CITY OF SNOHOMISH
WASHINGTON

SPECIFICATIONS, PROPOSAL AND CONTRACT DOCUMENTS

FOR

RESERVOIR NO. 2 PRESSURE REDUCING VALVE

ISSUED FOR BID
APRIL 2016

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

CITY OF SNOHOMISH
RESERVOIR NO. 2 PRESSURE REDUCING VALVE (PRV)
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 Avenue, Snohomish, WA 98290, until 2:00 PM, Pacific Coast Time, Monday, May 16, 2016, and then publicly opened and read aloud.

The work under this contract will construct a new pressure reducing valve (PRV) station at the south zone reservoir property and connect to the existing 362 and 218 Zone piping as shown on the project plans and identified in the technical specifications.

A non mandatory pre-bid walk through will be held on-site at 10:00 AM on Wednesday, May 4, 2016, at the South Zone Reservoirs located at 301 13th Street, Snohomish, WA 98290.

Project Title: **Reservoir No. 2 Pressure Reducing Valve (PRV)**

Engineer's Estimate Range: $100,000 - $150,000

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.ci.snohomish.wa.us/105/RFPs and in the office of the City of Snohomish Public Works Engineering Department, located at 112 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 $3,000,000 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 Max Selin, P.E., Senior Utilities Engineer, at (360) 282-3196 or at selin@snohomishwa.gov.

Dated this 27th day of April, 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 **RESERVOIR NO. 2 PRESSURE REDUCING VALVE (PRV)**. 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 (10) 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 Sr. Utilities Engineer, Max Selin, PE, at (360) 282-3196 or at selin@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
RESERVOIR NO. 2 PRESSURE REDUCING VALVE 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	DESCRIPTION	QTY	UNITS	UNIT PRICE	AMOUNT
PREPARATION					
1	MOBILIZATION AND DEMOBILIZATION	1	LS		
2	SPCC PLAN	1	LS		
3	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	1	LS		
4	SURVEYING AND STAKING	1	LS		
5	TESC	1	LS		

GRADING

6	UNSUITABLE FOUNDATION EXCAVATION INCLUDING HAUL	10	CY		
7	FOUNDATION MATERIAL	10	CY		
8	OVER EXCAVATION INCLUDING HAUL	10	CY		

SURFACING AND PAVEMENT

9	ASPHALT PATCHING	20	SY		
10	ASPHALT SAW CUT	65	LF		

CONCRETE

11	CONCRETE CURB AND GUTTER	20	LF		
12	CONCRETE SIDEWALK	12	SY		

UTILITIES

13	12” DI WATER MAIN CL 52	120	LF		
14	10” DI WATER MAIN CL 52	60	LF		
15	TRENCH EXCAVATION SAFETY SYSTEMS	1	LS		
16	16” TAPPING TEE ASSEMBLY W/TB	1	EA		
17	10” TAPPING TEE ASSEMBLY W/TB	1	EA		
18	PRV STATION WITH APPURTENANCES	1	LS		
19	12” DI 22.5° BEND (MJXMJ) W/TB	1	EA		
20	12” DI 45° BEND (MJXMJ) W/TB	4	EA		
21	12” DI 45° BEND (FLXFL) W/TB	1	EA		
22	10” DI 22.5° BEND (MJXMJ) W/TB	1	EA		
23	10” DI 45° BEND (MJXMJ) W/TB	1	EA		
24	12” X 8” DI REDUCER (MJXMJ)	1	EA		
25	10” X 8” DI REDUCER (MJXMJ)	1	EA		
26	IMPORT TRENCH BACKFILL	50	CY		
27	5/8” MINUS CRUSHED SURFACING TOP COURSE	100	TN		

TRAFFIC

28	PROJECT TEMPORARY TRAFFIC CONTROL	1	LS		

MISCELLANEOUS

29	RESTORATION, TRIMMING AND CLEANUP	1	LS		
30	MINOR CHANGES	1	F.A.	$10,000	$10,000

Subtotal Bid Items 1-30	
9.1% WSST	
Total Bid	

RECEIPT OF ADDENDA

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

Addendum #	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: **Reservoir No. 2 Pressure Reducing Valve 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 **Reservoir No. 2 Pressure Reducing Valve 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).

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	Contractor:
By _____ Signature	By: _____ Signature
Title: _____	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.

RESERVOIR NO. 2 PRESSURE REDUCING VALVE 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 **Reservoir No. 2 Pressure Reducing Valve 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. 2010 APWA Supplement General Special Provisions
7. AWWA Standards and Specifications
8. Special Provisions
9. Technical Specifications
10. Contract Drawings (Plans)
11. Addenda (if any)

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 _____
Title

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 **Reservoir No. 2 Pressure Reducing Valve 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**: Reservoir No. 2 Pressure Reducing Valve 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

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: _____

_____
Name, Title

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: **Reservoir No. 2 Pressure Reducing Valve 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 **_____, 2016.**

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

_____
Contractor

Title:

CITY OF SNOHOMISH

_____
City Manager

ATTEST:

_____
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	

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
$^{3}/_{8}$ 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: o sidewalks o road approaches o ditches o slopes o paths o trails o gores o prelevel o temporary pavement[1] o 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: o 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 $\frac{3}{8}$ inch or larger shall not exceed the values specified in Section 9-03.1(4)A and for aggregates smaller than $\frac{3}{8}$ 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

INTRODUCTION TO THE SPECIAL PROVISIONS

(July 31, 2007 APWA GSP)

The work on this project shall be accomplished in accordance with the *Standard Specifications for Road, Bridge and Municipal Construction*, 2014 edition, as issued by the Washington State Department of Transportation (WSDOT) and the American Public Works Association (APWA), Washington State Chapter (hereafter "Standard Specifications"). The Standard Specifications, as modified or supplemented by the Amendments to the Standard Specifications and these Special Provisions, all of which are made a part of the Contract Documents, shall govern all of the Work.

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

The project-specific Special Provisions are not labeled as such. The GSPs are labeled under the headers of each GSP, with the date of the GSP and its source, as follows:

(May 18, 2007 APWA GSP)
(August 7, 2006 WSDOT GSP)
(April 2016 COS)

Also incorporated into the Contract Documents by reference are:

- *Manual on Uniform Traffic Control Devices for Streets and Highways*, currently adopted edition, with Washington State modifications, if any
- *Standard Plans for Road, Bridge and Municipal Construction*, WSDOT/APWA, current edition
- *City of Snohomish Engineering Design and Construction Standards*

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.

DIVISION 1
GENERAL REQUIREMENTS

DESCRIPTION OF WORK
(March 13, 1995 WSDOT GSP)

The work under this contract provides for the construction of a new pressure reducing valve (PRV) station, installation of approximately 120 LF of 12-inch ductile iron water main, 60 LF of 10-inch ductile iron water main, connection to the existing 362 and 218 Zones, removal of structures and obstructions, clearing, grubbing, erosion control, traffic control, utility conflict resolution, miscellaneous surface restoration, and other related items, all as located within the City of Snohomish's corporate limits, easements, and public right-of-way, as shown on the drawings and specified in these technical provisions

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, Contract Plans, 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 the Engineer determines 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.

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 or Engineer to the Contractor authorizing and directing the Contractor to proceed with the work and establishing the date on which the contract time begins.

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

1-02 BID PROCEDURES AND CONDITIONS

1-02.1 Prequalification of Bidders

Delete this Section and replace it with the following:

1-02.1 Qualifications of Bidder
(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, plans and specifications will be issued to the Contractor at no cost as detailed below:

To Prime Contractor	No. of Sets	Basis of Distribution
Contract Provisions	2	Furnished automatically upon award.
Large plans (e.g., 22" x 34")	2	Furnished automatically upon award.

Additional plans and Contract Provisions 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
(April 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 on the Plans and in the Contract. Bidders are cautioned that alternate sources of information (copies of the Contract obtained from third parties) are not necessarily an accurate of complete representation of the Plans and Contract. Bidders shall use such information at their own risk.

City of Snohomish storm and sewer standards are included in the Appendix.

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.

The project is divided among three bidding schedules. Award will be made as a whole to one BIDDER however; the City reserves the right to award one, all, none or any combination of the Schedules thereof that best serves the interest of the City.

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 maximum bid amount that could be awarded;

5. Signature of the bidder's officer empowered to sign official statements. The signature of the person authorized to submit the bid should agree with the signature on the bond, and the title of the person must accompany the said signature;
6. The signature of the surety's officer empowered to sign the bond and the power of attorney.

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

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 two 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 business 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 they are 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 QuantitiesReplacement

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.

1-05.7 Removal of Defective and Unauthorized Work

(October 1, 2005 APWA GSP)

Supplement this section with the following:

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

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

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

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

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

1-05.11 Final Inspection

Delete this section and replace it with the following:

1-05.11 Final Inspections and Operational Testing

(October 1, 2005 APWA GSP)

1-05.11(1) Substantial Completion Date

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

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

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

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

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

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

If action to correct the listed deficiencies is not initiated within 7 days after receipt of the written notice listing the deficiencies, the Engineer may, upon written notice to the Contractor, take whatever steps are necessary to correct those deficiencies pursuant to Section 1-05.7. The Contractor will not be allowed an extension of contract time because of a delay in the performance of the work attributable to the exercise of the Engineer's right hereunder.

Upon correction of all deficiencies, the Engineer will notify the Contractor and the Contracting Agency, in writing, of the date upon which the work was considered physically complete. That date shall constitute the Physical Completion Date of the contract, but shall

not imply acceptance of the work or that all the obligations of the Contractor under the contract have been fulfilled.

1-05.11(3) Operational Testing

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

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

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

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 Project Engineer. All correspondence from the Contractor constituting any notification, notice of protest, notice of dispute, or other correspondence constituting notification required to be furnished under the Contract, must be in paper format, hand delivered or sent via mail delivery service to the Project Engineer's office. Electronic copies such as e-mails or electronically delivered copies

of correspondence will not constitute such notice and will not comply with the requirements of the Contract.

Add the following new section:

1-05.16 Water and Power
(October 1, 2005 APWA GSP)

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

Add the following new section:

1-05.17 Oral Agreements
(October 1, 2005 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

Buy America
Section 1-06 is supplemented with the following:

(August 6, 2007 WSDOT GSP)
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 false work.

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

(April 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 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 review of the Contractor's work plan, safety plan, construction sequence, 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 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

Section 1-07.5 is supplemented with the following:

(August 3, 2009 WSDOT GSP)
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
(April 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 with out 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 Derek DeBardi Sewer and Storm Division Lead 425-328-6251
Power Snohomish County PUD 360-563-2218	**Gas** Puget Sound Energy 1-888-225-5773
Cable Comcast 425-754-0064	**Phone** Frontier 425-231-4609

1-07.17(2) Utility Construction, Removal, or Relocation by Others
(April 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 as provided in Section 1-05.14.

The Contractor shall coordinate all work with the various utility companies and their Contractors. The Contractor, when scheduling his work crews, shall use production rates that anticipate the need to provide buck-outs and/or gaps in the driveways, curb and gutter, and/or pavement sections where existing utility structures currently exist, and then come back at a later time to construct the missing sections after the utility has been relocated or adjusted by the applicable utility. The Contractor shall assume that the utilities will not be relocated prior to construction of this project nor at his convenience during the course of construction. As such, the Contractor shall assume such, and schedule his crews and his subcontractors to remobilize to the various sites and temporarily relocate his or his subcontractor's crews to other areas of the project and complete other unaffected portions of the project in order to coordinate the relocation of the utilities with the various utility companies. There shall be no additional money or time due the Contractor for leaving gaps or for buck-out construction, remobilization, demobilization, out of sequence construction, relocation of work crews, and construction of curb, gutter, or driveway patches after the utility has been relocated. It is the intent of these Specifications that the Contractor diligently pursue other work on the site when such conflicts occur and recognize and plan for the inherent inefficiencies and impaired production rates.

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) 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 business days notice to the Contractor to correct the breach, immediately terminate the contract or, at its discretion, procure or renew such insurance and pay any and all premiums in connection therewith, with any sums so expended to be repaid to the Contracting Agency on demand, or at the sole discretion of the Contracting Agency, offset against funds due the Contractor from the Contracting Agency.

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)
Blasting (only required when the Contractor's work under this Contract includes exposures to which this specified coverage responds)

Such policy must provide the following minimum limits:

$3,000,000 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

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

(August 7, 2006 WSDOT GSP)
Lane closures are subject to the following restrictions:

1. Single 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:

No road closures will be allowed for this project. The Contractor shall submit a traffic control plan that details traffic control during construction in Pine Avenue and/or in 13th Street.

No traffic revisions in Pine Avenue and/or in 13th Street 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:

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

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

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

Whenever easements or rights of entry have not been acquired prior to advertising, these areas are so noted in the Plans. The Contractor shall not proceed with any portion of the work in areas where right of way, easements or rights of entry have not been acquired until the Engineer certifies to the Contractor that the right of way or easement is available or that the right of entry has been received. If the Contractor is delayed due to acts of omission on

the part of the Contracting Agency in obtaining easements, rights of entry or right of way, the Contractor will be entitled to an extension of time. The Contractor agrees that such delay shall not be a breach of contract.

Each property owner shall be given 48 hours notice prior to entry by the Contractor. This includes entry onto easements and private property where private improvements must be adjusted.

The Contractor shall be responsible for providing, without expense or liability to the Contracting Agency, any additional land and access thereto that the Contractor may desire for temporary construction facilities, storage of materials, or other Contractor needs. However, before using any private property, whether adjoining the work or not, the Contractor shall file with the Engineer a written permission of the private property owner, and, upon vacating the premises, a written release from the property owner of each property disturbed or otherwise interfered with by reasons of construction pursued under this contract. The statement shall be signed by the private property owner, or proper authority acting for the owner of the private property affected, stating that permission has been granted to use the property and all necessary permits have been obtained or, in the case of a release, that the restoration of the property has been satisfactorily accomplished. The statement shall include the parcel number, address, and date of signature. Written releases must be filed with the Engineer before the Completion Date will be established.

1-08 PROSECUTION AND PROGRESS

Add the following new section:

1-08.0 Preliminary Matters

(May 25, 2006 APWA GSP)

Add the following new section:

1-08.0(1) Preconstruction Conference

(October 10, 2008 APWA GSP)

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

1. To review the initial progress schedule;
2. To establish a working understanding among the various parties associated or affected by the work;
3. To establish and review procedures for progress payment, notifications, approvals, submittals, etc.;
4. To establish normal working hours for the work;
5. To review safety standards and traffic control; and

6. To discuss such other related items as may be pertinent to the work.

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

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

Add the following new section:

1-08.0(2) Hours of Work
(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 any consecutive 8-hour period between 7:00 a.m. and 6:00 p.m. of a working day with a maximum 1-hour lunch break and a 5-day work week. 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 Engineer 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 Engineer 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 or Engineer. These conditions may include but are not limited to: requiring the Engineer or such assistants as the Engineer may deem necessary 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 Engineer. The Contractor shall commence construction activities on the project site within ten days of the Notice to Proceed Date, unless otherwise approved in writing. The Contractor shall diligently pursue the work to the physical completion date within the time specified in the contract. Voluntary shutdown or slowing of operations by the Contractor shall not relieve the Contractor of the responsibility to complete the work within the time(s) specified in the contract.

1-08.5 Time for Completion
(April 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 Engineer 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 5th 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. 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 Engineer 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 Engineer determines to be unworkable. If the Contractor disagrees with any statement issued by the Engineer, 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 Engineer 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 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 Engineer 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 Project Engineer prior to establishing a Completion Date:

    a. Certified payrolls (Federal-aid projects or if requested by the City);

    b. Material acceptance certification documents;

    c. Annual report of amounts paid as MBE/WBE participants or quarterly report of amounts credited as DBE participation, as required by the Contract Provisions

    d. Final Contract voucher certification;

    e. Property owner releases if needed as required by Section 1-07.24.

1-08.5 Time for Completion
(June 28, 2007 APWA GSP, Option B)

Revise the third and fourth paragraphs to read:

Contract time shall begin on the first working day following the seventh calendar day after the Notice to Proceed date. If the Contractor starts work on the project at an earlier date, then contract time shall begin on the first working day when onsite work begins.

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

Revise the sixth paragraph to read:

The Engineer will give the Contractor written notice of the completion date of the contract after all the Contractor's obligations under the contract have been performed by the Contractor. The following events must occur before the Completion Date can be established:

1. The physical work on the project must be complete; and
2. The Contractor must furnish all documentation required by the contract and required by law, to allow the Contracting Agency to process final acceptance of the contract. The following documents must be received by the Project Engineer prior to establishing a completion date:
   a. Certified Payrolls (each pay period)
   b. Material Acceptance Certification Documents
   c. A report listing the names and addresses of the subcontractors and suppliers receiving contract funds from the Project.
   d. Final Contract Voucher Certification
   e. Any Property owner releases per 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 during suspension (as required in Section 1-07.23 or the Special Provisions). This may include a temporary road or detour.

1-09.1 Asphalt
(April 2016 COS)

Supplement this section with the following:

Asphalt Patch shall be measured by trench neat line and shall be replaced to a thickness in-kind with a minimum thickness of 4-inches. Payment for Asphalt Patch shall be per square yard based on measurement parameters listed in this supplement.

1-09.6 Force Account
(October 10, 2008 APWA GSP)

Supplement this section with the following:

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

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

2-01.5 Payment

Revise this section as follows:

Any clearing and grubbing required for the work shown on the Plans shall be considered as incidental to and included in the Bid Item "12" DI WATER MAIN CL 52", "10" DI WATER MAIN CL 52" and PRV STATION WITH APPURTENANCES no additional payment shall be made for clearing, grubbing and roadside cleanup.

2-02 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

2-02.1 Description

(April 2016 COS)

This Section is supplemented with the following:

This work also consists of removing, handling and disposing of deleterious material or debris encountered during trench excavation or other work as indicated on the Plans within the Project site, including, but not limited to, existing pipes and pipe anchors, utility structures or appurtenances, riprap, buried concrete including thrust blocks, concrete footings and/or slabs, buried logs or debris, asphalt pavement, cement concrete pavement, sidewalks, cement concrete curb and gutter, fences, landscaping items, rock walls, guardrail, signs and any and all other structures and obstructions (unless a separate bid item has been provided for this work).

2-02.3 Construction Requirements
(April 2016 COS)

This Section is supplemented with the following:

The removal of any existing improvements shall be conducted in such a manner as not to damage utilities and any portion of the infrastructure that is to remain in place. Any deviation in this matter will obligate the Contractor at his own expense, to repair, replace or otherwise make proper restoration to the satisfaction of the Contracting Agency.

When sawing of asphalt or concrete or combinations of materials is required, the depth of cut shall be as such to accomplish the intended purpose, without damaging surfaces to be left in place and will be determined in the field to the satisfaction of the Engineer.

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

(April 2016 COS)

This Section is supplemented with the following:

Existing cement concrete sidewalks, driveways, roadway slabs, curbs, and curbs and gutters shall be removed at the nearest construction joint where possible and removed and waste hauled as required for the construction of this Project. Where directed by the Engineer, cement concrete curbs or curb and gutter shall be saw-cut per Section 2-02.3(6) prior to removal. Existing asphalt pavement shall be precut per Section 2-02.3(6) before commencing excavation and shall be removed as required for the construction. Removal of pavement, sidewalk, curbs and gutters shall be paid for under the bid item “Removal of Structures and Obstructions”. No additional payment will be made for removal of pavement, sidewalks, curbs and gutters.

2-02.3(5) Waste Disposal (New Section)
(April 2016 COS)

Waste materials shall be loaded and hauled to a waste site secured by the Contractor and shall be disposed of in such a manner as to meet all requirements of state, county and municipal regulations regarding health, safety and public welfare.

Trench excavation soils that need to be disposed may be hauled to the City Pit located at 123rd Ave SE, Snohomish, WA, if approved by the Public Works Inspector. Contractor shall coordinate hauling all soils, if approved, to the City Pit with the Public Works Inspector relative to haul hours and off loading locations.

2-02.3(6) Sawcutting (New Section)
(December 7, 2006 G&O) 14

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.

2-02.4 Measurement

Supplement this section with the following:

Sawcutting will be measured by the linear foot of sawcut, along the line and grade of the sawcut and the limits of the sawcut as shown in the Plans.

2-02.5 Payment

Supplement this section with the following:

"Saw cutting", per linear foot.

The unit contract price per linear foot for "Sawcutting" shall be full pay for performing the work as specified, including containment, collection, and disposal of all saw cutting debris and wastewater. 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

2-03.3(14)C Compacting Earth Embankments

Supplement this section with the following:

Method C shall be used for this project. Additionally, the Contractor shall be responsible for all compaction testing and associated costs for this project.

2-03.4 Measurement
(April 2016 COS)

This Section is supplemented with the following:

Measurement of Over Excavation and Unsuitable Foundation Excavation, Incl. Haul will be per cubic yard, as field neat line measured in the excavated area (not truck measurement)

2-04 HAUL
(April 2016 COS)

This Section is supplemented with the following:

If the sources of materials provided by the Contractor necessitates hauling over any public roads, the Contractor shall, at the Contractor’s expense, make all arrangements for the use of the haul routes. No separate monies will be due the Contractor for this work.

2-09 STRUCTURE EXCAVATION

(April 2016 COS)

This Section is supplemented with the following:

When any work is being considered by the Contractor in the vicinity of an existing utility, the Contractor shall so inform an authority of the particular utility in ample time so that the utility involved and the Contractor may take any precautions necessary to facilitate construction in the vicinity of the utility, and thereby protect that particular utility from damage.

Protecting and Maintaining Utility Service

The Contractor shall protect and maintain the operational service of existing utility systems in a continuous manner as possible. The Contractor shall have the approval from the Engineer and notification shall be given to the Contracting Agency before any disruptions of service in existing utilities will be allowed. The Contractor shall comply with all the conditions established by the Engineer and the Contracting Agency. The Contractor shall give the utility owner a minimum notice of 48 hours before disrupting any planned service interruption. No planned interruption to an existing system shall be allowed on Fridays, weekends, or holidays, unless specifically agreed to in writing by the Contracting Agency. Where services are to be shut down, affected parties shall be notified in writing by the Contractor (i.e., door hangers) at least 48 hours and not more than 72 hours in advance of the time and period of shut down. The Contractor shall make every effort to keep shut down schedules to periods of anticipated minimum usage and for the least period of time.

Where the construction crosses or is adjacent to existing utilities, the Contractor shall exercise extreme care to protect such utilities from damage. Additionally, the Contractor shall review the Plans, the project site and familiarize himself with the various utilities and plan his construction activities in recognition that the very close proximity of existing utilities to the proposed work will adversely affect production rates of installation of the various planned improvements. The Contractor is hereby advised and cautioned that the location of existing utilities will be cause for considerable and extreme care and due diligence on the part of the Contractor. As such, work production rates are anticipated to be significantly impacted by their presence and normal production rates should not be anticipated, during construction by the Contractor for work in these areas. The Contractor shall anticipate minor alignment adjustments will also be required to accommodate the installation of utilities.

4-04.5 Payment
(April 2016 COS)

This Section is supplemented with the following:

The unit contract prices bid for the various types of ballast, structural fill, crushed surfacing base course, and crushed surfacing top course materials shall include all costs for obtaining and providing the materials, hauling the materials to the site, stockpiling, spreading, grading, shaping, compaction, compaction testing all compaction testing, material testing, (the Contractor

shall be responsible for all compaction and material testing for this project) and all other incidentals, complete, in place and in good working order. Asphalt grindings are not subject to reimbursement under any of these bid items. Asphalt grindings shall not be used on this project unless approved in writing by the City Engineer.

drainage structures, storm sewers, sanitary sewers, water mains and conduits

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

7-05.3 Construction Requirements
(April 2016 COS)

This Section is supplemented with the following:

The Contractor shall construct all vaults from precast concrete bases, structures and risers. In unimproved areas, the rim elevations shall be set as shown on the Plans. Dewatering shall be per Section 7-08.3(1).

Pipe connections to the vault shall be Link-Seal as shown on the Plans.

All pipes entering the vault structure shall be securely connected to the structure as shown on the plans per manufacturer's recommendations to effectively seal the pipe to the structure.

7-05.4 Measurement
(April 2016 COS)

This Section is supplemented with the following:

The PRV vault is included in the bid item "PRV Station With Appurtenances". No additional measurement will be made for the vault.

7-05.5 Payment
(April 2016 COS)

This Section is supplemented with the following:

The PRV vault is included in the bid item "PRV Station with Appurtenances". No additional payment will be made for the vault.

7-08 GENERAL PIPE INSTALLATION REQUIREMENTS

7-08.2 Materials
(April 2016 COS)

This Section is supplemented with the following:

Gravel Backfill for Pipe Zone Bedding shall meet the requirements of Section 9-03.9(3) for Top Course.

Bank Run Gravel for Trench Backfill shall meet the requirements of Section 9-03.14(1) for Gravel Borrow. The Contractor may also use CSTC for Trench Backfill meeting the requirements of Section 9-03.9(3) for Top Course.

7-08.3(1) A Trenches

This Section is supplemented with the following:

Payment for trench excavation shall be included in the unit price for each respective pipe and PRV Station to be installed as part of this project. No separate or additional payment for trench excavation beyond the unit price bid for each respective pipe will be paid.

The length of trench excavation in advance of pipe laying shall be kept to a maximum of 100 feet. Excavation shall either be closed up at the end of the day or protected per Section 1.07.23(1).

The Contractor shall limit his excavation to the limits of the maximum payment width and depth shown on the Plans. If the Contractor purposely or neglectfully excavates trenches to a width or depth beyond the neat line payment limit of the trench as shown on the Plans, the expenses associated with any additional trenching, waste haul, trench backfill, compaction, compaction testing, material testing and surface restoration as a result of excavating beyond the neat line payment limits shall be borne by the Contractor.

It is not anticipated that solid rock other than existing landscape rock will be encountered. Should such material be encountered, the excavation, removal and waste haul will be paid for by change order per Section 1-04.4. Boulders or broken rock less than 2 cubic yards in volume, shall not be classified as rock, nor will so called “hard-pan” or cemented gravel, even though it may be advantageous to use special equipment in its removal.

Trench excavation shall also include waste hauling all excess and/or unsuitable material encountered, including but not limited to, abandoned pipelines, concrete, asphalt, tree stumps, trees, logs, abandoned rail ties, piling, and riprap.

The Contractor shall furnish all equipment necessary to dewater the excavation. Before operations begin, the Contractor shall have sufficient pumping equipment and/or other machinery available on site to assure that the operation of any dewatering system can be maintained.

The Contractor shall dispose of the water in such a manner as not to cause a nuisance or menace to the public, and comply with all codes, regulations, and ordinances of applicable governing authorities with regard to drilling, dewatering, and erosion control. The release of groundwater to its static level shall be performed in such a manner as to maintain the undisturbed state of the natural foundation soil, prevent disturbance of backfill and prevent movement of structures and pipelines.

The dewatering system shall be installed and operated by the Contractor so that the groundwater level outside the excavation is not reduced to the extent that would damage or endanger adjacent structures or property. Should settlement of the surrounding area and/or structures be observed, the Contractor shall cease dewatering operations and implement contingency plans. The cost of

repairing any damage to adjacent structures, underground facilities or utilities and satisfactory restoration of above ground facilities to include fences, paving, concrete, etc., shall be the responsibility of the Contractor.

The Contractor shall be required to comply with all conditions and requirements mandated by the Department of Ecology for the construction, operation, and decommissioning of dewatering facilities.

7-08.3(2)B Pipe Laying – General
(April 2016 COS)

This Section is supplemented with the following:

All pipe shall be unloaded from delivery vehicles with mechanical equipment. Dropping of pipe onto the ground or mats will not be permitted. All pipe and fittings shall be carefully lowered into the trench in such a way as to prevent damage to pipe materials and protective coatings and linings. Under no circumstances shall materials be dropped or dumped into the trench.

Every precaution shall be taken to prevent foreign material from entering the pipe while it is being laid. The pipe shall be secured in place with pipe bedding tamped under it. Precaution shall be taken to prevent dirt from entering the joint space. At times when pipe laying is not in progress, the open ends of pipe shall be closed by a watertight plug or other means approved by the Contracting Agency. If water is in the trench when work resumes, the seal shall remain in place until the trench is dewatered as specified for groundwater control.

All connections to existing pipe of differing materials shall be made with adapters which are specifically manufactured for this purpose. If the band type adapters are used, then only stainless steel bands will be allowed. Pipe shall be installed in compliance with the manufacturer's recommendations and the City of Snohomish Engineering Standards.

7-08.4 Measurement

(April 2016 COS)

Delete all paragraphs under this Section and replace with the following:

Measurement for Removal of Unsuitable Material (Trench) will be per cubic yard as field neat line measured in the excavated area (not truck measurement) of material removed below the foundation depth as shown on the Plans.

7-08.5 Payment

(April 2016 COS)

Delete all paragraphs under this Section and replace with the following:

Payment will be made in accordance with Section 1-04.1, for each of the following bid items that are included in the Proposal:

"Unsuitable Foundation Excavation Including Haul" per cubic yard.

The unit contract price per cubic yard for "Unsuitable foundation excavation including haul" shall constitute full compensation for all labor, materials, tools, equipment, transportation, supplies, and incidentals required to complete all work to remove unsuitable material below the trench bottom, to include but not limited to excavation, removal and waste haul of unsuitable excavated material and dewatering.

"Trench Excavation Safety Systems," lump sum.
The lump sum contract price for "Trench Excavation Safety Systems" shall include all costs of furnishing, installing, maintaining, and removing those items necessary to provide adequate safety systems for trench excavation, as specified in Section 2 09.3(3)D. This item shall be paid proportionate to the satisfactory installation of all facilities that require trench excavation safety systems including pipeline, conduits, walls, embankments, and structures as noted in the Proposal, or otherwise required for the performance of this work.

"**Import Trench Backfill," per ton.**
The unit contract price per ton for "Import Trench Backfill" shall constitute full compensation for all labor, materials, tools, equipment, transportation, supplies, and incidentals required to complete all work to furnish and install this item, to include but not limited to backfill trenches, dewatering, excavation, loading, waste haul of excess excavated native material, and placing, shaping, compacting, compaction testing, and material testing the import trench backfill material.

All costs of plugging and abandoning of pipe, structures, and appurtenances to be left in place shall be considered incidental to the Project and merged into the various items bid. All costs to providing dewatering as required shall be included into the unit contract price for the type and size of pipe installed. All costs of providing bypass pumping as required shall be included into the unit contract price for the type and size of pipe installed.

7-09 WATER MAINS

Payment will be made in accordance with Section 1-04.1, for each of the following bid items that are included in the Proposal:

7-09.5 Payment

Bid Item 13 - 12" DI Water Main CL 52
Bid Item 14 - 10" DI Water Main CL 52

The unit price bid per lineal foot for ductile iron water main, CL 52, shall constitute full compensation for all labor, materials, tools, equipment, transportation, supplies, and incidentals required to complete all work to furnish and install this item, to include but not limited to excavation, pipe bedding, backfilling, compaction, pipe welding, compaction testing, material testing (the Contractor shall be responsible for all compaction and material testing for this project), removal and waste haul of excess or unsuitable excavated material, dewatering, bypass pumping and maintaining water service, connections to existing and new systems, flushing, cleaning, disinfection and testing.

7-09.5 TAPPING TEE ASSEMBLY W/TB
(April 2016 COS)

This section shall be supplemented with the following:

7-09.4 Measurement

This Section is supplemented with the following:

Bid Item 16 - 16-Inch Tapping Tee Assembly W/TB
Bid Item 17 - 10-Inch Tapping Tee Assembly W/TB

Measurement of tapping tee assemblies w/TB shall be per each.

7-09.5 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:

This section shall be supplemented with the following:

Bid Item 16 - 16-Inch Tapping Tee Assembly W/TB
Bid Item 17 - 10-Inch Tapping Tee Assembly W/TB

The unit price bid shall constitute full compensation for all labor, materials, tools, equipment, transportation, fuel, supplies, and incidentals required to complete all work to furnish and install these items, to include but not limited to excavation, pipe bedding, thrust blocking, backfilling, compaction, pipe welding, compaction testing, material testing (the Contractor shall be responsible for all compaction and material testing for this project), removal and waste haul of excess or unsuitable excavated material, dewatering, bypass pumping and maintaining water service, connections to existing and new systems, flushing, cleaning, disinfection and testing.

7-09.5 PRV STATION WITH APPURTENANCES
(April 2016 COS)

7-09.4 Measurement

This Section is supplemented with the following:

Bid Item 18 - PRV Station with Appurtenances

Measurement of PRV Station with Appurtenances will be for the complete station as noted in the project plans and specifications.

7-09.5 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:

The lump sum price for PRV Station with Appurtenances shall cover the complete cost for providing all labor, materials, tools and equipment necessary for constructing the complete PRV Station with Appurtenances as shown on the Plans and detailed in the contract specifications including but not limited to:

- Furnishing and installing the pre-cast concrete vault, access hatch with skid resistance treatment, ladder, pipe supports, and all incidentals including structure excavation, removal of unsuitable materials, backfill, compaction and surface restoration;
- Furnishing and installing potable water pipe between and including reducer/increaser on each side of the vault, valves, fittings, thrust restraint, including trenching, excavation, removal of unsuitable materials, disinfection and testing, backfill, compaction and compaction testing;
- Core drilling, filling and sealing of all penetrations in the vault for piping;
- Furnishing and installing all pressure reducing valves;
- Furnishing and installing coatings.

7-09.5 WATER MAIN FITTINGS
(April 2016 COS)

7-09.4 Measurement

This Section is supplemented with the following:

Bid Item 19 - 12” DI 22.5° Bend (MJXMJ) W/TB
Bid Item 20 - 12” DI 45° Bend (MJXMJ) W/TB
Bid Item 21 - 12” DI 45° Bend (FLXFL) W/TB
Bid Item 22 - 10” DI 22.5° Bend (MJXMJ) W/TB
Bid Item 23 - 10” DI 45° Bend (MJXMJ) W/TB

Bid Item 24 - 12” X 8” DI Reducer (MJXMJ)
Bid Item 25 - 10” X 8” DI Reducer (MJXMJ)

Measurement of water main fittings shall be per each.

7-09.5 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:

The unit price bid per each for ductile iron water main fittings, Bid Items 19-25, shall constitute full compensation for all labor, materials, tools, equipment, transportation, fuel, supplies, and incidentals required to complete all work to furnish and install these items, to include but not limited to excavation, pipe bedding, backfilling, compaction, thrust blocking, compaction testing, material testing (the Contractor shall be responsible for all compaction and material testing for this project), removal and waste haul of excess or unsuitable excavated material, dewatering, bypass pumping and maintaining water service, connections to existing and new systems, flushing, cleaning, disinfection and testing.

8-01.1 Description

Supplement this section with the following:

This Work includes installation, maintenance, and removal of silt fence, straw bales, filter bags, inlet protection, street cleaning, and all other erosion and water pollution control devices necessary to prevent impacts to the Pilchuck and Snohomish Rivers.

8-04 CURB, GUTTERS, AND SPILLWAYS

8-04.3 Construction Requirements

(April 2016 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 mush be provided twice: at 1 week prior and again 1 day prior to the work being performed.

8-14 CEMENT CONCRETE SIDEWALKS

8-14.3 Construction Requirements

(**April 2016 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 not be allowed. 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.

8-13 MONUMENT CASES

8-13.1 Description

Supplement this section with the following:

This Work shall also include furnishing and replacing monuments under the supervision of a Professional Licensed Surveyor.

8-13.3 Construction Requirements

The fourth paragraph is deleted and this section is supplemented with the following:

The Contractor shall be responsible for reestablishing legal survey markers such as monuments and monument cases under the supervision of a Professional Licensed Surveyor, and for filing all the necessary monument replacement forms through the Washington State Department of Natural Resources.

All survey work performed by the Contractor shall conform to all applicable sections of the Revised Code of Washington and the Washington Administrative Code.

The Contractor shall perform all of the necessary calculations for the contracted survey work and shall provide copies of these calculations to the Contracting Agency. Electronic files of all survey data shall be provided and in a format acceptable to the Contracting Agency.

The Contractor shall provide all traffic control, signing, and temporary traffic control devices in order to provide a safe work zone.

8-13.4 Measurement

Revise this section to read:

Measurement of monument, case and cover will be by the unit for each monument replaced.

8-13.5 Payment

Revise the bid item to read:

"Monument", per each.

8-30 MISCELLANEOUS
(April 2016 COS)

This Section is supplemented with the following:

8-30.1 Project Documentation
(April 2016 COS)

Description

The Work described in this section includes record drawings, photographs, and property release forms.

Construction Requirements Record Drawings

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.

Photographs

The Contractor shall provide comprehensive preconstruction photographs of the entire Work site and adjoining properties. The photographs shall provide complete coverage of all features. Before construction starts, two each 4" x 6" color glossy prints of each exposure, together with the electronic file, shall be delivered to the Contracting Agency. Photographs shall be taken in and along the project limits, prior to construction. Special attention shall be provided to depict existing conditions, edge of pavement, drainage facilities, and utility markers. The photographs shall be of commercial quality and the back of each glossy color print shall indicate the date, name of the project and the location and direction where the photograph was taken. Photographs shall be provided in one bound 3 ring photograph album, with photographs arranged in a logical order and protected by clear plastic sheeting or sleeves specifically made for this purpose. The Contractor shall provide post-construction photographs from the same spot and angle as the pre-construction photographs. The Contractor shall provide a minimum of 24 pre and 24 post-construction photographs of each Work site.

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.

SECTION III

TECHNICAL SPECIFICATIONS

City of Snohomish

TECHNICAL SPECIFICATIONS FOR:

Reservoir No. 2
Pressure Reducing Valve

Project No. SNH 115.095

Spring 2016 Construction

4/13/2016

4/13/2016

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1.10 GENERAL

Sections in these specifications titled "*Common Work for . . .*" shall apply to all following subsections whether directly referenced or not.

Sections in these specifications titled "*Related Sections*" shall be read as integral to the specification as if they were fully detailed within. All work and materials described in such sections shall be provided and performed by the Contractor.

1.11.01 Project Description

This project will add a pressure reducing valve station between the 362 Zone and the 218 Zone for emergency fire flow situations, connecting to 362 Zone 16-inch piping and connecting to 10-inch 218 Zone piping. The valves will be in a pre-cast concrete vault located within the City's 218 Zone reservoir property.

1.11.02 Reuse of Documents

Contractor and any Subcontractor or Supplier shall not:

1. Have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions; or
2. Reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer.
3. The prohibitions of this Paragraph will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

1.11.03 Electronic Data

1. Unless otherwise stated in the Supplementary Conditions, the data furnished by Owner to Contractor, or by Contractor to Owner, that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
2. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 30 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 30-day acceptance period will be corrected by the transferring party.

3. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

1.13 Permits and Licenses

The Owner will secure and pay for the following permits:

Right-of-Way Permit

The Contractor is not required to acquire and pay for other permits A copy of the Owner acquired permits are available at the Owner's office for examination by bidders. Conform to the requirements of these permits and all other permits issued for this project.

1.15 Warranty

The Contractor shall warrant all products used in the construction of this project for a period of one (1) year following project acceptance except for those components and listed warrantees below. *The date of project acceptance is defined as the date the City Council accepts the project.*

Warranty does not cover damage due to misuse by the Owner or conditions outside of the Owner or Contractor's control (force majeure) including but not limited to war, strikes, floods, fire, earthquakes, high winds (over 85 mph for 3 seconds peak gust), freezes below 10 degrees Fahrenheit (Western Washington), governmental restrictions, vandalism, and power failures or surges. The Contractor has control over workmanship, third party subcontractors and parts and materials used to complete the project.

Warranties in addition to this warranty are listed in the following sections:

- Division 2.13.1 Vegetation Protection
- Division 2.90.1 Landscaping
- Division 8.34.2 Access hatches

1.16 Owner Standard Locks and Keys

If construction locks are utilized during the project, Contractor shall provide Owner with construction key(s) for all temporary locks.

1.20 PRICE AND PAYMENT

1.29 Cost Increases for Materials

There shall be no allowance for additional payment should the cost of any materials go up during the course of the original contract timeframe. The Contractor is responsible for securing prices at the time of bid.

1.30 ADMINISTRATIVE

1.31 Responsibilities

1.31.1 Contractor's Responsibility

The work included in this contract is shown on the contract plans and described in these project specifications. All work incidental and necessary to the completion of the work described and shown shall be performed by the Contractor. In submitting a bid for this project, the Bidder warrants that they are an expert in this and related work, that they understand the process and functions shown, and that various work and processes not shown but necessary for the successful operation of this project will be provided by the Contractor.

The General (or Prime) Contractor is fully responsible for providing his subcontractors and suppliers with all relevant portions of the plans and specifications necessary to bid and construct the improvements.

Damage to existing utilities or property shall be repaired or replaced by the Contractor at the Contractor's expense.

The Contractor and each of the Subcontractors are responsible for coordinating the required inspections. There are specific requirements for inspection responsibilities and the advance notice that must be given to minimize construction delays. It is the Contractor's responsibility to be familiar with these requirements, include the coordination necessary in this estimate of project costs and schedule, and to comply with the requirements during construction. Failure to follow proper inspection and notification procedures may result in on-site work stoppages and removal or demolition of unapproved structures or systems, all at the Contractor's expense. See Testing, Startup and Operation section below for details.

Do not start work on this project or on any public or private right-of-way or easement until clearance is given by the Owner. It will be the responsibility of the Contractor to comply with the requirements of any permit for the project. Do not hinder private property access without a 24-hour notice to the private property owner, and do not hinder access for more than an 8-hour period. Do not disrupt emergency aid access to private and public property.

The Contractor is solely responsible for all elements of site safety. Inspections performed by the Owner are only to monitor and record that project plans and specifications are being complied with and construction is consistent with the design intent.

The Contractor shall be responsible for managing, coordinating, and overseeing his subcontractors, suppliers, manufacturers' representatives, or any other persons performing Work. The Contractor shall have a competent representative, familiar with the project and work being performed, on-site at all times.

1.31.1.1 Construction Inspection Scheduling

Unless otherwise noted on the plans or within these specifications, 48-hour prior notice shall be given to the Owner and appropriate reviewing agency for all inspections required for the construction of the project. 48-hour notice is defined as 2 complete working day notice. Time is not counted on weekends and holidays (inspections required on a Monday or the day after a holiday shall be scheduled a minimum of 48 hours in advance not including the holiday hours or weekend hours.)

Contractor shall schedule and arrange for the following inspections and tests with the appropriate reviewing agency and testing company.

- Any additional inspections required by the Building Department, or other approval agency
- Soils and crushed rock compaction
- Asphalt materials and compaction
- Pressure testing
- Water quality testing

1.31.1.2 Contractor Conducted Progress Meetings

The Contractor shall schedule and hold regular on-site progress meetings at least weekly and at other times as requested by the Owner or as required by progress of the work. The Contractor, Owner, and all Subcontractors active on the site must attend each meeting.

1.31.1.3 Contractor Provided Schedule and Non-working Day Approval

Contractor is responsible for providing an up to date construction schedule with each monthly pay estimate and at other times as requested by the Owner or as required by progress of the work. If the current schedule is still inline with the previous schedule, the Contractor shall inform the Owner with each pay estimate. Non-working day approval shall also be received by the Owner with each monthly pay estimate. Owner may delay monthly progress payments if Contractor fails to submit updated schedule and non-working day requests.

1.31.2 Owner Inspector's Responsibility

The Owner may elect to have an inspector on site to monitor, observe and record construction progress. The Contractor maintains complete responsibility to verify construction is meeting the design intent and is being constructed in accordance with the plans and specifications. It is not the responsibility of the Owner's inspector to address neither means and methods issues on site nor direct safety issues on site. The Owner's inspector does not have the authority to stop work if unsafe conditions are observed.1.33 Submittals

1.33.1 Submittal and Shop Drawings

Submittals are required for all items installed on this contract. Submittals shall be addressed to:

City of Snohomish

116 Union Ave

Snohomish, WA 98290

Attn: Max Selin

Email: selin@snohomishwa.gov

Submittals may be provided in electronic format (preferred) or hard copy. Owner reserves the right to require the Contractor to provide hard-copy submittals at no additional cost to the

Owner. Where hard-copy submittals are provided, Contractor shall submit three (3) copies; one set will be returned to the Contractor after review.

Electronic submittal via email is acceptable, however the Contractor shall take responsibility to follow up with the Owner to verify that the submittal was received. The Owner assumes no responsibility for emails that do not make it to the recipient. In the case of electronic submittals, only one copy will be returned to the Contractor, either electronically or hard copy at the Owner's discretion.

Submittal data for each item shall contain sufficient information on each item to determine if it is in compliance with the contract requirements. Submittal cutsheets and datasheets shall be annotated by the Contractor and shall clearly indicate the equipment and materials that will be provided, including any options or additive items. No generic cutsheets or datasheets will be accepted.

Items that are installed in the work that have not been approved through the submittal process shall be removed and an approved product shall be furnished, all at the Contractor's expense.

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

Shop drawings shall be submitted on 8½-inch x 11-inch, 11-inch x 17-inch, or 22-inch x 34-inch sheets and shall contain the following information:

- Project Name as it appears on the Document Cover.
- Prime Contractor and Applicable Subcontractor.
- Owner's Name.
- Applicable Specification and Drawings Reference.
- A stamp showing that the Contractor has checked the equipment for conformance with the contract requirements, coordination with other work on the job, and dimensional suitability.
- A place for the Engineer to stamp.

Submittals that do not comply with these requirements may be returned to the Contractor for re-submittal. The Contractor shall revise and resubmit as necessary. Acceptable submittals will be reviewed as promptly as possible, and transmitted to the Contractor not later than 7 working days after receipt by the Engineer. Delays caused by the need for re-submittal shall not be a basis for an extension of contract time or delay damages.

Shop drawings and submittals shall contain the following information for all items:

A. Shop or equipment drawings, dimensions, and weights.

B. Catalog information.

C. Manufacturer's specifications.

D. Special handling instructions.

E. Maintenance requirements.

F. List of contract exceptions.

By approving and submitting shop drawings and samples, the Contractor warrants that they have determined and verified all field measurements, field construction criteria, materials, catalog numbers, and similar data, and have checked and coordinated each shop drawing with the requirements of the work and of the contract documents.

The Contractor is responsible for identifying the shop drawings and submittals required for this project. Specific submittal requirements are listed in each section of these specifications. Contractor shall keep a complete and up to date copy of all submittals and review responses at the job site readily available to the Owner for inspection.

1.33.2 Substitutions

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

1.33.2.1 Prior to Bid Opening

Before opening bids, the Owner may consider written requests from product suppliers or prime bidders for substitutions. All requests for substitution must be received by Owner a minimum of 7 working days prior to bid opening. Requests shall be accompanied by drawings and specifications in sufficient detail to allow the Owner to determine whether or not the substitute proposed is equal to that specified. All requests shall include a listing of any significant variations in material or methods from those specified. If there are no variations, a statement to that fact shall be included in the request for approval. The determination as to whether or not a proposed substitute is acceptable shall rest solely with the Owner. Approval of substitutions will be only by addendum. The bidder shall include, in the proposal, all costs for any modifications required to adopt the substitute.

1.33.2.2 After Contract Execution

Within 14 days after the date of the contract, the Owner shall consider formal requests from the Contractor for a substitution of products in place of those specified. Submit two copies of each request for a substitution. Data shall include the necessary change in construction methods, including a detailed description of the proposed method and related drawings illustrating the methods. An itemized comparison of each proposed substitution with product or method specified shall be provided.

In making a request for a substitution, the Contractor represents that they have investigated the proposed product or method and has determined that it is equal or superior to the product specified. The Contractor shall coordinate the installation of accepted substitutions into the work, making changes that may be required for the work to be completed. The Contractor waives all claims for additional costs related to substitutions.

1.40 QUALITY CONTROL

1.42 Reference Specifications

Work under this contract shall be performed in accordance with applicable sections of the current Standard Specifications for Road, Bridge and Municipal Construction, Washington State Chapter, American Public Works Association, Washington State Department of Transportation, hereafter referred to as the Standard Specifications and City of Snohomish Engineering Standards.

Certain other referenced standards used in this specification are from the latest editions of:

- UPC Uniform Plumbing Code
- IMC International Mechanical Code
- AWWA American Water Works Association
- ANSI American National Standards Institute
- ASTM American Society for Testing and Materials

1.50 CONSTRUCTION SUPPORT

1.51 Temporary Utilities

The Contractor is responsible for providing all necessary water for construction-related fire protection and utilities required by this contract, or by laws and regulations. Sanitary facilities adequate for all workers shall comply with all codes and regulations.

At the close of this contract, the Contractor shall pay all utility bills that are outstanding, remove all temporary electrical, sanitary, gas, telephone and water facilities, and any other temporary service equipment that may remain.

The Contractor shall make arrangements for and provide all necessary facilities for the necessary water supply for construction at their own expense unless otherwise provided.

1.52 Temporary Facilities

The Contractor is responsible for construction and location of all field offices, all necessary gates and barricades, fences, handrails, guard rails, and securities required by this contract, or by laws and regulations. There shall be shelters and dry facilities for the workers as required. The Contractor shall provide all guards, marks, shields, protective clothing, rain gear, and other equipment required by law, ordinance, labor contracts, Occupational Safety and Health Administration (OSHA) regulations, and other regulations for the maintenance of health and safety. First aid kits and equipment as required by law shall also be supplied.

1.55.26 Traffic Control

Any traffic control activities required during construction shall be consistent with the Uniform Traffic Control Manual, latest edition and applicable local codes.

If flaggers are used, orientation meetings per WAC 296-155-305 shall be held each time a new flagger is introduced to the site or if site conditions change significantly. The Contractor is responsible for scheduling such meetings.

1.59 Site Control

The Contractor shall not perform work activities, store materials or equipment, move equipment through, or disturb in any way the areas outside the "Construction Limits" shown unless approved by the Owner in writing.

1.59.1 Surveying and Staking

The Contractor is responsible for surveying and staking and will stake out the locations of the permanent easements, temporary easements, rights-of-way, and all major facilities shown on the Plans and establish bench marks at locations designated by the Owner. The Contractor shall protect all stakes and marks in their original conditions. If stakes and markings are destroyed or defaced before their use is ended, the cost of replacing them will be at the Contractor's expense. All stakes, points, and marks, shall be administered and approved by a registered professional land surveyor licensed in the State of Washington. Provide approved and stamped survey notes, and control points to the Owner for as-built purposes.

Replace all damaged survey monuments in accordance with WAC 332-120.

1.70 EXECUTION AND CLOSEOUT

1.75 Testing, Startup and Operation

1.75.1 Schedule

The placing of all improvements in service shall consist of three parts: "testing", "startup", and "operation". Not less than **10 calendar days** before the anticipated time for beginning testing, the **Contractor** shall notify and submit to the Owner for approval, **a complete plan for the following:**

1. Schedules for tests: Pressure Relief Valve, hydrostatic pressure test, purity test
2. Product Representatives to be on site: Valve representative
3. Detail schedule of procedures for startup.
4. Complete schedule of events to be accomplished during testing.
5. An outline of work remaining under the contract that will be carried out concurrently with the operation phases.

Failure to provide proper notification to the Owner may lead to liquidated damages if schedule cannot be maintained. If rescheduling is required because components are not ready for testing the notification requirements are reset and shall provide for 10 calendars days advance notice in order to reserve Engineer's and/or Owner Representatives' time.

Not less than 5 working days before the anticipated time for beginning the testing, the Contractor shall provide a list of representatives that will be attending the testing. The Owner may request additional representatives if necessary at no additional cost.

The Contractor shall conduct all testing and startup. Testing and startup shall not be a cause for claims for delay by the Contractor and all expenses for testing and startup shall be incidental to this contract. The Contractor shall make arrangements for all materials, supplies, and labor necessary to efficiently complete the testing, startup, and operation. At a minimum, the Contractor shall provide:

1. Calibrated pressure gauge.

1.75.2 Testing

The Contractor may periodically request preliminary testing for items that must be covered or tested before other work can proceed. In these cases, the work shall not be tested or covered up without timely notice to the Owner of its readiness for testing. Should any work be covered up without notice, approval, or consent, it must, if required by the Owner, be uncovered for examination at the Contractor's expense. Where work is to be tested, all necessary equipment shall be set up and the work given a preliminary test so that any and all defects may be discovered and repaired prior to calling out the Owner for the test.

Final testing shall consist of individual tests and checks made on equipment intended to provide proof of performance of unit and proper operation of unit control together with necessary tests to show system operation in the presence of the Owner. Assure proper alignment, size, condition, capability, strength, proper adjustment, lubrication, pressure, hydraulic test, leakage test, and all other tests deemed necessary by the Owner to determine that all materials and equipment are of specified quality, properly situated, anchored, and in all respects, ready for use. Any certificates required by these specifications by the manufacturer's representatives shall be supplied to the Owner prior to startup.

All piping shall be tested as required by specifications and applicable codes. Tests on individual items of equipment, such as pipelines, structures, controls, and other items shall be as necessary to show proper system operation. During testing, the Contractor shall correct any defective work discovered. Startup shall not begin until all tests required by these specifications have been completed and approved by the Owner.

1.75.3 Scheduling of Owner Review for Testing

See Division 1.75.1 Scheduling for scheduling and notification requirements.

In addition, the Contractor shall provide further notification 2 working days and 2 working hours (to confirm schedule) of the scheduled test to the Owner confirming that the Contractor has successfully completed all preliminary testing and that all equipment, tools, materials, labor, subcontractors, manufacturer's representatives, and all other items required for witnessed testing are available and fully functional. Failure to provide advance notification and confirmation, or meet any of the testing requirements shall constitute a failed test in accordance with the section Inspection and Tests of the General Conditions.

A detailed testing schedule shall be provided by the Contractor and updated as needed to be at least 48 hours ahead of actual testing at the project site. he Contractor is required to have all systems pre-tested to their satisfaction prior to calling the Owner for formal testing.

1.75.30 Startup

Startup shall consist of a simulated operation of all equipment and controls. The purpose of startup shall be to check that all equipment will function under operating conditions, that all interlocking controls and sequences are properly set, and that the facility will function as an operating unit.

Technically qualified factory representatives shall be present for the startup phase. All Representatives shall be trained, qualified, and have experience in troubleshooting and fixing field issues. The startup shall continue until it is demonstrated that all functions, controls, and machinery are functioning correctly.

Authorized factory representatives shall be provided for the following items:

- **Pressure Reducing Valves**

1.77 Cleaning

1.77.2.1 Site and Facility Cleanup

Clean up debris and unused material, and remove from the site and any buildings. If vehicle traffic causes ruts, repair asphalt (new or existing) in paved areas, in other areas back track with dozer or excavator and repair to proposed surface condition including necessary hydroseed, mulch, and landscaping as shown on the plans.

Unpainted exposed concrete structures shall be cleaned to a consistent bare concrete surface finish. Remove extraneous substances such as efflorescence, leakage residue and excess repair materials.

1.77.2.2 Utility Corridor Cleanup

All areas impacted by the work shall be restored to at least original condition, unless specifically identified otherwise in the plans or specifications. All costs are incidental.

If an area of the project will be left idle, or minimal work performed for more than two weeks, the Contractor shall clean up the area prior to moving. In this context, clean-up means: stockpiles and materials shall be removed so as not to be obstructions or hazards; surfaces graded smooth as to their purpose; traffic control systems removed and traffic restored to the satisfaction of the local road agency.

1.79 Training and Documentation

Failure to provide acceptable final documentation including O&M manuals and as-built drawings will result in non-payment of the appropriate bid item in the schedule of prices.

The Contractor shall remove all tags and instructions that come packaged with or attached to equipment used on the project. Deliver all such documents to the Owner bound in a three ring binder or with the Operation and Maintenance Manual. Insert documents in sleeves if they cannot be punched.

1.79.1 Training

At the time that the facility is ready to be put into operation, the Contractor is to conduct an operation and maintenance training meeting with the owner to explain in detail the operation

and maintenance requirements of each of the facility's components. The training meeting shall not occur on the same date(s) as a startup.

Operation of the facility shall commence immediately after completion of testing, startup, and owner training and after satisfactory repairs and adjustments have been made.

1.79.2 Operation and Maintenance Manuals

Prior to the receipt of payment for more than 90 percent of the work, the Contractor shall deliver to the Owner 3 sets of acceptable manufacturer's operating and maintenance instructions covering valves and gauges installed on the Project requiring operational and/or maintenance procedures and for any additional items indicated by the Owner, including coatings furnished under this contract. Each set of instructions shall be bound into multiple volumes; each volume to be complete with an index and bound in a suitable, hard-covered binder. Binders shall be of hard back construction with full length metal hinge. Capacity shall be 3" to 5" as appropriate for the quantity of O&M documentation. More than one binder may be required for large projects. Binders shall be equal to Wilson-Jones WLJ344 series or WLJ369 series or Specialty Loose Leaf models 87784, 98085, 98086, or 98984. Manuals shall be assembled and indexed so that information on each coating and piece of equipment can be readily found.

The operating and maintenance instructions shall include, as a minimum, the following data for each coating and item of mechanical and electrical equipment:

Products

A. Equipment Identification including brand name, model number and serial numbers.

B. Date of manufacture and date of installation on job site.

C. Complete as-built elementary wiring and one-line diagrams.

D. Complete parts list, by generic title and identification number, complete with exploded views of each assembly.

Maintenance

A. Recommended spare parts.

B. Lubrication schedule including the applicable lubricant designation available from the Standard Oil Company of California.

C. Recommended preventive maintenance procedures and schedules. Schedule shall be provided for daily, weekly, monthly, quarterly, semi-annually and annually maintenance.

D. Disassembly and re-assembly instructions including parts identification and a complete parts breakdown for all equipment.

E. Weights of individual components of each item of equipment weighing over 50 pounds.

F. Name, location, and telephone number of the nearest suppliers and spare parts warehouses.

G. All manufacturers' warranties. Include name, address, and telephone number of the manufacturer's representative to be contacted for warranty, parts, or service information.

H. Cleaning, repair, and maintenance instructions for each coating system.

I. Provide videotapes, video CDs or DVDs utilized in the manufacturer's instruction program for the owner.

Operation

A. Recommended trouble-shooting and startup procedures.

B. Recommended step-by-step operating procedures.

C. Emergency operation modes, if applicable.

D. Normal shutdown procedures.

E. Long term shutdown (mothballing) procedures.

F. Equipment specifications and guaranteed performance data.

G. General manuals which describe several items not in the contract will not be accepted unless all references to irrelevant equipment are neatly eradicated or blocked out.

All O&M manuals shall be provided in hard copy. A duplicate CD copy may be provided but shall not substitute a hard copy unless approved by the Owner.

Progress payments for the total contract work in excess of 90 percent completion may not be made until the operation and maintenance manual has been delivered and approved by the Owner, at their discretion.

The Contractor shall secure and deliver to the Owner all equipment warranties and other warranties and guarantees required for all equipment and processes. Delivery shall be done at one time covering all major and minor equipment warranties. Copies of the warranties shall be included in each O & M Manual.

See Division 1.15 for details regarding required warranties for specific components.

1.79.3 Construction Record Drawings

Prior to receiving final payment for the work, the Contractor shall deliver a complete set of acceptable "As-Constructed" records to the Owner. Plans shall be made on clean, unmarked prints for this project in accordance with the following standards:

- Yellow markings or highlights = deleted items
- Red markings = new or modified items

The Contractor shall provide "as-built" information on all items and work shown on the plans showing details of the finished product including dimensions, locations, outlines, changes, manufacturers, etc. The information must be in sufficient detail to allow the Owner's personnel to locate, maintain, and operate the finished product and its various components.

1.80 PERFORMANCE REQUIREMENTS

1.81 Seismic Restraint and Anchorage

Contractor shall furnish seismic restraint for all piping valves, and other mechanical components. Seismic restraint shall be designed to meet IBC (ASCE 7 Chapter 13 – "Seismic Design Requirements for Nonstructural Components") code requirements. The following design values shall be used in calculating seismic forces:

Ip = 1.5	Sds = 0.828 g	Sd1 =0.479 g	Seismic Design Category = D

A complete seismic restraint system shall be provided including struts, straps, bolts, nuts, washers, etc. as required for secure attachment to foundations, pads, ceilings, floors, and/or walls. Contractor shall install restraints in accordance with the manufacturer's requirements as applicable. Seismic restraint systems shall be designed so as not to interfere with normal operations and maintenance of the equipment and other components as shown on the plans. Interference with normal operations and maintenance shall be as determined by the Owner. Drilled-in anchors for non-rotating equipment shall be Concrete Anchors unless otherwise specified.

Contractor shall submit either of the following in accordance with ASCE 7, 13.2.1 for all components:

1. Project-specific design and documentation prepared and submitted by a registered design professional.
2. Submittal of the manufacturer's certification that the component is seismically qualified by
    a. Analysis
    b. Testing in accordance with the alternative set forth in ASCE 7, Section 13.2.5.
    c. Experience data in accordance with the alternative set forth in ASCE 7, Section 13.2.6.

Special Certifications are required for the following systems for Seismic Design Categories C, D, E, and F. Systems shall be certified in accordance with ASCE 7, 13.2.2.

1. Mechanical and electrical equipment that must remain operable following the design earthquake. All mechanical equipment installed under this project falls under this category.

All materials and fabrication shall be as required in these specifications. Contractor shall submit this information to the Owner for review prior to fabrication and installation.

1.82 Pressure Ratings

Fittings, valves, pipe and fluid systems shall have pressure ratings equal to or greater than the pressures identified below, unless specifically called out otherwise in the plans or specifications:

Pipe Function	Working Pressure	Test Pressure

362 Zone	70 to 90 psi	250 psi
218 Zone	5 to 10 psi	250 psi

1.88 Location Designations

The following location designations shall be used except where otherwise noted on the plans:

Dry Locations: Indoor continually dry areas including office, laboratory, blower, and electrical rooms.

Wet Locations: All locations exposed to the weather, whether under a roof or not, or within channels, basins or tanks.

Damp Locations: Process areas; areas containing pumps, valves, and major piping; all spaces wholly or partially underground, or having a wall or ceiling forming part of a channel or tank, unless otherwise designated on the Plans. Any areas which do not fall within the definitions for dry, wet, or corrosive shall be considered damp.

Corrosive Locations: Areas where chlorine gas under pressure, sulfuric acid, or liquid polymer are stored or processed, sewer wetwells and sewer manholes.

Division 2
Sitework

2.00 GENERAL

Sections in these specifications titled "*Common Work for . . .*" shall apply to all following subsections whether directly referenced or not.

2.05 Common Work for Sitework

This division covers that work necessary for providing materials and performing all sitework as described in these specifications and as shown on the Plans.

Part 1 - General

Submittals

Submittal information shall be provided to the Owner for the following items:

- Erosion Control Fence Fabric
- Catch Basin Inserts
- Structural Fill
- Pipe Bedding
- Trench Backfill
- Crushed Surfacing
- Hot Mix Asphalt Paving
- Hydroseed and/or seed, fertilizer, mulch
- Top Soil

Other Items listed in this section or required by the Owner.

2.10 SITE PREPARATION

2.10.2 Clearing and Grubbing

Part 3- Execution

Construction

Clearing and grubbing shall be performed by the Contractor to remove and dispose of unwanted debris, vegetative matter, and other items noted on the Plans within the construction limits and shall conform to Section 2-01 of the Standard Specifications.

Remove and relocate permanent improvements that are within the construction limits, such as mailboxes and traffic signs. Locate mailboxes such that mail service is maintained during construction. Return facilities to original location, or plan location, at completion of local work.

Do not remove organic material including plants, grasses, trees and native topsoil unless directed by the Plans. In instances where the Contractor is allowed to clear areas to facilitate construction but is not required to, any areas disturbed by construction shall be surface restored to existing or better condition including matching surface restoration with hydroseed or plantings as shown in adjacent areas required to be modified by the Plans. Where the Contractor is allowed to clear areas to facilitate construction, surface restoration shall be completed at no additional cost to the owner.

2.10.5 Construction Access

Part 3 - Execution

Repair/Restoration

The Contractor is responsible for maintaining all construction accesses during construction and the cost of such maintenance shall be incidental to the bid price. Maintenance includes repairing settled and damaged areas, and providing dust control. Cost for maintenance due to rain, snow, wind or other weather conditions shall be incidental to the bid price.

Cleaning

Wherever construction vehicle access routes intersect paved roads, provisions must be made by the Contractor to minimize the transport of sediment onto the paved road. The Contractor shall remove all dirt, mud, rocks, vegetation, or other deleterious material from all construction equipment prior to leaving the site. This may include spray washing, sweeping, or other physical methods as necessary to remove materials.

If sediment or other debris is transported onto a paved road surface, the road shall be cleaned thoroughly by the end of the work day. Debris shall be removed from roads by shoveling or sweeping. Street washing shall be allowed only after debris has been removed in this manner.

2.11 Earthwork Materials

2.11.1 Common Work for Earthwork Materials

Part 1 - General

Acceptance at Site

Owner shall review the site near the end of each pay period to determine the equivalent percentage of earthwork completed compared to the total earthwork lump sum price. Contractor shall be paid based on the percentage completed based on Owner's judgment of percent complete.

Part 2 - Products

Source Quality Control

All imported fill material shall be free of hydrocarbons (e.g. gasoline, diesel, oil, etc.), pesticides, herbicides and other hazardous volatile organic compounds (VOCs) and synthetic organic chemicals (SOCs). The Contractor shall provide certification to the owner that the fill is free of these chemicals.

2.11.3 Structural Fill

Part 1 – General

Summary

All fill placed below, beside and against building components, building structures, vaults, manholes, handholes, slabs, sidewalks, and drives shall be "Structural Fill" unless other fill materials are specifically shown on the Plans. The structural fill material has been selected to support the weight of the structure in combination with the existing native material and to prevent adverse movement during an earthquake. The Contractor must take particular care to maintain the integrity of the design by using structural fill where shown.

References

Structural fill around the vault shall conform with Section 9-03.14(1), "Gravel Borrow" of the Standard Specifications.

See specific requirements in the City of Snohomish Engineering Standards for details.

Part 2 – Products

Components

Structural fill shall be soil free of organics, debris, and other deleterious materials. The Owner shall determine if native on-site materials are suitable for use as structural fill.

Part 3 – Execution

Installation/Construction

The moisture content of the material and weather conditions at the time of placement will be used to determine the suitability of native materials for backfill as structural fill. Structural fill shall bear on firm base and be placed in uniform layers not exceeding 12 inches in loose thickness. The backfill area must be free of standing water and the subgrade soils must be stable. Each layer of structural fill shall be compacted to at least 95 percent of its maximum dry density based on the ASTM D-1557 (modified) test procedure.

2.11.4 Pipe Bedding

Part 1 – General

Summary

All fill placed below and around buried utilities shall be "Gravel Backfill for Pipe Bedding". The pipe bedding material has been selected to support the weight of the utility by distributing the load so that the completed utility and backfill system does not weigh more than the native material. In addition, the grain size has been selected so that the bedding will not migrate into the bottom of the trench. The Contractor must take particular care to maintain the integrity of the utility design by using the appropriate pipe bedding material where shown.

References

City of Snohomish Standards are for Crushed Surfacing Top Course to be used for pipe zone bedding per 9-03.9(3) of the Standard Specifications.

Part 3 – Execution

Installation/Construction

Bedding material shall surround the pipe and conduits to the limits shown on the Plans and provide uniform support along the entire length without allowing concentrated loading at joints or bells or that results in any bridging of the pipe. All bedding material shall bear on firm subgrade and be compacted to firm and unyielding condition.

2.11.5 Trench Backfill

Part 1 – General

Summary

All fill placed above the pipe bedding in a trench shall be "Trench Backfill". The trench backfill material has been selected to distribute surface loads over the utility. In addition, the grain size has been selected so that the trench backfill will not migrate into the pipe bedding or trench walls. The Contractor must take particular care to maintain the integrity of the utility design by using the appropriate trench backfill material where shown.

References

City of Snohomish Standards are for Crushed Surfacing Top Course to be used for Trench Backfill for the top 4 feet (9-03.9(3) of the Standard Specifications).

Below 4 feet trench backfill shall consist of materials conforming to Section 9-03.19 "Bank Run Gravel for Trench Backfill" of the Standard Specifications or as approved by the City of Snohomish.

Part 3 – Execution

Installation/Construction

Trench backfill shall be placed and compacted above the pipe bedding to finished grade elevations in unrestored areas or to subgrade elevations in restored areas per City of Snohomish Standards.

In unimproved or landscaped areas trench backfill shall be placed in uniform layers not to exceed 12 inches in loose thickness. Each lift is to be compacted to at least 90 percent of its maximum dry density based on the ASTM D-1557 (modified) test procedure.

In areas where the trench will support roadways or vehicle access areas, trench backfill shall be placed in uniform layers not to exceed 12 inches in loose thickness. Each lift is to be compacted to at least 95 percent of its maximum dry density based on the ASTM D-1557 test procedure (modified proctor) from 0 to 4 feet below finished surface, 90 percent below 4 feet.

2.11.7 Gravel Base Course

Part 1 – General

Summary

All fill placed under paving, foundations or structures and next to native material shall be "Gravel Base Course" unless otherwise called out on the Plans.

References

Aggregate for gravel base course under structures, and foundations shall conform to Section 9-03.10 Aggregate for Gravel Base of the Standard Specifications.

Aggregate for gravel base course under roadways, paved areas, sidewalks and gravel areas shall conform to Section 9-03.9(3) Crushed Surfacing Base Course of the Standard Specifications.

2.11.8 Gravel Top Course

Part 1 – General

Summary

Gravel surface paving as shown on the Plans shall be "Gravel Top Course".

References

Aggregate for gravel top course shall conform to Section 9-03.9(3) Crushed Surfacing Top Course and Keystone of the Standard Specifications.

2.12 Road Surfacing

2.12.1 Common Work for Road Surfacing

2.12.2 Cement Concrete Pavement

Part 1 – General

References

Cement concrete pavement, sidewalks, curb and gutter shall meet the requirements of Division 3. Construction shall comply with Section 5-05 of the Standard Specifications.

Part 3 – Execution

Examination

Evidence of pavement damage such as surface cracking, ponding or other variations in surface consistency shall be investigated by the Contractor and reported to the Engineer.

Construction

Pavement areas damaged by construction activities shall be removed and reconstructed at the Contractor's expense to the City of Snohomish's standards.

Manhole covers, valve covers, survey markers, and other existing surface features shall be adjusted to the finished grade of the new pavement. Adjustment of utility features to grade shall be in conformance with the City of Snohomish standards.

2.12.3 Hot Mix Asphalt (HMA)

Part 1 – General

References

Hot Mix Asphalt (HMA) shall comply with Section 5-04 of the Standard Specifications. All HMA shown on the Plans shall be Commercial HMA unless otherwise noted. Furnish, place, spread, and compact HMA to the thickness shown on the Plans.

2.12.10 Pavement Marking/Striping

Part 1 – General

References

Pavement marking shall be constructed in accordance with 8-22 of the Standard Specifications and any Owner standards more stringent than the Standard Specifications.

Part 3 – Execution

Repair/Restoration

Pavement marking damaged or removed during construction shall be replaced by the Contractor. Cost for replacement of damaged or removed markings shall be incidental to the contract.

Installation/Construction

Provide markings on all new pavement per City of Snohomish requirements.

Pavement marking shall match marking at the project site unless noted otherwise on the Plans or within these specifications.

2.13 Vegetation Protection

2.13.1 Common Work for Vegetation Protection

Warranty

Trees which are protected within fencing that become damaged or die within one year of acceptance shall be repaired or replaced by the Contractor at the discretion of the Owner with trees of the same species and equal size.

2.13.2 Fencing

Site security is fully the contractor's responsibility. Site shall be secure at the end of each work day. Contractor may utilize existing fencing on site for security or install temporary fencing as necessary.

Construction fencing is required around tree drip lines as shown on the plans.

Part 3 – Execution

Installation/Construction

Protect trees and other existing vegetation to remain with temporary construction fencing as indicated on the Plans. No work can commence until complete erosion control and temporary fencing is in place and approved by Owner's Representative.

Fencing shall be constructed and located to protect vegetation from physical or chemical damage, flame, smoke, heat, and damage to, or compaction of roots.

Construction access, vehicle or equipment parking, material storage or material disposal will not be allowed within drip lines of existing trees to remain.

Repair/Restoration

After construction, any temporary chain link fencing shall be removed from site by Contractor.

2.13.4 Existing Trees to Remain

Part 3 – Execution

Installation/Construction

Individual trees and areas shown to remain shall be protected by construction fencing per plan. Install fencing before site preparation, grading and clearing and grubbing operations. Under no circumstances shall the Contractor, for convenience or ease of construction, remove existing trees that are not designated to be removed.

2.20 EARTH MOVING

2.23 Excavation

Part 1 – General

Summary

The Contractor shall excavate as necessary to construct the improvements shown.

Part 2 – Products

Materials

All excavated material not being used shall be removed from the project site.

Part 3 – Execution

Installation/Construction

Excavation shall include the digging, scraping, and removing existing native material, abandoned or interfering utilities, abandoned or interfering structures and any other obstacles necessary for the construction of the improvements shown on the Plans. Excavation includes utility excavation, structural excavation, and grading excavation.

Utility excavation shall be performed to the depths necessary to complete the utility construction work shown.

Structural excavation shall be performed to the limits shown and established by the Owner. The base of the excavation shall extend laterally a minimum of 18 inches beyond the structure unless specified otherwise on Plans.

Excavated material may be stockpiled on-site. Temporary stockpiling of excavated material will not be permitted outside the construction limits at any time.

Examination

The base of the excavation shall be evaluated by the Owner to determine if it is suitable for backfilling. The Owner will evaluate the stability of the base of excavation by determining if all significant organic soils or other unsuitable materials have been removed.

Construction

Excavation required by the Owner that is beyond the depth shown shall be performed by the Contractor per the direction of the Owner.

2.25 Erosion and Sedimentation Control

2.25.2 Contractor Provided Certified Erosion and Sedimentation Control Lead

Part 1 – General

Summary

The Contractor shall provide a Certified Erosion and Sedimentation Control Lead (CESCL) as part of their regular work force for the project. This person shall be a site superintendent, project manager or site laborer regularly on the project site during earthwork operations.

2.25.3 Temporary Erosion and Sedimentation Control (No SWPPP)

Part 1 – General

Quality Assurance

The Temporary Erosion and Sedimentation Control (TESC) Plans shown on the construction Plans are the minimum requirements for the anticipated site conditions. The Contractor shall add additional TESC facilities or processes as necessary to ensure that erosion and sedimentation problems do not occur. The Contractor shall inspect the TESC facilities at least weekly and following precipitation events and maintain the systems as necessary to prevent off-site damage.

Part 2 – Products

Materials

Straw or mulch shall be applied to any exposed surfaces to minimize erosion and filter surface water runoff. Where straw or mulch is required for erosion control, it shall be applied to a minimum thickness of 2-inches. Straw shall not include Reed Canary grass.

Part 3 – Execution

Installation/Construction

All erosion/sedimentation control systems including; fencing, earth berms, grasses, straw, mulch, culverts, drain pipe, outfalls and other items required by for this project, must be installed prior to any clearing, grubbing, excavation, or grading work or other work that could result in off-site stormwater or material flows. Erosion/sedimentation controls systems must remain in place throughout the duration of the construction activities. The systems may be

relocated to complete utility, excavation, grading, and landscaping activities if their location impedes the associated work. If the systems are relocated to complete any work they must be reinstalled to protect the construction and surrounding areas prior to commencing work on other portions of the project.

Systems such as mulch, plastic sheeting and hydroseed shall be installed as soon as clearing, grading and excavation are complete. The Contractor shall take care and diligence to minimize erosion exposure and provide erosion and sedimentation control measures as shown on the Plans and required by construction practice.

Stabilized construction entrances and wash pads shall be installed at the beginning of construction activities and shall be maintained for the duration of the project. Wash pads shall be kept clean to prevent the transport of sediment onto adjoining roads.

Earth berms shall be installed as necessary to prevent the migration of surface water into excavations or off of the project site. Surface water that is intercepted by earth berms shall be routed to an approved stormwater conveyance system. The Contractor shall ensure that the concentration of surface water at the earth berm does not erode the adjoining or downstream properties. Sediment deposited against the earth berm shall be removed to ensure that surface water can flow freely. The earth berm shall not be removed before the stabilization of the surface downhill from the berm.

2.25.4 Stormwater Discharge (No SWPPP)

Part 3 – Execution

Field Quality Control

The Contractor shall be responsible for meeting all construction stormwater discharge water quality requirements including State of Washington (WAC 173-220-020), Construction Stormwater Permit requirements and local requirements regardless of weather conditions.

If the project is fined by the permitting authority, that stormwater fine shall be paid for by the Contractor at no additional cost to the Owner.

2.50 SHORING AND SUPPORT

2.51 Contractor Designed Shoring

Part 1 - General

Summary

Where shoring, sheet piling, sheeting, bracing, lagging, or other supports are necessary to prevent cave-ins or damage to existing improvements, it shall be the responsibility of the Contractor to design, furnish, place, maintain, and remove supports in accordance with applicable laws, codes, and safety requirements.

References

Chapter 296-155 of WAC, "Safety Standards for Construction Work, Part N, Excavation, Trenching, and Shoring".

OSHA

Quality Assurance

Where the Contractor is required to provide the shoring design, it shall be prepared by a competent person as defined by WAC 296-155. Before beginning any excavation that is governed by the shoring requirements, the Contractor shall submit his stamped shoring plan and calculations to the Owner for approval. The stamp must be present on all Plans and calculations, and all submittals must be approved by the Owner prior to starting work.

Part 3 - Execution

Installation/Construction

Design, planning, installation, and removal of sheeting, shoring, sheet piling, lagging, and bracing shall be accomplished in such a manner as to maintain the undisturbed state of soil below and adjacent to excavation.

2.60 CONTAMINATED & WASTE MATERIALS HANDLING

2.60.2 Waste Material Control

Part 1 – General

Quality Assurance

Adhere to all requirements of federal, state, and local statutes and regulations dealing with pollution. Permit no public nuisances.

Use only dump sites that are approved by the regulatory agency having jurisdiction, and present proof of approval upon request.

Part 3 – Execution

Installation/Construction

The Contractor shall take precautions to warn, protect, and prevent the public from all hazards that exist on site due to any demolition or construction operations. Stockpiled debris shall be surrounded with yellow warning tape attached to lath, stakes, poles, or fencing to warn the public of any potential hazard.

Use water sprinkling, temporary enclosures, or other methods to limit dust and dirt from rising and scattering in the air. Surface water runoff that is contaminated with site debris, silt, or other material that adversely affects water quality shall be collected and cleaned prior to discharge. On site collection ponds may not be used to keep silt laden water from entering the storm water collection system.

Do not use water to control dust when its use may create hazardous or objectionable conditions such as ice formation, flooding, and pollution.

The Contractor shall minimize the amount of dust and other airborne particles caused by any demolition, excavation, stockpiling, or removal activities. Dust control measures shall be implemented by the Contractor prior to the beginning of work activities. Exposed soil may be wetted with water or covered to minimize dust creation. Water runoff from the wetting procedure shall be accumulated and cleaned prior to disposal. Water runoff accumulation shall be removed from the site prior to project completion.

Cleaning

At all times, keep the construction area clean and orderly and upon completion of the work, leave buildings broom clean and all parts of the work clean and free of rubbish and excess material of any kind. Leave fixtures, equipment, walls, and floors clean and free of stains, paint or roofing splashes, or other marks or defects. Upon completion, restore site of all work or equipment and material storage areas to their original conditions. Remove all miscellaneous unused material resulting from work and dispose of it in a manner satisfactory to the Owner. The site, through the progress of construction, shall be kept as clean as possible and in a neat condition.

2.61 Contaminated Materials

2.61.2 Toxic Spill or Release Contact Requirements

Part 3 - Execution

Field Quality Control

During construction, if there is any toxic substance spill or release discharged into the environment, report the location, quantity, date and time of the spill or release to Washington State Emergency Management at 1 (800) 258-5990 and the Owner's representative. Spills shall be monitored, contained, and cleaned up to applicable codes at the Contractor's expense.

2.90 LANDSCAPING

2.90.1 Common Work for Landscaping

Part 1 – General

Submittals

In addition to Division 2.05, provide the following information.

Samples of compost

Written maintenance instructions recommending proper procedures for maintenance of plant materials.

Top Soil - The Contractor shall submit the data for topsoil to be used as determined by an approved testing lab. Data shall include percentage of organic content as determined by incineration process and recommendations on type and quality of additives required to establish satisfactory pH factor, organic content, and supply of nutrients to bring the soil to a satisfactory level for planting.

Project/Site Conditions

Prevent damage to existing features, pavement, utility lines, areas to receive planting and other features remaining as part of final landscaping and/or site improvements.

Warranty

Warrant trees, shrubs and ground cover for the period as stated in the Warranty section of Division 1 against defects including death and unsatisfactory growth, except for defects

resulting from negligence by Owner, abuse or damage by others or unusual phenomena or incidents beyond the Contractor's control.

Replace, in size and kind and in accordance with the Plans and Specifications, all plants that are dead or, as determined by the Owner's Authorized Representative, in an unhealthy or unsightly condition, or have lost their natural shape due to dead branches or other causes due to the Contractor's negligence. Such replacement(s) will be at Contractor's expense.

Warranty shall not include damage or loss of trees, plants, or ground covers caused by fires, unusual floods, freezing rains, lightning storms, winds over 75 miles per hour or other catastrophic "Acts of God". Winter kill caused by extreme cold and severe winter conditions not typical of planting area, unanticipated acts of vandalism or negligence on the part of the Owner and damage caused by wildlife, shall not be covered under this warranty.

Maintenance

The plant establishment period shall be 365 days in duration from final acceptance.

Maintenance of landscaping installed as part of this contract is fully the responsibility of the Contractor during the plant establishment period.

During the plant establishment period, it shall be the Contractor's responsibility to ensure the continued growth of all plant materials. This care shall include, but not be limited to, the following: labor and materials necessary for removal of foreign materials, weeds, dead or rejected plant materials and lawn; the replacement of all unsatisfactory plant materials planted under this Contract in kind and size; and fertilizing to maintain a healthy growing condition and visually pleasing site.

Water trees, plants and groundcover within the first 24 hours of initial planting, and in sufficient amounts thereafter to keep plant materials in a healthy growing condition.

Provide maintenance reports to Owner's Authorized Representative monthly, indicating procedures, fertilizing, defective material, etc.

Part 2 – Products

Materials

A complete list of plants, including a schedule of sizes, quantities and other requirements is shown on the Plans. In the event that quantity discrepancies or material omissions occur in the plant materials list, the planting Plans shall govern.

All plants shall be nursery grown under climatic conditions similar to those in the project locale for a minimum of 2 years or transplanted from on-site.

Part 3 – Execution

Examination

Examine proposed planting areas and conditions of installation. Do not start planting work until unsatisfactory conditions are corrected and approved by the Owner's Authorized Representative.

Notify Owner's Authorized Representative at least 7 working days prior to installation of plant material.

Final inspection to determine acceptance of planted areas will be made by the Owner's Authorized Representative, upon Contractor's request. Provide notification at least 10 working days before requested inspection date. Planted areas will be accepted, provided all requirements, including maintenance, have been complied with and plant materials are alive and in a healthy, vigorous condition after final acceptance of the project.

Upon one year after Substantial Completion, the Owner will assume plant maintenance.

Repair/Restoration

All dead plant materials shall be replaced within thirty (30) days of discovery.

Correct defective work as soon as possible after deficiencies become apparent and weather and season permit.

Cleaning

During landscape work, keep pavements clean and work area in an orderly condition.

Perform cleaning during installation of the work and upon completion of the work. Remove from site all excess materials, soil, debris and equipment as instructed by Owner's Authorized Representative. Repair damage resulting from planting operations.

Remove any temporary irrigation systems once no longer needed. Remove only after approved by the Owner.

2.90.2 Landscape Grading

Part 3 – Execution

Installation/Construction

Perform fine grading within Contract limits, including adjacent transition areas, to new elevations, levels, profiles and contours indicated. Provide subgrade surfaces parallel to finished surface grades, unless specified otherwise. Provide uniform levels and slopes between new elevations and existing grades. All fills required to achieve subgrades shall be compacted per requirements of the fill type as noted above. For landscaping areas, all fill shall be compacted to 90 percent of modified proctor (ASTM D-1557) unless noted otherwise on the Plans.

Perform grading, within branch spread of existing trees scheduled to remain, by hand methods to elevations indicated. Cut roots cleanly to depth 3 inches below proposed finish grade. Treat cut roots over 1-inch in diameter with asphaltic pruning paint.

2.90.10 Topsoil

Part 2 – Products

Materials

Topsoil shall be naturally occurring surface soil with a minimum sand content of 60 percent. Topsoil shall have no evident rocks or debris over 1/2 inch Acidity pH range shall be between 5.0 and 6.5. Organic matter content shall be 10 to 20 percent by dry weight. Add dolomite limestone, if required, to obtain pH. Limestone, if used, shall be finely ground, passing a

minimum of 90 percent through the U.S. Standard No. 8 sieve and 20 percent through the U.S. Standard No. 100 sieve. Add approved nutrients, if required, to bring nutrients to a satisfactory level for planting as recommended by a qualified testing laboratory (exclude nitrogen, potassium and phosphorus).

Part 3 – Execution

Installation

Soil from excavated planting pit shall be mixed with organic compost in a ratio of 1/3 organic compost to 2/3 sandy loam.

Excess soil shall be disposed of as per Owner's Authorized Representative's instructions.

2.90.11 Hydroseed

Part 1 – General

Scheduling

The Contractor shall apply hydroseed either for temporary stabilization or permanent restoration within the optimum seeding windows whenever possible. Construction practices shall be timed to minimize bare, cleared and excavated areas so that surfaces are hydroseeded and seed germinates and grows stabilizing surfacing as soon as possible. The optimum seeding windows are April 1 through June 30 and September 1 through October 1. Seeding that occurs between July 1 and August 30 will require irrigation until 75 percent grass cover is established. Seeding that occurs between October 1 and March 30 will require a mulch layer at least 2-inches thick or plastic cover until 75 percent grass cover is established.

Maintenance

The Contractor shall provide temporary irrigation, mulch or plastic sheeting to hydroseeded areas as required by construction schedule in addition to the hydroseed (per areas dictated on the Plans or disturbed to facilitate construction or both) at no additional cost to the owner.

Part 2 – Products

Materials

Hydroseed applications shall include a minimum of 1,500 pounds per acre of mulch with 3 percent tackifier. Mulch may be made up of 100 percent: cottonseed meal; fibers made of wood, recycled cellulose, hemp, and kenaf; compost; or blends thereof. Tackifier shall be plant-based, such as guar or alpha plantago, or chemical-based such as polyacrylamide or polymers. Any mulch or tackifier product used shall be installed per manufacturer's instructions.

Mulch is required for seeding. Any areas that have seed applied by hand shall have a minimum 2-inch thick layer of mulch or topsoil. Slow-release fertilizers shall be used. Fertilizer shall not be agitated more than 20 minutes in the hydromulch machine before it is to be used.

On 2:1 to 1.5:1 slopes, Bonded Fiber Matrix (BFM) or Mechanically Bonded Fiber Matrix (MBFM) products may be used in lieu of hydroseed with erosion control mat. BFM/MBFM products are applied with approximately 10 percent tackifier. BFM/MBFM shall be allowed to cure 24-36 hours before rainfall and shall not be installed on wet or saturated soils.

Western Washington Hydroseed Mixes

Install seed, fertilizer, and mulch for hydroseed mix at the following application rates:

Seed 180 pounds per acre

Fertilizer 90 pounds per acre, 10-4-6 Nitrogen-Phosphorus-Potassium (N-P-K)

Mulch 1,500 pounds per acre

BFM/MBFM 3,000 pounds per acre (for 2:1 slopes and steeper)

Seed Mix			
Name	**Proportion by Weight**	**Percent Purity**	**Percent Germination**
Tall or meadow fescue	75-80%	98%	90%
Seaside/Creeping bentgrass	10-15%	92%	85%
Redtop bentgrass	5-10%	90%	80%
All Other Areas Seed Mix			
Name	Proportion by Weight	Percent Purity	Percent Germination
Redtop or Oregon Bentgrass	20%	92%	85%
Red fescue	70%	98%	90%
White Dutch Clover	10%	98%	90%

Part 3 – Execution

Preparation

Areas that will be seeded must have 2-inches of topsoil installed on the disturbed areas if no native top soil is present. The seedbed should be firm and rough. All soil should be roughened regardless of slope. If compaction is required, slopes must be track walked before seeding. Backblading or smoothing of slopes greater than 4:1 is not permitted if they are to be seeded.

Installation

All disturbed surfaces within the project not otherwise covered by asphalt, gravel, quarry spalls, concrete, or other plant material/landscape items as indicated on Plans shall be hydroseeded, except ditches and swales may have seed applied by hand. Apply seed prior to installing erosion control blankets.

Field Quality Control

The aforementioned specifications are the minimum requirements for the anticipated conditions. It will be the responsibility of the Contractor to ensure seeded areas establish ground cover and to provide any additional measures necessary to establish ground cover in seeded areas. Any seeded areas that fail to establish at least 75 percent cover (100 percent cover for areas that receive sheet or concentrated flows) shall be reseeded at no additional cost

to the Owner. Contractor should expect to provide a temporary irrigation system for dry season work or any work in Eastern Washington. Temporary irrigation systems shall be removed by the Contractor when no longer required.

3.00 GENERAL

Sections in these specifications titled "*Common Work for . . .*" shall apply to all following subsections whether directly referenced or not.

3.05 Common Work for Concrete

Part 1 - General

This division covers that work necessary for furnishing and installing all concrete as described in these specifications and as shown on the Plans.

References

Materials shall conform to the following standards:

- Cement - ASTM C-150
- Coarse aggregate - ASTM C-33
- Fine aggregate - ASTM C-33
- Admixtures - ASTM C-494
- Air-entraining admixtures – ASTM C-260
- Fly Ash – ASTM C-618

Submittals

Submittal information shall be provided to the Owner for the following items:

- Concrete mix design including aggregate gradation and substantiating strength data.
- Admixture Data
- Special placement procedures for hot or cold weather
- Construction Joint Plan
- Schedule of surface finishes
- Rebar mill certifications
- Rebar placement shop drawings
- Precast concrete items
- Schedule of form inserts
- Bentonite water stop
- Grouts
- Embedded items
- Form Release agent
- Method of plugging through-bolt holes

Concrete mix designs shall be submitted to the engineer for approval a minimum of two weeks prior to placing any concrete. The mix design shall include the amounts of cement, fine and coarse aggregate, water and admixtures, as well as the water cement ratio, slump, concrete yield, aggregate gradation, and substantiating strength data in accordance with ACI 318, Chapter 5. A batch plant inspection may be required, the cost of which shall be paid by the Contractor. Review of mix submittals by the engineer of record indicates only that information presented conforms generally with contract documents. Contractor or supplier maintains full responsibility for specified performance.

Part 2 - Products

Components

Nominal maximum size for aggregates is the smallest standard sieve opening through which the entire amount of aggregate is permitted to pass. Provide intermediate aggregate grades as required to achieve a well-graded mix.

All concrete surfaces exposed to weather or standing water shall be air entrained. Total air content shall be in accordance with IBC requirements unless specified otherwise herein. Air shall be measured at the truck, unless otherwise agreed to.

Water used in concrete shall be potable.

Fly ash may be substituted for up to 15 percent of the required cement, except where noted.

Any products that will be applied to the surface of the concrete and will be in contact with potable water must carry NSF 61 certification. Any concrete admixtures used in potable water storage structures must also carry NSF 61 certification.

Mixes

Concrete shall be mixed, conveyed, and proportioned in accordance with IBC section 1905.

The concrete mix shall include the amount of cement, fine and coarse aggregate, including aggregate gradations, water, and admixtures as well as water cement ratio, slump, concrete yield, and sustaining strength data in accordance with these specifications, the requirements of the International Building Code Section 1905, and the requirements of ACI 318.

Part 3 - Execution

Inspection

See Statement of Special Inspections on the Drawings for special inspection requirements. Provide 48-hour notice to Owner prior to needing the required inspections.

Also comply with local building department and permit requirements for inspection and notification.

The Contractor shall repair, replace or modify, as appropriate, any items noted in the Special Inspector's inspection or the building department inspection.

Testing

Concrete strength tests *may* be performed per section 1905.6 of the IBC and per the requirements noted herein. The Contractor will provide and pay all costs of concrete testing.

The Engineer shall be furnished with copies of all inspection reports and test results. Coordinate testing with the Owner and provide a minimum of 72-hour notice prior to concrete pouring.

Cylinders used for concrete strength tests shall be 6 X 12. 4 X 8 cylinders may be used for mixes with maximum aggregates less than 1-inch, however the testing lab must apply a 0.94 multiplier to the compressive strength test results unless data acceptable to the Engineer is presented that would justify a higher multiplier. All mixes utilizing aggregates over 1 inch shall be tested using 6 X 12 cylinders.

When 4 X 8 cylinders are utilized AASHTO T23 requirements shall be followed, and the retainer used with neoprene pads when testing for compressive strength shall be constructed according to ASTM C 1231.

The Contractor will coordinate all concrete testing with the testing agency. Costs will be paid by the Contractor.

Give the Owner and testing agency 48 hour notice prior to concrete placement. If Contractor fails to provide the required notice, the Owner may elect to cancel the affected concrete placement. Contractor shall be responsible for costs and delays due to improper notification.

If the Contractor schedules a concrete placement and does not notify the Owner and testing agency of a cancellation within 24 hours of the scheduled placement, the Contractor shall pay the testing agency costs for an unnecessary trip. If the Contractor fails to provide the testing agency with adequate notification and testing agency cannot attend concrete placement, Contractor shall reschedule placement. Contractor shall be responsible for all associated delays.

The Contractor shall provide all assistance and cooperation necessary to testing personnel to obtain the required concrete tests. Contractor and Owner will have access to testing results as soon as they are available.

The testing agency shall take a minimum of four samples for every 50 yards of concrete placed (and a minimum of four per pour); one for a 7 day test, two for 28 day tests, and one for backup testing in case the other two samples do not meet design strength. Additional samples may be taken to verify strength prior to form removal at the Contractor's expense.

3.10 FORMING AND ACCESSORIES

3.11 Formwork

3.11.13 Cast in Place Forming

Part 1 – General

Submittals

The Contractor shall submit a construction joint plan to the Engineer for review prior to formwork and rebar installation if altered from that shown on the Plans. Modifications to the construction joints shall be submitted to the Engineer no less than 7 working days prior to placing the forms and rebar.

Part 2 – Products

Materials

Unless otherwise directed, coat contact surface of forms with colorless, non-staining, mineral oil that is free from kerosene, or other approved suitable material, to permit satisfactory removal of forms without concrete damage.

Form construction for surfaces covered with backfill shall be made of steel, plywood, or dressed, matched lumber. Form construction for exposed surfaces shall be made of new plywood or steel without surface markings.

Part 3 - Execution

Installation/Construction

Concrete forms shall be sufficiently tight to prevent leakage of concrete or mortar and shall be properly braced or tied together to maintain desired position and shape until removed.

Conduits, pipes and sleeves of any material not harmful to concrete and within the limitations of ACI 318, Section 6.3 are permitted to be embedded in concrete with approval of the Engineer. Provide a ¾-inch chamfer or radius at all exposed corners and edges, unless specifically stated otherwise on the Plans.

Forms shall remain in place until the concrete has developed sufficient strength to withstand imposed loads without damage or deflection. Wall and slab forms shall remain in place for a minimum of 24 hours after completion of the pour. Forms for beams and suspended slabs shall remain in place for a minimum of 14 days AND until concrete has developed 28-day design strength, unless approved by the Engineer. The Contractor shall coordinate with the testing lab to verify concrete strength prior to form removal.

Do not allow water to flow through areas where forms are to be placed. During form construction and prior to placement of concrete, keep footings and floor slab areas free of standing water.

Field Quality Control

Variations from plumb, specified grade, conspicuous lines, and walls shall not exceed plus or minus 1/4- inch in any 10-foot length, and shall not exceed one inch over the entire length. Variations from dimensions shall not exceed plus or minus 1/2-inch. Closer tolerances shall be achieved by the Contractor as necessary to accommodate equipment and other permanent materials.

3.15 Accessory Materials

3.15.2 Premolded Joint Filler

Part 1 – General

References

Premolded joint filler for expansion or through joint applications shall conform to the specifications for "Preformed Expansion Joint Fillers for Concrete Paving and Structural

Construction", AASHTO M 213, except the requirement for water absorption is not applicable.

Part 2 – Products

Materials

The thickness and width of premolded joint filler shall be as indicated on the Plans. Where no premolded filler thickness is indicated, the thickness shall be 3/4 inch.

3.15.4 Embedded Items

Part 3 - Execution

Preparation

Fill voids in sleeves, insets, anchor slots, etc., temporarily with readily removable materials to prevent entry of concrete into voids.

Installation/Construction

Position embedded items accurately, and support against displacement or movement during placement.

Coat all aluminum embedded items as specified in Division 9.

3.15.5 Pipe Penetrations through Concrete

Part 1 - General

Summary

Water holding structures and structures buried and subject to groundwater contact: As shown on the Plans.

Structures not holding water or unburied structures: Unless identified on the Plans, all pipes larger than two inches passing through poured-in-place concrete floors and walls shall be isolated from the concrete.

Part 2 - Products

Materials

Provide a Link-Seal system (or approved equal).

Part 3 - Execution

Examination

Wrapping must be inspected and approved by Engineer prior to concrete pour. Gaps, tears, or looseness in wrapping will be cause for rejection.

Installation

Install Link-Seal per manufacturers instruction either within a cast-in-place sleeve or core drill a clean hole.

For vault drain, provide and install wrapping (watertight) with a minimum of 1/2-inch separation between the pipe and concrete. Extend wrapping a minimum of one inch above and below concrete pour and cut flush on accessible side(s) after curing.

3.15.14 Bentonite Waterstop (Lid to Wall Joint in Vault)

Part 2 - Products

Materials

Bentonite Waterstop shall be Volclay WATERSTOP-RX 101, or equal. Use Bentonite Waterstop only where specifically called out on the Plans. Bentonite Waterstop shall be a 1 inch x 3/4 inch flexible strip consisting of 75 percent sodium bentonite and 25 percent butyl rubber compound. Adhesive shall be as recommended by the waterstop supplier.

Part 3 - Execution

Preparation

Concrete to receive waterstop shall be sound with a smooth finish, free of debris, oil, grease, or other foreign material. Installation shall not proceed when work areas are flooded to the extent that would cause waterstop to hydrate; nor when precipitation can be reasonably anticipated before waterstop can be properly installed or protected. All applicable vertical and horizontal construction pour joints to receive waterstops must be encapsulated with a minimum of three (3) inches of concrete on all sides.

Installation

Components and installation procedures for Bentonite Waterstop shall be in accordance with manufacturer's printed specifications and recommendations. Install as follows:

1. Clean all debris, dirt and rocks from dry concrete surface.
2. Concrete to be free of large voids and projections.
3. Maintain minimum of 3 inches of clearance to edge of concrete.
4. Apply adhesive per manufacturer’s instructions.
5. Remove release paper. Press the entire length of waterstop firmly against primed surface. Verify minimum concrete coverage will be maintained over entire placement of waterstop. Place in maximum practicable lengths to minimize coil end joints.
6. Tightly butt coil ends together to form continuous waterstop. DO NOT OVERLAP COIL ENDS. Where required cut coils with sharp knife or utility blade to fit coil ends together without overlapping.
7. Pour and vibrate concrete. Whenever possible do not pour concrete directly.

3.15.19 Concrete Anchors

Part 1 - General

Quality Assurance

Installation of adhesive anchors shall be performed by personnel certified in accordance with the ACI/CRSI Adhesive Anchor Installer Certification Program. In lieu of certification the installer shall attend on-site training held by the adhesive manufacturer prior to the installation of adhesive anchors.

Part 2 - Products

Materials

Concrete Anchors shall be Simpson SET-XP Adhesive Anchors.

Anchorage into unreinforced masonry cells is not allowed unless specifically called out on plans.

Threaded rod shall be stainless steel except in dry locations.

Part 3 - Execution

Installation

Install in accordance with Manufacturer's recommendations. Special Inspection in accordance with IBC, Section 17, must be provided. Provide a minimum of 48 hours' notice to Engineer prior to starting installation. Concrete anchors shall not be used to resist tension or fatigue loading without Owner's evaluation and approval.

Use threaded rod or reinforcing bar as shown on the drawing, and meeting Manufacturer's recommendations. Provide minimum embedment as shown. Holes shall be drilled with carbide-tipped drill bit. Holes shall be cleaned of dust and debris. Adhesive shall be inserted with a mixing nozzle.

3.20 REINFORCING

3.21 Reinforcing Steel

Part 1 - General

References

ACI – American Concrete Institute- latest edition

CRSI Manual of Standard Practice – latest edition

Part 2 - Products

Materials

Grade – ASTM A706, Grade 60

ACI A615, Grade 60 shall be permitted if:

(a)The actual yield strength based on mill tests does not exceed fy by more than 18,000 psi; and,

(b) The ratio of actual tensile strength to the actual yield strength is not less than 1.25.

Detailing - ACI 318 and ACI 315

Lap requirements - See schedule on Plans or as required by ACI 318

Tie wire - 16 gauge minimum

Bar supports shall conform to "Bar Support Specification" CRSI Manual of Standard Practice, MSP-1-80. Provide Class 1, plastic protected bar supports. Use pre-cast concrete blocks to support bars off ground. Bar supports in water holding and buried structures shall be non-metallic.

Bar supports for the bottom rebar mat of suspended slabs or beams in water holding structures must be point supports (chairs or dobbies), not continuous.

Part 3 - Execution

Installation

Reinforcing steel shall be detailed in accordance with ACI 315and 318 and as shown on the Plans. Lap all reinforcements in accordance with "the reinforcing splice and development length schedule". Provide corner bars at all wall and footing intersections. Bend wire bar ties away from formwork to provide the same concrete clearance as shown on the Plans to the bars.

Welding of reinforcing steel shall not be performed unless specifically approved by the Engineer. If approved, Contractor will arrange and pay for all required Special Inspections associated with welding of reinforcing steel.

Field Quality Control

Reinforcing steel shall be free of rust and loose scale at time of concrete placement. Bars with kinks, improper bends, or reduced cross-section due to any cause will not be used. Bars shall not be field bent. Bars may not be tack-welded or otherwise heated.

If, within the project warranty period, rust spots appear on the concrete due to failure to achieve proper clearance on the rebar or wire ties, the Contractor shall grind out and patch the areas using a method satisfactory to the engineer.

3.30 CAST-IN-PLACE CONCRETE

3.30.1 Common Work for Cast in Place Concrete

Part 1 - General

Delivery

Concrete shall be transported in a truck mixer to the jobsite and discharged within 1.5 hours after cement has been added to water or aggregates. Rejected concrete will be at Contractor's expense.

Part 2 - Products

Components

If allowed, curing materials shall conform to ASTM C-171 and liquid membrane-forming compounds shall conform to ASTM C-309. When concrete is to be coated or stained, use UV-dissipating form release and curing compounds.

Part 3 - Execution

Preparation

Do not place concrete during rain, sleet, or snow until water and freezing protection is provided.

Before beginning placement of concrete, remove hardened concrete and foreign materials from inner surface of mixing and conveying equipment. Before depositing concrete, remove debris from space to be occupied by the concrete. Secure reinforcement in position to prevent movement during concrete placement.

At construction joints, thoroughly clean surface of existing concrete to remove laitance. Roughen existing concrete surface to expose aggregate uniformly and apply approved bonding agent to existing concrete in accordance with manufacturer's recommendations. Prior to placing fresh concrete, dampen joint and coat with grout mixture in accordance with ACI 301, Section 8.5.

Installation

Placement shall be in accordance with IBC, Section 1905.

Place no concrete when air temperature is below or expected to be below 40 degrees during the 28-day curing period unless a low temperature concrete mix has been approved by the Owner. Provide adequate equipment for heating materials and protecting concrete during freezing or near freezing weather. Keep materials, reinforcement, forms, and ground in contact with concrete free from frost at time of placement. Heat mixing water as required. Use no materials containing ice.

Place no concrete when air temperature exceeds or is expected to exceed 85 degrees during the 28-day curing period unless a high temperature placement plan has been approved, and unless adequate precautions are taken to protect work. Cool ingredients prior to mixing. Flake ice or crushed ice of a size that will melt completely during mixing may be substituted for all or part of water. Cool forms and reinforcing prior to placing concrete.

Handle concrete from mixer, ready-mixed truck, or from transporting vehicle to place of final deposit by methods which prevent separation or loss of ingredients. Under no circumstances shall concrete that has partially hardened be deposited.

Deposit concrete continuously so that no concrete will be deposited on concrete which has hardened sufficiently to cause formation of seams and planes of weakness within the section.

Consolidate concrete by vibration, supplemented by hand spading, rodding, forking, or tamping. Thoroughly work concrete around reinforcement, around embedded items, and into corners of forms to eliminate air or rock pockets which may cause honeycombing, pitting, or planes of weakness. Insert and withdraw internal vibrators at points approximately 18 inches in each direction and extend into the lower concrete lifts. At each insertion, the duration shall be sufficient to consolidate the concrete; but not sufficient to cause segregation. Do not use vibrators to transport concrete within forms. Consolidate slabs by utilizing vibrating screeds, roller pipe screeds, internal vibrators, or other approved methods. Have a spare vibrator available at jobsite during concrete placing operations.

After removal of forms, cut out and patch defects in concrete surfaces. Remove form tie cones. Cut or snap off form ties to a depth of 3/4-inch. Chip out rock pockets, holes from form tie removal, and other defects to solid concrete. Repair defects in accordance with 3.01.30.71.

All concrete shall be water-cured in accordance with ACI 308.1unless approved in advance by the Owner. If allowed, curing compound shall be applied immediately after finishing or form removal.

Curing compounds are not permitted on surfaces that will receive coatings.

Concrete structures that require differential backfill greater than 24 inches as shown on the Plans or as required for construction shall cure for a minimum of 7 days AND shall meet 28 day strength requirements prior to placing backfill.

3.31 Concrete Materials

3.31.2 Structural Concrete

Part 1 - General

Summary

All concrete as shown on the Plans not used for liquid containment and below-grade structures, ringwalls and mass concrete and not called out otherwise. Use water reducers as required to achieve slump. Hydraulic Concrete may be substituted.

Performance Requirements

28 day compressive strength - 4500 psi minimum

Slump - Without plasticizers; 4 inches for floor and roof slabs, 7 inches for walls. With plasticizers, maximum 9 inches or as desired for placement.

Part 2 - Products

Mixes

Water/cement ratio - .40

Nominal maximum aggregate size – 3/4" (WSDOT No. 67)

Entrained air ratio – 4.5% minimum to 7.5% maximum

3.31.3 Thrust Blocks, Driveways, Curb, Gutter, Sidewalks

Part 1 - General

Summary

All concrete for non-structural applications including thrust blocks, driveways, sidewalks, and fence post foundations. Hydraulic or Structural Concrete may be substituted.

Performance Requirements

28 day compressive strength – 4500 psi minimum

Part 2 - Products

Mixes

Water/cement ratio - .45 maximum

Nominal maximum aggregate size – 3/4 inch

Entrained air ratio – 3.5% minimum to 6.5% maximum

3.35 Surface Finishing

3.35.1 Common Work for Surface Finishing

Part 2 - Products

Finishes

Each concrete area that requires finishing shall conform to one of the following requirements:

Interior Floors and Vault Top - Light Brushed

Interior walls - Architectural

Exterior Walls - Ordinary Wall

Sidewalks – Light Brushed

Part 3 - Execution

Preparation

Do not place concrete which requires finishing until the materials, tools, and labor necessary for finishing the wet concrete are on the job and acceptable to the Owner.

3.35.6 Light Brush Finish

Part 2 – Products

Finish

When concrete has appropriately set, finish with light soft broom finish. Brush perpendicular to slab slope.

Part 3 - Execution

Construction

Consolidate, strike off, and level concrete; but do not work further until ready for floating. Begin floating when water sheen has disappeared and surface has stiffened sufficiently to permit floating operations. Consolidate surface with power-driven floats. Hand floating may be used if area is small or inaccessible to power units.

Field Quality Control

Check surface planeness during or after first floating. Cut down high spots and fill low spots to produce surface with tolerance of 1/4 inch in 10 feet in any direction. Re-float to a uniform, smooth, sweat finish concrete.

3.40 PRE-CAST CONCRETE

3.40.10 Utility Structures

Part 1 - General

Related Divisions

13.39.13 Sanitary Sewer Manholes, Frames and Covers

Performance Requirements

Pre-cast structures shall be constructed to withstand anticipated construction loads that occur during transport, handling, and placement as well as the anticipated design loads. Design loads shall include the anticipated soil pressures, hydrostatic loads, and HL-10 pedestrian traffic loading.

Part 2 - Products

Materials

All concrete structures identified on the Plans as being pre-cast, prefabricated, or not specifically detailed with reinforcing steel shall be pre-cast concrete.

Additional reinforcement shall be provided within the pre-cast concrete structure at all penetrations, openings, joints, and connections. The additional reinforcement shall be provided to prevent damage during shipping, handling and installation. All damaged units shall be rejected.

Pre-cast vaults shall conform to ACI 3188 and be constructed to the equivalent dimensions and functional characteristics of the specific product identified on the Plans.

3.60 GROUTING

3.62 Non-Shrink Grout

Part 1 - General

Summary

Use Precision Non-Shrink Grout for grouting all equipment base plates, pipe supports, and base plates for metalwork. Precision Non-Shrink grout may also be used for all other non-shrink grouting operations. General Purpose Non-Shrink grout may be used for any applications other than those noted for Precision Non-shrink Grout. Non-shrink grout shall be used to seal all new pipe and conduit penetrations (watertight) into and out of all concrete and CMU block walled structures.

Storage and Handling

Stockpile grout to prevent contamination from foreign materials and store admixtures to prevent contamination or damage from excess temperature change

Part 2 - Products

Materials

Precision Non-Shrink Grout:

Provide a high-precision, fluid, non-shrink, quartz or non-catalyzed metallic aggregate grouting material. Provide a ready-to-use grout that hardens free from bleeding, settlement, or drying shrinkage when mixed, placed and cured at any consistency – fluid, flowable, plastic or damp-pack.

Provide precision, non-shrink natural aggregate grout that when cured produces the following properties:

a. Compressive Strength at fluid consistency (ASTM C 109-90-Modified): 3500 psi (24 MPa) at 1 day, 7500 psi (52 MPa) at 28 days.

b. Passes ASTM C 1107 as a grade B grout when tested as temperature minimum and maximums of 45° F to 90° F (8° C to 32° C) at a working time of 30 minutes. Grout must be tested at a fluid consistency per ASTM C 939 and remain fluid at temperature range minimum and maximums for the 30 minute working time. All materials including water must be mixed and tested at temperature minimum/maximums.

c. Modulus of Elasticity at 28 days at fluid consistency (ASTM C 469): 3.00 x 106 psi (27.0 GPa) minimum, 3.9 x 106 (27.0 GPa maximum.

d. Coefficient of Thermal Expansion for fluid consistency (ASTM C 531): 7.5 x 10-6/ o F maximum (13.5 x 10-6/ o C).

e. Flexural strength at 28 days for fluid consistency (ASTM C 78): 1300 psi (7.9 MPa).

f. Resistance to rapid freezing – thawing (ASTM C 666, Procedure A): 300 cycles- min RDF 90%.

g. Split tensile strength at 28 days at fluid consistency (ASTM C 496): 450 psi (3.1 MPa).

h. Pass 24 hour grout test under stated temperature, time and fluidity constraints. See MBT Protection and Repair 24 hour Grout Form.

Precision non-shrink grout shall be Masterbuilders 928 or Embeco 885 Grout or approved equal. *No Rapid Set "Jet Set" is allowed on the project.*

General Purpose Non-Shrink Grout:

General Purpose Non-shrink grout shall meet the compressive strength and nonshrink requirements of CRD-C 621, Grades B and C; Corp or Engineers Specification for Non-shrink grout; and ASTM C 1107, Grades B and C. General Purpose Non-shrink grout shall be Masterflow 713 Plus or Embeco 636 Plus or approved equal.

Provide curing compounds as recommended by the grout manufacturer.

Water to be used in mixing the grout shall be potable.

Mixes

Comply with grout manufacturer's recommendations for mixing procedures.

Adjust water temperature to keep mixed grout temperature in the range of 45° F (7° C) and 90° F (32° C) minimum/maximum.

Use cold or iced water to extend working time in hot weather or in large placements.

Use warm water in cold conditions to achieve minimum as mixed temperatures.

Part 3 - Installation

Preparation

Mechanically remove unsound concrete within the limits of the grout placement.

Remove at least 1/4 inch (6mm) of existing concrete facing and continue removal as required to expose sound aggregate.

Thoroughly clean the roughened surface of dirt, loose chips, and dust. Maintain substrate in a saturated condition for 24 hours prior to grouting. Surface should be saturated surface dry at time of grouting.

Clean baseplates and other metal surfaces to be grouted to obtain maximum adhesion. Remove loose rust and scale by grinding or sanding.

Comply with grout manufacturer's recommendations for form construction. Construct forms to be liquid tight.

Installation

Place grout mixture into prepared areas from one side to the other. Avoid placing grout from opposite sides in order to prevent voids. Work material firmly into the bottom and sides to assure good bond and to eliminate voids.

Ensure that foundation and baseplate are within maximum/minimum placement temperatures. Shade foundation from summer sunlight under hot conditions. Warm foundation when foundation temperature is below 45° F (7° C).

Wet cure exposed shoulders for 48 hours followed by two coats of curing compound for best results. The minimal requirement is to wet cure until grout has reached final set, followed by two coats of curing compounds.

Division 4
Masonry—Not Used This Contract

Division 5
Fabricated Metalwork and Structural Plastics

5.00 GENERAL

This division covers that work necessary for furnishing and installing all fabricated metalwork as described in these specifications and as shown on the plans.

Sections in these specifications titled "*Common Work for* . . . shall apply to all following subsections whether directly referenced or not.

5.05 Common Work for Fabricated Metalwork and Plastics

Part 1 - General

Related Sections

Division 1.88 Location Designations; 9.90.00 Common Work for Painting and Coating; 9.90.01 Color Schedule; 9.91.13.12 Metals in contact with Concrete; 9.91.13.01 Exterior metals; 9.91.23.01 Metals interior; 9.91.23.04 Galvanized iron and nonferrous; 9.91.33 Submerged metals.

For Seismic Restraint see Division 1.81

Submittals

- Shop Drawings showing details of Fabricated Metalwork including connections and welding
- Concrete Anchors including installer certification.

Quality Assurance

Only prequalified welds (as defined by AWS) shall be used.

Fabricator shall be registered and approved by American Institute of Steel Construction (AISC) to perform shop fabrication without special inspection. Submit certificate of compliance to the Owner at the completion of fabrication. Owner will forward this to the Building Official.

If fabricator is not registered and approved, or the certificate of compliance is not received, the Contractor shall reimburse the Owner for all Special Inspections required by the IBC on shop fabricated items. The Contractor shall also reimburse the Owner for all Special Inspections required by the IBC for field welding not specifically shown on the plans. Contractor shall alert Owner at least 30 calendar days in advance if such Special Inspections will be required in order to procure the services of a testing lab.

Special Inspection by the Owner does not relieve the Contractor of responsibility of performing his own inspections and testing to ensure that all items are properly constructed.

Part 2 - Products

Materials

Galvanized Steel

Base metal shall be as specified for Mild Steel.

Hot-dip galvanized after fabrication in accordance with ASTM A 924/A 924M.

Finishes: For pieces that will NOT be painted, galvanize with zinc coating in accordance with ASTM A 653/A 653M For pieces that WILL be painted, galvanneal with zinc/10 percent iron coating in accordance with ASTM A 653/A 653M

Manufactured Units

Design of Contractor- or Manufacturer-designed components or assemblies shall meet the specific component requirements as provided here-in, as well as all applicable state and federal codes. Design shall include gravity loads and seismic loads in accordance with ASCE 7-10 Chapter 13 "Seismic Design Requirements for Nonstructural Components". Design criteria shall be as provided herein for components, and as provided on the plans.

Contractor-designed components and assemblies shall be shop welded and field bolted if possible. Field welding will NOT be allowed unless specifically shown, or there is no reasonable alternative.

Finishes

Isolate and coat dissimilar metals to prevent galvanic corrosion.

Galvanized steel: Uncoated

Stainless steel: Uncoated

Part 3 - Execution

Fabrication

All welding shall be in accordance with AISC and American Welding Society (AWS) standards and shall be performed by AISC and AWS certified welders using electrodes to match base material. Only prequalified welds (as defined by AWS) shall be used. Welding inspection shall be performed in accordance with the applicable AWS provisions and Chapter 17 of the IBC. Shop welding requiring inspection or testing per IBC Chapter 17 must be tested by an independent testing laboratory certified by AWS and approved by the owner at the Contractor's expense. Field welding, where required or allowed, will be inspected by a representative of the owner at the owner's expense. This does not relieve the Contractor of responsibility of performing his own inspections and testing to ensure that all items are properly constructed.

All shop welds shall be ground smooth.

Any shop paint on metal surfaces adjacent to joints to be field welded shall be wire brushed to remove the paint film prior to welding.

Where steel items to be welded are galvanized, galvanizing must first be removed by grinding with a silicon carbide wheel, by grit blasting or by sand blasting.

Any cutting or grinding equipment used on stainless steel must be new or only previously used on other stainless steel material.

Installation

Fabrications shall be installed as shown on the approved shop drawings. All members shall be accurately located and erected plumb and level.

Metal fabrications shall be installed or erected as based on the American Institute of Steel Construction (AISC) "Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings", latest edition, plus all referenced code requirements.

Temporary bracing, such as temporary guys, braces, false-work, cribbing, or other elements, shall be provided by the Contractor in accordance with the requirements of the "Code of Standard Practice", wherever necessary to accommodate all loads to which the structure may be subjected, including construction loads. Such bracing shall be left in place as long as may be required for safety. As erection progresses, the work shall be securely bolted or welded to compensate for all loads during construction.

No permanent bolting or welding shall be performed until the structure has been properly aligned.

5.05.23 Bolts and Other Connectors

Part 2 - Products

Materials

Bolts and other connectors not specifically called out otherwise shall be in accordance with the following.

Under no circumstances shall the fasteners be of lesser strength or higher corrosion potential than the materials being connected.

Connection bolts, nuts and washers for all materials in wet, damp or corrosive locations shall be Stainless Steel, alloy 304 in raw domestic or treated domestic water, alloy 316 in treatment process and sewage applications, and alloy 317 for acidic transport. Bolts and nuts shall meet ASTM F593B (bolts ¼-inch to 1- ½-inch in diameter with 30 ksi yield) and F594B (nuts). Use Nitronic 60 bolts and nuts for strong chlorine environments.

Steel Fabrications: Connection bolts for dry locations shall be ASTM A307 galvanized bolts.

Structural Plastic Fabrications: Connection bolts shall be ASTM A307 galvanized in dry applications and Stainless Steel in wet, damp or corrosive locations.

Aluminum Fabrications: Connection bolts shall be ASTM A307 galvanized.

Bolts installed into hardened concrete and CMU shall be Concrete Anchors as specified herein.

Bolts and studs shall be long enough that at least two threads extend beyond the face of the tightened nut.

For pump anchor bolts, see Division 11.19.

For mechanical pipe (non-structural) connections, see Division 15, “Common Work for Pipe and Fittings”.

Part 3 - Execution

Installation

All materials to be joined together shall be connected as shown on the plans, specifications, as recommended by the manufacturer, or as required by standard industry practices if not otherwise specified.

Dissimilar metals:

In damp locations, isolate dissimilar metals using nylon isolation sleeves and washers, Cooper B-Line Nylon Headed Sleeve Kit or equal.

For wet locations: avoid dissimilar metals unless specifically approved or shown. Use similar metals with welded connections. If approved or shown, use galvanized mild steel bolts installed into prepped and coated holes with additional field coating over the top of bolt.

5.50 METAL FABRICATIONS

5.60 LADDERS

5.60.1 Common Work for Ladders

Part 1 - General

Design Requirements

See plans for details.

Ladders shall meet the requirements set forth in the IBC, ASCE 7, OSHA 1910.27 and WAC (Washington Administrative Code) 296-24-735 through 296-24-81011.

Ladders shall extend the full distance from base landing to top access plus extension. Ladders that are short shall be field extended by method approved by the Engineer or replaced with proper length ladder.

Part 2 - Products

Materials

All ladders and ladder accessories shall be hot-dipped galvanized steel, or fiberglass.

Fabrication

Ladders shall be shop assembled, pre-drilled and prepared for field attachment of standoff clips, or as otherwise shown.

Division 6
Carpentry—Not Used This Contract

Division 7
Thermal and Moisture Protection – Not Used This Contract

8.00 GENERAL

Sections in these specifications titled "*Common Work for . . .*" shall apply to all following subsections whether directly referenced or not.

8.05 Common Work for Openings

Part 1 - General

Summary

This division covers furnishing all labor, materials, and equipment necessary for providing all access hatches.

Submittals

Submittal information shall be provided to the Owner for the following items:

- Hatches
- Hardware

8.30 SPECIALTY DOORS

8.31 Access Doors and Panels

8.31.20 Vault Hatches

Part 1 - General

Summary

Access hatches shall be of the dimensions and type shown on the project plans.

Performance Requirements

Access doors in fenced in grass location shall have H-10 (AASHTO) loading.

Access openings shall not have any obstructions such as intermediate hatch support beams.

Submittals

Provide manufacturer's statement of load rating.

Finishes

Aluminum hatch frames shall be protectively coated prior to casting in concrete to prevent the accelerated corrosion that occurs when aluminum is in contact with concrete.

Warranty

Manufacturer shall guarantee against defects in material or workmanship for a period of five years.

Part 2 - Products

Manufacturers

All hatches shall be equal to LW Products.

Components

Access hatches shall have aluminum diamond plate door leaf (or leaves), stainless steel spring lift, neoprene weather seal, stainless steel hardware, self-latching stainless steel slam lock, and recessed padlock hasp. An internal lever shall open the latch to prevent accidental entrapment. Any drainage provision provided by the hatch or frame shall be routed to the vault drain system using Sch 40 PVC anchored to the walls and ceiling unless shown otherwise on the plans.

Frame shall be channel style with a full anchor flange around the perimeter and shall allow for controlled water drainage away from the opening.

Compression spring operator lift system enclosed in telescopic tubes or torsion springs shall be provided for smooth, easy and controlled door operation throughout the entire arc of opening and closing. Operation shall not be affected by temperature. The door shall automatically lock in the vertical position by means of a heavy steel hold-open arm with release handle.

Hatch shall be openable from the inside of the vault.

Part 3 - Execution

Installation

Installation shall be in accordance with manufacturer's instructions.

Field Quality Control

Frame shall be installed square and true without binding of door throughout the full arc of travel. Miss-operation of door shall be corrected by the Contractor.

9.00 GENERAL

This division covers that work necessary for providing all materials, equipment, and labor to coat all items in accordance with these specifications.

Sections in these specifications titled "Common Work for . . ." shall apply to all following subsections whether directly referenced or not.

9.90 PAINTING AND COATING

9.90.00 Common Work for Painting and Coating

Part 1 – General

Scope

The work specified in this Section covers the furnishing and installation of protective coating, complete in place. Shop coating and/or factory applied finishes on manufactured or fabricated items may be specified elsewhere. Regardless of the number of coats previously applied, at least two coats of paint shall be applied in the field to all coated surfaces unless otherwise specified herein.

Submittals

Before beginning any painting or coating, submit a list of coatings and manufacturers intended for use for review by the Owner. Include the application each coating is intended for, any surface preparation, number of coats, method of application, and coating thickness.

Provide Material Safety Data Sheets for all materials to be used including solvents. Provide NSF certification for all finishes in potential contact with potable water. Submit this information in accordance with the requirements regarding shop drawings included herein.

Provide owner with schedule of coating operations and inspection timing. Coating inspections will be scheduled based upon Contractor-provided schedule, update schedule weekly or as necessary.

Provide manufacturer's approval of coating system applicator.

If product being used are manufactured by a company other than the specified reference standard, provide complete comparison of proposed products with specified projects including application procedures, coverage rates, and verification that product is designed for intended use. Information must also be provided that demonstrates that the manufacturer's products are equal to the performance standards of products listed.

Performance Requirements

All finishes potentially in contact with potable water shall be National Sanitation Foundation (NSF) certified for contact with potable water. Certification from the NSF or UL shall be supplied in writing at the time of the submittal process for Finishes. Contractor shall be responsible for verifying all finishes used on the project are compliant with primary and secondary standards of the Safe Drinking Water Act. Any violation shall be remedied at the Contractor's expense.

The completed coating shall produce a minimum dry film thickness in accordance with the specifications as determined by the microtest thickness gauge or comparable instrument. In areas where this thickness is not developed, sufficient additional coats shall be applied to produce it.

Quality Assurance

The Contractor shall be responsible for compatibility of all shop and field applied paint products including the use of primer, intermediate and top coats by different manufacturers if applicable. For any Contractor initiated substitutions, the Contractor shall verify complete compatibility between coatings provided for the project. If coatings are not compatible per manufacturer's review it shall be the Contractor's responsibility to remove incompatible coatings fully and replace with compatible coating systems.

Paint used in the first field coat over shop painted or previously painted surfaces shall cause no wrinkling, lifting, or other damage to the underlying paint.

The Contractor shall be responsible for obtaining written documentation from equipment/material manufacturers regarding the date at which shop prime coatings are applied and shall strictly adhere to the coating manufacturer's recommendations for recoat time intervals. The Contractor shall submit to the Engineer such documentation upon request.

Storage and Handling

Bring all materials to the job site in the original sealed and labeled containers of the paint manufacturer. Materials shall be subject to inspection by the Owner. Store paint supplies as recommended by the manufacturer and as approved by the Owner.

Waste Products

The Contractor shall be responsible for the collection, containment, transportation, and disposal of all waste products generated for this project. Cleaning and disposal shall comply with all federal, state, and local pollution control laws. Provide acceptable containers for collection and disposal of waste materials, debris, and rubbish.

Cleaning and disposal shall comply with all federal, state, and local pollution control laws. Provide acceptable containers for collection and disposal of waste materials, debris, and rubbish.

Site Conditions

Contractor shall take any and all measures necessary to prevent over-spray of structures and/or components in the field from both preparation and coating work. Should over-spray occur, the Contractor is responsible for all costs associated with any damage that occurs as a result of over-spray.

Part 2 – Products

Manufacturers

The following coating system manufacturers are approved subject to compliance with the Specifications contained herein:

1. Sherwin Williams
2. AkzoNobel Devoe
3. Or approved equal,

The specified coating shall be understood as establishing the type and quality of the coating desired. Other manufacturers' products will be accepted provided sufficient information is submitted to allow the Engineer to determine that the coatings proposed are equivalent to those named. Proposed coating shall be submitted for review in accordance with Division 1. Requests for review of equivalency will not be accepted from anyone except the Contractor, and such requests shall not be considered until after the Contract has been awarded.

Substitutions of the coatings of other manufacturers shall be considered only if equivalent systems of coatings can be provided and only if a record of satisfactory experience with the system in equivalent applications is available. Offers for substitutions will not be considered which decrease film thickness, solids by volume or the number of coats to be applied or which propose a change from the generic type of coating specified herein. All substitutions shall include complete test reports to prove compliance with specified performance criteria.

Part 3 – Execution

Installers

1. Coatings Contractor shall be in the business of an applying Protective Coatings for a minimum of three (3) Years. Contractor's applicators must be in the Industry of applying Protective Coatings for a minimum of three (3) Years. Contractor shall provide proof of both.
2. Coatings Contractor must provide a minimum of three (3) case histories of similar projects that have been applied within the past five (5) years. Contractor must provide current contact names, phone numbers, and email addresses on past projects for confirmation of successful installations.
3. Coatings Manufacturer must provide a letter of "Approval" the coatings applicator is "Approved" to apply the coatings called out within the specification.

If all (3) three above items cannot be met, the contractor will not be approved as the coatings applicator for the specified project.

Examination

The Owner shall inspect and approve all surface preparations prior to application of any coating. Provide 24-hour notice prior to surface inspection needs.

Preparation

Prepare surfaces in accordance with the recommendations of the manufacturer of the coating to be applied to the surface, or the surface preparation requirements of these specifications, whichever are stricter. In general all surface preparation shall meet Surfacing Preparation (SP) guidelines, the National Association of Pipe Fitters (NAPF), American Water Works Association (AWWA) and/or the National Association of Corrosion Engineers (NACE) as noted herein unless more strictly described by coating manufacturer.

Coatings shall only be applied during weather meeting the recommendations of the coating manufacturer. Air and surface temperatures, humidity and all other environmental conditions shall be within limits prescribed by the manufacturer for the coating being applied, and work areas shall be reasonably free of airborne dust at the time of application and while coating is drying.

Materials shall be mixed, thinned and applied according to the manufacturer's printed instructions. Dry Film Thickness (DFT) shall be as stated here in or applied based on coverage rates of square feet per gallon (sq. ft./gal).

Installation/Construction

Paint application shall be in strict accordance with manufacturer's printed instructions except that coating thickness specified herein shall govern. Finished coating on all items shall be clean, undamaged and of uniform thickness and color.

Coating shall be done in a manner satisfactory to the Owner. The dry film thickness listed in the "Materials" section of this Division must be met, regardless of the applied film thickness or number of coats.

Carefully observe all safety precautions stated in the manufacturer's printed instructions. Provide adequate ventilation and lighting at all times.

The manufacturer's recommended drying time shall be construed to mean "under normal conditions." Where conditions are other than normal because of weather, confined spaces, or other reason, longer drying times may be necessary. The manufacturer's recommendation for recoating time intervals shall be strictly adhered to.

Pipe shall be emptied of water for a minimum of 24 hours prior to surface preparation and painting. Pipe shall not be filled with water until coating is dry. If, in the Engineer's opinion it is not practical to drain the pipes, the water must stand for at least 48 hours to reach ambient temperature prior to coating the pipe. Do not allow water to flow for at least 24 hours after final coating.

Field Quality Control

The prime Contractor shall be completely responsible for coating quality. The Contractor shall provide both wet and dry film gauges, and make such available to the Engineer when requested.

If coating inspector finds anomalies and/or defects, the Contractor shall re-prep and recoat those areas per the coating manufacturer's instructions.

Acceptance of the completed coatings shall be based on the proper application and proper preparation of the coated surfaces, and a finished product that does not contain runs, drips, surface irregularities, overspray, color variations, scratches, pinholes, holidays, and other surface signs that detract from the overall performance and/or appearance of the finished project.

Inspection

For metals exposed to exterior atmospheric conditions, first coat of paint or primer must be placed within four hours of passing inspection. Bare steel must be re-blasted and re-inspected if not successfully coated within this four hour time frame, at the Contractor's expense.

Use the Pictorial Surface Preparation Standards for Painting Steel Surfaces (VIS-1) by the Steel Structures Painting Council (SSPC) as a visual standard for inspection of surface preparation of metal surfaces. Test-Tex Tape may also be used to verify surface profile.

Each coat shall be inspected prior to application of the next coat. Areas found to contain runs, overspray, roughness, streaks, laps, sags, or other signs of improper application shall be repaired or recoated in accordance with the manufacturer's recommendations. Finish coats shall be uniform in color and sheen. Surface preparations and coatings not inspected and approved by owner will be uncovered for inspection and approval at no additional cost to the owner.

Repair/Restoration

The Contractor is responsible for all costs associated with any damage that occurs as a result of over-spray.

Scratched, chipped or otherwise damaged coatings, including factory coatings, shall be repaired before final acceptance will be given.

Cleaning

If any cleaning of equipment at the site is performed with solvents, such work shall be done over leak-proof linings. Preparation or coating materials may not be disposed of on site.

9.90.02 Unpainted Items

Do not coat aluminum galvanized steel or stainless steel items unless specifically directed otherwise below or as shown on the plans. Do not coat shop epoxied control valves unless noted otherwise on the plans or herein. Do not coat small diameter pilot systems such as galvanized iron, copper or brass pipe and fittings associated with control valves unless noted otherwise on the plans or herein.

9.91 PAINTING AND COATING SYSTEMS

Refer to 9.90.00 for coating application requirements.

DI pipe shall have standard manufacturer applied asphaltic coating on interior (cement mortar lining as well for interior) and exterior of pipe. All valves shall be coated by the manufacturer with an epoxy coating. Any damaged coatings or galvanizing caused by shipping and/or installation shall be repaired to the satisfaction of the Owner's representative. All piping in contact with potable water shall be rated by NSF for use in direct contact with potable water.

9.97.23 CONCRETE COATINGS

Part 1 - General

Scheduling

Most coatings on concrete will require a 28 day concrete curing period prior to coating. Schedule the work accordingly. No additional monetary or time compensation will be given for failure to plan for the required curing duration.

9.97.23.07 – Concrete Vault Interior

Do not coat interior walls unless noted otherwise on the plans or stated herein.

9.97.23.08 – System 1: Concrete Vault Exterior – Bottom and Walls

Part 2 – Products

Materials

1. Sherwin Williams
    a. One coat: Hi-Mil Sher-Tar Epoxy. (16 to 20 Mil DFT)
2. AkzoNobel Devoe Coatings
    a. DevTar 5A High Solids Coal Tar Replacement Epoxy Coating. (16 to 20 Mil DFT)

Part 3 – Execution

Preparation

Allow 28 days cure time for concrete, or until passing the ASTM D 4263 Plastic Mat Test. Surface shall be clean, dry, and free of contaminants.

Division 10
Specialties—Not Used This Contract

Division 11
Equipment—Not Used This Contract

Division 12
Furnishings—Not Used This Contract

Division 13
Special Construction—Not Used This Contract

Division 14
Conveying Systems—Not Used This Contract

15.00 GENERAL

This division covers the work necessary for furnishing and installing mechanical appurtenances and accessories as described in these Specifications and shown on the Plans.

Sections in these specifications titled "*Common Work for . . .*" shall apply to all following subsections whether directly referenced or not.

15.05 Common Work for Mechanical

Part 1 - General

Summary

Provide the necessary piping, plumbing, fittings and appurtenances to make all piping systems complete, tested and ready for operation as specified herein and as shown on the Plans. Some fittings that are necessary for the complete piping system installation and operation may not have been shown. Provide fittings, pipe and appurtenances necessary, whether shown on the Plans or not, to make all piping systems complete, tested and ready for operation.

Some pipe supports, thrust blocking and tie rods are not shown on the Plans. Provide pipe supports, thrust blocking and tie rods for pipes as required by accepted design criteria to support and restrain the loads encountered.

Related Sections:

Division 1.82 Pressure Ratings

References

All products in contact with drinking water to be low-lead (less than 0.25%) content in compliance with NSF/ANSI 372.

Submittals

Submittal information shall be provided to the Owner for the following items.

- Ductile iron pipe and fittings
- Welded steel pipe and fittings
- Galvanized Steel pipe and fittings
- Isolation valves
- Control valves
- Hosebibs
- Other mechanical components listed in this division or required by the Engineer

Part 2 – Products

Materials

All valves, specialties, appurtenances and other such mechanical and plumbing components that are of similar purpose shall be of a single manufacturer and model line. Do not "mix and match" unless specifically stated otherwise or allowed by the Engineer. The intention of this requirement is to maintain consistency across all components installed on the project for function, maintenance, aesthetics and details of installation.

15.10 BURIED PIPE INSTALLATION

Part 1 – General

Site Conditions

Existing soils are unclassified except where specifically identified on the plans or specification.

Part 3 - Execution

Preparation

Contractor shall pothole ahead of pipe-laying a sufficient distance at known utility crossings and where noted on the plans to allow room to make vertical adjustments as necessary to avoid existing utilities. Should the Contractor fail to pothole identified utility crossings, any subsequent adjustments necessary shall not be cause for cost or time claim. If the area potholed is in a travelled area and will be reopened to traffic more than one day in advance of pipelaying through the zone, the hole shall be patched with hot or cold mix, the cost of which shall be incidental.

Installation

Install pipes to the depth shown on the trench detail, unless superseded by depth shown on the profile.

Keep openings in pipe closed during the progress of work. Install plugs to prevent water and debris from entering pipe. No payment will be made to clean pipes.

15.11 Open Trench Pipe Installation

15.11.11 Water Main Installation

Part 1 - General

References

Use materials and installation methods in accordance with the latest edition of the Uniform Plumbing Code and local codes and regulations that are applicable. Install ductile iron water mains in accordance with AWWA C600. Install PVC water mains in accordance with AWWA C900 and C905.

Scheduling

Connections to existing mains shall be made only after contacting the Engineer or agency inspector 48 hours prior. Connections to existing mains may only be performed on Tuesdays, Wednesdays, or Thursdays unless permission is obtained otherwise from the Engineer. Connections shall not be performed on Owner recognized holidays.

The contractor shall give the Owner a minimum of 72 hour's notice of any planned connection to an existing pipeline. Service shall not be interrupted as connections shall be hot tapped.

Part 3 - Execution

Installation

Install pipes in accordance with the manufacturer's recommendations. Use types and sizes of pipes as specified herein and/or as shown on the Plans. Where small pipe sizes are omitted from the Plans and not mentioned in the Specifications, use sizes corresponding to code requirements and as required by equipment and plumbing fixtures and appurtenances. Properly size any undesignated pipe sizes for the functions to be performed.

Carefully lay pipe and supports at proper lines and grades. Follow the piping runs shown on the Plans as closely as possible, except for minor adjustments to avoid architectural and structural features. Make major relocations, if required, in a manner acceptable to the Engineer.

Keep openings in pipes closed during progress of work.

Form thrust blocking so that bolts, joints, gaskets and flanges of adjacent joints are clear of concrete allowing bolts and joints to be dismantled without removing concrete. All concrete blocking shall have a minimum compressive strength of 4,000 psi unless identified otherwise in Division 3.31.3 or on the Plans.

Pipe passing through concrete walls or slabs shall be made watertight.

Trench shall be excavated to a sufficient width to allow for pipe installation, compaction equipment, and shoring when necessary. Maximum trench width will not exceed 36" + OD for 4" and larger pipe, or 24" + OD for 3" and smaller pipe for pay items or related materials including but limited to crushed surfacing, patching, import bedding, import backfill, and rock excavation.

Bedding shall be mechanically compacted in lifts no greater than 12-inches from base to springline and from springline to top of pipe using a jumping jack or sheepsfoot. Hoe-packs, sheepsfoots, and vibratory rollers shall not be used within 12-inches above the pipe. Trench backfill shall be compacted in lifts not exceeding 18-inches loose thickness.

Field Quality Control

No permanent connections to the existing water system shall be made until the new water main has been tested and approved by the City of Snohomish. Refer to the City of Snohomish Engineering Standards for water main testing requirements.

The Contractor shall provide all labor and equipment for earthwork, traffic control, trench safety and materials to make the temporary and final connections to the existing water system.

15.11.50 Trench Patching

Part 1 - General

Scheduling and Sequencing

The Contractor shall be required to patch all trenches installed within the existing pavement with Commercial Hot Mix Asphalt to the depth as shown in the standard plans. Trench patches shall be installed no later than 1 week following excavation.

The Contractor shall provide and maintain asphalt cold mix until final patching is complete.

Warranty

Refer to City of Snohomish Engineering Standards for Trench Patch Warranty Requirements.

Maintenance

Crushed surfacing shall be inspected and repaired continuously, including over weekends and other non-working periods. Temporary patching, regardless of material used, shall be incidental to the project cost. No additional payment will be made.

Part 3 - Execution

Field Quality Control

Pavement patching that must be removed and replaced due to any failed testing will not warrant additional payment.

15.18 Buried Piping Inspection and Testing

15.18.02 Water System Inspection and Testing

Part 3 – Execution

Refer to City of Snohomish Engineering Standards for water system inspection and testing. Contractor shall provide schematic drawings of testing and final configurations for review and approval by the City representative prior to beginning work.

15.20 PIPE AND FITTINGS

15.21 Common Work for Pipe and Fittings

Part 2 - Products

Components

Under no circumstance shall the fasteners be of lesser strength or higher corrosive potential than the materials being connected. In the event that dissimilar metals are adjacent (for example: stainless steel flange connecting to ductile iron flange) a dielectric insulation kit shall be used.

Fasteners for pipe and fittings: Per AWWA standards unless otherwise specified. All relevant subsections of AWWA C100, C200 and C500. All bolts and studs shall be long enough so that no less than 2 threads extend beyond the face of the nut. Non-submerged flange bolts to be ASTM A307 Grade A, zinc plated.

All components of any stainless steel or Cor-Ten system shall include all stainless steel or Cor-Ten components. Bolts, nuts, washers, tie rods, and other components shall be one material and not intermixed.

Finishes

For conditions other than submerged, all nuts and bolts shall be zinc plated, and suitable for above and below grade locations as required. Where above grade/exposed piping is specially coated, the connecting nuts and bolts shall be coated using the same system.

Part 3 - Execution

Construction

All piping and related equipment to be joined together shall be connected as shown on the Plans, Specifications, as recommended by the manufacturer or as required by standard industry practices if not otherwise specified.

15.22 Metal Pipe and Fittings

15.22.02 Ductile Iron Pipe and Fittings

Part 1 - General

Design Requirements

Ductile iron pipe shall have thickness designed in accordance with ANSI/AWWA C150/A21.50 and shall be based on laying conditions and internal pressures to meet the requirements of Division 1.82.

The pipe thickness shall not be less than that of Class 52 pipe.

Part 2 - Products

Manufactured Units

Pipe shall be cement-lined and asphaltic coated in accordance with ANSI Standard A21.4 (AWWA C104) unless otherwise specified, and shall conform to ANSI Standard A21.51 (AWWA C151).

Rubber gasket pipe joints are to be push-on-joint (Tyton) or mechanical joint (MJ) in accordance with ANSI Standard A21.11 (AWWA C-111), unless otherwise specified.

Flanged joints shall conform to ANSI Standard B16.1.

When requested, furnish certification from the manufacturer of the pipe and gasket being supplied that inspection and all of the specified tests have been made, and the results comply with requirements of this standard.

Ductile Iron Fittings

All fittings shall be ductile iron where possible. Steel fittings will not be accepted. Ductile iron fittings shall be short body, cement-lined and for the pressure rating noted in Division 1.82. Metal thickness and manufacturing processes shall conform to applicable portions of ANSI Standards A21.20, A21.11, B16.2 and B16.4.

Standard cement lining shall be in accordance with ANSI Standard A21.4 (AWWA C104).

Mechanical joint (MJ), ductile iron, compact fittings 3 inches through 24 inches and 54 inches through 64 inches shall be in accordance with AWWA C153.

Flanged pipe spools shall be fabricated from minimum Class 53 wall thickness pipe and conform to ANSI/AWWA C115/A21.15 with the exception that flanges shall be fabricated from ductile iron unless otherwise specified in the Contract Documents. Interior shall be cement lined.

Ductile iron flange (FL) fittings shall be in accordance with AWWA C110 and fabricated from ductile iron unless otherwise specified in the Contract Documents with a bolt pattern to match adjacent pipe. Gasket material for flanges shall be neoprene, buna-n, chlorinated butyl or cloth-inserted rubber. Gaskets shall be ring type. Full face type gaskets are not allowed. Gaskets shall be a minimum 1/8" thick.

Type of ends shall be specified as mechanical joint (MJ), restrained joint (RJ), plain end (PE) or flanged (FL).

Part 3 - Execution

Installation

The Contractor shall provide tools and equipment, including any special tools required for installing each particular type of pipe used.

The amount of deflection at each pipe joint shall not exceed 3-degrees per joint (11 inches over 18 feet) or the manufacturer's printed recommended deflections, whichever is less.

15.30 VALVES

15.31 Common Work for Valves

Part 1 – General

Design and Performance Requirements

Valves noted on the Plans or in other parts of the Specifications shall meet the requirements herein. Valves shall be designed for the intended service.

Valve suppliers shall review the design and certify that the valve provided in the submittal is appropriate for the application and will operate as shown and described. Any discrepancies from the design and the valves shall be brought to the Engineer's attention during the bidding process. Valves that do not operate as specified and per normal industry standards shall be replaced or modified so that they operate within the design parameters at the Contractor's expense.

Pressure rating shall be per Division 1.82 unless shown otherwise.

Part 2 – Products

Components

Buried valves shall be equipped with an AWWA 2-inch wrench nut with a minimum of 12 turns required to close the valve, unless otherwise noted on the Plans. Valves located at

elevations higher than 6 feet above the finished floor shall be equipped with chainwheel operator.

Buried valves where the operator nut is more than 3 feet below the valve box lid shall be provided with a solid shaft valve nut extension to reach between 18" and 36" of the ground surface. Extension shall attach to the nut with a set screw. Diameter of extension shall be appropriate for the valve size and length of extension, but under no circumstances shall be less than 1 inch for 4 foot long extension rods, or 1.25 inch for rods longer than 4 feet. Extension shall function without excessive twisting.

Part 3 - Execution

Installation

Install valves in strict accordance with the manufacturer's instructions and as shown on the Plans. Verify alignment and adjustments after installation. Provide buried valves with all operators or valves boxes installed so that wrenches or operators perform freely and without binding or other interference. Bed and backfill buried valves according to the requirements of the pipe to which they are attached.

15.32 Isolation Valves

15.32.02 Resilient Wedge (Seat) Gate Valves

Part 1 – General

Design Requirements

All gate valves for water lines 2 inches and larger shall be of the resilient, wedge-type, non-rising stem and shall meet or exceed the performance requirements of AWWA C509 or AWWA C515-Reduced-Wall, Resilient-Seated Gate Valves for Water Supply Service, unless shown otherwise. Valves shall be suitable for installation with the type and class of pipe being installed. The wedge shall be fully encapsulated with vulcanized SBR rubber. Ends to be as specified. Valve opening direction shall be counter-clockwise.

Part 3 - Execution

Installation

Install valves in strict accordance with manufacturer's instructions and as shown on the Plans. Verify alignment and adjustments after installation. Provide buried valves with all operators or valve boxes installed so that wrenches and operators perform freely and without binding or other interference. Bed and backfill buried valves according to requirements of the pipe to which they are attached.

15.34 Hydraulic Control Valves

15.34.01 Common Work for Hydraulic Control Valves

Part 1 – General

Submittals

Valve suppliers shall review the design and certify that the valve provided in the submittal will operate as described and within the conditions specified. Any discrepancies from the design and the specified valves shall be brought to the Engineer's attention during the submittal process.

Performance Requirements

Hydraulic control valves noted on the Plans or in other parts of the Specifications shall meet the requirements herein. Valves shall be designed for the intended service. Install valves in strict accordance with manufacturer's instructions and as shown on the Plans.

Valves that do not operate as intended shall be replaced or modified so that they operate within the design parameters at the Contractor's expense.

All valves shall be rated for the pressures shown in Division 1.82, unless stated otherwise within the individual valve specification.

Part 2 – Products

Manufactured Units

Valves shall be diaphragm-actuated, hydraulically-operated valves and shall have a cover chamber sealed from the body by a flexible, synthetic rubber diaphragm. Control of the valve shall be from direct-acting, adjustable spring-loaded diaphragm valve(s). Pilot controls shall be selected appropriately for the system operational pressure range.

Components

Provide brass or SS nameplates on all valves indicating valve size, inlet side (or flow direction), valve model and control pilot adjustment ranges.

Valves shall be provided with all pilots, solenoids and controls preassembled to operate the valve in its intended function. Provide each valve with stainless steel trim. Diaphragm shaft shall be stainless steel.

Provide a valve position sight gauge equal to Cla-Val Model X101 for the following valves.

- Pressure Relief Valves (8-inch and 3-inch)

Finishes

All hydraulic control valves shall be provided with an epoxy coating on the interior flow path and exterior body. Interior epoxy shall be certified for potable water use.

15.34.40 Pressure Reducing Valves – Hydraulic Control

Part 2 – Products

Manufacturers

Pressure reducing valves, 8-inch and 3-inch, shall be Cla-Val Model 93EG-01BCSVYKCO, Pressure Reducing with solenoid shut off, ball valves, closing and opening speed controls, sight glass indicator, wye pilot strainer, epoxy coated main valve inside and out *provided with Anti-Cavitation trim*. The normal inlet pressure will be 98 to 105 psi and the set point of the downstream will be 8 psi for the larger valve and 10 psi for the smaller valve. Max flow rates

will be around 350gpm for the 3-inch valve and 2,800 gpm for the 8-inch valve for a total of about 3,150 gpm. Valve shall be flanged with ductile iron body.

Manufactured Units

The pressure reducing valve shall be set to open at any pressure below its preset setpoint and to close at any pressure above an adjustable deadband to maintain downstream pressure within 2.5 psi of the pressure setpoint. Downstream pressure control shall not be based on changing upstream pressures.

Part 3 – Execution

Install valve to meet manufacturer's requirements. Test valve so that a simulated opening of the valve occurs using normal working pressure of the water system which will be 98 to 105 psi. A contractor superintendent and GC Systems or equal valve manufacturer's representative shall be on site during the test and final pilotry adjustment.

GC Systems or equal valve manufacturer's representative shall be on site to setup the pilotry, simulate a test of pressure reducing and set the final pressure setting. Representative shall be on site along with Owner's representative and shall not leave the site until all testing is complete and approved by the Owner's representative. If Owner's representative is not satisfied with testing and setup the valve manufacturer's representative shall return to the site to satisfy the Owner's representative that all testing is complete and the valve is properly installed at no additional cost to the Owner.

15.40 PIPING SPECIALTIES

15.40.01 Dismantling Joint

Part 1 – General

Design Criteria

Dismantling joint shall be accessible and capable of repeated installations and removals and capable of the testing and working pressures as specified in Division 1.82. Joint adjustment range of no less than 2-inches for 12-inch diameter and smaller pipe, and 3-inches for 14-inch diameter and larger pipe. Joint assembly to include limiting rods to prevent pull-out.

Part 2 – Products

Manufacturers

Dismantling joint shall be Romac DJ400 with limit rods or equal.

Part 3 – Execution

Installation

Install per the manufacturer's instructions. Set the assembly at the midpoint of the adjustment range unless specifically called out otherwise on the plans.

15.40.08 Valve Box – Cast Iron

Part 2 - Products

Components

Cast iron valve boxes shall be a complete unit composed of the following.

- Valve box
- Lid with recessed handle
- Extension stem for operator nuts more than 3 feet below grade

Valve box assembly shall be adjustable to accommodate variable trench depths. Valve box assembly shall be rated for continuous traffic loading.

Part 3 - Execution

Installation

Valve boxes shall be provided and installed for all buried valves. Install box plumb with surface and straight so that keys and operators do not bind.

15.40.11 Joint Restraints – Wedge Style

Part 1 General

Summary

This specification is for wedge-action style restraints. This type of restraint shall not be used where the plans or specifications require True Restrained Joints (TRJ) .Other terms used for TRJ may include "Bead-locked" or "Fabricated Restrained Joints".

Performance Requirements.

All naturally unrestrained joints subject to unbalanced forces shall be restrained to resist testing and operational forces. Restraints shall be rated for the testing and operational pressures. Restraints shall be designed specifically for the material and purpose of the pipe and joint.

Submittals

Provide manufacturer's information describing applicability and performance ratings.

Part 2 Products

Manufacturers

EBAA Iron "Mega-Lug" and US Pipe "Field Lok" gaskets or approved equals. If the Owner has construction standards addressing the type of restraints allowed, those standards shall take precedent over this specification unless specifically identified otherwise on the plans.

Components

Set-screw type restraints are not permitted. Provide the quantity of restraints required for fully restraining all design forces.

Part 3 Execution

Preparation

Verify that the pipe surface where the restraints will affix is not damaged or corroded prior to installation. Any such damaged pipe shall be cut off and disposed of. Clean any dirt or debris from the surface of the pipe.

Installation/Construction

Install per the restraint manufacturer's instructions. Bolted style restraints shall be tightened in an alternating pattern in stages, do not tighten circumferentially. If pipes require deflection at the joints, perform the deflection prior to final tightening of the restraints. Do not exceed the manufacturer's maximum deflection recommendations. Bedding material must include sufficient fines for proper soil-to-pipe adhesion and shall not be a rounded gravel, pea gravel, washed rock or other poorly graded material. Compaction of bedding around restrained pipe shall be performed in maximum 9-inch lifts using mechanical compaction equipment.

Repair

If restraints must be removed for any reason, the restraints shall be disposed of and not reused. The section of pipe to which the restraints were secured shall be cut off and disposed of.

Division 16
Electrical—Not Used This Contract

Division 17
Automatic Control—Not Used This Contract

APPENDIX A

PREVAILING MINIMUM HOURLY WAGE RATES

State of Washington
Department of Labor & Industries

Prevailing Wage Section - Telephone 360-902-5335
PO Box 44540, Olympia, WA 98504-4540

Washington State Prevailing Wage

The PREVAILING WAGES listed here include both the hourly wage rate and the hourly rate of fringe benefits. On public works projects, worker's wage and benefit rates must add to not less than this total. A brief description of overtime calculation requirements are provided on the Benefit Code Key.

Journey Level Prevailing Wage Rates for the Effective Date: 04/27/2016

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. And Over)	$44.76	7A	3I	
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 (level C)	$43.95	7A	3I	
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 Mount With Boom Attachment Over 42 M	$56.94	7A	3C	8P
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		$53.57	7A	3C	8P

		Elevator And Man-lift: Permanent And Shaft Type				
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, Tunnel Drill, Boring, Road Header And/or Shield	$56.94	7A	3C	8P
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		$56.44	7A	3C	8P

		Overhead, Bridge Type Crane: 20 Tons Through 44 Tons				
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: 45 Yards And Over	$56.94	7A	3C	8P
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		$57.51	7A	3C	8P

		Shovel, Excavator, Backhoes: Over 50 Metric Tons To 90 Metric Tons				
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 Sewer & Water	Asphalt Plant Operators	$56.94	7A	3C	8P
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		Compressor	$53.57	7A	3C	8P

	Power Equipment Operators-Underground Sewer & Water					
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 Operators-Underground Sewer & Water	Finishing Machine, Bidwell And Gamaco & Similar Equipment	$56.44	7A	3C	8P
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 Operators-Underground Sewer & Water	Loaders: Elevating Type Belt	$56.00	7A	3C	8P
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			$53.57	7A	3C	8P

	Power Equipment Operators-Underground Sewer & Water	Oil Distributors, Blower Distribution & Mulch Seeding Operator				
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 Sewer & Water	Pumps - Water	$53.57	7A	3C	8P
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 Operators-Underground Sewer & Water	Shovel, Excavator, Backhoe: Over 30 Metric Tons To 50 Metric Tons	$56.94	7A	3C	8P
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		Tree Trimmer	$34.93	5A	2B	

	Telephone Line Construction - Outside					
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	