to the swamp annotation in the BLM glossary. Zackuse Creek is not depicted. Tract 2 was patented to Jim Yonderfrump on December 4, 1884 (Accession Nr: WAOAA 064970; Document Nr: 1789; Authority: May 20, 1862: Homestead Entry Original [12 Stat. 392]). Yonderfrump also owned other land in Section 32 totaling 70 acres. Tract 3 was patented to Bill Sbedzue on February 3, 1883 (Accession Nr: WAOAA 064967; Document Nr: 1479; Authority: May 20, 1862: Homestead Entry Original [12 Stat. 392]). Sbedzue also owned other land in Section 32 totaling 55.75 acres. The 1895 topographic map depicts the Seattle and International Railroad – Snoqualmie Branch had been constructed along the eastern shoreline of Lake Sammamish and few structures were present along the shoreline. The 1897 land classification sheet identifies the area along the shoreline as “cut area not restocking” and the inland portion of the project as “cut areas restocking,” indicating that it had already been logged.

The 1907 county atlas depicts the project as within lands owned by Jim Yonderfrump (Anderson 1907). Surrounding land was primarily large tracts belonging to individuals with few owned by companies in the timber industry. To the north in Section 29, the neighborhood of Inglewood had been platted. Land southwest of the project was labeled as “Indian.” On the 1912 county atlas, Yonderfrump continued to own the land in the eastern portion of the project though Clark now owned the land to the west (Kroll 1912). The road presently named East Lake Sammamish Parkway had been constructed east of the railroad line. The Lake Sammamish Shingle Company was present to the north of the project along the shoreline.

Tax records on file at the Puget Sound Regional Archive dating January 1, 1940 show that as of February 25, 1919, Amelia Zackuse was the fee owner of Tax Lot 50 (Folio 23845½; King

County Tax Parcel 3225069277) comprising the eastern portion of the project (no ground disturbing activity is proposed within this location). In 1920, she built a house on the property described on the 1940 tax assessment as a single story single-family dwelling comprising two rooms and one roofed porch accessed by a gravel road. The main rooms were 16 by 18 feet (288 square feet) and 12 by 14 feet (168 square feet) with the porch measuring 12 by 14 feet (168). It had a wood post block foundation with a tarpaper and shake roof, shiplap exterior walls, and a ceiling height of 7-10 feet. It featured a stove for heat and a well for water, but did not have plumbing. It is noted as a “shack” in poor condition and of “very cheap” construction with an effective age of 5 years in 1940. Amelia Zackuse is shown as the landowner of the eastern portion of the project on the 1926 and 1936 county atlases (Kroll 1926, 1936). Tax records show that J. G. Hammersberg purchased the property on May 19, 1947 and on May 7, 1949 filed a complaint stating that there had been an inaccurate assessed valuation of improvements (\$50.00, 3 buildings) for his property because he had demolished all three structures in November of 1947. Hammersberg sold his property to the current owner in 2011 (King County 2017). Tax records at the Puget Sound Regional Archives demonstrated that King County Tax Parcel 2249850150 (also previously owned by the Zackuse Family) has been and remained vacant land.

Andrew Breckberg owned the western portion of the project beginning on August 8, 1923 according to tax records on file at the Puget Sound Regional Archives, and county atlases list him as the owner in 1926 and 1936 (Kroll 1926, 1936). In 1923, he built a house in the southeastern portion of his land, which was more recently subdivided into an individual parcel (King County Parcel 3225069239) and is unassociated with the proposed project. Breckberg also built a barn on his property in 1939 and is contained within parcel 3225069021, but outside of the project location.

Hammersberg also purchased Breckberg’s land and is listed as the owner on August 27, 1954 according to records held at the Puget Sound Regional Archives. Hammersberg built a single-family residence on the property in 1954 and the structure was first occupied in July 1955. It is described as a single story residence comprised of three rooms totaling 612 square feet. The interior has 8-foot ceilings, painted plasterboard walls, fir floors, a brick fireplace with stove heat, and single bathroom. The exterior is described as a composition-tar roof, an unroofed porch, a wood post concrete block foundation, and shiplap cedar siding. The construction is described as “double” and “cheap,” though the structure was listed as in fair condition. This structure is in close proximity to the proposed project staging area. Hammersberg sold his property to the current owner in 2011 (King County 2017).

Historic aerial imagery is available for the project location beginning in 1969 (NETR 2017). Imagery from this year depicts the project primarily as a younger understory interspersed with stands of more mature trees. East Lake Sammamish Parkway is present in its current location with single-family residences to the west along the shoreline. Subsequent imagery shows that these conditions persist with the exception that the forest has grown to maturity. Historic topographic maps (1956, 1964, 1969, and 1976) corroborate the information depicted in imagery; however, these depict Zackuse Creek following East Lake Sammamish Parkway to the northeast and entering Lake Sammamish north of its current location near Louis Thompson Road NE (NETR 2017). The project is located primarily within King County Tax Parcel 3225069021, listed as a vacant lot (King County Assessor 2017). However, project mapping completed by the

Snoqualmie Tribe noted a derelict house just north of Zackuse Creek in the central portion of the project. This is likely the Hammersberg house described above.

2.7 Cultural Resources Database Review

A review of DAHP's WISAARD database identified previous cultural resource studies, recorded precontact and historic sites, and recorded built environment, which helps gauge the potential and likely nature of cultural resources present within the project vicinity (DAHP 2017b). This review indicates that a cultural resources assessment for a draft Environmental Impact Statement (EIS) conducted by Johnson (2000) was completed for the East Lake Sammamish Trail project; a small portion of the current project intersects this assessment. However, no subsurface investigations were conducted in this location. All activities for interim use of the trail were to occur on the rail bed or immediately adjacent to the rail bed. No significant cultural materials or archaeological sites were identified during field reconnaissance. The railroad bed accommodating the East Lake Sammamish Trail had been recorded as historic era archaeological site 45KI451, the Seattle Lake Shore & Eastern Railroad Grade (DAHP 2017b). It is present within a small segment of the project. This historic site was determined not eligible for listing on historic registers and thus project actions will not be considered an adverse effect.

Rennaker and Raymond (2015) completed an assessment to the southwest of the project (.09 mile) for the restoration of Ebright Creek. Their assessment consisted of limited background research and pedestrian surface survey. No recorded or as-yet unrecorded cultural resources were observed during the course of the assessment and not further archaeological investigations were recommended.

The nearest previously recorded precontact archaeological site is 45KI1228 (DAHP 2017b). This site is a lithic scatter found during monitoring just over one mile north of the project. This site has not yet been formally evaluated for NRHP eligibility.

The Zackuse Family Cemetery is located .04 mile east of the project (see Figure 2). The cemetery is named for the family that homesteaded in that area, whose descendants are represented by the Snoqualmie Tribe (Sundberg 2011). The earliest date of use for this plot is identified as 1910. According to the cemetery description,

Significance narrative: The Zackuse family plot is one of ten family plots in King County (nine surveyed in the 2010 King County Cemetery survey) and one of four Native American historic cemeteries (three previously surveyed, excluding archaeological sites). This property is significant for its associations with post-contact Native American settlement and funerary practices in King County and is the only such site not on Muckleshoot Reservation lands.

The cemetery, part or all of which is now owned by King County, was part of the Zackuse family homestead along East Lake Sammamish. Family members continue to be associated with the Snoqualmie Tribe. The extent and locations of any extant burials are unknown. Burials and/or other significant historic archaeological deposits and/or traditional cultural sites may also be located on adjoining parcels. The site is likely to have been vandalized, as reported in 1999

by a tribal member. Earlier reports suggested that this was a site of earlier Native American settlement as well as a late 19th/early 20th century farmstead.

Physical description: This site has not been verified in the field but is identified as a cemetery in King County records and has been reported as such by informants from the Snoqualmie Tribe. The County-owned parcel was segregated from a larger parcel in 1994 and is land-locked but adjacent to a community open space owned by the homeowners association for a plat to the north. It is most likely in poor condition due to vandalism, land divisions and varying management, and abandonment [Sundberg 2011:4].

According to a Seattle Times article from 2000, the cemetery containing between 50 and 75 graves was desecrated. Two men apparently used a backhoe to remove approximately 20 graves. The only remaining gravestone was believed to be of Thomas Zackuse buried in the cemetery in 1944.

A traditional cultural property has been identified in the Inglewood area northeast of the project (Shantry et al. 2014, in Parvey 2016:5). This site was described as “a triangular boulder surrounded by a roughly oval ring of maple trees. The boulder is a marker stone for a trail that once extended from Lake Sammamish to the Snoqualmie River Valley” (Parvey 2016:5-6).

Historic structures recorded in proximity to the project consist of a 1960 single-family residence, 1910 single-family residence, and a 1925 barn (DAHP 2017b). The nearest historic register property is the Reard-Freed Farmstead, built in 1895 and located at 1807 212th Ave SE (Esser 2001), approximately 1.5 mile east of the project; it was determined eligible for the NRHP. No King County or City of Sammamish landmarks are located in proximity to the project.

3.0 Archaeological Expectations

3.1 Archaeological Predictive Models

The DAHP statewide predictive model uses environmental data about the locations of known archaeological sites to identify where previously unknown sites are more likely to be found. The model correlates locations of known archaeological data to environmental data “to determine the probability that, under a particular set of environmental conditions, another location would be expected to contain an archaeological site” (Kauhi and Markert 2009:2-3). Environmental data categories included in the model are elevation, slope, aspect, distance to water, geology, soils, and landforms. According to the model, the project location is ranked as “Survey Highly Advised: Very High Risk.”

An archaeological sensitivity model was recently developed as a part of an archaeological context statement for King County (Kopperl et al. 2016). This model conditions the archaeological sensitivity of particular area of the modern-day King County landscape on two axes, sensitivity and preservation, across five analytic time periods and overall in relation to recorded archaeological sites (Kopperl et al. 2016:173). This model identifies the current project vicinity as having low sensitivity for Analytic Period (AP) 1 (14,000–12,000 cal BP); a higher sensitivity for AP 2 (12,000–8000 cal BP), AP 3 (8000–5000 cal BP), and AP 4 (5000–2500 cal BP); a moderate sensitivity for AP 5 (2500–200 cal BP) (Kopperl et al. 2016:Figures 8-2-6); and

a moderate to high sensitivity for archaeological sites overall (Kopperl et al. 2016:Figures 8-3 and 8-7); and that the project location is in a setting identified as aggradational (within the creek valley) and stable (within glacially derived terraces) (Kopperl et al. 2016:Figure 8-8).

3.2 Archaeological Expectations

This assessment considers the implications of the predictive model coupled with an understanding of geomorphological context, local settlement patterns, and post-depositional processes to characterize the potential for archaeological deposits to be encountered. The project location is considered to be within an area considered to have a higher probability for archaeological deposits due to its situation in a moderately level area and proximity to two reliable freshwater sources. The location was also owned by two notable tribal families during the late 1800s – early 1900s and is associated with a named place, though, there is no record of activities or structures within the project location or area of proposed excavation.

Mapped surface geology and soils in the project are derived from glacial deposits, colluvium, and alluvium (likely in the form of reworked glacial upland sediments) indicating that archaeology would be present at or the near surface of these deposits or buried below more recently deposited sediments. Historic land use in the project location consisted of logging indicating that the upper portion of the landscape has undergone disturbance making it less likely that intact (i.e. significant) archaeology may be present in the project location. The residential development (single-family residence, driveway, and outbuilding) within a portion of the project would have entailed the removal of all organic overburden to leave mineral soils exposed, and some degree of cut and fill construction, with an end goal of creating a uniform grade for development. As a result, this area of the project is anticipated to be disturbed. Zackuse Creek also appears to have changed course over time and may have reworked potential cultural deposits on its relict banks.

Precontact activities in the project location could have included overland travel, camps, and/or resource gathering/hunting activities as well as possible ceremonial activities. These activities could be represented by a material record that could include middens, thermal features, fire-modified rock scatters, lithic scatters, bone or stone tools or implements, faunal remains, and/or other materials that may represent more short-term use of the landscape. Historic activities that occurred within the project vicinity included overland travel, logging, homesteading, and/or 1950s development as identified in the tax assessor records. Materials or deposits that may be identified from such activities could include tools or implements and/or culturally modified trees from logging activity, structural debris or objects from homesteading and later residential development, or items lost or discarded from overland travel.

4.0 Field Investigations

Total Area Examined: The entire project (~5 acres).

Areas not examined: None.

Date(s) of Survey: September 13 and 14, 2017

Weather and Surface Visibility: Weather conditions were ~70 degrees and sunny. Mineral soil visibility in the project location was typically poor due to dense vegetation, a paved roadway, and graveled trail, but mineral soils were exposed intermittently along creek beds and vegetation removal areas that had been recently cut.

Fieldwork conducted by: Sonja Kassa and Jessica Gardner. Notes are on file with CRC. A Snoqualmie Indian Tribe cultural resources staff member was onsite during fieldwork.

Field Methodology: Fieldwork consisted of pedestrian surface survey and subsurface testing via hand excavated shovel test probes. Surface survey was conducted in meandering transects due to trees and dense vegetation, and saturated sediments, throughout the project targeting mineral soil exposures. Probes were manually excavated with a shovel measuring 40 centimeters in diameter and all sediments were passed through ¼-inch hardware mesh to screen for artifacts. Probe locations were recorded using a handheld GPS unit.

Field Investigations: Pedestrian survey provided information on the current condition of the project and helped to gauge the potential for as-yet unknown archaeology within the project location. The archaeologists entered the project via the existing overgrown gravel driveway generally trending north-south that would be used to access the project during construction. The driveway had been partially down cut into the existing hillside on the east and built up into the low to the west. The driveway opened into a clearing containing a standing, but a dilapidated outbuilding and a partially burnt structure that appeared to have been a single-family structure (Figure 11 and 12). This area had been cleared of trees, but was overgrown with thick Himalayan blackberry and bracken fern, standing up to ten feet in height in the densest areas. Where possible, the vegetation was cleared to determine if any structures or objects were hidden in the vegetation. The only objects identified were a debris pile of metal tools and pipes, and metal oil drums adjacent to the outbuilding and the area appeared to have been used for parking. This area is where staging for the proposed project is planned. The dilapidated structures and associated objects were photo-documented and recorded as a historic site.

The noxious weed clearing areas were examined next (Figures 13 and 14). These locations had recently been cleared of vegetation, primarily Himalayan blackberry, and the smaller southern area had also been previously planted. Both locations were moderately sloped. The northern eradication area abutted segments of the northern edge of Zackuse Creek. The creek in this location was deeply incised and appeared to have been dredged in at least one location with spoils deposited adjacent to the bank. Near surface sediments had been disturbed as a result of weed eradication.

The lower reach of Zackuse Creek west of the weed eradication areas and in the area of proposed realignment was primarily a wetland with one to two main creek channels and smaller braided streams and wetlands surrounding these (Figures 15 and 16). A possible culturally modified tree, located north of the creek realignment channel, was identified by a Snoqualmie tribal cultural resource staff member; this tree is not located within areas of anticipated disturbance and will not be impacted by the project (Figure 17). The existing main creek channel and the proposed creek realignment was surveyed to where it enters a culvert at East Lake Sammamish Parkway. Surface conditions consisted of saturated soils with standing or running water in most locations.

Mineral soil visibility was only present in and along the margins of the creek bed which was generally cobbly transitioning to thick silts as the creek leveled to the west.

The locations of culvert replacements below East Lake Sammamish Parkway were surveyed via visual reconnaissance and were photo-documented (Figures 18 and 19). Conditions in these locations were generally steep alongside the road and trail margins with the creek present in an incised channel hidden by dense vegetation. Underground utilities were present along East Lake Sammamish Parkway.

Eighteen shovel test probes were excavated within the project location (Figure 20; Table 1). Probes ranged between 28 and 110 centimeters below surface. Probes were excavated in the access route and staging area, noxious weed eradication areas, the existing creek channel and banks, and channel realignment location. Subsurface deposits varied in composition dependent upon the location within the project (Figures 21 – 23). Observed soils consisted of imported gravels and glacial sediments in the access, staging area, and noxious weed treatment locations. In the current creek alignment and realignment locations, sediments were characterized as alluvium and ranged from reworked glacial gravels and cobbles devoid of fines in the east where the creek had higher energy flows due to the moderately steeper terrain, to interbedded silts and clay with sands and gravels indicating seasonal flows. No intact precontact archaeological materials or buried anthropogenic surfaces were identified during the course of this survey. Probes were backfilled immediately following documentation.

5.0 Results and Recommendations

5.1 Results

Cultural Resources Identified within the APE: Historic site 45KI451, the Seattle Lake Shore & Eastern Railroad Grade, is present crossing the western terminus of the project location and is presently represented by the East Lake Sammamish Trail (DAHP 2017b). This historic site was previously determined not eligible for listing on historic registers.

A previously unrecorded 1954 partially burned and dilapidated single-family residence and outbuilding were documented as a historic era archaeological site. This site is described in Attachment B and evaluated for historic significance below.

5.2 Evaluation of Historical Significance

Resources are typically defined as significant or potentially significant if they are identified as of special importance to an ethnic group or Indian tribe or if the resource is considered to meet certain eligibility criteria for local, state, or national historic registers, such as the National Register of Historic Places (NRHP). Based on NRHP assessment criteria developed by the National Park Service, historical significance is conveyed by properties:

- A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
 - B. That are associated with the lives of persons significant in our past; or
 - C. That embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction;
- or

- D. That have yielded, or may be likely to yield, information important in prehistory or history [NPS 2002:2].

Criteria used for assessment of potential eligibility for the Washington Heritage Register (WHR) are similar to NRHP criteria. Criteria to qualify include (DAHP 2017c):

- A building, site, structure or object must be at least 50 years old. If newer, the resource should have documented exceptional significance.
- The resource should have a high to medium level of integrity, i.e. it should retain important character defining features from its historic period of construction.
- The resource should have documented historical significance at the local, state or federal level.
- ACHP review and listing requires the consent of the owner.

According to the NRHP guidelines, the “essential physical features” of a property must be intact for it to convey its significance, and the resource must retain its integrity, or “the ability of a property to convey its significance.” The seven aspects of integrity are:

- Location (the place where the historic property was constructed or the place where the historic event occurred);
- Design (the combination of elements that create the form, plan, space, structure, and style of a property);
- Setting (the physical environment of a historic property);
- Materials (the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property);
- Workmanship (the physical evidence of the crafts of a particular culture or people during any given period of history or prehistory);
- Feeling (a property's expression of the aesthetic or historic sense of a particular period of time); and
- Association (the direct link between an important historic event or person and a historic property) [NPS 2002:44].

The King County Designation Criteria (KC 20.62.040) is described as follows (King County 2017):

A. An historic resource may be designated as a King County landmark if it is more than forty years old or, in the case of a landmark district, contains resources that are more than forty years old, and possesses integrity of location, design, setting, materials, workmanship, feeling, or association, or any combination of the foregoing aspects of integrity, sufficient to convey its historic character, and:

1. Is associated with events that have made a significant contribution to the broad patterns of national, state or local history;
2. Is associated with the lives of persons significant in national, state or local history;
3. Embodies the distinctive characteristics of a type, period, style or method of design or construction, or that represents a significant and distinguishable entity whose components may lack individual distinction;
4. Has yielded, or may be likely to yield, information important in prehistory or history; or
5. Is an outstanding work of a designer or builder who has made a substantial contribution to the art.

B. An historic resource may be designated a community landmark because it is an easily identifiable visual feature of a neighborhood or the county and contributes to the distinctive quality or identity of such neighborhood or county or because of its association with significant historical events or historic themes, association with important or prominent persons in the community or county or recognition by local citizens for substantial contribution to the neighborhood or community. An improvement or site qualifying for designation solely by virtue of satisfying criteria set out in this section shall be designated a community landmark and shall not be subject to K.C.C. 20.62.080.

C. Cemeteries, birthplaces or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature and properties that have achieved significance within the past forty years shall not be considered eligible for designation. However, such a property shall be eligible for designation if they are:

1. An integral part of districts that meet the criteria set out in subsection A. of this section or if it is:
2. A religious property deriving primary significance from architectural or artistic distinction or historical importance;
3. A building or structure removed from its original location but that is significant primarily for its architectural value, or which is the surviving structure most importantly associated with a historic person or event;
4. A birthplace, grave or residence of a historical figure of outstanding importance if there is no other appropriate site or building directly associated with his or her productive life;
5. A cemetery that derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features or from association with historic events;
6. A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner or as part of a restoration master plan, and when no other building or structure with the same association has survived;
7. A property commemorative in intent if design, age, tradition or symbolic value has invested it with its own historical significance; or
8. A property achieving significance within the past forty years if it is of exceptional importance. (Ord. 17635 § 2, 2013: Ord. 10474 § 4, 1992: Ord. 4828 § 4, 1980).

Based on these formal evaluation criteria, data acquired during field investigations, and supporting resources, the evidence gathered does not support this site's association with events or persons significant to local, state, or national history. The single-family residence has suffered fire damage and is partially collapsed. It is of a typical, low-grade design and materials, and is not connected to a notable architect. It does not appear to contain information that would be important to enhancing the historic context of Sammamish, the State of Washington, or the country. It is in disrepair detracting from aspects of integrity including design, setting, and feeling, diminishing the properties' essential physical features that would convey potential historical significance. Subsurface excavation in and adjacent to the site did not yield evidence of intact subsurface deposits that would enrich the site's significance. Consequently, test excavations are not considered necessary to evaluate this site. Of the seven aspects of integrity, this site appears to only embody integrity of location. Therefore, this site was not considered

eligible for listing on historic registers nor are any further archaeological investigations recommended.

5.3 Conclusions and Recommendations

This assessment was conducted to determine potential effects of this project on cultural resources. Background research identified historic site 45KI451, the Seattle Lake Shore & Eastern Railroad Grade, on the western margin of the project. This resource was determined not eligible for historic registers and will not be affected by the project. Field investigations identified a previously unrecorded site comprised of a 1954 partially burnt and collapsed single-family residence and associated debris and outbuilding of unknown age. This site was evaluated for listing on historic registers and was recommended not eligible. Surface survey identified one possible culturally modified tree as identified by a Snoqualmie tribal representative. The location of this tree was recorded and is not within an area of anticipated disturbance and will not be affected. Subsurface testing did not encounter cultural materials or deposits and encountered both glacial and alluvial deposits. The western portion of the project crossing East Lake Sammamish Parkway, East Lake Sammamish Trail, and East Shore Lane was not testable due to the presence of the road and underground utilities.

Based on the higher probability for this location to contain archaeological resources and the presence of untestable locations during survey, CRC recommends archaeological monitoring for ground disturbing activity associated with the stream realignment and culvert replacement. It is unknown if the newly documented historic site will be impacted by project activities at this time; however, this site is not recommended eligible for historic registers and impacts to it would not be considered an adverse effect. Should the structural elements of the site be removed, archaeological monitoring would be warranted. The project will also replace an existing culvert below the East Lake Sammamish Trail, a historic railroad grade 45KI451 determined not eligible for historic registers. This replacement is not considered an adverse effect to this resource. No archaeological excavation permits would likely be required for disturbance in either of the noted historic era sites. Based on communication with Snoqualmie Indian Tribe cultural resources staff, it is recommended that the City consult with the Tribe regarding their interest in being present during project ground disturbance.

In the event that any ground-disturbing or other construction activities result in the inadvertent discovery of archaeological resources, work should be halted in the immediate area, and contact made with county officials, the technical staff at DAHP, and tribal representatives. A protocol for inadvertent discoveries is provided in Attachment C. Work should be stopped until further investigation and appropriate consultation have concluded. In the unlikely event of the inadvertent discovery of human remains, work should be immediately halted in the area, the discovery covered and secured against further disturbance, and contact effected with law enforcement personnel, consistent with the provisions set forth in RCW 27.44.055 and RCW 68.60.055.

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8.0 Figures and Tables



Figure 1. USGS Issaquah, WA (2001) 7.5-minute quadrangle annotated with the approximate project location in red.

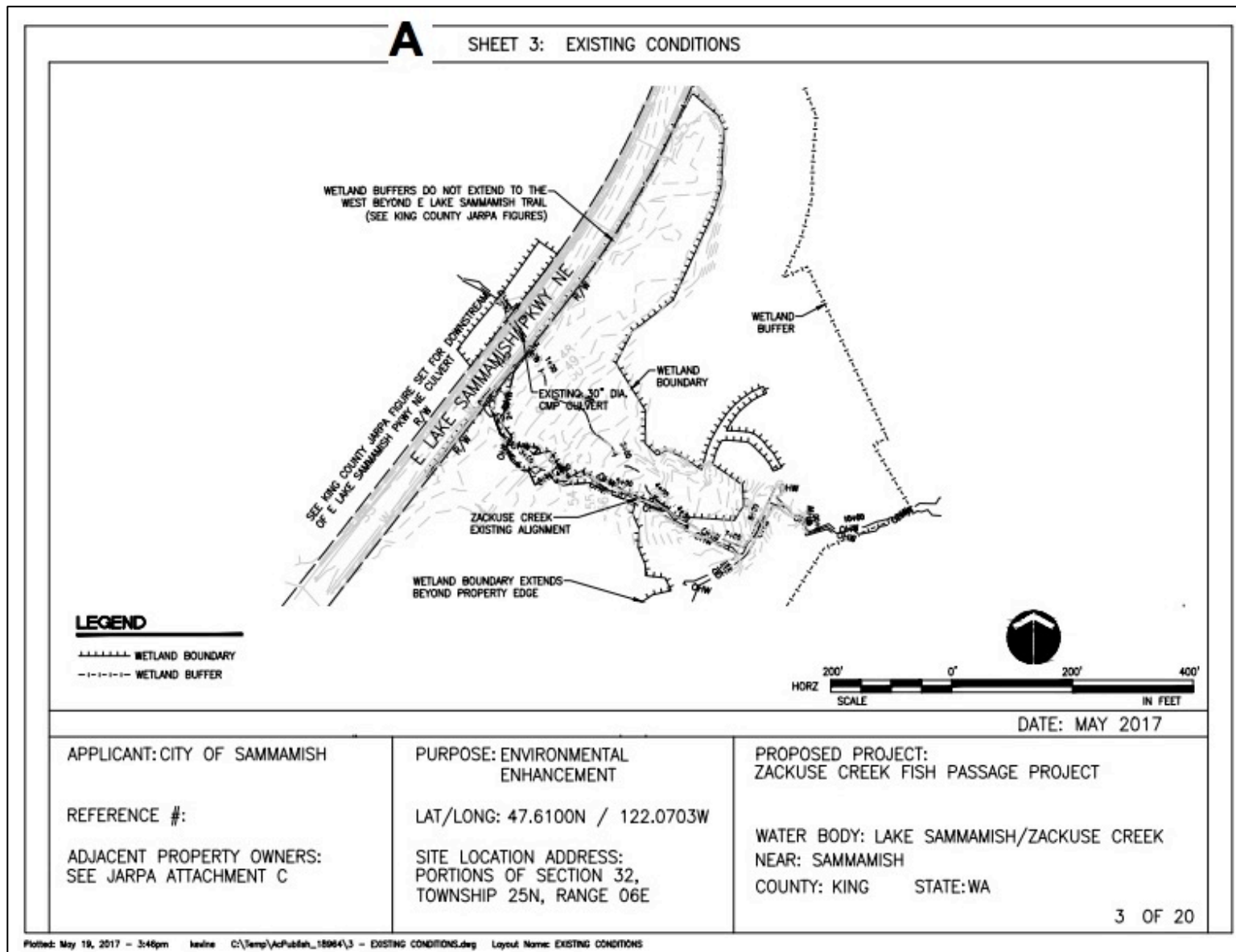


Figure 2. Project plans – existing conditions, provided by Otak, Inc.

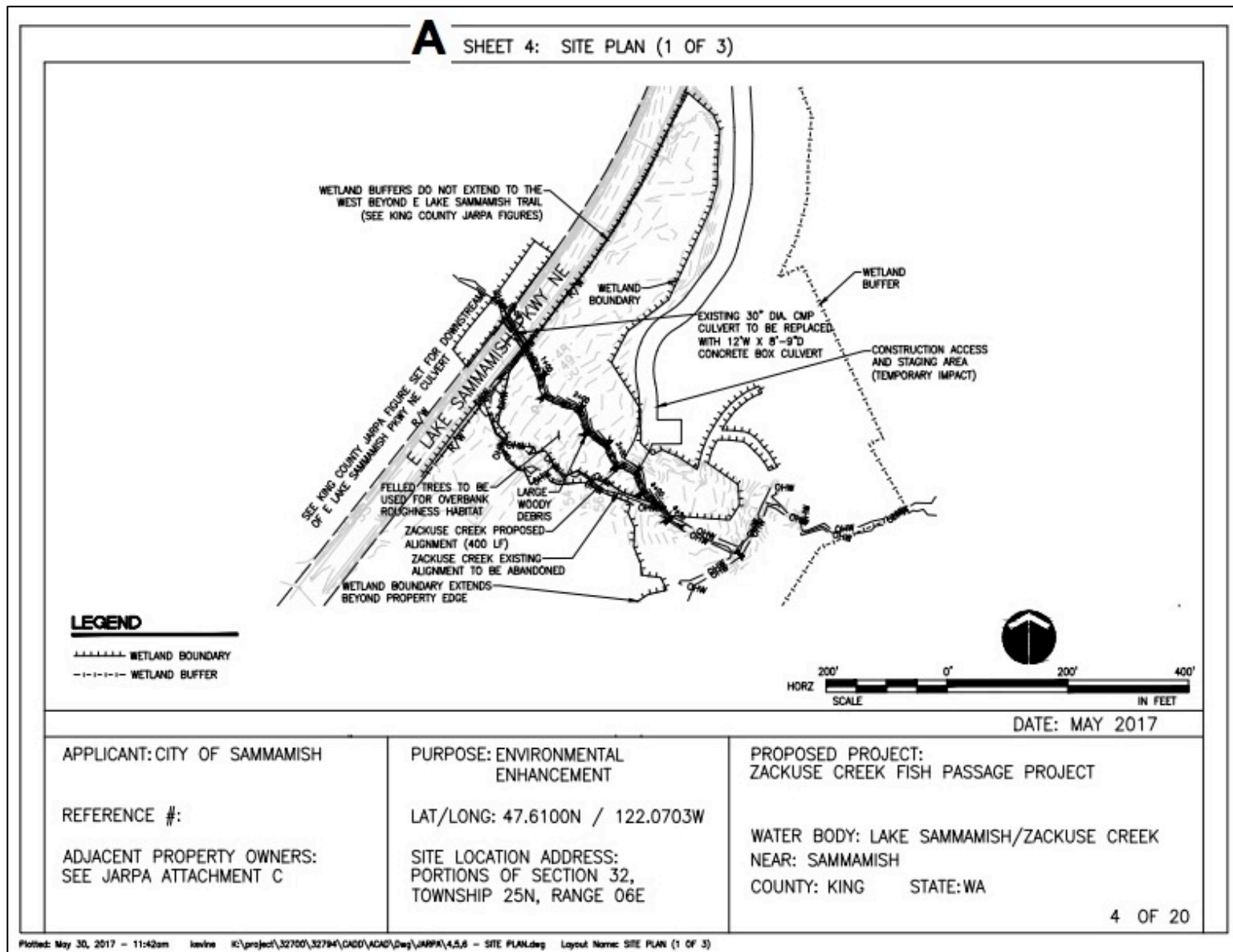


Figure 3. Project plans – site plan, provided by Otak, Inc.

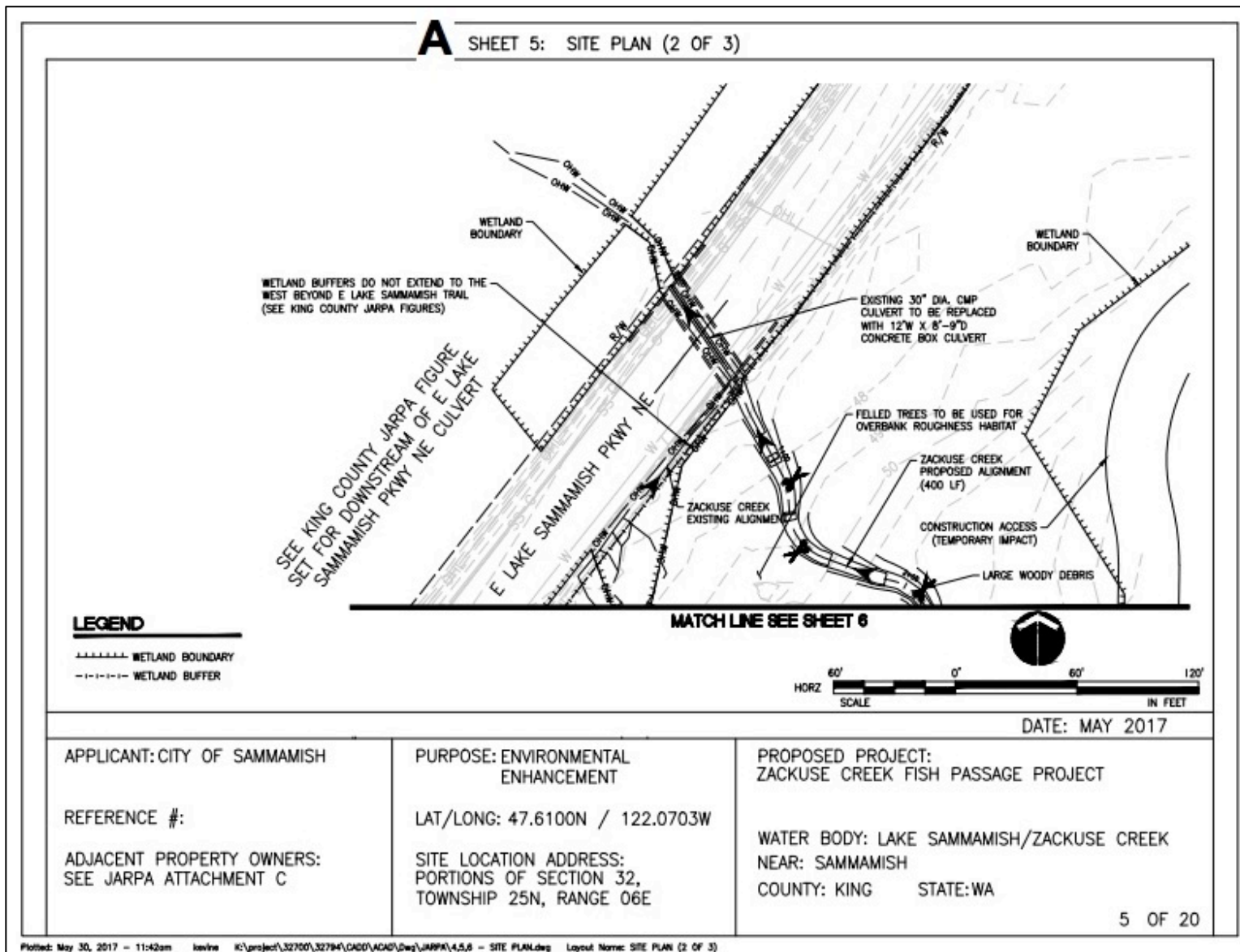


Figure 4. Project plans – site plan, provided by Otak, Inc.

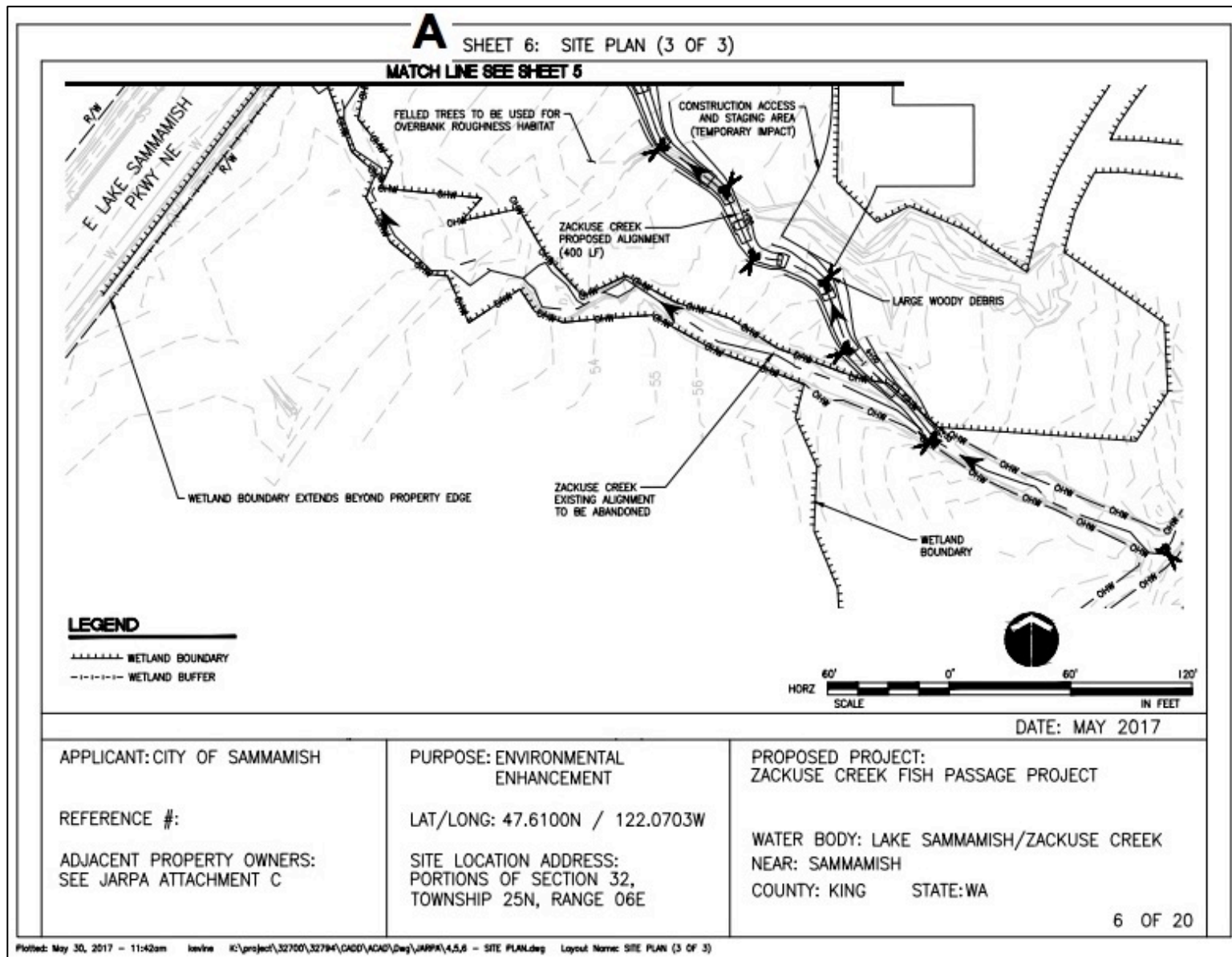


Figure 5. Project plans – site plan, provided by Otak, Inc.

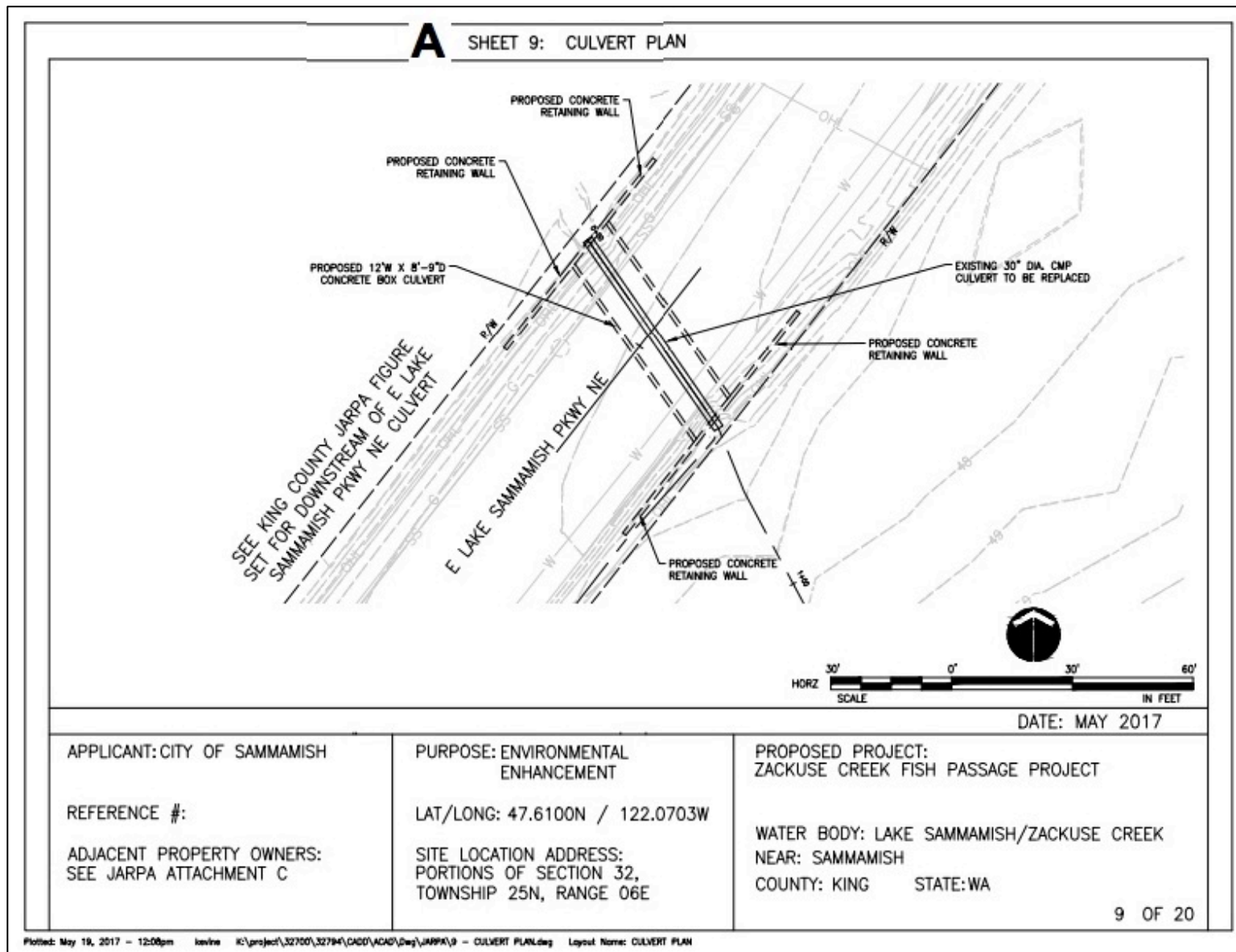


Figure 6. Project plans – culvert plan, provided by Otak, Inc.

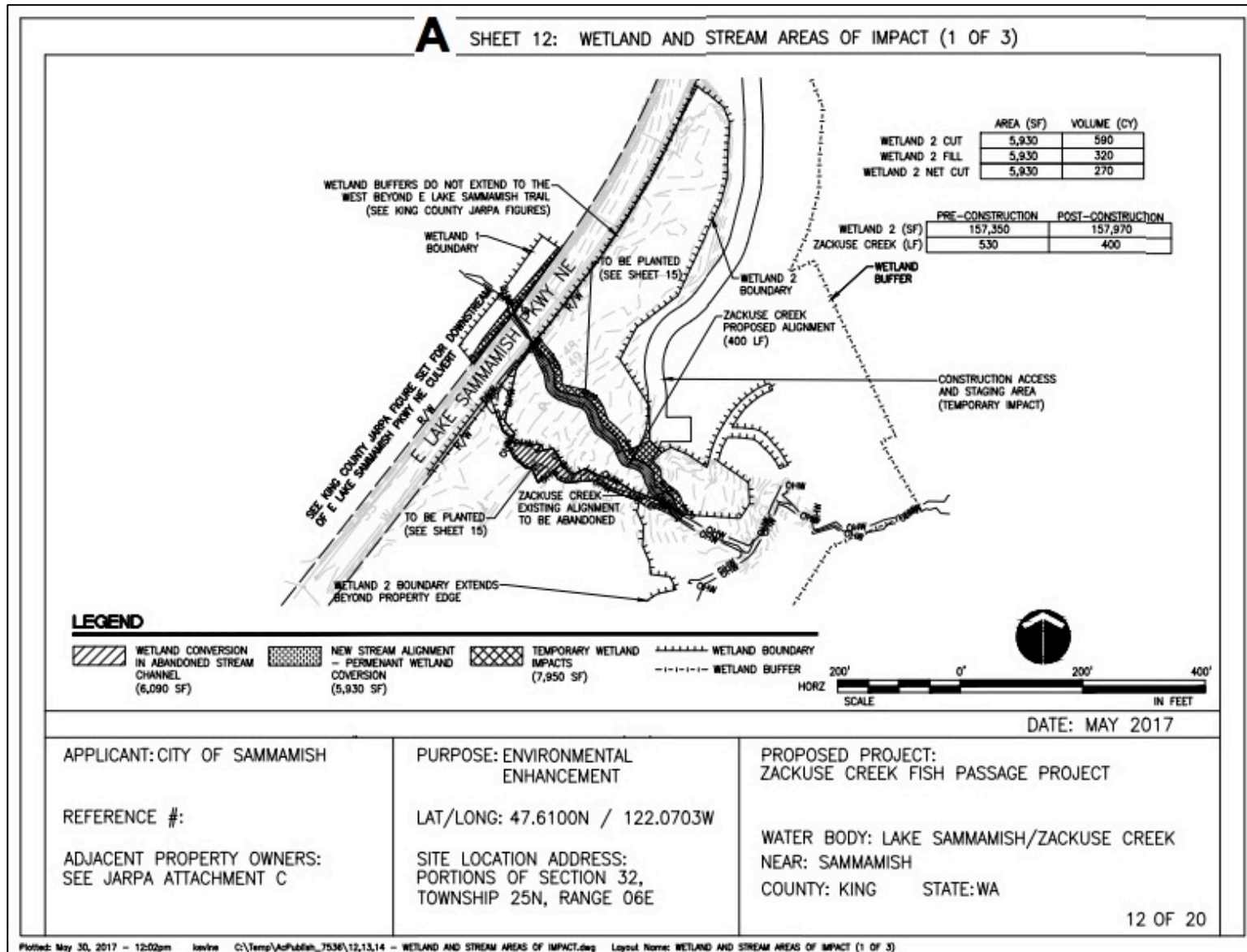
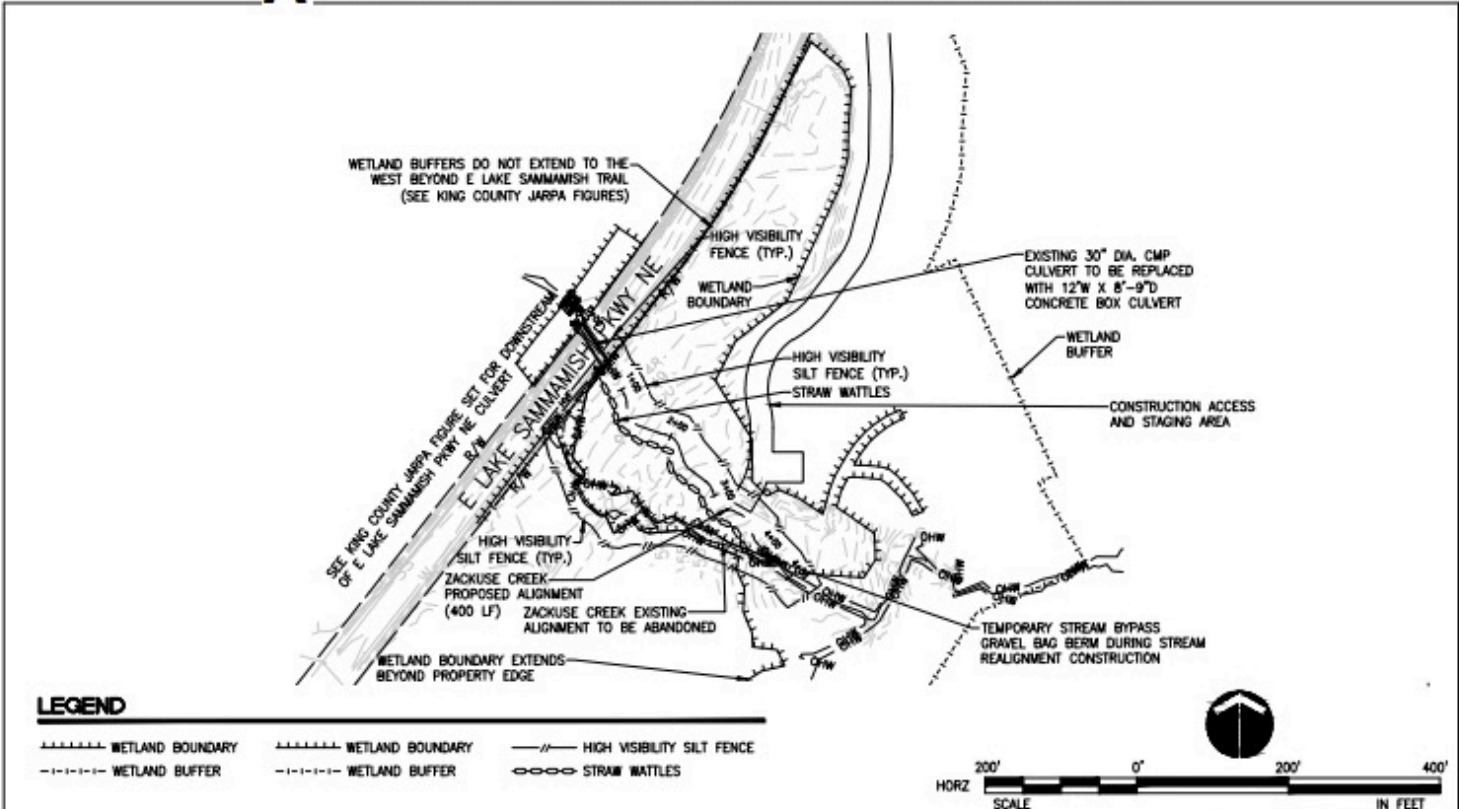


Figure 7. Project plans – wetland and stream areas of impact, provided by Otak, Inc.

A SHEET 18: TEMPORARY EROSION AND SEDIMENT CONTROL (TESC) (1 OF 3)



DATE: MAY 2017		
APPLICANT: CITY OF SAMMAMISH REFERENCE #: ADJACENT PROPERTY OWNERS: SEE JARPA ATTACHMENT C	PURPOSE: ENVIRONMENTAL ENHANCEMENT LAT/LONG: 47.6100N / 122.0703W SITE LOCATION ADDRESS: PORTIONS OF SECTION 32, TOWNSHIP 25N, RANGE 06E	PROPOSED PROJECT: ZACKUSE CREEK FISH PASSAGE PROJECT WATER BODY: LAKE SAMMAMISH/ZACKUSE CREEK NEAR: SAMMAMISH COUNTY: KING STATE: WA
18 OF 20		

Plotted: May 30, 2017 - 11:56am k:\n\ne K:\project\32700\32794\CADD\ACAD\dwg\JARPA\18,19,20 - TEMPORARY EROSION AND SEDIMENT CONTROL (TESC).dwg Layout Name: TEMPORARY EROSION AND SEDIMENT CONTROL (TESC) (1 OF 3)

Figure 8. Project plans – temporary erosion and sediment control, provided by Otak, Inc.

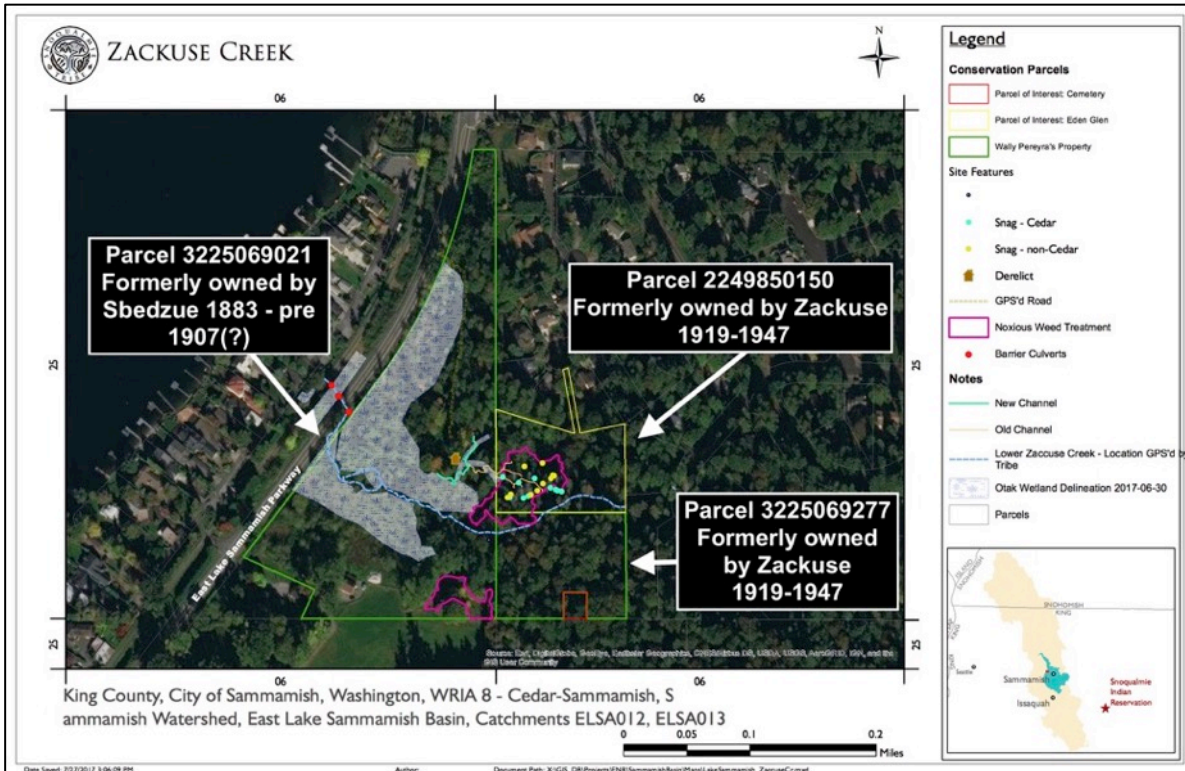


Figure 9. Satellite imagery annotated with the tax parcels, noxious weed treatment areas (pink), wetlands, and dilapidated residence. Historic parcel ownership by tribal families is noted.



Figure 10. USSG (1874) map annotated with the approximate project location in red.



Figure 11. View of the partially burned and collapsed single-family residence; view is to the east.



Figure 12. View of the outbuilding (age unknown); view is to the southwest.



Figure 13. View of the conditions within the northern noxious weed treatment location; view is to the north.



Figure 14. View of the conditions within the southern noxious weed treatment location; view is to the west.



Figure 15. View of the observed conditions along the western project segment of Zackuse Creek near East Lake Sammamish Parkway; view is to the west.



Figure 16. View of the observed conditions along the eastern project segment of Zackuse Creek; view is to the west.



Figure 17. View of possible culturally modified tree branch identified by a Snoqualmie Tribal cultural resource staff member; view is to the southwest.



Figure 18. View of the Zackuse Creek culvert on the eastern margin of East Lake Sammamish Parkway; view is to the south.



Figure 19. View of the western terminus of the proposed project; view is to the east. Green marker depicts the location of the stream. Photograph taken from East Lake Sammamish Trail.

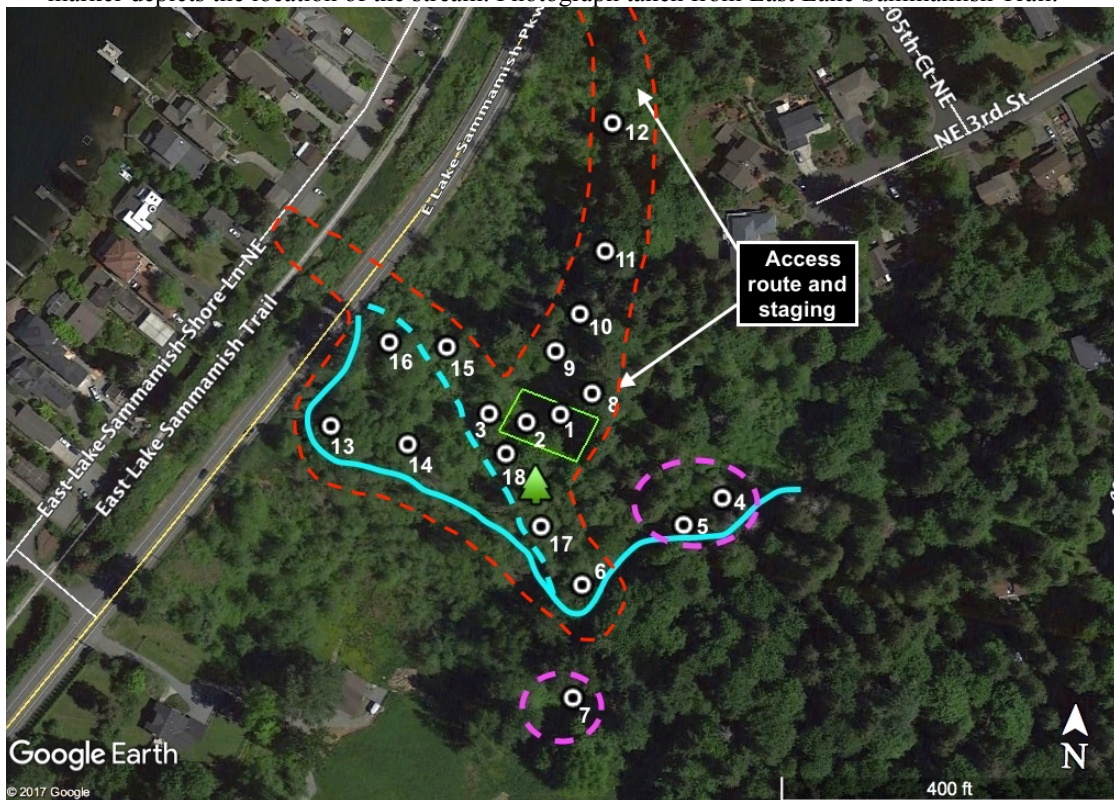


Figure 20. Satellite imagery annotated with the excavated shovel test probes, approximate location of creek and new alignment (blue), potential culturally modified tree, and noxious weed treatment locations (pink). The staging area and location of proposed excavation are outlined in red.

Table 1. Location of probes and descriptions of subsurface conditions within the project location.

Probe #	Probe Location (WGS84 Zone 10 UTM coordinates, +/- 3 m)	Stratigraphic Description (depths are centimeters below surface [cmbs])	Cultural Materials Found
1	570013 m E 5273431 m N	0-29: compact dark grayish brown very gravelly sandy loam, roots (disturbed glacial) 29-38: very compact dark yellowish brown very gravelly sandy loam (intact glacial) 38-59: very compact grayish brown very gravelly sandy loam (intact glacial)	none
2	569999 m E 5273428 m N	0-30: grayish brown gravelly (imported pea gravel), cobbly loam, window glass and metal fragments (imported gravels/disturbed glacial) 30-52: yellowish brown gravelly, cobbly loam (intact glacial)	window glass and metal fragments 0-30 cmbs
3	569985 m E 5273430 m N	0-18: grayish brown gravelly, cobbly loam with organics and roots (disturbed glacial) 18-28: yellowish brown gravelly, cobbly sandy loam (intact glacial)	none
4	570077 m E 5273402 m N	0-35: dark grayish brown very gravelly sandy loam with roots (disturbed glacial) 35-65: dark yellowish brown very gravelly sandy loam, poorly sorted sub-angular to sub-rounded gravels and cobbles (intact glacial)	none
5	570063 m E 5273390 m N	0-50: grayish brown gravelly, cobbly sandy loam (disturbed glacial) 50-72: yellowish brown gravelly, cobbly sandy loam (intact glacial)	clear glass fragments 0-50 cmbs
6	570024 m E 5273365 m N	0-18: grayish brown gravelly, cobbly sandy loam (reworked alluvium) 18-50: gray gravelly, cobbly sandy loam (reworked alluvium) 50-85: dark gray sandy loam intermixed with silt loam, roots, organics, a woody debris (reworked alluvium) water table at 85 cmbs	none
7	570022 m E 5273322 m N	0-18: brownish gray gravelly sandy loam 18-69: gray cobbly sandy loam (reworked glacial)	none
8	570025 m E 5273440 m N	0-27: dark grayish brown gravelly sandy loam, many roots 27-32: light gray gravelly sandy loam, very firm to hard 32-48: grayish yellowish brown very gravelly sandy loam terminate due to root obstructions	1 clear glass shard and 1 very small red brick fragment 0-27 cmbs
9	570010 m E 5273456 m N	0-10: extremely compact angular gravelly gray loam (imported gravels) 10-12: extremely compact yellowish gray gravelly, cobbly loam (glacial)	Non-diagnostic whiteware and aluminum <i>Sprite</i> cap 0-10 cmbs
10	570019 m E 5273471 m N	0-2: leaf litter and decomposing organics 2-9: extremely compact angular gravels and fines 9-27: compact grayish brown very gravelly sandy loam	none
11	570028 m E 5273496 m N	0-11: compact grayish brown angular gravelly loam 11-31: yellowish brown gravelly, cobbly loam (intact glacial)	none

Probe #	Probe Location (WGS84 Zone 10 UTM coordinates, +/- 3 m)	Stratigraphic Description (depths are centimeters below surface [cmbs])	Cultural Materials Found
12	570029 m E 5273547 m N	0-5: decomposing organics 5-18: compact angular gravels and fines (imported gravels) 18-30: grayish brown and yellowish brown gravelly sandy loam, mottled, disturbed glacial material 30-69: gray sand and gravels mixed with dark brown organic silts, moist, alluvial deposits	none
13	569922 m E 5273423 m N	0-70: gray to dark grayish brown silty clay with gray sand mottling and organics, some gravels present 60-70 cmbs 70-73: gray gravelly silty clay, hard water table at 50 cm. suction present in soils below the water table. Possibly a relict channel	none
14	569953 m E 5273417 m N	0-11: brown silty sand 11-26: gray silty sand 26-72: dark brown silty clay 72-90: gray gravelly, cobbly silty clay 90-100: reddish brown clay 100-110: gray gravelly, cobbly sandy loam water table at 48 cm	none
15	569967 m E 5273456 m N	0-42: dark brown silty clay with organics 42-65: dark gray sandy loam with gravels and cobbles. terminated on cobble. water table at 49 cm	none
16	569944 m E 5273457 m N	0-25: brown gravelly loam, organics 25-53: moist gray gravelly, cobbly sand 63-83: moist brown gravelly loam, organics 83-97: wet gray gravelly, cobbly sand water table at 73 cmbs	none
17	570007 m E 5273387 m N	0-29: gray gravelly, cobbly sandy loam 29-50: moist gray coarse sand with trace silt 50-65: wet dark gray silty sand with gravels	none
18	569992 m E 5273415 m N	0-40: moist brown gravelly, cobbly sandy loam, roots 40-65: wet gray gravelly, cobbly silty sand water table at 40 cmbs	modern clear/brown glass and metal fragments 0-50 cmbs



Figure 21. Typical subsurface conditions observed in the staging and access area in proximity to the historic site.



Figure 22. Typical subsurface conditions observed in the Zackuse Creek braided system.



Figure 23. Typical subsurface conditions observed in the northern noxious weed treatment location.

Attachment A. Correspondence between CRC and area Tribes.



Cultural Resource Consultants

August 31, 2017

Muckleshoot Indian Tribe
Laura Murphy
39015 172nd Ave SE
Auburn, WA 98092

Re: Cultural Resources Assessment for the Zackuse Creek Fish Passage Project, Sammamish, WA

Dear Laura:

I am writing to inform you of a cultural resources assessment for the above referenced project and to seek additional information about the project area the Tribe may have that is not readily available through other written sources. This letter is on a technical staff-to-technical staff basis to inquire about project-related cultural information or concerns. It is not intended as formal government-to-government consultation to be initiated by the appropriate regulatory agency.

The project is located in Section 32, Township 25 North, Range 06 East Willamette Meridian at East Lake Sammamish (ELS) Parkway NE, ELS Trail, ELS Shore Lane NE in Sammamish. The purpose of the project is to provide fish passage and suitable spawning and rearing habitat for native kokanee salmon within Zackuse Creek. Currently, three undersized culverts impede fish passage. The concrete culverts are a partial fish passage barrier due to their slight elevations which contribute to high velocity water flows. Immediately upstream of the culverts and east of ELS Parkway, Zackuse Creek flows in a poorly defined channel through a valley bottom wetland before turning 90 degrees at the ELS Parkway road embankment to enter the culvert.

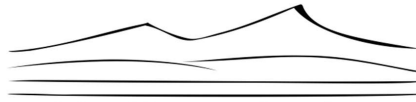
We are in the process of reviewing available information. Background research will include a site files search at the Washington State Department of Archaeology and Historic Preservation, review of previously recorded cultural resource reports, and review of pertinent published literature and ethnographies. Results of our investigations will be presented in a technical memo.

We are aware that not all information is contained within published sources. Should the Tribe have additional information to support our assessment, we would very much like to include it in our study. Please contact me at sonja@crcwa.com or 360-395-8879 should you wish to provide any comments. I appreciate your assistance in this matter and look forward to hearing from you.

Sincerely,

Sonja Kassa
Projects Manager

CULTURAL RESOURCE CONSULTANTS, LLC., BALLARD LABS, 1416 NW 46TH ST, STE 105 PMB346, SEATTLE, WA 98107
PHONE 206.855.9020 - sonja@crcwa.com



Cultural Resource Consultants

August 31, 2017

Snoqualmie Indian Tribe
Steven Mullen-Moses
PO Box 969
Snoqualmie, WA 98065

Re: Cultural Resources Assessment for the Zackuse Creek Fish Passage Project, Sammamish, WA

Dear Steven:

I am writing to inform you of a cultural resources assessment for the above referenced project and to seek additional information about the project area the Tribe may have that is not readily available through other written sources. This letter is on a technical staff-to-technical staff basis to inquire about project-related cultural information or concerns. It is not intended as formal government-to-government consultation to be initiated by the appropriate regulatory agency.

The project is located in Section 32, Township 25 North, Range 06 East Willamette Meridian at East Lake Sammamish (ELS) Parkway NE, ELS Trail, ELS Shore Lane NE in Sammamish. The purpose of the project is to provide fish passage and suitable spawning and rearing habitat for native kokanee salmon within Zackuse Creek. Currently, three undersized culverts impede fish passage. The concrete culverts are a partial fish passage barrier due to their slight elevations which contribute to high velocity water flows. Immediately upstream of the culverts and east of ELS Parkway, Zackuse Creek flows in a poorly defined channel through a valley bottom wetland before turning 90 degrees at the ELS Parkway road embankment to enter the culvert.

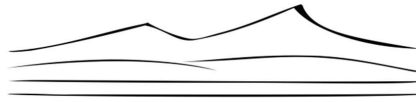
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Sincerely,

Sonja Kassa
Projects Manager

CULTURAL RESOURCE CONSULTANTS, LLC., BALLARD LABS, 1416 NW 46TH ST, STE 105 PMB346, SEATTLE, WA 98107
PHONE 206.855.9020 - sonja@crcwa.com



Cultural Resource Consultants

August 31, 2017

Stillaguamish Tribe
Kerry Lyste, Cultural Resources
3322 236th Street NE
Arlington, WA 98223

Re: Cultural Resources Assessment for the Zackuse Creek Fish Passage Project, Sammamish, WA

Dear Kerry:

I am writing to inform you of a cultural resources assessment for the above referenced project and to seek additional information about the project area the Tribe may have that is not readily available through other written sources. This letter is on a technical staff-to-technical staff basis to inquire about project-related cultural information or concerns. It is not intended as formal government-to-government consultation to be initiated by the appropriate regulatory agency.

The project is located in Section 32, Township 25 North, Range 06 East Willamette Meridian at East Lake Sammamish (ELS) Parkway NE, ELS Trail, ELS Shore Lane NE in Sammamish. The purpose of the project is to provide fish passage and suitable spawning and rearing habitat for native kokanee salmon within Zackuse Creek. Currently, three undersized culverts impede fish passage. The concrete culverts are a partial fish passage barrier due to their slight elevations which contribute to high velocity water flows. Immediately upstream of the culverts and east of ELS Parkway, Zackuse Creek flows in a poorly defined channel through a valley bottom wetland before turning 90 degrees at the ELS Parkway road embankment to enter the culvert.

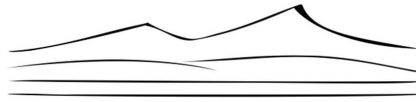
We are in the process of reviewing available information. Background research will include a site files search at the Washington State Department of Archaeology and Historic Preservation, review of previously recorded cultural resource reports, and review of pertinent published literature and ethnographies. Results of our investigations will be presented in a technical memo.

We are aware that not all information is contained within published sources. Should the Tribe have additional information to support our assessment, we would very much like to include it in our study. Please contact me at sonja@crcwa.com or 360-395-8879 should you wish to provide any comments. I appreciate your assistance in this matter and look forward to hearing from you.

Sincerely,

Sonja Kassa
Projects Manager

CULTURAL RESOURCE CONSULTANTS, LLC., BALLARD LABS, 1416 NW 46TH ST, STE 105 PMB346, SEATTLE, WA 98107
PHONE 206.855.9020 - sonja@crcwa.com



Cultural Resource Consultants

August 31, 2017

Tulalip Tribes
Richard Young
6410 23rd Ave NE
Tulalip, WA 98271

Re: Cultural Resources Assessment for the Zackuse Creek Fish Passage Project, Sammamish, WA

Dear Richard:

I am writing to inform you of a cultural resources assessment for the above referenced project and to seek additional information about the project area the Tribe may have that is not readily available through other written sources. This letter is on a technical staff-to-technical staff basis to inquire about project-related cultural information or concerns. It is not intended as formal government-to-government consultation to be initiated by the appropriate regulatory agency.

The project is located in Section 32, Township 25 North, Range 06 East Willamette Meridian at East Lake Sammamish (ELS) Parkway NE, ELS Trail, ELS Shore Lane NE in Sammamish. The purpose of the project is to provide fish passage and suitable spawning and rearing habitat for native kokanee salmon within Zackuse Creek. Currently, three undersized culverts impede fish passage. The concrete culverts are a partial fish passage barrier due to their slight elevations which contribute to high velocity water flows. Immediately upstream of the culverts and east of ELS Parkway, Zackuse Creek flows in a poorly defined channel through a valley bottom wetland before turning 90 degrees at the ELS Parkway road embankment to enter the culvert.

We are in the process of reviewing available information. Background research will include a site files search at the Washington State Department of Archaeology and Historic Preservation, review of previously recorded cultural resource reports, and review of pertinent published literature and ethnographies. Results of our investigations will be presented in a technical memo.

We are aware that not all information is contained within published sources. Should the Tribe have additional information to support our assessment, we would very much like to include it in our study. Please contact me at sonja@crcwa.com or 360-395-8879 should you wish to provide any comments. I appreciate your assistance in this matter and look forward to hearing from you.

Sincerely,

Sonja Kassa
Projects Manager

CULTURAL RESOURCE CONSULTANTS, LLC., BALLARD LABS, 1416 NW 46TH ST, STE 105 PMB346, SEATTLE, WA 98107
PHONE 206.855.9020 - sonja@crcwa.com



Margaret Berger <margaret@crcwa.com>

Fwd: Zackuse Creek Fish Passage Public Agency/Utility project

Glenn Hartmann <glenn@crcwa.com>

Thu, Aug 10, 2017 at 10:00 AM

To: Margaret Berger <margaret@crcwa.com>, Sonja Kassa <sonja@crcwa.com>

----- Forwarded message -----

From: Adam Osbekoff <adam@snoqualmi-tribe.us>

Date: Thu, Aug 10, 2017 at 7:50 AM

Subject: Zackuse Creek Fish Passage Public Agency/Utility project

To: Glenn Hartmann <glenn@crcwa.com>, lozbolt@sammamish.us <lozbolt@sammamish.us>

CC: Steven Mullen-Moses <steve@snoqualmi-tribe.us>

Hello

The Snoqualmie Indian Tribes Department of Archaeology and Historic Preservation request that we have the opportunity to participate in the cultural resource survey regarding the above mentioned project.

Thank you for your time.

Adam

Adam Osbekoff

Cultural Resource Compliance Manager

adam@snoqualmi-tribe.us

425-753-0388

9416 384th Ave SE

PO Box 969

Snoqualmie WA 98065

--

Glenn D. Hartmann

Senior Archaeologist

Cultural Resource Consultants

1416 NW 46th St., STE 105 PMB 346

Seattle, WA 98107

206.855.9020

www.crcwa.com

8/31/2017

Cultural Resource Consultants, Inc. Mail - 1707E - Zackuse Creek



Sonja Kassa <sonja@crcwa.com>

1707E - Zackuse Creek

Kerry Lyste <klyste@stillaguamish.com>
To: Teresa Peterson <teresa@crcwa.com>
Cc: Sonja Kassa <sonja@crcwa.com>

Thu, Aug 31, 2017 at 3:10 PM

Hi Teresa and Sonja,

Thank you for notification on this project. We do not have anything to add at this time. Please keep us informed of anything you find during field work and research.

Best, KL

Kerry Lyste
THPO/GIS Database Administrator; Stillaguamish Tribe of Indians

3322 236th Street NE, Arlington, WA 98223

Mailing Address: PO Box 277, Arlington, WA 98223

Ph: 360-572-3072 Fax: 360-659-3113



From: Teresa Peterson [mailto:teresa@crcwa.com]
Sent: Thursday, August 31, 2017 10:34 AM
To: Kerry Lyste <klyste@stillaguamish.com>
Cc: Sonja Kassa <sonja@crcwa.com>
Subject: 1707E - Zackuse Creek

[Quoted text hidden]

<https://mail.google.com/mail/u/0/?ui=2&ik=62e4125605&jsver=PX1Y7GgZjW4.en.&view=pt&msg=15e3a581cd0254c9&search=inbox&siml=15e3a581cd0254c9>

1/1

Attachment B. Archaeological site form.

See associated PDF document.

Attachment C. Inadvertent discovery protocol.

Protocols for Discovery of Archaeological Resources

In the event that archaeological resources are encountered during project implementation, the following actions will be taken:

In the find location, all ground disturbing activity will stop. The find location will be secured from any additional impacts and the supervisor will be informed.

The project proponent will immediately contact the agencies with jurisdiction over the lands where the discovery is located, if appropriate. The appropriate agency archaeologist or the proponent's contracting archaeologist will determine the size of the work stoppage zone or discovery location in order to sufficiently protect the resource until further decisions can be made regarding the work site.

The project proponent will consult with DAHP regarding the evaluation of the discovery and the appropriate protection measures, if applicable. Once the consultation has been completed, and if the site is determined to be NRHP-eligible, the project proponent will request written concurrence from the agency or tribe(s) that the protection and mitigation measures have been fulfilled. Upon notification of concurrence from the appropriate parties, the project proponent will proceed with the project.

Within six months after completion of the above steps, the project proponent will prepare a final written report of the discovery. The report will include a description of the contents of the discovery, a summary of consultation, and a description of the treatment or mitigation measures.

Protocols for Discovery of Human Remains

If human remains are found within the project area, the project proponent, its contractors or permit-holders, the following actions will be taken, consistent with Washington State RCWs 68.50.645, 27.44.055, and 68.60.055:

If ground-disturbing activities encounter human skeletal remains during the course of construction then all activity will cease that may cause further disturbance to those remains. The area of the find will be secured and protected from further disturbance. The project proponent will prepare a plan for securing and protecting exposed human remains and retain consultants to perform these services. The finding of human skeletal remains will be reported to the county medical examiner/coroner and local law enforcement in the most expeditious manner possible. The remains will not be touched, moved, or further disturbed. The county medical examiner/coroner will assume jurisdiction over the human skeletal remains and make a determination of whether those remains are forensic or non-forensic. If the county medical examiner/coroner determines the remains are non-forensic, then they will report that finding to DAHP, which will then take jurisdiction over the remains. DAHP will notify any appropriate cemeteries and all affected tribes of the find. The State Physical Anthropologist will make a determination of whether the remains are Indian or Non-Indian and report that finding to any appropriate cemeteries and the affected tribes. DAHP will then handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains.

Contact Information

Muckleshoot Indian Tribe

39015 172nd Ave SE, Auburn, WA 98092

Primary Contact: Laura Murphy, Cultural Resources, 253-876-3272

Snoqualmie Indian Nation

PO Box 969, Snoqualmie, WA 98065

Primary Contact: Steven Mullen-Moses, Director of Archaeology and Historic Preservation, 425-495-6097

Stillaguamish Tribe

3322 236th Street NE, Arlington, WA 98223

Primary Contact: Kerry Lyste, THPO, 360-572-3072

Tulalip Tribes

6410 23rd Avenue NE, Tulalip, WA 98271

Primary Contact: Richard Young, Cultural Resources, 360-716-2652

Washington Department of Archaeology and Historic Preservation

PO Box 48343, Olympia, WA 98504-8343

Lead Representative: Allyson Brooks, State Historic Preservation Officer, 360-586-3066

Primary Contact: Rob Whitlam, State Archaeologist, 360-586-3080

Primary Contact for Human Remains: Guy Tasa, State Physical Anthropologist, office: 360-586-3534, cell: 360-790-1633

King County Historic Preservation Program

201 South Jackson Street, Suite 700 [MS: KSC-NR-0700], Seattle, WA 98104

Primary Contact: Philippe D. LeTourneau, Archaeologist, 206 477-4529

King County Medical Examiner

908 Jefferson Street, Seattle, WA 98104

Primary Contact: Richard Harruff, Medical Officer, 206-731-3232

King County Sheriff

516 3rd Ave W-150 Seattle, WA 98104

Lead Representative: John Urquhart, Sheriff, 206-296-4155

Primary Contact: Non-Emergency Line, 206-296-3311



STATE OF WASHINGTON ARCHAEOLOGICAL SITE INVENTORY FORM

Smithsonian Number: 45

County: King

Date: 9/26/2017

Human Remains? DAHP Case No.:

Compiled By: Sonja Kassa

Cultural Resource Consultants, LLC

Archaeological Sites are exempt from public disclosure per RCW 42.56.300

SITE DESIGNATION

Site Name: Hammersberg home and debris scatter

Field/Temporary ID:

Site Type: Historic Debris Scatter/Concentration

Historic Residential Structures

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this request for determination of eligibility meet the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the site

meets does not meet the National Register Criteria.

I recommend that this property be considered significant at the following level(s) of significance:

Criteria

Statement of Significance

Resources are typically defined as significant or potentially significant if they are identified as of special importance to an ethnic group or Indian tribe or if the resource is considered to meet certain eligibility criteria for local, state, or national historic registers, such as the National Register of Historic Places (NRHP). Based on NRHP assessment criteria developed by the National Park Service, historical significance is conveyed by properties:

- A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. That are associated with the lives of persons significant in our past; or
- C. That embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. That have yielded, or may be likely to yield, information important in prehistory or history [NPS 2002:2].

Criteria used for assessment of potential eligibility for the Washington Heritage Register (WHR) are similar to NRHP criteria. Criteria to qualify include (DAHP 2017c):

- A building, site, structure or object must be at least 50 years old. If newer, the resource should have documented exceptional significance.
- The resource should have a high to medium level of integrity, i.e. it should retain important character defining features from its historic period of construction.
- The resource should have documented historical significance at the local, state or federal level.
- ACHP review and listing requires the consent of the owner.

According to the NRHP guidelines, the “essential physical features” of a property must be intact for it to convey its significance, and the resource must retain its integrity, or “the ability of a property to convey its significance.” The seven aspects of integrity are:

- Location (the place where the historic property was constructed or the place where the historic event occurred);
- Design (the combination of elements that create the form, plan, space, structure, and style of a property);
- Setting (the physical environment of a historic property);
- Materials (the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property);
- Workmanship (the physical evidence of the crafts of a particular culture or people during any given period of history or prehistory);

- Feeling (a property's expression of the aesthetic or historic sense of a particular period of time); and
- Association (the direct link between an important historic event or person and a historic property) [NPS 2002:44].

The King County Designation Criteria (KC 20.62.040) is described as follows (King County 2017):

A. An historic resource may be designated as a King County landmark if it is more than forty years old or, in the case of a landmark district, contains resources that are more than forty years old, and possesses integrity of location, design, setting, materials, workmanship, feeling, or association, or any combination of the foregoing aspects of integrity, sufficient to convey its historic character, and:

1. Is associated with events that have made a significant contribution to the broad patterns of national, state or local history;
2. Is associated with the lives of persons significant in national, state or local history;
3. Embodies the distinctive characteristics of a type, period, style or method of design or construction, or that represents a significant and distinguishable entity whose components may lack individual distinction;
4. Has yielded, or may be likely to yield, information important in prehistory or history; or
5. Is an outstanding work of a designer or builder who has made a substantial contribution to the art.

B. An historic resource may be designated a community landmark because it is an easily identifiable visual feature of a neighborhood or the county and contributes to the distinctive quality or identity of such neighborhood or county or because of its association with significant historical events or historic themes, association with important or prominent persons in the community or county or recognition by local citizens for substantial contribution to the neighborhood or community. An improvement or site qualifying for designation solely by virtue of satisfying criteria set out in this section shall be designated a community landmark and shall not be subject to K.C.C. 20.62.080.

C. Cemeteries, birthplaces or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature and properties that have achieved significance within the past forty years shall not be considered eligible for designation. However, such a property shall be eligible for designation if they are:

1. An integral part of districts that meet the criteria set out in subsection A. of this section or if it is:
2. A religious property deriving primary significance from architectural or artistic distinction or historical importance;
3. A building or structure removed from its original location but that is significant primarily for its architectural value, or which is the surviving structure most importantly associated with a historic person or event;
4. A birthplace, grave or residence of a historical figure of outstanding importance if there is no other appropriate site or building directly associated with his or her productive life;
5. A cemetery that derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features or from association with historic events;
6. A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner or as part of a restoration master plan, and when no other building or structure with the same association has survived;
7. A property commemorative in intent if design, age, tradition or symbolic value has invested it with its own historical significance; or
8. A property achieving significance within the past forty years if it is of exceptional importance. (Ord. 17635 § 2, 2013: Ord. 10474 § 4, 1992: Ord. 4828 § 4, 1980).

According to records held at the Puget Sound Regional Archives, Hammersberg is listed as the property owner on August 27, 1954 . Records show that Hammersberg built a single-family residence on the property in 1954 and the structure was first occupied in July 1955. It is described as a single story residence comprised of three rooms totaling 612 square feet. The interior has 8-foot ceilings, painted plasterboard walls, fir floors, a brick fireplace with stove heat, and single bathroom. The exterior is described as a composition-tar roof, an unroofed porch, a wood post concrete block foundation, and shiplap cedar siding. The construction is described as “double” and “cheap,” though the structure was listed as in fair condition. This structure is in close proximity to the proposed project staging area. Hammersberg sold his property to the current owner in 2011 (King County 2017).

The site was visited during field investigations in 2017. By this time, the single-family residence had suffered fire damage and was partially collapsed. An outbuilding of poor construction and unknown age was also observed west of the residence and contained salvaged items from the residence. Rusted machinery and debris piles were present west of the residence and north of the out building. Subsurface testing in the vicinity of the structures revealed imported gravels and the presence of glass/metal fragments.

ARCHAEOLOGICAL SITE INVENTORY FORM

Smithsonian Number: 45

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Based on these formal evaluation criteria, data acquired during field investigations, and supporting resources, the evidence gathered does not support this site's association with events or persons significant to local, state, or national history. The single-family residence has suffered fire damage and is partially collapsed. It is of a typical, low-grade design and materials, and is not connected to a notable architect. It does not appear to contain information that would be important to enhancing the historic context of Sammamish, the State of Washington, or the country. It is in disrepair detracting from aspects of integrity including design, setting, and feeling, diminishing the properties' essential physical features that would convey potential historical significance. Subsurface excavation in and adjacent to the site did not yield evidence of intact subsurface deposits that would enhance the site's significance. Consequently, test excavations are not considered necessary to evaluate this site. Of the seven aspects of integrity, this site appears to only embody integrity of location. Therefore, this site was not considered eligible for listing on historic registers nor are any further archaeological investigations recommended.

Integrity

According to the NRHP guidelines, the "essential physical features" of a property must be intact for it to convey its significance, and the resource must retain its integrity, or "the ability of a property to convey its significance." The seven aspects of integrity are:

- Location (the place where the historic property was constructed or the place where the historic event occurred);
- Design (the combination of elements that create the form, plan, space, structure, and style of a property);
- Setting (the physical environment of a historic property);
- Materials (the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property);
- Workmanship (the physical evidence of the crafts of a particular culture or people during any given period of history or prehistory);
- Feeling (a property's expression of the aesthetic or historic sense of a particular period of time); and
- Association (the direct link between an important historic event or person and a historic property) [NPS 2002:44].

Of the seven aspects of integrity, this site appears to only embody integrity of location. Therefore, this site was not considered eligible for listing on historic registers nor are any further archaeological investigations recommended.

SHPO Determination

Eligibility Survey/Inventory **Determined On**

Determined By

SHPO Comments

SITE LOCATION

USGS Quad Map Name(s): ISSAQUAH	
T: 25	R: 06
E/W: E	Section: 32
UTM: Zone: 10	Easting: 570009
	Northing: 5273422
Latitude:	Longitude:
	Elevation (ft/m): 19
Drainage, Major: Lake Washington	Drainage, Minor: Lake Sammamish-Sammamish River
	River Mile: N/A
Aspect: west	Slope: 0-5 percent

Location Description (General to Specific):

This site is located in Sammamish, King County, Washington. It is located near the center of King County Tax Parcel 322506-9021 accessible from East Lake Sammamish Parkway NE.

Directions (For Relocation Purposes):

Headed east on I-90, take exit for Front St toward East Lake Sammamish Parkway Southeast. Use the left 2 lanes to turn left onto Front St N (signs for E Lk Sammamish Parkway SE). Continue onto E Lake Sammamish Pkwy SE for 2 miles. At the traffic circle, take the 2nd exit and stay on E Lake Sammamish Pkwy SE for approximately 4 miles. A paved pull out will be present to the right on East Lake Sammamish Parkway just before Louis Thompson Road, park here. Walk approximately .12 mile south on the overgrown driveway. The site will be present in the clearing at the end of the driveway.

SITE DESCRIPTION

Narrative Description (Overall Site Observations):

This site is located on a low, level glacial terrace on the eastern margin of Lake Sammamish and north of Zackuse Creek. It is at the end of an overgrown graveled driveway in an area that has been cleared of trees, but is overgrown with bracken fern and Himalayan blackberry. The site roughly encompasses a 20 by 30 meter area and consists of a 1954 single-family residence that has suffered fire damage and is mostly collapsed, a poorly constructed outbuilding of an unknown build date containing items salvaged from the burnt residence and a large lathe machine, and debris piles of rusted metal pipes and machinery, and oil drums hidden in the overgrown vegetation.

Site Dimensions (Overall Site Dimensions):

Length: ~30 meters **Direction:** SE-NW **Width:** ~ 20 meters **Direction:** SW-NE

Method of Horizontal Measurement: Google Earth

Depth: unknown **Method of Vertical Measurement:** Google Earth

Vegetation (On Site):

Local: bracken fern and Himalayan blackberry **Regional:** Tsuga heterophylla (Western Hemlock)

Landforms (On Site):

Local: glacial terrace **Regional:** glacially carved trough

Water Resources (Type): Zackuse Creek **Distance:** ~10 meters **Permanence:** permanent

CULTURAL MATERIALS AND FEATURES

Narrative Description (Specific Inventory Details):

This site is a single-family residence that had suffered fire damage and was partially collapsed leaving its original appearance largely indistinguishable, though the following observations were made. It had vertical and horizontal wood siding in a double layer; a brick chimney was present on the center east side; a window and door were present on the north side; power was visible on the outside; a kitchen was present in the northwest corner; laminate flooring was visible; a small, L-shaped bathroom was present in the southeast corner with sea foam green fixtures; and non-diagnostic debris was present around the house.

Two primary debris piles were visible west of the residence and partially obscured by dense vegetation. The first contained two rusted oil drums. The second was larger in size and contained a variety of pipes, machinery, and appliances, all rusted. Recognizable objects included a compressor and a radiator.

An outbuilding was present southwest of the residence and contained some salvaged items from the house fire, including the bath tub, it also contains a large lathe. The construction date of the outbuilding is unknown but it is associated with the residence. It was crudely built and can be considered condemned. It is primarily held up by poorly implemented joists and chains. It has a partial concreted floor, poured concrete and cinder block foundation. Three walls are no longer present or were removed by salvaging the wood. It is currently under stress from excessive vegetation growing on the roof.

Method of Collection:

ARCHAEOLOGICAL SITE INVENTORY FORM

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None.

Location of Artifacts (Temporary/Permanent):

N/A

SITE AGE

Component Type	Historic
Dates	1955-?
Dating Method	King County Assessor
Phase	N/A
Basis for Phase Designation	N/A

SITE RECORDERS

Observed By	Address		
Sonja Kassa	1416 NW 46th St., Seattle, WA 98107		
Date Recorded:	9/26/2017		
Recorded by (Professional Archaeologist):	Sonja Kassa		
Organization:	Cultural Resource Consultants, LLC	Phone Number:	360-395-8879
Address:	1416 NW 46th St., Seattle, WA 98107	Email:	sonja@crcwa.com

SITE HISTORY

Previous Archaeological Work:

None.

LAND OWNERSHIP

Owner	Address	Parcel
Water T. Pereyra	202 East Lake Sammamish Parkway NE, Sammamish, WA - 98074	322506-9021

RESEARCH REFERENCES

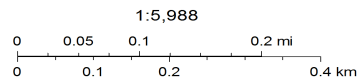
Items/Documents Used in Research:

N/A

USGS MAP



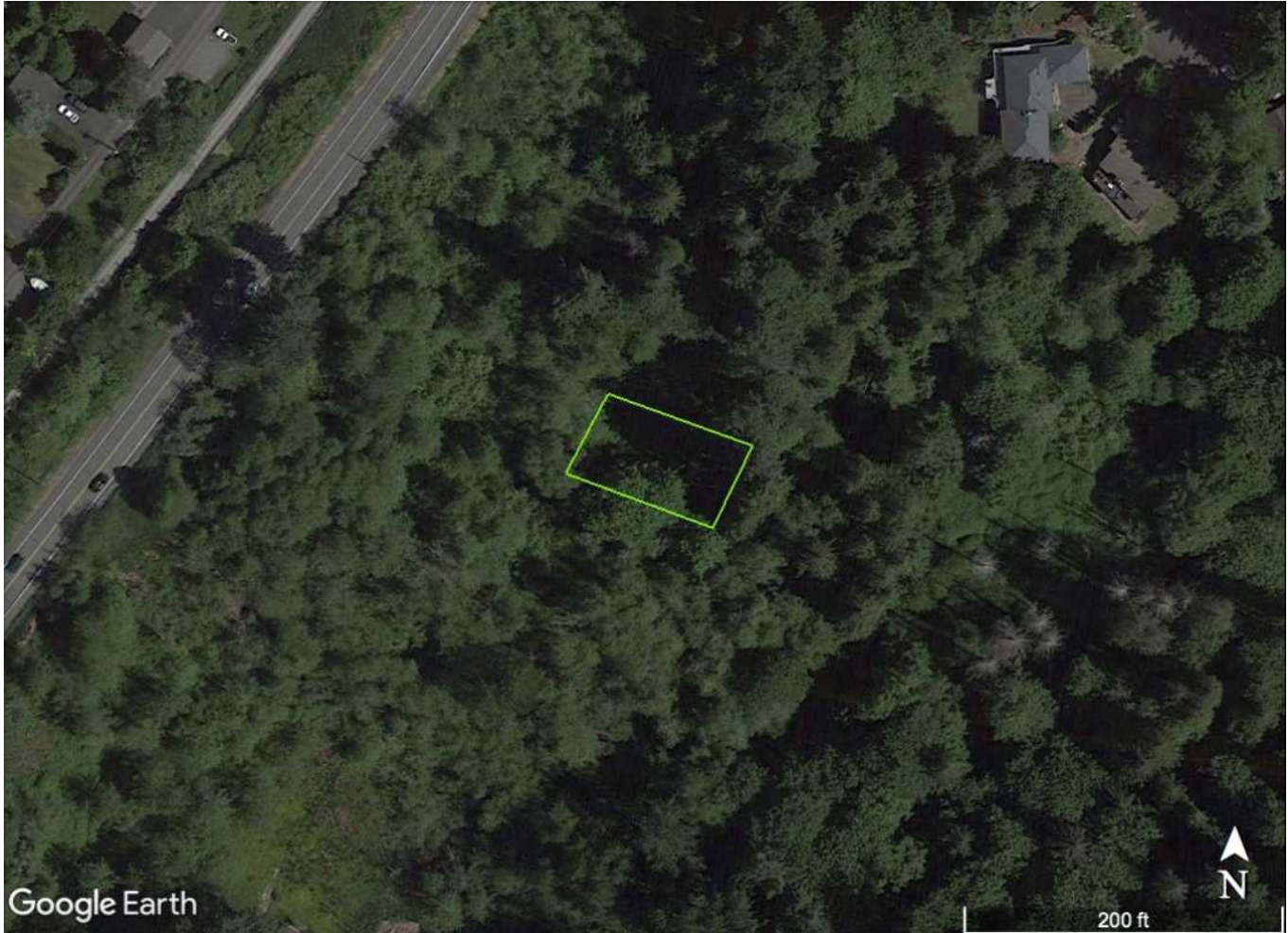
October 3, 2017



Copyright © 2013 National Geographic Society, I-cubed

SKETCH MAPS

Source Information



PHOTOGRAPHS



Photo ID 357576
Title single-family residence - entry
Year Taken 2017
Is Circa?
Notes
Type image/jpeg
Photo View view is to the southwest
Source
Copyright



Photo ID 357604
Title single family residence 1956
Year Taken 1956
Is Circa?
Notes
Type image/jpeg
Photo View view is to the southeast
Source From Puget Sound Regional Archives
Copyright

ARCHAEOLOGICAL SITE INVENTORY FORM

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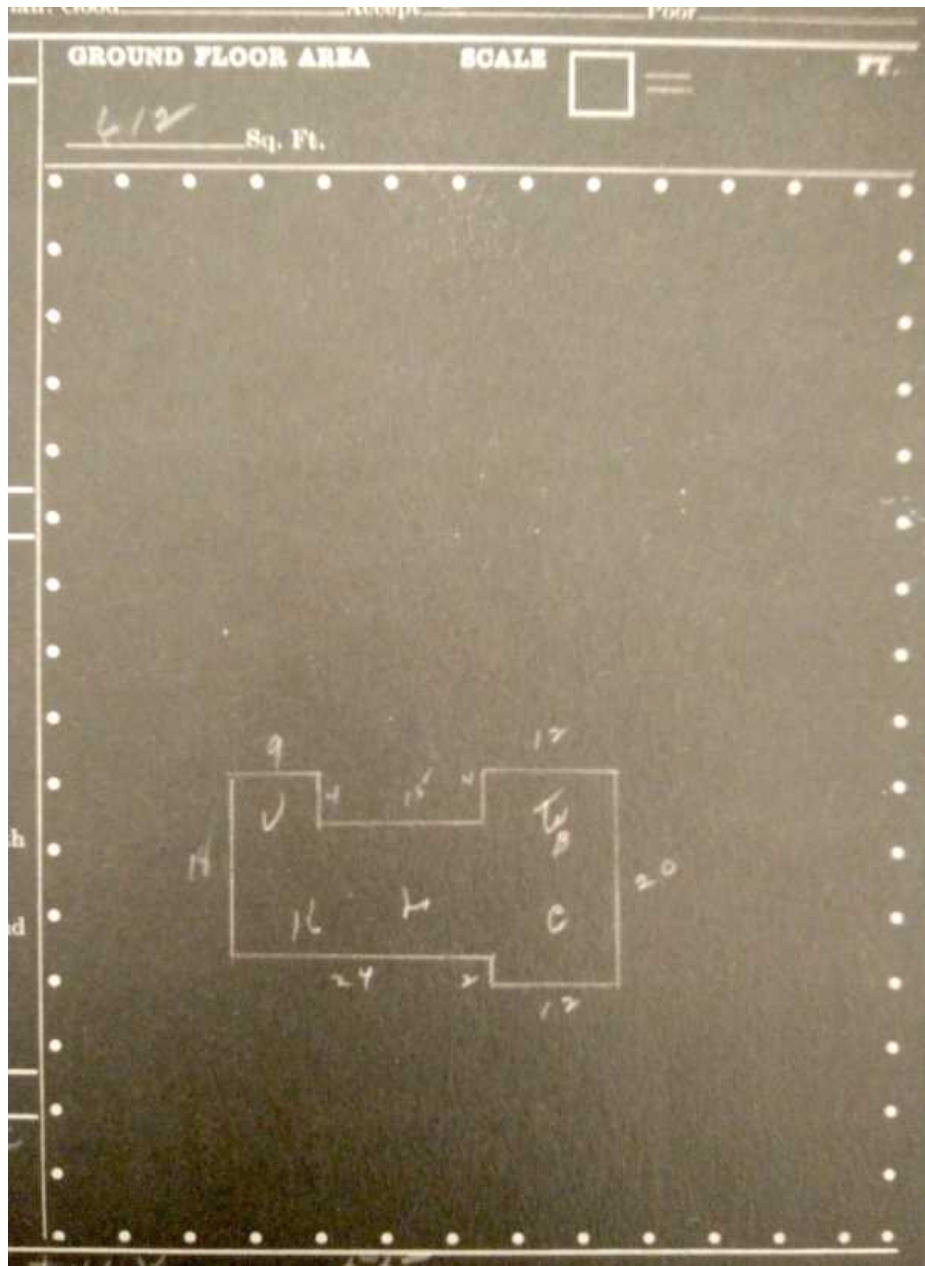


Photo ID 357603
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Year Taken 2017
Is Circa?
Notes
Type image/jpeg
Photo View
Source From Puget Sound Regional Archives
Copyright

ARCHAEOLOGICAL SITE INVENTORY FORM

Smithsonian Number: 45

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Photo ID 357601
 Title single-family residence - tax assessor data 1954
 Year Taken 1954
 Is Circa?
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 Photo View view is ot the south
 Source From Puget Sound Regional Archives
 Copyright



Photo ID 357574
Title single-family residence - interior
Year Taken 2017
Is Circa?
Notes
Type image/jpeg
Photo View view is to the southwest
Source
Copyright



Photo ID 357572
Title single-family residence - interior
Year Taken 2017
Is Circa?
Notes
Type image/jpeg
Photo View view is to the south
Source
Copyright



Photo ID 357571
Title single-family residence - exterior
Year Taken 2017
Is Circa?
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Type image/jpeg
Photo View view is to the north
Source
Copyright



Photo ID 357570
Title single-family residence - exterior
Year Taken 2017
Is Circa?
Notes
Type image/jpeg
Photo View
Source
Copyright



Photo ID 357568
Title single-family residence - south exterior
Year Taken 2017
Is Circa?
Notes
Type image/jpeg
Photo View view is to the north
Source
Copyright



Photo ID 357567
Title outbuilding - interior with lathe
Year Taken 2017
Is Circa?
Notes
Type image/jpeg
Photo View view is to the north
Source
Copyright



Photo ID 357566
Title outbuilding - interior with salvaged items from residence
Year Taken 2017
Is Circa?
Notes
Type image/jpeg
Photo View view is to the north
Source
Copyright



Photo ID 357565
Title outbuilding - interior
Year Taken 2017
Is Circa?
Notes
Type image/jpeg
Photo View
Source
Copyright



Photo ID 357564
Title debris pile - machinery
Year Taken 2017
Is Circa?
Notes
Type image/jpeg
Photo View view is to the east
Source
Copyright



Photo ID 357563
Title outbuilding - exterior
Year Taken 2017
Is Circa?
Notes
Type image/jpeg
Photo View
Source
Copyright

ARCHAEOLOGICAL SITE INVENTORY FORM

Smithsonian Number: 45

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Photo ID 357562
Title debris pile
Year Taken 2017
Is Circa?
Notes
Type image/jpeg
Photo View
Source
Copyright



Photo ID 357561
Title rusted oil drums
Year Taken 2017
Is Circa?
Notes
Type image/jpeg
Photo View view is to the northwest
Source
Copyright