CITY OF SNOHOMISH
WASHINGTON

SPECIFICATIONS, PROPOSAL AND CONTRACT DOCUMENTS

FOR

BLACKMANS LAKE OUTLET IMPROVEMENTS PROJECT

ISSUED FOR BID
June 2016

TABLE OF CONTENTS

*** DOCUMENTS TO BE TURNED IN WITH BID**

CITY OF SNOHOMISH
BLACKMANS LAKE OUTLET IMPROVEMENTS PROJECT
NOTICE OF CALL FOR BIDS

NOTICE IS HEREBY GIVEN, that sealed bids shall be received and recorded by the City Clerk at City Hall, 116 Union Street, Snohomish, WA 98290, until 2:00 PM, Pacific Coast Time, Thursday, June 16, 2016, and then publicly opened and read aloud.

The work of this contract provides for the construction of approximately 580 lineal feet of open channel, 370 lineal feet of sediment removal from an existing channel, 150 lineal feet of 24-inch culvert replacement, earth berm, paving, plantings, removal of structures and obstructions, clearing, grubbing, grading, erosion control, traffic control, miscellaneous surface restoration, and other related items, all as located within the City of Snohomish's corporate limits, easements, right of entry, and public right-of-way, as shown on the drawings and specified in these technical provisions.

Project Title: **City of Snohomish Blackmans Lake Outlet Improvements Project**

Engineer's Estimate Range: $350,000 - $400,000

Plans, specifications, addenda, and a plan holders list for this project are available on-line through Builders Exchange of Washington, Inc. at http://www.bxwa.com; 2607 Wetmore Avenue, Everett, WA 98201-2929, (425) 258-1303, Fax (425) 259-3832. Informational copies of any available maps, plans and specifications are on file for inspection online through the City's website at http://www.snohomishwa.gov/105/RFPs and at the Snohomish City Hall, located at 116 Union Avenue, Snohomish, WA 98290.

All bid proposals shall be accompanied by a bid proposal deposit in cash, certified check, cashier's check or surety bond in an amount equal to five percent (5%) of the grand total amount of such bid proposal. NO BID SHALL BE CONSIDERED UNLESS ACCOMPANIED BY SUCH BID PROPOSAL DEPOSIT. If the successful bidder does not enter into a contract and file a performance and payment bond and the required insurance certificates, with the City of Snohomish within ten (10) working days after Notice of Award of Bid, the amount of the bid deposit shall be forfeited to the City of Snohomish. Unsuccessful bidders' deposits will be returned upon City's execution of contract documents or rejection of all bids.

A one hundred percent (100%) Contractor's Performance and Payment Bond is required. The bond must be delivered to the Snohomish City Clerk within ten (10) working days after notification of the award to the successful bidder. The Bond must be approved by City officials before the contract award is final. A Contract is required and must be executed and returned to the City of Snohomish within ten (10) working days after notification of award. Approval of the contract by City officials is required before the contract award is final.

A certificate of liability insurance with $1,000,000 single event and $3,000,000 aggregate limits for this project must be furnished to the City of Snohomish within ten (10) working days after

Notice of Award of Bid. This insurance certificate shall also specifically name the City of Snohomish as an additional insured. The successful bidder may not commence work under this contract until all required insurance coverage has been approved by the City.

The City of Snohomish reserves the right to reject any or all bids, and to waive irregularities or informalities in the bid or in the opening. The City of Snohomish reserves the right to delete portions of the work.

No bidder may withdraw his bid after the hour set for the opening thereof, or before award of contract, unless said award is delayed for a period exceeding sixty (60) calendar days.

The bidder further agrees to begin work within ten (10) working days after Notice to Proceed has been issued by the City of Snohomish. The Contractor has forty-five (45) working days to complete the construction of the project. Payment of liquidated damages will be made by the Contractor to the City in the amount specified in the Contract if the construction work is not physically completed within the allotted working days, in accordance with Section 1-08.9 of the Standard Specifications.

Bid package and technical related questions can be directed to Yoshihiro Monzaki, P.E., City Engineer, at (360) 282-3161 or monzaki@snohomishwa.gov.

Dated this 1st day of June, 2016

City of Snohomish, Washington

BY:

Pat Adams, City Clerk

INFORMATION FOR BIDDERS

BIDS will be received by the CITY OF SNOHOMISH (herein called the "OWNER") at the time and location set forth in the Call for Bids herein before and then at said office publicly opened and read aloud.

Each BID must be submitted in a sealed envelope addressed to the CITY OF SNOHOMISH, ATTN: CITY CLERK, 116 Union Ave., Snohomish, WA, 98290. Each sealed envelope containing a BID must be plainly marked on the outside as BID for **BLACKMANS LAKE OUTLET IMPROVEMENTS PROJECT**. The envelope should bear on the outside the name of the BIDDER, his address, his license number if applicable, and the name of the project for which the BID is submitted. If forwarded by mail, the sealed envelope containing the BID must be enclosed in another envelope addressed to the OWNER at the above address.

All BIDS must be made on the required PROPOSAL FORM. All blank spaces for BID prices must be filled in, in ink or typewritten, and the PROPOSAL FORM must be fully completed and executed when submitted. Only one copy of the PROPOSAL FORM is required.

The OWNER may waive any informalities or minor defects or reject any and all BIDS. Any BID may be withdrawn prior to the above scheduled time for the opening of BIDS or authorized postponement thereof. Any BID received after the time and date specified shall not be considered. No BIDDER may withdraw a BID within sixty (60 days) after the actual date of the opening thereof.

Before submitting its proposal, the BIDDER shall examine the site of the work and review the drawings and specifications including ADDENDA and ascertain for themselves the work required and all of the physical conditions in relation thereto. Failure to take this precaution will not release the successful BIDDER from entering into contracts nor excuse the BIDDER from performing the work in strict accordance with the terms of the contract. No verbal statement made by any officer, agent, or employee of the OWNER, in relation to the physical conditions pertaining to the site of the work, will be binding on the OWNER during the gathering of information for proposal preparation by each BIDDER. After BIDS have been submitted, the BIDDER shall not assert that there was a misunderstanding concerning the quantities of WORK or of the nature of the WORK to be done.

The CONTRACT DOCUMENTS contain the provisions required for the construction of the PROJECT. Information obtained from an officer, agent, or employee of the OWNER or any other person shall not affect the risks or obligations assumed by the CONTRACTOR or relieve him from fulfilling any of the conditions of the contract.

Each BID must be accompanied by a BID deposit payable to the OWNER for five percent (5%) of the total amount of the BID. As soon as the BID prices have been compared, the OWNER will return the deposits of all except the three lowest responsible BIDDERS. When the Agreement is executed, the deposits of the remaining unsuccessful BIDDERS will be returned.

The party to whom the contract is awarded will be required to execute the Agreement and obtain the performance and payment bond within ten calendar days after the date on the NOTICE OF AWARD. The performance and payment bond in the amount of 100 percent of the CONTRACT PRICE, with a corporate surety approved by the OWNER, will be required for the faithful performance of the contract. The NOTICE OF AWARD shall be accompanied by the necessary Agreement and bond forms. In case of failure of the BIDDER to execute the Agreement, the OWNER may at his option consider the BIDDER in default; in which case the BID deposit accompanying the bid shall become the property of the OWNER.

The OWNER, within 10 days of receipt of acceptable bond and Agreement signed by the party to whom the Agreement was awarded, shall sign the Agreement within such period.

CONTRACTOR shall not commence work until a NOTICE TO PROCEED has been issued by the OWNER.

The OWNER may make such investigations as he deems necessary to determine the ability of the BIDDER to perform the WORK, and the BIDDER shall furnish to the OWNER all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any BID if the evidence submitted by, or investigation of, such BIDDER fails to satisfy the OWNER, in the OWNER'S discretion, that such BIDDER is properly qualified to carry out the obligations of the Agreement and to complete the WORK contemplated therein.

A conditional or qualified BID will not be accepted.

All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout.

Each BIDDER is responsible for inspecting the site and for reading and being thoroughly familiar with the CONTRACT DOCUMENTS. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to his BID.

The low BIDDER must supply the names and addresses of major material suppliers and subcontractors when requested to do so by the OWNER.

The City of Snohomish reserves the right to delete portions of the work.

Bid Package and technical related questions can be directed to the City Engineer, Yoshihiro Monzaki, PE, at (360) 282-3161 or monzaki@snohomishwa.gov.

CITY OF SNOHOMISH - BID PROPOSAL

TO: City of Snohomish
Attn: City Clerk
116 Union Street
Snohomish, WA 98290

The bidder declares that he or she has carefully examined the contract documents for the project; that he or she has personally visited the sites; that he or she has satisfied himself or herself as to the quantities of work involved, including materials and the equipment and conditions of work involved, surveying necessary for the project, and including the fact that the description of the quantities of work and materials as included herein, is brief and intended only to indicate the general nature of the work and to identify the said quantities with the detailed requirements of the contract documents and that this proposal is made according to the contract documents, which are hereby made a part of this proposal. The City of Snohomish reserves the right to delete portions of the work.

The bidder declares that he or she has exercised his or her own judgment regarding the interpretations of the specifications contained within the construction documents and has utilized all data that he or she believes pertinent in arriving at his or her conclusions.

The bidder agrees to hold his or her bid proposal open for sixty (60) days after the receipt of bids by the City.

The bidder agrees that if this proposal is accepted, he or she will, within ten (10) working days after notification of acceptance, execute a contract in the form included in the construction documents with the City of Snohomish, and will, prior to the time of execution of the contract, deliver to the City of Snohomish a performance and payment bond and a Certificate of Insurance and as required therein, and will, furnish all machinery, tools, apparatus, and other means of construction, and do the work in the manner, in the time, and according to the methods specified in the contract documents.

The bidder further agrees, if awarded the contract, to begin work within ten (10) working days after the date of notice to proceed and to complete the construction within forty-five (45) working days as described in Section 1-08.5 in the Special Provisions included herein.

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

The bidder proposes to accept as full payment for the work proposed herein the amount computed under the provisions of the contract documents. This amount shall be based on actual quantities of material placed and work performed. Bidder agrees that the unit prices represent a true measure of the labor and material required to perform the work, including all allowances for overhead and profit for each type of work called for in these contract documents.

BID PROPOSAL
BLACKMANS LAKE OUTLET IMPROVEMENTS PROJECT
CITY OF SNOHOMISH
NOTICE OF CALL FOR BIDS

Note: Unit prices for all items, all extensions, and the total amount bid must be shown. 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 entered in ink.

BID SCHEDULE

ITEM	SPEC. NO.	DESCRIPTION	QTY	UNITS	UNIT PRICE	AMOUNT
1	1-09	MOBILIZATION AND DEMOBILIZATION	1	LS		
2	2-01	CLEARING AND GRUBBING	1	LS		
3	2-02	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	1	LS		
4	2-03	GRAVEL BORROW INCL. HAUL	57	TON		
5	2-03	DITCH EXCAVATION INCL. HAUL	1910	CY		
6	8-15	QUARRY SPALLS	2	TON		
7	SP 8-26	STREAMBED SEDIMENT	50	TON		
8	SP 8-26	STREAMBED COBBLES (4-INCH)	165	TON		
9	7-02	CORRUGATED POLYETHYLENE CULV. PIPE 24 IN. DIAM.	152	LF		
10	4-04	CRUSHED SURFACING TOP COURSE	220	TON		
11	5-04	PLANING BITUMINOUS PAVEMENT	340	SY		
12	5-04	HMA CL. ½ IN. PG 64-22	400	TON		
13	8-01	SILT FENCE	20	LF		
14	8-01	SEEDING, FERTILIZING, AND MULCHING (DRY AREA SEED MIX)	1	LS		
15	8-01	SEEDING AND MULCHING (WET AREA SEED MIX)	1	LS		
16	8-01	TACKIFIER	1	LS		

17	8-02	FINE COMPOST	1	LS		
18	8-01	BIODEGRADABLE EROSION CONTROL BLANKET	3000	SY		
19	8-01	CHECK DAM	38	LF		
20	8-01	INLET PROTECTION	2	EA		
21	8-01	WATTLE	1767	LF		
22	8-02	PSIPE PAPER BIRCH	23	EA		
23	8-02	PSIPE WESTERN CRABAPPLE	40	EA		
24	8-02	PSIPE WESTERN RED CEDAR	37	EA		
25	8-02	PSIPE SHORE PINE	39	EA		
26	8-02	PSIPE SCOULERS WILLOW LIVE STAKE	647	EA		
27	8-02	PSIPE SITKA WILLOW LIVE STAKE	652	EA		
28	8-02	PSIPE SNOW BERRY	139	EA		
29	8-02	PSIPE SALMONBERRY	95	EA		
30	8-02	PSIPE BLACK TWINBERRY	147	EA		
31	8-02	PSIPE RED OSIER DOGWOOD	344	EA		
32	8-02	PSIPE SITKA SPRUCE	90	EA		
33	8-02	PSIPE HARDHACK	35	EA		
34	8-02	PSIPE PACIFIC NINEBARK	5	EA		
35	8-02	PSIPE NOOTKA ROSE	5	EA		
36	8-02	PSIPE HOOKERS WILLOW LIVE STAKE	100	EA		
37	8-02	PSIPE PACIFIC WILLOW LIVE STAKE	117	EA		
38	8-02	PSIPE SWORD FERN CONTAINER	55	EA		
39	8-04	CEMENT CONC. TRAFFIC CURB AND GUTTER	81	LF		
40	8-04	CEMENT CONC. PEDESTRIAN CURB	15	LF		
41	8-11	BEAM GUARDRAIL TYPE 31	100	LF		
42	8-11	BEAM GUARDRAIL (TYPE 31) ANCHOR TYPE 10	4	EA		
43	8-22	PLASTIC STOP LINE	15	LF		

44	8-21	PERMANENT SIGNING	1	LS		
45	1-10	PROJECT TEMPORARY TRAFFIC CONTROL	1	LS		
46	2-09	STRUCTURE EXCAVATION CLASS B INCL. HAUL	360	CY		
47	2-09	SHORING OR EXTRA EXCAVATION CL. B	760	SF		
48	8-14	CEMENT CONC. SIDEWALK	76	SY		
49	8-14	CEMENT CONC. CURB RAMP TYPE PARALLEL B	1	EA		
50	8-24	ROCK FOR ROCK WALL	13	TON		
51	2-12	CONSTRUCTION GEOTEXTILE FOR SEPARATION	625	SY		
52	SP 8-28	DEWATERING	1	LS		
53	SP 8-27	SPLIT RAIL FENCE	200	LF		
54	SP 2-01	NOXIOUS WEED AND INVASIVE SPECIES REMOVAL	1	LS		
55	SP 8-30	SURVEY	1	LS		
56	1-04	MINOR CHANGE	1	FA	$20,000	$20,000
57	1-07	SPCC PLAN	1	LS		
58	7-05	CATCH BASIN TYPE 1	1	EA		
59	7-04	CORRUGATED POLYETHYLENE STORM SEWER PIPE 12 IN. DIAM.	17	LF		
60	7-05	ADJUST CATCH BASIN	1	EA		
61	SP 7-05	LOCKING SOLID METAL COVER AND FRAME FOR CATCH BASIN	1	EA		
62	7-05	CONNECTION TO DRAINAGE STRUCTURE	1	EA		
					Subtotal Bid Items 1-61	
					9.1% WSST	
					Total Bid	

RECEIPT OF ADDENDA

Receipt of the following Addenda to the Contract Documents is hereby acknowledged:

Addendum No.	Date of Receipt	Signed Acknowledgement

Note: Failure to acknowledge receipt of the Addenda may be considered an irregularity in the proposal.

BID PROPOSAL SIGNATURE SHEET

The undersigned bids for complete construction of the following project: **Blackmans Lake Outlet Improvements Project** as described in the contract documents. The bidder proposes to accept as full payment for the work proposed herein; the amount computed under the provisions of the contract documents.

NOTE: The City reserves the right to accept or reject any and all bids as determined by the City.

TOTAL:

Total Bid Including Applicable Tax	**$**

_____	_____
Contractor (Firm Name)	Signature
_____	_____
Address	Name & Title (printed)
_____ Fax_____	_____
Phone & Fax Number	Date of Signing
_____	_____
Washington State Contractor's Registration Number	Indicate whether contractor is partnership corporation, or sole proprietorship

All bid proposals shall be accompanied by a bid proposal deposit in cash, certified check, cashier's check or surety bond in an amount equal to five percent (5%) of the bid proposal. NO BID SHALL BE CONSIDERED UNLESS ACCOMPANIED BY SUCH BID PROPOSAL DEPOSIT.

Bid proposal to be submitted in a sealed envelope marked "**BID ENCLOSED**" FOR **Blackmans Lake Outlet Improvements Project**.

WASHINGTON STATE SALES TAX. The work on this contract is to be performed upon lands whose ownership obligates the Contractor to pay sales tax. The provisions of Section 1-07.2(2) apply.

COMPLETION TIME AND LIQUIDATED DAMAGES

It is understood and agreed that all work required to complete this Project and achieve the implied intent of the Plans and Specifications shall be completed within forty five (45) working days. Refer to Section 1-08.5 of the General Requirements.

It is further understood and agreed that the Owner may deduct liquidated damages from payments due or to become due the Contractor in the amount set forth in Section 1-08.9, Liquid Damages, for each working day in beyond the time allowed in the contract, as stipulated in the paragraph above, unless specified otherwise. Such deductions may be made for any delays, which cannot reasonably be shown to be beyond the Contractor's control.

The liquidated damages do not include and are in addition to damages from costs for engineering, administrative, and other costs incurred beyond contract completion date. The cost of additional office and field engineering, construction surveillance, and other costs beyond contract completion date shall be billed the contractor at standard billing rates for said services then in effect.

NON COLLUSION DECLARATION

The undersigned, being duly sworn, deposes and says that the Bid submitted herewith is a genuine and not a collusive or sham bid or made in the interest or on behalf of any person herein named and that the person, firm, association, joint venture, co-partnership, or corporation herein named, has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in the preparation and submission of a bid for consideration in the award of a contract for the improvement described on the first page of this Proposal Form.

PREVAILING WAGES

The prevailing rate of wages shall be paid to all workers, laborer, or mechanics per Chapter 39.12 RCW. (See 2016 WSDOT/APWA Standard Specifications). Prevailing wage rates for trades in the County that may be applicable to the project are included in Appendix C.

PROPOSAL FORM (continued)

BID DEPOSIT

A Bid Deposit in an amount of five percent (5%) of the Total Bid Amount(s) based upon the Lump Sum or Bid Schedule approximate quantities at the unit prices including applicable taxes and in the form indicated on the following pages.

Cash	_____	IN THE AMOUNT OF $ _____
Cashier's Check	_____	$ _____
Certified Check	_____	$ _____Payable to the Owner
Bid Bond	_____	IN THE AMOUNT OF 5% OF THE AMOUNT BID

SURETY

If the Bidder is awarded a construction contract on this Bid, the Surety who provides the Contract Bond will be _____.

Whose address is _____
Street

_____
City State Zip Code

BIDDER INFORMATION AND SIGNATURE

The party by whom this bid is submitted and by whom the contract will be entered into, in case the award is made to him, is:

_____
Corporation/Partnership/Individual

Firm Name: _____

Doing business at _____
Address City/State

Which is the address to which all communications concerned with this bid and contract should be sent.

The name of the president, treasurer, and 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/Title	Address
_____	_____
_____	_____
_____	_____
_____	_____

IN WITNESS hereto, the undersigned agrees to the conditions of the BID, certifies that this BID has not been restricted, modified or conditioned, acknowledges receipt of addenda ____to ____, attests to the absence of collusion in the Non-Collusion Affidavit below, and agrees to be bound by its provisions, certifies and agrees concerning non-segregated facilities in the Non-Segregated facilities statement below, covenants, stipulates and agrees in accordance with the Anti-Discrimination Certification below, declares, accepts and understands in accordance with the Bidder's Declaration and Understanding below, agrees as to prevailing wages as below, agrees as to Washington State Sales tax as above, understands and agrees as to the completion of time and liquidated damages as below, and with the full authority of the firm or other business entity submitting this BID has set his hand this _____day of _____2016.

If Sole Proprietor or Partnership

_____
Signature of Bidder

_____
Title

If Corporation

Attest: _____
Name of Corporation

_____ By _____
Secretary

Title _____

Sworn to before me this _____ day of

_____, _____.

_____
Notary Public in and for the State
Of Washington residing at

_____

NOTE:
1. If the Bidder is a co-partnership, so state, giving the Name under which business is transacted.

2. If the Bidder is a corporation, this Proposal must be Executed by the duly authorized officials and notarized.

DEPOSIT OR BID BOND FORM

DEPOSIT STATEMENT

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

SIGN HERE _____

BID BOND

KNOW ALL MEN BY THESE PRESENTS:

That we, _____, as Principal, and_____, as Surety, are held firmly bound unto the _____, Washington, 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
_____
_____
_____, Washington, according to the terms of the bid made by the Principal therefore, 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 so do, 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 _____, _____.

_____
Principal
_____
Surety
_____

_____, _____

Received return of deposit in the sum of $ _____

ANTI-DISCRIMINATION CERTIFICATE

CITY OF SNOHOMISH
STATE OF WASHINGTON
COUNTY OF SNOHOMISH

The bidder hereby covenants, stipulates and agrees that no person shall be discriminated against in the bidding of the service and/or materials hereunder and that the bidder shall not refuse to hire any person therefore because of such person's race, creed, color or national origin, unless based on a bona fide occupational qualification. Also, the bidder will in no matter discriminate against any person because of such person's race, creed, color or national origin. Any such discrimination shall be deemed a violation of this bid and shall render this bid subject to forfeiture.

_____

_____
Contractor's Signature

Subscribed and sworn to before me this _____ day of _____, 2016.

_____
Notary Public in and for
The State of Washington,
Residing at

_____

My commission expires _____

INDEMNIFICATION ADDENDUM

_____ (hereinafter called Contractor) agrees to defend, indemnify and hold the City of Snohomish (hereinafter called Owner) harmless from any and all claims, demands, loses and liabilities to or by third parties arising from, resulting from or connected with services performed or to be performed under this subcontract by Contractor or contractor's agents or employees to the fullest extent permitted by law and subject to the limitations provided below.

Contractor's duty to indemnify Owner shall not apply to liability for damages arising out of bodily injury to persons or damage to property caused by or resulting from the sole negligence of Owner or Owner's agents or employees.

Contractor's duty to indemnify Owner for liability for damages arising out of bodily injury to persons or damage to property caused by or resulting from the concurrent negligence of (a) Owner's agents or employees, and (b) Contractor or Contractor's agents or employees, shall apply only to the extent of negligence of Contractor or Contractor's agents or employees.

Contractor specifically and expressly waives any immunity that may be granted it under the Washington State Industrial Insurance Act, Title 51 RCW. Further, the indemnification obligation under this subcontract shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable to or for any third party under workers compensation acts, disability benefits acts, or other employee benefits acts; provided Contractors waiver of immunity by the provisions of this paragraph extends only to claims against Contractor by Owner and does not include, or extend to, any claims by Contractor's employees directly against Contractor.

Contractor's duty to defend, indemnify and hold Owner harmless shall include as to all claims, demands, losses and liability to which is applies, Owner's personnel-related costs, reasonable attorney's fees, court costs and all other claim-related expenses.

THE UNDERSIGNED HEREBY CERTIFY THAT THIS ADDENDUM WAS MUTUALLY NEGOTIATED.

Dated: _____ Dated:_____

Owner: CITY OF SNOHOMISH

By _____
Signature

Title: _____

Contractor:

By: _____
Signature

Title: _____

CERTIFICATION OF NONSEGREGATED FACILITIES

The bidder certifies that s/he does not maintain or provide for her/his employees any segregated facilities at any of her/his establishments, and that s/he does not permit her/his employees to perform their services at any locations, under her/his control, where segregated facilities are maintained. The bidder certifies further that s/he will not maintain or provide for her/his employees any segregated facilities at any of her/his establishments, and that s/he will not permit her/his employees to perform their services at any location under her/his control where segregated facilities are maintained. The bidder agrees that a breach of this certification will be a violation of the Equal Opportunity clause on any contract resulting from acceptance of this bid. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms, and washrooms, restaurants, or other eating areas, time clocks, locker rooms or other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact because of habit, local custom or otherwise. The bidder agrees that except where s/he has obtained identical certification from proposed subcontractor prior to the award of subcontracts exceeding $10,000, which are not exempt from the provisions of the Equal Opportunity clause, that s/he will retain such certifications in her/his files.

NOTE: The penalty for making false statements in offers is prescribed in 18 USV 1001.

Dated: _____, _____ _____
(Name of Bidder)

By _____
Signature

Title _____

Official Address:

_____

_____
(City, State, Zip)

_____

Must be included without alteration.

BID FORMS SECTION 0-01.3

BLACKMANS LAKE OUTLET IMPROVEMENTS PROJECT

0-01.3(7) SURPLUS MATERIAL DISPOSAL AND/OR REMOVAL

TYPE OF MATERIAL TO BE REMOVED FROM SITE	**LOCATION OF STORAGE AND/OR DISPOSAL SITE** (include name and phone number of owner and address of site)	**PROPOSED METHOD OF DISPOSAL AND/OR REUSE**

Note: Please refer to "Disposal of Surplus Material" in Section 2-03.3(7) of the Standard Specifications.

If a disposal site is rejected, the Contractor is responsible for locating a new disposal site that will meet the Owner's criteria. Any associated costs incurred in finding a new or different disposal and/or storage site will be the responsibility of the Contractor and at no additional cost to the Owner.

CONTRACT

THIS AGREEMENT, made in 3 copies, each of which shall be deemed original, and entered into as of the date hereinafter affixed, by and between CITY OF SNOHOMISH, hereinafter called the Owner, and _____ HEREINAFTER called the Contractor,

WITNESSETH:

That in consideration of the terms and conditions contained herein and attached and made a part of this Agreement, the parties hereto covenant and agree as follows:

I. The Contractor shall do all work and furnish all labor, tools, materials and equipment for the construction of the **Blackmans Lake Outlet Improvements Project** in accordance with and as described in the attached plans and specifications, including any Addenda which are by this reference incorporated herein and made a part hereof, and shall perform any alterations in or additions to the work provided under this contract and every part thereof.

If said work is not completed within the time specified, the Contractor agrees to pay to the Owner the sum set forth in Section 1-08.9 for each and every calendar day said work remains uncompleted after expiration of the specified time, as liquidated damages. The Contractor shall provide and bear the expense of all equipment, work, and labor of any sort whatsoever that may be required for the transfer of materials and for constructing and completing the work provided for in this contract and every part thereof and shall guarantee said materials and work for a period of one year after completion of this contract, except such as are mentioned in the specifications to be furnished by CITY OF SNOHOMISH.

II. CITY OF SNOHOMISH hereby promises and agrees with the Contractor to employ and does employ the Contractor to provide the materials and to do and cause to be done the above-described work and to complete and finish the same according to the attached plans and specifications and the terms and conditions herein contained and hereby contracts to pay for the same according to the attached specifications and the schedule of prices bid and hereto attached, at the time and in the manner and upon the conditions provided for in this contract.

III. The Contractor for himself and for his heirs, executors, administrators, successors and assigns does hereby agree to the full performance of all covenants herein contained upon the part of the Contractor.

IV. It is further provided that no liability shall attach to CITY OF SNOHOMISH by reason of entering into this contract, except as expressly provided herein.

V. The CITY OF SNOHOMISH is committed to transparency and accountability in its contracting and expenditures, and obtaining maximum taxpayer value for public works projects. Prior to final acceptance and release of retainage by the CITY OF SNOHOMISH, Contractor shall provide the CITY OF SNOHOMISH with a report listing the names and addresses of the subcontractors and suppliers receiving contract funds from the Project.

VI. This agreement consists of the following documents, all of which are incorporated by reference as if set forth in full herein, and are component parts hereof:

1. Legal, Procedural, Contract Documents, and Indemnification Addendum
2. Washington State Legal Requirements (RCW'S; WAC'S)
3. City of Snohomish Engineering Standards, Specifications and Details
4. Amendments to the Standard Specifications
5. 2016 Standard Specifications (WSDOT/APWA)
6. Special Provisions
7. Contract Drawings (Plans)
8. Addenda, if any
9. Bid Proposal Forms

Countersigned:

This _____ day of _____, 2016.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed the day and year first herein above written.

CITY OF SNOHOMISH (Owner)

By _____
Larry Bauman, City Manager

Approved as to form

By_____
Grant Weed, City Attorney

CONTRACTOR

By _____

Address:

Telephone Number:

Fax Number:

Acknowledgement of Waiver of Contractor's Industrial insurance immunity. See Standard Specifications, 1-07.14. (Initial acknowledgement)

_____ _____
Owner Contractor

CONTRACT BOND

KNOW ALL MEN BY THESE PRESENTS: That whereas CITY OF SNOHOMISH has awarded to _____, hereinafter designated as the "Principal," a contract for the construction of the Project designated City of Snohomish **Blackmans Lake Outlet Improvements Project** all as hereto attached and made a part hereof, and whereas said principal is required under the terms of said contract to furnish a bond for the faithful performance of said contract:

NOW, THEREFORE, we the principal and _____

_____

(Surety)

a corporation, organized and existing under and by virtue of the laws of the State of _____, duly authorized to do business in the State of Washington, as surety, are held and firmly bound unto CITY OF SNOHOMISH, a municipal corporation of the State of Washington in the sum of: _____, lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by those presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if the above-bonded principal, his or its heirs, executors, administrators, successors, or assigns shall in all things stand to and abide by and well and truly keep and perform the covenants, conditions, and agreements in the said contract and shall faithfully perform all the provisions of such contract and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said contract that may hereafter be made, at the time and in the manner therein specified, and shall pay all laborers, mechanics, subcontractors, and material men and all persons who shall supply such person or persons or subcontractors with provisions and supplies for the carrying on of such work on his or their part and shall indemnify and save harmless CITY OF SNOHOMISH, their officers and agents and shall further save harmless and indemnify said CITY OF SNOHOMISH from any defect or defects in any of the workmanship entering into any part of the work or designated equipment

covered by said contract which shall develop or be discovered within one (1) year after the final acceptance of such work, then this obligation shall become null and void; otherwise, it shall remain in full force and effect, provided that the liability hereunder for defects in materials and workmanship for a period of one (1) year after the acceptance of the work shall not exceed the sum of:

_____

_____

And the said surety, for the value received, hereby further stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation on the bond, and it does hereby waive notice of any change, extension of time, alterations, or additions to the terms of the contract or the work or to the specifications.

IN WITNESS WHEREOF, the said principal and the said surety have caused this bond and three (3) counterparts thereof to be signed and sealed by their duly authorized officers this _____ day of _____, _____.

_____

Principal

TWO WITNESSES: (If sole proprietor or Partnership)

By _____

_____

_____

ATTEST: (If Corporation)

Corporate Seal

By _____

Title _____

_____

Surety

By _____

Its _____

_____

Address of local office and agent of Surety Company is:_____

APPROVED AS TO FORM

By _____
Grant Weed, Attorney for CITY OF SNOHOMISH

NOTE: THIS QUESTIONNAIRE MUST BE COMPLETED AND ATTACHED TO CERTIFICATE OF INSURANCE.

INSURANCE COVERAGE QUESTIONNAIRE

For:

Project Title**: BLACKMANS LAKE OUTLET IMPROVEMENTS PROJECT**
Project Owner: **CITY OF SNOHOMISH**

Are the following coverage's and/or conditions in effect?

	Yes	No
The Policy form is ISO Commercial General Liability form GC-00 001 or GC 00 02 (Circle ONE). If no, attach a copy of the policy with required coverages clearly identified.		
The Owner, its officials, officers, employees and volunteers are additional insures as Respects (a) activities performed for the Owner by or on behalf of the Named Insured, (b) products and completed operations of the Named Insured, or (c) premises, owned, leased, or used by the Named Insured.		
Products Completed operation coverage.		
Cross Liability clause (or equivalent wording).		
Personal Injury Liability Coverage (with employee exclusion deleted)		
Broad Form Damage with X, C U Hazards included.		
Blanket Contractual Liability coverage applying to this contract or Contractual Liability Coverage applying to this contract		
Employers Liability – Stop Gap		
Written notice of cancellation to the City		

Deductibles or SIRS GL_____ AL_____ Excess_____

Insurer's Best Rating GL_____ AL_____ Excess_____

This questionnaire is issued as a matter of information. This questionnaire is not an insurance policy and does not amend, extend, or alter the coverage afforded by the policies indicated on the attached Certificate of Insurance or as required by the Contract Documents

Agency/Broker	Completed by (type)
Address	Completed by (signature)
Name of Person to Contact	Telephone Number

CITY OF SNOHOMISH

CONTRACTOR'S DECLARATION OF OPTION FOR MANAGEMENT OF STATUTORY RETAINED PERCENTAGE

The owner shall withhold the retained percentage for this contract from time-to-time as such retained percentage accrues and in accordance with RCW 60.28.010, 020, and 050.

OPTION A. I hereby elect to have the retained percentage for this contract held in a fund by the owner until thirty (30) days following final acceptance of the work. (No interest will be earned on the retained percentage amount under this election).

CONTRACTOR: _____

Date: _____

OPTION B. I hereby elect to have the owner deposit the retained percentage for this contract, from time-to-time, as such retained percentage accrues and in accordance with RCW 60.28.010, 020, and 050.

I hereby designate _____ as the depositary for said funds which shall be deposited in an interest earning account subject to joint control by owner and the contractor. All interest earned on said deposits shall belong to the contractor. (If contractor fails to designate the depositary then the owner designates)

I hereby further agree to be fully responsible for payment of all costs of fees incurred as a result of establishing said depositary account and depositing the retained percentage as authorized by statute. The owner shall not be liable in any way for any costs or fees in connection therewith.

CONTRACTOR:

_____

Date: _____

ATTN: FINANCE DEPARTMENT *This form is for selection of retainage option* ***ONLY****.* ***OPTION B*** *must have a signed Escrow Instruction/Agreement on file prior to processing retainage payment to the bank. Signed Agreement will be secured by the Purchasing Division.*

CITY OF SNOHOMISH

PUBLIC WORKS PROJECT - RETAINED PERCENTAGE ESCROW AGREEMENT

Escrow No. _____

City of Snohomish
116 Union Street
Snohomish, WA 98290

Contractor:

Address:

Project Title: **Blackmans Lake Outlet Improvements Project**

TO: Escrow Bank or Trust Co:

_____

_____

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

INSTRUCTIONS

1. Warrants or checks made payable to you and the contractor jointly upon delivery to you shall be endorsed by you and forwarded for collection. The moneys will then be used by you to purchase, as directed by the Contractor, bonds or other securities chosen by the Contractor and approved by the City of Snohomish. Attached is a list of such bonds, or other securities approved by the City of Snohomish. Other bonds or securities, except stocks may be selected by the Contractor, subject to express written approval of the City of Snohomish. Purchase of such bonds or other securities shall be in a form which shall allow you alone to reconvert such bonds or other securities into money if you are required to do so by the City of Snohomish as provided in paragraph 4 of this Escrow Agreement.

2. When and as interest on the securities held by you pursuant to this agreement accrues and is paid, you shall collect such interest and forward it to the Contractor at its address designated below unless otherwise directed by the Contractor.

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

4. In the event the City of Snohomish orders you to do so in writing, you shall, within thirty-five (35) days of receipt of such order, reconvert into money the securities held by you pursuant to this agreement and return such money together with any other moneys held by you hereunder, to the City of Snohomish. Written release will be issued by the City Treasurer. For further information contact the City Treasurer at (360) 568-3115.

5. The Contractor agrees to pay you as compensation for your services hereunder as follows:

Payment of all fees shall be the sole responsibility of the Contractor and shall not be deducted from any property placed with you pursuant to this agreement until and unless the City of Snohomish directs the release to the Contractor of the securities and moneys held hereunder whereupon you shall be granted a first lien upon such property released and shall be entitled to reimburse yourself from such property for the entire amount of your fees as provided for herein above. In the event that you are made a party to any litigation with respect to the property held by you hereunder, or in the event that the conditions of this escrow are not promptly fulfilled or that you are required to render any service not provided for in these instructions, or that there is any assignment of the interests of this escrow or any modifications hereof, you shall be entitled to reasonable compensation for such extraordinary services from the Contractor and reimbursement from the Contractor for all costs and expenses, including attorneys fees occasioned by such default, delay, controversy or litigation.

6. This agreement shall not be binding until executed by the Contractor and the City of Snohomish and accepted by you.

7. This instrument contains the entire agreement between you, the Contractor and the City of Snohomish with respect to this escrow and you are not a party to nor bound by any instrument or agreement other than this; you shall not be required to take notice of any default or any other matter nor be bound by nor required to give notice or demand, nor required to take any action whatever except as herein expressly provided; you shall not be liable for any loss or damage not caused by your own negligence or willful misconduct.

8. The foregoing provisions shall be binding upon the assigns, successors, personal representatives and heirs of the parties hereto.

9. The Contractor's Federal Income Tax Identification number is _____.

The undersigned have read and hereby approve the instructions as given above governing the administration of this escrow and do hereby execute this agreement on this_____ day of _____, 2016.

CONTRACTOR

_____
Signature

Title: _____

CITY OF SNOHOMISH

_____
Larry Bauman
City Manager

ATTEST:

_____
Pat Adams
City Clerk

The above escrow instructions received and accepted this_____ day of _____, 2016.

ESCROW BANK OR TRUST CO:

_____
Signature

Title: _____

Securities Authorized by City of Snohomish - Select only one:

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

PLEASE RETURN THIS SIGNED AGREEMENT TO:

City of Snohomish
Attn: City Treasurer
116 Union Street
Snohomish, WA 98290

RETAINAGE RELEASE REQUIREMENTS

The following are the documents required to be on file with the City of Snohomish prior to release of retainage to the Contractor.

No.	Document	Generated by	Contact	Date Received by City
1	Contractor's Notification to City of Completion of Contract Work	Contractor	City Engineer	
2	Recommendation of Project Acceptance	City / Project Engineer	City Engineer	
3	Final Project Acceptance	City / Council	City Engineer	
4	Intent to Pay Prevailing Wages	Contractor	Dept. of Labor & Industries	
5	Notification of Completion to Department of Revenue	City / City Treasurer	Dept. of Revenue Excise Tax Division	
6	Affidavit of Wages Paid	Contractor	Dept. of Labor & Industries	
7	Certificate of Payment State Excise Tax by Public Works Contractor	State	Dept of Revenue Excise Tax Division	
8	Release Regarding Industrial Insurance	City	City Engineer	
9	Certification of Payment of Contributions	State	Dept. of Employment Security	
10	Receipt for Payment in full or Release of Lien signed by Lien Claimant and filed with City	Contractor	All claims against retainage or payment Bond filed with the City	
11	All warranty documents to include Performance Bond	Contractor	Project Engineer	
12	Contractor's Record Drawings	Contractor	City Engineer	
13	Subcontractors and Suppliers Disclosures	Contractor	Project Engineer	

SECTION I

AMENDMENTS TO THE STANDARD SPECIFICATIONS

INTRO.AP1

INTRODUCTION

The following Amendments and Special Provisions shall be used in conjunction with the 2016 Standard Specifications for Road, Bridge, and Municipal Construction.

AMENDMENTS TO THE STANDARD SPECIFICATIONS

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

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

1-02.AP1

Section 1-02, Bid Procedures and Conditions
April 4, 2016

1-02.4(1) General

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 on the Thursday preceding the bid opening to allow a written reply to reach all prospective Bidders before the submission of their Bids.

1-02.9 Delivery of Proposal

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

> The Contracting Agency will not open or consider any Proposal when the Proposal or Bid deposit is received after the time specified for receipt of Proposals or received in a location other than that specified for receipt of Proposals unless an emergency or unanticipated event interrupts normal work processes of the Contracting Agency so that Proposals cannot be received.

The following new paragraph is inserted before the last paragraph:

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

1-02.12 Public Opening of Proposals

This section is supplemented with the following new paragraph:

If an emergency or unanticipated event interrupts normal work processes of the Contracting Agency so that Proposals cannot be opened at the time indicated in the call for Bids the time specified for opening of Proposals will be deemed to be extended to the same time of day on the first work day on which the normal work processes of the Contracting Agency resume.

1-06.AP1

Section 1-06, Control of Material
January 4, 2016

This section is supplemented with the following new section and subsections:

1-06.6 Recycled Materials

The Contractor shall make their best effort to utilize recycled materials in the construction of the project; the use of recycled concrete aggregate as specified in Section 1-06.6(1)A is a requirement of the Contract.

The Contractor shall submit a Recycled Material Utilization Plan as a Type 1 Working Drawing within 30 calendar days after the Contract is executed. The plan shall provide the Contractor's anticipated usage of recycled materials for meeting the requirements of these Specifications. The quantity of recycled materials will be provided in tons and as a percentage of the Plan quantity for each material listed in Section 9-03.21(1)E Table on Maximum Allowable Percent (By Weight) of Recycled Material. When a Contract does not include Work that requires the use of a material that is included in the requirements for using materials the Contractor may state in their plan that no recycled materials are proposed for use.

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

1-06.6(1) Recycling of Aggregate and Concrete Materials

1-06.6(1)A General

The minimum quantity of recycled concrete aggregate shall be 25 percent of the total quantity of aggregate that is incorporated into the Contract for those items listed in Section 9-03.21(1)E Table on Maximum Allowable Percent (By Weight) of Recycled Material that allow the use of recycled concrete aggregate. The percentage of recycled material incorporated into the project for meeting the required percentage will be calculated in tons based on the quantity of recycled concrete used on the entire Contract and not as individual items.

If the Contractor's total cost for Work with recycled concrete aggregate is greater than without the Contractor may choose to not use recycled concrete aggregate. When the Contractor does not meet the minimum requirement of 25 percent recycled concrete aggregate for the Contract due to costs or any other reason the following shall be submitted:

1. A cost estimate for each material listed in Section 9-03.21(1)E that is utilized on the Contract. The cost estimate shall include the following:

    a. The estimated costs for the Work for each material with 25 percent recycled concrete aggregate. The cost estimate shall include for each material a copy of the price quote from the supplier with the lowest total cost for the Work.

    b. The estimated costs for the Work for each material without recycled concrete aggregate.

The Contractor's cost estimates shall be submitted as an attachment to the Recycled Materials Reporting form.

1-07.AP1

Section 1-07, Legal Relations and Responsibilities to the Public
April 4, 2016

1-07.1 Laws to be Observed

In the second to last sentence of the third paragraph, "WSDOT" is revised to read "Contracting Agency".

1-07.2(2) State Sales Tax: WAC 458-20-170 – Retail Sales Tax

The last three sentences of the first paragraph are deleted and replaced with the following new sentence:

The Contractor (Prime or Subcontractor) shall include sales or use tax on the purchase or rental of tools, machinery, equipment, or consumable supplies not integrated into the project, in the unit bid prices.

1-07.9(2) Posting Notices

Items 1 and 2 are revised to read:

1. EEOC - P/E-1 (revised 11/09, supplemented 09/15) – **Equal Employment Opportunity IS THE LAW** published by US Department of Labor. Post for projects with federal-aid funding.

2. FHWA 1022 (revised 05/15) – **NOTICE Federal-Aid Project** published by Federal Highway Administration (FHWA). Post for projects with federal-aid funding.

Items 5, 6 and 7 are revised to read:

5. WHD 1420 (revised 02/13) – **Employee Rights and Responsibilities Under The Family And Medical Leave Act** published by US Department of Labor. Post on all projects.

6. WHD 1462 (revised 01/16) – **Employee Polygraph Protection Act** published by US Department of Labor. Post on all projects.

7. F416-081-909 (revised 09/15) – **Job Safety and Health Law** published by Washington State Department of Labor and Industries. Post on all projects.

Items 9 and 10 are revised to read:

9. F700-074-909 (revised 06/13) – **Your Rights as a Worker in Washington State** by Washington State Department of Labor and Industries (L&I). Post on all projects.

10. EMS 9874 (revised 10/15) – **Unemployment Benefits** published by Washington State Employment Security Department. Post on all projects.

1-08.AP1

Section 1-08, Prosecution and Progress
January 4, 2016

1-08.1(1) Prompt Payment, Subcontract Completion and Return of Retainage Withheld

In item number 5 of the first paragraph, "WSDOT" is revised to read "Contracting Agency".

1-09.AP1

Section 1-09, Measurement and Payment
April 4, 2016

1-09.6 Force Account

The second sentence of item number 4 is revised to read:

A "specialized service" is a work operation that is not typically done by worker classifications as defined by the Washington State Department of Labor and Industries and by the Davis Bacon Act, and therefore bills by invoice for work in road, bridge and municipal construction.

5-02.AP5

Section 5-02, Bituminous Surface Treatment
April 4, 2016

5-02.3(2) Preparation of Roadway Surface

This section is supplemented with the following new subsection:

5-02.3(2)E Crack Sealing

Where shown in the Plans, seal cracks and joints in the pavement in accordance with Section 5-04.3(4)A1 and the following:

1. Cracks ¼ inch to 1 inch in width - fill with hot poured sealant.

2. Cracks greater than 1 inch in width – fill with sand slurry.

5-04.AP5

Section 5-04, Hot Mix Asphalt
April 4, 2016

This section (and all subsections) is revised to read:

This Section 5-04 is written in a style which, unless otherwise indicated, shall be interpreted as direction to the Contractor.

5-04.1 Description

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

HMA shall be composed of asphalt binder and mineral materials as required, and may include reclaimed asphalt pavement (RAP) or reclaimed asphalt shingles (RAS), mixed in the proportions specified to provide a homogeneous, stable, and workable mix.

5-04.2 Materials

Provide materials as specified in these sections:

Asphalt Binder	9-02.1(4)
Cationic Emulsified Asphalt	9-02.1(6)
Anti-Stripping Additive	9-02.4
Warm Mix Asphalt Additive	9-02.5
Aggregates	9-03.8
Reclaimed Asphalt Pavement (RAP)	9-03.8(3)B
Reclaimed Asphalt Shingles (RAS)	9-03.8(3)B
Mineral Filler	9-03.8(5)
Recycled Material	9-03.21
Hot Poured Sealant	9-04.2(1)A
Sand Slurry	9-04.2(1)B

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

Comply with each of the following:

- Develop the mix design in accordance with WSDOT SOP 732.
- Develop a mix design that complies with Sections 9-03.8(2) and 9-03.8(6).
- Develop a mix design no more than 6 months prior to submitting it for QPL evaluation.
- Submit mix designs to the WSDOT State Materials Laboratory in Tumwater, including WSDOT Form 350-042.
- Include representative samples of the materials that are to be used in the HMA production as part of the mix design submittal. See Section 5-04.2(1)A to determine when to include samples of RAP or RAS.

- Identify the brand, type, and percentage of anti-stripping additive in the mix design submittal.

- Include with the mix design submittal a certification from the asphalt binder supplier that the anti-stripping additive is compatible with the crude source and the formulation of asphalt binder proposed for use in the mix design.

- Do not include warm mix asphalt (WMA) additives when developing a mix design or submitting a mix design for QPL evaluation. The use of warm mix asphalt (WMA) additives is not part of the process for obtaining approval for listing a mix design on the QPL. Refer to Section 5-04.2(2)B.

The Contracting Agency's basis for approving, testing, and evaluating HMA mix designs for approval on the QPL is dependent on the contractual basis for acceptance of the HMA mixture, as shown in Table 1.

Table 1

Basis for Contracting Agency Evaluation of HMA Mix Designs for Approval on the QPL		
Contractual Basis for Acceptance of HMA Mixture (see Section 5-04.3(9))	**Basis for Contracting Agency Approval of Mix Design for Placement on QPL**	**Contracting Agency Materials Testing for Evaluation of the Mix Design**
Statistical Evaluation, or Nonstatistical Evaluation	WSDOT Standard Practice QC-8	The Contracting Agency will test the mix design materials for compliance with Sections 9-03.8(2) and 9-03.8(6).
Visual Evaluation	Review of Form 350-042 for compliance with Sections 9-03.8(2) and 9-03.8(6)	The Contracting Agency may elect to test the mix design materials, or evaluate in accordance with WSDOT Standard Practice QC-8, at its sole discretion.

If the Contracting Agency approves the mix design, it will be listed on the QPL for 12 consecutive months. The Contracting Agency may extend the 12 month listing provided the Contractor submits a certification letter to the Qualified Products Engineer verifying that the aggregate source and job mix formula (JMF) gradation, and asphalt binder crude source and formulation have not changed. The Contractor may submit the certification no sooner than one month prior to expiration of the initial 12 month mix design approval. Within 7 calendar days of receipt of the Contractor's certification, the Contracting Agency will update the QPL. The maximum duration for approval of a mix design and listing on the QPL will be 24 months from the date of initial approval or as approved by the Engineer.

5-04.2(1)A Mix Designs Containing RAP and/or RAS

Mix designs are classified by the RAP and/or RAS content as shown in Table 2.

Table 2

Mix Design Classification Based on RAP/RAS Content	
RAP/RAS Classification	**RAP/RAS Content[1]**
Low RAP/No RAS	0% ≤ RAP% ≤ 20% and RAS% = 0%
High RAP/Any RAS	20% < RAP% ≤ Maximum Allowable RAP[2] and/or 0% < RAS% ≤ Maximum Allowable RAS[2]

[1]Percentages in this table are by total weight of HMA
[2]See Table 4 to determine the limits on the maximum amount RAP and/or RAS.

5-04.2(1)A1 Low RAP/No RAS – Mix Design Submittals for Placement on QPL

For Low RAP/No RAS mix designs, comply with the following additional requirements:

1. Develop the mix design without the inclusion of RAP.

2. The asphalt binder grade shall be the grade indicated in the Bid item name or as otherwise required by the Contract.

3. Do not submit samples of RAP with these mix designs.

4. Testing RAP or RAS stockpiles is not required for obtaining approval for placing these mix designs on the QPL.

5-04.2(1)A2 High RAP/Any RAS - Mix Design Submittals for Placement on QPL

For High RAP/Any RAS mix designs, comply with the following additional requirements:

1. For mix designs with any RAS, test the RAS stockpile (and RAP stockpile if any RAP is in the mix design) in accordance with Table 3.

2. For High RAP mix designs with no RAS, test the RAP stockpile in accordance with Table 3.

3. For mix designs with High RAP/Any RAS, construct a single stockpile for RAP and a single stockpile for RAS and isolate (sequester) these stockpiles from further stockpiling before beginning development of the mix design. Test the RAP and RAS during stockpile construction as required by item 1 and 2 above. Use the test data in developing the mix design, and report the test data to the Contracting Agency on WSDOT Form 350-042 as part of the mix design submittal for approval on the QPL. Account for the reduction in asphalt binder contributed from RAS

in accordance with AASHTO PP 78. Do not add to these stockpiles after starting the mix design process.

Table 3

Test Frequency of RAP/RAS During RAP/RAS Stockpile Construction For Approving a High RAP/Any RAS Mix Design for Placement on the QPL		
Test Frequency[1]	Test for	Test Method
• 1/1000 tons of RAP (minimum of 10 per mix design) and • 1/100 tons of RAS (minimum of 10 per mix design)	Asphalt Binder Content and Sieve Analysis of Fine and Coarse Aggregate	FOP for AASHTO T 308 and FOP for WAQTC T 27/T 11

[1]"tons", in this table, refers to tons of the reclaimed material before being incorporated into HMA.

4. Limit the amount of RAP and/or RAS used in a High RAP/Any RAS mix design by the amount of binder contributed by the RAP and/or RAS, in accordance with Table 4.

Table 4

Maximum Amount of RAP and/or RAS in HMA Mixture	
Maximum Amount of Binder Contributed from:	
RAP	RAS
40%[1] minus contribution of binder from RAS	20%[2]

[1] Calculated as the weight of asphalt binder contributed from the RAP as a percentage of the total weight of asphalt binder in the mixture.

[2] Calculated as the weight of asphalt binder contributed from the RAS as a percentage of the total weight of asphalt binder in the mixture.

5. Develop the mix design including RAP, RAS, recycling agent, and new binder.

6. Extract, recover, and test the asphalt residue from the RAP and RAS stockpiles to determine the percent of recycling agent and/or grade of new asphalt binder needed to meet but not exceed the performance grade (PG) of asphalt binder required by the Contract.

   a. Perform the asphalt extraction in accordance with AASHTO T 164 or ASTM D 2172 using reagent grade trichloroethylene.

   b. Perform the asphalt recovery in accordance with AASHTO R 59 or ASTM D 1856.

c. Test the recovered asphalt residue in accordance with AASHTO R 29 to determine the asphalt binder grade in accordance with Section 9-02.1(4).

d. After determining the recovered asphalt binder grade, determine the percent of recycling agent and/or grade of new asphalt binder in accordance with ASTM D 4887.

e. Test the final blend of recycling agent, binder recovered from the RAP and RAS, and new asphalt binder in accordance with AASHTO R 29. The final blended binder shall meet but not exceed the performance grade of asphalt binder required by the Contract and comply with the requirements of Section 9-02.1(4).

7. Include the following test data with the mix design submittal:

   a. All test data from RAP and RAS stockpile construction.

   b. All data from testing the recovered and blended asphalt binder.

8. Include representative samples of the following with the mix design submittal:

   a. RAP and RAS.

   b. 100 grams of recovered asphalt residue from the RAP and RAS that are to be used in the HMA production.

5-04.2(1)B Commercial HMA - Mix Design Submittal for Placement on QPL

For HMA used in the Bid item Commercial HMA, in addition to the requirements of 5-04.2(1) identify the following in the submittal:

1. Commercial HMA

2. Class of HMA

3. Performance grade of binder

4. Equivalent Single Axle Load (ESAL)

The Contracting Agency may elect to approve Commercial HMA mix designs without evaluation.

5-04.2(1)C Mix Design Resubmittal for QPL Approval

Develop a new mix design and resubmit for approval on the QPL when any of the following changes occur. When these occur, discontinue using the mix design until after it is reapproved on the QPL.

1. Change in the source of crude petroleum used in the asphalt binder.

2. Changes in the asphalt binder refining process.

3. Changes in additives or modifiers in the asphalt binder.

4. Changes in the anti-strip additive, brand, type or quantity.

5. Changes to the source of material for aggregate.

6. Changes to the job mix formula that exceed the amounts as described in item 2 of Section 9-03.8(7), unless otherwise approved by the Engineer.

7. Changes in the percentage of material from a stockpile, when such changes exceed 5% of the total aggregate weight.

    a. Changes to the percentage of material from a stockpile will be calculated based on the total aggregate weight (not including the weight of RAP) for Low RAP/No RAS mix designs.

    b. For High RAP/Any RAS mix designs, changes in the percentage of material from a stockpile will be based on total aggregate weight including the weight of RAP (and/or RAS when included in the mixture).

Prior to making any change in the amount of RAS in an approved mix design, notify the Engineer for determination of whether a new mix design is required, and obtain the Engineer's approval prior to implementing such changes.

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

Use only mix designs listed on the Qualified Products List (QPL). Submit WSDOT Form 350-041 to the Engineer to request approval to use a mix design from the QPL. Changes to the job mix formula (JMF) that have been approved on other contracts may be included. The Engineer may reject a request to use a mix design if production of HMA using that mix design on any contract is not in compliance with Section 5-04.3(11)D, E, F, and G for mixture or compaction.

5-04.2(2)A Changes to the Job Mix Formula

The approved mix design obtained from the QPL will be considered the starting job mix formula (JMF) and shall be used as the initial basis for acceptance of HMA mixture, as detailed in Section 5-04.3(9).

During production the Contractor may request to adjust the JMF. Any adjustments to the JMF will require approval of the Engineer and shall be made in accordance with item 2 of Section 9-03.8(7). After approval by the Engineer, such adjusted JMF's shall constitute the basis for acceptance of the HMA mixture.

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

The Contractor may, at the Contractor's discretion, elect to use warm mix asphalt (WMA) processes for producing HMA. WMA processes include

organic additives, chemical additives, and foaming. The use of WMA is subject to the following:

- Do not use WMA processes in the production of High RAP/Any RAS mixtures.
- Before using WMA processes, obtain the Engineer's approval using WSDOT Form 350-076 to describe the proposed WMA process.

5-04.3 Construction Requirements

5-04.3(1) Weather Limitations

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

Do not place HMA on any wet surface, or when the average surface temperatures are less than those specified in Table 5, or when weather conditions otherwise prevent the proper handling or finishing of the HMA.

Table 5

Minimum Surface Temperature for Paving		
Compacted Thickness (Feet)	**Wearing Course**	**Other Courses**
Less than 0.10	55°F	45°F
0.10 to 0.20	45°F	35°F
More than 0.20	35°F	35°F

5-04.3(2) Paving Under Traffic

These requirements apply when the Roadway being paved is open to traffic.

In hot weather, the Engineer may require the application of water to the pavement to accelerate the finish rolling of the pavement and to shorten the time required before reopening to traffic.

During paving operations, maintain temporary pavement markings throughout the project. Install temporary pavement markings on the Roadway prior to opening to traffic. Temporary pavement markings shall comply with Section 8-23.

5-04.3(3) Equipment

5-04.3(3)A Mixing Plant

Equip mixing plants as follows.

1. **Use tanks for storage and preparation of asphalt binder which:**

   - Heat the contents by means that do not allow flame to contact the contents or the tank, such as by steam or electricity.

   - Heat and hold contents at the required temperatures.

   - Continuously circulate contents to provide uniform temperature and consistency during the operating period.

- Provide an asphalt binder sampling valve, in either the storage tank or the supply line to the mixer.

2. **Provide thermometric equipment:**

   - In the asphalt binder feed line near the charging valve at the mixer unit, capable of detecting temperature ranges expected in the HMA and in a location convenient and safe for access by Inspectors.

   - At the discharge chute of the drier to automatically register or indicate the temperature of the heated aggregates, and situated in full view of the plant operator.

3. **When heating asphalt binder:**

   - Do not exceed the maximum temperature of the asphalt binder recommended by the asphalt binder supplier.

   - Avoid local variations in heating.

   - Provide a continuous supply of asphalt binder to the mixer at a uniform average temperature with no individual variations exceeding 25°F.

4. **Provide a mechanical sampler for sampling mineral materials that:**

   - Meets the crushing or screening requirements of Section 1-05.6.

5. **Provide HMA sampling equipment that complies with WSDOT SOP T-168.**

   - Use a mechanical sampling device installed between the discharge of the silo and the truck transport, approved by the Engineer, or

   - Platforms or devices to enable sampling from the truck transport without entering the truck transport for sampling HMA.

6. **Provide for setup and operation of the Contracting Agency's field testing:**

   - As required in Section 3-01.2(2).

7. **Provide screens or a lump breaker:**

   - When using any RAP or any RAS, to eliminate oversize RAP or RAS particles from entering the pug mill or drum mixer.

5-04.3(3)B Hauling Equipment

Provide HMA hauling equipment with tight, clean, smooth metal beds and a cover of canvas or other suitable material of sufficient size to protect the HMA from adverse weather. Securely attach the cover to protect the HMA whenever the weather conditions during the work shift include, or are forecast to include, precipitation or an air temperature less than 45°F.

Prevent HMA from adhering to the hauling equipment. Spray metal beds with an environmentally benign release agent. Drain excess release agent prior to filling hauling equipment with HMA. Do not use petroleum derivatives or other coating material that contaminate or alter the characteristics of the HMA. For hopper trucks, operate the conveyer during the process of applying the release agent.

5-04.3(3)C Pavers

Use self-contained, power-propelled pavers provided with an internally heated vibratory screed that is capable of spreading and finishing courses of HMA in lane widths required by the paving section shown in the Plans.

When requested by the Engineer, provide written certification that the paver is equipped with the most current equipment available from the manufacturer for the prevention of segregation of the coarse aggregate particles. The certification shall list the make, model, and year of the paver and any equipment that has been retrofitted to the paver.

Operate the screed in accordance with the manufacturer's recommendations and in a manner to produce a finished surface of the required evenness and texture without tearing, shoving, segregating, or gouging the mixture. Provide a copy of the manufacturer's recommendations upon request by the Contracting Agency. Extensions to the screed will be allowed provided they produce the same results, including ride, density, and surface texture as obtained by the primary screed. In the Travelled Way do not use extensions without both augers and an internally heated vibratory screed.

Equip the paver with automatic screed controls and sensors for either or both sides of the paver. The controls shall be capable of sensing grade from an outside reference line, sensing the transverse slope of the screed, and providing automatic signals that operate the screed to maintain the desired grade and transverse slope. Construct the sensor so it will operate from a reference line or a mat referencing device. The transverse slope controller shall be capable of maintaining the screed at the desired slope within plus or minus 0.1 percent.

Equip the paver with automatic feeder controls, properly adjusted to maintain a uniform depth of material ahead of the screed.

Manual operation of the screed is permitted in the construction of irregularly shaped and minor areas. These areas include, but are not limited to, gore areas, road approaches, tapers and left-turn channelizations.

When specified in the Contract, provide reference lines for vertical control. Place reference lines on both outer edges of the Traveled Way of each

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

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

If the paving machine in use is not providing the required finish, the Engineer may suspend Work as allowed by Section 1-08.6.

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

Use a material transfer device (MTD) or material transfer vehicle (MTV) to deliver the HMA from the hauling equipment to the paving machine for any lift in (or partially in) the top 0.30 feet of the pavement section used in traffic lanes. However, an MTD/V is not required for HMA placed in irregularly shaped and minor areas such as tapers and turn lanes, or for HMA mixture that is accepted by Visual Evaluation. At the Contractor's request the Engineer may approve paving without an MTD/V; the Engineer will determine if an equitable adjustment in cost or time is due. If a windrow elevator is used, the Engineer may limit the length of the windrow in urban areas or through intersections.

To be approved for use, an MTV:

1. Shall be a self-propelled vehicle, separate from the hauling vehicle or paver.

2. Shall not connected to the hauling vehicle or paver.

3. May accept HMA directly from the haul vehicle or pick up HMA from a windrow.

4. Shall mix the HMA after delivery by the hauling equipment and prior to placement into the paving machine.

5. Shall mix the HMA sufficiently to obtain a uniform temperature throughout the mixture.

To be approved for use, an MTD:

1. Shall be positively connected to the paver.

2. May accept HMA directly from the haul vehicle or pick up HMA from a windrow.

3. Shall mix the HMA after delivery by the hauling equipment and prior to placement into the paving machine.

4. Shall mix the HMA sufficiently to obtain a uniform temperature throughout the mixture.

5-04.3(3)E Rollers

Operate rollers in accordance with the manufacturer's recommendations. When requested by the Engineer, provide a Type 1 Working Drawing of the manufacturer's recommendation for the use of any roller planned for use on the project. Do not use rollers that crush aggregate, produce pickup or washboard, unevenly compact the surface, displace the mix, or produce other undesirable results.

5-04.3(4) Preparation of Existing Paved Surfaces

Before constructing HMA on an existing paved surface, the entire surface of the pavement shall be clean. Entirely remove all fatty asphalt patches, grease drippings, and other deleterious substances from the existing pavement to the satisfaction of the Engineer. Thoroughly clean all pavements or bituminous surfaces of dust, soil, pavement grindings, and other foreign matter. Thoroughly remove any cleaning or solvent type liquids used to clean equipment spilled on the pavement before paving proceeds. Fill all holes and small depressions with an appropriate class of HMA. Level and thoroughly compact the surface of the patched area.

Apply a uniform coat of asphalt (tack coat) to all paved surfaces on which any course of HMA is to be placed or abutted. Apply tack coat to cover the cleaned existing pavement with a thin film of residual asphalt free of streaks and bare spots. Apply a heavy application of tack coat to all joints. For Roadways open to traffic, limit the application of tack coat to surfaces that will be paved during the same working shift. Equip the spreading equipment with a thermometer to indicate the temperature of the tack coat material.

Do not operate equipment on tacked surfaces until the tack has broken and cured. Repair tack coat damaged by the Contractor's operation, prior to placement of the HMA.

Unless otherwise approved by the Engineer, use CSS-1, CSS-1h, or Performance Graded (PG) asphalt for tack coat. The CSS-1 and CSS-1h emulsified asphalt may be diluted with water at a rate not to exceed one part water to one part emulsified asphalt. Do not allow the tack coat material to exceed the maximum temperature recommended by the asphalt supplier.

When shown in the Plans, prelevel uneven or broken surfaces over which HMA is to be placed by using an asphalt paver, a motor patrol grader, or by hand raking, as approved by the Engineer.

5-04.3(4)A Crack Sealing

5-04.3(4)A1 General

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

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

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

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

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

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

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

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

1. Cracks ¼ inch to 1 inch in width - fill with hot poured sealant.

2. Cracks greater than 1 inch in width – fill with sand slurry.

5-04.3(4)B Soil Residual Herbicide

Where shown in the Plans, apply one application of an approved soil residual herbicide. Comply with Section 8-02.3(3)B. Complete paving within 48 hours of applying the herbicide.

Use herbicide registered with the Washington State Department of Agriculture for use under pavement. Before use, obtain the Engineer's approval of the

herbicide and the proposed rate of application. Include the following information in the request for approval of the material:

1. Brand Name of the Material,

2. Manufacturer,

3. Environmental Protection Agency (EPA) Registration Number,

4. Material Safety Data Sheet, and

5. Proposed Rate of Application.

5-04.3(4)C Pavement Repair

Excavate pavement repair areas and backfill these with HMA in accordance with the details shown in the Plans and as staked. Conduct the excavation operations in a manner that will protect the pavement that is to remain. Repair pavement not designated to be removed that is damaged as a result of the Contractor's operations to the satisfaction of the Engineer at no cost to the Contracting Agency. Excavate only within one lane at a time unless approved otherwise by the Engineer. Do not excavate more area than can be completely backfilled and compacted during the same shift.

Unless otherwise shown in the Plans or determined by the Engineer, excavate to a depth of 1.0 feet. The Engineer will make the final determination of the excavation depth required.

The minimum width of any pavement repair area shall be 40 inches unless shown otherwise in the Plans. Before any excavation, sawcut the perimeter of the pavement area to be removed unless the pavement in the pavement repair area is to be removed by a pavement grinder.

Excavated materials shall be the property of the Contractor and shall be disposed of in a Contractor-provided site off the Right of Way or used in accordance with Sections 2-02.3(3) or 9-03.21.

Apply a heavy application of tack coat to all surfaces of existing pavement in the pavement repair area, in accordance with Section 5-04.3(4).

Place the HMA backfill in lifts not to exceed 0.35-foot compacted depth. Thoroughly compact each lift by a mechanical tamper or a roller.

5-04.3(5) Producing/Stockpiling Aggregates, RAP, & RAS

Produce aggregate in compliance with Section 3-01. Comply with Section 3-02 for preparing stockpile sites, stockpiling, and removing from stockpile each of the following: aggregates, RAP, and RAS. Provide sufficient storage space for each size of aggregate, RAP and RAS. Fine aggregate or RAP may be uniformly blended with the RAS as a method of preventing the agglomeration of RAS particles. Remove the aggregates, RAP and RAS from stockpile(s) in a manner that ensures minimal segregation when being moved to the HMA plant for processing into the final mixture. Keep different aggregate sizes separated until they have been delivered to the HMA plant.

5-04.3(5)A Stockpiling RAP or RAS for High RAP/Any RAS Mixes

Do not place any RAP or RAS into a stockpile which has been sequestered for a High RAP/Any RAS mix design. Do not incorporate any RAP or RAS into a High RAP/Any RAS mixture from any source other than the stockpile which was sequestered for approval of that particular High RAP/Any RAS mix design.

RAP that is used in a Low RAP/No RAS mix is not required to come from a sequestered stockpile.

5-04.3(6) Mixing

The asphalt supplier shall introduce 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.

Anti-strip is not required for temporary work that will be removed prior to Physical Completion.

Use asphalt binder of the grade, and from the supplier, in the approved mix design.

Prior to introducing reclaimed materials into the asphalt plant, remove wire, nails, and other foreign material. Discontinue use of the reclaimed material if the Engineer, in their sole discretion, determines the wire, nails, or other foreign material to be excessive.

Size RAP and RAS prior to entering the mixer to provide uniform and thoroughly mixed HMA. If there is evidence of the RAP or RAS not breaking down during the heating and mixing of the HMA, immediately suspend the use of the RAP or RAS until changes have been approved by the Engineer.

After the required amount of mineral materials, RAP, RAS, new asphalt binder and recycling agent have been introduced into the mixer, mix the HMA until complete and uniform coating of the particles and thorough distribution of the asphalt binder throughout the mineral materials, RAP and RAS is ensured.

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

A maximum water content of 2 percent in the mix, at discharge, will be allowed providing the water causes no problems with handling, stripping, or flushing. If the water in the HMA causes any of these problems, reduce the moisture content.

During the daily operation, HMA may be temporarily held in approved storage facilities. Do not incorporate HMA into the Work that has been held for more

than 24 hours after mixing. Provide an easily readable, low bin-level indicator on the storage facility that indicates the amount of material in storage. Waste the HMA in storage when the top level of HMA drops below the top of the cone of the storage facility, except as the storage facility is being emptied at the end of the working shift. Dispose of rejected or waste HMA at no expense to the Contracting Agency.

5-04.3(7) Spreading and Finishing

Do not exceed the maximum nominal compacted depth of any layer in any course, as shown in Table 6, unless approved by the Engineer:

Table 6

Maximum Nominal Compacted Depth of Any Layer		
HMA Class	**Wearing Course**	**Other than Wearing Course**
1 inch	0.35 feet	0.35 feet
¾ and ½ inch	0.30 feet	0.35 feet
⅜ inch	0.15 feet	0.15 feet

Use HMA pavers complying with Section 5-04.3(3) to distribute the mix. On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical, the paving may be done with other equipment or by hand.

When more than one JMF is being utilized to produce HMA, place the material produced for each JMF with separate spreading and compacting equipment. Do not intermingle HMA produced from more than one JMF. Each strip of HMA placed during a work shift shall conform to a single JMF established for the class of HMA specified unless there is a need to make an adjustment in the JMF.

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

Sample aggregate for meeting the requirements of Section 3-04 prior to being incorporated into HMA. (The acceptance data generated for the Section 3-04 acceptance analysis will not be commingled with the acceptance data generated for the Section 5-04.3(9) acceptance analysis.) Aggregate acceptance samples shall be taken as described in Section 3-04. Aggregate acceptance testing will be performed by the Contracting Agency. Aggregate contributed from RAP and/or RAS will not be evaluated under Section 3-04.

For aggregate that will be used in HMA mixture which will be accepted by either Statistical or Nonstatistical Evaluation, the Contracting Agency's acceptance of the aggregate will be based on:

1. Samples taken prior to mixing with asphalt binder, RAP, or RAS;

2. Testing for the materials properties of fracture, uncompacted void content, and sand equivalent;

3. Evaluation by the Contracting Agency in accordance with Section 3-04, including price adjustments as described therein.

For aggregate that will be used in HMA which will be accepted by Visual Evaluation, evaluation in accordance with items 1, 2, and 3 above is at the discretion of the Engineer.

5-04.3(9) HMA Mixture Acceptance

The Contracting Agency will evaluate HMA mixture for acceptance by one of three methods as determined from the criteria in Table 7.

Table 7

Basis of Acceptance for HMA Mixture			
	Visual Evaluation	**Nonstatistical Evaluation**	**Statistical Evaluation**
Criteria for Selecting the Evaluation Method	• Commercial HMA placed at any location • Any HMA placed in: ○ sidewalks ○ road approaches ○ ditches ○ slopes ○ paths ○ trails ○ gores ○ prelevel ○ temporary pavement[1] ○ pavement repair • Other nonstructural applications of HMA as approved by the Engineer	• All HMA mixture of the same class and PG binder grade with a Proposal quantity less than 4,000 tons. (Exclude the tonnage of HMA mixture accepted by Visual Evaluation.)	• All HMA mixture other than that accepted by Visual or Nonstatistical Evaluation

[1] Temporary pavement is HMA that will be removed before Physical Completion of the Contract.

5-04.3(9)A Mixture Acceptance – Test Section

This Section applies to HMA mixture accepted by Statistical Evaluation and mixture accepted by Nonstatistical Evaluation. A test section is not allowed for HMA accepted by Visual Evaluation.

The purpose of a test section is to determine, at the beginning of paving, whether or not the Contractor's mix design and production processes will produce HMA meeting the Contract requirements related to mixture.

Use Table 8 to determine when a test section is required, optional, or not allowed, and to determine when test sections may end for an individual mix design. Each mix design will be evaluated independently for the test section requirements.

Construct HMA mixture test sections at the beginning of paving, using at least 600 tons and a maximum of 1,000 tons or as approved by the Engineer. Each test section shall be constructed in one continuous operation. Each test section shall be considered a lot. The mixture in each

test section will be evaluated based on the criteria in Table 9 to determine if test sections for that mix design may stop.

If more than one test section is required, each test section shall be separately by the criteria in table 8 and 9.

Table 8

Criteria for Conducting and Evaluating HMA Mix Texture Sections (For HMA Mixture Accepted by Statistical or Nonstatistical Evaluation)		
	High RAP/Any RAS	**Low RAP/No RAS**
Is Mixture Test Section Optional or Mandatory?	Mandatory[1]	At Contractor's Option[3]
Waiting period after paving the test section.	4 calendar days[2]	4 calendar days[2]
What Must Happen to Stop Performing Test Sections?	Meet "Results Required to Stop Performing Test Sections" in Table 9 for High RAP/Any RAS.	Provide samples and respond to WSDOT test results required by Table 9 for Low RAP/No RAS.

[1]If a mix design has produced an acceptable test section on a previous contract (paved in the same calendar year, from the same plant, using the same JMF) the test section may be waived if approved by the Engineer.

[2]This is to provide time needed by the Contracting Agency to complete testing and the Contractor to adjust the mixture in response to those test results. Paving may resume when this is done.

[3]For HMA with Low RAP/No RAS, which is accepted by Nonstatistical Evaluation, a test section is not allowed.

Table 9

Results Required to Stop Performing HMA Mixture Test Sections[1] (For HMA Mixture Accepted by Statistical or Nonstatistical Evaluation)		
Test Property	**Type of HMA**	
	High RAP/Any RAS	**Low RAP/No RAS**
Gradation	Minimum PF_i of 0.95 based on the criteria in Section 5-04.3(9)B4[2]	None[4]
Asphalt Binder	Minimum PF_i of 0.95 based on the criteria in Section 5-04.3(9)B4[2]	None[4]
V_a	Minimum PF_i of 0.95 based on the criteria in Section 5-04.3(9)B4[2]	None[4]
Hamburg Wheel Track Indirect Tensile Strength	Meet requirements of Section 9-03.8(2).[3]	These tests will not be done as part of

		Test Section.
Sand Equivalent Uncompacted Void Content Fracture	Meet requirements of Section 9-03.8(2).[3]	None[3]

[1]In addition to the requirements of this table, acceptance of the HMA mixture used in each test section is subject to the acceptance criteria and price adjustments for Statistical Evaluation or Non-statistical Evaluation (see Table 7).

[2]Divide the test section lot into three sublots, approximately equal in size. Take one sample from each sublot, and test each sample for all of the properties in the first column.

[3]Take one sample for each test section lot. Test the sample for all of the properties in the first column.

[4]Divide the test section lot into three sublots, approximately equal in size. Take one sample from each sublot, and test each sample for all of the properties in the first column. There are no criteria for discontinuing test sections for these mixes; however, the contractor must comply with Section 5-04.3(11)F before resuming paving.

5-04.3(9)B Mixture Acceptance – Statistical Evaluation

5-04.3(9)B1 Mixture Statistical Evaluation – Lots and Sublots

HMA mixture which is accepted by Statistical Evaluation will be evaluated by the Contracting Agency dividing that HMA tonnage into mixture lots, and each mixture lot will be evaluated using stratified random sampling by the Contracting Agency sub-dividing each mixture lot into mixture sublots. All mixture in a mixture lot shall be of the same mix design. The mixture sublots will be numbered in the order in which the mixture (of a particular mix design) is paved.

Each mixture lot comprises a maximum of 15 mixture sublots, except:

- The final mixture lot of each mix design on the Contract will comprise a maximum of 25 sublots.
- A mixture lot for a test section, which will consist of the three sublots and corresponding test results used in evaluating the test section for gradation, asphalt binder, and Va.

Each mixture sublot shall be approximately uniform in size with the maximum mixture sublot size as specified in Table 10. The quantity of material represented by the final mixture sublot of the project, for each mix design on the project, may be increased to a maximum of two times the mixture sublot quantity calculated. Should a lot accepted by statistical evaluation contain fewer than three sublots, the HMA will be accepted in accordance with nonstatistical evaluation.

Table 10

Maximum HMA Mixture Sublot Size For HMA Accepted by Statistical Evaluation	
HMA Original Plan Quantity (tons)[1]	**Maximum Sublot Size (tons)[2]**
< 20,000	1,000

20,000 to 30,000	1,500
>30,000	2,000

[1] "Plan quantity" means the plan quantity of all HMA of the same class and binder grade which is accepted by Statistical Evaluation.

[2] The maximum sublot size for each combination of HMA class and binder grade shall be calculated separately.

- For a mixture lot in progress with a mixture CPF less than 0.75, a new mixture lot will begin at the Contractor's request after the Engineer is satisfied that material conforming to the Specifications can be produced. See also Section 5-04.3(11)F.

- If, before completing a mixture lot, the Contractor requests a change to the JMF which is approved by the Engineer, the mixture produced in that lot after the approved change will be evaluated on the basis of the changed JMF, and the mixture produced in that lot before the approved change will be evaluated on the basis of the unchanged JMF; however, the mixture before and after the change will be evaluated in the same lot. Acceptance of subsequent mixture lots will be evaluated on the basis of the changed JMF.

5-04.3(9)B2 Mixture Statistical Evaluation – Sampling

Comply with Section 1-06.2(1).

Samples of HMA mixture which is accepted by Statistical Evaluation will be randomly selected from within each sublot, with one sample per sublot. The Engineer will determine the random sample location using WSDOT Test Method T 716. The Contractor shall obtain the sample when ordered by the Engineer. The Contractor shall sample the HMA mixture in the presence of the Engineer and in accordance with FOP for WAQTC T 168.

5-04.3(9)B3 Mixture Statistical Evaluation – Acceptance Testing

Comply with Section 1-06.2(1).

The Contracting Agency will test the mixture sample from each sublot (including sublots in a test section) for the properties shown in Table 11.

Table 11

Testing Required for each HMA Mixture Sublot		
Test	**Procedure**	**Performed by**
V_a	WSDOT SOP 731	Engineer
Asphalt Binder Content	FOP for AASHTO T 308	Engineer
Gradation: Percent Passing 1½″, 1″, ¾″, ½″, ⅜″, No. 4, No. 8, No. 200	FOP for WAQTC T 27/T 11	Engineer

The mixture samples and tests taken for the purpose of determining acceptance of the test section (as described in Section 5-04.3(9)A) shall also be used as the test results for acceptance of the mixture described in 5-04.3(9)B3, 5-04.3(9)B4, 5-04.3(9)B5, and 5-04.3(9)B6.

5-04.3(9)B4 Mixture Statistical Evaluation – Pay Factors

Comply with Section 1-06.2(2).

The Contracting Agency will determine a pay factor (PF_i) for each of the properties in Table 11, for each mixture lot, using the quality level analysis in Section 1-06.2(2)D. For Gradation, a pay factor will be calculated for each of the sieve sizes listed in Table 11 which is equal to or smaller than the maximum allowable aggregate size (100 percent passing sieve) of the HMA mixture. The USL and LSL shall be calculated using the Job Mix Formula Tolerances (for Statistical Evaluation) in Section 9-03.8(7).

If a constituent is not measured in accordance with these Specifications, its individual pay factor will be considered 1.00 in calculating the Composite Pay Factor (CPF).

5-04.3(9)B5 Mixture Statistical Evaluation – Composite Pay Factors (CPF)

Comply with Section 1-06.2(2).

In accordance with Section 1-06.2(2)D4, the Contracting Agency will determine a Composite Pay Factor (CPF) for each mixture lot from the pay factors calculated in Section 5-04.3(9)B4, using the price adjustment factors in Table 12. Unless otherwise specified, the maximum CPF for HMA mixture shall be 1.05.

Table 12

HMA Mixture Price Adjustment Factors	
Constituent	**Factor "f"**
All aggregate passing: 1½″, 1″, ¾″, ½″, ⅜″ and No.4 sieves	2
All aggregate passing No. 8 sieve	15
All aggregate passing No. 200 sieve	20
Asphalt binder	40
Air Voids (V_a)	20

5-04.3(9)B6 Mixture Statistical Evaluation – Price Adjustments

For each HMA mixture lot, a Job Mix Compliance Price Adjustment will be determined and applied, as follows:

$$JMCPA = [0.60 \times (CPF - 1.00)] \times Q \times UP$$

Where

JMCPA = Job Mix Compliance Price Adjustment for a given lot of mixture ($)

CPF = Composite Pay factor for a given lot of mixture (maximum is 1.05)
Q = Quantity in a given lot of mixture (tons)
UP = Unit price of the HMA in a given lot of mixture ($/ton)

5-04.3(9)B7 Mixture Statistical Evaluation – Retests

The Contractor may request that a mixture sublot be retested. To request a retest, submit a written request to the Contracting Agency within 7 calendar days after the specific test results have been posted to the website or emailed to the Contractor, whichever occurs first. The Contracting Agency will send a split of the original acceptance sample for testing by the Contracting Agency to either the Region Materials Laboratory or the State Materials Laboratory as determined by the Engineer. The Contracting Agency will not test the split of the sample with the same equipment or by the same tester that ran the original acceptance test. The sample will be tested for a complete gradation analysis, asphalt binder content, and V_a, and the results of the retest will be used for the acceptance of the HMA mixture in place of the original mixture sublot sample test results. The cost of testing will be deducted from any monies due or that may come due the Contractor under the Contract at the rate of $250 per sample.

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

5-04.3(9)C1 Mixture Nonstatistical Evaluation – Lots, Sublots, Sampling, Test Section, Testing, Retests

For HMA mixture accepted by Nonstatistical Evaluation, comply with the requirements in Table 13:

Table 13

Nonstatistical Evaluation Lots, Sublots, Sampling, Test Section, Testing, Retests		
Comply with the Specifications Below		Comply with the Requirements of the Section for:
Test Section	Section 5-04.3(9)A	Nonstatistical Evaluation
Lots and Sublots	Section 5-04.3(9)B1	Statistical Evaluation
Sampling	Section 5-04.3(9)B2	Statistical Evaluation
Acceptance Tests	Section 5-04.3(9)B3	Statistical Evaluation
Retests	Section 5-04.3(9)B7	Statistical Evaluation

5-04.3(9)C2 Mixture Nonstatistical Evaluation - Acceptance

Each mixture lot of HMA produced under Nonstatistical Evaluation, for which all sublot acceptance test results (required by Table 13) fall within the Job Mix Formula Tolerances for Nonstatistical Evaluation in Section 9-03.8(7), will be accepted at the unit Contract price with no further evaluation.

5-04.3(9)C3 Mixture Nonstatistical Evaluation – Out of Tolerance Procedures

Each mixture lot of HMA produced under Nonstatistical Evaluation, for which any sublot acceptance test result (required by Table 13)

falls outside of the Job Mix Formula Tolerances for Nonstatistical Evaluation in Section 9-03.8(7), shall be evaluated in accordance with Section 1-06.2 and Table 14 to determine a Job Mix Compliance Price Adjustment.

Table 14

Nonstatistical Evaluation – Out of Tolerance Procedures	
Comply with the Following[1]	
Pay Factors[2]	Section 5-04.3(9)B4
Composite Pay Factors[3]	Section 5-04.3(9)B5
Price Adjustments	Section 5-04.3(9)B6

[1]When less than three mixture sublots exist, backup samples of the existing mixture sublots shall be tested to provide a minimum of three sets of results for evaluation. If enough backup samples are not available, the Contracting Agency will select core sample locations from the Roadway in accordance with WSDOT Test Method T 716, take cores from the roadway in accordance with WSDOT SOP 734, and test the cores in accordance with WSDOT SOP 737.

[2]The Nonstatistical Evaluation tolerance limits in Section 9-03.8(7) will be used in the calculation of the PF_i.

[3]The maximum CPF shall be 1.00.

5-04.3(9)D Mixture Acceptance – Visual Evaluation

Visual Evaluation of HMA mixture will be by visual inspection by the Engineer or, in the sole discretion of the Engineer, the Engineer may sample and test the mixture.

5-04.3(9)D1 Mixture Visual Evaluation – Lots, Sampling, Testing, Price Adjustments

HMA mixture accepted by Visual Evaluation will not be broken into lots unless the Engineer determines that testing is required. When that occurs, the Engineer will identify the limits of the questionable HMA mixture, and that questionable HMA mixture shall constitute a lot. Then, the Contractor will take samples from the truck, or the Engineer will take core samples from the roadway at a minimum of three random locations from within the lot, selected in accordance with WSDOT Test Method T 716, taken from the roadway in accordance with WSDOT SOP 734, and tested in accordance with WSDOT SOP 737. The Engineer will test one of the samples for all constituents in Section 5-04.3(9)B3. If all constituents from that test fall within the Job Mix Formula Tolerances (for Visual Evaluation) in Section 9-03.8(7), the lot will be accepted at the unit Contract price with no further evaluation.

When one or more constituents fall outside those tolerance limits, the other samples will be tested for all constituents in Section 5-04.3(9)B3, and a Job Mix Compliance Price Adjustment will be calculated in accordance with Table 15.

Table 15

Visual Evaluation – Out of Tolerance Procedures	
Comply with the Following	
Pay Factors[1]	Section 5-04.3(9)B4
Composite Pay Factors[2]	Section 5-04.3(9)B5
Price Adjustments	Section 5-04.3(9)B6

[1]The Visual Evaluation tolerance limits in Section 9-03.8(7) will be used in the calculation of the PF_i.

[2]The maximum CPF shall be 1.00.

5-04.3(9)E Mixture Acceptance – Notification of Acceptance Test Results

The results of all mixture acceptance testing and the Composite Pay Factor (CPF) of the lot after three sublots have been tested will be available to the Contractor through The Contracting Agency's website.

The Contracting Agency will endeavor to provide written notification (via email to the Contractor's designee) of acceptance test results through its web-based materials testing system Statistical Analysis of Materials (SAM) within 24 hours of the sample being made available to the Contracting Agency. However, the Contractor agrees:

1. Quality control, defined as the system used by the Contractor to monitor, assess, and adjust its production processes to ensure that the final HMA mixture will meet the specified level of quality, is the sole responsibility of the Contractor.

2. The Contractor has no right to rely on any testing performed by the Contracting Agency, nor does the Contractor have any right to rely on timely notification by the Contracting Agency of the Contracting Agency's test results (or statistical analysis thereof), for any part of quality control and/or for making changes or correction to any aspect of the HMA mixture.

3. The Contractor shall make no claim for untimely notification by the Contracting Agency of the Contracting Agency's test results or statistical analysis.

5-04.3(10) HMA Compaction Acceptance

For all HMA, the Contractor shall comply with the General Compaction Requirements in Section 5-04.3(10)A. The Contracting Agency will evaluate all HMA for compaction compliance with one of the following - Statistical Evaluation, Visual Evaluation, or Test Point Evaluation - determined by the criteria in Table 16:

Table 16

Criteria for Determining Method of Evaluation for HMA Compaction[1]		
Statistical Evaluation of HMA Compaction is Required For:	**Visual Evaluation of HMA Compaction is Required For:**	**Test Point Evaluation of HMA Compaction is Required For:**

• Any HMA for which the specified course thickness is greater than 0.10 feet, and the HMA is in: ○ traffic lanes, including but not limited to: • ramp lanes • truck climbing lanes • weaving lanes • speed change lanes	• "HMA for Preleveling…" • "HMA for Pavement Repair…"	• Any HMA not meeting the criteria for Statistical Evaluation or Visual Evaluation

[1]This table applies to all HMA, and shall be the sole basis for determining the acceptance method for compaction.

The Contracting Agency may, at its sole discretion, evaluate any HMA for compliance with the Cyclic Density requirements of Section 5-04.3(10)B.

5-04.3(10)A HMA Compaction – General Compaction Requirements

Immediately after the HMA has been spread and struck off, and after surface irregularities have been adjusted, thoroughly and uniformly compact the mix. The completed course shall be free from ridges, ruts, humps, depressions, objectionable marks, and irregularities and shall conform to the line, grade, and cross-section shown in the Plans. If necessary, alter the JMF in accordance with Section 9-03.8(7) to achieve desired results.

Compact the mix when it is in the proper condition so that no undue displacement, cracking, or shoving occurs. Compact areas inaccessible to large compaction equipment by mechanical or hand tampers. Remove HMA that becomes loose, broken, contaminated, shows an excess or deficiency of asphalt, or is in any way defective. Replace the removed material with new HMA, and compact it immediately to conform to the surrounding area.

The type of rollers to be used and their relative position in the compaction sequence shall generally be the Contractor's option, provided the specified densities are attained. An exception shall be that pneumatic tired rollers shall be used for compaction of the wearing course beginning October 1st of any year through March 31st of the following year. Coverage with a steel wheel roller may precede pneumatic tired rolling. Unless otherwise approved by the Engineer, operate rollers in the static mode when the internal temperature of the mix is less than 175°F. Regardless of mix temperature, do not operate a roller in a mode that results in checking or cracking of the mat.

On bridge decks and on the five feet of roadway approach immediately adjacent to the end of bridge/back of pavement seat, operate rollers in static mode only.

5-04.3(10)B HMA Compaction – Cyclic Density

Low cyclic density areas are defined as spots or streaks in the pavement that are less than 90 percent of the theoretical maximum density. At the Engineer's discretion, the Engineer may evaluate the HMA pavement for low cyclic density, and when doing so will follow WSDOT SOP 733. A $500 Cyclic Density Price Adjustment will be assessed for any 500-foot section with two or more density readings below 90 percent of the theoretical maximum density.

5-04.3(10)C HMA Compaction Acceptance – Statistical Evaluation

HMA compaction which is accepted by Statistical Evaluation will be based on acceptance testing performed by the Contracting Agency, and statistical analysis of those acceptance tests results. This will result in a Compaction Price Adjustment.

5-04.3(10)C1 HMA Compaction Statistical Evaluation – Lots and Sublots

HMA compaction which is accepted by Statistical Evaluation will be evaluated by the Contracting Agency dividing the project into compaction lots, and each compaction lot will be evaluated using stratified random sampling by the Contracting Agency sub-dividing each compaction lot into compaction sublots. All mixture in any individual compaction lot shall be of the same mix design. The compaction sublots will be numbered in the order in which the mixture (of a particular mix design) is paved.

Each compaction lot comprises a maximum of 15 compaction sublots, except for the final compaction lot of each mix design on the Contract, which comprises a maximum of 25 sublots.

Each compaction sublot shall be uniform in size as shown in Table 17, except that the last compaction sublot of each day may be increased to a maximum of two times the compaction sublot quantity calculated. Minor variations in the size of any sublot shall not be cause to invalidate the associated test result.

Table 17

HMA Compaction Sublot Size	
HMA Original Plan Quantity (tons)[1]	Compaction Sublot Size (tons)
<20,000	100
20,000 to 30,000	150
>30,000	200

[1] In determining the plan quantity tonnage, do not include any tons accepted by test point evaluation.

The following will cause one compaction lot to end prematurely and a new compaction lot to begin:

- For a compaction lot in progress with a compaction CPF less than 0.75, a new compaction lot will begin at the Contractor's request after the Engineer is satisfied that

material conforming to the Specifications can be produced. See also Section 5-04.3(11)F.

5-04.3(10)C2 HMA Compaction Statistical Evaluation – Acceptance Testing

Comply with Section 1-06.2(1).

The location of HMA compaction acceptance tests will be randomly selected by the Contracting Agency from within each sublot, with one test per sublot. The Contracting Agency will determine the random sample location using WSDOT Test Method T 716.

Use Table 18 to determine compaction acceptance test procedures and to allocate compaction acceptance sampling and testing responsibilities between the Contractor and the Contracting Agency. Roadway cores shall be taken or nuclear density testing shall occur after completion of the finish rolling, prior to opening to traffic, and on the same day that the mix is placed.

Table 18

HMA Compaction Acceptance Testing Procedures and Responsibilities			
	When Contract Includes Bid Item "Roadway Cores"	When Contract Does Not Include Bid Item "Roadway Cores"	
Basis for Test:	Roadway Cores	Roadway Cores[3]	Nuclear Density Gauge[3]
In-Place Density Determined by:	Contractor shall take cores[1] using WSDOT SOP 734[2] --- Contracting Agency will determine core density using FOP for AASHTO T 166	Contracting Agency will take cores[1] using WSDOT SOP 734 --- Contracting Agency will determine core density using FOP for AASHTO T 166	Contracting Agency, using FOP for WAQTC TM 8
Theoretical Maximum Density Determined by:	Contracting Agency, using FOP for AASHTO T 209		
Rolling Average of Theoretical Maximum Densities Determined by:	Contracting Agency, using WSDOT SOP 729		
Percent	Contracting	Contracting	Contracting

Compaction in Each Sublot Determined by:	Agency, using WSDOT SOP 736	Agency, using WSDOT SOP 736	Agency, using FOP for WAQTC TM 8

[1]The core diameter shall be 4-inches unless otherwise approved by the Engineer.

[2]The Contractor shall take the core samples in the presence of the Engineer, at locations designated by the Engineer, and deliver the core samples to the Contracting Agency.

[3]The Contracting Agency will determine, in its sole discretion, whether it will take cores or use the nuclear density gauge to determine in-place density. Exclusive reliance on cores for density acceptance is generally intended for small paving projects and is not intended as a replacement for nuclear gauge density testing on typical projects.

When using the nuclear density gauge for acceptance testing of pavement density, the Engineer will follow WSDOT SOP 730 for correlating the nuclear gauge with HMA cores. When cores are required for the correlation, coring and testing will be by the Contracting Agency. When a core is taken for gauge correlation at the location of a sublot, the relative density of the core will be used for the sublot test result and is exempt from retesting.

5-04.3(10)C3 HMA Statistical Compaction – Price Adjustments

For each HMA compaction lot (that is accepted by Statistical Evaluation) which has less than three compaction sublots, for which all compaction sublots attain a minimum of 91 percent compaction determined in accordance with FOP for WAQTC TM 8 (or WSDOT SOP 736 when provided by the Contract), the HMA will be accepted at the unit Contract price with no further evaluation.

For each HMA compaction lot (that is accepted by Statistical Evaluation) which does not meet the criteria in the preceding paragraph, the compaction lot shall be evaluated in accordance with Section 1-06.2(2) to determine the appropriate Compaction Price Adjustment (CPA). All of the test results obtained from the acceptance samples from a given compaction lot shall be evaluated collectively. Additional testing by either a nuclear density gauge or cores will be completed as required to provide a minimum of three tests for evaluation.

For the statistical analysis in Section 1-06.2, use the following values:

x = Percent compaction of each sublot
USL = 100
LSL= 91

Each CPA will be determined as follows:

$$CPA = [0.40 \times (CPF - 1.00)] \times Q \times UP$$

Where

CPA = Compaction Price Adjustment for the compaction lot ($)
CPF = Composite Pay Factor for the compaction lot (maximum is 1.05)
Q = Quantity in the compaction lot (tons)
UP = Unit price of the HMA in the compaction lot ($/ton)

5-04.3(10)C4 HMA Statistical Compaction – Requests for Retesting

For a compaction sublot that has been tested with a nuclear density gauge that did not meet the minimum of 91 percent of the theoretical maximum density in a compaction lot with a CPF below 1.00 and thus subject to a price reduction or rejection, the Contractor may request that a core, taken at the same location as the nuclear density test, be used for determination of the relative density of the compaction sublot. The relative density of the core will replace the relative density determined by the nuclear density gauge for the compaction sublot and will be used for calculation of the CPF and acceptance of HMA compaction lot. When cores are taken by the Contracting Agency at the request of the Contractor, they shall be requested by noon of the next workday after the test results for the compaction sublot have been provided or made available to the Contractor. Traffic control shall be provided by the Contractor as requested by the Engineer. Failure by the Contractor to provide the requested traffic control will result in forfeiture of the request for retesting. When the CPF for the compaction lot based on the results of the cores is less than 1.00, the Contracting Agency will deduct the cost for the coring from any monies due or that may become due the Contractor under the Contract at the rate of $200 per core and the Contractor shall pay for the cost of the traffic control.

5-04.3(10)D HMA Compaction – Visual Evaluation

Visual Evaluation will be the basis of acceptance for compaction of the Bid items “HMA for Pavement Repair Cl. ___ PG ___”and “HMA for Prelevelling Class___ PG___”. This HMA shall be thoroughly compacted to the satisfaction of the Engineer. HMA that is used to prelevel wheel ruts shall be compacted with a pneumatic tire roller.

5-04.3(10)E HMA Compaction – Test Point Evaluation

When compaction acceptance is by Test Point Evaluation, compact HMA based on a test point evaluation of the compaction train. Perform the test point evaluation in accordance with instructions from the Engineer. The number of passes with an approved compaction train, required to attain the maximum test point density, shall be used on all subsequent paving.

5-04.3(10)F HMA Compaction Acceptance – Notification of Acceptance Test Results

The obligations and responsibilities for notifying the Contractor of compaction acceptance test results are the same as for mixture acceptance test results. See Section 5-04.3(9)E.

5-04.3(11) Reject Work

This Section applies to HMA and all requirements related to HMA (except aggregates prior to being incorporated into HMA). For rejection of aggregate prior to its incorporation into HMA refer to Section 3-04.

5-04.3(11)A Reject Work – General

Work that is defective or does not conform to Contract requirements shall be rejected.

5-04.3(11)B Rejection by Contractor

The Contractor may, prior to acceptance sampling and testing, elect to remove any defective material and replace it with new material. Any such new material will be sampled, tested, and evaluated for acceptance.

5-04.3(11)C Rejection Without Testing (Mixture or Compaction)

The Engineer may, without sampling, reject any batch, load, or section of Roadway that appears defective. Material rejected before placement shall not be incorporated into the pavement.

No payment will be made for the rejected materials or the removal of the materials unless the Contractor requests the rejected material to be tested. If the Contractor requests testing, acceptance will be by Statistical Evaluation, and a minimum of three samples will be obtained and tested. When uncompacted material is required for testing but not available, the Engineer will determine random sample locations on the roadway in accordance with WSDOT Test Method T 716, take cores in accordance with WSDOT SOP 734, and test the cores in accordance with WSDOT SOP 737.

If the CPF for the rejected material is less than 0.75, no payment will be made for the rejected material; in addition, the cost of sampling and testing shall be borne by the Contractor. If the CPF is greater than or equal to 0.75, the cost of sampling and testing will be borne by the Contracting Agency. If the material is rejected before placement and the CPF is greater than or equal to 0.75, compensation for the rejected material will be at a CPF of 0.75. If rejection occurs after placement and the CPF is greater than or equal to 0.75, compensation for the rejected material will be at the calculated CPF with an addition of 25 percent of the unit Contract price added for the cost of removal and disposal.

5-04.3(11)D Rejection – A Partial Sublot (Mixture or Compaction)

In addition to the random acceptance sampling and testing, the Engineer may also isolate from a mixture or compaction sublot any material that is suspected of being defective in relative density, gradation or asphalt binder content. Such isolated material will not include an original sample location. The Contracting Agency will obtain a minimum of three random samples of the suspect material and perform the testing. When uncompacted material is required for testing but is not available, the Engineer will select random sample locations on the roadway in accordance with WSDOT Test Method T 716, take cores samples in accordance with WSDOT SOP 734, and test the material in accordance

with WSDOT SOP 737. The material will then be statistically evaluated as an independent lot in accordance with Section 1-06.2(2).

5-04.3(11)E Rejection – An Entire Sublot (Mixture or Compaction)

An entire mixture or compaction sublot that is suspected of being defective may be rejected. When this occurs, a minimum of two additional random samples from this sublot will be obtained. When uncompacted material is required for the additional samples but the material has been compacted, the Contracting Agency will take and test cores from the roadway as described in Section 5-04.3(11)D. The additional samples and the original sublot will be evaluated as an independent lot in accordance with Section 1-06.2(2).

5-04.3(11)F Rejection - A Lot in Progress (Mixture or Compaction)

The Contractor shall shut down operations and shall not resume HMA placement until such time as the Engineer is satisfied that material conforming to the Specifications can be produced when:

1. the Composite Pay Factor (CPF) of a mixture or compaction lot in progress drops below 1.00 and the Contractor is taking no corrective action, or

2. the Pay Factor (PF_i) for any constituent of a mixture or compaction lot in progress drops below 0.95 and the Contractor is taking no corrective action, or

3. either the PF_i for any constituent (or the CPF) of a mixture or compaction lot in progress is less than 0.75.

5-04.3(11)G Rejection – An Entire Lot (Mixture or Compaction)

An entire lot with a CPF of less than 0.75 will be rejected.

5-04.3(12) Joints

5-04.3(12)A Transverse Joints

Conduct operations such that placement of the top or wearing course is a continuous operation or as close to continuous as possible. Unscheduled transverse joints will be allowed, but the roller may pass over the unprotected end of the freshly laid HMA only when the placement of the course is discontinued for such a length of time that the HMA will cool below compaction temperature. When the Work is resumed, cut back the previously compacted HMA to produce a slightly beveled edge for the full thickness of the course.

Construct a temporary wedge of HMA on a 50H:1V where a transverse joint as a result of paving or planing is open to traffic. Separate the HMA in the temporary wedge from the permanent HMA upon which it is placed by strips of heavy wrapping paper or other methods approved by the Engineer. Remove the wrapping paper and trim the joint to a slightly beveled edge for the full thickness of the course prior to resumption of paving.

Waste the material that is cut away and place new HMA against the cut. Use rollers or tamping irons to seal the joint.

5-04.3(12)B Longitudinal Joints

Offset the longitudinal joint in any one course from the course immediately below by not more than 6 inches nor less than 2 inches. Locate all longitudinal joints constructed in the wearing course at a lane line or an edge line of the Traveled Way. Construct a notched wedge joint along all longitudinal joints in the wearing surface of new HMA unless otherwise approved by the Engineer. The notched wedge joint shall have a vertical edge of not less than the maximum aggregate size nor more than ½ of the compacted lift thickness, and then taper down on a slope not steeper than 4H:1V. Uniformly compact the sloped portion of the HMA notched wedge joint.

On one-lane ramps a longitudinal joint may be constructed at the center of the traffic lane, subject to approval by the Engineer, if:

1. The ramp must remain open to traffic, or

2. The ramp is closed to traffic and a hot-lap joint is constructed.

    a. Two paving machines shall be used to construct the hot-lap joint.

    b. The pavement within 6 inches of the hot-lap joint will not be excluded from random location selection for compaction testing.

    c. Construction equipment other than rollers shall not operate on any uncompacted HMA.

When HMA is placed adjacent to cement concrete pavement, construct longitudinal joints between the HMA and the cement concrete pavement. Saw the joint to the dimensions shown on Standard Plan A-40.10 and fill with joint sealant meeting the requirements of Section 9-04.2.

5-04.3(13) Surface Smoothness

The completed surface of all courses shall be of uniform texture, smooth, uniform as to crown and grade, and free from defects of all kinds. The completed surface of the wearing course shall not vary more than ⅛ inch from the lower edge of a 10-foot straightedge placed on the surface parallel to the centerline. The transverse slope of the completed surface of the wearing course shall vary not more than ¼ inch in 10 feet from the rate of transverse slope shown in the Plans.

When deviations in excess of the above tolerances are found that result from a high place in the HMA, correct the pavement surface by one of the following methods:

1. Remove material from high places by grinding with an approved grinding machine, or

2. Remove and replace the wearing course of HMA, or

3. By other method approved by the Engineer.

Correct defects until there are no deviations anywhere greater than the allowable tolerances.

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

When portland cement concrete pavement is to be placed on HMA, the surface tolerance of the HMA shall be such that no surface elevation lies above the Plan grade minus the specified Plan depth of portland cement concrete pavement. Prior to placing the portland cement concrete pavement, bring any such irregularities to the required tolerance by grinding or other means approved by the Engineer.

When utility appurtenances such as manhole covers and valve boxes are located in the Traveled Way, pave the Roadway before the utility appurtenances are adjusted to the finished grade.

5-04.3(14) Planing Bituminous Pavement

Plane in such a manner that the underlying pavement is not torn, broken, or otherwise damaged by the planing operation. Delamination or raveling of the underlying pavement will not be construed as damage due to the Contractor's operations. Pavement outside the limits shown in the Plans or designated by the Engineer that is damaged by the Contractor's operations shall be repaired to the satisfaction of the Engineer at no additional cost to the Contracting Agency.

For mainline planing operations, use equipment with automatic controls and with sensors for either or both sides of the equipment. The controls shall be capable of sensing the grade from an outside reference line, or a mat-referencing device. The automatic controls shall have a transverse slope controller capable of maintaining the mandrel at the desired transverse slope (expressed as a percentage) within plus or minus 0.1 percent.

Remove all loose debris from the planed surface before opening the planed surface to traffic. The planings and other debris resulting from the planing operation shall become the property of the Contractor and be disposed of in accordance with Section 2-03.3(7)C, or as otherwise allowed by the Contract.

5-04.3(15) Sealing Pavement Surfaces

Apply a fog seal where shown in the Plans. Construct the fog seal in accordance with Section 5-02.3. Unless otherwise approved by the Engineer, apply the fog seal prior to opening to traffic.

5-04.3(16) HMA Road Approaches

Construct HMA approaches at the locations shown in the Plans or where staked by the Engineer, in accordance with Section 5-04.

5-04.4 Measurement

HMA Cl. ___ PG ___, HMA for ___ Cl. ___ PG ___, and Commercial HMA will be measured by the ton in accordance with Section 1-09.2, with no deduction being made for the weight of asphalt binder, mineral filler, or any other component of the HMA. If the Contractor elects to remove and replace HMA as allowed by Section 5-04.3(11), the material removed will not be measured.

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

Crack Sealing-LF will be measured by the linear foot along the line of the crack.

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

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

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

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

Planing bituminous pavement will be measured by the square yard.

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

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

5-04.5 Payment

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

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

The unit Contract price per ton for "HMA Cl. ___ PG ___", "HMA for Approach Cl. ___ PG ___", "HMA for Preleveling Cl. ___ PG ___", "HMA for Pavement Repair Cl. ___ PG ___", and "Commercial HMA" shall be full compensation for all costs, including anti-stripping additive, incurred to carry out the requirements of Section 5-04 except for those costs included in other items which are included in this Subsection and which are included in the Proposal.

"Crack Sealing-FA", by force account.

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

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

"Soil Residual Herbicide ____ ft. Wide", per mile, or
"Soil Residual Herbicide", per square yard.
The unit Contract price per mile or per square yard for "Soil Residual Herbicide" shall be full payment for all costs incurred to obtain, provide and install herbicide in accordance with Section 5-04.3(4)B.

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

"Asphalt for Fog Seal", per ton.
Payment for "Asphalt for Fog Seal" is described in Section 5-02.5.

"Longitudinal Joint Seal", per linear foot.
The unit Contract price per linear foot for "Longitudinal Joint Seal" shall be full payment for all costs incurred to construct the longitudinal joint between HMA and cement concrete pavement, as described in Section 5-04.3(12)B.

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

"Temporary Pavement Marking", per linear foot.
Payment for "Temporary Pavement Marking" is described in Section 8-23.5.

"Water", per M gallon.
Payment for "Water" is described in Section 2-07.5.

"Job Mix Compliance Price Adjustment", by calculation.
"Job Mix Compliance Price Adjustment" will be calculated and paid for as described in Section 5-04.3(9)B6, 5-04.3(9)C3, and 5-04.3(9)D1.

"Compaction Price Adjustment", by calculation.
"Compaction Price Adjustment" will be calculated and paid for as described in Section 5-04.3(10)C3.

"Roadway Core", per each.

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

"Cyclic Density Price Adjustment", by calculation.
"Cyclic Density Price Adjustment" will be calculated and paid for as described in Section 5-04.3(10)B.

6-02.AP6

Section 6-02, Concrete Structures
April 4, 2016

6-02.3(2)A Contractor Mix Design

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

The mix design submittal shall also include test results no older than one year showing that the Aggregates do not contain Deleterious Substances in accordance with Section 9-03.

6-02.3(2)A1 Contractor Mix Design for Concrete Class 4000D

The following new sentence is inserted after the second sentence of the last paragraph:

Mix designs using shrinkage reducing admixture shall state the specific quantity required.

The following new sentence is inserted before the last sentence of the last paragraph:

Testing samples of mixes using shrinkage reducing admixture shall use the admixture amount specified in the mix design submittal.

6-02.3(2)B Commercial Concrete

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

Commercial concrete does not require mix design or source approvals for cement, aggregate, and other admixtures.

6-02.3(26)D2 Test Block Dimensions

The first sentence is revised to read:

The dimensions of the test block perpendicular to the tendon in each direction shall be the smaller of twice the minimum edge distance or the minimum spacing specified by the special anchorage device manufacturer, with the stipulation that the concrete cover over any confining reinforcing steel or supplementary skin reinforcement shall be appropriate for the project-specific application and circumstances.

6-02.3(27)A Use of Self-Consolidating Concrete for Precast Units

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

2. Precast reinforced concrete three-sided structures, box culverts and split box culverts in accordance with Section 7-02.3(6).

6-09.AP6

Section 6-09, Modified Concrete Overlays
April 4, 2016

6-09.3(8)A Quality Assurance for Microsilica Modified and Fly Ash Modified Concrete Overlays

The first sentence of the first paragraph is revised to read the following two new sentences:

> The Engineer will perform slump, temperature, and entrained air tests for acceptance in accordance with Section 6-02.3(5)D and as specified in this Section after the Contractor has turned over the concrete for acceptance testing. Concrete samples for testing shall be supplied to the Engineer in accordance with Section 6-02.3(5)E.

The last paragraph is deleted.

6-09.3(8)B Quality Assurance for Latex Modified Concrete Overlays

The first two paragraphs are deleted and replaced with the following:

> The Engineer will perform slump, temperature, and entrained air tests for acceptance in accordance with Section 6-02.3(5)D and as specified in this Section after the Contractor has turned over the concrete for acceptance testing. The Engineer will perform testing as the concrete is being placed. Samples shall be taken on the first charge through each mobile mixer and every other charge thereafter. The sample shall be taken after the first 2 minutes of continuous mixer operation. Concrete samples for testing shall be supplied to the Engineer in accordance with Section 6-02.3(5)E.

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

> Recommendations made by the technical representative on or off the jobsite shall be adhered to by the Contractor.

6-14.AP6

Section 6-14, Geosynthetic Retaining Walls
January 4, 2016

6-14.5 Payment

The bid item “Concrete Fascia Panel”, per square foot, and the paragraph following this bid item are revised to read:

> “Concrete Fascia Panel For Geosynthetic Wall”, per square foot.
>
> All costs in connection with constructing the concrete fascia panels as specified shall be included in the unit Contract price per square foot for “Concrete Fascia Panel For Geosynthetic Wall”, including all steel reinforcing bars, premolded joint filler, polyethylene bond breaker strip, joint sealant, PVC pipe for weep holes, exterior surface finish, and pigmented sealer (when specified), constructing and placing the concrete footing, edge beam, anchor beam, anchor rod assembly, and backfill.

6-19.AP6

Section 6-19, Shafts
January 4, 2016

6-19.4 Measurement
The first paragraph is revised to read:

> Soil excavation for shaft, including haul, will be measured by the cubic yards of shaft excavated. The cubic yards will be computed using the shaft diameter, top of shaft elevation and bottom of shaft elevation shown in the Plans, less all rock excavation measured as specified for rock excavation. Excavation between the existing ground line and the top of shaft elevation is considered incidental to soil excavation for shaft and will not be measured.

The second paragraph is deleted.

6-19.5 Payment
The paragraph following the bid item "Soil Excavation For Shaft Including Haul", per cubic yard is revised to read:

> The unit Contract price per cubic yard for "Soil Excavation For Shaft Including Haul" shall be full pay for performing the work as specified, including all costs in connection with furnishing, mixing, placing, maintaining, containing, collecting, and disposing of all mineral, synthetic, and water slurry, and disposing of groundwater collected by the shaft excavation, and the incidental excavation of soils between the top of shaft elevation shown in the Plans and the existing ground line.

8-01.AP8

Section 8-01, Erosion Control and Water Pollution Control
April 4, 2016

8-01.2 Materials
This section is supplemented with the following new paragraph:

> Recycled concrete, in any form, shall not be used for any Work defined in Section 8-01.

8-01.3(8) Street Cleaning
This section is revised to read:

> Self-propelled street sweepers shall be used to remove and collect sediment and other debris from the Roadway, whenever required by the Engineer. The street sweeper shall effectively collect these materials and prevent them from being washed or blown off the Roadway or into waters of the State. Street sweepers shall not generate fugitive dust and shall be designed and operated in compliance with applicable air quality standards.
>
> Material collected by the street sweeper shall be disposed of in accordance with Section 2-03.3(7)C.
>
> Street washing with water will require the concurrence of the Engineer.

8-10.AP8

Section 8-10, Guide Posts
January 4, 2016

8-10.3 Construction Requirements
The last sentence of the second paragraph is deleted.

8-20.AP8

Section 8-20, Illumination, Traffic Signal Systems, Intelligent Transportation Systems, and Electrical
April 4, 2016

8-20.3(5)A General
The last paragraph is revised to read:

> Immediately after the sizing mandrel has been pulled through, install an equipment grounding conductor if applicable (see Section 8-20.3(9)) and any new or existing wire or cable as specified in the Plans. Where conduit is installed for future use, install a 200-pound minimum tensile strength pull string with the equipment grounding conductor. The pull string shall be attached to duct plugs or caps at both ends of the conduit.

8-20.3(5)A1 Fiber Optic Conduit
The last paragraph is deleted.

8-20.3(5)D Conduit Placement
Item number 2 is revised to read:

> 2. 24-inches below the top of the untreated surfacing on a Roadbed.

8-20.3(9) Bonding, Grounding
The following two new paragraphs are inserted after the first paragraph:

> Install an equipment grounding conductor in all new conduit, whether or not the equipment grounding conductor is called for in the wire schedule.
>
> For each new conduit with innerduct install an equipment grounding conductor in only one of the innerducts unless otherwise required by the NEC or the Plans.

The fourth paragraph (after the preceding Amendments are applied) is revised to read:

> Bonding jumpers and equipment grounding conductors meeting the requirements of Section 9-29.3(2)A3 shall be minimum #8 AWG, installed in accordance with the NEC. Where existing conduits are used for the installation of new circuits, an equipment grounding conductor shall be installed unless an existing equipment ground conductor, which is appropriate for the largest circuit, is already present in the existing raceway. The equipment ground conductor between the isolation switch and the sign lighter fixtures shall be minimum #14 AWG stranded copper conductor. Where parallel circuits

are enclosed in a common conduit, the equipment-grounding conductor shall be sized by the largest overcurrent device serving any circuit contained within the conduit.

The second sentence of the fifth paragraph (after the preceding Amendments are applied) is revised to read:

A non-insulated stranded copper conductor, minimum #8 AWG with a full circle crimp on connector (crimped with a manufacturer recommended crimper) shall be connected to the junction box frame or frame bonding stud, the other end shall be crimped to the equipment bonding conductor, using a "C" type crimp connector.

The last two sentences of the sixth paragraph (after the preceding Amendments are applied) are revised to read:

For light standards, signal standards, cantilever and sign bridge Structures the supplemental grounding conductor shall be #4 AWG non-insulated stranded copper conductor. For steel sign posts which support signs with sign lighting or flashing beacons the supplemental grounding conductor shall be #6 AWG non insulated stranded copper conductor.

The fourth to last paragraph is revised to read:

Install a two grounding electrode system at each service entrance point, at each electrical service installation and at each separately derived power source. The service entrance grounding electrode system shall conform to the "Service Ground" detail in the Standard Plans. If soil conditions make vertical grounding electrode installation impossible an alternate installation procedure as described in the NEC may be used. Maintain a minimum of 6 feet of separation between any two grounding electrodes within the grounding system. Grounding electrodes shall be bonded copper, ferrous core materials and shall be solid rods not less than 10 feet in length if they are ½ inch in diameter or not less than 8 feet in length if they are ⅝ inch or larger in diameter.

8-22.AP8

Section 8-22, Pavement Marking
January 4, 2016

8-22.4 Measurement

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

The measurement for "Painted Wide Lane Line", "Plastic Wide Lane Line", "Profiled Plastic Wide Lane Line", "Painted Barrier Center Line", "Plastic Barrier Center Line", "Painted Stop Line", "Plastic Stop Line", "Painted Wide Dotted Entry Line", or "Plastic Wide Dotted Entry Line" will be based on the total length of each painted, plastic or profiled plastic line installed. No deduction will be made for the unmarked area when the marking includes a broken line such as, wide broken lane line, drop lane line, wide dotted lane line or wide dotted entry line.

8-22.5 Payment

The following two new Bid items are inserted after the Bid item "Plastic Crosshatch Marking", per linear foot:

"Painted Wide Dotted Entry Line", per linear foot.

"Plastic Wide Dotted Entry Line", per linear foot.

9-03.AP9

Section 9-03, Aggregates
April 4, 2016

9-03.1(1) General Requirements

This first paragraph is supplemented with the following:

Reclaimed aggregate may be used if it complies with the specifications for Portland Cement Concrete. Reclaimed aggregate is aggregate that has been recovered from plastic concrete by washing away the cementitious materials.

9-03.1(2) Fine Aggregate for Portland Cement Concrete

This section is revised to read:

Fine aggregate shall consist of natural sand or manufactured sand, or combinations thereof, accepted by the Engineer, having hard, strong, durable particles free from adherent coating. Fine aggregate shall be washed thoroughly to meet the specifications.

9-03.1(2)A Deleterious Substances

This section is revised to read:

The amount of deleterious substances in the washed aggregate shall be tested in accordance with AASHTO M 6 and not exceed the following values:

Material finer than No. 200 Sieve	2.5 percent by weight
Clay lumps and friable particles	3.0 percent by weight
Coal and lignite	0.25 percent by weight
Particles of specific gravity less than 2.00	1.0 percent by weight.

Organic impurities shall be tested in accordance with AASHTO T 21 by the glass color standard procedure and results darker than organic plate no. 3 shall be rejected. A darker color results from AASHTO T 21 may be used provided that when tested for the effect of organic impurities on strength of mortar, the relative strength at 7 days, calculated in accordance with AASHTO T 71, is not less than 95 percent.

9-03.1(4) Coarse Aggregate for Portland Cement Concrete

This section is revised to read:

Coarse aggregate for concrete shall consist of gravel, crushed gravel, crushed stone, or combinations thereof having hard, strong, durable pieces free from adherent coatings. Coarse aggregate shall be washed to meet the specifications.

9-03.1(4)A Deleterious

This section, including title, is revised to read:

9-03.1(4)A Deleterious Substances

The amount of deleterious substances in the washed aggregate shall be tested in accordance with AASHTO M 80 and not exceed the following values:

Material finer than No. 200	1.0[1] percent by weight
Clay lumps and Friable Particles	2.0 percent by weight
Shale	2.0 percent by weight
Wood waste	0.05 percent by weight
Coal and Lignite	0.5 percent by weight
Sum of Clay Lumps, Friable Particles, and Chert (Less Than 2.40 specific gravity SSD)	3.0 percent by weight

[1]If the material finer than the No. 200 sieve is free of clay and shale, this percentage may be increased to 1.5.

9-03.1(4)C Grading

The following new sentence is inserted at the beginning of the last pargraph:

Where coarse aggregate size 467 is used, the aggregate may be furnished in at least two separate sizes.

9-03.1(5) Combined Aggregate Gradation for Portland Cement Concrete

This section is revised to read:

As an alternative to using the fine aggregate sieve grading requirements in Section 9-03.1(2)B, and coarse aggregate sieve grading requirements in Section 9-03.1(4)C, a combined aggregate gradation conforming to the requirements of Section 9-03.1(5)A may be used.

9-03.1(5)A Deleterious Substances

This section is revised to read:

The amount of deleterious substances in the washed aggregates ⅜ inch or larger shall not exceed the values specified in Section 9-03.1(4)A and for aggregates smaller than ⅜ inch they shall not exceed the values specified in Section 9-03.1(2)A.

9-03.1(5)B Grading

The first paragraph is deleted.

9-03.8(7) HMA Tolerances and Adjustments

In the table in item 1, the last column titled “Commercial Evaluation” is revised to read “Visual Evaluation”.

9-03.21(1)B Concrete Rubble

This section, including title, is revised to read:

9-03.21(1)B Recycled Concrete Aggregate

Recycled concrete aggregates are coarse aggregates manufactured from hardened concrete mixtures. Recycled concrete aggregate may be used as coarse aggregate or blended with coarse aggregate for Commercial Concrete. Recycled concrete aggregate shall meet all of the requirements for coarse aggregate contained in Section 9-03.1(4)

or 9-03.1(5). In addition to the requirements of Section 9-03.1(4) or 9-03.1(5), recycled concrete shall:

1. Contain an aggregated weight of less than 1 percent of adherent fines, vegetable matter, plastics, plaster, paper, gypsum board, metals, fabrics, wood, tile, glass, asphalt (bituminous) materials, brick, porcelain or other deleterious substance(s) not otherwise noted;
2. Be free of harmful components such as chlorides and reactive materials unless mitigation measures are taken to prevent recurrence in the new concrete;
3. Have an absorption of less than 10 percent when tested in accordance with AASHTO T 85.

Recycled concrete aggregate shall be in a saturated condition prior to mixing.

Recycled concrete aggregate shall not be placed below the ordinary high water mark of any water of the State.

9-03.21(1)D Recycled Steel Furnace Slag

This section title is revised to read:

Steel Furnace Slag

9-03.21(1)E Table on Maximum Allowable Percent (By Weight) of Recycled Material

The following new row is inserted after the second row:

Coarse Aggregate for Commercial Concrete	9-03.1(4)	0	100	0	0

9-04.AP9

Section 9-04, Joint and Crack Sealing Materials
January 4, 2016

9-04.2(1) Hot Poured Joint Sealants

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

9-04.2(1)A Hot Poured Sealant

Hot poured sealant shall be sampled in accordance with ASTM D5167 and tested in accordance with ASTM D5329. Hot poured sealant shall have a minimum Cleveland Open Cup Flash Point of 205°C in accordance with AASHTO T 48.

9-04.2(1)A1 Hot Poured Sealant for Cement Concrete Pavement

Hot poured sealant for cement concrete pavement shall meet the requirements of ASTM D6690 Type IV, except for the following:

1. The Cone Penetration at 25°C shall be 130 maximum.

2. The extension for the Bond, non-immersed, shall be 100 percent.

9-04.2(1)A2 Hot Poured Sealant for Bituminous Pavement

Hot poured sealant for bituminous pavement shall meet the requirements of ASTM D6690 Type II.

9-04.2(1)B Sand Slurry for Bituminous Pavement

Sand slurry is mixture consisting of the following components measured by total weight:

1. Twenty percent CSS-1 emulsified asphalt,

2. Two percent portland cement, and

3. Seventy-eight percent fine aggregate meeting the requirements of 9-03.1(2)B Class 2. Fine aggregate may be damp (no free water).

9-07.AP9

Section 9-07, Reinforcing Steel
January 4, 2016

9-07.1(1)A Acceptance of Materials

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

Reinforcing steel rebar manufacturers shall comply with the National Transportation Product Evaluation Program (NTPEP) Work Plan for Reinforcing Steel (rebar) Manufacturers.

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

Steel reinforcing bar manufacturers use either English or a Metric size designation while stamping rebar.

SECTION II

SPECIAL PROVISIONS

Blackmans Lake Outlet Drainage Improvements

Special Provisions

Table of Contents

Certifications

The listed Special Provisions have been prepared under the direction of the following Professional Engineer and/or Landscape Architect, registered in the State of Washington, whose seals and signatures appear below. Sections not listed are provided by the City of Snohomish.

Tetra Tech, Inc.

Special Provision Section	
2-01	8-02
2-02	8-24
2-03	8-26
2-09	8-27
5-04	8-28
7-05	8-30
8-01	

Gregory L. Gaasland, P.E.

SPECIAL PROVISIONS

Table of Contents

SPECIAL PROVISIONS

INTRODUCTION

The following special provisions shall be used in conjunction with the Standard Specifications for Road, Bridge and Municipal Construction, 2016 edition, as issued by the Washington State Department of Transportation, hereinafter referred to as the "Standard Specifications".

The Standard Specifications, except as they may be modified or superseded by these provisions, shall govern all phases of work under this contract, and they are by reference made an integral part of these specifications and contract as herein fully set forth. Measurement and payment will be only for those items listed in the proposal. All other work will be considered as incidental with no separate measurement or payment.

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

Also incorporated into these specifications by reference are:

- Manual on Uniform Traffic Control Devices for Streets and Highways, current edition

- Standard Plans for Road, Bridge and Municipal Construction, as prepared by the Washington State Department of Transportation and the American Public Works Association, current edition

- City of Snohomish Engineering Design and Construction Standards Manual

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

Wherever reference is made in the Standard Specifications to the Contracting Agency, State, Commission, Department of Transportation, Secretary of Transportation, such reference shall be deemed to be the City of Snohomish through its City Council, employees, and duly authorized representatives.

NOTE: Strict adherence to the Standard Specifications will be required along with the following amendments and clarifications:

DIVISION 1
GENERAL REQUIREMENTS

DESCRIPTION OF WORK
(March 13, 1995 WSDOT GSP)

This contract provides for the construction of approximately 580 lineal feet of open channel, 370 lineal feet of sediment removal from an existing channel, 150 lineal feet of 24-inch culvert replacement, earth berm, paving, plantings, removal of structures and obstructions, clearing, grubbing, grading, erosion control, traffic control, miscellaneous surface restoration, and other related items are included as part of the contracted work, which will be performed in accordance with these Contract Provisions and the Standard Specifications.

1-01 DEFINITIONS AND TERMS

1-01.3 Definitions
(September 12, 2008 APWA GSP)

This Section is supplemented with the following:

All references in the Standard Specifications to the terms “State”, “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 “State Materials Laboratory” shall be revised to read “Contracting Agency designated location”.

The venue of all causes of action arising from the advertisement, award, execution, and performance of the contract shall be in the Superior Court of the County where the Contracting Agency’s headquarters are located.

Additive
A supplemental unit of work or group of bid items, identified separately in the 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 proposal, from which the Contracting Agency may make a choice between different methods or material of construction for performing the same work.

Contract
The written agreement between the Contracting Agency and the Contractor. It describes, among other things:

1. What work will be done, and by when;
2. Who provides labor and materials; and
3. How Contractors will be paid

The Contract includes the Contract (Agreement) form; bidder's completed Proposal Form, all required forms, certificates and affidavits, performance, labor and material payment bonds, the 2016 Standard Specifications for Road, Bridge and Municipal Construction and amendments thereto, Contract Provisions, Reference Drawings, Standard Plans, City of Snohomish Engineering Standards and Specifications and associated Standard Details, addenda and change orders.

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.

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 it is determined that the Contracting Agency has full and unrestricted use and benefit of the facilities, both from the operational and safety standpoint, and only minor incidental work, replacement of temporary substitute facilities, 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.

Engineer
The Contracting Agency's representative who administers the construction program for the Contracting Agency, which may be the Contracting Agency itself.

Notice of Award
The written notice from the Contracting Agency to the successful bidder signifying the Contracting Agency's acceptance of the bid.

Notice to Proceed
The written notice from the Contracting Agency to the Contractor authorizing and directing the Contractor to proceed with the work and establishing the date on which the contract time begins.

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

1-02 BID PROCEDURES AND CONDITIONS

1-02.1 Prequalification of Bidders

Delete this Section and replace it with the following:

1-02.1 Qualifications of Bidder
(March 25, 2009 APWA GSP)

Bidders must meet the minimum qualifications of RCW 39.04.350(1), as amended:

"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:

(a) At the time of bid submittal, have a certificate of registration in compliance with chapter 18.27 RCW;

(b) Have a current state unified business identifier number;

(c) If applicable, have industrial insurance coverage for the bidder's employees working in Washington as required in Title 51 RCW; an employment

security department number as required in Title 50 RCW; and a state excise tax registration number as required in Title 82 RCW; and

(d) Not be disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065(3)."

1-02.2 Plans and Specifications
(October 1, 2005 APWA GSP)

Delete this section and replace it with the following:

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

After award of the Contract Documents will be issued to the Contractor at no cost as detailed below:

To Prime Contractor	No. of Sets	Basis of Distribution
Specifications	2	Furnished automatically upon award.
Plans	2	Furnished automatically upon award

Additional Contract Documents may be obtained from the City if needed upon request.

1-02.4 Examination Of Plans, Specifications And Site Of Work
(March 13, 1995 WSDOT GSP)

1-02.4(1) General
(March 2016 COS)

This Section is supplemented with the following:

Contractor shall review the entire Contract to ensure that the completeness of their Proposal includes all items of Work regardless of where shown in the Contract Documents. Bidders are cautioned that alternate sources of information (copies of the Contract obtained from third parties) are not necessarily an accurate or complete representation of the Contract Documents. Bidders shall use such information at their own risk.

1-02.5 Proposal Forms
(October 1, 2005 APWA GSP)

Delete this section and replace it with the following:

At the request of a bidder, the Contracting Agency will provide a proposal form for any project on which the bidder is eligible to bid.

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 D/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 forms unless otherwise specified.

Any correction to a bid made by interlineation, alteration, or erasure, shall be initialed by the signer of the bid. 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 D/M/WBE 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 D/W/MBE requirements are to be satisfied through such an agreement.

1-02.7 Bid Deposit
(October 1, 2005 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 base 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.

The bidder must use the bond form included in the Contract Documents.

1-02.9 Delivery of Proposal
(October 1, 2005 APWA GSP)

Revise the first paragraph to read:

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

1-02.13 Irregular Proposals
(March 25, 2009 APWA GSP)

Revise item 1 to read:

1. A proposal will be considered irregular and will be rejected if:
   a. The Bidder is not prequalified <u>when so required</u>;
   b. The authorized proposal form furnished by the Contracting Agency is not used or is altered;
   c. The completed proposal form contains any unauthorized additions, deletions, alternate Bids, or conditions;
   d. The Bidder adds provisions reserving the right to reject or accept the award, or enter into the Contract;
   e. A price per unit cannot be determined from the Bid Proposal;
   f. The Proposal form is not properly executed;
   g. The Bidder fails to submit or properly complete a Subcontractor list, if applicable, as required in Section 1-02.6;
   h. The Bidder fails to submit or properly complete a Disadvantaged, Minority or Women's Business Enterprise Certification, if applicable, as required in Section 1-02.6;

i. The Bid Proposal does not constitute a definite and unqualified offer to meet the material terms of the Bid invitation; or

j. More than one proposal is submitted for the same project from a Bidder under the same or different names.

1-02.14 Disqualification of Bidders
(March 25, 2009 APWA GSP, Option B)

Delete this Section and replace it with the following:

A Bidder will be deemed not responsible if:

1. The Bidder does not meet the mandatory bidder responsibility criteria in RCW 39.04.350(1), as amended; or
2. Evidence of collusion exists with any other Bidder or potential Bidder. Participants in collusion will be restricted from submitting further bids; or
3. The Bidder, in the opinion of the Contracting Agency, is not qualified for the work or to the full extent of the bid, or to the extent that the bid exceeds the authorized prequalification amount as may have been determined by a prequalification of the Bidder; or
4. An unsatisfactory performance record exists based on past or current Contracting Agency work or for work done for others, as judged from the standpoint of conduct of the work; workmanship; or progress; affirmative action; equal employment opportunity practices; termination for cause; or Disadvantaged Business Enterprise, Minority Business Enterprise, or Women's Business Enterprise utilization; or
5. There is uncompleted work (Contracting Agency or otherwise), which in the opinion of the Contracting Agency might hinder or prevent the prompt completion of the work bid upon; or
6. The Bidder failed to settle bills for labor or materials on past or current contracts, unless there are extenuating circumstances acceptable to the Contracting Agency; or
7. The Bidder has failed to complete a written public contract or has been convicted of a crime arising from a previous public contract, unless there are extenuating circumstances acceptable to the Contracting Agency; or
8. The Bidder is unable, financially or otherwise, to perform the work, in the opinion of the Contracting Agency; or
9. There are any other reasons deemed proper by the Contracting Agency.

As evidence that the Bidder meets the bidder responsibility criteria above, the apparent three lowest Bidders must submit to the Contracting Agency within 24 hours of the bid submittal deadline, documentation (sufficient in the sole

judgment of the Contracting Agency) demonstrating compliance with all applicable responsibility criteria, including all documentation specifically listed in the supplemental criteria. The Contracting Agency reserves the right to request such documentation from other Bidders as well, and to request further documentation as needed to assess bidder responsibility.

The basis for evaluation of Bidder compliance with these supplemental criteria shall be any documents or facts obtained by Contracting Agency (whether from the Bidder or third parties) which any reasonable owner would rely on for determining such compliance, including but not limited to: (i) financial, historical, or operational data from the Bidder; (ii) information obtained directly by the Contracting Agency from owners 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 24 hours of receipt of the Contracting Agency's determination by presenting its appeal to the Contracting Agency. The Contracting Agency will consider the appeal 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 working days after the Bidder determined to be not responsible has received the final determination.

1-02.15 Pre-Award Information
(October 1, 2005 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. A copy of State of Washington Contractor's Registration, or
8. Any other information or action taken that is deemed necessary to ensure that the bidder is the lowest responsible bidder.

1-03 AWARD AND EXECUTION OF CONTRACT

1-03.3 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) working 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 ten (10) working additional calendar days for return of the documents, provided the Contracting Agency deems the circumstances warrant it.

1-03.4 Contract Bond
(October 1, 2005 APWA GSP)

Revise the first paragraph to read:

The successful bidder shall provide an executed contract bond for the full contract amount. This contract bond shall:

1. Be on a Contracting Agency-furnished form;
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. Be conditioned upon the faithful performance of the contract by the Contractor within the prescribed time;
4. Guarantee that the surety shall indemnify, defend, and protect the Contracting Agency against any claim of direct or indirect loss resulting from the failure:
    a. Of the Contractor (or any of the employees, subcontractors, or lower tier subcontractors of the Contractor) to faithfully perform the contract, 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;
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 must be signed by the president or vice-president, unless accompanied by written proof of the authority of the individual signing the bond to bind the corporation (i.e., corporate resolution, power of attorney or a letter to such effect by the president or vice-president).

1-04 SCOPE OF THE WORK

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

(October 1, 2005 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, including APWA General Special Provisions, if included,
4. Contract Plans
5. Amendments to the Standard Specifications,

6. WSDOT Standard Specifications for Road, Bridge and Municipal Construction,
7. Contracting Agency's Standard Plans (if any), and
8. WSDOT Standard Plans for Road, Bridge, and Municipal Construction.

1-04.6 Variation in Estimated Quantities Replacement

Section 1-04.6 is hereby deleted and replaced with the following:

Payment to the Contractor will be made only for the actual quantities of work performed and accepted in conformance with the contract. When the actual accepted quantity of work performed under a unit item varies from the original proposal quantity, payment will be at the unit contract price for all work and within the original time for completion.

1-05 CONTROL OF WORK

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 Contracting Agency, or fails to perform any part of the work required by the Contract Documents, the Contracting Agency 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 Contracting Agency determines to be an emergency situation, the Contracting Agency 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 Contracting Agency or 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 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.

1-05.13 Superintendents, Labor and Equipment of Contractor
(March 25, 2009 APWA GSP)

Revise the seventh paragraph to read:

Whenever the Contracting Agency evaluates the Contractor's qualifications pursuant to Section 1-02.14, it will take these performance reports into account.

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 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 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 making and removing temporary connections to available power and water sources necessary for the performance of the work. Available power and water sources shall be as identified by the Contracting Agency and within the Contract Documents.

Add the following new section:

1-05.17 Oral Agreements
(October 1, 2005 AWPA 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.

1-06 CONTROL OF MATERIAL
(August 6, 2007 WSDOT GSP)

Section 1-06 is supplemented with the following:

Buy America
The major quantities of steel and iron construction material that is permanently incorporated into the project shall consist of American-made materials only. Buy America does not apply to temporary steel items, e.g., temporary sheet piling, temporary bridges, steel scaffolding and falsework.

The Contractor may utilize minor amounts of foreign steel and iron in this project provided the cost of the foreign material used does not exceed one-tenth of one percent of the total contract cost or $2,500.00, whichever is greater.

American-made material is defined as material having all manufacturing processes occurring domestically. To further define the coverage, a domestic product is a manufactured steel material that was produced in one of the 50 States, the District of Columbia, Puerto Rico, or in the territories and possessions of the United States.

If domestically produced steel billets or iron ingots are exported outside of the area of coverage, as defined above, for any manufacturing process then the resulting product does not conform to the Buy America requirements. Additionally, products manufactured domestically from foreign source steel billets or iron ingots do not conform to the Buy America requirements because the initial melting and mixing of alloys to create the material occurred in a foreign country.

Manufacturing begins with the initial melting and mixing, and continues through the coating stage. Any process which modifies the chemical content, the physical size or shape, or the final finish is considered a manufacturing process. The processes include rolling, extruding, machining, bending, grinding, drilling, welding, and coating. The action of applying a coating to steel or iron is deemed a manufacturing process. Coating includes epoxy coating, galvanizing, aluminizing, painting, and any other coating that protects or enhances the value of steel or iron.

Any process from the original reduction from ore to the finished product constitutes a manufacturing process for iron.

Due to a nationwide waiver, Buy America does not apply to raw materials (iron ore and alloys), scrap (recycled steel or iron), and pig iron or processed, pelletized, and reduced iron ore.

The following are considered to be steel manufacturing processes:

1. Production of steel by any of the following processes:

    a. Open hearth furnace.

    b. Basic oxygen.

    c. Electric furnace.

    d. Direct reduction.

2. Rolling, heat treating, and any other similar processing.

3. Fabrication of the products.

    a. Spinning wire into cable or strand.

    b. Corrugating and rolling into culverts.

    c. Shop fabrication.

A certification of materials origin will be required for any items comprised of, or containing, steel or iron construction materials prior to such items being incorporated into the permanent work. The certification shall be on DOT Form 350-109EF provided by the Engineer, or such other form the Contractor chooses, provided it contains the same information as DOT Form 350-109EF.

1-07 LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLIC

1-07.1 Laws To Be Observed

(March 2016 COS)

Section 1-07.1 is supplemented 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.

All work under this contract shall be performed in a safe manner. The Contractor and all Subcontractors shall observe all rules and regulations of the Washington State Department of Labor and Industries, rules and regulations of OSHA, WISHA or any other jurisdiction, and all other applicable safety standards. The Contractor shall be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the Work. This requirement shall apply continuously and not be limited to normal working hours.

The Engineer's and Contracting Agency's review of the Contractor's work plan, safety plan, schedule or performance does not and is not intended to include review or approval of the adequacy of the Contractor's safety measures in, on, or near the construction site. The Engineer or Contracting Agency does not purport to be a safety expert, is not engaged in that capacity under the Contract, and has neither the authority nor the responsibility to enforce construction safety laws, rules, regulations or procedures, or to order the stoppage of Work for claimed violations thereof.

The Contractor shall exercise every precaution at all times for the prevention of accidents and the protection of persons (including employees and property. All exposed moving parts of equipment capable of inflicting injury by accidental contact shall be protected with sturdy removable guards in accordance with applicable safety regulations.

1-07.2 State Sales Tax

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

1-07.2 State Sales Tax

(October 1, 2005 APWA GSP)

1-07.2(1) General

The Washington State Department of Revenue has issued special rules on the State sales tax. Sections 1-07.2(1) through 1-07.2(4) 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(3) describes this exception. The Contracting Agency will pay the retained percentage 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 60.28.050). 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(2) 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(3) 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(4) 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

(August 3, 2009 WSDOT GSP)

Section 1-07.5 is supplemented with the following:

Environmental Commitments

The following Provisions summarize the 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:

General

The Contractor shall ensure that the Project Manager representing the Prime Contractor and all Subcontractors has read and understands this Special Provision. Prior to commencing any work on site, the Contractor shall provide the Engineer with a signed statement from the Project Manager stating that the Project Manager has read, understands and will abide by the conditions of this Special Provision.

Wetlands and Water Quality

The following restrictions and requirements pertain to work throughout the project limits:

Areas set aside for wash out of concrete delivery trucks, pumping equipment, and tools shall be approved by the Engineer. This area shall not have any possibility of draining to storm drainage infrastructure or waters of the State including wetlands.

During any operation involving saw cutting of concrete, a vacuum method to collect all concrete dust and debris shall be used at all times. Additionally, all water generated by the cutting operation shall be controlled and contained, to be disposed of on land with no possibility of entry to waters of the State, including wetlands.

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.

1-07.17 Utilities and Similar Facilities

(March 2016 COS)

This Section 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.

Utility Locations

The following addresses and telephone numbers of utility companies known or suspected of having facilities within the project limits are supplied for the Contractor's convenience in the table below:

Water City of Snohomish Joe Palmer Water Division Lead 425-328-0068	**Sewer and Storm Drain** City of Snohomish Dereck DeBardi Sewer and Water Division Lead 425-328-6251
Power Snohomish County PUD 360-563-2218	**Telephone** Frontier 425-231-4609
Cable Comcast 425-754-0064	**Gas** Puget Sound Energy 1-888-225-5773

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

(March 2016 COS)

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

Any authorized agent of the Contracting Agency or utility owners may enter the right-of-way to repair, rearrange, alter, or connect their equipment. The Contractor shall cooperate with such effort and shall avoid creating delays or hindrances to those doing the work. As needed, the Contractor shall arrange to coordinate work schedules.

The Contractor shall carry out the Work in a way that will minimize interference and delay for all forces involved. Any costs incurred prior to the utility owners anticipated completion (or if no completion is specified, within a reasonable period of time) that results from the coordination and prosecution of the Work regarding utility adjustment, relocation, replacement, or construction shall be at the Contractor's expense.

Payment
All costs to comply with this Section and repair specified in this Section, unless otherwise stated, are incidental to the Contract and are the responsibility of the Contractor. The Contractor shall include all related costs in the bid prices of the Contract.

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
(May 10, 2006 APWA GSP)

1-07.18(1) General Requirements

A. The Contractor shall obtain the insurance described in this section from insurers approved by the State Insurance Commissioner pursuant to RCW Title 48. The insurance must be provided by an insurer with a rating of A-: VII or higher in the A.M. Best's Key Rating Guide, which is licensed to do business in the state of Washington (or issued as a surplus line by a Washington Surplus lines broker). The Contracting Agency reserves the right to approve or reject the insurance provided, based on the insurer (including financial condition), terms and coverage, the Certificate of Insurance, and/or endorsements.

B. The Contractor shall keep this insurance in force during the term of the contract and for thirty (30) calendar days after the Physical Completion date, unless otherwise indicated (see C. below).

C. If any insurance policy is written on a claim 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 Final Completion 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 insurance policies shall contain a "cross liability" provision.

E. The Contractor's and all subcontractors' insurance coverage shall be primary and non-contributory insurance as respects the Contracting Agency's insurance, self-insurance, or insurance pool coverage.

F. All insurance policies and Certificates of Insurance shall include a requirement providing for a minimum of 45 days prior written notice to the Contracting Agency of any cancellation in any insurance policy.

G. Upon request, the Contractor shall forward to the Contracting Agency a full and certified copy of the insurance policy(s).

H. The Contractor shall not begin work under the contract until the required insurance has been obtained and approved by the Contracting Agency.

I. 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 (5) working 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.

J. 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 Professional Liability and Workers Compensation, shall name the following listed entities as additional insured(s):

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

The above-listed entities shall be additional insured(s) for the full available limits of liability maintained by the Contractor, whether primary, excess, contingent or otherwise, 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(3) describes limits lower than those maintained by the Contractor.

1-07.18(3) Subcontractors

Contractor shall ensure that each subcontractor of every tier obtains and maintains at a minimum the insurance coverages listed in 1-07.18(5)A and 1-07.18(5)B. Upon request of the Contracting Agency, the Contractor shall provide evidence of such insurance.

1-07.18(4) Evidence of Insurance

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. The certificate and endorsements must conform to the following requirements:

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. A statement of additional insured status on an ACORD Certificate of Insurance shall not satisfy this requirement.
3. Any other amendatory endorsements to show the coverage required herein.

1-07.18(5) Coverages and Limits

The insurance shall provide the minimum coverages and limits set forth below. Providing coverage in these stated minimum limits shall not be construed to relieve the Contractor from liability in excess of such limits. 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 shall be the responsibility of the Contractor.

1-07.18(5)A Commercial General Liability

A policy of Commercial General Liability Insurance, including:

Per project aggregate

Premises/Operations Liability

Products/Completed Operations – for a period of one year following final acceptance of the work.

Personal/Advertising Injury

Contractual Liability

Independent Contractors Liability

Stop Gap / Employers' Liability

Explosion, Collapse, or Underground Property Damage (XCU)

Such policy must provide the following minimum limits:

$1,000,000	Each Occurrence
$3,000,000	General Aggregate
$1,000,000	Products & Completed Operations Aggregate
$1,000,000	Personal & Advertising Injury, each offence

Stop Gap / Employers' Liability

$1,000,000	Each Accident
$1,000,000	Disease - Policy Limit
$1,000,000	Disease - Each Employee

1-07.18(5)B Automobile Liability
Automobile Liability for owned, non-owned, hired, and leased vehicles, with an MCS 90 endorsement and a CA 9948 endorsement attached if "pollutants" are to be transported. Such policy(ies) must provide the following minimum limit:

$1,000,000	combined single limit

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)F Excess or Umbrella Liability

The Contractor shall provide Excess or Umbrella Liability coverage at limits of $2,000,000 per occurrence and annual aggregate. This excess or umbrella liability coverage shall apply, at a minimum, to both the Commercial General and Auto insurance policy coverage.

1-07.23 Public Convenience And Safety
(April 2, 2007 WSDOT GSP)

Work Zone Clear Zone
The Work Zone Clear Zone (WZCZ) applies during working and nonworking hours. The WZCZ applies only to temporary roadside objects introduced by the Contractor's operations and does not apply to preexisting conditions or permanent Work. Those work operations that are actively in progress shall be in accordance with adopted and approved Traffic Control Plans, and other contract requirements.

During nonworking hours equipment or materials shall not be within the WZCZ unless they are protected by permanent guardrail or temporary concrete barrier. The use of temporary concrete barrier shall be permitted only if the Engineer approves the installation and location.

During actual hours of work, unless protected as described above, only materials absolutely necessary to construction shall be within the WZCZ and only construction vehicles absolutely necessary to construction shall be allowed within the WZCZ or allowed to stop or park on the shoulder of the roadway.

The Contractor's nonessential vehicles and employees private vehicles shall not be permitted to park within the WZCZ at any time unless protected as described above.

Deviation from the above requirements shall not occur unless the Contractor has requested the deviation in writing and the Engineer has provided written approval.

Minimum WZCZ distances are measured from the edge of traveled way and will be determined as follows:

Posted Speed	Distance From Traveled Way (Feet)
35 mph or less	10 *
40 mph	15
45 to 55 mph	20
60 mph or greater	30

* or 2-feet beyond the outside edge of sidewalk

Minimum Work Zone Clear Zone Distance

1-07.23(1) Construction Under Traffic
(August 7, 2006 WSDOT GSP)

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

Lane closures are subject to the following restrictions:

1. Lane closures will be allowed between 8:00 am and 5:00 pm Monday through Friday except as described below.

If the Engineer determines the permitted closure hours adversely affect traffic, the Engineer may adjust the hours accordingly. The Engineer will notify the Contractor in writing of any change in the closure hours.

No lane closures will be allowed on a holiday or holiday weekend, or after 12:00 PM (noon) on a day prior to a holiday or holiday weekend. Holidays that occur on Friday, Saturday, Sunday or Monday are considered a holiday weekend.

1-07.23(2) Construction and Maintenance of Detours

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

Detours are allowed under the following conditions and are subject to the following restrictions:

1. Temporary road and lane closures with associated detours if needed will be allowed on Avenue A, 13th Street and Ferguson Park Road as approved by the Engineer.

If the Engineer determines the permitted closure hours adversely affect traffic, the Engineer may adjust the hours accordingly. The Engineer will notify the Contractor in writing of any change in the closure hours.

No road closures will be allowed on a holiday or holiday weekend, or after 12:00 PM (noon) on a day prior to a holiday or holiday weekend. Holidays that occur on Friday, Saturday, Sunday or Monday are considered a holiday weekend.

1-07.24 Rights of Way
(October 1, 2005 APWA GSP)

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

Limits of project activity are indicated in the Plans. The Contractor's work activities shall be confined within these limits, unless arrangements for use of private property or other City property are made.

Whenever any of the work is accomplished on or through property other than public property or 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. However, no easements or rights of entry have been acquired nor are deemed necessary for completion of the work and are considered optional.

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 Contracting Agency certifies to the Contractor that the right of way or easement is available or that the right of entry has been received. Each property owner shall be given 48 hours notice prior to entry by the Contractor.

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 Contracting Agency 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 Contracting Agency before the Completion Date will be established.

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, the Contracting Agency and such other interested parties as may be invited. The purpose of the preconstruction conference will be:

1. To review the initial work 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 preliminary work schedule;
2. A preliminary schedule of working drawing submittals;
3. A preliminary outline of the work plan; and
4. A list of material sources for approval, if applicable.

Add the following new section:

1-08.0(2) Hours of Work
(May 25, 2006 APWA GSP)

Except in the case of emergency or unless otherwise approved by the Contracting Agency, the normal straight time working hours for the contract shall be a consecutive 8-hour period between 7:00 a.m. and 6:00 p.m. with a maximum 1-hour lunch break Monday through Friday, unless otherwise approved by the Contracting Agency. The normal straight time 8-hour working period for the contract shall be established at the preconstruction conference or prior to the Contractor commencing the work.

If a Contractor desires to perform work on holidays, Saturdays, Sundays, or before 7:00 a.m. or after 6:00 p.m. on any day, the Contractor shall apply in writing to the Contracting Agency for permission to work such times. Permission to work longer than an 8-hour period between 7:00 a.m. and 6:00 p.m. is not required. Such requests shall be submitted to the Contracting Agency no later than noon on the working day prior to the day for which the Contractor is requesting permission to work.

Permission to work between the hours of 10:00 p.m. and 7:00 a.m. during weekdays and between the hours of 10:00 p.m. and 9:00 a.m. on weekends or holidays may also be subject to noise control requirements. Approval to continue work during these hours may be revoked at any time the Contractor exceeds the Contracting Agency's noise control regulations or complaints are received from the public or adjoining property owners regarding the noise from the Contractor's operations. The Contractor shall have no claim for damages or delays should such permission be revoked for these reasons.

Permission to work Saturdays, Sundays, holidays or other than the agreed upon normal straight time working hours Monday through Friday may be given subject to certain other conditions set forth by the Contracting Agency. These conditions may include but are not limited to: requiring the Contracting Agency to be present during the work; requiring the Contractor to reimburse the Contracting Agency for the costs in excess of straight-time costs for Contracting Agency employees who worked during such times, on non Federal aid projects; considering the work performed on Saturdays, Sundays, and holidays as working days with regards to the contract time; and 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. Assistants may include, but are not limited to, survey crews; personnel from the Contracting Agency's material testing lab; inspectors; and other Contracting Agency employees when in the opinion of the Engineer, such work necessitates their presence.

1-08.4 Notice to Proceed and Prosecution of the Work
(October 1, 2005 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 Contracting Agency. The Contractor shall commence construction activities on the project site within ten (10) working 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.

1-08.5 Time for Completion
(March 2016 COS)

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

The Contractor shall complete all Contract Work within the number of "working days" stated in the Contract Provisions or as extended by the Engineer in accordance with Section 1-08.8. Every day will be counted as a "working day" unless it is a nonworking day or an Engineer determined unworkable day. A nonworking day is defined as a Saturday, a Sunday, a day on which the Contract specifically suspends Work, or one of these holidays: January 1, the third Monday of January, the third Monday of February, Memorial Day, July 4, Labor Day, November 11, Thanksgiving, and Christmas Day. When any of these holidays fall on a Sunday, the following Monday shall be counted a nonworking day. When the holiday falls on a Saturday, the preceding Friday shall be counted a nonworking day. The days between December 25 and January 1 will be classified as nonworking days, provided the Contractor actually suspends performance of the Work.

Any unworkable day is defined as a half or whole day the Contracting Agency declares to be unworkable because of weather or conditions caused by the weather that prevents satisfactory and timely performance of the Work shown on the critical path of the Contractor's approved progress schedule. Other conditions beyond the control of the Contractor may qualify for an extension of time in accordance with Section 1-08.8.

The Contract time shall begin on the first working day following the 10th calendar day after the issuance of the written notice to proceed or the first day on which the Contractor begins to perform Work on the site, whichever first occurs, unless approved otherwise by the Contracting Agency. The Contract Provisions may specify another starting date for the Contract time, in which case time will begin on the starting date specified.

Each working day shall be charged to the Contract as it occurs until the Work is physically complete. If requested by the Contractor in writing, the Contracting Agency will provide the Contractor with a weekly statement that shows the number of working days: (1) charged to the Contract the week before; (2) specified for the substantial and 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 days that the Contracting Agency determines to be unworkable. If the Contractor disagrees with any statement issued by the Contracting Agency, the Contractor shall submit a written protest within 10 calendar days after the date of the statement. The protest shall be sufficiently detailed to enable the Contracting Agency to ascertain the basis for the dispute and the amount of time disputed. Any statement that is not protested by the Contractor as required in this Section shall be deemed as having been accepted. If the Contractor elects and is approved by the Contracting Agency to work 10 hours a day for four days a week (a 4-10 schedule), the fifth day of the week of that week will be charged as a working day if that day would be chargeable as a working day if the Contractor had not elected to utilize the 4-10 schedule.

The Contracting Agency will give the Contractor written notice of the Completion Date of the Contract after all of the Contractor's obligations under the Contract have been performed by the Contractor. The following events must occur before the Completion Date will 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 Contracting Agency prior to establishing a Completion Date:
    a. Certified payrolls (Federal-aid projects);
    b. Material acceptance certification documents;
    c. Testing Reports;
    d. Annual report of amounts paid as MBE/WBE participants or quarterly report of amounts credited as DBE participation, as required by the Contract Provisions;
    e. Final Contract voucher certification;
    f. Property owner releases if needed as required by Section 1-07.24.

1-08.7 Maintenance During Suspension
(October 1, 2005 APWA GSP)

Revise the second paragraph to read:

At no expense to the Contracting Agency, the Contractor shall provide through the construction area a safe, smooth, and unobstructed roadway, sidewalk, and path for public use and, where such access would normally be provided, during suspension (as required in Section 1-07.23 or the Special Provisions). This may include a temporary access road or pathway.

1-09 MEASUREMENT AND PAYMENT

1-09.9 Payments

(October 10, 2008 APWA GSP)

Delete the third paragraph and replace it with the following:

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 payment. 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 — partial payment for lump sum Bid items will be a percentage of the price in the Proposal based on the Engineer's determination of the amount of Work performed, with consideration given to, but not exclusively based on, the Contractor's lump sum breakdown for that item.
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 after signature of approval by the City Manager.

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

1. Retainage per Section 1-09.9(1);
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.

Payments will be made by warrants, issued by the Contracting Agency's fiscal officer, against the appropriate fund source for the project. Payments received on account of work performed by a subcontractor are subject to the provisions of RCW 39.04.250.

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.

DIVISION 2
EARTHWORK

2-01 CLEARING, GRUBBING, AND ROADSIDE CLEANUP

2-01.1 Description
(March 2016 Tetra Tech)

Section 2-01.1 is supplemented by the following:

Clearing and grubbing on this project shall be performed within the following limits:

Areas disturbed by grading whose limits are shown on Drawings C-101 through C-105. Wetland Area 1, Wetland Area 4 and Wetland Area 5 shown on landscape plans L-102, L-103 and L-104 shall not be cleared and grubbed.

2-01.3(3) Noxious Weed and Invasive Species Removal (New Section)
Section 2-01.3(3) is replaced by the following:

Noxious weeds and invasive species shall initially be removed as specified herein and at the locations shown in the Plans. Work required to perform follow-up weed removal treatments in subsequent years will be done by others.

The Contractor shall prepare and submit a Weed Removal and Control Plan to the Engineer for approval two weeks prior to the start of weed removal. The plan shall incorporate the provisions as indicated herein and on the Plans.

The Weed Removal and Control Plan shall incorporate the following provisions:

1. Noxious weeds to be removed are defined by Washington Administrative Code Chapter 16-750 WAC.
2. Noxious and invasive weeds on the mitigation site shall be eradicated using manual or mechanical removal and treatment with a non-residual herbicide.
3. Herbicide application shall be done selectively so that no overspray occurs that may harm sensitive plants.
4. Only herbicides approved for aquatic applications shall be used.
5. All herbicides shall be applied as authorized by law and at the application rates and conditions specified by the manufacture of the product.
6. A licensed herbicide applicator shall apply all herbicides. Application of herbicides shall be consistent with state law.
7. No vehicle traffic is allowed within the wetland boundaries.
8. All plant material removed shall be hauled off-site to an approved facility.

At a minimum, the following list of weeds shall be removed. Other noxious weeds will require removal as identified on-site. Other weed removal treatments may be used if approved by the Engineer.

Species Scientific Name (Common Name)	Control Method	Herbicide Application
Rubus Armeniacus (Himalayan Blackberry)	Cut prior to seed set and apply herbicide immediately to cane cuts.	Apply glyphosate with a dye for marking treated plants.
Phahalarius arundinacea (Reed Canary Grass)	Cut prior to seed set and apply herbicide.	Apply glyphosate with a dye for marking treated plants.
Iris pseudacorus (Yellow Iris)	Dig root mass by hand and remove all parts from site.	Apply glyphosate with a dye for marking treated plants.
Hedra helix (English Ivy)	Pull from ground and cut climbing stems at the base of trees. Leave vines on trees.	Apply glyphosate with a dye for marking treated plants.
Llix aquifolium (Holly)	Cut trunk to ground and apply herbicide.	Apply glyphosate with a dye for marking treated plants.
Fallopia japonica (Japanese knotweed)	Cut prior to seed set and apply herbicide.	Apply glyphosate with a dye for marking treated plants.
Lythrum salicaria (Purple loosestrife)	Cut prior to seed set and apply herbicide.	Apply glyphosate with a dye for marking treated plants.
Lysimachia vulgaris (Garden loosestrife)	Cut prior to seed set and apply herbicide.	Apply glyphosate with a dye for marking treated plants.

Species Scientific Name (Common Name)	Follow-Up Treatments
Rubus Armeniacus (Himalayan Blackberry)	Apply to resprouting individuals in late summer or fall when regrowth is at least 2 feet tall. Follow-up cutting and treatment of sprouts yearly for three years.
Phahalarius arundinacea (Reed Canary Grass)	Apply herbicide to resprouting shoots in late summer or fall when regrowth is at least 6 inches tall.
Iris pseudacorus (Yellow Iris)	Dig root mass by hand and remove all parts from site.
Hedra helix (English Ivy)	Pull from ground and cut climbing stems at the base of trees. Leave vines on trees.
Llix aquifolium (Holly)	Cut trunk to ground and apply herbicide.
Fallopia japonica (Japanese knotweed)	Apply herbicide to resprouting shoots in late summer or fall when regrowth is at least 6 inches tall.
Lythrum salicaria (Purple loosestrife)	Apply herbicide to resprouting shoots in late summer or fall when regrowth is at least 6 inches tall.
Lysimachia vulgaris (Garden loosestrife)	Apply herbicide to resprouting shoots in late summer or fall when regrowth is at least 6 inches tall.

2-01.4 Measurement
Section 2-01.4 is supplemented by the following:

No specific unit of measurement shall apply to the lump sum item “Noxious Weed and Invasive Species Removal”.

2-01.5 Payment
Section 2-01.5 is supplemented by the following:

“Noxious Weed and Invasive Species Removal”, per lump sum.

The lump sum contract price for “Noxious Weed and Invasive Species Removal” shall be full compensation for furnishing all tools, labor, equipment, materials, and incidentals necessary to remove, treat, and dispose of the noxious weeds and invasive species as indicated on the Plans and specified herein, and directed in the field by the Engineer, to include but not limited to, fees, fuel and permits related to disposal.

The third sentence of this section is revised to read:

The unit Contract price per lump sum for “Clearing and Grubbing” shall be full pay for all Work described in this section except “Noxious Weed and Invasive Species Removal”.

2-02 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

2-02.1 Description
(March 2016 Tetra Tech)

Section 2-02.1 is supplemented by the following:

The following items as indicated on the Plans shall be removed and disposed of in accordance with the requirements of Section 2-02:

1. Asphalt concrete pavement over existing culverts and widened sidewalk area, approximately 70 SY.
2. Approximately 148 feet of 24-inch CMP culvert.
3. Guardrail at culvert crossing.
4. Guardrail posts at culvert crossing.
5. Cement concrete sidewalk, approximately 60 SY.
6. Cement concrete curb and gutter, approximately 80 LF.

2-02.3(4) Sawcutting (New Section)
(December 7, 2006 G&O)

Where shown on the Plans or where directed in the field by the Engineer, the Contractor shall make a neat vertical saw-cut at the boundaries of the area to be removed. Care shall be taken during sawcutting so as to prevent damage to the

existing asphalt concrete, or concrete, to remain in place. Any pavement or concrete damaged by the Contractor outside the area scheduled for removal due to the Contractor's operations or negligence shall be repaired or replaced to the Contracting Agency's satisfaction by the Contractor at no additional cost to the Contracting Agency.

All cuts shall be continuous, full depth, and shall be made with saws specifically equipped for this purpose. No skip cutting or jack hammering will be allowed unless specifically approved otherwise in writing by the Engineer. Any pavement that is damaged outside the allowable trench widths or as marked in the field, in accordance with the Plans or pre-approved by the Contracting Agency, shall be repaired entirely at the Contractor's expense.

Wheel cutting or jack hammering shall not be considered an acceptable means of pavement "cutting," unless pre-approved in writing by the Engineer. However, even if pre-approved as a method of cutting, no payment will be made for this type of work, and it shall be included in the various unit contract and lump sum prices listed in the Proposal.

The location of all pavement cuts shall be pre-approved by the Engineer in the field before cutting commences.

All water and slurry material resulting from sawcutting operations shall not be allowed to enter the storm drainage or sanitary sewer system and shall be removed from the site and disposed of in accordance with the Washington State Department of Ecology regulations.

2-02.5 Payment
(May 2014 COS)

This Section is supplemented with the following:

All costs for saw cutting as indicated in the Plans and as may be additionally necessary to construct the Project shall be included in the unit Contract and lump sum prices as listed in the Proposal. No additional or separate payment will be made for saw cutting.

The lump sum contract price for "Removal of Structures and Obstructions" shall be full compensation for furnishing all tools, labor, equipment, materials, and incidentals necessary for removing, loading, hauling, relocating, disposing of, and/or delivering items as noted herein and directed in the field by the Engineer, to include but not limited to, fees, fuel and permits related to disposal.

2-03 ROADWAY EXCAVATION AND EMBANKMENT

2-03.1 Description
(March 2016 Tetra Tech)

Section 2-03.1 is supplemented by the following:

This Work includes the removal of sediment and other material from the existing stream channel and construction of the new floodwater channel to the lines and grade as shown on the Plans. This includes reshaping adjacent embankments and removal of material where shown on the Plans to achieve the specified grade. This Work is included as part of Ditch Excavation Including Haul.

This Work includes construction of the separator berm which shall be placed and compacted as shown on the Plans. This work is included in Gravel Borrow Including Haul.

2-03.3 Construction Requirements
Section 2-03.3 is supplemented by the following:

Care shall be taken by the Contractor when excavating in the vicinity of the existing culvert to not damage the culvert ends.

2-03.4 Measurement
Section 2-03.4 is supplemented by the following:

Compaction of material in the separator berm will not be measured.

2-03.5 Payment
Section 2-03.5 is supplemented by the following:

Compaction of material placed in the separator berm is considered incidental and will not be paid separately.

2-09 STRUCTURE EXCAVATION

2-09.1 Description
(March 2016 Tetra Tech)

Section 2-09.1 is supplemented by the following:

The grading and material removal for the wetland creation, rock wall facing, and gravel walkway as shown in the Plans is included, measured and paid for under Structure Excavation Class B Including Haul.

DIVISION 5
SURFACE TREATMENTS AND PAVEMENTS

5-04 HOT MIX ASPHALT

5-04.1 Description
(March 2016 Tetra Tech)

Section 5-04.1 is supplemented by the following:

This work includes the application of liquid asphalt emulsion to the pavement overlay ends.

5-04.3 Construction Requirements
Section 5-04.3 is supplemented by the following:

Liquid asphalt emulsion shall be applied to the pavement overlay edges at all locations where new asphalt is placed adjacent to existing asphalt.

The Contractor shall provide verbal and written notice (door hangers) to property owners identifying restricted roadway access during paving. This notice mush be provided twice: at one (1) week prior and again one (1) day prior to the work being performed.

5-04.4 Measurement
Section 5-04.4 is supplemented by the following:

Liquid asphalt emulsion will not be measured separately.

5-04.5 Payment
Section 5-04.5 is supplemented by the following:

Liquid asphalt emulsion shall be included in the cost for HMA CL. 1/2 IN. PG 64-22.

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

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

7-05.3 Construction Requirements
(May 2016 Tetra Tech)

The third paragraph of Section 7-05.3 is supplemented with the following

Where called for, locking solid metal covers conforming to Standard Plan B-30.20-02 and frames conforming to Standard Plan B-30.10-01 shall be furnished and installed on existing catch basins and inlets.

7-05.4 Measurement
Section 7-05.4 is supplemented with the following:

Locking solid metal cover and frame for catch basins will be measured by the unit for each cover and frame assembly installed on an existing catch basin or inlet.

7-05.5 Payment
Section 7-05.5 is supplemented with the following:

"Locking Solid Metal Cover And Frame For Catch Basin", per each.
The unit contract price per each for "Locking Solid Metal Cover and Frame for Catch Basin" shall be full pay for removing and disposing of the existing frame and grate, and installing the frame and cover.

DIVISION 8
MISCELLANEOUS CONSTRUCTION

8-01 EROSION CONTROL AND WATER POLLUTION CONTROL
(March 2016 Tetra Tech)

Section 8-01 is modified as follows:

8-01.3 Construction Requirements

8-01.3(2) Seeding, Fertilizing and Mulching
The following is added:

Grass shall be established throughout the entire application area subject to the following provisions:

1. Seeding is best performed in spring (March 1 to May 15) or fall (September 1 to October 1). For summer seeding, sprinkler systems or other measures for watering the grass seed shall be provided by the Contractor.
2. Irrigation is required during the first summer following installation if seeding occurs in spring or summer. Seeding in the fall may not need irrigation if approved by the Engineer.

Fertilizer shall be slow release with a P-K-N ratio of 10-10-10, or as approved by the engineer, and shall be suitable for newly seeded areas.
Mulch shall be moderate-term wood cellulose.

8-01.4 Measurement
Section 8-01.4 is supplemented with the following:

Watering and sprinkler systems will not be measured separately.

No specific unit of measurement shall apply to the lump sum items “Seeding, Fertilizing, and Mulching (Dry Area Seed Mix)” and “Seeding and Mulching (Wet Area Seed Mix)”.

No specific unit of measurement shall apply to the lump sum item “Tackifier”.

8-01.5 Payment
Section 8-01.5 is supplemented by the following:

Watering and sprinkler systems shall be included in the cost for Seeding, Fertilizing and Mulching and for Seeding and Mulching.

“Tackifier”, per lump sum.

The lump sum contract price for “Tackifier” shall be full payment for all costs incurred to complete the work.

“Seeding, Fertilizing, and Mulching (Dry Area Seed Mix)”, per lump sum.

“Seeding and Mulching (Wet Seed Mix)”, per lump sum.

The lump sum contract price for “Seeding, Fertilizing, and Mulching (Dry Area Seed Mix)” and “Seeding and Mulching (Wet Area Seed Mix)” shall be full compensation for furnishing all tools, labor, equipment, materials, and incidentals necessary to placing seed, fertilizer and mulch where indicated in the Plans or as otherwise approved by the Engineer.

8-02 ROADSIDE RESTORATION

(March 2016 Tetra Tech)

Section 8-02 is modified as follows:

8-02.4 Measurement

Section 8-02.4 is supplemented with the following:

No specific unit of measurement shall apply to the lump sum item “Fine Compost”.

8-02.5 Payment

Section 8-02.5 is supplemented with the following:

“Fine Compost”, per lump sum.

The lump sum Contract price for “Fine Compost” shall be full compensation for furnishing all tools, labor, equipment, materials, and incidentals necessary to supplying and spreading the compost onto the existing soil where indicated in the Plans or as otherwise approved by the Engineer.

8-04 CURB, GUTTERS, AND SPILLWAYS

8-04.3 Construction Requirements

(May 2014 COS)

This Section is supplemented with the following:

Any curb and gutter damaged, defaced, cracked, chipped, or determined to be of poor workmanship, in the opinion of the Contracting agency, shall be removed, waste hauled and replaced by the Contractor, at the Contractor’s expense. Sacking and grinding shall not be considered an acceptable means for repairing unacceptable sections. The Contractor shall further provide verbal and written notice (door hangers) to property owners identifying restricted use of their driveways, sidewalks, etc. This notice must be provided twice: at one (1) week prior and again one (1) day prior to the work being performed.

8-14 CEMENT CONCRETE SIDEWALKS

8-14.3 Construction Requirements
(May 2014 COS)

This Section is supplemented with the following:

Any sidewalk damaged, defaced, cracked chipped, or determined to be of poor workmanship, in the opinion of the Contracting Agency, shall be removed, waste hauled, and replaced by the Contractor at the Contractor's expense. Damaged sidewalk shall be removed at a construction or expansion joint. Sawcutting will be allowed as directed in the field by the Engineer. Sacking, grinding, or spot repairs shall not be considered an acceptable means for repairing unacceptable sections. The Contractor shall further provide verbal and written notice (door hangers) to property owners identifying restricted use of their driveways, sidewalks, etc. This notice mush be provided twice: at one (1) week prior and again one (1) day prior to the work being performed.

8-24 ROCK AND GRAVITY BLOCK WALL AND GABION CRIBBING
(March 2016 Tetra Tech)

Section 8-24 is modified as follows:

8-24.4 Measurement
Section 8-24.4 is modified as follows:
Delete the first paragraph and replace with the following:

Rock for rock walls will be measured by the ton of rock actually placed.
Backfill for rock walls will not be measured.

Delete the fourth paragraph and replace with the following:
Construction geotextile used in rock wall facing construction will not be measured.

8-24.5 Payment
The third sentence of Section 8-24.5 is revised to read:
The unit Contract price per ton for "Rock for Rock Wall" shall also include furnishing and installing chinking materials, construction geotextile, and backfill for rock walls.

Section 8-26 is replaced with the following:

8-26 STREAMBED CONSTRUCTION

(March 2016 Tetra Tech)

8-26.1 Description

This Work shall consist of furnishing and constructing the streambed in accordance with the Plans and these Specifications and as ordered by the Engineer in accordance with Section 1-04.4.

This Work includes obtaining, providing, hauling and placing the material components that constitute the reconstructed streambed and mixing/placing the streambed material as shown on the Plans. This includes both the floodwater channel section and the restored channel section.

8-26.2 Materials

Materials shall meet the requirements of the following sections:

Streambed Sediment	9-03.11(1)	
Streambed Cobbles	9-03.11(2)	4” Cobbles

8-26.3 Construction Requirements

The Streambed Cobbles shall be the 4-inch size. This Work includes the placement of the material on the prepared channel bottom as detailed in the Plans. Hand methods and/or mechanical methods, which may include conveyor systems, may be required for placing material as shown in the Plans. The streambed material shall be uniformly and thoroughly mixed in the ratio of one part Streambed Sediment and two parts Streambed Cobbles before placement into the channel.

The excavation and grading to achieve the streambed profile and side-slopes in the Drawings is measured as Ditch Excavation Including Haul.

8-26.4 Measurement

Streambed Sediment will be measured by the ton delivered to the site actually placed. Streambed Cobbles will be measured by the ton delivered to the site actually placed. Ditch Excavation Including Haul is measured and paid separately.

8-26.5 Payment

Payment will be made in accordance with Section 1-04.1, for each of the following Bid items that are included in the Proposal:

“Streambed Sediment”, per ton.

“Streambed Cobbles”, per ton.

The unit Contract price per ton for each for the streambed material specified above shall be full pay for furnishing all labor, tools, equipment, and materials required to mix and place the streambed material. When it is necessary to dump and sort individual loads, payment will be made only for that portion accepted by the Engineer.

Section 8-27 is replaced with the following:

8-27 SPLIT RAIL FENCE

(March 2016 Tetra Tech)

8-27.1 Description

The Contractor shall provide and install a split rail fence with two rails per span at the location shown in the Plans.

8-27.2 Materials

The split rail fence material shall be fabricated from untreated western red or white cedar.

8-27.3 Construction Requirements

The split rail fence shall be constructed as detailed in the Drawings. The fence shall consist of posts spaced on 8-foot centers with two rails between posts. The rails shall fit into predrilled holes in the posts. The post length shall be as detailed. The top rail shall be centered approximately 6 inches from the post top with the other rail spaced approximately 18 inches below the top rail.

The fence shall be constructed in the approximate location as shown in the Plans. The Engineer shall specify the actual location when fence construction is to commence. The Contractor shall ask the Engineer to specify the location prior to fence construction.

Posts shall be backfilled with crushed surfacing top course (CSTC) packed around the post as shown in the Plans. The posts shall be installed vertically along the alignment specified by the Engineer.

8-27.4 Measurement

Split rail fence will be measured by the linear foot of completed fence, along the ground line, exclusive of openings.

8-27.5 Payment

Payment will be made in accordance with Section 1-04.1 for the following bid items:

“Split Rail Fence”, per linear foot.

The unit Contract price per linear foot for “Split Rail Fence” shall be full compensation for furnishing all tools, labor, equipment, materials, and incidentals for the specified work including rentals, procurement, rails, posts, post hole excavation and backfill, CSTC, hardware and installation.

Section 8-28 is replaced with the following:

8-28 DEWATERING

(March 2016 Tetra Tech)

8-28.1 Description

Seepage and groundwater is expected during construction. The Contractor shall provide, install, maintain and operate all necessary equipment to keep excavations free from water during construction. Use of multiple trash/sump pumps, headers and discharge pipe conveying turbid water to a sediment trap or "Baker Tank" is expected. The Contractor shall dispose of the dewatered water so as to not cause injury to public or private property or nuisance to the public. Disposal of water shall comply with all local, State and federal laws and ordinances.

Dewatering shall also include the bypassing of any creek flow around the construction area. Construction is scheduled for summer months when typically there is little or no creek flow unless release from the lake is required to maintain lake levels. The Contractor shall provide a means to bypass lake flow around the construction area if the lake level exceeds elevation 141.0 feet and directed by the Engineer.

Dewatering shall also include the water barrier system to isolate the work area from the creek and lake flow.

8-28.2 Materials

Anticipated materials include numerous trash/sump pumps, headers, and pipe to route the pumped water to a sediment trap or "Baker Tank" and piping and pumps to bypass discharge from the lake, if required. Materials also include the devices for isolating the work area from creek and lake flow which may include bulk container bags with plastic sheeting and sand bags, cofferdam and/or sandbag dam with plastic sheeting or by a method and materials developed by the Contractor and approved by the Engineer.

8-28.3 Construction Requirements

Dewatering shall consist of the design, furnishing, installation, operation, maintenance, and removal of a dewatering system(s) to achieve proper completion of all work performed under this Contract. The dewatering system shall meet the Minimum Standards for Construction and Maintenance of Wells, Chapter 173-160 WAC, specified by the Department of Ecology, State of Washington.

The dewatering system shall be designed using accepted and professional methods of design and engineering consistent with the best modern practice. The dewatering system shall include any well points, sumps, and other equipment, appurtenances, and related earthwork necessary to perform the function. Deep wells are not recommended because of associated large drawdown. The Contractor shall employ the services of a professional dewatering expert acknowledge as experienced in the field of dewatering design, installation, operation and maintenance. The Contractor and dewatering expert shall visit the site to determine the existing conditions thereof.

The Contractor shall be solely responsible for proper design, installation, proper operation, maintenance, and any failure of any component of the dewatering system for this Contract.

Any method of dewatering shall include securing the area from unauthorized access.

The Contractor shall design a dewatering plan prior to construction for approval by the Engineer. This plan shall be kept updated throughout the duration of construction as needed to accommodate construction staging and field conditions. The dewatering plan shall be submitted to the Engineer weekly at the Progress Meetings if there are changes from the previously submitted dewatering plan.

The dewatering plan shall show locations of well points, sump locations, pump sizes and capacities, points of discharge, erosion and sediment control measures, and the use and location of filter bags, sediment traps or “Baker Tanks”.

The construction area must be isolated from creek flow and the lake. Bypassing of creek flow from the lake may be required. Isolating the creek/lake from the construction area may be done with the methods shown in the Plans (bulk container bags with plastic sheeting and sand bags, cofferdam and/or sandbag dam with plastic sheeting) or by a method developed by the Contractor and approved by the Engineer.

The lake level shall be recorded by the Contractor at the time when the lake is isolated from the construction area by driving a stake into the lakeside of the structure used to isolate the lake from the downstream construction area and clearly marking the stake with paint or an indelible marker indicating the lake level. The Contractor shall monitor the lake level throughout construction. The Contractor shall document the lake level (at a minimum) daily and provide the documented levels as requested by the Engineer. If there is an increase of more than 6 inches in lake level, then the Contractor shall start releasing water from the lake through pumping or gravity discharge. If lake release is required, the Contractor shall construct the bypass system to ensure that stream flows bypass the construction site area safely without damage to surrounding property or downstream areas. Sediment must not be conveyed downstream during the construction period. No overtopping of the lake isolation system will be permitted.

Gravity discharge may only occur through portions of the construction area whose channels have been completed except plantings or seeding may have not yet occurred, as approved by the Engineer. When construction activity prevents gravity flow, lake and creek discharge shall be pumped. Pumped lake flow shall be discharged into either an undisturbed channel reach or completed channel construction reaches. Flow cannot be discharged downstream if the flow may encounter any channel reach that is under construction; otherwise, the flow must be piped to discharge downstream of the unfinished channel. The Contractor is cautioned that discharge piping from pumping may need to be routed through existing culverts. Discharge into the downstream reach shall be done in a manner to prevent erosion to the stream channel or banks.

The Contractor shall furnish, install, operate, and remove any and all machinery and equipment necessary to keep excavations free from water during construction, and shall dewater and dispose of the water so as not to cause injury to public or private property, or to cause a nuisance or menace to the public. The Contractor shall at all times have on hand sufficient pumping equipment and machinery in good working condition for all emergencies, including power outage and flooding, and shall have available at all times competent workers for the continuous and successful operation of the dewatering systems. These systems shall not be shut down between shifts, on holidays, on weekends, or during work stoppage.

The control of groundwater shall be such that softening of the bottom of excavations, or formation of “quick” conditions or “boils” during excavation shall not occur. Dewatering systems shall be designed and operated so as to prevent removal of the natural soils.

During excavation, demolition of structures, demolition of hardscape, demolition of utilities, construction of structures, installing of pipelines, placing of working base, structure and trench backfill, utility construction, pavement construction, grading, structure and trench backfill, the placing and setting of concrete, and prior to the acceptance of the work or any portion of the work, excavations shall be free of water. The Contractor shall control surface runoff so as to prevent entry or collection of water in excavations or on other isolated areas of the site.

The Contractor shall monitor the dewatering operations on a daily basis and make changes as necessary to assure construction is not delayed. The Contractor shall maintain on-site sufficient equipment and materials to ensure continuous and successful operation of the dewatering systems.

The Contractor shall be responsible for and repair without cost to the City any damage to work in place, other Contractor’s equipment, and the excavation, including damage to the excavation bottom due to heave and including removal of disturbed material that may result from Contractor negligence, inadequate or improper installation, maintenance and operation of the dewatering system, and any mechanical or electrical failure of the dewatering system.

The Contractor shall assume ownership and responsibility for the timing and removal and disposal of all dewatering pumps, pipes, and other assorted system hardware. The Contractor shall remove and abandon all wells in accordance with Chapter 173-160 WAC.

Upon the approval of the Engineer, the removal of the water barrier from the lake shall be done gradually to allow the lake level to equalize with the downstream channel capacity. In no case shall the release rate resulting from the water barrier removal exceed 1 cfs. The Contractor shall notify the Engineer two days prior to the water barrier removal. The gradual removal of the water barrier may require several days.

8-28.4 Measurement
No unit of measurement shall apply to the lump sum price for dewatering.

8-28.5 Payment
"Dewatering", per lump sum.
The unit contract price per lump sum for "Dewatering" shall be full compensation to the Contractor for all tools, materials, labor and equipment necessary to perform the work described herein, including, but not limited to, creating and updating the dewatering plan, and installation, maintenance and adjustment of dewatering wells, baker tanks, sumps, pumps, piping, water barrier construction and maintenance including bulk container bags with fill, plastic sheeting, sandbags, cofferdams to isolate the creek/lake from the construction area, and resulting sediment control.

Section 8-30 is added with the following:

8-30 SURVEY
(March 2016 Tetra Tech)

8-30.1 Description
This work consists of performing all survey necessary for the construction of improvements.

8-30.3 Construction Requirements
All work performed shall be in conformity with the lines, grades, slopes, cross-sections, superelevation data and dimensions as shown in the plans or as directed by the Engineer. If the plans, special provisions, or these specifications state specific tolerances, the work shall be performed within those limits. The Engineer's decision as to the conformity of the work shall be final as provided in Section 1-05.1.

The Contractor shall not deviate from the approved plans and working drawings unless the Engineer approves in writing.

Construction Surveying: The Contractor is required to provide all construction staking on the contract and shall be responsible for securing the services of a professional land surveyor who shall provide all surveying and construction staking needed in conjunction with the project. The staking shall include, but not be limited to:

Creek Centerline	Slope Staking
Curbs and Gutters	Grading and Paving
Storm Drain System	
Monuments/Monument Reference	R.O.W. and easement location
Underground Power Facilities	
Underground Water Facilities	
Underground Communication Facilities	Plant locations

The Contractor shall assume full responsibility for the accuracy of the survey and shall provide restaking as needed. The City shall provide the Contractor's surveyor with the horizontal and vertical control needed to perform the construction survey.

The Contractor's surveyor shall provide the original field notes showing, at minimum the centerline station, offset and elevation to each improvement constructed under this contract in sufficient detail to draw the as-constructed record of the project. These records shall be kept legibly in a format conforming to good engineering practice in a hard covered field book.

At the conclusion of the project the Contractor's surveyor shall provide to the City a copy of the field books, containing the original field notes for staking, as well as the as-built information, and one set of full size construction Plans upon which he has plotted the as-built location of the new work. This Plan shall bear the surveyor's seal and signature certifying its accuracy.

8-30.4 Measurement
No unit of measure shall apply to the lump sum price for survey.

8-30.5 Payment
Payment will be made in accordance with Section 1-04.1 for the following bid item:

"Survey", per lump sum.

The unit contract price per lump sum for "Survey" shall be full compensation to the Contractor for all materials, labor and equipment necessary to perform the work described herein.

Section 8-31 is added with the following:

8-31 PROJECT DOCUMENTATION
(May 2014 COS)

8-31.1 Description

Record drawings and other documents are to be maintained and annotated by the Contractor during construction as follows: (1) a neatly and legibly marked set of Contract Plans showing the final location of piping, structures, paving limits, curbs, gutters, sidewalks, relocated utility structures, monuments, channelization, etc.; (2) additional documents such as schedules, lists, drawings, and easement/permit forms included in the Specifications; and (3) Contractor layout and installation drawings. Unless otherwise specified, record drawings shall be full size and maintained in a clean, dry, and legible condition. Record documents shall not be used for construction purposes and shall be available for review by the Contracting Agency during normal working hours at the Contractor's field office. At the completion of the Work and prior to

final payment, all record drawings and attachments shall be submitted to the Contracting Agency. The record drawings shall be prepared concurrently with the Work being performed and shall be kept current at all times. Annotations to the record documents shall be made with an erasable colored pencil conforming to the following color code:

Additions	Red
Deletions	Green
Comments	Blue
Dimensions	Graphite

The record drawings shall identify all existing or abandoned utilities that were found during construction and not shown on the original Contract Plans. The Contractor will be provided with one set of Contract Plans for this purpose. At the end of the project, each record drawing and other document shall be stamped and signed by the Contractor, attesting to the accuracy of the drawing or other document.

8-31.5 Payment

All work required to complete the project documentation shall be considered incidental to the contract and as such merged in the various items bid.

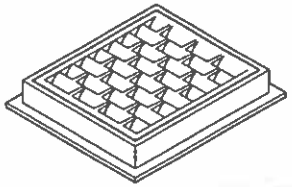
Appendix 1

WSDOT Standard Details

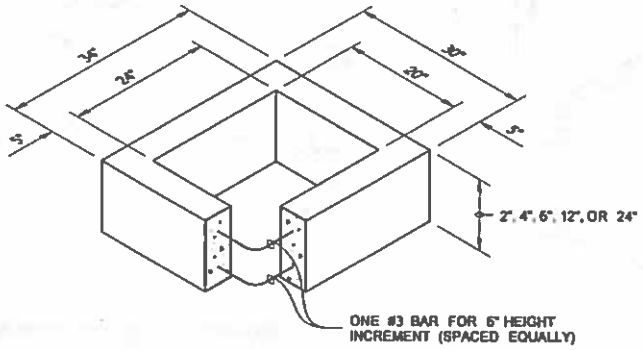
The following are included:

B-5.20
B-30.10
B-30.20
B-55.20
C-20.10
C-20.40
C-23.60
F-10.12
F-10.16
F-30.10
F-40.12
G-22.10
I-30.15
I-30.30
I-40.20
I-50.20
I-60.10

DRAWN BY: LISA CYFORD



FRAME AND VANED GRATE



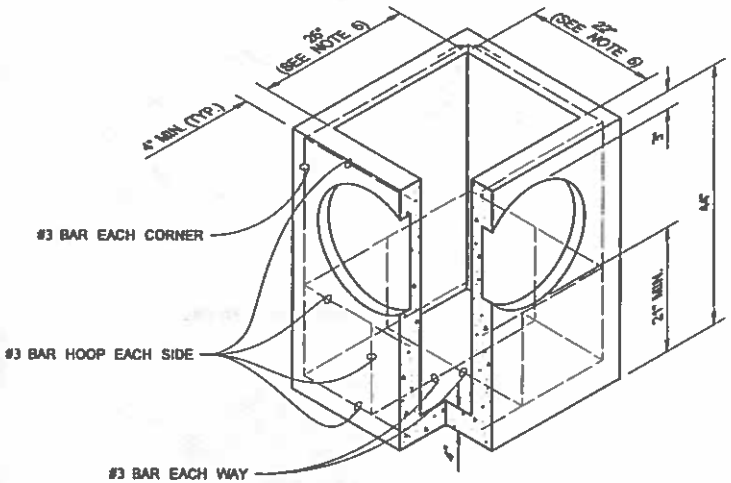
RECTANGULAR ADJUSTMENT SECTION

PIPE ALLOWANCES	
PIPE MATERIAL	MAXIMUM INSIDE DIAMETER
REINFORCED OR PLAIN CONCRETE	12"
ALL METAL PIPE	15"
CPSSP * (STD. SPEC. 9-05.20)	12"
SOLID WALL PVC (STD. SPEC. 9-05.12(1))	15"
PROFILE WALL PVC (STD. SPEC. 9-05.12(2))	15"

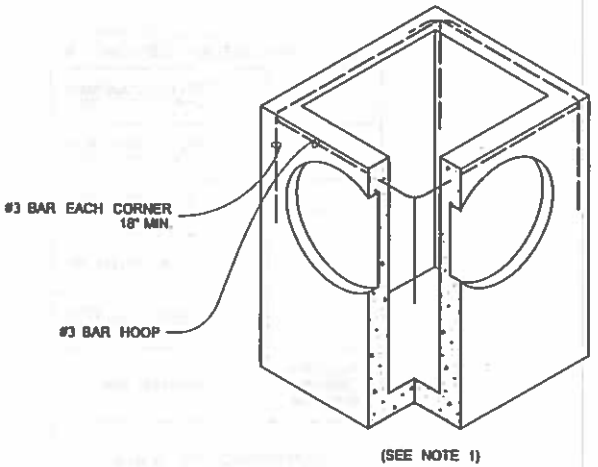
* CORRUGATED POLYETHYLENE STORM SEWER PIPE

NOTES

1. As acceptable alternatives to the rebar shown in the PRECAST BASE SECTION, fibers (placed according to the Standard Specifications), or wire mesh having a minimum area of 0.12 square inches per foot shall be used with the minimum required rebar shown in the ALTERNATIVE PRECAST BASE SECTION. Wire mesh shall not be placed in the knockouts.
2. The knockout diameter shall not be greater than 20". Knockouts shall have a wall thickness of 2" minimum to 2.5" maximum. Provide a 1.5" minimum gap between the knockout wall and the outside of the pipe. After the pipe is installed, fill the gap with joint mortar in accordance with Standard Specification 9-04.3.
3. The maximum depth from the finished grade to the lowest pipe invert shall be 5'.
4. The frame and grate may be installed with the flange down, or integrally cast into the adjustment section with flange up.
5. The Precast Base Section may have a rounded floor, and the walls may be sloped at a rate of 1:24 or steeper.
6. The opening shall be measured at the top of the Precast Base Section.
7. All pickup holes shall be grouted full after the basin has been placed.

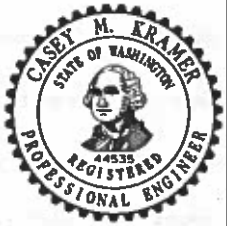


PRECAST BASE SECTION



(SEE NOTE 1)

ALTERNATIVE PRECAST BASE SECTION



NOTE: THIS PLAN IS NOT A LEGAL DOCUMENT UNLESS IT BEARS THE ORIGINAL SEAL AND SIGNATURE OF THE ENGINEER AND APPROVED FOR PUBLICATION BY OR PER AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

CATCH BASIN TYPE 1

STANDARD PLAN B-5.20-01

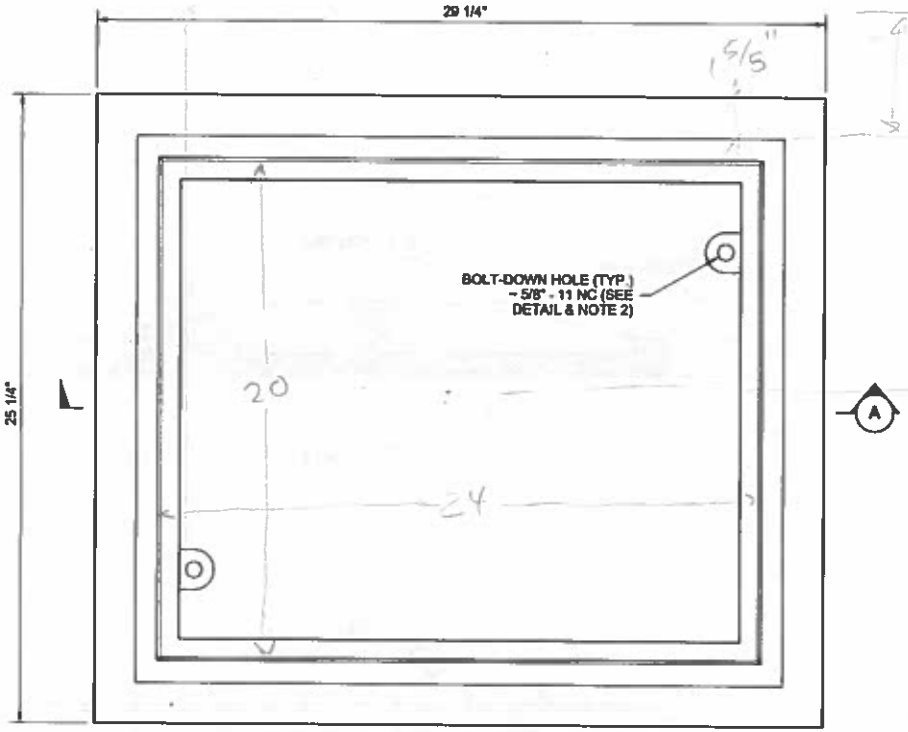
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

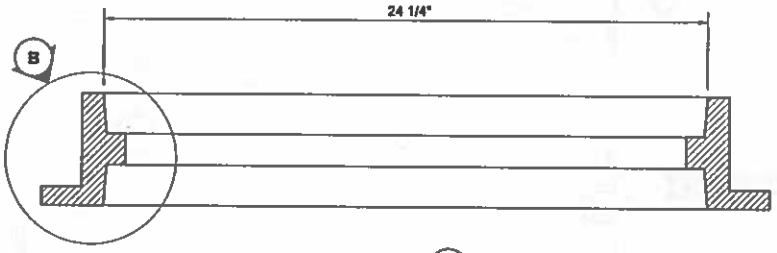
Pasco Bakotich III — STATE DESIGN ENGINEER — 06-16-11 — DATE

Washington State Department of Transportation

DRAWN BY: LISA CYFORD



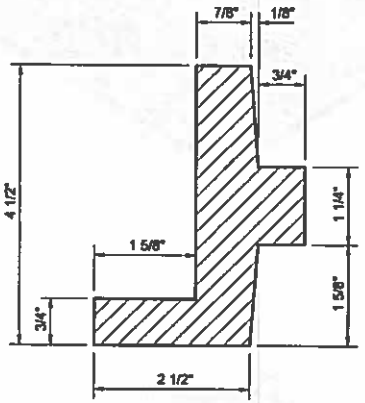
TOP



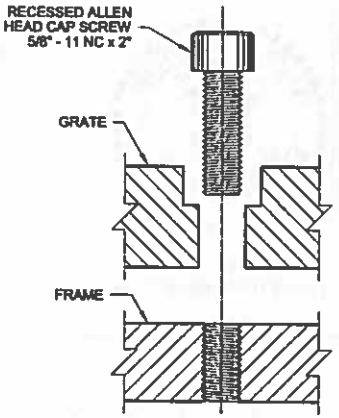
SECTION (A)

NOTES

1. This frame is designed to accommodate 20" × 24" grates or covers as shown on Standard Plans B-30.20, B-30.30, B-30.40, and B-30.50.
2. Bolt-down capability is required on all frames, grates, and covers, unless specified otherwise in the Contract. Provide 2 holes in the frame that are vertically aligned with the grate or cover slots. The frame shall accept the 5/8" - 11 NC × 2" Allen head cap screw by being tapped, or other approved mechanism. Location of bolt-down holes varies by manufacturer.
3. Refer to **Standard Specification 9-05.15(2)** for additional requirements.

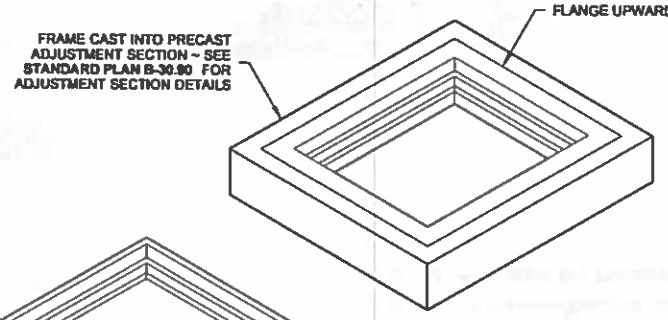


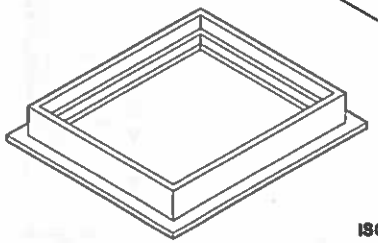
DETAIL (B)



SECTION

BOLT-DOWN DETAIL
SEE NOTE 2





ISOMETRIC VIEW
SHOWING THE VARIATIONS

CASEY M. KRAMER
STATE OF WASHINGTON
44535
REGISTERED
PROFESSIONAL ENGINEER

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL, SIGNED BY THE ENGINEER AND DATED, IS ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST

RECTANGULAR FRAME (REVERSIBLE)

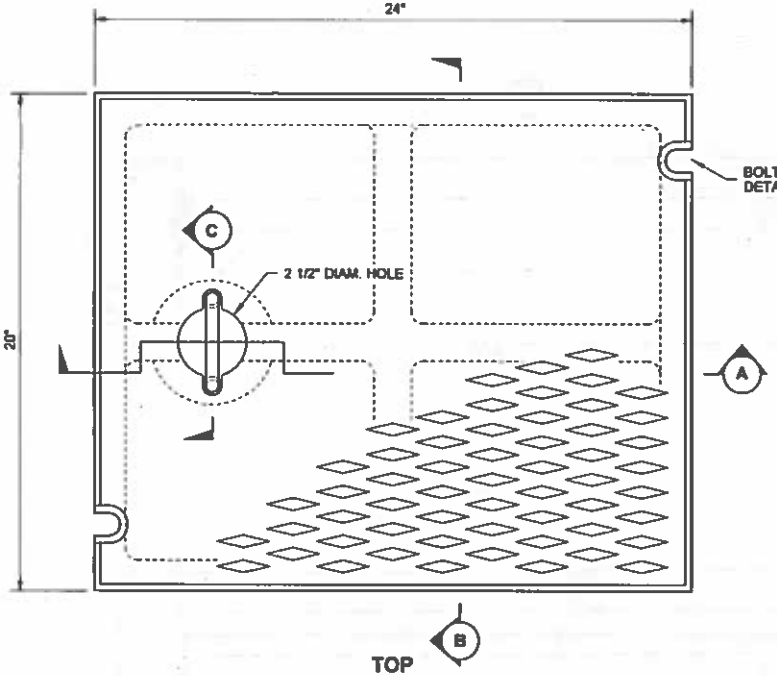
STANDARD PLAN B-30.10-01

SHEET 1 OF 1 SHEET

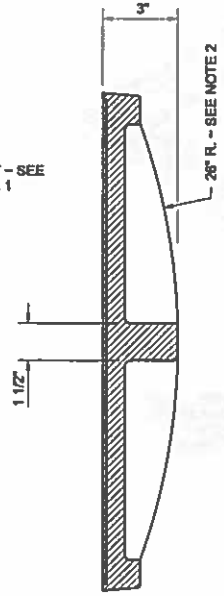
APPROVED FOR PUBLICATION

Pasco Bakotich III — STATE DESIGN ENGINEER — *04/26/12* — DATE

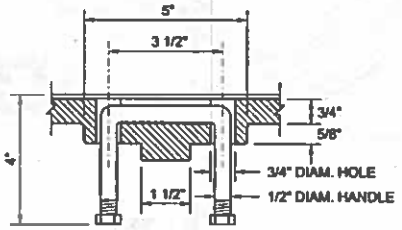
Washington State Department of Transportation



TOP



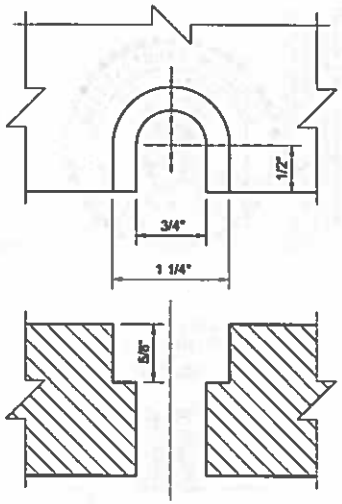
SECTION (B)



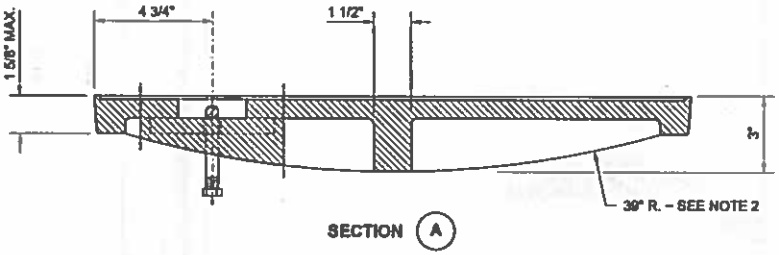
SECTION (C)

NOTES

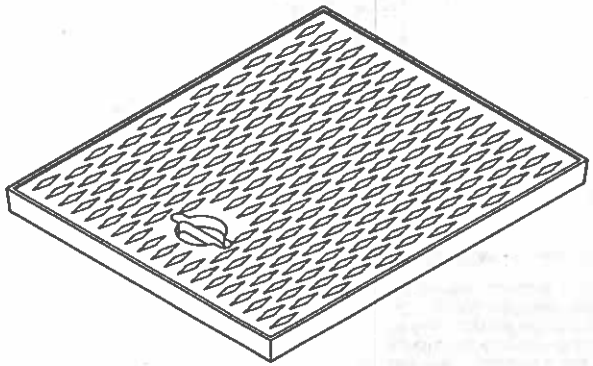
1. Bolt-down capability is required on all frames, grates, and covers, unless specified otherwise in the Contract. Provide 2 holes in the frame that are vertically aligned with the grate or cover slots. The frame shall accept the 5/8" - 11 NC × 2" Allen head cap screw by being tapped, or other approved mechanism. Location of bolt-down holes varies by manufacturer.
2. Alternative reinforcing designs are acceptable in lieu of the rib design.
3. Refer to **Standard Specification 9-05.15(2)** for additional requirements.
4. For frame details, see **Standard Plan B-30.10.**



BOLT-DOWN SLOT DETAIL
SEE NOTE 1



SECTION (A)



ISOMETRIC

RECTANGULAR SOLID METAL COVER

STANDARD PLAN B-30.20-02

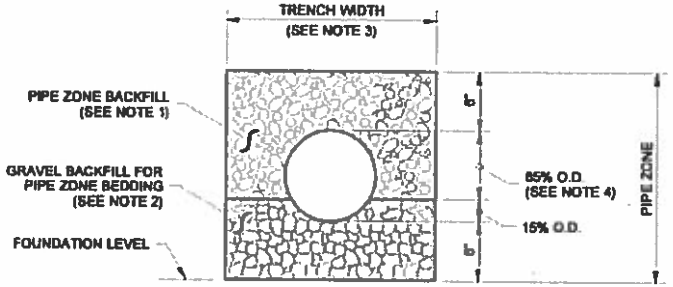
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

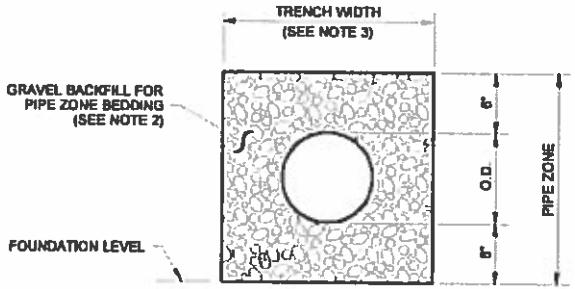
Pasco Bakotich III 04/26/12

STATE DESIGN ENGINEER — DATE

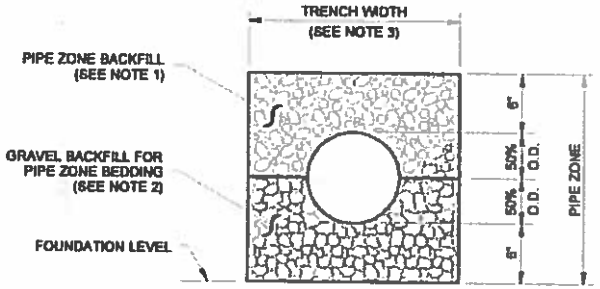
Washington State Department of Transportation



CONCRETE AND DUCTILE IRON PIPE



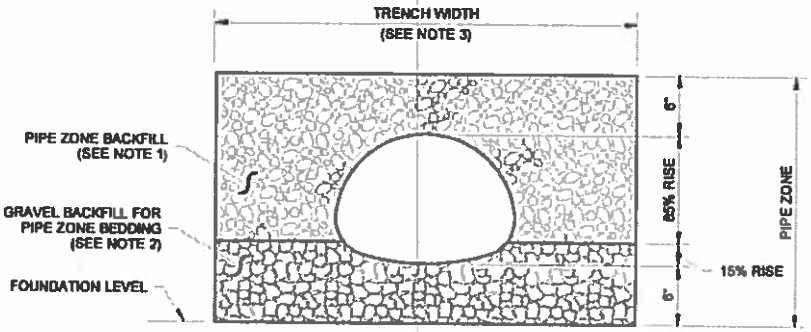
THERMOPLASTIC PIPE



METAL PIPE

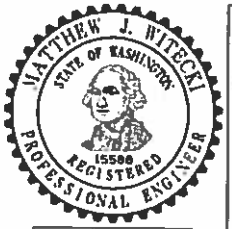
NOTES

1. See Standard Specifications Section 7-08.3(3) for Pipe Zone Backfill.
2. See Standard Specifications Section 9-03.12(3) for Gravel Backfill for Pipe Zone Bedding.
3. See Standard Specifications Section 2-09.4 for Measurement of Trench Width.
4. For sanitary sewer installation, concrete pipe shall be bedded to spring line.



PIPE ARCHES

CLEARANCE BETWEEN PIPES FOR MULTIPLE INSTALLATIONS		
PIPE	SIZE	MINIMUM DISTANCE BETWEEN BARRELS
CIRCULAR PIPE (DIAMETER)	12" to 24"	12"
	30" to 96"	DIAM. /2
	102" to 180"	48"
PIPE ARCH (SPAN) METAL ONLY	18" to 36"	12"
	43" to 142"	SPAN /3
	148" to 200"	48"



PIPE ZONE BEDDING AND BACKFILL

STANDARD PLAN B-55.20-00

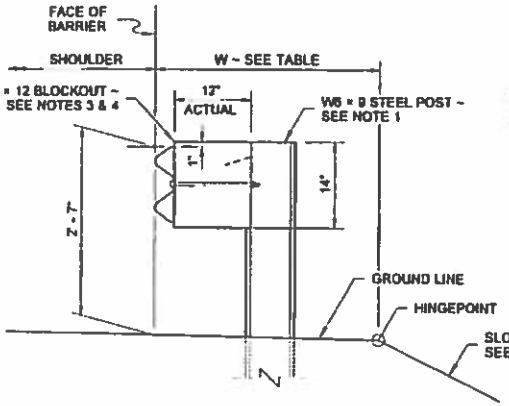
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

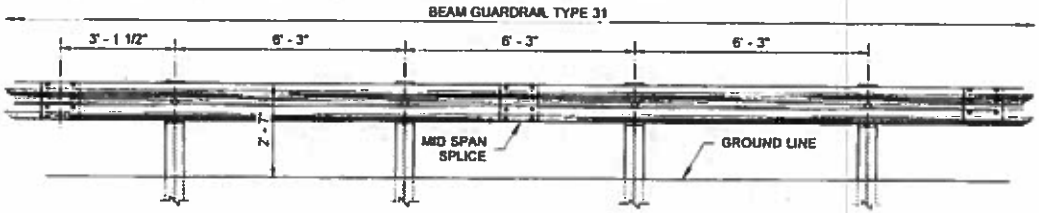
Harold J. Peterfeso 06-01-06

STATE DESIGN ENGINEER — DATE

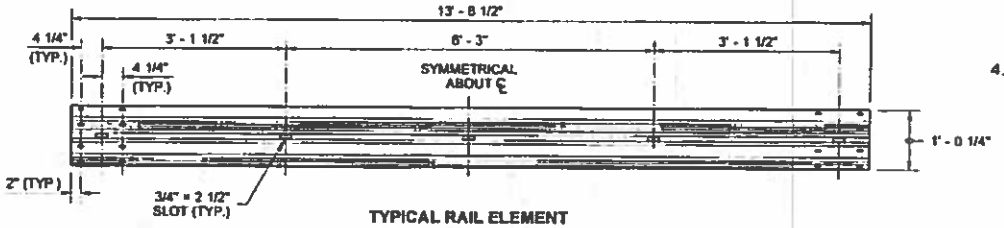
Washington State Department of Transportation



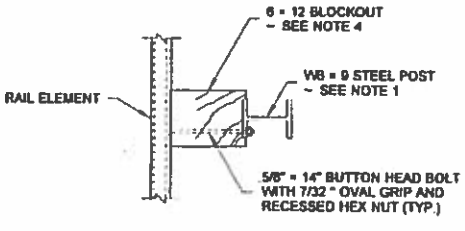
TYPICAL SECTION ~ WITHOUT CURB
(6' - 0" LONG POSTS)



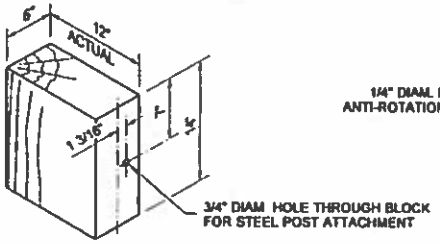
TYPICAL ELEVATION



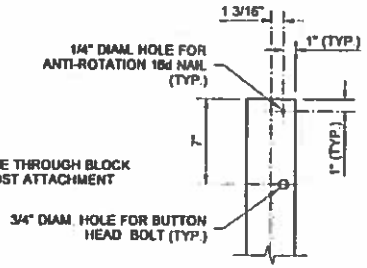
TYPICAL RAIL ELEMENT



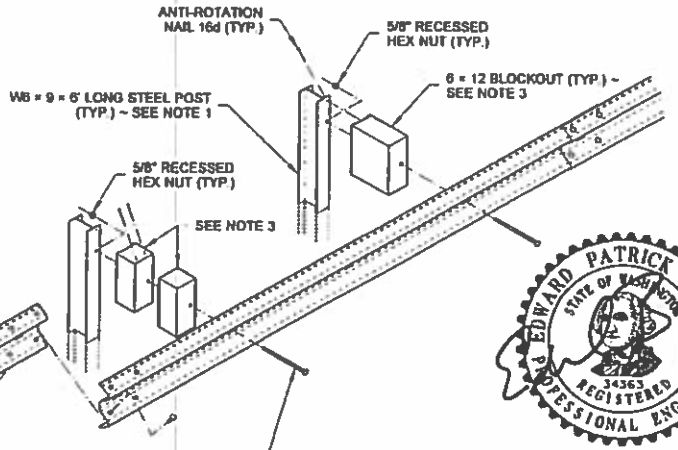
PLAN VIEW



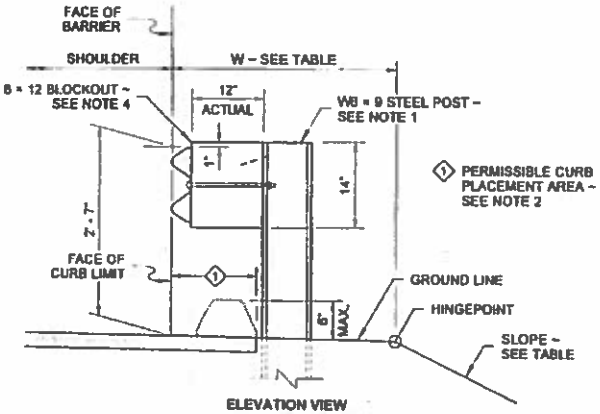
WOOD BLOCK



STEEL POST

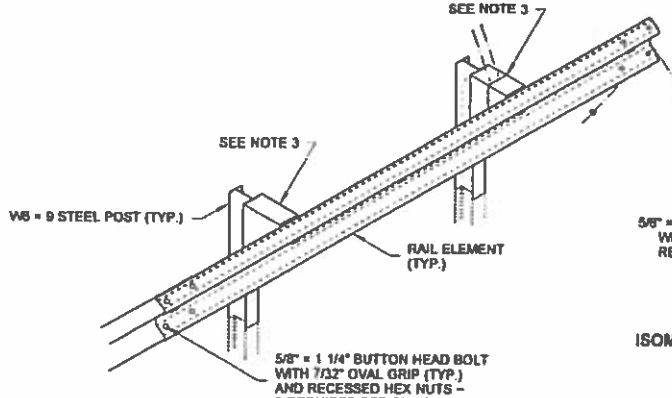


ISOMETRIC VIEW



ELEVATION VIEW

TYPICAL SECTION ~ WITH CURB
(6' - 0" LONG POSTS)



NOTES

1. Refer to Standard Plan C-1 and C-1b 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 2) to achieve the actual 12" offset. See **Standard Specification 9-16.3(2)**. Wood blocks shall be secured to the steel posts with anti-rotation nails as detailed. If combination blocks are used, the adjacent blocks shall be toe nailed 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 9-16.3(2)**.

SLOPE \ EMBANKMENT TABLE	
SLOPE	W
2H : 1V OR FLATTER	2.5' MIN.
STEEPER THAN 2H : 1V BUT NOT STEEPER THAN 1H : 1V	4.0' MIN.

DRAWN BY LISA CYFORD

EDWARD PATRICK BARRY — STATE OF WASHINGTON — 34363 — REGISTERED PROFESSIONAL ENGINEER

6·10·13

BEAM GUARDRAIL TYPE 31

STANDARD PLAN C-20.10-01

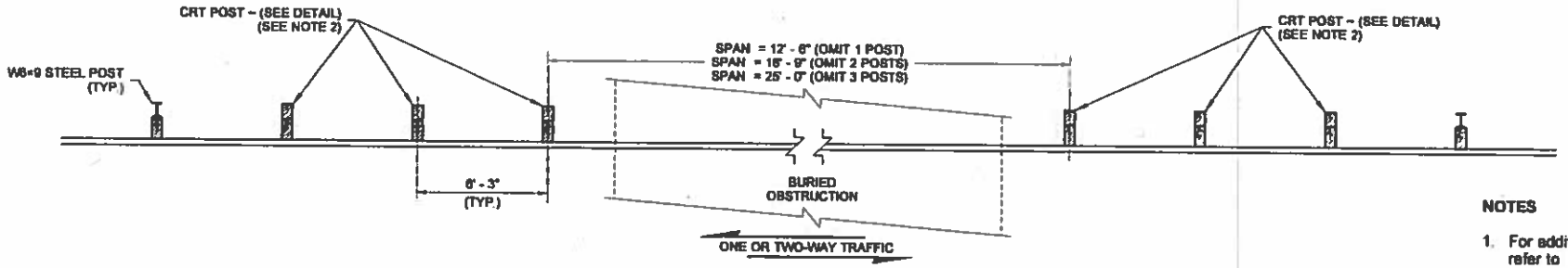
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

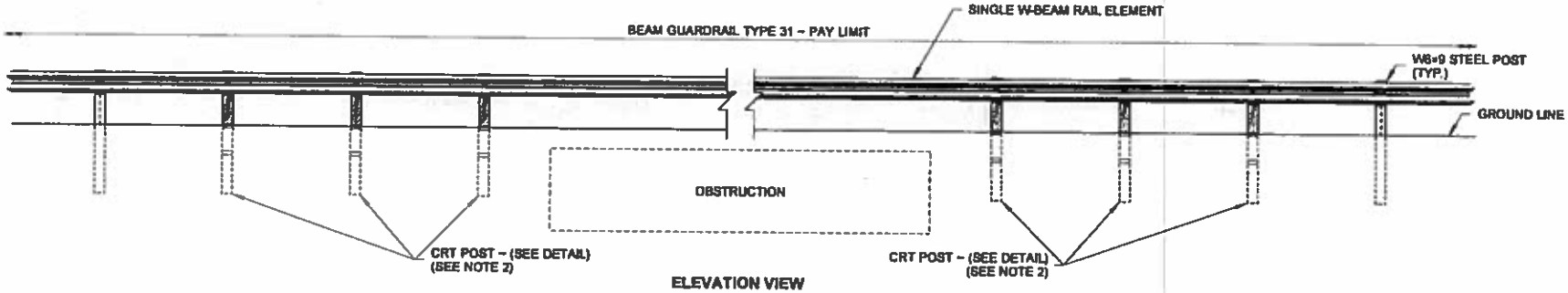
STATE DESIGN ENGINEER — DATE 6/20/13

Washington State Department of Transportation

DRAWN BY: FERN UDDELL



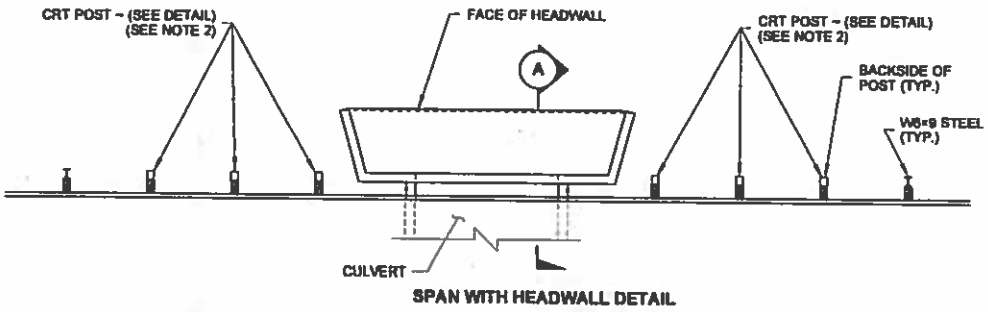
PLAN VIEW



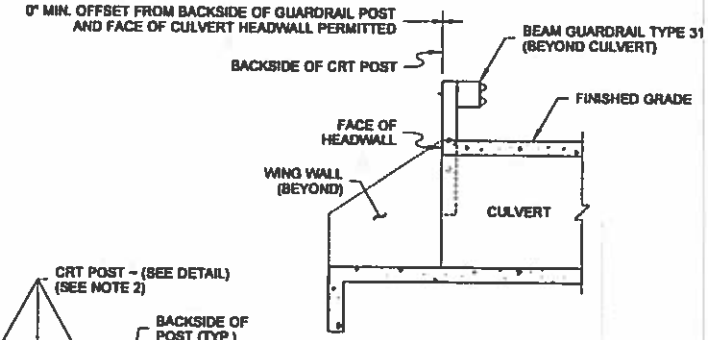
ELEVATION VIEW

NOTES

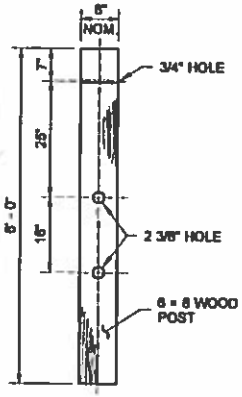
1. For additional details not shown on this plan, refer to **Standard Plan C-20.10.**
2. CRT post to be wood only.



SPAN WITH HEADWALL DETAIL



SECTION (A)



CONTROLLED RELEASING
TERMINAL (CRT) POST DETAIL

EDWARD PATRICK BARRY
STATE OF WASHINGTON
34363
REGISTERED
PROFESSIONAL ENGINEER

BEAM GUARDRAIL TYPE 31 PLACEMENT 12' - 6", 18' - 9" OR 25' - 0" SPAN

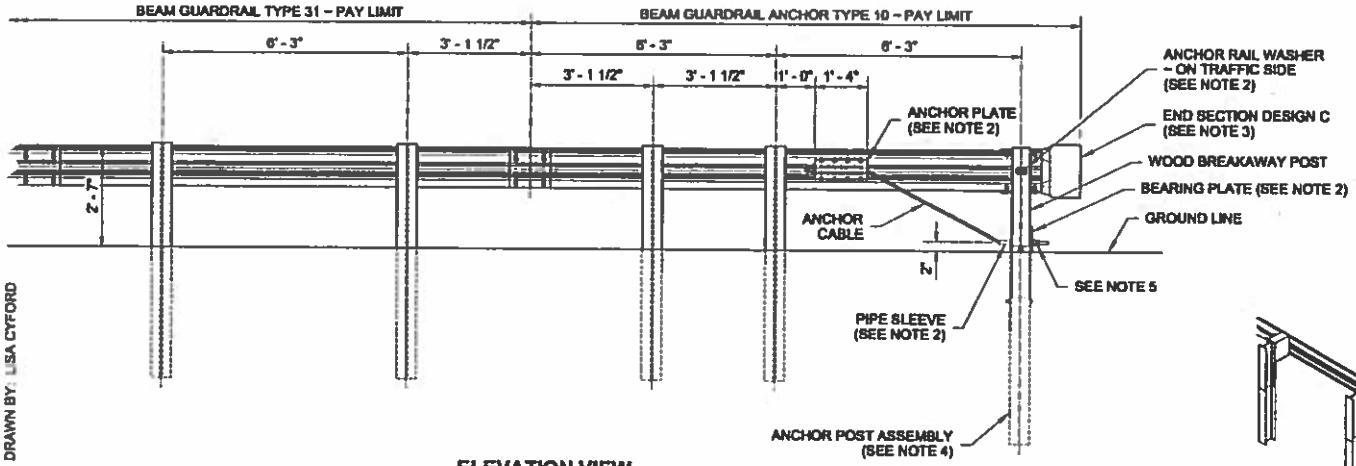
STANDARD PLAN C-20.40-03

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

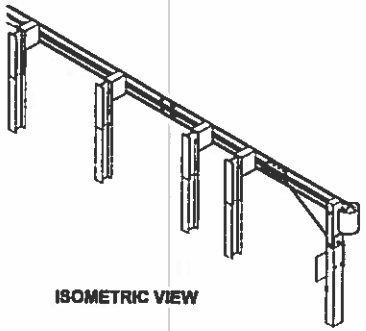
Pasco Bakotich III — STATE DESIGN ENGINEER — 07/2/12 — DATE

Washington State Department of Transportation



ELEVATION VIEW
W-BEAM

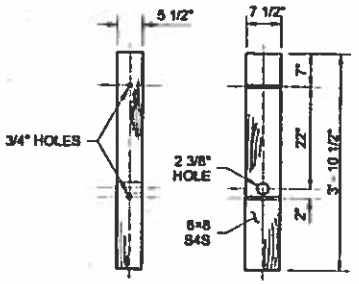
DRAWN BY: LISA CYFORD



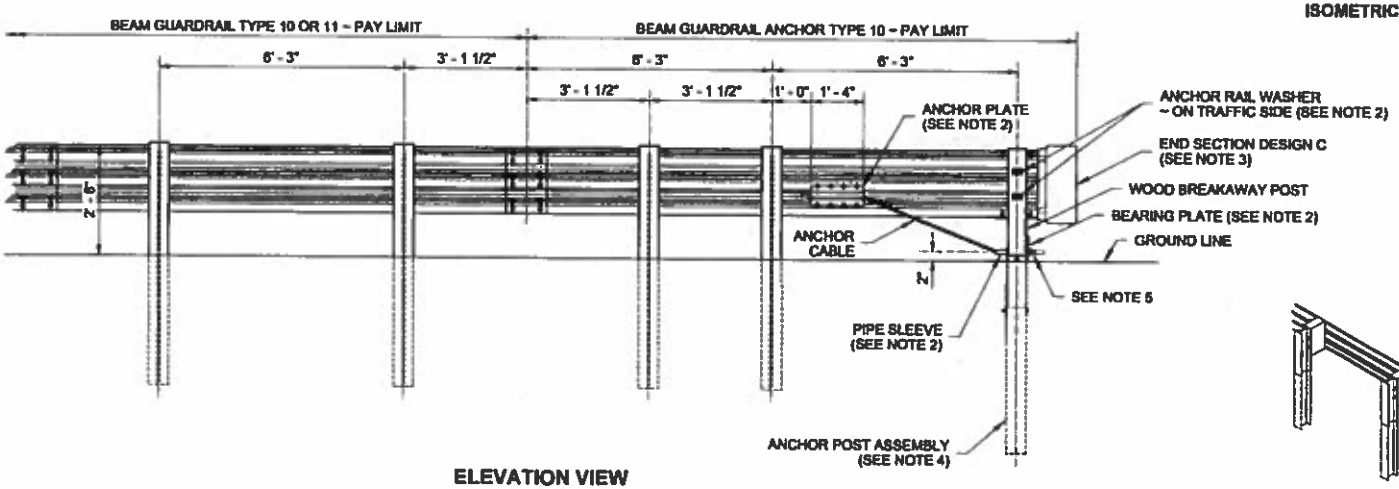
ISOMETRIC VIEW

NOTES

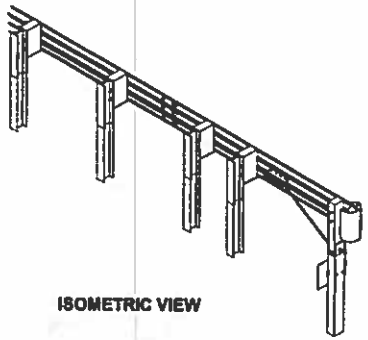
1. For use on the end of guardrail runs when a crashworthy terminal is not required.
2. For additional details not shown, see **Standard Plan C-6c.**
3. For end section details, see **Standard Plans C-7** and **C-7a.**
4. Use details for Wood Breakaway post shown on this plan and components shown on **Standard Plan C-1b.**
5. Fasten the Anchor Cable using two 1" nuts and washer, at both ends of cable. Outside nut shall be torqued against inside nut a minimum of 100 ft.-lbs.
6. Wood blocks shown. Blocks of alternate material may be used. See **Standard Specification 9-16.3(2).**



WOOD BREAKAWAY POST DETAIL



ELEVATION VIEW
THRIE BEAM



ISOMETRIC VIEW

EDWARD PATRICK BARRY
STATE OF WASHINGTON
34363
REGISTERED
PROFESSIONAL ENGINEER

BEAM GUARDRAIL (TYPE 31) ANCHOR TYPE 10

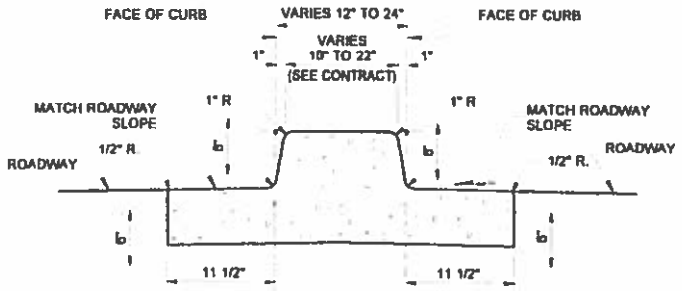
STANDARD PLAN C-23.60-02

SHEET 1 OF 1 SHEET

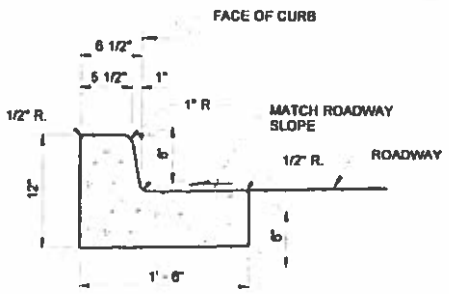
APPROVED FOR PUBLICATION

Pasco Bakotich III — STATE DESIGN ENGINEER — 06/21/12 — DATE

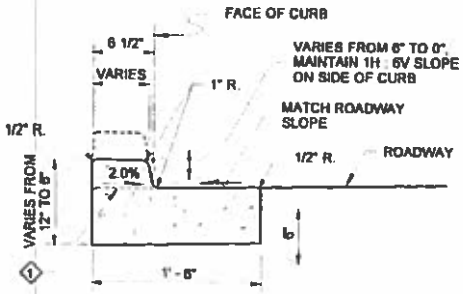
Washington State Department of Transportation



DUAL-FACED CEMENT CONCRETE TRAFFIC CURB AND GUTTER

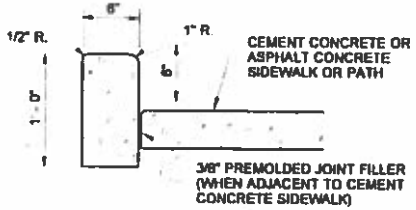


CEMENT CONCRETE TRAFFIC CURB AND GUTTER

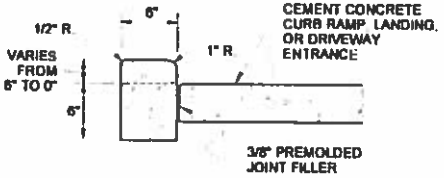


DEPRESSED CURB SECTION

AT CURB RAMPS AND DRIVEWAY ENTRANCES



CEMENT CONCRETE PEDESTRIAN CURB



CEMENT CONCRETE PEDESTRIAN CURB

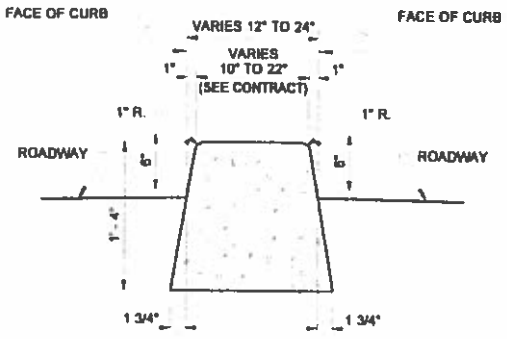
AT CURB RAMPS, LANDINGS, AND DRIVEWAY ENTRANCES

NOTE

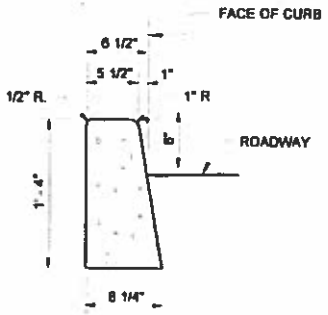
1. See Standard Plan F-30.10 for Curb Expansion and Contraction Joint spacing.

① FLUSH WITH GUTTER PAN AT CURB RAMP ENTRANCE ~ 1/2" VERTICAL LIP AT DRIVEWAY ENTRANCE

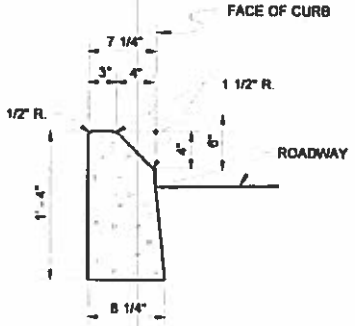
DRAWN BY FERN LIDDELL



DUAL-FACED CEMENT CONCRETE TRAFFIC CURB



CEMENT CONCRETE TRAFFIC CURB



MOUNTABLE CEMENT CONCRETE TRAFFIC CURB

CEMENT CONCRETE CURBS

STANDARD PLAN F-10.12-02

SHEET 1 OF 1 SHEET

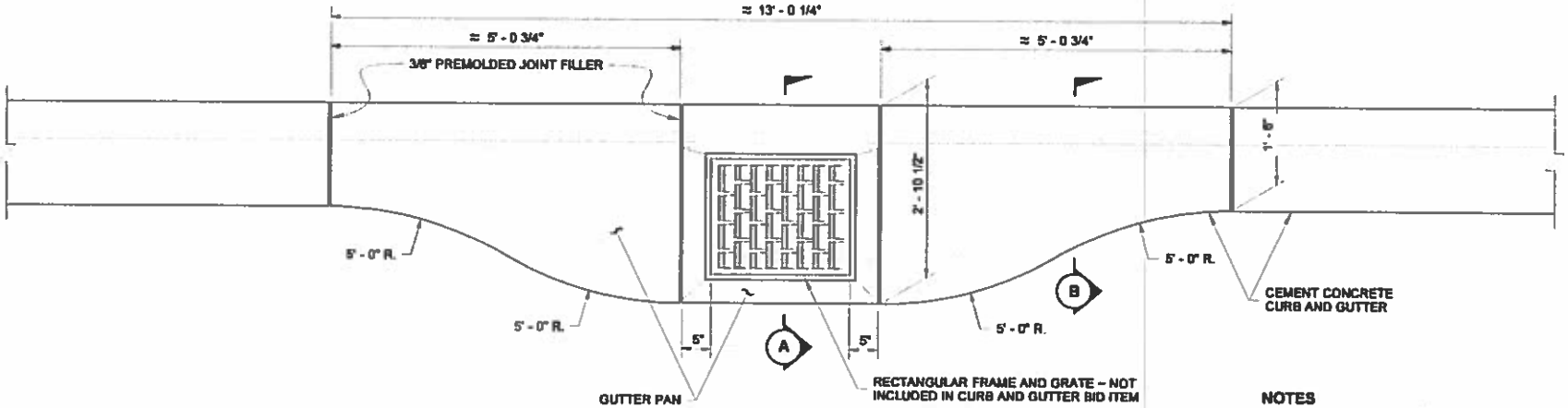
APPROVED FOR PUBLICATION

Pasco Bakotich III 06-16-11

STATE DESIGN ENGINEER — DATE

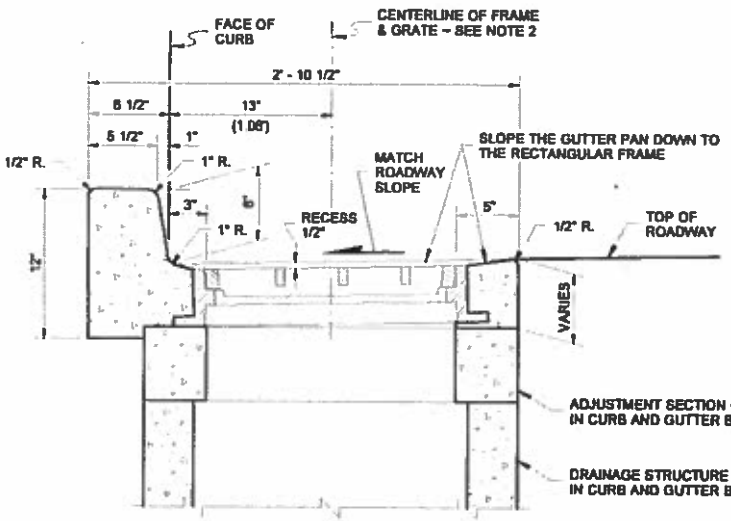
Washington State Department of Transportation

DRAWN BY MARK SUJKA

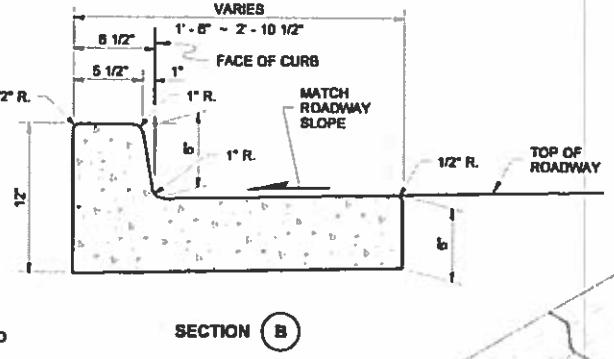


PLAN VIEW

CATCH BASIN GUTTER PAN



SECTION (A)



SECTION (B)

ISOMETRIC VIEW

NOTES

1. The intent of this design is to facilitate the compaction of Hot Mix Asphalt pavement adjacent to a drainage structure.
2. The centerline of the drainage structure may differ from the centerline of the frame and grate.

KEVIN J. DAYTON
STATE OF WASHINGTON
24035
REGISTERED
PROFESSIONAL ENGINEER

EXPIRES JULY 27, 2007

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL, SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

CEMENT CONCRETE CURB AND GUTTER PAN

STANDARD PLAN F-10.16-00

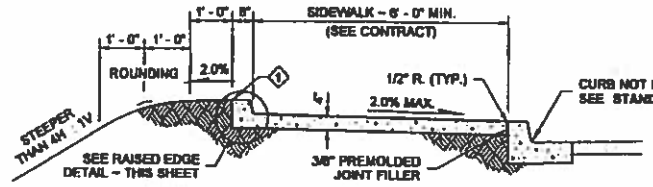
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

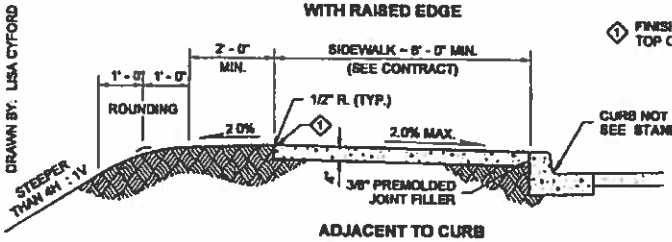
Kevin J. Dayton 12-20-06

STATE DESIGN ENGINEER — DATE

Washington State Department of Transportation

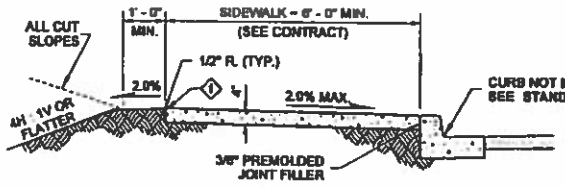


WITH RAISED EDGE

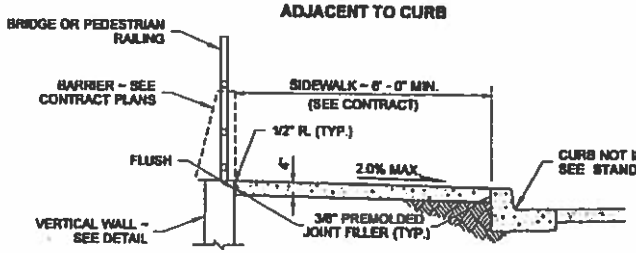


ADJACENT TO CURB
(STEEP FILL SLOPES)

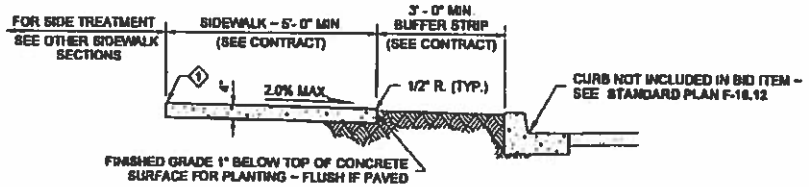
① FINISHED GRADE 1" BELOW TOP OF CONCRETE SURFACE



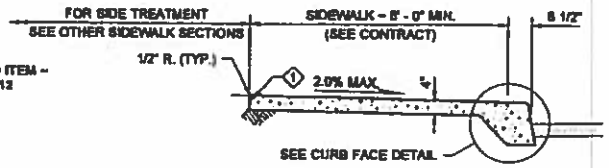
ADJACENT TO CURB



ADJACENT TO CURB AND RAILING OR WALL



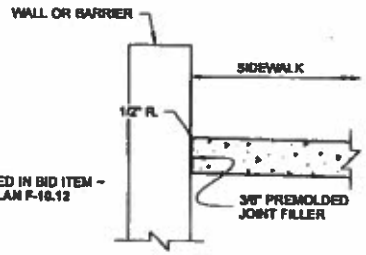
ADJACENT TO BUFFER STRIP



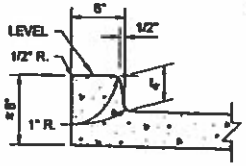
MONOLITHIC CEMENT CONCRETE CURB AND SIDEWALK

NOTE

1. Four feet of the sidewalk width shall be the minimum pedestrian accessible route free of vertical and horizontal obstructions. Gratings, Access Covers, Junction Boxes, Cable Vaults, Pull Boxes and other appurtenances within the sidewalk must have slip resistant surfaces, be flush with surface, and match grade of the sidewalk.

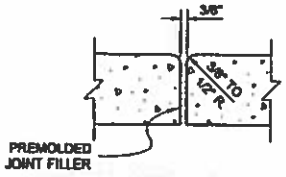


SIDEWALK ADJACENT TO WALL DETAIL

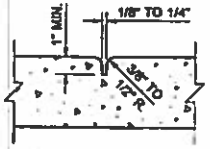


RAISED EDGE DETAIL

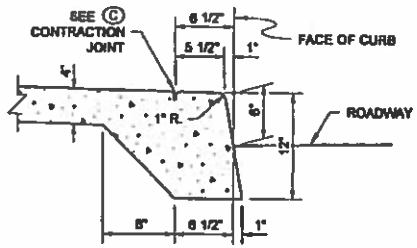
EXTEND SIDEWALK TRANSVERSE JOINTS TO INCLUDE RAISED EDGE



Ⓔ EXPANSION JOINT

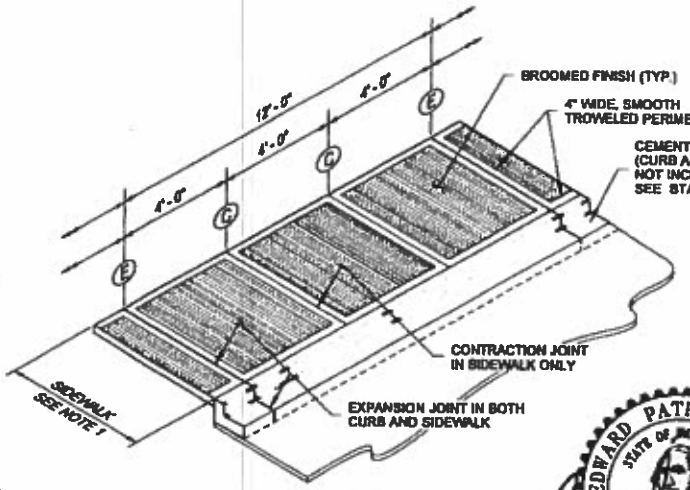


Ⓒ CONTRACTION JOINT



CURB FACE DETAIL

EXTEND SIDEWALK TRANSVERSE EXPANSION JOINTS TO INCLUDE CURB (FULL DEPTH)



ISOMETRIC VIEW

JOINT AND FINISH DETAIL

DRAWN BY: LISA CYFORD

EDWARD PATRICK BERRY
STATE OF WASHINGTON
24363
REGISTERED
PROFESSIONAL ENGINEER

5-30-2013

CEMENT CONCRETE SIDEWALK

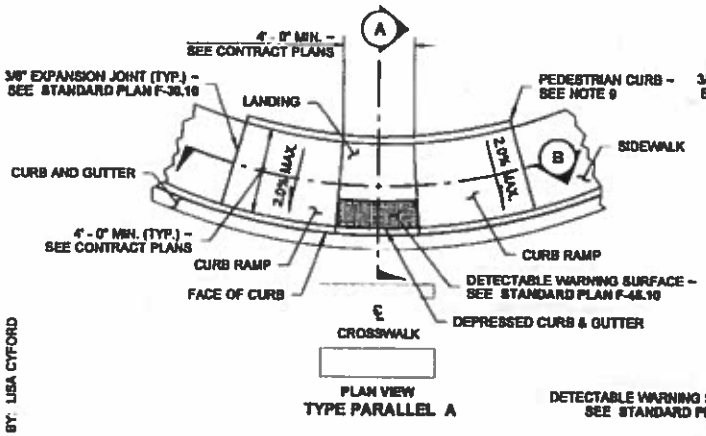
STANDARD PLAN F-30.10-02

SHEET 1 OF 1 SHEET

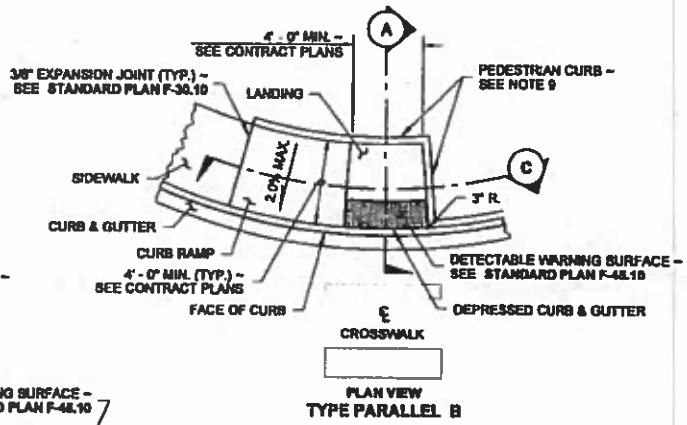
APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER — DATE 4/24/13

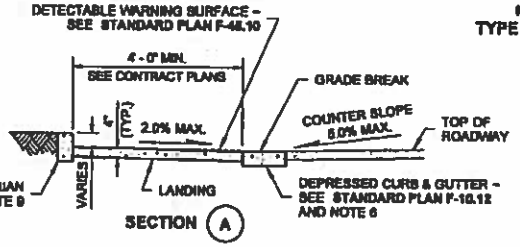
Washington State Department of Transportation



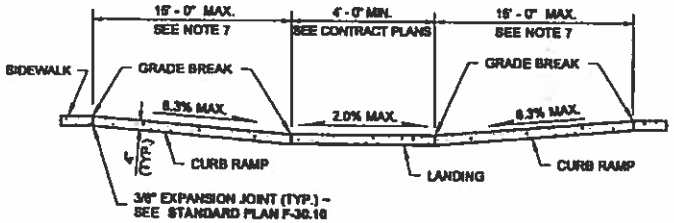
PLAN VIEW
TYPE PARALLEL A



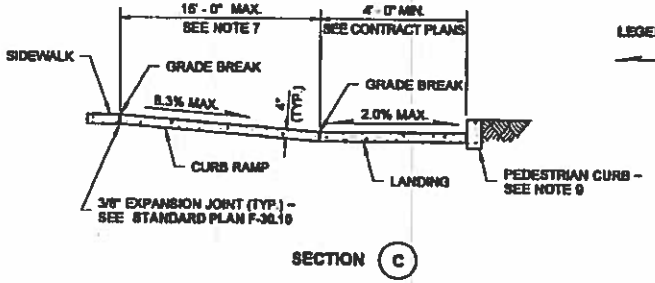
PLAN VIEW
TYPE PARALLEL B



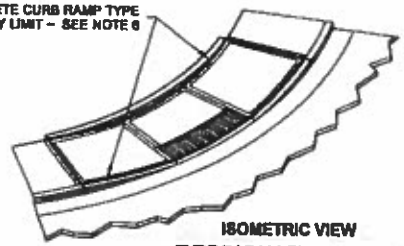
SECTION (A)



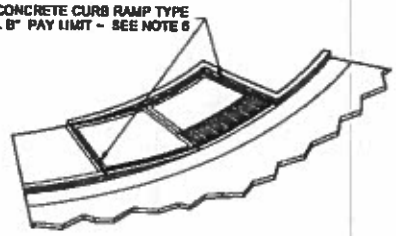
SECTION (B)



SECTION (C)



ISOMETRIC VIEW
TYPE PARALLEL A PAY LIMIT



ISOMETRIC VIEW
TYPE PARALLEL B PAY LIMIT

DRAWN BY: LISA CYFORD

NOTES

1. Provide a separate Curb Ramp for each marked or unmarked crosswalk. Curb Ramp location shall be placed within the width of the associated crosswalk, or as shown in the Contract Plans.
2. Where "GRADE BREAK" is called out, the entire length of the grade break between the two adjacent surface planes shall be flush.
3. Do not place Gratings, Junction Boxes, Access Covers, or other appurtenances in front of the Curb Ramp or on any part of the Curb Ramp or Landing.
4. See Contract Plans for the curb design specified. See Standard Plan F-10.12 for Curb, Curb and Gutter, Depressed Curb and Gutter, and Pedestrian Curb details.
5. See Standard Plan F-30.10 for Cement Concrete Sidewalk Details. See Contract Plans for width and placement of sidewalk.
6. The Bid Item "Cement Concrete Curb Ramp Type __" does not include the adjacent Curb, Curb and Gutter, Depressed Curb and Gutter, Pedestrian Curb, or Sidewalks.
7. The Curb Ramp maximum running slope shall not require the ramp length to exceed 15 feet to avoid chasing the slope indefinitely when connecting to steep grades. When applying the 15-foot max. length, the running slope of the curb ramp shall be as flat as feasible.
8. Curb Ramp, Landing, and Flares shall receive broom finish. See Standard Specifications 8-14.
9. Pedestrian Curb may be omitted if the ground surface at the back of the Curb Ramp and/or Landing will be at the same elevation as the Curb Ramp or Landing and there will be no material to retain.

LEGEND

SLOPE IN EITHER DIRECTION

EDWARD PATRICK BARRY
STATE OF WASHINGTON
34363
REGISTERED
PROFESSIONAL ENGINEER

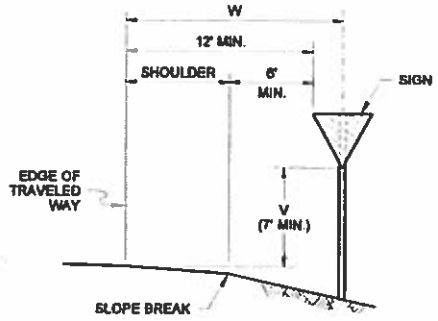
5-30-2013

PARALLEL CURB RAMP

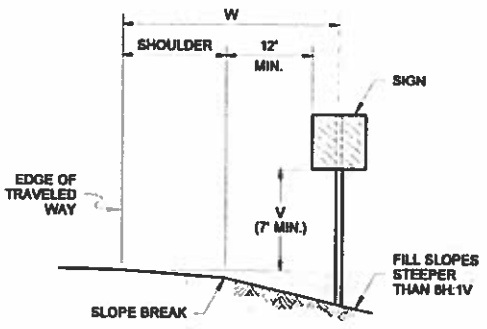
STANDARD PLAN F-40.12-02

SHEET 1 OF 1 SHEET

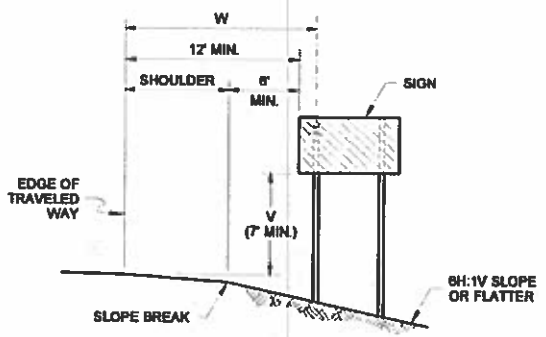
APPROVED FOR PUBLICATION
Lance Bolduc III 4/24/13
STATE DESIGN ENGINEER DATE
Washington State Department of Transportation



SIGN INSTALLATION IN FILL SECTION

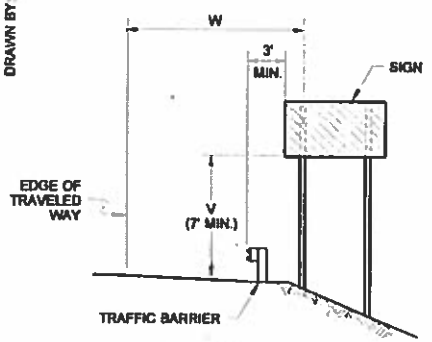


SIGN INSTALLATION ON STEEP FILL SLOPES

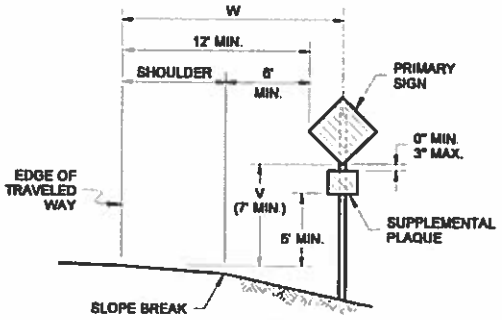


MULTIPLE SIGN POST INSTALLATION IN FILL SECTION

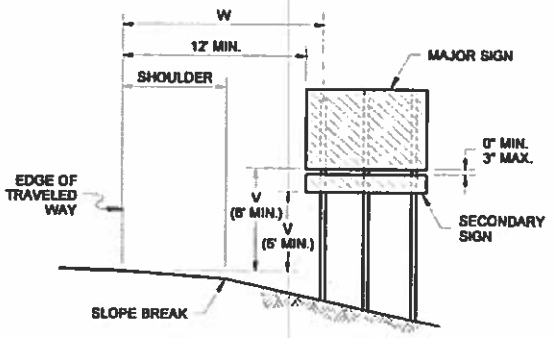
DRAWN BY: MARK SUJKA



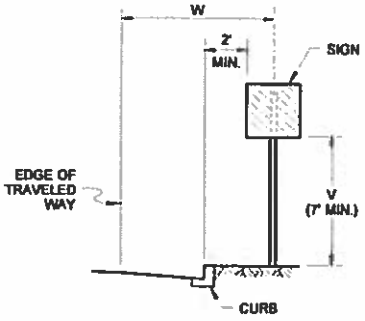
SIGN INSTALLATION BEHIND TRAFFIC BARRIER



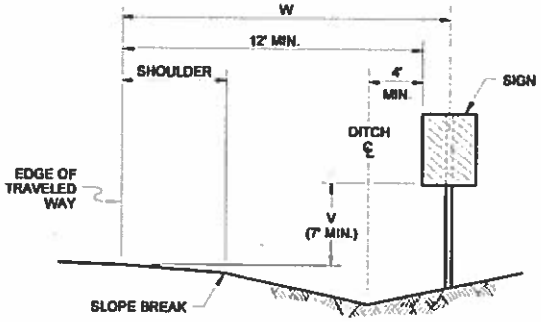
SIGN WITH SUPPLEMENTAL PLAQUE INSTALLATION IN FILL SECTION



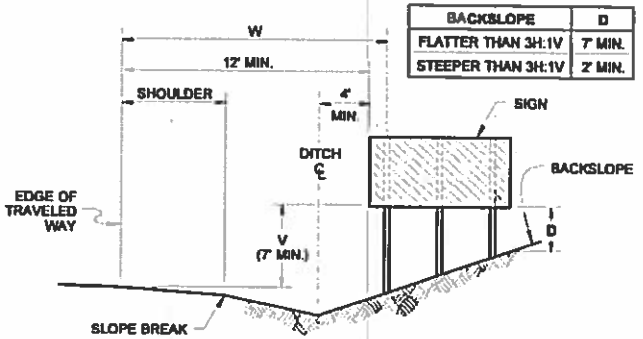
GUIDE OR DIRECTIONAL SIGN WITH SECONDARY SIGN INSTALLATION ON EXPRESSWAYS AND FREEWAYS



SIGN INSTALLATION IN CURB SECTION



SIGN INSTALLATION IN DITCH SECTION



BACKSLOPE	D
FLATTER THAN 3H:1V	7' MIN.
STEEPER THAN 3H:1V	2' MIN.

MULTIPLE SIGN POST INSTALLATION IN DITCH SECTION

NOTES

1. Refer to the Sign Specification Sheet of the Contract for the 'V' and 'W' distances.
2. The minimum vertical distance from the bottom of the sign to the ground shall not be less than 7' for signs located within the Design Clear Zone.

THEODORE J. TREPANIER
STATE OF WASHINGTON
25335
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES AUGUST 9, 2009

NOTE: THIS PLAN IS NOT A LEGAL DOCUMENT UNLESS IT BEARS THE ORIGINAL SIGNATURE AND SEAL OF THE ENGINEER. THIS DRAWING, DIGITALLY OR AS RECORD DUPLICATE, THE ORIGINAL DOCUMENT IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

GROUND MOUNTED SIGN PLACEMENT

STANDARD PLAN G-20.10-00

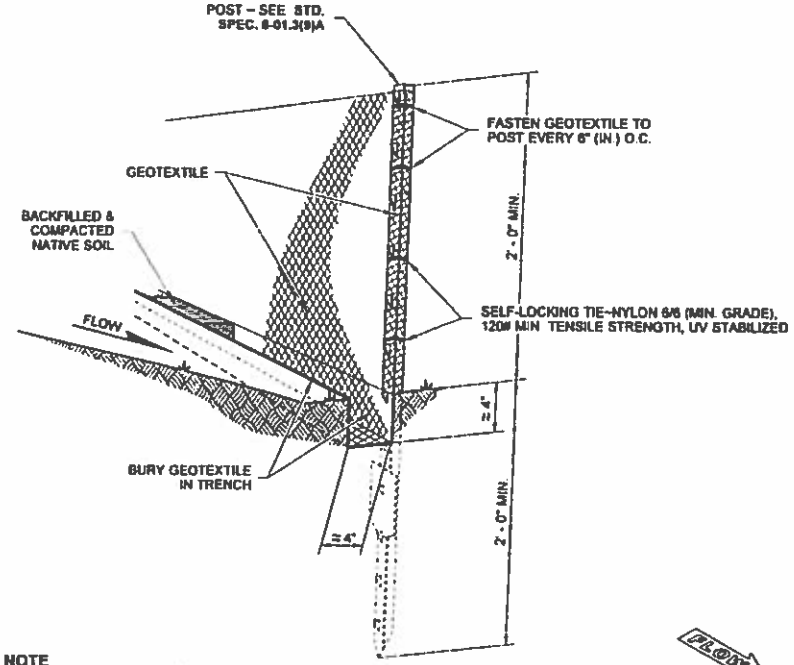
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

Pasco Bakotich III — STATE DESIGN ENGINEER — *09-20-07* — DATE

Washington State Department of Transportation

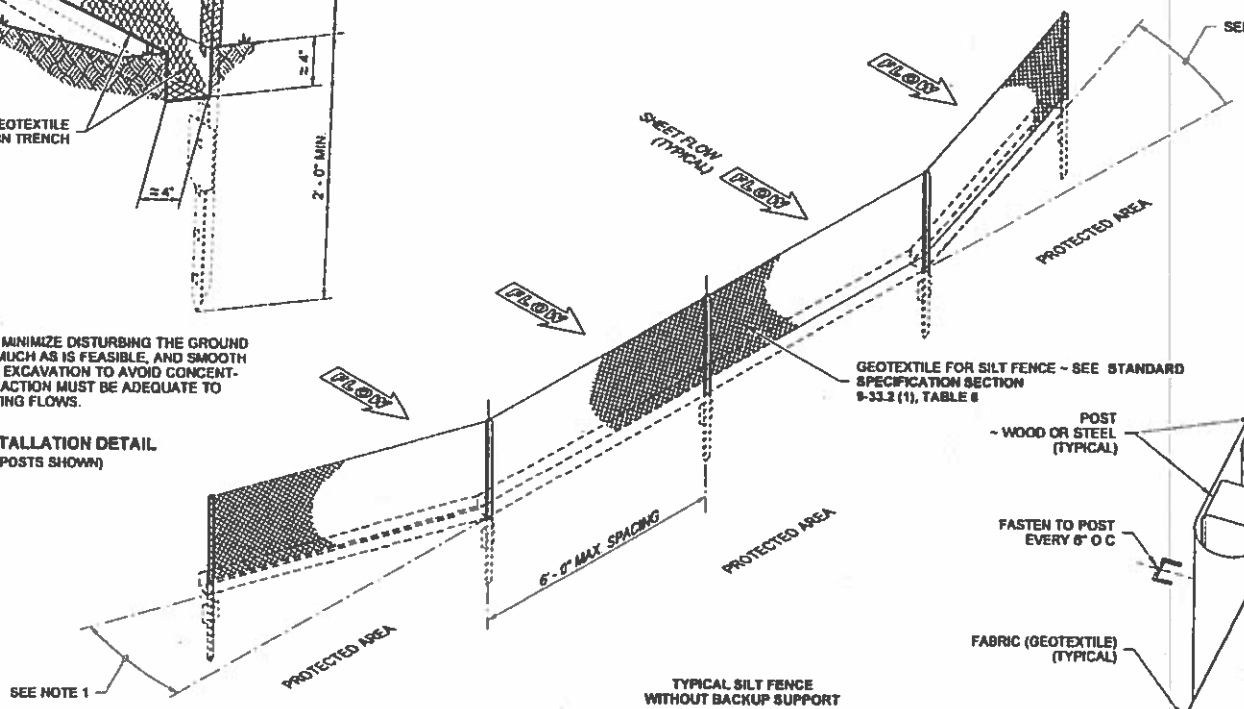
DRAWN BY: BILL BERENS



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 SILT FENCE WITHOUT BACKUP SUPPORT
ISOMETRIC
(STEEL POSTS SHOWN)

NOTES

1. Install the ends of the 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.

SPLICED FENCE SECTIONS SHALL BE CLOSE ENOUGH TOGETHER TO PREVENT SILT LADEN WATER FROM ESCAPING THROUGH THE FENCE AT THE OVERLAP.

SPLICE DETAIL
(WOOD POSTS SHOWN)

STATE OF WASHINGTON
REGISTERED LANDSCAPE ARCHITECT
SANDRA L. SALISBURY
CERTIFICATE NO. 000860
MARCH 11, 2013

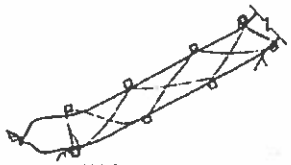
SILT FENCE

STANDARD PLAN I-30.15-02

SHEET 1 OF 1 SHEET

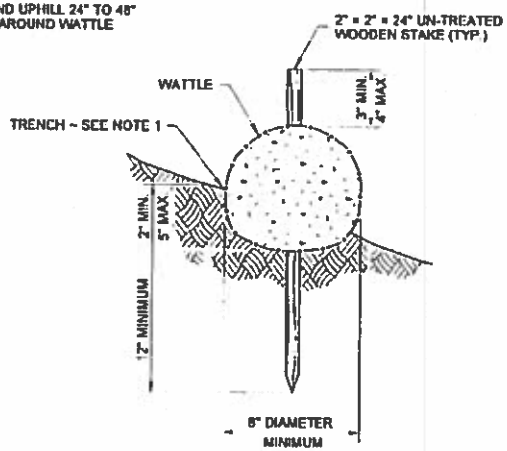
APPROVED FOR PUBLICATION
STATE DESIGN ENGINEER
3/26/13
DATE
Washington State Department of Transportation

DRAWN BY FERN LIDDELL



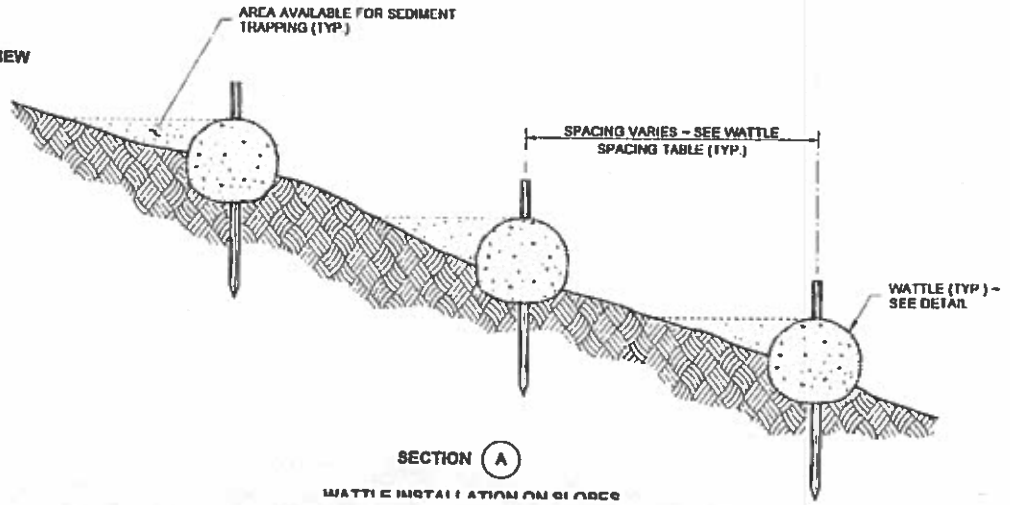
ALLOWABLE ALTERNATIVE TIE-DOWN METHOD

PLAN VIEW



WATTLE DETAIL

8" DIAMETER WATTLE SPACING TABLE	
SLOPE	MAXIMUM SPACING
1H : 1V	10' - 0"
2H : 1V	20' - 0"
3H : 1V	30' - 0"
4H : 1V	40' - 0"



SECTION (A)

WATTLE INSTALLATION ON SLOPES

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
LICENSE NO. 860
DATE 10 June 2013

NOTE: THIS PLAN IS NOT A LEGAL DOCUMENT UNLESS SIGNED, DATED AND SEALED BY THE ENGINEER AND APPROVED FOR PUBLICATION. A COPY OF THIS PLAN IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

WATTLE INSTALLATION ON SLOPE

STANDARD PLAN I-30.30-01

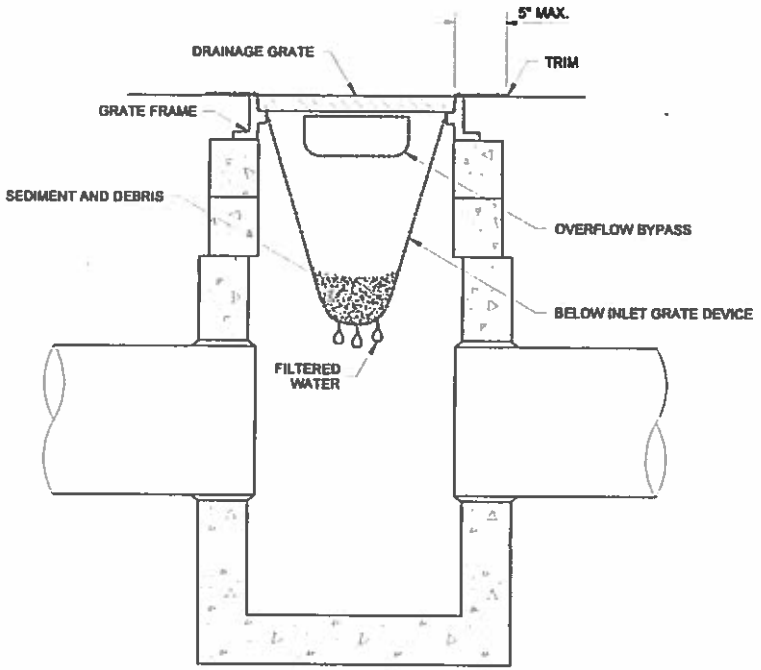
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER — DATE 4/10/13

Washington State Department of Transportation

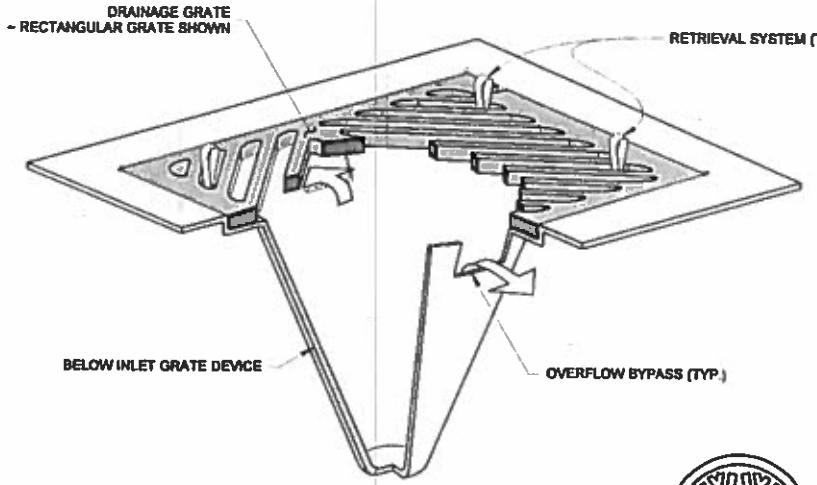
DRAWN BY: LISA CYFORD



SECTION VIEW
NOT TO SCALE

NOTES

1. Size the Below Inlet Grate Device (BIGD) for the storm water structure it will service.
2. The BIGD shall have a built-in high-flow relief system (overflow bypass).
3. The retrieval system must allow removal of the BIGD without spilling the collected material.
4. Perform maintenance in accordance with Standard Specification 8-01.3(15).



ISOMETRIC VIEW

STATE OF WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT
MARK W. MAURER
CERTIFICATE NO. 000598

NOTE: THIS PLAN IS NOT A LEGAL SUPERSEDING DOCUMENT BUT AN ELECTRONIC DUPLICATE OF THE ORIGINAL, SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION IS KEPT ON FILE AT THE HEADQUARTERS OF THE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST

STORM DRAIN INLET PROTECTION

STANDARD PLAN I-40.20-00

SHEET 1 OF 1 SHEET

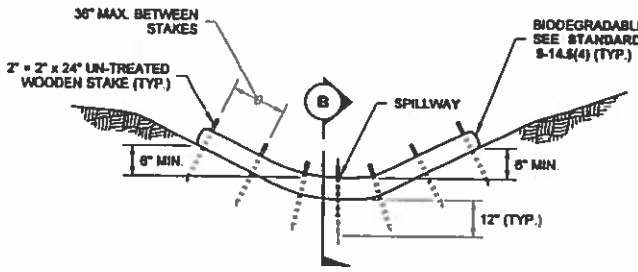
APPROVED FOR PUBLICATION

Pasco Bakotich III 09-20-07

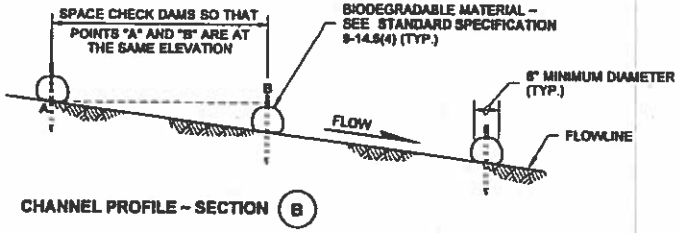
STATE DESIGN ENGINEER — DATE

Washington State Department of Transportation

DRAWN BY: FERN LIDDELL



TYPICAL CHANNEL SECTION



CHANNEL PROFILE – SECTION (B)

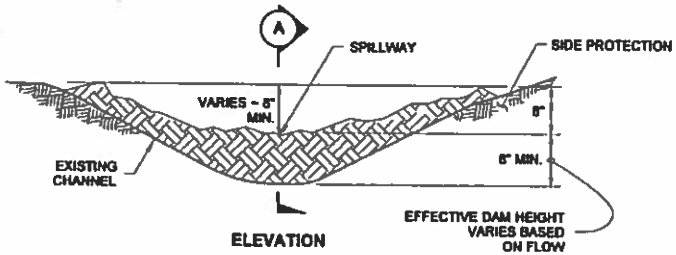
BIODEGRADABLE CHECK DAM

BIODEGRADABLE CHECK DAM NOTE

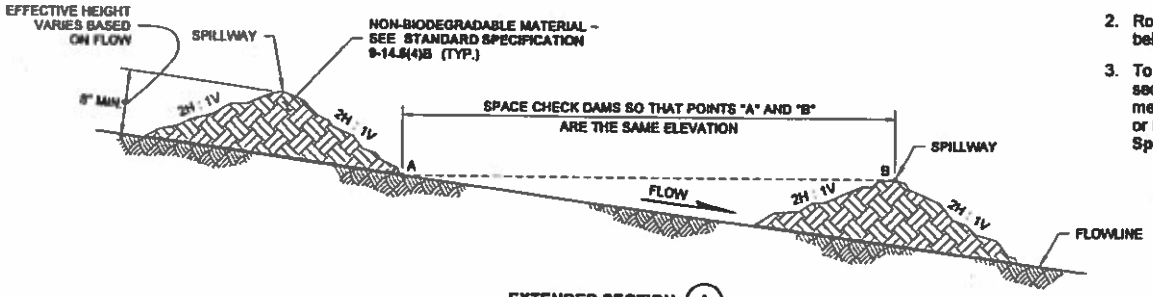
1. Biodegradable Check Dams may need additional or modified staking to prevent undercutting or scouring.

GENERAL NOTES

1. **Check Dams shall meet the requirements of Standard Specifications 8-01.3(6) and 9-14.5(4).**
2. **In channels, install the sloped ends of the Check Dam a minimum of 8" higher than the spillway to ensure water flows over the dam and not around it.**
3. **Perform maintenance in accordance with Standard Specification 8-01.3(15).**
4. **Remove Check Dams in accordance with Standard Specification 8-01.3(16).**



ELEVATION



EXTENDED SECTION (A)

NON-BIODEGRADABLE CHECK DAM

NON-BIODEGRADABLE CHECK DAM NOTES

1. **Non-Biodegradable Manufactured Check Dam devices approved for use under Standard Specification 9-14.5(4) shall be installed per manufacturer's recommendations and shall perform in accordance with Standard Specification 8-01.3(6).**
2. **Rock Check Dams shall be placed outside of the clear zone or behind traffic barrier.**
3. **To ensure adequate damming time, Rock Check Dams used as sediment control may need to be enhanced with plastic that meets the requirements of Standard Specification 9-14.5(3) or fabric that meets the geotextile requirements of Standard Specification 9-33.2(1), Table 6.**

STATE OF WASHINGTON
REGISTERED LANDSCAPE ARCHITECT
SANDRA L. SALISBURY
LICENSE NO. 860
DATE: 6 June 2013

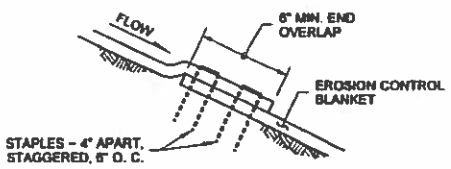
NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL, SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST

CHECK DAMS ON CHANNELS

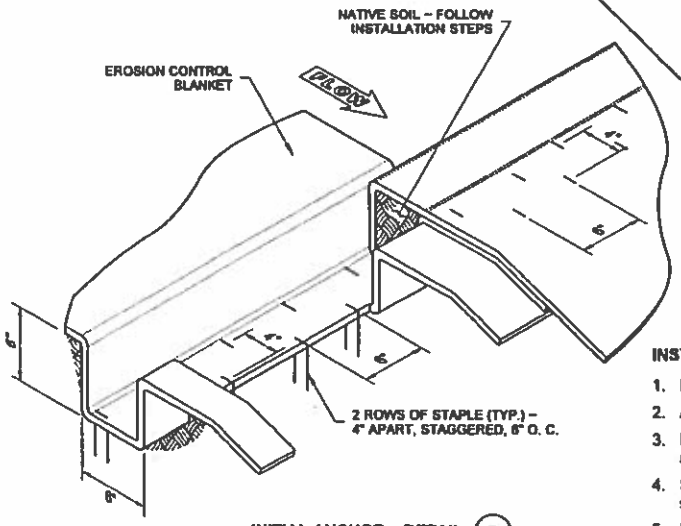
STANDARD PLAN I-50.20-01

SHEET 1 OF 1 SHEET

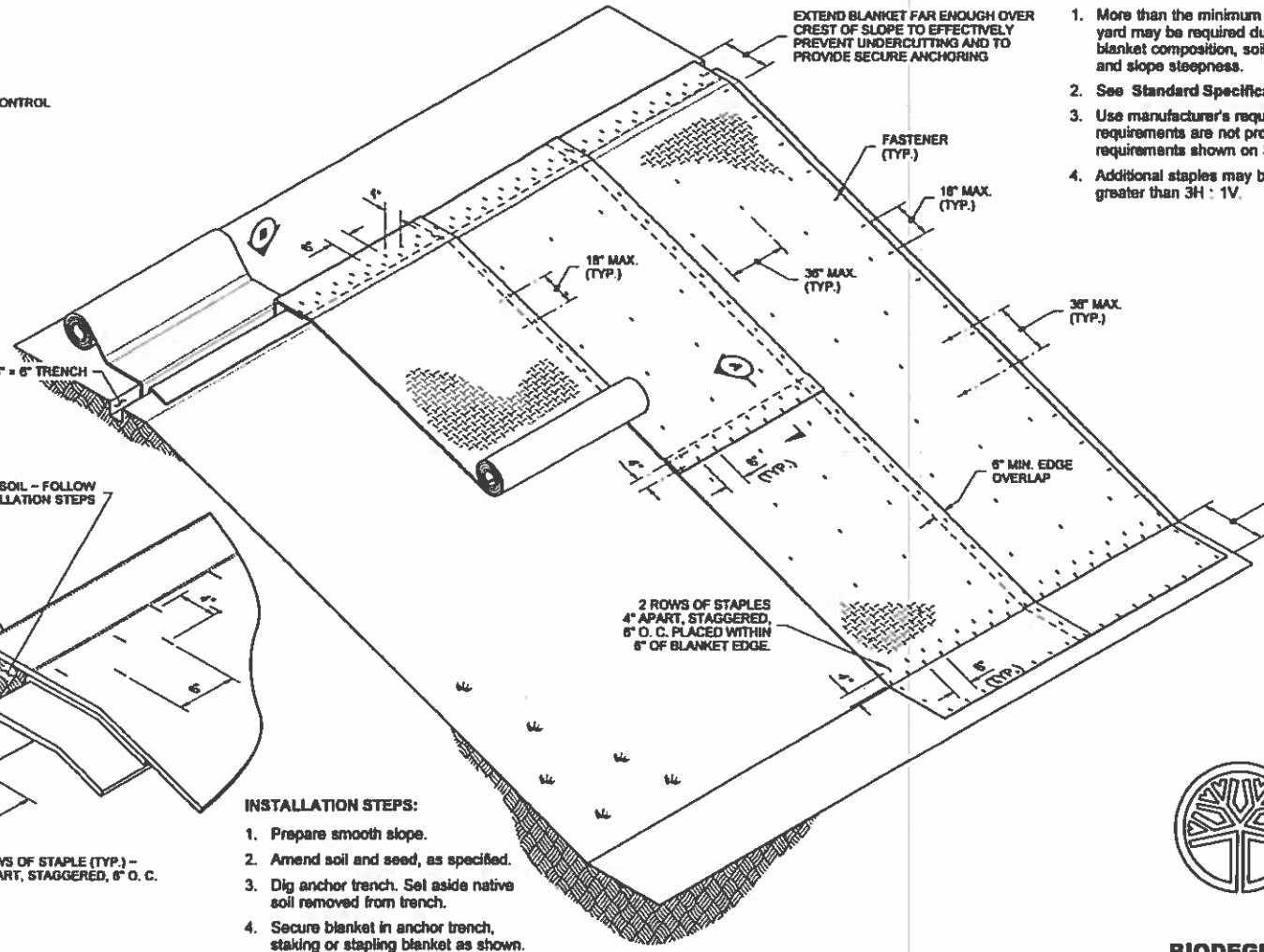
APPROVED FOR PUBLICATION
STATE DESIGN ENGINEER
6/6/13
(DATE)
Washington State Department of Transportation



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.

DRAWN BY: LISA CYFORD

STATE OF WASHINGTON
REGISTERED LANDSCAPE ARCHITECT
SANDRA L. SALISBURY
LICENSE NO. 860
DATE: 6 June 2013

BIODEGRADABLE EROSION CONTROL BLANKET PLACEMENT FOR SLOPES STANDARD PLAN I-60.10-01

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION
STATE DESIGN ENGINEER
6/6/13
DATE
Washington State Department of Transportation

Appendix 2

Geotechnical Report

GEOTECHNICAL ENGINEERING REPORT

Blackmans Lake Weir and Culvert Replacement

Avenue "A" and 13th Street

Snohomish, Washington

Prepared for:

Tetra Tech
1420 Fifth Avenue, Suite 600
Seattle, Washington 98101

Prepared by:

AMEC Environment & Infrastructure, Inc.
11810 North Creek Parkway North
Bothell, Washington 98011

December 13, 2012

Project No. 2-917-17426-0

December 13, 2012
Project No. 2-917-17426-0

Tetra Tech
1420 Fifth Avenue, Suite 600
Seattle, Washington 98101

Attention: Mr. Greg Gaasland, P.E.

Subject: **Geotechnical Engineering Report**
Blackmans Lake Weir and Culvert Replacement
Avenue "A" and 13th Street
Snohomish, Washington

Dear Greg:

AMEC Environment & Infrastructure, Inc. (AMEC), is pleased to submit this report describing our geotechnical evaluation for the Blackmans Lake Weir and Culvert Replacement. The purpose of our evaluation was to derive conclusions and recommendations concerning soil design parameters for support of the weir and culverts.

As outlined in our proposal dated May 8, 2012, our scope of work was limited to field explorations, laboratory testing, geotechnical analysis, and report preparation. We received a fully executed contract on June 7, 2012. Your notice to proceed with our field studies followed completion of rights of entry and surveying on August 2, 2012. This report has been prepared for the exclusive use of Tetra Tech and their consultants, for specific application to this project, in accordance with generally accepted geotechnical engineering practice.

Sincerely,
AMEC Environment & Infrastructure, Inc.

William J. Lockard, LEG
Senior Geologist

James S. Dransfield, PE
Principal Geotechnical Engineer

AMEC Environment & Infrastructure, Inc.
11810 North Creek Parkway N
Bothell, Washington 98011
(425) 368-1000 Phone
(425) 368-1001 Facsimile
www.amec.com

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

GEOTECHNICAL ENGINEERING REPORT
Blackmans Lake Weir and Culvert Replacement
Snohomish, Washington

1.0 SUMMARY

The following summary of project geotechnical considerations is presented for introductory purposes and, as such, should be used only in conjunction with the full text of this report.

- Project Description: Improvement plans call for replacing the existing culverts at four roadway crossings along a 1,050-foot section of the drainage channel for the outlet of Blackmans Lake. The culverts are to be replaced with HDPE culverts of similar size and length at the Ferguson Park Road crossing, while the remaining three crossings will be replaced with concrete box culverts. A steel post and timber- (or plastic-) plank lake level control weir structure is also proposed within the existing channel. A new flood control channel will be excavated near the existing channel, adjacent to Avenue A.
- Exploratory Methods: We explored subsurface conditions by drilling four borings: one boring at each creek crossing and one at the anticipated location of the weir. The borings were advanced to depths of 11 to 24 feet below existing road grades.
- Soil Conditions: Borings AB-1, AB-3, and AB-4 encountered loose fill soils varying from 5.5 to 8 feet thick that in turn mantled either soft alluvial deposits consisting of peat to very soft clay (AB-1) or loose to dense silty sand deposits interpreted to represent glacial sediments (AB-3 and AB-4). Boring AB-2 encountered interbedded medium stiff silt and medium dense silty sand alluvial deposits which mantled medium dense to dense silty sand to the full depth explored.
- Groundwater Conditions: In general, groundwater elevations were noted to range from 3 to 11 feet below the existing ground surface at the time of drilling. However, the groundwater levels should be anticipated to fluctuate within the water level within the creek at the time of construction.
- Liquefaction: Our liquefaction analysis indicated that the soils underlying the project site pose a relatively low risk of liquefaction.
- Box Culvert Foundation Considerations: It is our opinion that due to soft soil conditions at the anticipated invert elevations for the new concrete box culverts, these structures should be founded upon bearing pads of structural fill to provide suitable uniform support.

- Weir Support Considerations: The vertical supports for the weir will mainly be subjected to lateral loading. Embedment on the order of at least 12 feet below grade is recommended to resist lateral loading.
- Excavation Considerations: The open cut construction method is likely the preferred option for replacing the existing culverts. If temporary cut slopes cannot be excavated due to site constraints, temporary shoring will be necessary for worker access.
- Construction Dewatering: Due to relatively high groundwater levels and the proximity to Blackmans Lake, provisions for construction dewatering will be necessary to allow installation of the HDPE culverts and the earthwork required to construct the bearing pads and foundations for the bottomless box culverts. Temporary construction dewatering will also need to be considered for control of perched groundwater seepage or other sources at each of the culvert excavations.
- On-site Soil Considerations: Because the on-site soils are moisture-sensitive and would be readily disturbed when wet, the contractor should install appropriate temporary drainage systems at the construction site and should minimize traffic over exposed subgrades. Ideally, earthwork would be scheduled for the summer and fall months, when lake and groundwater levels will likely be at their seasonal low.

2.0 SITE AND PROJECT DESCRIPTION

The subject site extends along approximately 1,050 feet of the channel for Swifty Creek, which originates at the south end of Blackmans Lake in the northeast portion of Snohomish, Washington, as shown on the enclosed Location Map (Figure 1). From Blackmans Lake, the creek channel immediately crosses under Ferguson Park Road, then flows generally southward paralleling Avenue "A" for approximately 580 feet where it crosses under a private driveway serving as a secondary entrance to the Woodlake Manor housing complex located at 1018 13th Street. The creek then continues approximately 120 feet southward to where it enters into another culvert which conveys it roughly southeastward under the intersection of Avenue "A" and 13th Street. After exiting the culvert the stream then travels approximately 100 feet before crossing under Smithson Place. Each crossing is currently occupied by partially filled corrugated metal pipe (CMP) arch culverts each with an approximate span of 40 inches and rise of 60 inches, which convey the creek flow. The enclosed Site and Exploration Plan (Figure 2) illustrates these site boundaries and adjacent existing features.

The proposed project is to consist of removal and replacement of the existing corrugated metal culverts, for the Ferguson Park Road crossing, with new HDPE culverts of similar size at the same approximate elevation and locations. The remaining road crossings will be replaced with concrete box culverts at the same locations and similar elevations as the existing culverts. Installation of a new

steel H-pile and timber- (or plastic-) plank lake level control weir is also proposed at approximately STA 17+00 to control water levels within Blackmans Lake. Minor re-grading of the channel will be performed downstream of the weir location to about 170 feet downstream of the Smithson Place culvert to remove accumulated sediment. Re-grading of the existing channel banks to a more stable configuration may also be performed. Upstream of the level control weir a new floodwater channel will be constructed parallel to Avenue A, which will be generally trapezoidal shaped with 6-foot base width and 2H:1V (Horizontal: Vertical) side slopes.

The conclusions and recommendations contained in this report are based on our understanding of the currently proposed utilization of the project site, as derived from layout drawings, written information, and verbal information supplied to us. Consequently, if any changes are made in the currently proposed project, we may need to modify our conclusions and recommendations contained herein to reflect those changes.

3.0 EXPLORATORY METHODS

AMEC explored surface and subsurface conditions at the project site on August 2, 2012. Our exploration and testing program comprised the following elements:

- A visual surface reconnaissance of the site;
- Four borings; one advanced at each of the crossing locations, and one boring also serving to characterize the soil conditions at the proposed weir location immediately north of the Woodlake Manor private driveway crossing;
- Laboratory testing performed on selected soil samples obtained beneath the site consisting of four grain-size analyses and four moisture content determinations; and
- A review of published geologic and seismologic maps and literature.

Table 1 summarizes the approximate locations, surface elevations, and termination depths of our subsurface explorations, and Figure 2 depicts their approximate relative locations. Appendix A of this report includes the boring logs, and describes our field exploration procedures. Appendix B describes our laboratory testing procedures and presents the lab testing results.

The specific number, locations, and depths of our explorations were selected by AMEC in relation to the existing and proposed site features, under the constraints of surface access, underground utility conflicts, and budget considerations. We estimated the relative location of each exploration by measuring from existing features and scaling these measurements onto a layout plan supplied to us, then we estimated their elevations by interpolating between spot elevations shown on this same plan.

Consequently, the data listed in Table 1 and the locations depicted on Figure 2 should be considered accurate only to the degree permitted by our data sources and implied by the measuring methods.

Table 1 Approximate Locations, Elevations, and Depths of Explorations

Exploration	Functional Location	Surface Elevation (feet)	Termination Depth (feet)
AB-1	STA 22+68, 13' north (SE corner Ferguson Park Road Culvert Crossing)	142.5	11
AB-2	STA 16+74, 28' south (East side of weir location)	146.2	24
AB-3	STA 14+88, 15' south (NW corner of Avenue "A" & 13th Street Intersection)	147.7	14
AB-4	STA 12+43, 15' north (SW corner of Smithson Place culvert crossing)	147.7	14

Elevation datum: Topographic survey provided by Tetra Tech

It should be realized that the explorations performed for this evaluation reveal subsurface conditions only at discrete locations and that actual conditions in other areas could vary. Furthermore, the nature and extent of any such variations would not become evident until additional explorations are performed or until construction activities have begun. If significant variations are observed at that time, we may need to modify our conclusions and recommendations contained in this report to reflect the actual site conditions.

4.0 SITE CONDITIONS

The following sections of text present our observations, measurements, findings, and interpretations regarding surface, soil, groundwater, and seismic conditions at the project site.

4.1 Surface Conditions

Surface conditions were observed during our subsurface exploration program in August, 2012. Regional topography slopes downward to the south and west, with surface elevations along the creek channel varying from 147 to 140 feet. Our observations disclosed the creek channel within the project limits ranges from 4 to 8 feet wide and 4 to 9 feet deep, as measured from surrounding grades with side slopes inclined at 1.5H:1V varying to near vertical. Heavy brush was present along the banks of the creek with scattered stands of deciduous trees. The heavy brush prevented visual observation of the condition of the slopes comprising the creek banks and water was present within the channel obscuring the sediments within the channel at the time of our site visit.

4.2 Soil Conditions

According to published geologic maps of the Snohomish quadrangle (Minard, 1985), the surficial soils along the creek channel are mapped as Vashon glacial till. Vashon till is generally described as a very

compact (dense) heterogeneous mix of silt sand and gravel that were placed and subsequently overridden by Vashon glacial ice mass. Detailed soil mapping by the United Stated Department of Agriculture (USDA, 2012), indicates the northern portion of the project alignment north of the intersection of Avenue "A" and 13th Street is classified as Mukilteo Muck, described as mucky peat and organic deposits formed by herbaceous materials within closed depressions varying to fine sandy loam. The southern portion of the alignment is mapped as Tokul gravelly loam, derived from glacial till plains.

Our on-site explorations revealed near-surface soil conditions to be generally consistent with the mapped stratigraphy. At each crossing location the general stratigraphy encountered consisted of a thin layer of asphalt overlying fill soils that in turn mantled soft alluvial deposits. Within all borings except AB-1, the alluvial soils mantled loose to dense silty sand deposits interpreted to represent glacial deposits from the Vashon stade of the Fraser glacial advance.

AB-1 encountered a 1-inch thick layer of asphalt placed directly over medium dense gravelly sand fill that extended to a depth of 6 feet. Below the fill, very soft to soft alluvial soils were encountered which consisted of very soft, fibrous peat. The peat deposits were approximately 3 feet thick and graded to a silty peat at 9 feet. Below the silty peat, very soft clay was encountered to the full depth explored.

AB-2 encountered alternating layers of sandy silt to silty sand that extended to a depth of approximately 7 feet, where medium dense to dense, silty sand was encountered that extended to the full depth explored. Borings AB-3 and AB-4 encountered generally similar conditions to AB-2, with approximately 5 to 8 feet of loose, silty sand fill extending below the road grade. The fill soils within AB-4 were noted to have organic debris (mainly roots, charcoal and wood fragments). The fill soils then mantled loose to medium dense, silty sand which extended to the full depths explored. The enclosed exploration logs provide a detailed description of the soil strata encountered in our subsurface explorations.

We interpret the existing fill and native soils to be currently at or above their optimum moisture contents, and to be highly sensitive to moisture content variations. The enclosed laboratory testing sheets graphically present our test results, and Table 2 summarizes these results. The enclosed exploration logs (Appendix A) provide a detailed description of the strata encountered in our subsurface explorations. Table 2 summarizes the approximate thicknesses of selected layers.

Table 2 Approximate Thicknesses, Depths, and Elevations of Materials Encountered in Explorations

Exploration	Thickness of Fill (feet)	Thickness of Alluvial Soils (feet)	Elevation Top of Granular Bearing Soil (feet)	Approximate Bottom of Culvert Elevation (feet)
AB-1	6	5+	N/E	137
AB-2	N/E	7.5	138	138.5
AB-3	5.5	2.0	138.5	137
AB-4	8	N/E	139.5	136.5

N/E = not encountered within depth of exploration.

Our geotechnical laboratory tests revealed that the majority of the fill soils, with the exception of the granular fill encountered within AB-1, have a fines (silt and clay) content of about 30 percent and a moisture content of about 16 to 30 percent. We interpret these soils to be currently above their optimum moisture contents and to be highly sensitive to moisture content variations. The enclosed laboratory testing sheets graphically present our test results, and Table 3 summarizes these results.

Table 3 Laboratory Test Results

Boring and Sample Number	Sample Depth (feet)	Moisture Content (percent)	Gravel Content (percent)	Sand Content (percent)	Silt/Clay Content percent)
AB-1/S-1	2.5	11.1	46.6	50.3	3.1
AB-2/S-3	7.5	9.5	27.9	42.2	29.9
AB-3/S-3	7.5	13.4	15.9	53.8	30.3
AB-4/S-2	5	29.5	20.0	51.2	28.7

4.3 Groundwater Conditions

At the time of our subsurface exploration program (August 2012), groundwater was encountered within the limits of each of our borings. The groundwater levels varied from approximately 3 feet below existing grade within AB-1 adjacent Blackmans Lake to 5 feet within boring AB-2. Within borings AB-3 and AB-4 perched groundwater was encountered at depths of 11 feet and 7 feet, respectively. Because our exploration was performed during a generally dry period of the year, current groundwater conditions may closely represent the yearly low levels. Throughout the year, groundwater levels would likely fluctuate in response to changing lake levels, changes in precipitation patterns, off-site construction activities, and site utilization.

4.4 Seismic Conditions

Based on our analysis of subsurface exploration logs and our review of published geologic maps, we interpret the on-site soil conditions to correspond to a seismic site class D, as defined by Table 3.4.2.1-1 of the 2009 American Association of State Highway and Transportation Officials (AASHTO)

manual entitled *Guide Specifications for LRFD Seismic Design First Edition*. Based on review of AASHTO seismic hazard maps, AMEC recommends using the following parameters for Seismic Site Class D:

- Ss = 1.118 Fa = 1.053 SDs = 0.785
- S1 = 0.383 Fv = 1.634 SD1 = 0.417

The AASHTO maps are labeled with a probability of exceedance of 7 percent in 75 years corresponding to a return interval of 1,000 years. Current (2007) Probabilistic Uniform Response Spectra Data prepared by the USGS for 7 percent in 75 years indicate a peak bedrock site acceleration coefficient of about 0.36g.

4.4.1 Liquefaction Analysis

Liquefaction is a sudden increase in porewater pressure and a sudden loss of soil shear strength caused by shear strains, as could result from an earthquake. Research has shown that saturated, loose sands with a fines (silt and clay) content less than about 25 percent are most susceptible to liquefaction. Our liquefaction analysis indicated that the soils underlying the project site are not susceptible to liquefaction during a severe earthquake. Review of published liquefaction susceptibility maps (Palmer, 2004), also indicates the area has a low susceptibility for liquefaction.

4.4.2 Liquefaction Potential

For purposes of evaluating liquefaction potential, we used the computer program SHAKE2000 to evaluate liquefaction based on the equation for factor of safety against liquefaction. This program evaluates the cyclic resistance ratio required to initiate liquefaction based on Standard Penetration Test (SPT) results, as recommended by Seed, et al. (1983 and 1985), and reviewed in the Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils (Youd, et al. 1997 and 2001). We evaluated the potential for liquefaction assuming a magnitude 7.5 earthquake with a peak ground acceleration of 0.36g. For liquefaction analyses, we have used the peak ground acceleration from the USGS Probabilistic Uniform Response Spectra, 2002 Data, ground motion with a 7 percent probability of exceedance in 75 years (return interval of 1,000 years). We used this method to determine the relative factor of safety against liquefaction for the loose to medium dense, sand and very soft silt layers underlying the site. Based upon the measured soil density, high water table elevation, and relatively high percent fines of the site soils, the potential for soil liquefaction at the site is considered low.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The proposed project is to consist of removal and replacement of the existing corrugated metal culverts for the Ferguson Park Road crossing with new HDPE culverts of similar size and at the approximate same elevation and locations. The remaining crossings will be replaced with precast box culverts, each with a 4 foot rise and a 6 foot span (width). Installation of a new weir is also proposed at approximately STA 17+00 to control water levels within Blackmans Lake. Minor grading within the channel will be performed along the majority of the creek channel to remove accumulated sediment. Re-grading of the channel banks to a more stable configuration will also be performed. We offer the following general geotechnical conclusions and recommendations concerning this project.

- Feasibility: Based on our field explorations, research, and analyses, the proposed replacement of the existing culverts appears feasible from a geotechnical standpoint, contingent on the recommendations presented herein.
- Liquefaction Considerations: Our liquefaction analysis indicated that the soils underlying the project site possess a relatively low risk of liquefaction during a severe earthquake.
- Culvert Foundation Options: The proposed HDPE culvert can be supported by a bearing pad of structural fill. Similarly, the proposed box culverts can be founded upon either native medium dense to dense sands or a bearing pad of structural fill.
- On-site Soil Reuse: Our visual soil classifications and laboratory testing indicate that most of the on-site soils are highly moisture-sensitive and susceptible to disturbance when wet. Thus, these soils are marginal at best for potential reuse as structural fill. Provisions for imported structural fill should be included within design and bidding for the earthwork portion of the project.
- Dewatering/ Drainage: To minimize potential issues with construction dewatering and wet subgrade conditions, earthwork should be scheduled for periods of dry weather, such as that usually occurring during the summer and early fall months.
- Subgrade Protection: Due to the moisture-sensitive nature of the on-site soils, the contractor should install appropriate temporary drainage systems to keep water out of the construction areas and should minimize traffic over any subgrades prepared within these soils.

The following text sections of this report present our specific geotechnical conclusions and recommendations concerning site preparation, excavations, foundations, backfilled walls, and structural fill. American Society for Testing and Materials (ASTM) specification codes cited herein refer to the current ASTM manual. Washington State Department of Transportation (WSDOT) specification codes and plan designations cited herein refer to WSDOT publications M41-10, *2012*

Standard Specifications for Road, Bridge, and Municipal Construction, and M21-01, *Standard Plans for Road, Bridge, and Municipal Construction*, respectively. AASHTO specifications cited herein refer to AASHTO *LRFD Bridge Design Specifications* (5th Edition, 2010).

5.1 Site Preparation

Depending on the contractor's work plan and sequencing, preparation of the project site may involve erosion control, dewatering, temporary cuts, and excavations, followed by backfilling and site restoration. The paragraphs below discuss our geotechnical comments and recommendations concerning site preparation.

Erosion Control Measures: It is recommended that a staked silt fence be installed around the area to be disturbed. The base of the silt fence should be buried so that sediment cannot pass beneath it, and the silt fence should be inspected and maintained during the time that the site soils are exposed, on a periodic basis and after any major rainstorm event. Because stripped surfaces and soil stockpiles are typically a source of runoff sediments, they should be given particular attention. If earthwork occurs during wet weather, we recommend that all stripped surfaces be covered with straw to reduce runoff erosion. Similarly, soil stockpiles and cut slopes should be covered with plastic sheeting for erosion protection. It may be prudent to maintain a berm and swale around the downslope side of stripped areas and stockpiles in order to capture runoff water and thereby reduce the downslope sediment transport. In addition, the stripped areas should be revegetated as soon as possible, also reducing the potential for erosion.

Temporary Diversion and Drainage: We recommend intercepting and diverting any potential sources of surface or near-surface water within the construction zones before stripping begins. This may include temporary diversion of the creek around the work area. Because the selection of an appropriate drainage system will depend on the water quantity, season, weather conditions, construction sequence, and contractor's methods, final decisions regarding drainage systems are best made in the field at the time of construction. Nonetheless, we anticipate that the work will include a temporary collection pond, pumps and bypass piping, and curbs, berms, or ditches placed around the work areas to adequately intercept surface water runoff.

Temporary Dewatering: Depending on the time of construction, it is likely that groundwater seepage will be encountered in excavations. To reduce potential adverse impacts on construction, it may be necessary to provide temporary construction dewatering. Depending on water volumes, we anticipate that an internal system of ditches, sumpholes, and pumps will be adequate to temporarily dewater the excavation to allow construction activities.

At this site, we understand the water collected from inside the excavations may require pretreatment prior to on-site or off-site disposal. The contractor should therefore submit a plan for temporary dewatering, including a description of methods for controlling, storing, treating and disposing of collected water.

At the Ferguson Park Road culvert, the excavation will be shallow, but will be in close proximity to Blackmans Lake. A system will need to be installed that prevents inflow of lake water. At the remaining culvert and weir installations, it is anticipated that deeper excavations (on the order of 5 to 10 feet below grade) will mainly encounter perched groundwater seepage. For planning, we would estimate the perched seepage (if present depending on season) might be on the order of 0.05 gallon per minute per foot of excavation sidewall.

Temporary Cut Slopes: All temporary cut slopes associated with site excavations should be adequately inclined to prevent sloughing and collapse, and be constructed in accordance with WISHA regulations. Based on our borings, the site soils would be classified as Soil Type C, with maximum allowable slopes of 1.5H:1V according to Table N-1 of WAC 296-155-66403. Temporary slope safety should remain the responsibility of the Contractor who is on site and able to control his workers and operations.

Temporary Shoring: If temporary cut slopes cannot be accommodated due to site constraints, and worker access is necessary within the excavations, temporary shoring would need to be installed before excavation.

Site Excavations: We anticipate that excavations up to about 10 feet deep will be required to accommodate the box culverts. Based on our explorations, we anticipate that these excavations will encounter loose to medium dense native soils composed of silty gravelly sand. We expect that the fill and underlying native soils can be readily excavated with conventional earthworking equipment.

Site Cutting and Filling: We anticipate that moderate cutting and filling will be required for the culvert replacement. Mostly excavation, with minor amounts of backfill around foundations, is anticipated. Imported clean granular fill would likely be needed for filling during the wet season, such as “Ballast” or “Gravel Borrow” per WSDOT: 9-03.9(1) and 9-03.14, respectively. Regardless of soil type, all fill should be placed and compacted according to our recommendations presented in the Structural Fill section of this report.

Subgrade Compaction: Exposed subgrades for foundations, pavements, and other structures should be compacted to a firm, unyielding state. Any localized zones of loose granular soils observed within a subgrade should be compacted to a density commensurate with the surrounding soils.

Permanent Slope Restoration: All permanent cut slopes and fill slopes should be adequately inclined to minimize long-term raveling, sloughing, and erosion. We generally recommend that no slopes be steeper than 2H:1V (Horizontal: Vertical). For all soil types, the use of flatter slopes (such as 3H:1V) would further reduce long-term erosion and facilitate revegetation. Any slope that would be in contact with the creek would need to be further protected from erosion with armoring.

Slope Protection: We recommend that a permanent berm, swale, or curb be constructed along the top edge of all permanent slopes to intercept surface flow. In addition, a hardy vegetative groundcover should be established as soon as feasible, to further protect the slopes from runoff water erosion. Alternatively, permanent slopes could be armored with quarry spalls or a geosynthetic erosion mat.

5.2 Culvert Foundations

We understand box culverts and associated headwalls and wing walls will be precast concrete structures. We offer the following comments and recommendations for purposes of culvert foundation design and construction. In our opinion, the box culvert structures will obtain adequate support from the site soils, if the subgrades are prepared as described below.

Subgrade Excavations: We anticipate that excavations up to about 10 feet below existing grades will be required for the box culverts. Test borings at the proposed crossings encountered variable soil conditions to this depth underlain by loose to medium dense silty sands. In order to provide adequate bearing conditions for box culverts, we recommend that all box culverts be placed upon a bearing pad (see below).

Bearing Pad Materials: We recommend bearing pads composed of Permeable Ballast per WSDOT 9-03.9(2), controlled density fill (CDF), or lean-mix concrete (LMC). If ballast is used, a geotextile separation fabric per WSDOT Standard Specification 9-33.1 Table 3 should be placed at the base of the excavation. We do not recommend using other imported or on-site soils as bearing pad materials.

Bearing Pad Dimensions: We recommend that bearing pads be at least 1 foot thick. A 2-foot thick bearing pad should be used at the shallower Woodlake Manor culvert crossing. Because foundation stresses are transferred outward as well as downward into the bearing soils, all bearing pad excavations should extend horizontally outward from the edges of each culvert structure. For bearing pads to be backfilled with CDF or LMC, this horizontal distance should be at least 50 percent of the bearing pad depth; for ballast backfill, this horizontal distance should be at least 75 percent of the bearing pad depth. The subgrades should be observed prior to placement of any bearing pad materials in order to verify that they have been adequately prepared.

Subgrade Verification: Foundations should never be constructed atop soft, loose, organic, or frozen soils, nor atop subgrades covered by standing water. A geotechnical engineer should be retained to observe all subgrades before placement of the culvert structures in order to verify that the subgrade has been adequately prepared.

Culvert Design Considerations: For culvert design upon a minimum 1-foot-thick bearing pad, we recommend using the following AASHTO Load Resistance Factor Design (LRFD) soil design parameters:

Table 4 AASHTO LRFD Soil Design Parameters

Design Parameter	Recommended Value
Minimum thickness of cover above culvert (feet)	1.5
Minimum depth of water table below grade (feet)	4
Soil Density (pcf)	135
Coefficient of active earth pressure Ka	0.26
Coefficient of at-rest earth pressure Ko	0.40
Coefficient of dynamic active earth pressure Kae	0.35[1]
Ultimate soil bearing strength (psf)	8,000[2]
Resistance factor – bearing	0.45[3]
Ultimate coefficient of friction, soil-precast concrete	0.67
Resistance factor – sliding	0.90[3]
Traffic Loading	H-20

1 Assumes level backslope using one half of the peak ground acceleration (1000-year) = 0.18g, where g is the acceleration due to gravity.

2 Assumes bearing upon a minimum 1-foot thick bearing pad of crushed rock above native soils.

3 These factors apply to strength limit state – use 1.0 for service limit state.

Foundation Settlements: We estimate that total post-construction static settlements of properly designed culvert structures bearing on properly prepared subgrades will not exceed 1 inch. Differential settlements could approach one half of the actual total settlement between adjacent foundation elements.

Foundation Backfill: We recommend that the foundation excavation be backfilled with structural fill around the exterior sides of the culvert structures, to provide erosion protection and lateral load resistance. Recommendations for structural fill are provided in the Structural Fill section of this report.

5.3 Weir Foundation

We understand the weir will be constructed with vertical support piles that are planned to be wide flange vertical H-pile beams. The lake level control weir will be comprised of timber or plastic planks that serve as stop logs and span between the beams. We understand the weir foundation beams

would be installed in a predrilled holes and backfilled with concrete, but might possibly be installed directly into the soil by impact driving or vibration.

These piles would have negligible applied vertical load, and would serve to resist lateral loading from unbalanced water pressures. Maximum water depth is anticipated to be 2 feet, however there is some risk of scour on the downstream side, for an assumed maximum unbalanced water depth of 4 feet. A quarry spall pad is anticipated on the downstream side of the weir to resist deeper scouring.

Because the piers are relatively short, we assume the pier foundation would be relatively rigid and would act as a pole. The soils within the upper 10 feet at the weir location are interbedded medium dense sands and stiff silts. We recommend using an allowable passive pressure of 275 pounds per cubic foot (expressed as an equivalent fluid unit weight) acting over two pile diameters, and neglecting the uppermost 2 feet of embedment below the ground surface. According to NAVFAC Design Manual 7-2, a lateral deflection equal to about 0.002 times the pier length would be required to mobilize the passive pressure. Higher deflection would mobilize higher passive pressures. The factor of safety with respect to ultimate available passive pressure is greater than 1.5. The passive pressure approach is recommended as a simplistic and conservative design, since it neglects redistribution of vertical stress and shear at the bottom of the pile, which would likewise serve to resist lateral loads.

Because the weir piles are relatively short and there is limited soils data, we recommend providing a minimum embedment of twice the unsupported length. For a maximum 4-foot unsupported length, we recommend 8 feet of additional embedment for a total length of 12 feet from the top of weir.

5.4 Structural Fill

The term "structural fill" refers to any materials used under foundations for culverts and retaining walls, and as backfill outside of culverts, walls, and other features, up to final pavement surface. Our comments, conclusions, and recommendations concerning structural fill are presented in the following paragraphs.

Materials: Typical structural fill materials include clean sand, granulithic gravel, crushed rock, quarry spalls, controlled-density fill (CDF), lean-mix concrete (LMC), well-graded mixtures of sand and gravel (commonly called "gravel borrow" or "pit-run"), and miscellaneous mixtures of silt, sand, and gravel. Recycled asphalt, concrete, and glass, which are derived by pulverizing the parent materials, are also potentially useful as structural fill in certain applications. Soils used for structural fill should not contain any organic matter, debris, or individual particles greater than approximately 6 inches in diameter.

Onsite Soils: We offer the following evaluation of the on-site soils in relation to potential use as structural fill.

- *Surficial Organic Soils*: Topsoil and organic-rich soils if encountered are *not* suitable for use as structural fill under any circumstances, due to their high organic content. Consequently, these materials can be used only for non-structural purposes, such as in landscaping areas.
- *Fill*: The fill soils consisting of a mix of import fill and the re-worked alluvial sandy and gravelly soils would be suitable for reuse as structural fill, contingent upon the moisture content of the material and its ability to be compacted to meet project specifications.
- *Alluvium*: The very loose to loose silty sands and sandy silts underlying the fill would not be suitable for reuse as structural fill at their present moisture content. These soils were typically saturated and contained trace organics.
- *Glacial Drift*: The loose to medium dense silty sands found beneath the fill soils and soft alluvium would not be suitable for reuse as structural fill at their present moisture content. These soils were typically wet to saturated within the borings and would require moisture conditioning to be reused. Due to the high silt content of these soils, they would be highly moisture sensitive and difficult to use during wet weather.

Fill Placement: Generally, ballast, CDF, and LMC do not require special placement and compaction procedures. In contrast, clean sand, granulithic gravel, crushed rock, soil mixtures, and recycled materials should be placed in horizontal lifts not exceeding 8 inches in loose thickness, and each lift should be thoroughly compacted with a mechanical vibratory compactor.

Compaction Criteria: Using the Modified Proctor test (ASTM D-1557) as the standard, we recommend structural fill be used for various on-site applications and compacted to the following minimum densities:

Fill Application	Minimum Compaction
Foundation subgrade or bearing pad	90 percent
Foundation and stemwall backfill	90 percent
Roadway embankment (upper 2 feet)	95 percent
Roadway embankment (below 2 feet)	90 percent

Subgrade Verification and Compaction Testing: Regardless of material or location, all structural fill should be placed over firm, unyielding subgrades prepared in accordance with the Site Preparation section of this report. The condition of all subgrades should be verified by an AMEC representative before filling or construction begins. In addition, fill soil compaction should be verified by means of in-place density tests performed during fill placement so the adequacy of the soil compaction efforts may be evaluated as earthwork progresses.

Soil Moisture Considerations: The suitability of soils used for structural fill depends primarily on their grain-size distribution and moisture content when placed. As the "fines" content (the soil fraction passing the US No. 200 Sieve) increases, soils become more sensitive to small changes in moisture content. Soils containing more than about 5 percent fines (by weight) cannot be consistently compacted to a firm, unyielding condition when the moisture content is more than 2 percentage points above or below optimum. For fill placement during wet-weather site work, we recommend using "clean" fill, which refers to soils that have a fines content of 5 percent or less (by weight), based on the soil fraction passing the US No. 4 Sieve.

CDF Strength Considerations: CDF is normally specified in terms of its compressive strength, which typically ranges from 50 to 200 psi. CDF having a strength of 50 psi (7,200 psf) provides adequate support for most structural applications and can be readily excavated with hand shovels. A strength of 100 psi (14,400 psf) provides additional support for special applications but greatly increases the difficulty of hand-excavation. In general, CDF having a strength greater than about 100 psi requires power equipment to excavate and should not be used where future hand-excavation might be needed.

6.0 RECOMMENDED ADDITIONAL SERVICES

Because the future performance and integrity of the structural elements will depend largely on proper site preparation, drainage, fill placement, and construction procedures, monitoring and testing by experienced geotechnical personnel should be considered an integral part of the construction process. Consequently, we recommend that AMEC be retained to review or provide the following post-report services:

- Review all construction plans and specifications to verify that our design criteria presented in this report have been properly integrated into the design;
- Prepare a letter summarizing all review comments (if required by the City of Snohomish);
- Attend a pre-construction conference with the design team and contractor to discuss important geotechnical-related construction issues;
- Observe all exposed subgrades after completion of stripping and over-excavation to confirm that suitable soil conditions have been reached and to determine appropriate subgrade compaction methods;
- Monitor the placement of all structural fill and test the compaction of structural fill soils to verify their conformance with the construction specifications;

- Check all completed subgrades for culvert structures, in order to verify their bearing capacity; and
- Prepare a post-construction letter summarizing all field observations, inspections, and test results (if required by the City of Snohomish).

7.0 CLOSURE

The conclusions and recommendations presented in this report are based, in part, on the explorations AMEC performed and used for this study; therefore, if variations in the subgrade conditions are observed at a later time, we may need to modify this report to reflect those changes. In addition, because the future performance and integrity of the project elements depend largely on proper initial site preparation, drainage, and construction procedures, monitoring and testing by experienced geotechnical personnel should be considered an integral part of the construction process. AMEC is available to provide earthwork monitoring, soils testing, and geotechnical engineering services throughout construction.

We appreciate the opportunity to be of service on this project. If you have any questions regarding this report, or any aspects of the project, please feel free to contact our office.

AMEC Environment & Infrastructure, Inc.

William J. Lockard, L.E.G.
Senior Geologist

James S. Dransfield, P.E.
Principal Geotechnical Engineer

Reviewed by: Stephen A. Siebert, P.E.

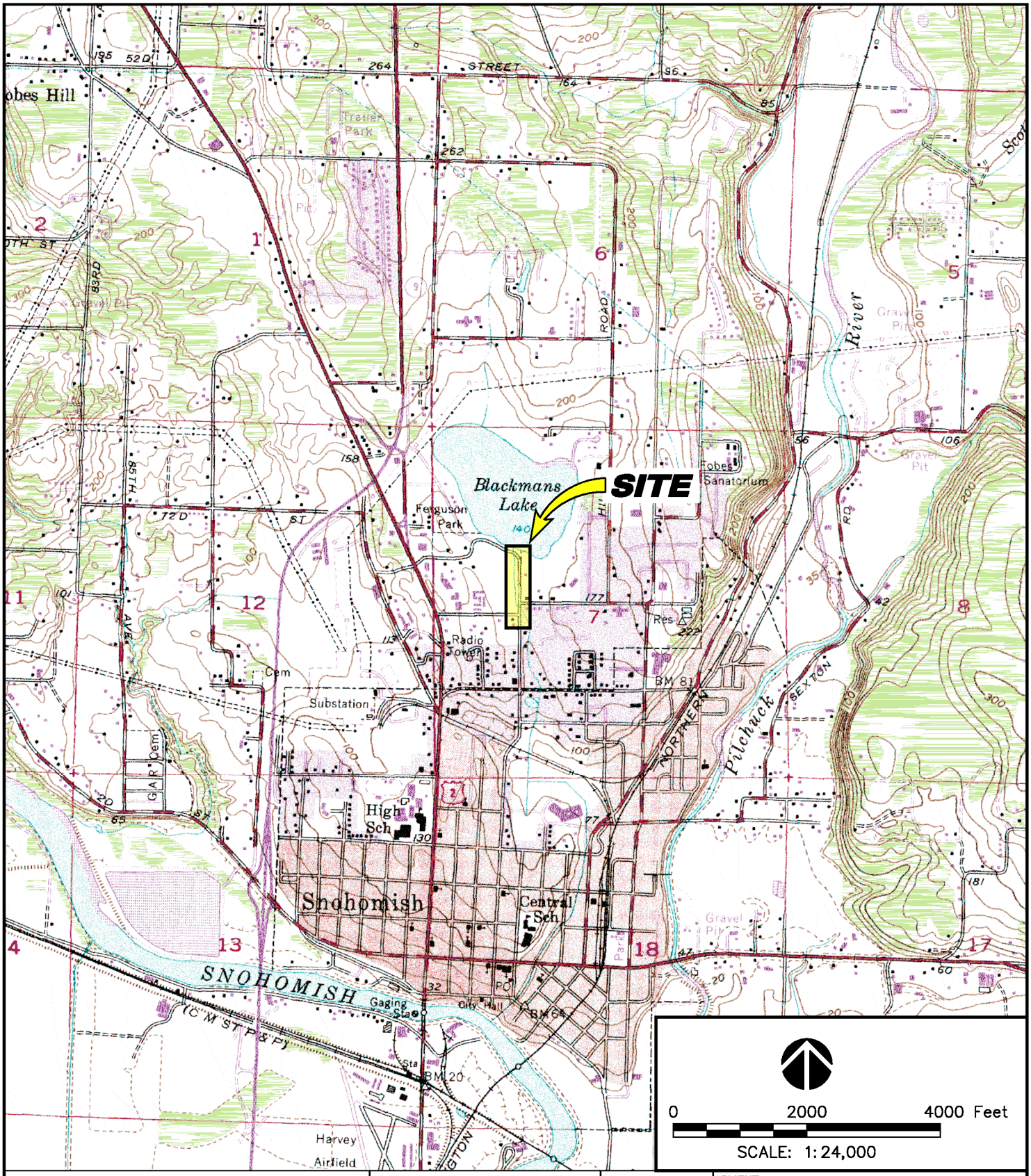
8.0 REFERENCES

Minard, J.P., 1985, Geologic map of the Snohomish quadrangle, Snohomish County, Washington: U.S. Geological Survey, Miscellaneous Field Studies Map MF-1745, scale 1:24000.

Palmer, Stephen P., Magsino, Sammantha L., Bilderback, Eric L., Poelstra, James L., Folger, Derek S., and Niggemann Rebecca A., 2004, Open File Report 2004-20: Liquefaction Susceptibility and Site Class Maps of Washington State, By County, Map 31A – Snohomish County Liquefaction Susceptibility, Sheet 61 of 78.

United States Department of Agriculture (USDA), Natural Resources Conservation Service, 2012, Web Soil Survey, http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx . Accessed August 21, 2012.

FIGURES



AMEC Environment & Infrastructure
11810 North Creek Parkway North
Bothell, WA, U.S.A. 98011-8201

CLIENT LOGO

CLIENT: TETRA TECH

PROJECT: BLACKMANS LAKE WEIR AND CULVERT REPLACEMENT, Snohomish, WA

TITLE: SITE LOCATION MAP

DWN BY:	DATUM:	DATE:
JRS	NAD83	AUGUST 2012
CHK'D BY:	REV. NO.:	PROJECT NO:
WJL		2-917-17426-0
PROJECTION:	SCALE:	FIGURE No.
WA STATE PLANE	AS SHOWN	1

G:\91\17000\17426 - Blackmans Lake\17426-01.dwg - Layout1 - Nov. 27, 2012 11:03am - jeffrey.sanders

MATCHLINE FIGURE 2B

AVENUE A

13TH STREET

Smithson Place

AB-1 AB-2 AB-3 AB-4

FIRE HYDRANT
12"CONC
SD
SS
W
P
G
T
FIBER OPTIC OH
CMNC WALK
4' CHAINLINK FENCE
SIGN
"DEAD END"
"STOP"
TELE RISER
GAS VALVE
8"PVC
GAS PAINT MARKED "2" PEIP PSE-G"
BURIED THRUST BLOCK
GAS PAINT MARKED "2" STW IP PSE-G"
6"CMP
12"CONC
18"CONC
36"CMP
WM
UG
6"VBF
WOOD GUARD RAIL
MAILBOX
TELE RISER
GRAVEL
LARGE ROCK
6' WOOD FENCE
4' WOOD FENCE AT TOP OF SLOPE
8"PVC
12"CONC
BH
11+00
12+00
13+00
14+00
15+00
16+00
140
145
150

LEGEND

AB-4 BORING NUMBER AND APPROXIMATE LOCATION

0 40 80

SCALE IN FEET

	CLIENT LOGO	CLIENT: TETRA TECH	DWN BY: JRS	PROJECT: BLACKMANS LAKE WEIR AND CULVERT REPLACEMENT, Snohomish, WA	DATE: AUGUST 2012
			CHK'D BY: WJL		PROJECT NO: 2-917-17426-0
		AMEC Environment & Infrastucture, 11810 North Creek Parkway North, Bothell, WA, U.S.A. 98011-8201	DATUM:	TITLE: SITE AND EXPLORATION PLAN	REV. NO.:
			PROJECTION:		FIGURE No. 2A
			SCALE: AS SHOWN		

G:\91\17000\17426 – Blackmans Lake\17426-02.dwg – Exploration 1 – Nov. 30, 2012 7:39am – jeffrey.sanders

MATCHLINE FIGURE 2A

D GUARD RAIL

"LAKE MANOR"

MAILBOX

ASPHALT

AVENUE A

17+00

18+00

19+00

20+00

21+00

22+00

23+00

145

140

FERGUSON PARK ROAD

ASPHALT

RAIL GUARD

WATER EDGE

SMP "SP-3"

SMP "SP-

AB-1

HBH

SMP "SP-6"

SMP "SP-5"

SMP "SP-1"

WOOD FENCE

ROCK CIRCLE FILLED WITH SAND

GRAVEL

GATE

ASPHALT

ASPHALT

WATER EDGE

LEGEND

AB-4 BORING NUMBER AND APPROXIMATE LOCATION

0 40 80

SCALE IN FEET

	CLIENT LOGO	CLIENT: TETRA TECH	DWN BY: JRS	PROJECT: BLACKMANS LAKE WEIR AND CULVERT REPLACEMENT Snohomish, WA	DATE: AUGUST 2012
			CHK'D BY: WJL		PROJECT NO: 2-917-17426-0
		AMEC Environment & Infrastucture 11810 North Creek Parkway North Bothell, WA, U.S.A. 98011-8201	DATUM:	TITLE: SITE AND EXPLORATION PLAN	REV. NO.:
			PROJECTION:		FIGURE No. 2B
			SCALE: AS SHOWN		

G:\91\17000\17426 – Blackmans Lake\17426-02.dwg – Exploration 2 – Nov. 30, 2012 7:40am – jeffrey.sanders

APPENDIX A

Field Exploration Procedures and Logs

APPENDIX A
FIELD EXPLORATION PROCEDURES AND LOGS
1-917-17426-0

The following paragraphs describe our procedures associated with the field explorations and field tests AMEC Environment & Infrastructure, Inc. (AMEC) conducted for this project. Descriptive logs of our explorations are enclosed in this appendix.

Auger Boring Procedures

Our exploratory borings were advanced with a hollow-stem auger, using a truck-mounted drill rig operated by an independent drilling firm working under subcontract to AMEC. A geotechnical specialist from AMEC continuously observed the borings, logged the subsurface conditions, and collected representative soil samples. All samples were stored in watertight containers and later transported to our laboratory for further visual examination and testing. After each boring was completed, the borehole was backfilled with a mixture of bentonite chips and soil cuttings, and the surface was patched with asphalt or concrete (where appropriate).

Throughout the drilling operation, soil samples were obtained at 2.5- or 5-foot depth intervals by means of the Standard Penetration Test (SPT) per American Society for Testing and Materials (ASTM) D-1586. This testing and sampling procedure consists of driving a standard 2-inch diameter steel split-spoon sampler 18 inches into the soil with a 140-pound hammer free-falling 30 inches. The number of blows required to drive the sampler through each 6-inch interval is counted, and the total number of blows struck during the final 12 inches is recorded as the Standard Penetration Resistance, or "SPT blow count." If a total of 50 blows are struck within any 6-inch interval, the driving is stopped and the blow count is recorded as 50 blows for the actual penetration distance. The resulting Standard Penetration Resistance values indicate the relative density of granular soils and the relative consistency of cohesive soils.

The enclosed *Boring Logs* describe the vertical sequence of soils and materials encountered in each boring, based primarily on our field classifications and supported by our subsequent laboratory examination and testing. Where a soil contact was observed to be gradational, our logs indicate the average contact depth. Where a soil type changed between sample intervals, we inferred the contact depth. Our logs also graphically indicate the blow count, sample type, sample number, and approximate depth of each soil sample obtained from the borings, as well as any laboratory tests performed on these soil samples. If any groundwater was encountered in a borehole, the approximate groundwater depth is depicted on the boring log. Groundwater depth estimates are typically based on the moisture content of soil samples, the wetted height on the drilling rods, and the water level measured in the borehole after the auger has been extracted.

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS (MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE)	GRAVEL AND GRAVELLY SOILS (MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE)	CLEAN GRAVELS (LESS THAN 5% FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (GREATER THAN 12% FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS (MORE THAN 50 OF COARSE FRACTION PASSING NO. 4 SIEVE)	CLEAN SANDS (LESS THAN 5% FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (GREATER THAN 12% FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS (MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE)	SILTS AND CLAYS (LIQUID LIMIT LESS THAN 50)	INORGANIC		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
		ORGANIC		OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS (LIQUID LIMIT GREATER THAN 50)	INORGANIC		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
		ORGANIC		OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS
FILL SOILS				FILL (AF)	HUMAN ALTERED SOIL OR MODIFIED LAND

NOTES:

1. SOIL DESCRIPTIONS ARE BASED ON THE GENERAL APPROACH PRESENTED IN THE STANDARD PRACTICE FOR DESCRIPTION AND IDENTIFICATION OF SOILS (VISUAL-MANUAL PROCEDURE), AS OUTLINED IN ASTM D 2488. WHERE LABORATORY INDEX TESTING HAS BEEN CONDUCTED, SOIL CLASSIFICATIONS ARE BASED ON THE STANDARD TEST METHOD FOR CLASSIFICATION OF SOILS FOR ENGINEERING PURPOSES, AS OUTLINED IN ASTM D 2487.

2. SOIL DESCRIPTION TERMINOLOGY IS BASED ON VISUAL ESTIMATES (IN THE ABSENCE OF LABORATORY TEST DATA) OF THE PERCENTAGES OF EACH SOIL TYPE AND IS DEFINED AS DESCRIBED BELOW:

3. DUAL SYMBOLS (E.G. SP-SM, OR GP-GM) ARE USED TO INDICATE A SOIL WITH AN ESTIMATED 5-12% FINES.

   PRIMARY CONSTITUENT: >50% - "GRAVEL", "SAND", "SILT", "CLAY", etc.
   SECONDARY CONSTITUENTS: >12% and ≤50% - "gravelly", "sandy", "silty", etc.
   ADDITIONAL CONSTITUENTS: >5% and ≤12% - "some gravel", "some sand", "some silt", etc.
   ≤5% - "trace gravel", "trace sand", "trace silt" etc. or not noted.

4. RELATIVE DENSITY OF SOIL IS BASED ON STANDARD TEST METHOD FOR PENETRATION TEST (SPT) AND SPLIT-BARREL SAMPLING OF SOILS ASTM D 1586 OR CORRELATIONS FOR OTHER SIMPLER TYPES AND METHODS FOR SPT SAMPLING, THE FOLLOWING BLOW COUNT CORRELATION APPLIES.

   A. RELATIVE DENSITY OF COARSE GRAINED SOILS (N = BLOWS/FOOT SPT METHOD)
   - VERY LOOSE: N = ≤4
   - LOOSE: N = >4 AND ≤10
   - MEDIUM DENSE: N = >10 AND ≤30
   - DENSE: N = >30 AND ≤50
   - VERY DENSE: N = >50

   B. RELATIVE CONSISTENCY OF FINE GRAINED SOILS (N = BLOWS/FOOT SPT METHOD)
   - VERY SOFT: N = <2
   - SOFT: N = ≥2 AND ≤4
   - MEDIUM STIFF: N = >4 AND ≤8
   - STIFF: N = >8 AND ≤15
   - VERY STIFF: N = >15 AND ≤30
   - HARD: N = >30

AMEC Environment & Infrastructure
11810 North Creek Parkway North
Bothell, WA, U.S.A. 98011-8201

CLIENT LOGO

CLIENT

PROJECT

DWN BY: JRS

DATUM:

DATE: JULY 2010

TITLE

SOIL CLASSIFICATION CHART / KEY

CHK'D BY: JD

REV. NO.:

PROJECT NO:

PROJECTION:

SCALE: NOT TO SCALE

FIGURE No. A-1

PROJECT: *Blackmans Lake Weir & Culvert Replacement*

JOB No. *2-917-17426-0* BORING No. *AB-1*

Soil Description

SE corner Ferguson Park Road Culvert Crossing (STA 22+65, 13' LT)

Location:

Approximate ground surface elevation: 142.0 feet

DEPTH (feet)

USCS/USGS GRAPHICS

SAMPLE TYPE

SAMPLE NUMBER

GROUND WATER

PENETRATION RESISTANCE

▲ Standard ##/## Blows over inches △ Other

Blows per foot

Page 1 of 1

TESTING

0 1-inch asphalt pavement over: Medium dense, moist, gray, fine to course sandy GRAVEL, varying to gravelly SAND

S-1 ATD 12

5 Very soft, saturated, brown, fibrous PEAT with some organic-rich silt

S-2 10

S-3 1/12

10 Very soft, saturated, light gray, silty CLAY/ clayey SILT

S-4 0

Boring terminated at approximately 11.5 feet

15

20

25

30

0 10 20 30 40 50

0 20 40 60 80 100

Plastic Limit MOISTURE CONTENT Liquid Limit

LEGEND

2.00-inch OD split-spoon sampler

ATD Groundwater level at time of drilling

Grain Size Analysis (% fines shown)

amec

11810 North Creek Parkway N
Bothell, WA 98011

Drilling Method: HSA Hammer Type: Automatic Date drilled: *August 02, 2012* Logged By: *WJL*

Drilled by: *Environmental Drilling*

BOTHELL_LOG FORMAT 2012 BORING LOGS.GPJ BOTHELL GEO 2010 B&TP.GDT 8/31/12

PROJECT: *Blackmans Lake Weir & Culvert Replacement*

JOB No. *2-917-17426-0* BORING No. *AB-2*

Location: East side of weir location at private driveway crossing (STA 16+75, 30' RT)

Approximate ground surface elevation: 145.5 feet

DEPTH (feet)	Soil Description	USCS/USGS GRAPHICS	SAMPLE TYPE	SAMPLE NUMBER	GROUND WATER
0	Grass sod over: light gray SILT with occasional rootlets				
	Medium dense, moist, mottled gray/tan, silty fine SAND			S-1	
5	Stiff, saturated, gray, SILT with some fine sand,occasional sand stringers and rootlets peat fragments			S-2	P ATD
	Medium dense, moist, mottled gray with rust mottling, silty, gravelly SAND			S-3	
10	becomes wet			S-4	
15	becomes wet to saturated			S-5	
20	becomes dense			S-6	
	Boring terminated at approximately 24 feet				
25					
30					

PENETRATION RESISTANCE

▲ Standard ##/ Blows over inches △ Other

Blows per foot

0 10 20 30 40 50

S-1: 17

S-2: 11

S-3: 29

S-4: 13

S-5: 29

S-6: 34

TESTING

S-3: 30

0 20 40 60 80 100

Plastic Limit MOISTURE CONTENT Liquid Limit

Page 1 of 1

LEGEND

2.00-inch OD split-spoon sampler

P ATD Perched water level at time of drilling

Grain Size Analysis (% fines shown)

amec

11810 North Creek Parkway N
Bothell, WA 98011

Drilling Method: HSA Hammer Type: Automatic Date drilled: *August 02, 2012* Logged By: *WJL*

Drilled by: *Environmental Drilling*

BOTHELL_LOG FORMAT 2012 BORING LOGS.GPJ BOTHELL GEO 2010 B&TP.GDT 8/31/12

PROJECT: *Blackmans Lake Weir & Culvert Replacement*

JOB No. *2-917-17426-0* BORING No. *AB-3*

Soil Description
NW corner of Avenue "A" & 13th Street
Location: Intersection (STA 14+90, 13' RT)
Approximate ground surface elevation: 146.0 feet

Page 1 of 1

DEPTH (feet)	Soil Description	USCS/USGS GRAPHICS	SAMPLE TYPE	SAMPLE NUMBER	GROUND WATER	PENETRATION RESISTANCE (Standard ▲, Blows over inches ##, Other △; Blows per foot)	TESTING
0	1.5-inches asphalt over: Loose, moist, mottled brown/gray/tan, fine to medium SAND with some gravel and trace to some silt			S-1		8	
5	Medium stiff, moist to wet, gray SILT with some sand and trace gravel			S-2		7	
	Loose, wet to saturated, tan, silty fine to medium SAND with trace to some gravel			S-3		9	30
10	becomes medium dense			S-4	ATD	11	
	Boring terminated at approximately 14 feet						
15							
20							
25							
30							

0 10 20 30 40 50

0 20 40 60 80 100
Plastic Limit MOISTURE CONTENT Liquid Limit

LEGEND

- 2.00-inch OD split-spoon sampler
- ATD Groundwater level at time of drilling
- Grain Size Analysis (% fines shown)

amec

11810 North Creek Parkway N
Bothell, WA 98011

Drilling Method: HSA Hammer Type: Automatic Date drilled: *August 02, 2012* Logged By: *WJL*

Drilled by: *Environmental Drilling*

BOTHELL_LOG FORMAT 2012 BORING LOGS.GPJ BOTHELL GEO 2010 B&TP.GDT 8/31/12

PROJECT: *Blackmans Lake Weir & Culvert Replacement*

JOB No. *2-917-17426-0* BORING No. *AB-4*

Location: SW corner of Smithson Place culvert crossing (STA 12+40, 15' LT)

Approximate ground surface elevation: 147.5 feet

DEPTH (feet)	Soil Description	USCS/USGS GRAPHICS	SAMPLE TYPE	SAMPLE NUMBER	GROUND WATER
0	2-inches asphalt over: Very loose, moist, dark brown, silty SAND with some gravel and scattered organics			S-1	
5				S-2	P ATD
	Dense, moist, rust mottled tan, silty SAND, with some gravel - large fractured gravel fragment within sample			S-3	
10	becomes wet, grayish tan, silty gravelly SAND			S-4	
	Boring terminated at approximately 14 feet				
15					
20					
25					
30					

PENETRATION RESISTANCE

▲ Standard ##/## Blows over inches △ Other

Blows per foot

0 10 20 30 40 50

S-1: 2

S-2: 2

S-3: 30

S-4: 59

Page 1 of 1

TESTING

29

0 20 40 60 80 100

Plastic Limit MOISTURE CONTENT Liquid Limit

LEGEND

2.00-inch OD split-spoon sampler

P ATD Perched water level at time of drilling

Grain Size Analysis (% fines shown)

amec

11810 North Creek Parkway N
Bothell, WA 98011

Drilling Method: HSA Hammer Type: Automatic Date drilled: *August 02, 2012* Logged By: *WJL*

Drilled by: *Environmental Drilling*

BOTHELL_LOG FORMAT 2012 BORING LOGS.GPJ BOTHELL GEO 2010 B&TP.GDT 8/31/12

APPENDIX B

Laboratory Testing Procedures and Results

APPENDIX B
LABORATORY TESTING PROCEDURES AND RESULTS
1-917-17426-0

The following paragraphs describe our procedures associated with the laboratory tests AMEC conducted for this project. Graphical results of certain laboratory tests are enclosed in this appendix.

Visual Classification Procedures

Visual soil classifications were conducted on all samples in the field and on selected samples in our laboratory. All soils were classified in general accordance with the United Soil Classification System, which includes color, relative moisture content, primary soil type (based on grain size), and any accessory soil types. The resulting soil classifications are presented on the exploration logs contained in Appendix A.

Moisture Content Determination Procedures

Moisture content determinations were performed on representative samples to aid in identification and correlation of soil types. All determinations were made in general accordance with ASTM D-2216. The results of these tests are shown on the exploration logs contained in Appendix A.

Grain-size Analysis Procedures

A grain-size analysis indicates the range of soil particle diameters included in a particular sample. Grain-size analyses were performed on representative samples in general accordance with ASTM D-422. The results of these tests are presented on the enclosed grain-size distribution graphs and were used in soil classifications shown on the exploration logs contained in Appendix A.

Krazan & ASSOCIATES, INC.

GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING
CONSTRUCTION TESTING & INSPECTION
FORENSIC INVESTIGATION

August 16, 2012

KA No. 096-12212
Lab Report No. 1

Mr. James Dransfield (E-Mail)
AMEC ENVIRONMENTAL & INFRASTRUCTURE
11810 N. Creek Pkwy. N.
Bothell, WA 98011

RE: SOILS LABORATORY TESTING
Blackmans Lake Weir (Lab)
AMEC Project No. 2-917-17426-0
Bothell, Washington

Dear Mr. Dransfield;

In accordance with your request and authorization, we have performed laboratory tests for the above referenced project.

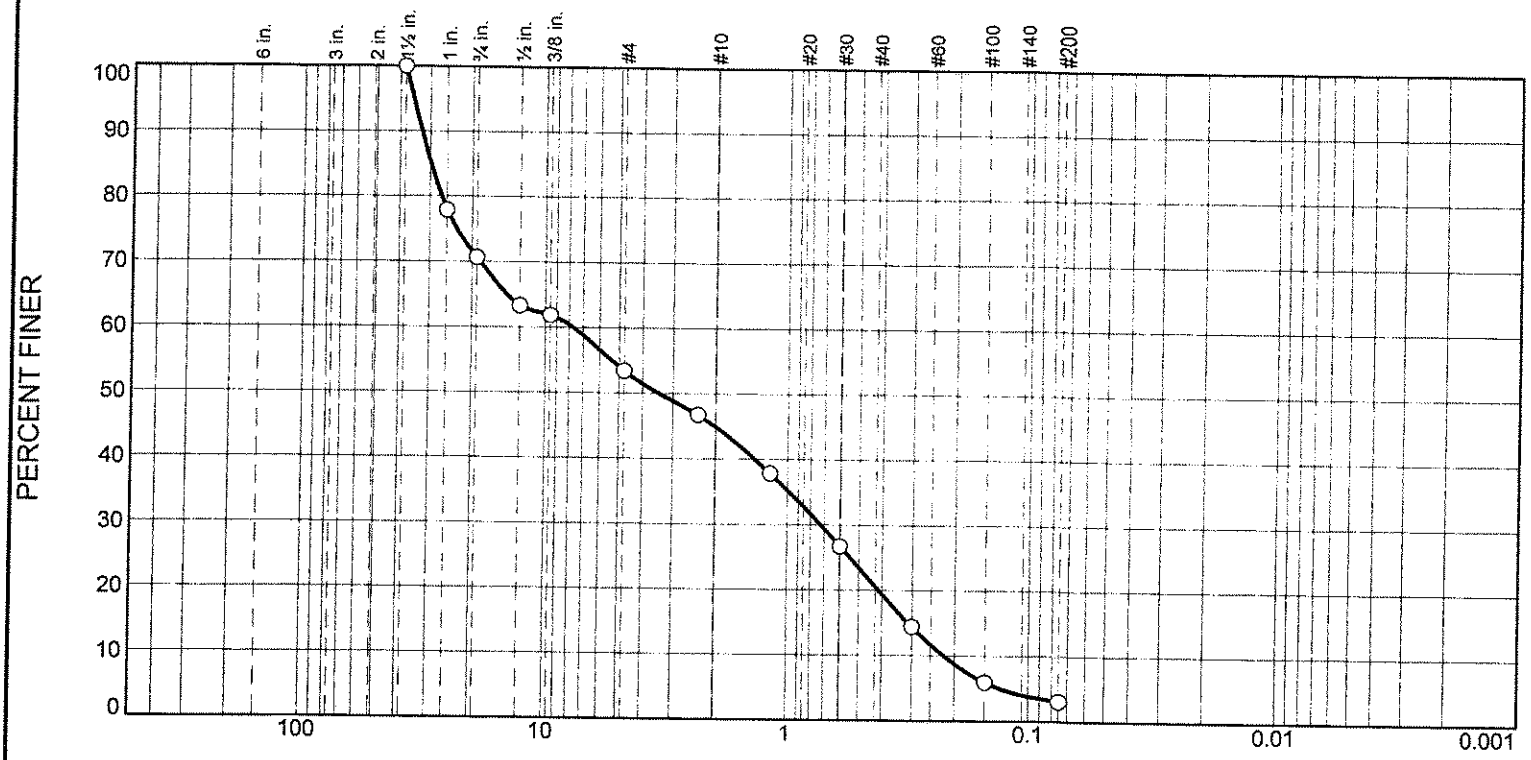
Laboratory testing was performed in accordance with ASTM standards. Attached are the results of the Natural Moisture Content's and Sieve Analysis' for sample numbers 43200-A to 43200-D as performed in the Krazan and Associates laboratory. If you have any questions; or if we can be of further assistance, please do not hesitate to contact our office.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

Corbett Mercer
Laboratory Manager
Pacific Northwest Division

CM/lm

Krazan & Assoc. Sieve Analysis



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	29.4	17.2	8.5	24.5	17.3	3.1	

Test Results (ASTM C-136 & ASTM C-117)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1.5	100.0		
1	77.9		
.75	70.6		
.5	63.3		
.375	61.9		
#4	53.4		
#8	46.7		
#16	37.8		
#30	26.7		
#50	14.4		
#100	6.0		
#200	3.1		

* (no specification provided)

Material Description

Gray poorly graded SAND with gravel.

Atterberg Limits (ASTM D 4318)

PL= NP LL= NV PI= NP

Classification

USCS (D 2487)= SP AASHTO (M 145)= A-1-a

Coefficients

D_{90}= 32.4259 D_{85}= 29.6801 D_{60}= 7.7055
D_{50}= 3.4137 D_{30}= 0.7236 D_{15}= 0.3112
D_{10}= 0.2215 C_u= 34.78 C_c= 0.31

Remarks

Sample ID: 43200-A.
As-Received Moisture Content (ASTM D-2216): 11.12%
AB-1/S-1 (6-6-6).

Date Received: 8/10/12 **Date Tested:** 8/13/12

Tested By: Corbett Mercer

Checked By: Corbett Mercer

Title: Lab Manager

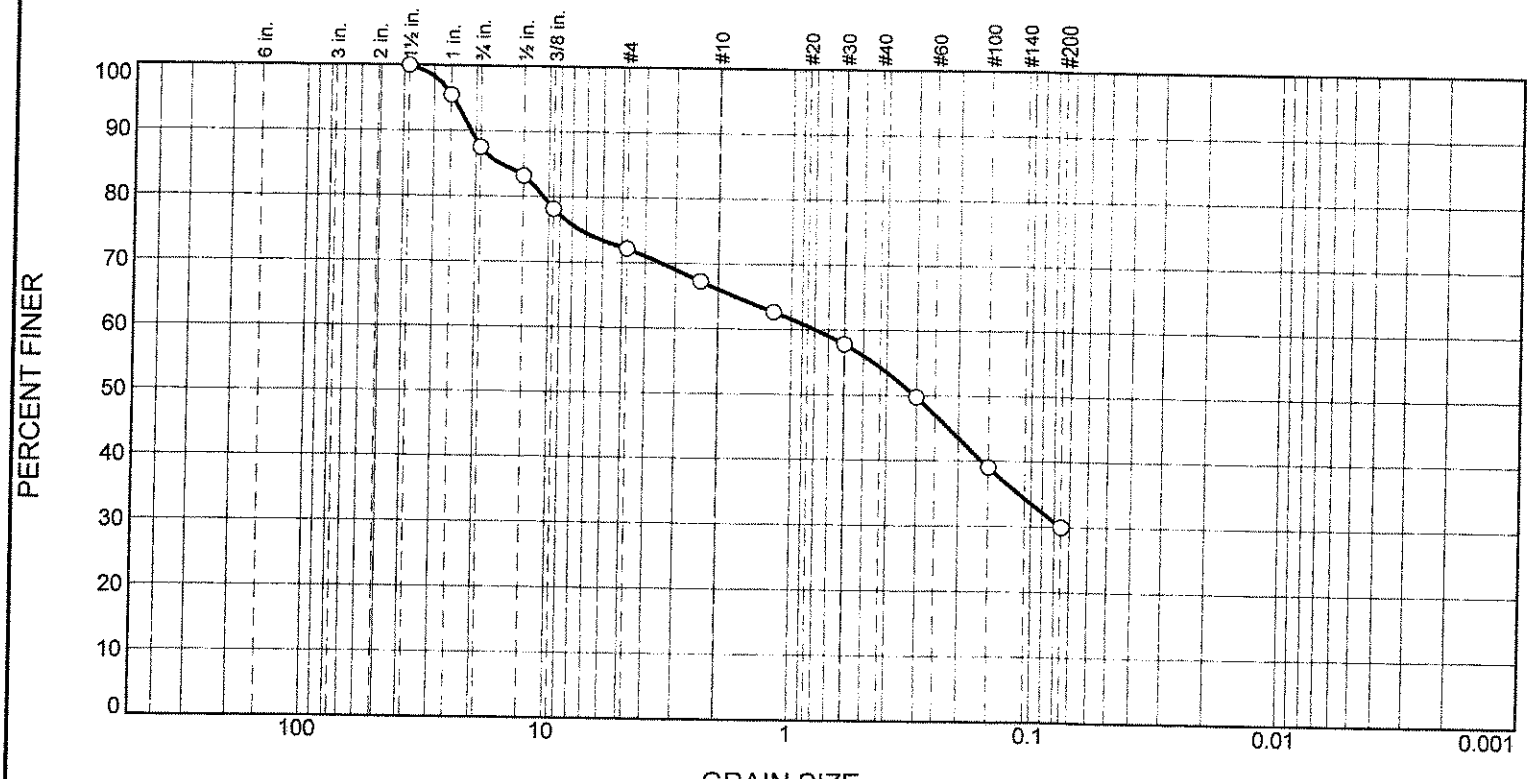
Location: Client Supplied; AB-1/S-1 @ 2.5'
Sample Number: 43200-A **Depth:** 2.5'

Date Sampled: 8/2/12

Krazan

Client: AMEC Environment & Infrastructure, Inc
Project: Blackmans Lake Weir (Lab)
(#2-917-17426-0)
Project No: 09612212

Krazan & Assoc. Sieve Analysis



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	12.5	15.4	6.0	11.8	24.4	29.9	

Test Results (ASTM C-136 & ASTM C-117)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1.5	100.0		
1	95.5		
.75	87.5		
.5	83.2		
.375	78.1		
#4	72.1		
#8	67.2		
#16	62.7		
#30	57.8		
#50	49.7		
#100	39.0		
#200	29.9		

* (no specification provided)

Material Description

Light brownish-gray silty SAND with gravel.

Atterberg Limits (ASTM D 4318)

PL= NP LL= NV PI= NP

Classification

USCS (D 2487)= SM AASHTO (M 145)= A-2-4(0)

Coefficients

D_{90}= 20.9931 D_{85}= 15.7757 D_{60}= 0.7896
D_{50}= 0.3054 D_{30}= 0.0753 D_{15}=
D_{10}= C_u= C_c=

Remarks

Sample ID: 43200-B.
As-Received Moisture Content (ASTM D-2216): 9. 46%
AB-2/S-3 (8-12-17).

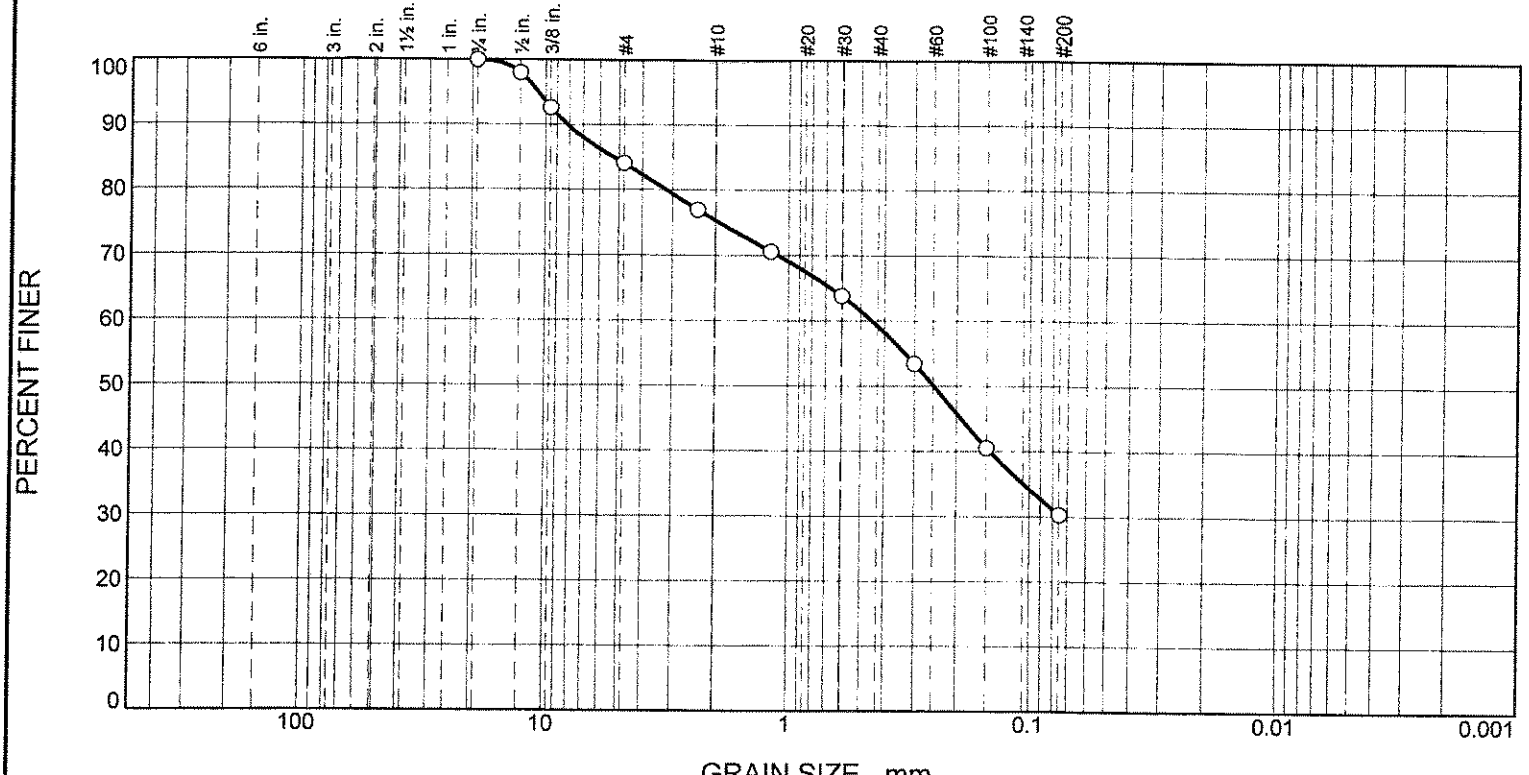
Date Received: 8/10/12 **Date Tested:** 8/13/12
Tested By: Corbett Mercer
Checked By: Corbett Mercer
Title: Lab Manager

Location: Client Supplied; AB-2/S-3 @ 7.5'
Sample Number: 43200-B **Depth:** 7.5'
Date Sampled: 8/2/12

Krazan

Client: AMEC Environment & Infrastructure, Inc
Project: Blackmans Lake Weir (Lab)
(#2-917-17426-0)
Project No: 09612212

Krazan & Assoc. Sieve Analysis



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	15.9	8.7	16.2	28.9	30.3	

Test Results (ASTM C-136 & ASTM C-117)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
.75	100.0		
.5	98.0		
.375	92.6		
#4	84.1		
#8	77.0		
#16	70.6		
#30	63.8		
#50	53.5		
#100	40.5		
#200	30.3		

* (no specification provided)

Material Description

Light brown silty SAND with gravel.

Atterberg Limits (ASTM D 4318)

PL= NP LL= NV PI= NP

Classification

USCS (D 2487)= SM AASHTO (M 145)= A-2-4(0)

Coefficients

D_{90}= 8.1549 D_{85}= 5.2401 D_{60}= 0.4499
D_{50}= 0.2489 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Sample ID: 43200-C.
As-Received Moisture Content (ASTM D-2216): 13.43%
AB-3/S-3 (6-3-6).

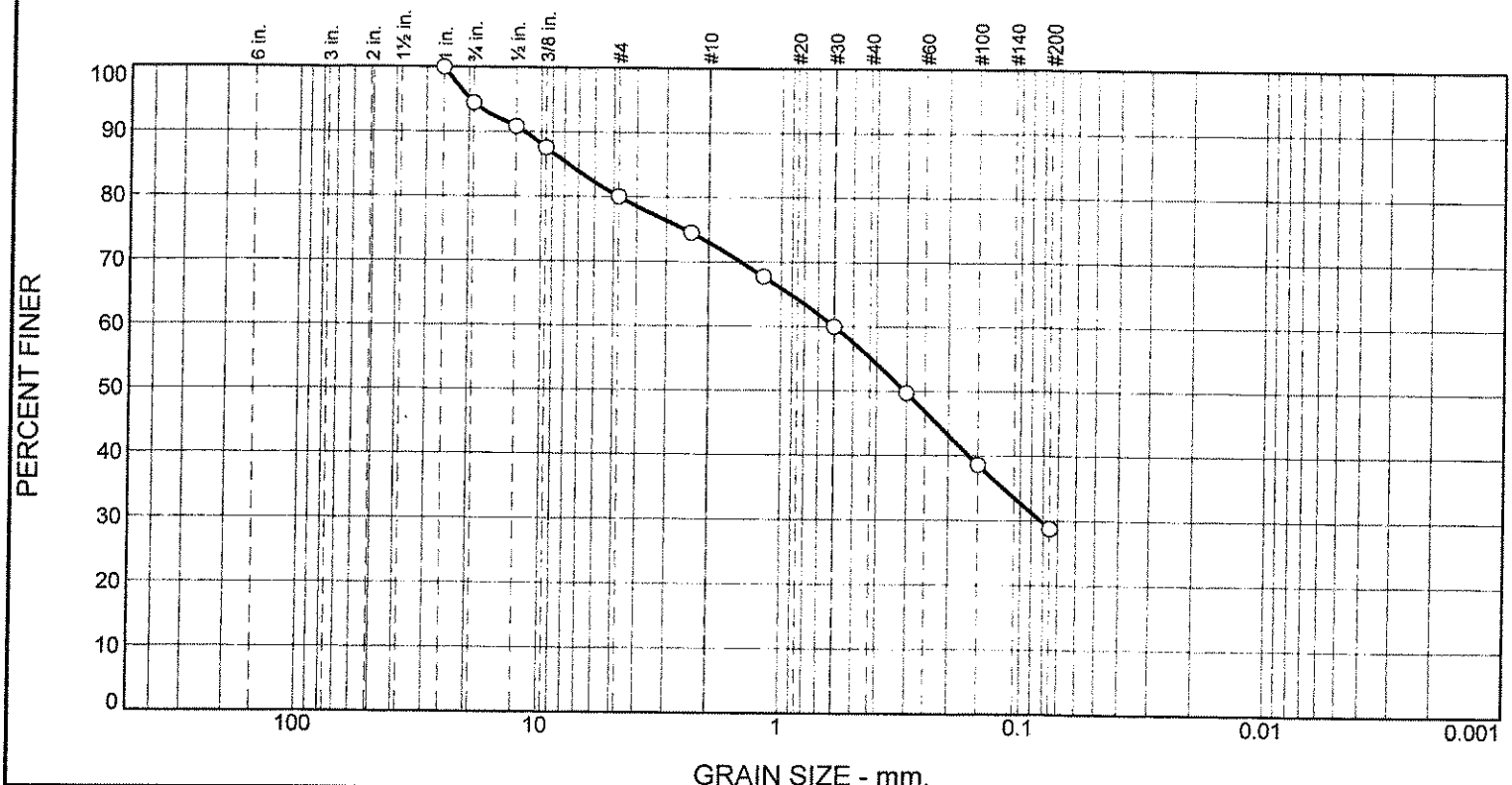
Date Received: 8/10/12 **Date Tested:** 8/13/12
Tested By: Corbett Mercer
Checked By: Corbett Mercer
Title: Lab Manager

Location: Client Supplied; AB-3/S-3 @ 7.5'
Sample Number: 43200-C **Depth:** 7.5'
Date Sampled: 8/2/12

Krazan

Client: AMEC Environment & Infrastructure, Inc
Project: Blackmans Lake Weir (Lab)
(#2-917-17426-0)
Project No: 09612212

Krazan & Assoc. Sieve Analysis



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	5.5	14.5	7.0	17.8	26.5	28.7	

Test Results (ASTM C-136 & ASTM C-117)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1	100.0		
.75	94.5		
.5	90.8		
.375	87.6		
#4	80.0		
#8	74.5		
#16	67.7		
#30	60.0		
#50	49.7		
#100	38.6		
#200	28.7		

* (no specification provided)

Material Description

Brown to Dark brown silty SAND with gravel and organics.

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SM **AASHTO (M 145)=** A-2-4(0)

Coefficients

D_{90}= 11.6938 D_{85}= 7.6911 D_{60}= 0.5994
D_{50}= 0.3052 D_{30}= 0.0823 D_{15}=
D_{10}= C_u= C_c=

Remarks

Sample ID: 43200-D.
As-Received Moisture Content (ASTM D-2216): 29.53%
AB-4/S-2

Date Received: 8/10/12 **Date Tested:** 8/13/12
Tested By: Corbett Mercer
Checked By: Corbett Mercer
Title: Lab Manager

Location: Client Supplied; AB-4/S-2 @ 5'
Sample Number: 43200-D **Depth:** 5'
Date Sampled: 8/2/12

Krazan

Client: AMEC Environment & Infrastructure, Inc
Project: Blackmans Lake Weir (Lab)
(#2-917-17426-0)
Project No: 09612212

Appendix 3

HPA Permit

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

HYDRAULIC PROJECT APPROVAL

Issued Date: January 07, 2015
Project End Date: January 06, 2016

Permit Number: 2015-4-7+01
FPA/Public Notice Number: N/A
Application ID: 427

PERMITTEE	AUTHORIZED AGENT OR CONTRACTOR
City of Snohomish	Northwest Environmental Consulting LLC
ATTENTION: Yoshihiro Monzaki	ATTENTION: Brad Thiele
116 Union Ave	3639 Palatine Ave N
Snohomish, WA 98290	Seatle, WA 98103

Project Name: Blackmans Lake Outlet Improvements

Project Description: Replace culverts and create overflow channel adjacent to existing channel for high water periods.

PROVISIONS

1. TIMING: The project may begin IMMEDIATELY and shall be completed by JANUARY 6, 2016, Provided: All work occurs during a low or no flow period. If the stream is flowing, a stream bypass shall be installed for the duration of the project.

2. NOTIFICATION REQUIREMENT: The Area Habitat Biologist (AHB) listed below shall receive written notification (FAX or mail) from the person to whom this Hydraulic Project Approval (HPA) is issued (permittee) or the agent/contractor no less than three working days prior to the start of construction activities. The notification shall include the permittee's name, project location, starting date for work, and the control number for this HPA.

3. APPROVED PLANS: Work shall be accomplished per plans and specifications approved by the Washington Department of Fish and Wildlife entitled BLACKMANS LAKE OUTLET IMPROVEMENTS and dated MAY 2014 except as modified by this Hydraulic Project Approval. A copy of these plans shall be available on site during construction.

4. CULVERT INSTALLATION: The culvert(s) shall be placed on a flat gradient with the bottom of the culvert placed below the level of the streambed a minimum of 20 percent of the culvert diameter for a round culvert, and 20 percent of the culvert's rise for an elliptical culvert. The 20 percent placement below the streambed shall be measured at the culvert outlet.

5. The culvert width at the streambed shall be equal to or greater than the average width of the streambed.

6. The culvert shall be installed to maintain structural integrity to the 100-year peak flow with consideration of the debris likely to be encountered.

7. Fill associated with the culvert installation shall be protected from erosion to the 100-year peak flow.

8. The culvert shall be installed and maintained to avoid inlet scouring and to prevent erosion of stream banks downstream of the project.

9. The culvert shall be installed in the dry or in isolation from the stream flow by the installation of a bypass flume or culvert, or by pumping the stream flow around the work area.

10. The culvert shall not exceed 38 feet in total length.

11. Disturbance of the streambed and banks shall be limited to that necessary to place the culvert and any required channel modification associated with it. Affected streambed and bank areas outside the culvert and associated fill shall be restored to preproject configuration following installation of the culvert. Within one year of project completion, the banks shall be revegetated with native or other approved woody species. Vegetative cuttings shall be planted at a

maximum interval of three feet (on center) and maintained as necessary for three years to ensure 80 percent survival.

12. Approach material shall be structurally stable and be composed of material that, if eroded into the stream, shall not be detrimental to fish life.

13. Equipment used for this project shall operate stationed on the road bed.

14. The use of equipment below the ordinary high water line shall be limited to that necessary to gain position for work.

15. Equipment used for this project may operate below the ordinary high water line, provided the drive mechanisms (wheels, tracks, tires, etc.) shall not enter or operate below the ordinary high water line.

16. Equipment used for this project shall be free of external petroleum-based products while working around the stream. Accumulation of soils or debris shall be removed from the drive mechanisms (wheels, tires, tracks, etc.) and undercarriage of equipment prior to its working below the ordinary high water line. Equipment shall be checked daily for leaks and any necessary repairs shall be completed prior to commencing work activities along the stream.

17. Alteration or disturbance of the bank and bank vegetation shall be limited to that necessary to construct the project. Within seven calendar days of project completion, all disturbed areas shall be protected from erosion using vegetation or other means. Within one year of project completion, the banks, including riprap areas, shall be revegetated with native or other approved woody species. Vegetative cuttings shall be planted at a maximum interval of three feet (on center) and maintained as necessary for three years to ensure 80 percent survival.

18. Aquatic vegetation shall not be removed or disturbed.

19. Erosion control methods shall be used to prevent silt-laden water from entering the stream: These may include, but are not limited to, straw bales, filter fabric, temporary sediment ponds, check dams of pea gravel-filled burlap bags or other material, and/or immediate mulching of exposed areas.

20. If high flow conditions that may cause siltation are encountered during this project, work shall stop until the flow subsides.

21. Extreme care shall be taken to ensure that no petroleum products, hydraulic fluid, fresh cement, sediments, sediment-laden water, chemicals, or any other toxic or deleterious materials are allowed to enter or leach into the stream.

22. If at any time, as a result of project activities, fish are observed in distress, a fish kill occurs, or water quality problems develop (including equipment leaks or spills), immediate notification shall be made to the Washington Military Department's Emergency Management Division at 1-800-258-5990, and to the Area Habitat Biologist listed below.

LOCATION #1: , Snohomish, WA 98290

WORK START: January 7, 2015 WORK END: January 6, 2016

WRIA	Waterbody:			Tributary to:	
07 - Snohomish	Blackmans Lake Creek (rb)			Snohomish River	
1/4 SEC:	Section:	Township:	Range:	Latitude:	Longitude:	County:
SW 1/4	07	28 N	06 E	47.9317	-122.0931	Snohomish

Location #1 Driving Directions

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

HYDRAULIC PROJECT APPROVAL

Issued Date: January 07, 2015
Project End Date: January 06, 2016

Permit Number: 2015-4-7+01
FPA/Public Notice Number: N/A
Application ID: 427

From I-5, go east on Highway 2 toward Snohomish. Exit southbound on State Route 9. Follow SR9 to Bickford Avenue, which turns into Avenue D as it approaches town. Turn left on 13th Street, and left again on Avenue A.

APPLY TO ALL HYDRAULIC PROJECT APPROVALS

This Hydraulic Project Approval pertains only to those requirements of the Washington State Hydraulic Code, specifically Chapter 77.55 RCW. Additional authorization from other public agencies may be necessary for this project. The person (s) to whom this Hydraulic Project Approval is issued is responsible for applying for and obtaining any additional authorization from other public agencies (local, state and/or federal) that may be necessary for this project.

This Hydraulic Project Approval shall be available on the job site at all times and all its provisions followed by the person (s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work.

This Hydraulic Project Approval does not authorize trespass.

The person(s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work may be held liable for any loss or damage to fish life or fish habitat that results from failure to comply with the provisions of this Hydraulic Project Approval.

Failure to comply with the provisions of this Hydraulic Project Approval could result in a civil penalty of up to one hundred dollars per day and/or a gross misdemeanor charge, possibly punishable by fine and/or imprisonment.

All Hydraulic Project Approvals issued under RCW 77.55.021 are subject to additional restrictions, conditions, or revocation if the Department of Fish and Wildlife determines that changed conditions require such action. The person(s) to whom this Hydraulic Project Approval is issued has the right to appeal those decisions. Procedures for filing appeals are listed below.

MINOR MODIFICATIONS TO THIS HPA: You may request approval of minor modifications to the required work timing or to the plans and specifications approved in this HPA. Any approved minor modification will require issuance of a letter documenting the approval. A minor modification to the required work timing means any change to the work start or end dates of the current work season to enable project or work phase completion. Minor modifications will be approved only if spawning or incubating fish are not present within the vicinity of the project. You may request subsequent minor modifications to the required work timing. A minor modification of the plans and specifications means any changes in the materials, characteristics or construction of your project that does not alter the project's impact to fish life or habitat and does not require a change in the provisions of the HPA to mitigate the impacts of the modification. Minor modifications do not require you to pay additional application fees or be issued a new HPA. If you originally applied for your HPA through the online Aquatic Protection Permitting System (APPS), you may request a minor modification through APPS. A link to APPS is at http://wdfw.wa.gov/licensing/hpa/. If you do not use APPS you must submit a written request that clearly indicates you are seeking a minor modification to an existing HPA. Written requests must include the name of the applicant, the name of the authorized agent if one is acting for the applicant, the control number of the HPA, the date issued, the permitting biologist, the requested changes to the HPA, the reason for the requested change, the date of the request, and the requestor's signature. Send by mail to: Washington Department of Fish and Wildlife, PO Box 43234, Olympia, Washington 98504-3234, or by email to HPAapplications@dfw.wa.gov. Do not include payment with your request. You should allow up to 45 days for the department to process your request.

Issued Date: January 07, 2015
Project End Date: January 06, 2016

Permit Number: 2015-4-7+01
FPA/Public Notice Number: N/A
Application ID: 427

MAJOR MODIFICATIONS TO THIS HPA: You may request approval of major modifications to any aspect of your HPA. Any approved change other than a minor modification to your HPA will require issuance of a new HPA. If you paid an application fee for your original HPA you must pay an additional $150 for the major modification. If you did not pay an application fee for the original HPA, no fee is required for a change to it. If you originally applied for your HPA through the online Aquatic Protection Permitting System (APPS), you may request a major modification through APPS. A link to APPS is at http://wdfw.wa.gov/licensing/hpa/. If you do not use APPS you must submit a written request that clearly indicates you are requesting a major modification to an existing HPA. Written requests must include the name of the applicant, the name of the authorized agent if one is acting for the applicant, the control number of the HPA, the date issued, the permitting biologist, the requested changes to the HPA, the reason for the requested change, the date of the request, payment of the application the original application was subject to an application fee, and the requestor's signature. Send your written request and payment, if applicable, by mail to: Washington Department of Fish and Wildlife, PO Box 43234, Olympia, Washington 98504-3234. You should allow up to 45 days for the department to process your request.

APPEALS INFORMATION

If you wish to appeal the issuance, denial, conditioning, or modification of a Hydraulic Project Approval (HPA), Washington Department of Fish and Wildlife (WDFW) recommends that you first contact the department employee who issued or denied the HPA to discuss your concerns. Such a discussion may resolve your concerns without the need for further appeal action. If you proceed with an appeal, you may request an informal or formal appeal. WDFW encourages you to take advantage of the informal appeal process before initiating a formal appeal. The informal appeal process includes a review by department management of the HPA or denial and often resolves issues faster and with less legal complexity than the formal appeal process. If the informal appeal process does not resolve your concerns, you may advance your appeal to the formal process. You may contact the HPA Appeals Coordinator at (360) 902-2534 for more information.

A. INFORMAL APPEALS: WAC 220-110-340 is the rule describing how to request an informal appeal of WDFW actions taken under Chapter 77.55 RCW. Please refer to that rule for complete informal appeal procedures. The following information summarizes that rule.

A person who is aggrieved by the issuance, denial, conditioning, or modification of an HPA may request an informal appeal of that action. You must send your request to WDFW by mail to the Washington Department of Fish and Wildlife HPA Appeals Coordinator,600 Capitol Way North, Olympia, Washington 98501-1091; e-mail to HPAapplications@dfw.wa.gov; fax to (360) 902-2946; or hand-delivery to the Natural Resources Building, 1111 Washington St SE, Habitat Program, Fifth floor. WDFW must receive your request within 30 days from the date you receive notice of the decision. If you agree, and you applied for the HPA, resolution of the appeal may be facilitated through an informal conference with the WDFW employee responsible for the decision and a supervisor. If a resolution is not reached through the informal conference, or you are not the person who applied for the HPA, the HPA Appeals Coordinator or designee will conduct an informal hearing and recommend a decision to the Director or designee. If you are not satisfied with the results of the informal appeal, you may file a request for a formal appeal.

B. FORMAL APPEALS: WAC 220-110-350 is the rule describing how to request a formal appeal of WDFW actions taken under Chapter 77.55 RCW. Please refer to that rule for complete formal appeal procedures. The following information summarizes that rule.

HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

Issued Date: January 07, 2015
Project End Date: January 06, 2016

Permit Number: 2015-4-7+01
FPA/Public Notice Number: N/A
Application ID: 427

A person who is aggrieved by the issuance, denial, conditioning, or modification of an HPA may request a formal appeal of that action. You must send your request for a formal appeal to the clerk of the Pollution Control Hearings Boards and serve a copy on WDFW within 30 days from the date you receive notice of the decision. You may serve WDFW by mail to the Washington Department of Fish and Wildlife HPA Appeals Coordinator,600 Capitol Way North, Olympia, Washington 98501-1091; e-mail to HPAapplications@dfw.wa.gov; fax to (360) 902-2946; or hand-delivery to the Natural Resources Building, 1111Washington St SE, Habitat Program, Fifth floor. The time period for requesting a formal appeal is suspended during consideration of a timely informal appeal. If there has been an informal appeal, you may request a formal appeal within 30 days from the date you receive the Director's or designee's written decision in response to the informal appeal.

C. FAILURE TO APPEAL WITHIN THE REQUIRED TIME PERIODS: If there is no timely request for an appeal, the WDFW action shall be final and unappealable.

Habitat Biologist	Jamie.Bails@dfw.wa.gov	Jamie Bails	for Director
Jamie Bails	425-775-1311, Ext:309		WDFW

State of Washington
Department of Fish and Wildlife
Mailing Address: PO Box 43234, Olympia, WA 98504-3234, (360) 902-2200, TDD (360) 902-2207
Main Office Location: Natural Resources Building, 1111 Washington Street SE, Olympia, WA

October 1, 2015

Northwest Environmental Consulting LLC
Brad Thiele
3639 Palatine Ave N
Seattle, WA 98103

Dear Brad Thiele:

SUBJECT: YOUR APPLICATION FOR BLACKMANS LAKE OUTLET IMPROVEMENTS, WDFW APPLICATION ID: 427

On June 26, 2014, Washington Department of Fish and Wildlife (WDFW) first received your application materials for a Hydraulic Project Approval (HPA) for the project referenced above.

Per your request, your permit has been extended from January 1, 2016 to January 6, 2017.

All other work condtions remain the same.

If you have any questions, please call me at 425-775-1311 Ext:309.

Sincerely,

Jamie Bails
Habitat Biologist

Appendix 4

Prevailing Minimum Hourly Wage Rate

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: 5/26/2016

County	Trade	Job Classification	Wage	Holiday	Overtime	Note
Snohomish	Asbestos Abatement Workers	Journey Level	$43.95	5D	1H	
Snohomish	Boilermakers	Journey Level	$64.29	5N	1C	
Snohomish	Brick Mason	Journey Level	$52.82	5A	1M	
Snohomish	Brick Mason	Pointer-Caulker-Cleaner	$52.82	5A	1M	
Snohomish	Building Service Employees	Janitor	$9.47		1	
Snohomish	Building Service Employees	Shampooer	$9.47		1	
Snohomish	Building Service Employees	Waxer	$9.47		1	
Snohomish	Building Service Employees	Window Cleaner	$13.48		1	
Snohomish	Cabinet Makers (In Shop)	Journey Level	$15.08		1	
Snohomish	Carpenters	Acoustical Worker	$54.02	5D	4C	
Snohomish	Carpenters	Bridge, Dock And Wharf Carpenters	$54.02	5D	4C	
Snohomish	Carpenters	Carpenter	$54.02	5D	4C	
Snohomish	Carpenters	Carpenters on Stationary Tools	$54.15	5D	4C	
Snohomish	Carpenters	Creosoted Material	$54.12	5D	4C	
Snohomish	Carpenters	Floor Finisher	$54.02	5D	4C	
Snohomish	Carpenters	Floor Layer	$54.02	5D	4C	
Snohomish	Carpenters	Scaffold Erector	$54.02	5D	4C	
Snohomish	Cement Masons	Journey Level	$53.95	7A	1M	
Snohomish	Divers & Tenders	Diver	$107.22	5D	4C	8A
Snohomish	Divers & Tenders	Diver On Standby	$64.42	5D	4C	
Snohomish	Divers & Tenders	Diver Tender	$58.33	5D	4C	
Snohomish	Divers & Tenders	Surface Rcv & Rov Operator	$58.33	5D	4C	
Snohomish	Divers & Tenders	Surface Rcv & Rov Operator Tender	$54.27	5A	4C	

Snohomish	Dredge Workers	Assistant Engineer	$56.44	5D	3F	
Snohomish	Dredge Workers	Assistant Mate (Deckhand)	$56.00	5D	3F	
Snohomish	Dredge Workers	Boatmen	$56.44	5D	3F	
Snohomish	Dredge Workers	Engineer Welder	$57.51	5D	3F	
Snohomish	Dredge Workers	Leverman, Hydraulic	$58.67	5D	3F	
Snohomish	Dredge Workers	Mates	$56.44	5D	3F	
Snohomish	Dredge Workers	Oiler	$56.00	5D	3F	
Snohomish	Drywall Applicator	Journey Level	$54.02	5D	1H	
Snohomish	Drywall Tapers	Journey Level	$54.07	5P	1E	
Snohomish	Electrical Fixture Maintenance Workers	Journey Level	$13.76		1	
Snohomish	Electricians - Inside	Cable Splicer	$63.94	7H	1E	
Snohomish	Electricians - Inside	Construction Stock Person	$31.71	7H	1D	
Snohomish	Electricians - Inside	Journey Level	$59.69	7H	1E	
Snohomish	Electricians - Motor Shop	Craftsman	$15.37		1	
Snohomish	Electricians - Motor Shop	Journey Level	$14.69		1	
Snohomish	Electricians - Powerline Construction	Cable Splicer	$74.92	5A	4D	
Snohomish	Electricians - Powerline Construction	Certified Line Welder	$65.71	5A	4D	
Snohomish	Electricians - Powerline Construction	Groundperson	$44.12	5A	4D	
Snohomish	Electricians - Powerline Construction	Heavy Line Equipment Operator	$65.71	5A	4D	
Snohomish	Electricians - Powerline Construction	Journey Level Lineperson	$65.71	5A	4D	
Snohomish	Electricians - Powerline Construction	Line Equipment Operator	$55.34	5A	4D	
Snohomish	Electricians - Powerline Construction	Pole Sprayer	$65.71	5A	4D	
Snohomish	Electricians - Powerline Construction	Powderperson	$49.16	5A	4D	
Snohomish	Electronic Technicians	Journey Level	$30.10		1	
Snohomish	Elevator Constructors	Mechanic	$85.45	7D	4A	
Snohomish	Elevator Constructors	Mechanic In Charge	$92.35	7D	4A	
Snohomish	Fabricated Precast Concrete Products	Journey Level - In-Factory Work Only	$13.50		1	
Snohomish	Fence Erectors	Fence Erector	$14.00		1	
Snohomish	Flaggers	Journey Level	$37.26	7A	3I	
Snohomish	Glaziers	Journey Level	$56.16	7L	1Y	
Snohomish	Heat & Frost Insulators And Asbestos Workers	Journeyman	$63.18	5J	1S	
Snohomish	Heating Equipment Mechanics	Journey Level	$72.83	7F	1E	

Snohomish	Hod Carriers & Mason Tenders	Journey Level	$45.32	7A	3I	
Snohomish	Industrial Power Vacuum Cleaner	Journey Level	$9.47		1	
Snohomish	Inland Boatmen	Boat Operator	$56.78	5B	1K	
Snohomish	Inland Boatmen	Cook	$53.30	5B	1K	
Snohomish	Inland Boatmen	Deckhand	$53.30	5B	1K	
Snohomish	Inland Boatmen	Deckhand Engineer	$54.32	5B	1K	
Snohomish	Inland Boatmen	Launch Operator	$55.57	5B	1K	
Snohomish	Inland Boatmen	Mate	$55.57	5B	1K	
Snohomish	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Cleaner Operator, Foamer Operator	$9.73		1	
Snohomish	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Grout Truck Operator	$11.48		1	
Snohomish	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Head Operator	$12.78		1	
Snohomish	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Technician	$9.47		1	
Snohomish	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Tv Truck Operator	$10.53		1	
Snohomish	Insulation Applicators	Journey Level	$54.02	5D	4C	
Snohomish	Ironworkers	Journeyman	$63.53	7N	1O	
Snohomish	Laborers	Air, Gas Or Electric Vibrating Screed	$43.95	7A	3I	
Snohomish	Laborers	Airtrac Drill Operator	$45.32	7A	3I	
Snohomish	Laborers	Ballast Regular Machine	$43.95	7A	3I	
Snohomish	Laborers	Batch Weighman	$37.26	7A	3I	
Snohomish	Laborers	Brick Pavers	$43.95	7A	3I	
Snohomish	Laborers	Brush Cutter	$43.95	7A	3I	
Snohomish	Laborers	Brush Hog Feeder	$43.95	7A	3I	
Snohomish	Laborers	Burner	$43.95	7A	3I	
Snohomish	Laborers	Caisson Worker	$45.32	7A	3I	
Snohomish	Laborers	Carpenter Tender	$43.95	7A	3I	
Snohomish	Laborers	Caulker	$43.95	7A	3I	
Snohomish	Laborers	Cement Dumper-paving	$44.76	7A	3I	
Snohomish	Laborers	Cement Finisher Tender	$43.95	7A	3I	
Snohomish	Laborers	Change House Or Dry Shack	$43.95	7A	3I	
Snohomish	Laborers	Chipping Gun (under 30 Lbs.)	$43.95	7A	3I	
Snohomish	Laborers	Chipping Gun(30 Lbs.	$44.76	7A	3I	

		And Over)				
Snohomish	Laborers	Choker Setter	$43.95	7A	3I	
Snohomish	Laborers	Chuck Tender	$43.95	7A	3I	
Snohomish	Laborers	Clary Power Spreader	$44.76	7A	3I	
Snohomish	Laborers	Clean-up Laborer	$43.95	7A	3I	
Snohomish	Laborers	Concrete Dumper/chute Operator	$44.76	7A	3I	
Snohomish	Laborers	Concrete Form Stripper	$43.95	7A	3I	
Snohomish	Laborers	Concrete Placement Crew	$44.76	7A	3I	
Snohomish	Laborers	Concrete Saw Operator/core Driller	$44.76	7A	3I	
Snohomish	Laborers	Crusher Feeder	$37.26	7A	3I	
Snohomish	Laborers	Curing Laborer	$43.95	7A	3I	
Snohomish	Laborers	Demolition: Wrecking & Moving (incl. Charred Material)	$43.95	7A	3I	
Snohomish	Laborers	Ditch Digger	$43.95	7A	3I	
Snohomish	Laborers	Diver	$45.32	7A	3I	
Snohomish	Laborers	Drill Operator (hydraulic,diamond)	$44.76	7A	3I	
Snohomish	Laborers	Dry Stack Walls	$43.95	7A	3I	
Snohomish	Laborers	Dump Person	$43.95	7A	3I	
Snohomish	Laborers	Epoxy Technician	$43.95	7A	3I	
Snohomish	Laborers	Erosion Control Worker	$43.95	7A	3I	
Snohomish	Laborers	Faller & Bucker Chain Saw	$44.76	7A	3I	
Snohomish	Laborers	Fine Graders	$43.95	7A	3I	
Snohomish	Laborers	Firewatch	$37.26	7A	3I	
Snohomish	Laborers	Form Setter	$43.95	7A	3I	
Snohomish	Laborers	Gabian Basket Builders	$43.95	7A	3I	
Snohomish	Laborers	General Laborer	$43.95	7A	3I	
Snohomish	Laborers	Grade Checker & Transit Person	$45.32	7A	3I	
Snohomish	Laborers	Grinders	$43.95	7A	3I	
Snohomish	Laborers	Grout Machine Tender	$43.95	7A	3I	
Snohomish	Laborers	Groutmen (pressure)including Post Tension Beams	$44.76	7A	3I	
Snohomish	Laborers	Guardrail Erector	$43.95	7A	3I	
Snohomish	Laborers	Hazardous Waste Worker (level A)	$45.32	7A	3I	
Snohomish	Laborers	Hazardous Waste Worker (level B)	$44.76	7A	3I	
Snohomish	Laborers	Hazardous Waste Worker	$43.95	7A	3I	

		(level C)				
Snohomish	Laborers	High Scaler	$45.32	7A	3I	
Snohomish	Laborers	Jackhammer	$44.76	7A	3I	
Snohomish	Laborers	Laserbeam Operator	$44.76	7A	3I	
Snohomish	Laborers	Maintenance Person	$43.95	7A	3I	
Snohomish	Laborers	Manhole Builder-mudman	$44.76	7A	3I	
Snohomish	Laborers	Material Yard Person	$43.95	7A	3I	
Snohomish	Laborers	Motorman-dinky Locomotive	$44.76	7A	3I	
Snohomish	Laborers	Nozzleman (concrete Pump, Green Cutter When Using Combination Of High Pressure Air & Water On Concrete & Rock, Sandblast, Gunite, Shotcrete, Water Bla	$44.76	7A	3I	
Snohomish	Laborers	Pavement Breaker	$44.76	7A	3I	
Snohomish	Laborers	Pilot Car	$37.26	7A	3I	
Snohomish	Laborers	Pipe Layer Lead	$45.32	7A	3I	
Snohomish	Laborers	Pipe Layer/tailor	$44.76	7A	3I	
Snohomish	Laborers	Pipe Pot Tender	$44.76	7A	3I	
Snohomish	Laborers	Pipe Reliner	$44.76	7A	3I	
Snohomish	Laborers	Pipe Wrapper	$44.76	7A	3I	
Snohomish	Laborers	Pot Tender	$43.95	7A	3I	
Snohomish	Laborers	Powderman	$45.32	7A	3I	
Snohomish	Laborers	Powderman's Helper	$43.95	7A	3I	
Snohomish	Laborers	Power Jacks	$44.76	7A	3I	
Snohomish	Laborers	Railroad Spike Puller - Power	$44.76	7A	3I	
Snohomish	Laborers	Raker - Asphalt	$45.32	7A	3I	
Snohomish	Laborers	Re-timberman	$45.32	7A	3I	
Snohomish	Laborers	Remote Equipment Operator	$44.76	7A	3I	
Snohomish	Laborers	Rigger/signal Person	$44.76	7A	3I	
Snohomish	Laborers	Rip Rap Person	$43.95	7A	3I	
Snohomish	Laborers	Rivet Buster	$44.76	7A	3I	
Snohomish	Laborers	Rodder	$44.76	7A	3I	
Snohomish	Laborers	Scaffold Erector	$43.95	7A	3I	
Snohomish	Laborers	Scale Person	$43.95	7A	3I	
Snohomish	Laborers	Sloper (over 20")	$44.76	7A	3I	
Snohomish	Laborers	Sloper Sprayer	$43.95	7A	3I	
Snohomish	Laborers	Spreader (concrete)	$44.76	7A	3I	
Snohomish	Laborers	Stake Hopper	$43.95	7A	3I	
Snohomish	Laborers	Stock Piler	$43.95	7A	3I	

Snohomish	Laborers	Tamper & Similar Electric, Air & Gas Operated Tools	$44.76	7A	3I	
Snohomish	Laborers	Tamper (multiple & Self-propelled)	$44.76	7A	3I	
Snohomish	Laborers	Timber Person - Sewer (lagger, Shorer & Cribber)	$44.76	7A	3I	
Snohomish	Laborers	Toolroom Person (at Jobsite)	$43.95	7A	3I	
Snohomish	Laborers	Topper	$43.95	7A	3I	
Snohomish	Laborers	Track Laborer	$43.95	7A	3I	
Snohomish	Laborers	Track Liner (power)	$44.76	7A	3I	
Snohomish	Laborers	Traffic Control Laborer	$39.84	7A	3I	8R
Snohomish	Laborers	Traffic Control Supervisor	$39.84	7A	3I	8R
Snohomish	Laborers	Truck Spotter	$43.95	7A	3I	
Snohomish	Laborers	Tugger Operator	$44.76	7A	3I	
Snohomish	Laborers	Tunnel Work-Compressed Air Worker 0-30 psi	$74.29	7A	3I	8Q
Snohomish	Laborers	Tunnel Work-Compressed Air Worker 30.01-44.00 psi	$79.32	7A	3I	8Q
Snohomish	Laborers	Tunnel Work-Compressed Air Worker 44.01-54.00 psi	$83.00	7A	3I	8Q
Snohomish	Laborers	Tunnel Work-Compressed Air Worker 54.01-60.00 psi	$88.70	7A	3I	8Q
Snohomish	Laborers	Tunnel Work-Compressed Air Worker 60.01-64.00 psi	$90.82	7A	3I	8Q
Snohomish	Laborers	Tunnel Work-Compressed Air Worker 64.01-68.00 psi	$95.92	7A	3I	8Q
Snohomish	Laborers	Tunnel Work-Compressed Air Worker 68.01-70.00 psi	$97.82	7A	3I	8Q
Snohomish	Laborers	Tunnel Work-Compressed Air Worker 70.01-72.00 psi	$99.82	7A	3I	8Q
Snohomish	Laborers	Tunnel Work-Compressed Air Worker 72.01-74.00 psi	$101.82	7A	3I	8Q
Snohomish	Laborers	Tunnel Work-Guage and Lock Tender	$45.42	7A	3I	8Q
Snohomish	Laborers	Tunnel Work-Miner	$45.42	7A	3I	8Q
Snohomish	Laborers	Vibrator	$44.76	7A	3I	

Snohomish	Laborers	Vinyl Seamer	$43.95	7A	3I	
Snohomish	Laborers	Watchman	$33.86	7A	3I	
Snohomish	Laborers	Welder	$44.76	7A	3I	
Snohomish	Laborers	Well Point Laborer	$44.76	7A	3I	
Snohomish	Laborers	Window Washer/cleaner	$33.86	7A	3I	
Snohomish	Laborers - Underground Sewer & Water	General Laborer & Topman	$43.95	7A	3I	
Snohomish	Laborers - Underground Sewer & Water	Pipe Layer	$44.76	7A	3I	
Snohomish	Landscape Construction	Irrigation Or Lawn Sprinkler Installers	$17.31		1	
Snohomish	Landscape Construction	Landscape Equipment Operators Or Truck Drivers	$20.06		1	
Snohomish	Landscape Construction	Landscaping Or Planting Laborers	$14.13		1	
Snohomish	Lathers	Journey Level	$54.02	5D	1H	
Snohomish	Marble Setters	Journey Level	$52.82	5A	1M	
Snohomish	Metal Fabrication (In Shop)	Fitter	$15.38		1	
Snohomish	Metal Fabrication (In Shop)	Laborer	$9.79		1	
Snohomish	Metal Fabrication (In Shop)	Machine Operator	$9.47		1	
Snohomish	Metal Fabrication (In Shop)	Painter	$9.98		1	
Snohomish	Metal Fabrication (In Shop)	Welder	$15.38		1	
Snohomish	Millwright	Journey Level	$55.52	5D	4C	
Snohomish	Modular Buildings	Journey Level	$9.47		1	
Snohomish	Painters	Journey Level	$39.35	6Z	2B	
Snohomish	Pile Driver	Journey Level	$54.27	5D	4C	
Snohomish	Plasterers	Journey Level	$51.68	7Q	1R	
Snohomish	Playground & Park Equipment Installers	Journey Level	$11.94		1	
Snohomish	Plumbers & Pipefitters	Journey Level	$65.52	5A	1G	
Snohomish	Power Equipment Operators	Asphalt Plant Operators	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators	Assistant Engineer	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators	Barrier Machine (zipper)	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators	Batch Plant Operator, Concrete	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators	Bobcat	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators	Brokk - Remote Demolition Equipment	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators	Brooms	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators	Bump Cutter	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators	Cableways	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators	Chipper	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators	Compressor	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators	Concrete Pump: Truck	$56.94	7A	3C	8P

		Mount With Boom Attachment Over 42 M				
Snohomish	Power Equipment Operators	Concrete Finish Machine -laser Screed	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators	Concrete Pump - Mounted Or Trailer High Pressure Line Pump, Pump High Pressure.	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators	Concrete Pump: Truck Mount With Boom Attachment Up To 42m	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators	Conveyors	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators	Cranes Friction: 200 tons and over	$58.67	7A	3C	8P
Snohomish	Power Equipment Operators	Cranes: 20 Tons Through 44 Tons With Attachments	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators	Cranes: 100 Tons Through 199 Tons, Or 150' Of Boom (Including Jib With Attachments)	$57.51	7A	3C	8P
Snohomish	Power Equipment Operators	Cranes: 200 tons- 299 tons, or 250’ of boom including jib with attachments	$58.10	7A	3C	8P
Snohomish	Power Equipment Operators	Cranes: 300 tons and over or 300’ of boom including jib with attachments	$58.67	7A	3C	8P
Snohomish	Power Equipment Operators	Cranes: 45 Tons Through 99 Tons, Under 150' Of Boom (including Jib With Attachments)	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators	Cranes: A-frame - 10 Tons And Under	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators	Cranes: Friction cranes through 199 tons	$58.10	7A	3C	8P
Snohomish	Power Equipment Operators	Cranes: Through 19 Tons With Attachments A-frame Over 10 Tons	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators	Crusher	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators	Deck Engineer/deck Winches (power)	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators	Derricks, On Building Work	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators	Dozers D-9 & Under	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators	Drill Oilers: Auger Type, Truck Or Crane Mount	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators	Drilling Machine	$57.51	7A	3C	8P

Snohomish	Power Equipment Operators	Elevator And Man-lift: Permanent And Shaft Type	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators	Finishing Machine, Bidwell And Gamaco & Similar Equipment	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators	Forklift: 3000 Lbs And Over With Attachments	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators	Forklifts: Under 3000 Lbs. With Attachments	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators	Grade Engineer: Using Blue Prints, Cut Sheets, Etc	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators	Gradechecker/stakeman	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators	Guardrail Punch	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators	Hard Tail End Dump Articulating Off- Road Equipment 45 Yards. & Over	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators	Hard Tail End Dump Articulating Off-road Equipment Under 45 Yards	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators	Horizontal/directional Drill Locator	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators	Horizontal/directional Drill Operator	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators	Hydralifts/boom Trucks Over 10 Tons	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators	Hydralifts/boom Trucks, 10 Tons And Under	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators	Loader, Overhead 8 Yards. & Over	$57.51	7A	3C	8P
Snohomish	Power Equipment Operators	Loader, Overhead, 6 Yards. But Not Including 8 Yards	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators	Loaders, Overhead Under 6 Yards	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators	Loaders, Plant Feed	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators	Loaders: Elevating Type Belt	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators	Locomotives, All	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators	Material Transfer Device	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators	Mechanics, All (leadmen - $0.50 Per Hour Over Mechanic)	$57.51	7A	3C	8P
Snohomish	Power Equipment Operators	Motor Patrol Graders	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators	Mucking Machine, Mole,	$56.94	7A	3C	8P

		Tunnel Drill, Boring, Road Header And/or Shield				
Snohomish	Power Equipment Operators	Oil Distributors, Blower Distribution & Mulch Seeding Operator	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators	Outside Hoists (elevators And Manlifts), Air Tuggers,strato	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators	Overhead, Bridge Type Crane: 20 Tons Through 44 Tons	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators	Overhead, Bridge Type: 100 Tons And Over	$57.51	7A	3C	8P
Snohomish	Power Equipment Operators	Overhead, Bridge Type: 45 Tons Through 99 Tons	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators	Pavement Breaker	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators	Pile Driver (other Than Crane Mount)	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators	Plant Oiler - Asphalt, Crusher	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators	Posthole Digger, Mechanical	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators	Power Plant	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators	Pumps - Water	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators	Quad 9, Hd 41, D10 And Over	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators	Quick Tower - No Cab, Under 100 Feet In Height Based To Boom	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators	Remote Control Operator On Rubber Tired Earth Moving Equipment	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators	Rigger And Bellman	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators	Rigger/Signal Person, Bellman (Certified)	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators	Rollagon	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators	Roller, Other Than Plant Mix	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators	Roller, Plant Mix Or Multi-lift Materials	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators	Roto-mill, Roto-grinder	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators	Saws - Concrete	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators	Scraper, Self Propelled Under 45 Yards	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators	Scrapers - Concrete & Carry All	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators	Scrapers, Self-propelled:	$56.94	7A	3C	8P

		45 Yards And Over				
Snohomish	Power Equipment Operators	Service Engineers - Equipment	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators	Shotcrete/gunite Equipment	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators	Shovel , Excavator, Backhoe, Tractors Under 15 Metric Tons.	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators	Shovel, Excavator, Backhoe: Over 30 Metric Tons To 50 Metric Tons	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators	Shovel, Excavator, Backhoes, Tractors: 15 To 30 Metric Tons	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators	Shovel, Excavator, Backhoes: Over 50 Metric Tons To 90 Metric Tons	$57.51	7A	3C	8P
Snohomish	Power Equipment Operators	Shovel, Excavator, Backhoes: Over 90 Metric Tons	$58.10	7A	3C	8P
Snohomish	Power Equipment Operators	Slipform Pavers	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators	Spreader, Topsider & Screedman	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators	Subgrader Trimmer	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators	Tower Bucket Elevators	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators	Tower Crane Up To 175' In Height Base To Boom	$57.51	7A	3C	8P
Snohomish	Power Equipment Operators	Tower Crane: over 175’ through 250’ in height, base to boom	$58.10	7A	3C	8P
Snohomish	Power Equipment Operators	Tower Cranes: over 250’ in height from base to boom	$58.67	7A	3C	8P
Snohomish	Power Equipment Operators	Transporters, All Track Or Truck Type	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators	Trenching Machines	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators	Truck Crane Oiler/driver - 100 Tons And Over	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators	Truck Crane Oiler/driver Under 100 Tons	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators	Truck Mount Portable Conveyor	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators	Welder	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators	Wheel Tractors, Farmall Type	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators	Yo Yo Pay Dozer	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators- Underground	Asphalt Plant Operators	$56.94	7A	3C	8P

	Sewer & Water					
Snohomish	Power Equipment Operators- Underground Sewer & Water	Assistant Engineer	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Barrier Machine (zipper)	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Batch Plant Operator, Concrete	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Bobcat	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Brokk - Remote Demolition Equipment	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Brooms	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Bump Cutter	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Cableways	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Chipper	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Compressor	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Concrete Pump: Truck Mount With Boom Attachment Over 42 M	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Concrete Finish Machine -laser Screed	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Concrete Pump - Mounted Or Trailer High Pressure Line Pump, Pump High Pressure.	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Concrete Pump: Truck Mount With Boom Attachment Up To 42m	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Conveyors	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Cranes Friction: 200 tons and over	$58.67	7A	3C	8P

Snohomish	Power Equipment Operators- Underground Sewer & Water	Cranes: 20 Tons Through 44 Tons With Attachments	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Cranes: 100 Tons Through 199 Tons, Or 150' Of Boom (Including Jib With Attachments)	$57.51	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Cranes: 200 tons- 299 tons, or 250’ of boom including jib with attachments	$58.10	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Cranes: 300 tons and over or 300’ of boom including jib with attachments	$58.67	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Cranes: 45 Tons Through 99 Tons, Under 150' Of Boom (including Jib With Attachments)	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Cranes: A-frame - 10 Tons And Under	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Cranes: Friction cranes through 199 tons	$58.10	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Cranes: Through 19 Tons With Attachments A-frame Over 10 Tons	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Crusher	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Deck Engineer/deck Winches (power)	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Derricks, On Building Work	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Dozers D-9 & Under	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Drill Oilers: Auger Type, Truck Or Crane Mount	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Drilling Machine	$57.51	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Elevator And Man-lift: Permanent And Shaft Type	$53.57	7A	3C	8P
Snohomish	Power Equipment	Finishing Machine,	$56.44	7A	3C	8P

	Operators- Underground Sewer & Water	Bidwell And Gamaco & Similar Equipment				
Snohomish	Power Equipment Operators- Underground Sewer & Water	Forklift: 3000 Lbs And Over With Attachments	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Forklifts: Under 3000 Lbs. With Attachments	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Grade Engineer: Using Blue Prints, Cut Sheets, Etc	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Gradechecker/stakeman	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Guardrail Punch	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Hard Tail End Dump Articulating Off- Road Equipment 45 Yards. & Over	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Hard Tail End Dump Articulating Off-road Equipment Under 45 Yards	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Horizontal/directional Drill Locator	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Horizontal/directional Drill Operator	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Hydralifts/boom Trucks Over 10 Tons	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Hydralifts/boom Trucks, 10 Tons And Under	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Loader, Overhead 8 Yards. & Over	$57.51	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Loader, Overhead, 6 Yards. But Not Including 8 Yards	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Loaders, Overhead Under 6 Yards	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Loaders, Plant Feed	$56.44	7A	3C	8P
Snohomish	Power Equipment	Loaders: Elevating Type	$56.00	7A	3C	8P

	Operators- Underground Sewer & Water	Belt				
Snohomish	Power Equipment Operators- Underground Sewer & Water	Locomotives, All	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Material Transfer Device	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Mechanics, All (leadmen - $0.50 Per Hour Over Mechanic)	$57.51	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Motor Patrol Graders	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Mucking Machine, Mole, Tunnel Drill, Boring, Road Header And/or Shield	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Oil Distributors, Blower Distribution & Mulch Seeding Operator	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Outside Hoists (elevators And Manlifts), Air Tuggers,strato	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Overhead, Bridge Type Crane: 20 Tons Through 44 Tons	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Overhead, Bridge Type: 100 Tons And Over	$57.51	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Overhead, Bridge Type: 45 Tons Through 99 Tons	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Pavement Breaker	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Pile Driver (other Than Crane Mount)	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Plant Oiler - Asphalt, Crusher	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Posthole Digger, Mechanical	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Power Plant	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators- Underground	Pumps - Water	$53.57	7A	3C	8P

	Sewer & Water					
Snohomish	Power Equipment Operators- Underground Sewer & Water	Quad 9, Hd 41, D10 And Over	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Quick Tower - No Cab, Under 100 Feet In Height Based To Boom	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Remote Control Operator On Rubber Tired Earth Moving Equipment	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Rigger And Bellman	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Rigger/Signal Person, Bellman (Certified)	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Rollagon	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Roller, Other Than Plant Mix	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Roller, Plant Mix Or Multi-lift Materials	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Roto-mill, Roto-grinder	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Saws - Concrete	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Scraper, Self Propelled Under 45 Yards	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Scrapers - Concrete & Carry All	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Scrapers, Self-propelled: 45 Yards And Over	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Service Engineers - Equipment	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Shotcrete/gunite Equipment	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Shovel , Excavator, Backhoe, Tractors Under 15 Metric Tons.	$56.00	7A	3C	8P
Snohomish	Power Equipment	Shovel, Excavator,	$56.94	7A	3C	8P

	Operators- Underground Sewer & Water	Backhoe: Over 30 Metric Tons To 50 Metric Tons				
Snohomish	Power Equipment Operators- Underground Sewer & Water	Shovel, Excavator, Backhoes, Tractors: 15 To 30 Metric Tons	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Shovel, Excavator, Backhoes: Over 50 Metric Tons To 90 Metric Tons	$57.51	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Shovel, Excavator, Backhoes: Over 90 Metric Tons	$58.10	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Slipform Pavers	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Spreader, Topsider & Screedman	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Subgrader Trimmer	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Tower Bucket Elevators	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Tower Crane Up To 175' In Height Base To Boom	$57.51	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Tower Crane: over 175’ through 250’ in height, base to boom	$58.10	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Tower Cranes: over 250’ in height from base to boom	$58.67	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Transporters, All Track Or Truck Type	$56.94	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Trenching Machines	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Truck Crane Oiler/driver - 100 Tons And Over	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Truck Crane Oiler/driver Under 100 Tons	$56.00	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Truck Mount Portable Conveyor	$56.44	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Welder	$56.94	7A	3C	8P

Snohomish	Power Equipment Operators- Underground Sewer & Water	Wheel Tractors, Farmall Type	$53.57	7A	3C	8P
Snohomish	Power Equipment Operators- Underground Sewer & Water	Yo Yo Pay Dozer	$56.44	7A	3C	8P
Snohomish	Power Line Clearance Tree Trimmers	Journey Level In Charge	$45.75	5A	4A	
Snohomish	Power Line Clearance Tree Trimmers	Spray Person	$43.38	5A	4A	
Snohomish	Power Line Clearance Tree Trimmers	Tree Equipment Operator	$45.75	5A	4A	
Snohomish	Power Line Clearance Tree Trimmers	Tree Trimmer	$40.84	5A	4A	
Snohomish	Power Line Clearance Tree Trimmers	Tree Trimmer Groundperson	$30.74	5A	4A	
Snohomish	Refrigeration & Air Conditioning Mechanics	Mechanic	$65.52	5A	1G	
Snohomish	Residential Brick Mason	Journey Level	$20.00		1	
Snohomish	Residential Carpenters	Journey Level	$40.66	5D	4C	
Snohomish	Residential Cement Masons	Journey Level	$14.00		1	
Snohomish	Residential Drywall Applicators	Journey Level	$40.64	5D	4C	
Snohomish	Residential Drywall Tapers	Journey Level	$54.07	5P	1E	
Snohomish	Residential Electricians	Journey Level	$32.24	7F	1D	
Snohomish	Residential Glaziers	Journey Level	$38.40	7L	1H	
Snohomish	Residential Insulation Applicators	Journey Level	$25.68		1	
Snohomish	Residential Laborers	Journey Level	$20.73		1	
Snohomish	Residential Marble Setters	Journey Level	$30.74		1	
Snohomish	Residential Painters	Journey Level	$17.46		1	
Snohomish	Residential Plumbers & Pipefitters	Journey Level	$28.99		1	
Snohomish	Residential Refrigeration & Air Conditioning Mechanics	Journey Level	$37.72	5A	1G	
Snohomish	Residential Sheet Metal Workers	Journey Level (Field or Shop)	$43.46	7F	1R	
Snohomish	Residential Soft Floor Layers	Journey Level	$44.11	5A	3D	
Snohomish	Residential Sprinkler Fitters (Fire Protection)	Journey Level	$42.73	5C	2R	
Snohomish	Residential Stone Masons	Journey Level	$30.74		1	
Snohomish	Residential Terrazzo Workers	Journey Level	$9.47		1	
Snohomish	Residential Terrazzo/Tile Finishers	Journey Level	$21.60		1	
Snohomish	Residential Tile Setters	Journey Level	$25.17		1	

Snohomish	Roofers	Journey Level	$46.46	5A	3H	
Snohomish	Roofers	Using Irritable Bituminous Materials	$49.46	5A	3H	
Snohomish	Sheet Metal Workers	Journey Level (Field or Shop)	$72.83	7F	1E	
Snohomish	Shipbuilding & Ship Repair	Boilermaker	$40.87	7M	1H	
Snohomish	Shipbuilding & Ship Repair	Carpenter	$39.46	7R	2B	
Snohomish	Shipbuilding & Ship Repair	Electrician	$37.58	5T	3E	
Snohomish	Shipbuilding & Ship Repair	Heat & Frost Insulator	$63.18	5J	1S	
Snohomish	Shipbuilding & Ship Repair	Laborer	$27.88	5T	3E	
Snohomish	Shipbuilding & Ship Repair	Machinist	$37.58	5T	3E	
Snohomish	Shipbuilding & Ship Repair	Painter	$39.35	6Z	2B	
Snohomish	Shipbuilding & Ship Repair	Shipfitter	$37.58	5T	3E	
Snohomish	Shipbuilding & Ship Repair	Welder/Burner	$37.58	5T	3E	
Snohomish	Sign Makers & Installers (Electrical)	Sign Installer	$26.56		1	
Snohomish	Sign Makers & Installers (Electrical)	Sign Maker	$20.50		1	
Snohomish	Sign Makers & Installers (Non-Electrical)	Sign Installer	$22.56		1	
Snohomish	Sign Makers & Installers (Non-Electrical)	Sign Maker	$20.50		1	
Snohomish	Soft Floor Layers	Journey Level	$44.11	5A	3D	
Snohomish	Solar Controls For Windows	Journey Level	$9.47		1	
Snohomish	Sprinkler Fitters (Fire Protection)	Journey Level	$70.14	5C	1X	
Snohomish	Stage Rigging Mechanics (Non Structural)	Journey Level	$13.23		1	
Snohomish	Stone Masons	Journey Level	$52.82	5A	1M	
Snohomish	Street And Parking Lot Sweeper Workers	Journey Level	$15.00		1	
Snohomish	Surveyors	Assistant Construction Site Surveyor	$56.00	7A	3C	8P
Snohomish	Surveyors	Chainman	$55.47	7A	3C	8P
Snohomish	Surveyors	Construction Site Surveyor	$56.94	7A	3C	8P
Snohomish	Telecommunication Technicians	Journey Level	$22.38		1	
Snohomish	Telephone Line Construction - Outside	Cable Splicer	$37.60	5A	2B	
Snohomish	Telephone Line Construction - Outside	Hole Digger/Ground Person	$20.79	5A	2B	
Snohomish	Telephone Line Construction - Outside	Installer (Repairer)	$36.02	5A	2B	
Snohomish	Telephone Line Construction - Outside	Special Aparatus Installer I	$37.60	5A	2B	

Snohomish	Telephone Line Construction - Outside	Special Apparatus Installer II	$36.82	5A	2B	
Snohomish	Telephone Line Construction - Outside	Telephone Equipment Operator (Heavy)	$37.60	5A	2B	
Snohomish	Telephone Line Construction - Outside	Telephone Equipment Operator (Light)	$34.94	5A	2B	
Snohomish	Telephone Line Construction - Outside	Telephone Lineperson	$34.93	5A	2B	
Snohomish	Telephone Line Construction - Outside	Television Groundperson	$19.73	5A	2B	
Snohomish	Telephone Line Construction - Outside	Television Lineperson/Installer	$26.31	5A	2B	
Snohomish	Telephone Line Construction - Outside	Television System Technician	$31.50	5A	2B	
Snohomish	Telephone Line Construction - Outside	Television Technician	$28.23	5A	2B	
Snohomish	Telephone Line Construction - Outside	Tree Trimmer	$34.93	5A	2B	
Snohomish	Terrazzo Workers	Journey Level	$47.46	5A	1M	
Snohomish	Tile Setters	Journey Level	$47.46	5A	1M	
Snohomish	Tile, Marble & Terrazzo Finishers	Finisher	$38.29	5A	1B	
Snohomish	Traffic Control Stripers	Journey Level	$43.73	7A	1K	
Snohomish	Truck Drivers	Asphalt Mix Over 16 Yards (W. WA-Joint Council 28)	$51.25	5D	3A	8L
Snohomish	Truck Drivers	Asphalt Mix To 16 Yards (W. WA-Joint Council 28)	$50.41	5D	3A	8L
Snohomish	Truck Drivers	Dump Truck	$37.94		1	
Snohomish	Truck Drivers	Dump Truck And Trailer	$38.52		1	
Snohomish	Truck Drivers	Other Trucks	$38.52		1	
Snohomish	Truck Drivers	Transit Mixer	$34.63		1	
Snohomish	Well Drillers & Irrigation Pump Installers	Irrigation Pump Installer	$17.05		1	
Snohomish	Well Drillers & Irrigation Pump Installers	Oiler	$13.93		1	
Snohomish	Well Drillers & Irrigation Pump Installers	Well Driller	$19.01		1	

****

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. D. 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 15% over the hourly rate of wage. All other hours worked after 6:00 am 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.

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.

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.

Holiday Codes

5. A. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, and Christmas Day (7).

B. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, the day before Christmas, and Christmas Day (8).

C. Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8).

D. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8).

H. Holidays: New Year's Day, Memorial Day, Independence Day, Thanksgiving Day, the Day after Thanksgiving Day, And Christmas (6).

Holiday Codes Continued

5. 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).

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).

Holiday Codes Continued

6. T. Paid Holidays: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, The Friday After Thanksgiving Day, The Last Working Day Before Christmas Day, And Christmas Day (9).

Z. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, And Christmas Day (7). If a holiday falls on Saturday, the preceding Friday shall be considered as the holiday. If a holiday falls on Sunday, the following Monday shall be considered as the holiday.

7. A. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8). Any Holiday Which Falls On A Sunday Shall Be Observed As A Holiday On The Following Monday. If any of the listed holidays falls on a Saturday, the preceding Friday shall be a regular work day.

B. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

C. Holidays: New Year's Day, Martin Luther King Jr. Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

D. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8). Unpaid Holidays: President's Day. Any paid holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any paid holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

E. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

F. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, the last working day before Christmas day and Christmas day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

G. Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day (6). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday.

H. Holidays: New Year's Day, Martin Luther King Jr. Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, the Last Working Day before Christmas Day and Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

I. Holidays: New Year's Day, President's Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day, The Friday After Thanksgiving Day, The Day Before Christmas Day And Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

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.

Holiday Codes Continued

7. 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.

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. A. In addition to the hourly wage and fringe benefits, the following 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 100' To 150' -$3.00 per Foot for Each Foot Over 100 Feet
Over 150' To 220' -$4.00 per Foot for Each Foot Over 150 Feet
Over 220' -$5.00 per Foot for Each Foot Over 220 Feet

Note Codes Continued

8. C. In addition to the hourly wage and fringe benefits, the following depth premiums apply to depths of fifty feet or more:
Over 50' To 100' -$1.00 per Foot for Each Foot Over 50 Feet
Over 100' To 150' -$1.50 per Foot for Each Foot Over 100 Feet
Over 150' To 200' -$2.00 per Foot for Each Foot Over 150 Feet
Over 200' -Divers May Name Their Own Price

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.

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.